



**Authoring Guide  
for  
Perception Version 3**

**Version 3.1, October 2001**



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# **Part 1: Introduction**





# 1 How to use this manual

## 1.1 The purpose of this guide

This guide is intended to help you understand online questions and assessments and then help you through the detailed operations of using the *Perception* authoring tools, *Question Manager* and *Assessment Manager*. We do not suggest that you try to sit and read this as you might a novel, but rather you should use it for reference.

If you simply wish to get started using Questionmark *Perception* we recommend that you consult the *Getting Started with Perception Version 3* guide.

The full set of documents that is available for *Perception* is detailed in 1 *Other documentation* below.

As well as reading this guide, you are recommended to check the *Perception* support site for the latest information. You can reach this on the web at:

*<http://www.questionmark.com/perception/help/>*

If you have any other questions about *Perception*, please contact your local Questionmark affiliate. We welcome any feedback from customers on this or any other Questionmark product.

## 1.2 Each chapter outlined

This guide contains the following:

### INTRODUCTION

**Chapter 2** *About Perception* explains what *Perception* is and what it can do for you.

**Chapter 3** *New authoring features in Version 3* summarizes the many enhancements to *Perception*'s authoring capabilities in version 3.

### PART 1: ONLINE ASSESSMENTS

**Chapter 1** *What are online assessments?* explains the concept of online assessments and how they can be used as an effective means of testing and surveying a variety of target audiences.

**Chapter 2** *Key concepts in authoring* explains the essential concepts of topic structure, question tagging, outcomes, scoring and feedback.

**Chapter 3** *Developing assessments with Perception* shows how online assessments are derived from questions and it also describes the database structures that are used by *Perception*.

### PART 2: AUTHORIZING QUESTIONS

**Chapter 1** *The structure of questions* reveals the detailed construction of questions from basic entities such as choices, outcomes, feedback and scores.

**Chapter 2** *Question Manager* describes the *Question Manager* interface and menus in full detail.

**Chapter 3** *The Question Wizard* explains how to use the *Question Wizard* and how to construct questions of various types.

**Chapter 4** *The Question Editor* shows you how to use the *Question Editor*, and how to add and edit content, choices and outcomes.

**Chapter 5** *The QML Editor* describes how to create and edit questions directly in Question Markup Language (QML) by using the *QML Editor*.

## **PART 3: BUILDING ASSESSMENTS**

- Chapter 1** *The structure of assessments* describes how questions are built into structured assessments with flow control, timing and monitoring options.
- Chapter 2** *Assessment Manager* covers the *Assessment Manager* interface and menus in full detail.
- Chapter 3** *Assessment blocks* explains how to build assessments for delivery and describes in detail the blocks used to construct assessments.

## **PART 4: TEMPLATES**

- Chapter 1** *Templates explained* introduces *Perception*'s powerful template facility and shows how it enhances the presentation of assessments.
- Chapter 2** Template Editor guides you through the tools *Perception* provides for building, editing and previewing templates files.

## **PART 5: DELIVERING ASSESSMENTS**

- Chapter 1** *Publishing assessments* defines the process of publishing assessments so that they can be delivered to participants over the web or on a desktop.

## **REFERENCE MATERIAL**

- Chapter 1** *Other documentation* gives other references and sources of help.

### 1.3 Suggested reading strategy

How you decide which parts of this guide to read will depend on what you are trying to achieve. Some possible approaches are suggested below.

Reader/Needs	Suggested Chapters
New author Composing questions only	<i>Getting Started with Perception Version 3</i> Part 1: 1 <i>What are online assessments?</i> 2 <i>Key concepts in authoring</i> 3 <i>Developing assessments with Perception</i> Part 2: 1 <i>The structure of questions</i> 2 <i>Question Manager</i> 3 <i>The Question Wizard</i>
New author Composing questions Building assessments	As above, plus: Part 3: 1 <i>The structure of assessments</i> 2 <i>Assessment Manager</i> 3 <i>Assessment blocks</i> Part 5: 1 <i>Publishing assessments</i>
Experienced <i>Perception</i> user Composing questions only	Part 2: 2 <i>Question Manager</i> 3 <i>The Question Wizard</i> 4 <i>The Question Editor</i> 5 <i>The QML Editor</i>
Experienced <i>Perception</i> user Composing questions Building assessments	As above, plus: Part 3: 2 <i>Assessment Manager</i> 3 <i>Assessment blocks</i> Part 5: 1 <i>Publishing assessments</i>
Experienced question author New to <i>Perception</i> Composing questions only	Part 1: 1 <i>What are online assessments?</i> 2 <i>Key concepts in authoring</i> 3 <i>Developing assessments with Perception</i> Part 2: 1 <i>The structure of questions</i> 2 <i>Question Manager</i> 3 <i>The Question Wizard</i> 4 <i>The Question Editor</i> 5 <i>The QML Editor</i>

Reader/Needs	Suggested Chapters
Experienced question author New to <i>Perception</i> Composing questions Building assessments	As above, plus: <i>Part 3:</i> 1 <i>The structure of assessments</i> 2 <i>Assessment Manager</i> 3 <i>Assessment blocks</i> <i>Part 5:</i> 1 <i>Publishing assessments</i>
New template user	Question/Assessment material above, plus: <i>Part 4:</i> 1 <i>Templates explained</i> 2 <i>Template Editor</i>
Experienced template user	Question/Assessment material above, plus: <i>Part 4:</i> 2 <i>Template Editor</i>



## 2 About Perception

Questionmark *Perception* is an integrated software suite that enables you to create your own tests, surveys and questionnaires for online delivery. These types of online question and answer exercises are all known as *assessments*. People who work through assessments are called *participants*.

This guide provides you with comprehensive information about *Perception's* desktop authoring applications, *Question Manager* and *Assessment Manager*. These are Windows programs which author questions and assessments for delivery.

*Question Manager* enables users to create questions and answers and store them in a database. These questions can be organized by topic, and the database can serve as a structured item bank of questions. Each question can contain one or more *question tags* that are defined by question authors to classify questions, and may be used later for question selection.

*Question Manager* also provides the functionality for these questions to be scored, and to define feedback to be given to the participants answering the questions. Scores and feedback may also be defined for topics containing a set of questions.

*Assessment Manager* is used to organize questions into tests or surveys, called *assessments*, which are then saved within another database. These assessments can be specified in a variety of ways, giving the user complete control over the information delivered to the participant.

Assessments can be limited by the time or number of attempts a participant may take, and may also be set up to require *monitoring* by a proctor or invigilator who must confirm the identity of participants.

*Assessment Manager* can even direct participants to another program or assessment dependent on the assessment's results.

*Question Manager* and *Assessment Manager* use databases, which store your questions and assessments. These databases typically reside on your local PC. These can be delivered in either of the following ways:

- Over the web or an intranet

To do this, you need to copy or publish the data into the databases used by the server software. Part 6:1.1 *Publishing for web deployment* describes how to do this.

Once assessments have been published to the server databases they are then available to *Perception Server*, the web-based component of the software suite, which then delivers it to the participant. Participant answers to assessments are stored in a single answer database on the webserver. They can then be reported on within *Enterprise Reporter*, another web-based tool in the software.

- From a Windows platform.

*Assessment Manager* allows you to publish assessments for delivery to participants without using a web server (for example, they can be distributed on CDs). This is covered in Part 6: 1.2 *Publishing for Windows delivery*.

Once assessments have been published for Windows delivery, participants can take them by running *Presenter*. Participant answers to assessments are stored in one or more answer databases. These databases can be reported on (merging them into one first if necessary) with *Windows Reporter*.



## 3 New authoring features in Version 3

There are several major improvements in the ease of use and capability of the authoring software in *Perception* version 3.

### 3.1 Additional question types

There are six new question types that you can create in *Question Manager*.

These new question types and a new more powerful drag-and-drop wizard make it easier for you to create a wider range of questions.

#### 3.1.1 Matching Questions

Matching questions offer the participant a drop-down list of possible responses to a question.

#### 3.1.2 Ranking Questions

Ranking questions require the participant to place a list of options in an order.

#### 3.1.3 Select a blank Questions

Select a blank questions offer the participant a drop-down list of texts to place in a blank area of a question.

#### 3.1.4 Likert Scale Questions

Likert scale questions ask the user to assign an option from a set of either 3, 4 or 5 possibilities to a question.

#### 3.1.5 True/False Questions

True/False questions ask the user to give a "True" or "False" answer to a question.

#### 3.1.6 Yes/No Questions

Yes/No questions ask the user to give a "Yes" or "No" answer to a question.

### 3.1.7 Question tags

You can now define question tags, each of which has its own set of defined tag values that make it much easier to categorize questions and make item banks.

For example, you can define the tags "Difficulty" and "Approved" in Question Manager that may take the tag values indicated below:

Tag	Tag Values
Difficulty	Easy Moderate Difficult
Approved	New York California Florida

You can now include these tags and tag values in the questions shown below:

Question	Tag Settings			
	Tag	Tag Value	Tag	Tag Value
Algebra	Difficulty	Easy	Approved	New York
Geometry	Difficulty	Easy	Approved	New York
Poetry	Difficulty	Difficult	Approved	California
Napoleon	Difficulty	Difficult	Approved	California
Calculus	Difficulty	Difficult	Approved	Florida

When you come to build an assessment with Assessment Manager, you can select all the questions with "Difficulty=Easy", and the questions "Algebra" and "Geometry" will be placed in the assessment.

Alternatively, if you choose to select all the questions with "Approved=California", the questions "Poetry" and "Napoleon" will be placed in the assessment.

### 3.1.8 Topic scoring

Very often, as well as giving someone an overall score, you will want to allocate scores for separate topics. This enables you to pinpoint the level of knowledge that participants have in specific subject areas.

Topic scoring is much enhanced in version 3 – see 3.1.9 *Prerequisite topic scores*, 3.1.10 *Topic outcomes and feedback* and 3.1.11 *Topic based reporting*.

### 3.1.9 Prerequisite topic scores

You can enforce a “pass” score for specific topics, and define what happens when participants either achieve or fall below these scores. For example, you can require that participants do well enough in certain topics before they pass an assessment.

### 3.1.10 Topic outcomes and feedback

Different score ranges in a topic can be assigned topic outcome names and different feedback. So at the end of an assessment, you can provide appropriate advice in the feedback for each topic.

### 3.1.11 Topic based reporting

Topic scores and outcomes can be displayed more effectively on the final page shown to participants, in reports and also when integrating with other applications.

### 3.1.12 New question status

A question can now be given a question status of **Normal** if it is suitable for including in assessments, **Retired** if it is only required for historical purposes, or **Incomplete** if it is still being developed and is not ready for use in assessments.

For example, if there are several people authoring a question, a status of **Incomplete** can be assigned to it until it is formally released.

### 3.1.13 Question notes and comments

It's also possible to link some text to a question as a “note”. This allows questions to be annotated before they are released. These notes can also be used as long-term comments to be stored with questions.

### 3.1.14 Question score limits (“floor” and “ceiling” scores)

The score for a question can be limited by a “floor” and a “ceiling”.

### 3.1.15 SQL and Oracle support

The *Perception* Version 3 Windows authoring software allows users of *Perception* who use databases in *SQL Server* or *Oracle* format the ability to edit question or assessment databases directly in these formats.

In version 2, it was only possible to edit Microsoft Access databases, but you could publish to other formats.

### 3.1.16 Interoperability and open standards support

Questionmark are strongly committed to supporting open standards to help ensure that our software is future proof and interoperable. Version 2 of *Perception* was compliant with AICC standards; version 3 remains compliant with them, and also complies with IMS QTI XML (see 3.1.17 *IMS QTI XML* below). In addition, *Perception* now supports assessment packaging (see 3.1.18 *Assessment packaging* below).

### 3.1.17 IMS QTI XML

*Question Manager* can now import questions from external files formatted according to the IMS QTI XML standard. It can also export questions to external files formatted according to this standard.

### 3.1.18 Assessment packaging

There is a new facility to package up an assessment, its questions and templates, and any graphics it uses into a single, compressed archive file. It's easy then for another *Perception* user to import the archive file into their installation. This is great for users to transfer assessments between each other, and is also appropriate for publishers who want to create and sell material in *Perception* format.

These new advances in *Perception* Version 3 make questions and assessments much easier to transfer between *Perception* installations, and also to use them in conjunction with other software.

### 3.1.19 Flexible database architecture

The *Perception* database architecture has been overhauled for version 3. Version 2 databases are upwards compatible, but need to be converted in a simple process. The new architecture makes *Perception* more scalable, more flexible and allows more functionality.

### **3.1.20 Assessment monitoring**

It is now possible to define specific assessments that need monitoring. A monitor is a proctor or invigilator who can check the identity of a participant. If an assessment is monitored, a participant can only take it if a monitor signs them in.

### **3.1.21 MathML support**

Questions can now include MathML, making it easier for mathematical and scientific authors to provide effective questions.

### **3.1.22 Comment boxes**

It's now possible for authors to give a comment box to participants to allow them to comment on the answer, which is particularly useful when evaluating the effectiveness of questions.



**Part 2:  
Online  
Assessments**





# 1 What are online assessments?

An *assessment* is a collection of questions that are answered by participants, together with the instructions necessary to present them to a participant who use a web browser on a PC. This concept is developed in 1.1 *How are assessments made up?* below.

*Questions* are presented to participants who choose answers for them. They are of a selected type, and may be assigned a score according to the participant's answer. This concept is developed in 1.2 *How are questions made up?* below.

## 1.1 How are assessments made up?

As well as questions, assessments contain instructions that determine:

- **Assessment layout**  
How the assessment appears to the participant
- **Timing**  
The time the participant has in which to take the assessment
- **Question scoring and feedback**  
How the participant's scores are used to generate feedback messages
- **Jumps**  
Which of the questions are presented to a participant according to the answers they submit as they progress through the assessment
- **Security controls**  
Who can take assessments
- **Reporting controls**  
Which questions are available for reporting on later
- **Assessment scoring**  
How the participant's overall score is used to generate feedback messages
- **Branching**  
What happens at the end of an assessment

*Figure 1* overleaf shows the basic structure of a typical assessment:

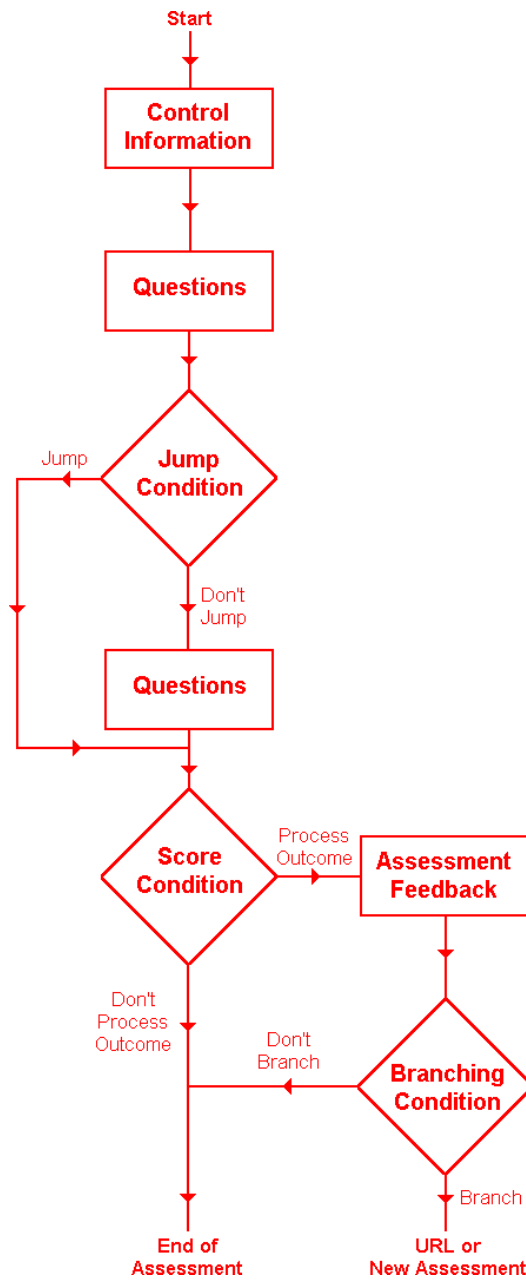


Figure 1 Overview of Typical Assessment Structure

When the participant starts to take the assessment, the instructions contained in the **Control Information** determine the layout, timing, question scoring, feedback, security controls and reporting for the assessment. This is the function of the *control block* described in Part 4: 1.1 *The control block*.

There is always one control block in an assessment.

The first set of **Questions** is then presented. Questions are grouped together in *question blocks* which can have their own introductory message and are explained in Part 4: 1.1.6 *Assessment topic reporting*.

There is always at least one question block in an assessment.

A question block may (or may not) be followed by a *jump*. A jump contains a **Jump Condition** that is a test of the previous question block based on one of the following:

- The occurrence of a particular question outcome
- The participant's score for the question block
- The overall score for the assessment (including the last question block)

If the condition is met, then the participant will either be presented with another block of questions or the assessment will end, according to how the jump is defined.

If the condition is not met, then the participant will continue to the next set of **Questions**. There may be one or more jumps in assessment or none at all.

The instructions that constitute a jump are contained in a *jump block* and are detailed in Part 4: 1.3 *Jump blocks*.

When a participant has answered all the questions that are presented to them, their overall score for the assessment will be calculated and then used to determine how the participant's performance is evaluated.

A range of overall scores is used to define one or more *assessment outcomes*. These are covered in depth in Part 4: 1.4 *Assessment outcomes*.

For example, an overall score of less than 50% may be used to define a "fail" outcome, and one of more than 50% may be used to define a "pass" outcome.

There is always at least one assessment outcome in an assessment.

## What are online assessments?

---

An assessment outcome contains instructions to do any of the following:

- **Define the range of scores for which it is applicable**  
An assessment outcome is applicable when the participant achieves an overall assessment score between specified minimum and maximum percentage values.
- **Impose a topic score that the participant must achieve**  
An assessment outcome can stipulate that the participant must achieve a minimum or “pre-requisite” collective score for the questions belonging to a particular topic (see 2.1 *Organizing questions by topics* below).
- **Give a feedback message**  
Each assessment outcome can be defined to give a particular feedback message to any participant whose overall assessment score falls within the range for that assessment outcome.
- **Redirect the participant when the assessment ends**  
Also, any of the assessment outcomes can contain instructions to “branch”, or direct the participant to, another assessment or a URL if their overall assessment score falls within the range for the assessment outcome.

In the assessment represented by *Figure 1*, a single assessment outcome would be used to encompass the boxes marked **Score Condition**, **Assessment Feedback** and **Branching**.

At minimum, an assessment must have one control block, one question block and one assessment outcome.

However, assessments can contain more blocks and have more complex structures than that shown in *Figure 1*. For example, there could be many more question blocks, some with several jump blocks after them, and perhaps 10 assessment outcomes that separate the overall assessment score into deciles (0%-10%, 11%-20%...) that each branch to different new assessments or URLs.

## 1.2 How are questions made up?

*Figure 2* overleaf shows the basic structure of a typical question.

When participants take an assessment, they see a series of questions. For each question, they first see the **Wording** or content that expresses what they have to explain, describe or indicate.

There can be one or more items of wording, but there need not be any (the question wording could be contained in a graphic that the question uses).

It is possible for a question to contain nothing but an item of wording, in which case the question itself functions as an **Explanation** (see Part 3: 3.5 *Creating an explanation question using the Wizard*).

The participant then considers their answer and selects one of the available **Choices**. A question must have at least one choice.

Each question has a *question type* that determines how the choices are offered and what the participant does to enter their answer.

For example, a multiple choice question requires the participant to select one of a number of options and then submit this option as the answer. With a drag-and-drop question, participants drag marker graphics across a background graphic and drop them at the locations that they believe represents the correct answer, and then submit these positions as the answer.

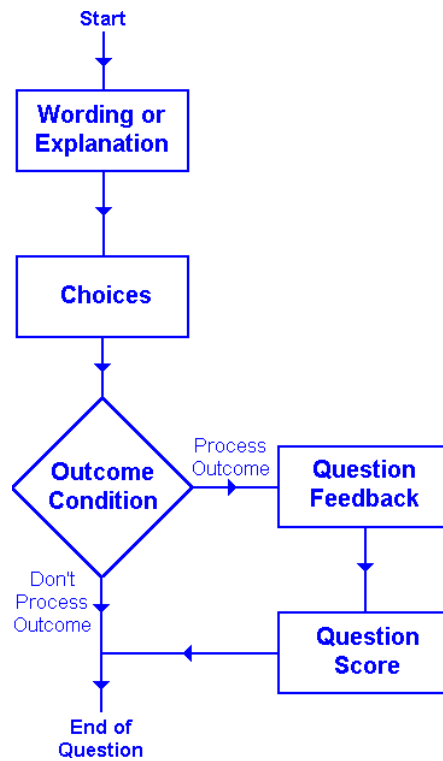
Question types are discussed in Part 3: 1.2 *Question types*, and each type of question that you can create in *Perception* is detailed in Part 3: 3.2 *Question Wizard Types* below.

When the participant has answered the question, an **Outcome Condition** will usually be evaluated. This is a test of the participant's answer that determines the **Question Score** assigned to the participant for this answer, and the **Question Feedback** given to the participant for this answer.

These elements make up a *question outcome*: in *Figure 2*, a single question outcome would be used to encompass the boxes marked **Outcome Condition**, **Question Feedback** and **Question Score**.

The purpose of question outcomes is to relate choices to outcomes using conditions.

There may be one or more question outcomes in a question, and there is always one by default (it is possible to delete all existing question outcomes, so there need not be any).



**Figure 2** *Overview of Typical Question Structure*

Question outcomes, and how they are created for the various question types available in *Perception*, are discussed in Part 3: 4.7 *Constructing outcomes for each question type*.

## 2 Key concepts in authoring

*Perception* provides two methods of organizing your questions.

The primary method is by *topic* (see 2.1 *Organizing questions by topics* below). This approach allows you to:

- Categorize your questions into groups that you define
- Structure these groups into a hierarchy
- Evaluate a participant's performance for a topic
- Create reports according to topic
- Create libraries of questions for use in building assessments

When you have created a topic structure, you can then use *question tags* (see 2.2 *Classifying questions with tags* below). This is based on defining your own attributes for questions and then assigning them values from a range that you also define.

### 2.1 Organizing questions by topics

#### 2.1.1 What are topics?

One of the great advantages of authoring assessments with *Perception* is that you can organize your questions into *topics*. A topic is a group of questions (also known as *items*) relating to a particular subject, level of difficulty, or some other common trait.

The following symbol represents a question:



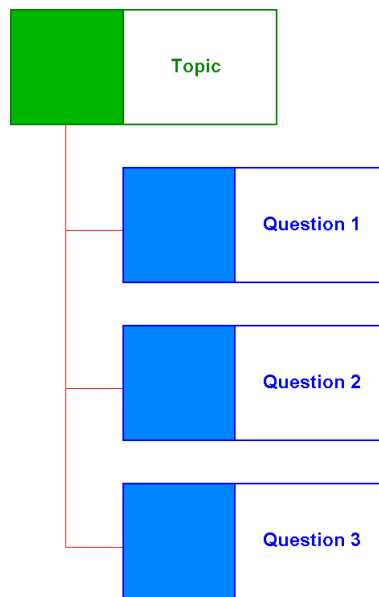
**Figure 3** *Question Symbol*

This symbol represents a topic:



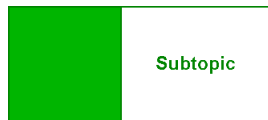
**Figure 4** *Topic Symbol*

You can create a topic with *Question Manager* (see Part 3: 2.8.1 *Adding a new topic or subtopic* below) and then create some questions within it:



**Figure 5** *Example of Questions in a Topic*

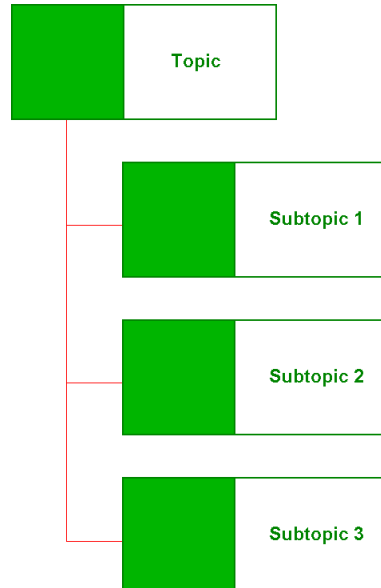
A topic can also contain another topic. This is called a subtopic and is represented by this symbol:



**Figure 6** *Subtopic Symbol*



You can create subtopics with *Question Manager* (see Part 3: 2.8.1 *Adding a new topic or subtopic* below):



**Figure 7** Example of Subtopics in a Topic

You can also use *Question Manager* to create a more complex structure containing both questions and subtopics. In this way, topics can be used to build up structured *item banks*.

In an item bank, every topic and subtopic usually contains either subtopics or questions but not both, and each question relates to a specific *learning objective*. This is shown in *Figure 8* below.

Although it is possible for a topic or subtopic to contain both subtopics and questions, this is not generally the best practice for defining topic structures.

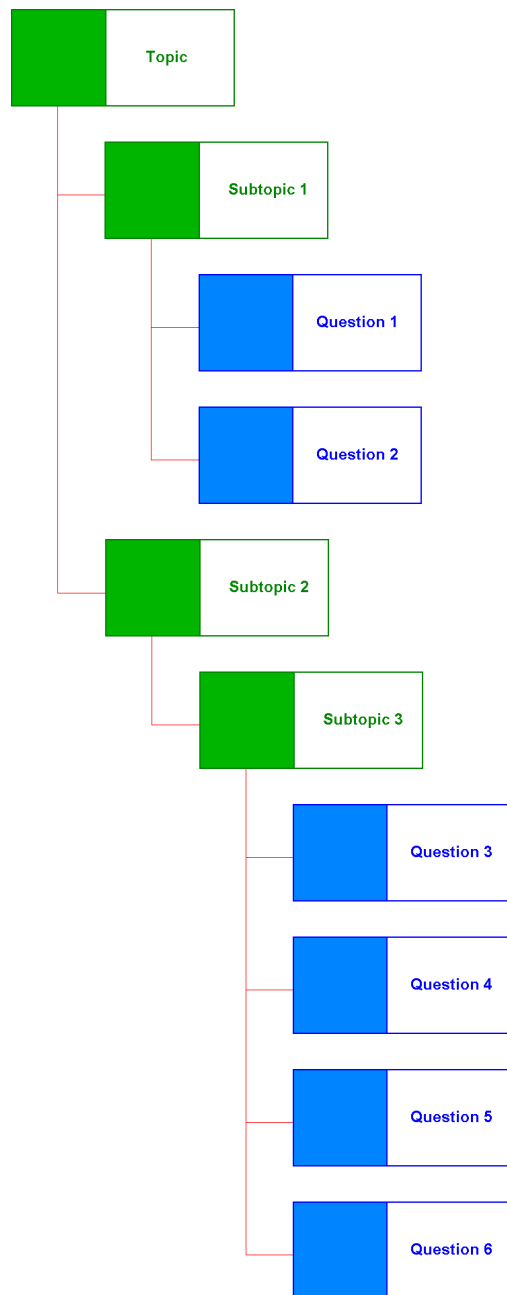


Figure 8 *Questions and Subtopics in a Topic*

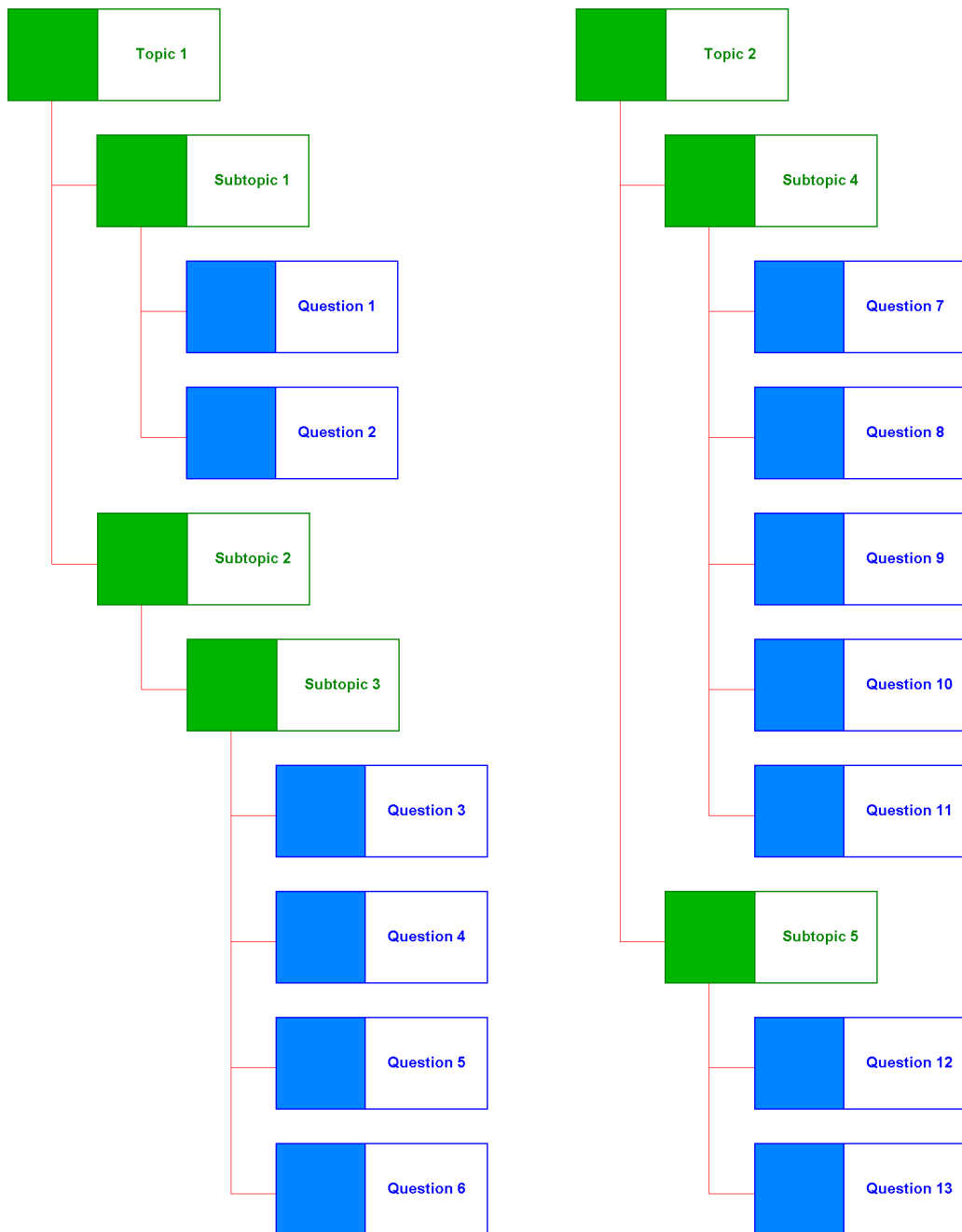


Figure 9 Example of Complete Topic Structure

It is possible to have more than one topic in the database, as shown in *Figure 9* above.

This structure is stored in a question database that is used later as a library for building assessments. When building assessments, individual questions may be selected or whole topics of questions may be.

Another form of selection is based on question *tags*. This is explained in 2.2 *Classifying questions with tags* below.

Topics are often used to build up structured *item banks*. It is important to consider how to name your topics before building item banks, especially if several authors are contributing to it. Topic names must be unique.

You must always have at least one topic.

### 2.1.2 Topic Outcomes

When a participant has answered all the questions that are presented to them, their score for each assessment can be used to determine specific feedback for a topic. The topic score can be reported on separately. This is done with *topic outcomes*.

A range of topic scores (see Part 3: 1.6.3 *Scoring topics* below) is used to define one or more *topic outcomes*. These are covered in depth in Part 3: 2.8 *Working with topics*.

For example, a topic score of less than 40% may be used to define a “retake” outcome, one of 41%-70% to define a “pass” outcome and a final one of more than 70% may be used to define a “merit” outcome.

There may be one or more topic outcomes associated with a topic but there need not be any.

An example of topic outcomes is shown in *Figure 26* below (see Part 3: 1.6.3 *Scoring topics*).

### 2.1.3 Example topic structure

You might have a topic for questions relating to **sales-ethics**, or another topic containing questions about **Native American History**. As the number of questions you create grows, topics will become increasingly useful for organizing your questions.

The **Native American History** topic might use subtopics to contain questions organized according to difficulty, or time period:

#### Native American History

Easy

Moderate

Difficult

#### Native American History

Pre-Glacial

Kamchatka Migration

South Pacific Migration

Post-Glacial

Colonial

French Relations

English Relations

1776-1830

Sequoyah

Modern Era

## 2.2 Classifying questions with tags

### 2.2.1 What are tags?

When you have created your topic structure, you can use question *tags* to classify each question according to your own criteria. You can then build assessments from questions that all meet one or more of these criteria. Examples might be:

- **Classification by difficulty**  
Creating assessments whose questions are equally difficult (for example, a “difficulty level” may be set at “easy”, “moderate” or “difficult”)
- **Classification by metric**  
Creating assessments whose questions all measure the same thing (for example, recall of learned material or understanding of its meaning)
- **Classification by acceptability**  
Creating assessments whose questions have all been approved for use in a specific area or by a specific organization (for example, “approved in New York” or “approved by the examining committee”)

Tags are not used to classify questions by subject, this is the function of topics.

Once you have defined your tags, you choose which of them to apply to a particular question as you create or edit it with *Question Manager* (see Part 3: 2.9 *Working with Tags* below).

This symbol represents a tag:

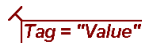


Figure 10 Tag Symbol

A question that contains tags is represented by this symbol:

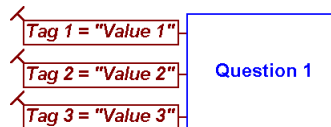


Figure 11 Tagged Question Symbol

You can define as many different tags as you want, and each can have as many different values as you need. You can define some tags as requiring a value, and you can define some tags as having default values, which apply unless set otherwise.

You can use tags to structure your questions, as a way of indexing questions, and also to guide the automatic selection of questions by *Perception Server*.

### 2.2.2 Example of selection by tag

If the following tags are defined:

Tag	Tag Values	
	Value	Abbreviation
Difficulty	Easy	E
	Moderate	M
	Difficult	D
Approved	New York	NY
	California	Cal
	Florida	Flo

These tags could then be added to the topic structure of *Figure 9* above. This is shown in *Figure 12* below.

Notice that some questions use both tags, some only one and others are not tagged at all.

When building an assessment (see Part 4: 2.10.4 *Selecting tagged questions from a topic or subtopic* below), you could select questions according to the condition:

**Difficulty = Moderate AND Approved = Florida**

This is a *tag equation*.

The questions selected would then be **Question 1**, **Question 6**, **Question 7**, **Question 8** and **Question 12**. This is shown in *Figure 13* below.

Note that in *Figure 12* and *Figure 13* below the tags were created, assigned tags values and then used for selection within a topic structure that was already defined. This is the recommended practice.

## Key concepts in authoring

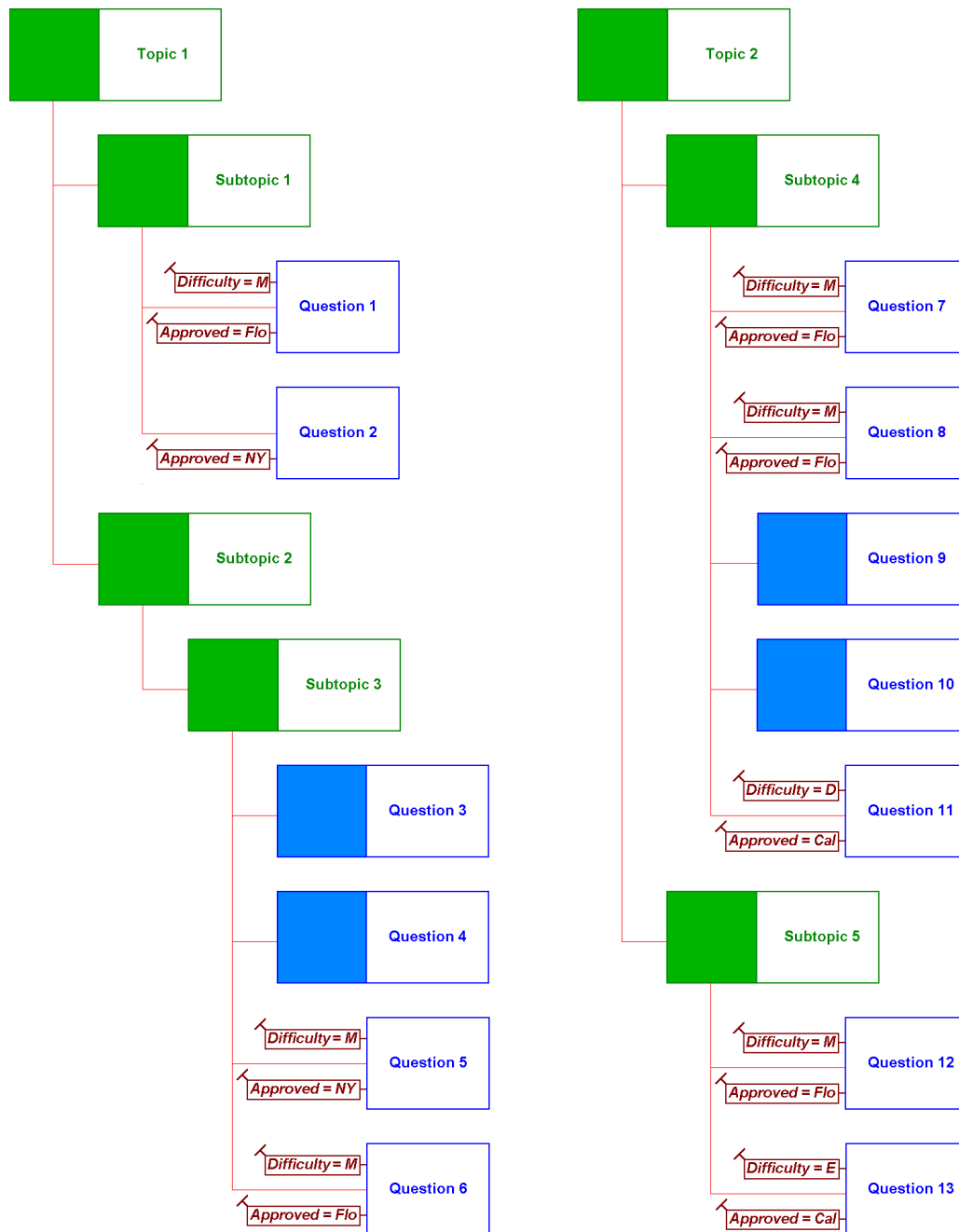


Figure 12 Example of Tags in a Topic Structure



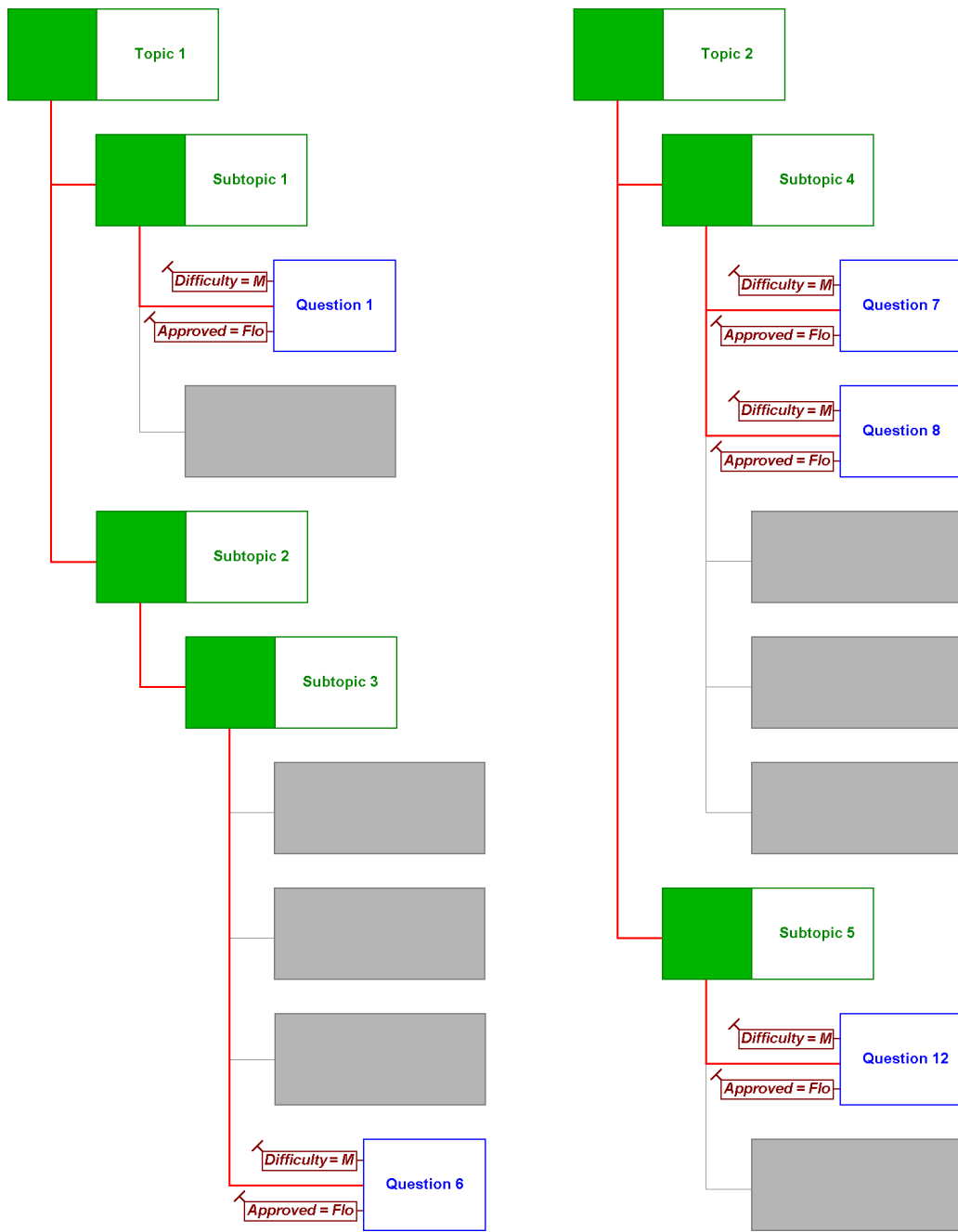


Figure 13 Example of Tag Selection

## 2.3 Desktop and Browser Based Authoring

*Question Manager* and *Assessment Manager* are Windows applications, and are the authoring software that is covered by this guide.

However, it's also possible to use special versions of them from within a web browser. This method of authoring is called *Browser Based Authoring*, and the software versions that support it are always referred to as *Browser Based Question Manager* and *Browser Based Assessment Manager*.

*Browser Based Authoring* lets you view, edit, create and delete questions and assessments using your browser.

*Browser Based Question Manager* and *Browser Based Assessment Manager* provide basic but powerful authoring and also the full capability of reviewing the contents of the *Perception Server* databases from a browser at a distance.

In addition, security can be controlled independently for questions and assessments.

However, for full functionality authoring, you need to use *Question Manager* and *Assessment Manager*.

To start using *Browser Based Authoring* see *Getting Started with Perception Version 3*. For a more complete treatment, refer to *Enterprise Manager's* online help.

## 3 Developing assessments with Perception

### 3.1 The process of developing assessments

There are a variety of ways of using *Perception*, but they all involve the basic stages shown in *Figure 14* overleaf. These stages are:

1) **Authoring**

This is the process of composing a structured bank of questions and then selecting appropriate ones for assessments that are given to participants.

2) **Publishing**

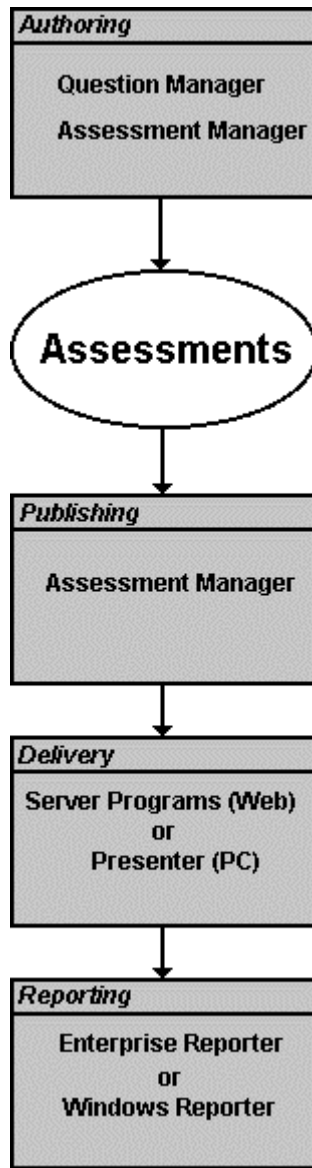
When assessments have been constructed from questions, they must be copied to a database (together with any associated files) from which they can either be delivered with a web server, or used by participants who are not web enabled.

3) **Delivery**

Participants can now take the assessments, either by accessing a URL (which point to a server program) from within their web browser (if they are web enabled), or by using a special Windows program (if they are not).

4) **Reporting**

When the participants have taken their assessments, *Perception* offers two powerful tools for reporting and analysis of the results: *Enterprise Reporter* and *Windows Reporter*.



**Figure 14** *Stages in Developing an Assessment*

*Figure 15* overleaf shows a more complete representation of all the possibilities for developing assessments.

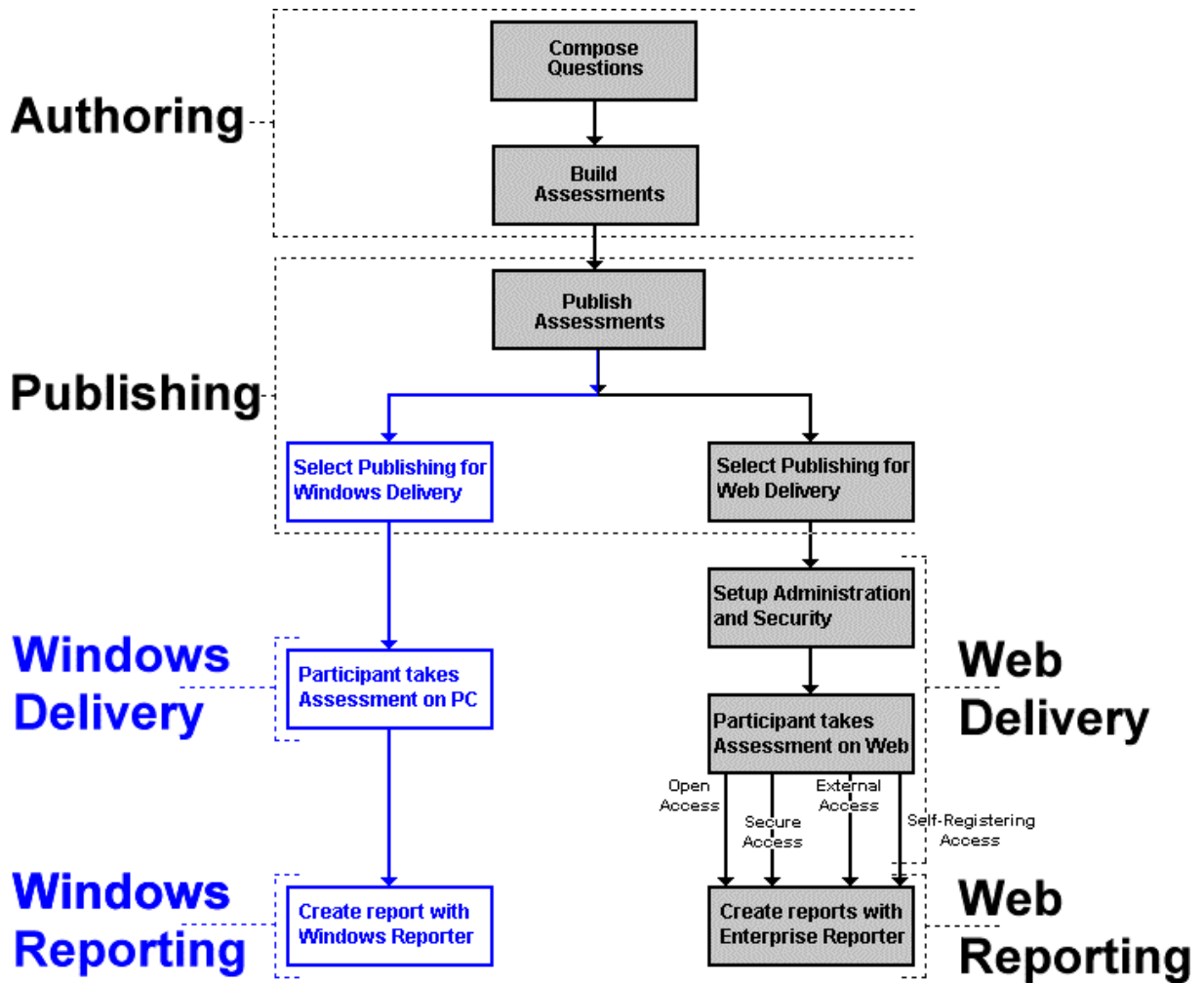


Figure 15 The Full Process of Developing an Assessment

## 3.2 Databases

*Perception* uses the following databases to control the information that is used throughout the process shown in *Figure 15* above:

- **Question Database**

This database holds all the questions that you have authored in the topic structure that you have defined. It can be copied to an assessment server during publication (see Part 6: 1.1 *Publishing for web deployment* below).
- **Assessment Database**

All the assessments that you have built from your item bank of questions are stored in this database. It is copied to an assessment server during publication (see Part 6: 1.1 *Publishing for web deployment* below).
- **Security Database**

Administrators use this database to control participants and their access to assessments. It is not required by the authoring process and is not covered by this guide.

The use of this database is documented in the *Web Deployment Guide for Perception Version 3*.
- **Answer Database**

When participants submit answers to questions in assessments, their responses are stored in this database. It also contains all the question, topic and assessment scores calculated for each answer and any feedback that is given.
- **Report Database**

Administrators use this database to define the content and layout of reports that are generated with *Enterprise Reporter* from the answer database. It is not required by the authoring process and is not covered by this guide.

The use of this database is documented in the *Web Deployment Guide for Perception Version 3*.

The structure of each of these databases is detailed in the *Technical Data Complete Reference*.

The only databases used during the authoring process are the question database and the assessment database.

### 3.3 Question Markup Language

*Question Markup Language* (QML) is the format that *Perception* uses to represent questions. It is a structured language that can be used to describe questions independent of platform or layout considerations.

QML is defined by Questionmark and is XML compliant.

Each question is stored within a question database in QML format, and questions can be transferred between question databases using the import and export functions of *Question Manager* (see Part 3: 2.6 *Importing and exporting questions* below). Any question migrated in this way always remains identical in *Question Manager*.

Another means of migrating questions is possible by using the import and export functions of *Question Manager* with QTI XML, which is an industry standard.

Some key features of QML are:

- Only individual questions are described
- Each question is independent of any other
- Sequencing of questions (for example, branching, jumps and selection of questions at random for a test) is outside the scope of QML
- Several questions may be defined in the same QML file
- There is no link or interdependence between different questions

The complete definition of QML can be found on the *Perception* support site at:

<http://www.questionmark.com/perception/help/>





# **Part 3: Authoring Questions**



# 1 The structure of questions

The broad structure of a typical question shown in *Figure 2* and described in Part 2: 1.2 *How are questions made up?* is implemented in *Perception* by building it up from the elements shown in *Figure 16*.

The question elements are:

- **Control Information**

This information consists of:

- A **description** of the question (see 1.1 *Question description* below)
- The **status** of the question (see 1.8 *Question status indicator* below)
- Upper and lower limits for the score that the participant can be awarded for the question (see 1.6.2 *Maximum and minimum question scores* below)
- **Notes** that may be added to the question by authors (see 1.9.1 *Question notes* below)

- **Question Tags**

The concept of **question tags** was introduced in Part 2: 2.2 *Classifying questions with tags* above, and the process of tagging a question is explained in 1.7 *Question tags* below.

- **Question Text**

This is either the question rubric or some explanatory text. It may be entered as **Plain** text, **HTML**, **MathML** or as a link to a **URL**.

- **Question Type**

The **question type** determines how the choices are offered and what the participant does to enter their answer. The question types supported by *Perception* are discussed in 1.2 *Question types* below.

This element also specifies whether the participants can enter **comments** on the question or not, and whether to **shuffle** the choices each time they are presented.

## The structure of questions

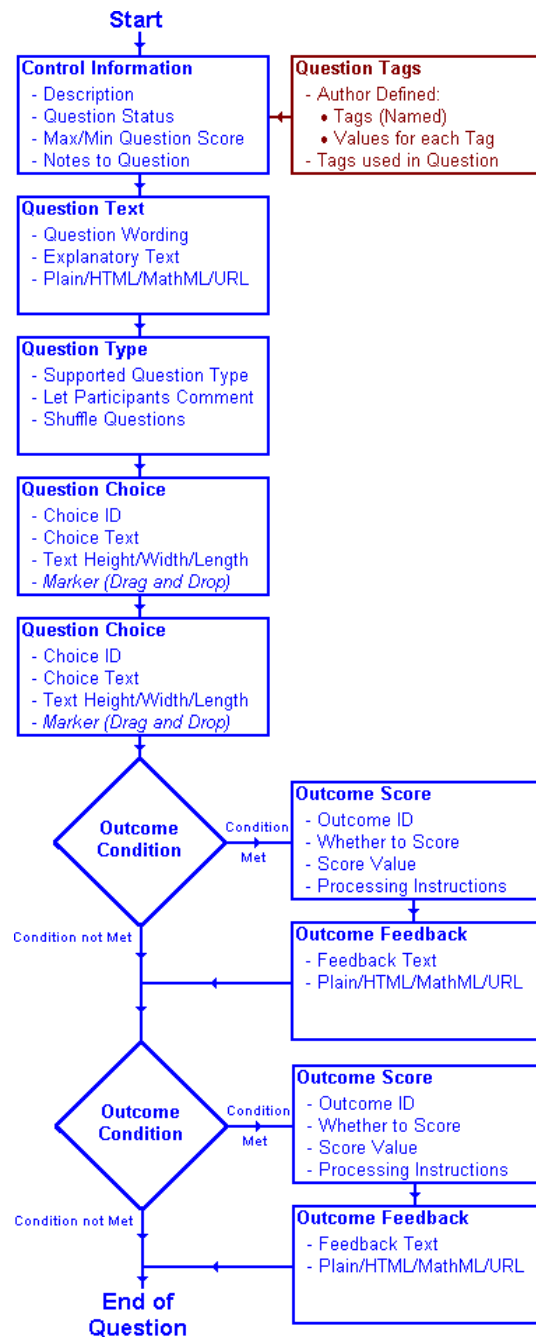


Figure 16 Detailed Construction of a Typical Question

- **Question Choices**

Choices for all types of questions have an **ID** and some text. It is also possible to define the **height** and **width** of the box in which the choice appears on the screen, and to limit the text to a **maximum number of characters**.

Drag and drop questions specify the position on a background graphic that a **marker** graphic must be placed for a correct answer.

A question will generally contain several choices.

- **Question Outcomes**

**Question outcomes** consist of the following elements:

- **Condition**

This evaluates participant's answers and links the choices they make to their score and the feedback that is given to them.

- **Score**

This includes the **score** awarded to participants who make the choice related to this outcome. It contains the **Outcome ID** for this question outcome.

A question will generally contain several outcomes, and a specific choice may be linked to more than one outcome.

This element also specifies whether to **Score this outcome**, whether to **Accumulate** the scores with those awarded if other outcomes are processed for the same question choice and whether to **Evaluate other outcomes even if this outcome scored**.

- **Feedback**

This is the text of the feedback given for this outcome. It may be entered as **Plain** text, **HTML**, **MathML** or as a link to a **URL**.

The following sections show you an example of how a question is built up from these elements.

The illustrations show you how the question appears in *Question Manager* and *Question Editor* at various stages. It is not necessary to understand how these tools work at present, but you can find a full description of *Question Manager* in 2 *Question Manager* below, and a complete guide to *Question Editor* in 4 *The Question Editor* below.

## 1.1 Question description

In the example used to illustrate building a question from question elements, we will begin by assuming that a topic called **Capital Cities** already exists. This is shown on the left hand pane of *Figure 17* below:

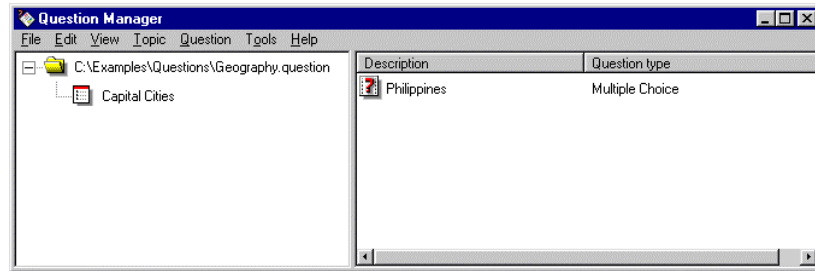


Figure 17 Question Elements: Description

On the right hand pane, a new question has been created with the description **Philippines**. A question description is useful for locating individual questions within an item bank.

## 1.2 Question types

Next, we assign a question type of **Multiple Choice** to the question:

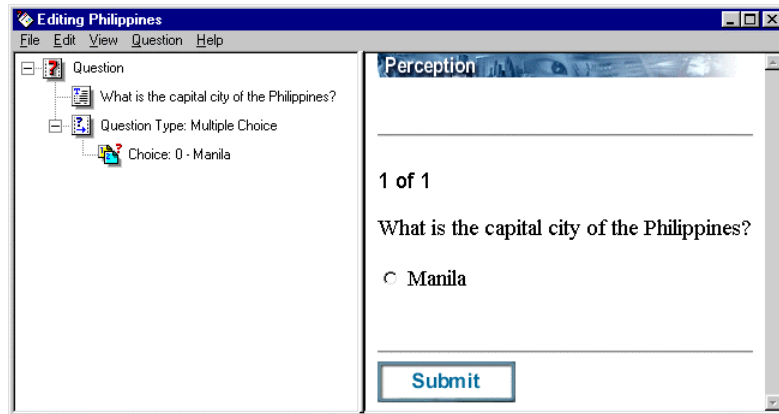


Figure 18 Question Elements: Type

The question shown in *Figure 18* also contains a single choice, because at least one choice is required for a multiple choice question.

The question types supported by *Question Manager* are:

- **Drag and drop**  
Participants place several graphical markers on the background graphic to indicate their answers (these are the “hot” areas).
- **Essay**  
Designed for long, open-ended text questions that are answered with free text essays. These can be scored with *Essay Grader* or by other methods outside *Perception*.
- **Explanation**  
Used for information screens, title pages, or to display large bodies of text.
- **Fill in Blanks**  
The participant enters text in one or more text entry fields.
- **Java**  
Java questions enable you to use Java applets so that you can create functionality that is not covered by any of the other question types. They are usually used to meet specific, and sometimes highly specialized, needs, for example generating random numbers in mathematical questions.
- **Macromedia® Flash™**  
A Macromedia® Flash™ question enables you to use a Flash™ object. This object presents a question to the participant and returns the answer to *Perception*.
- **Matching**  
A matching question offers the participant one or more choices whose descriptions can each be selected from a separate drop-down list. Within a matching question, a particular description can only be selected from one of the drop-down lists, even though it appears in all of them.
- **Matrix**  
The participant answers by selecting one answer in each row from a matrix of radio buttons.
- **Multiple Choice**  
The participant answers by selecting an answer from a list of two or more choices.

- **Multiple Response**  
The participant answers by selecting multiple answers from a list of two or more choices.
- **Numeric**  
The participant enters a number in a text entry field.
- **Pull-down list**  
Participants respond by using pull-down menus, displayed to the side of several choices.
- **Ranking question**  
A ranking question requires the participant to define the available choices in the correct order.
- **Select a blank question**  
A select a blank question invites the participant to choose the correct word or phrase from a drop down list that corresponds to a blank area of text.
- **Text Match**  
The participant enters text in a text entry field to answer a question.

It is also possible to define your own additional question types and use them when creating questions. This requires a knowledge of QML (see Part 2: 3.3 *Question Markup Language* above and the *Technical Data Complete Reference*) and is done outside of *Question Manager*.



A number of *Question Wizards* (see 3.2 *Question Wizard Types* below) are available to help in create questions:

Question Type	Question Wizard	Refer to
<b>Drag and drop</b>	Drag and drop Wizard	3.3
	Hotspot Wizard	3.7
<b>Essay</b>	Essay Wizard	3.4
<b>Explanation</b>	Explanation Wizard	3.5
<b>Fill in Blanks</b>	Fill in Blanks Wizard	3.6
<b>Java</b>	<i>No Wizard available</i>	–
<b>Macromedia Flash</b>	Macromedia Flash Wizard	3.9
<b>Matching</b>	Matching Wizard	3.10
<b>Matrix</b>	Matrix Wizard	3.11
<b>Multiple Choice</b>	Multiple Choice Wizard	3.12
	Likert scale Wizard	3.8
	True/False Wizard	3.19
	Yes/No Wizard	3.20
<b>Multiple Response</b>	Multiple Response Wizard	3.13
<b>Numeric</b>	Numeric Wizard	3.14
<b>Pull-down list</b>	Pull-down list Wizard	3.15
<b>Ranking</b>	Ranking Wizard	3.16
<b>Select a blank</b>	Select a blank Wizard	3.17
<b>Text Match</b>	Text Match Wizard	3.18

There are more Wizard types than question types. This is because special forms of drag and drop questions (“Hotspot” questions) and multiple choice questions (“Likert scale”, “True/False” and “Yes/No” questions) can be created with the *Question Wizard*.

### 1.3 Question choices

We can now add some more choices to our question:

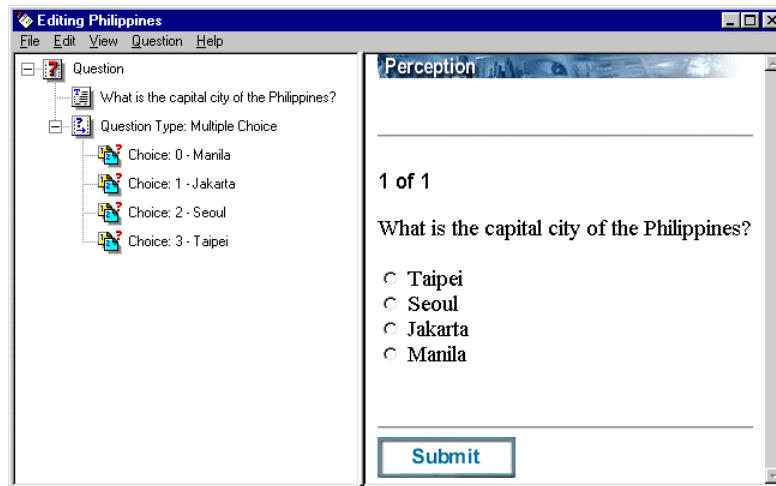


Figure 19 Question Elements: Choices

In this case, the participant makes a single choice from a range of options. The question type controls the format of the participant's reply (for example, several choices can be made for multiple response questions, but a number is required for numeric questions).

## 1.4 Question outcomes

We can now add the first outcome to our question:

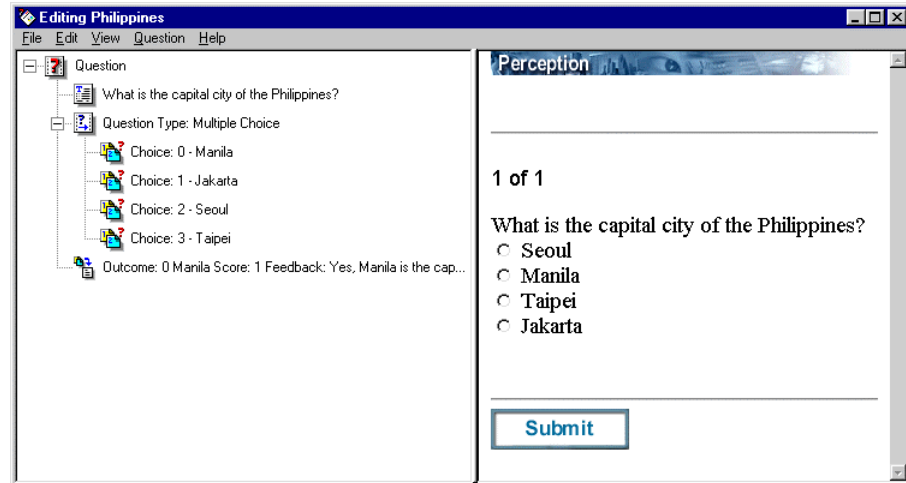


Figure 20 Question Elements: Single Outcome

This outcome contains a condition that causes it to be processed if the correct answer (**Manila**) is chosen by the participant, in which case a score of **1** is awarded to the participant and the feedback:

**Yes, Manila is the capital.**

is displayed.

## The structure of questions

For the incorrect choices, we can now add three more outcomes:

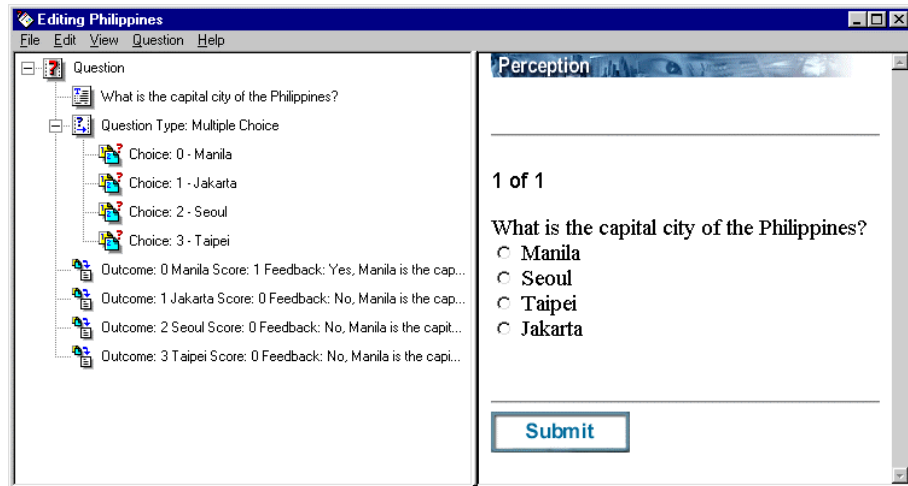


Figure 21 Question Elements: Several Outcomes

These outcomes each contain a condition that causes it to be processed if the appropriate incorrect answer (**Seoul**, **Taipei** or **Jakarta**) is chosen by the participant. In each of these cases a score of **0** is awarded to the participant and the feedback:

**No, Manila is the capital.**

is displayed.

### 1.4.1 Choosing outcome conditions

When setting the condition within an outcome, it is important to create one appropriate to the question type. For example, the condition:

**The choice "0 – Manila" is selected**

is suitable for this example, but the condition:

**The choice "0 – Manila" is equal to "1"**

is unsuitable because this form of condition is intended for numeric questions.

### 1.4.2 Outcome conditions for different question types

When creating an outcome for a particular choice, the conditions normally used for each question type are shown below:

Question Type	Condition
Drag and drop	Choice is in the area bounded by:
Fill in blanks	Choice matches exactly Choice matches ignoring letter case Choice matches the text misspelled Choice includes the text Choice includes the text ignoring letter case
Matching	Choice matches exactly
Matrix	Choice matches exactly Choice matches ignoring letter case Choice matches the text misspelled Choice includes the text Choice includes the text ignoring letter case
Multiple choice	Choice is selected
Multiple response	Choice is selected All choices selected
Numeric	Choice is a number equal to Choice is a number in a range from Choice is a number greater than Choice is a number less than
Pull-down list	Choice matches exactly
Ranking	Choice matches exactly
Select a blank	Choice matches exactly
Text match	Choice matches exactly Choice matches ignoring letter case Choice matches the text misspelled Choice includes the text Choice includes the text ignoring letter case

The following question types do not appear in the table above, because:

- **Explanation** questions do not need any outcomes.
- **Essay** questions usually have only basic outcomes such as a “scored” and an “unscored” outcome because they are not scored at the time the participant takes them.
- **Java** questions can have outcomes but the conditions set for them depend on the programming of the Java applets.
- **Macromedia Flash** questions are usually created with the **Macromedia Flash Wizard** (see 3.9 *Creating a Macromedia® Flash™ question using the Wizard* below) which sets up the outcomes automatically.

### 1.4.3 Simple and complex outcome conditions

The simple conditions shown above may be combined with the logical operators **AND**, **OR** and **NOT** to make a more complex condition, for example:

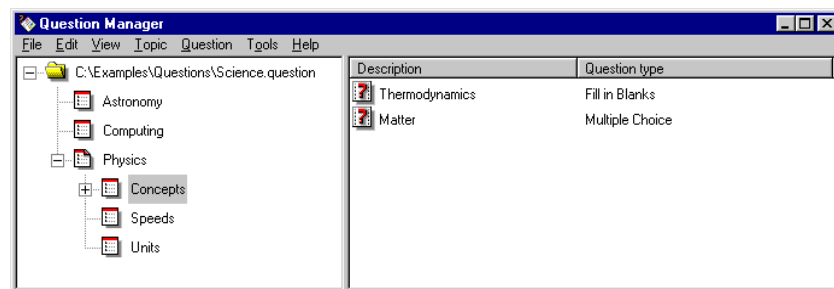
**The choice "2 – Seoul" is NOT selected AND  
The choice "3 – Taipei" is NOT selected**

You can also create outcomes that are processed when **Anything else** happens apart from answers trapped by the other outcomes. These other outcomes **Always happen** regardless of any other outcomes that are processed, or outcomes that deal with a questions that is **Not answered** by the participant.

## 1.5 Organizing questions into topics

The concept of topics was introduced in Part 2: 2.1 *Organizing questions by topics* above.

The example shown in *Figure 22* below shows a topic and subtopic structure in the left hand pane:



**Figure 22** *Questions Structured into Topics and Subtopics*

The right hand pane shows the two questions **Thermodynamics** and **Matter** in the subtopic **Concepts**. This subtopic is part of the topic **Physics**.

The complete topic structure is illustrated in *Figure 23* below.

The first topic is **Astronomy** which contains a single question called **The Plants**.

The second topic is **Computing** which contains three questions, **Babbage**, **COBOL** and **Internet**.

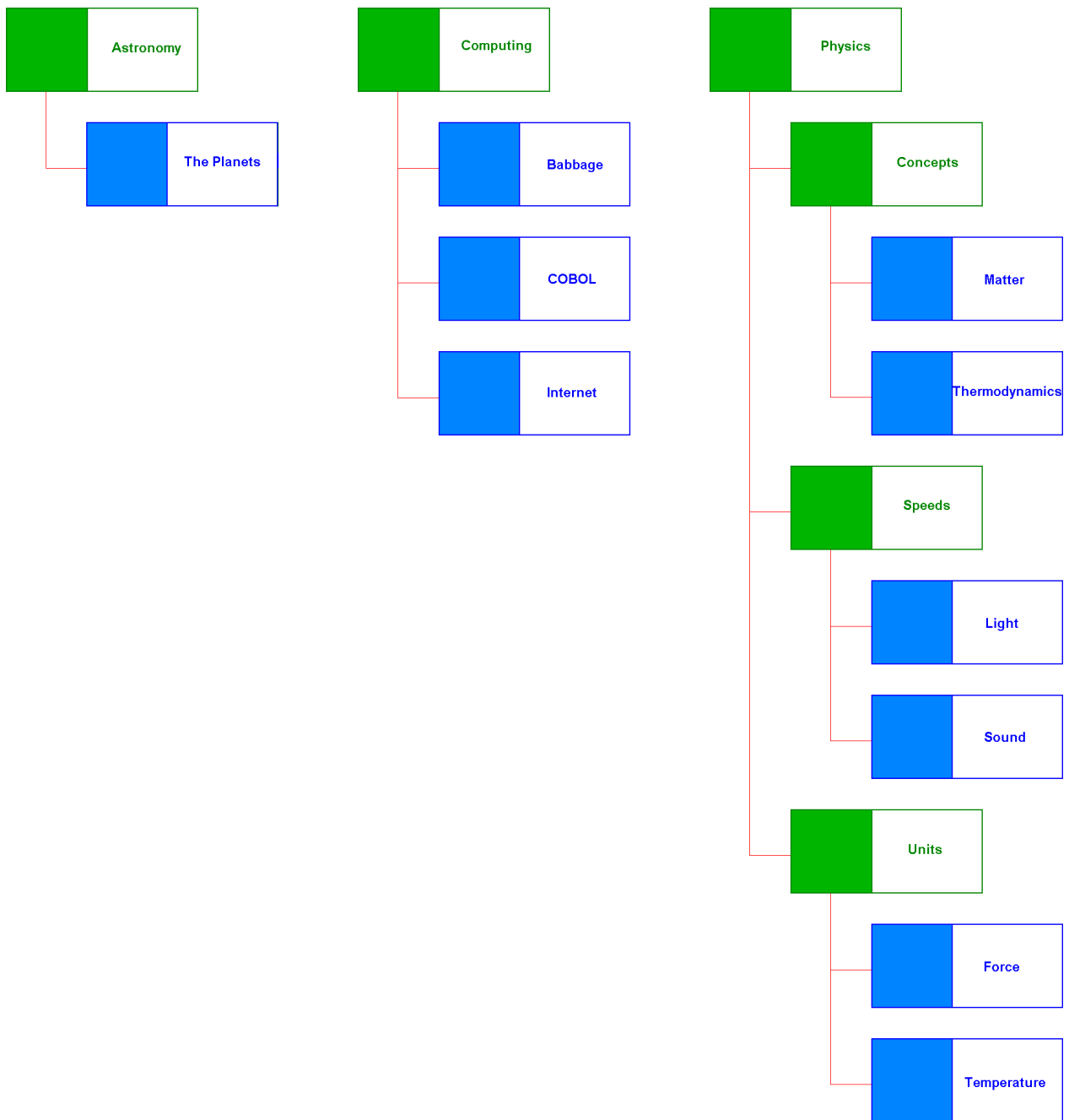
The third topic is **Physics**, which is structured into three subtopics, **Concepts**, **Speeds** and **Units**.

The subtopic **Concepts** contains two questions, **Matter** and **Thermodynamics**.

The subtopic **Speeds** contains two questions, **Light** and **Sound**.

The subtopic **Units** contains two questions, **Force** and **Temperature**.

## The structure of questions



**Figure 23** Complete Topic and Subtopic Structure



## 1.6 Designing a scoring regime

*Perception* is very flexible in allowing you to implement a scoring regime for your questions. Although the design of scoring systems is beyond the scope of this manual, this section will discuss the mechanisms within *Question Manager* that support different scoring models.

### 1.6.1 Scoring individual questions

Suppose that you create a multiple response question with three possible choices:

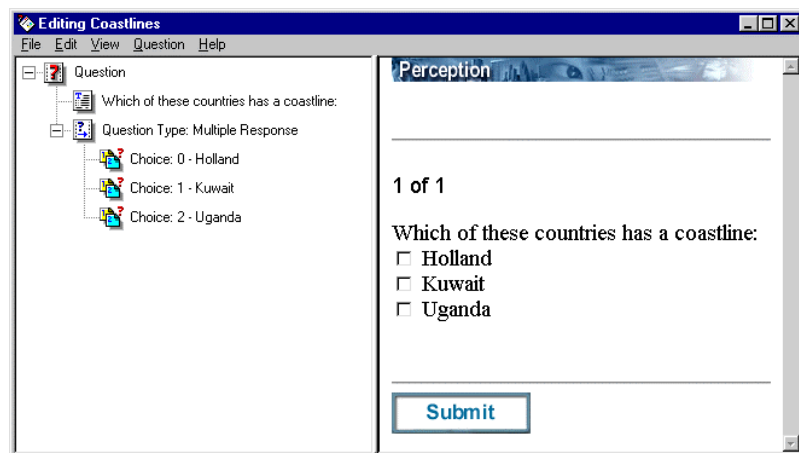


Figure 24 Unscored Multiple Response Question

Participants can choose just one option, any pair of options, all three options or none at all.

The correct answers to this question are **Holland** and **Kuwait**.

## The structure of questions

A possible scoring scheme for this question is:

Response	Score	Condition
Holland+Kuwait	2	The choice "0 - Holland" is selected AND The choice "1 - Kuwait" is selected AND The choice "2 - Uganda" is NOT selected
Holland Only	1	The choice "0 - Holland" is selected AND The choice "1 - Kuwait" is NOT selected AND The choice "2 - Uganda" is NOT selected
Kuwait Only	1	The choice "0 - Holland" is NOT selected AND The choice "1 - Kuwait" is selected AND The choice "2 - Uganda" is NOT selected
Holland+Uganda	1	The choice "0 - Holland" is selected AND The choice "1 - Kuwait" is NOT selected AND The choice "2 - Uganda" is selected
Kuwait+Uganda	1	The choice "0 - Holland" is NOT selected AND The choice "1 - Kuwait" is selected AND The choice "2 - Uganda" is selected
All	1	The choice "0 - Holland" is selected AND The choice "1 - Kuwait" is selected AND The choice "2 - Uganda" is selected
Uganda Only	0	The choice "0 - Holland" is NOT selected AND The choice "1 - Kuwait" is NOT selected AND The choice "2 - Uganda" is selected
None	0	The choice "0 - Holland" is NOT selected AND The choice "1 - Kuwait" is NOT selected AND The choice "2 - Uganda" is NOT selected

This is implemented with the outcomes shown in *Figure 25* below. Each of the conditions above is included in an outcome, and an additional outcome that awards a score of -1 has also been added for the case where the participant does not submit an answer.

With the scoring scheme above, a participant will receive a point for each correct choice but will not be penalized for an incorrect one. It would be possible to devise a more sophisticated scheme that, for example, started with a score of 3 and added -1 to the accumulated score for each incorrect answer.

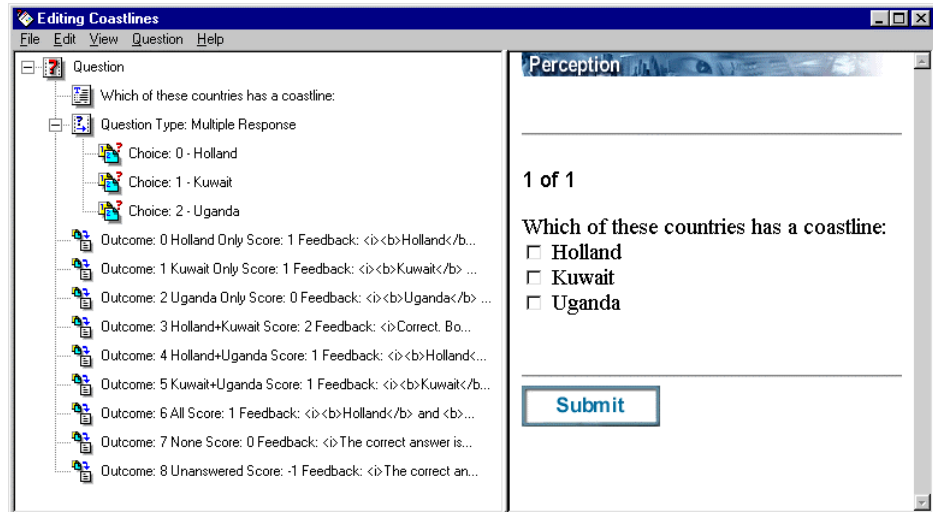


Figure 25 Scored Multiple Response Question, with Feedback

## 1.6.2 Maximum and minimum question scores

*Perception* enables you to set **Question score limits** that define the following for each question:

- |                |  |
|----------------|--|
| <b>Ceiling</b> | This is the maximum score that can ever be awarded to a participant for a specific question. If a greater value is calculated as the outcomes are processed, the “ceiling” score will override it. |
| <b>Floor</b>   | This is the minimum score that can ever be awarded to a participant for a specific question. If a lower value is calculated as the outcomes are processed, the “floor” score will override it.     |

A question can have a floor score, a ceiling score, or both or neither.

These limits are part of the **Control information** shown in *Figure 16* above. They are set when using the *Question Wizard* (see 3 *The Question Wizard* below), or in the *Question Editor* (see 4.1.2 *Defining question properties* below).

### 1.6.3 Scoring topics

As well as awarding scores for individual questions, *Perception* will calculate an overall score for all the questions that a participant answers for a given topic. These topic scores can be used for reporting, and give useful information for analyzing how the performance of individual participants or groups of participants varies by topic.

For example, the participants in one class taking questions selected from the topic structure shown in *Figure 22* above might score well in **Computing**, moderately well in **Physics** but less well in **Astronomy**. For another class, the students might score very well in **Physics** and **Astronomy** but not so well in **Computing**.

Topic outcomes (see Part 2: 2.1.2 *Topic Outcomes* above) can be used to define ranges of topic score for which different feedback is given. They can be associated with both topics and subtopics:

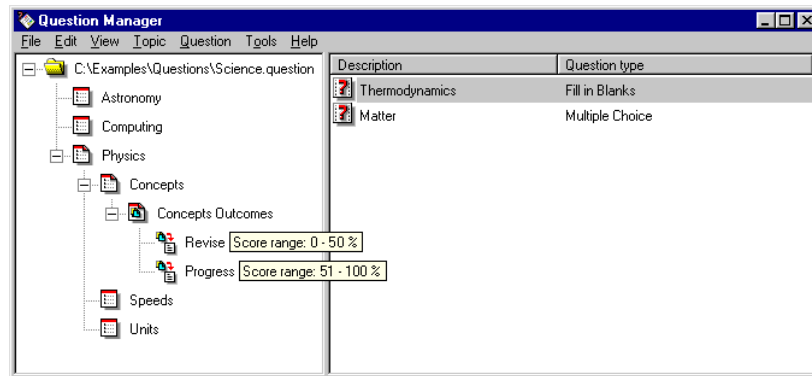


Figure 26 Topics with Topic Scores

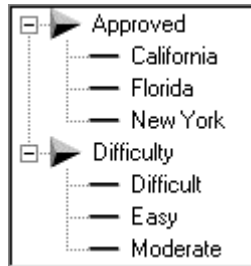
In *Figure 26* above, two topic outcomes have been added to the subtopic **Concepts**.

Participants who score 50% or less overall for the questions that they take from this topic will see the feedback for the **Revise** topic outcome. This advises them to revise the subject.

Participants who score more than 50% overall for the questions that they are given from this topic will see the feedback for the **Progress** topic outcome. This tells them that they are ready to move on to other subjects.

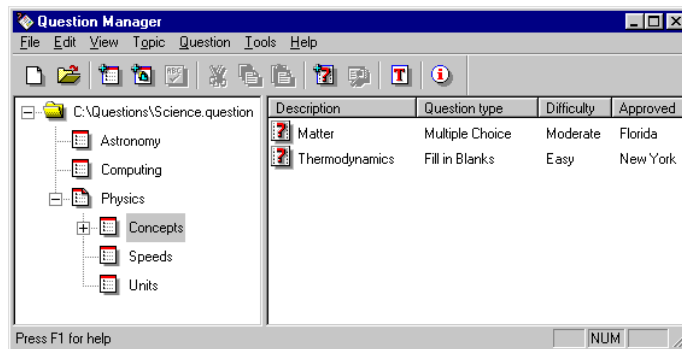
## 1.7 Question tags

The concept of tags was introduced in Part 2: 2.2 *Classifying questions with tags* above and illustrated in *Figure 12*. The tags used in *Figure 12* are:



**Figure 27** Tag and Tag Value Definitions

These tags are applied to the questions **Matter** and **Thermodynamics** (which are with the subtopic **Concepts** of the topic **Physics**) in *Figure 28* below:



**Figure 28** Tags and Tag Values Assigned to Questions

The structure corresponding to *Figure 28* above is shown in *Figure 29* below.

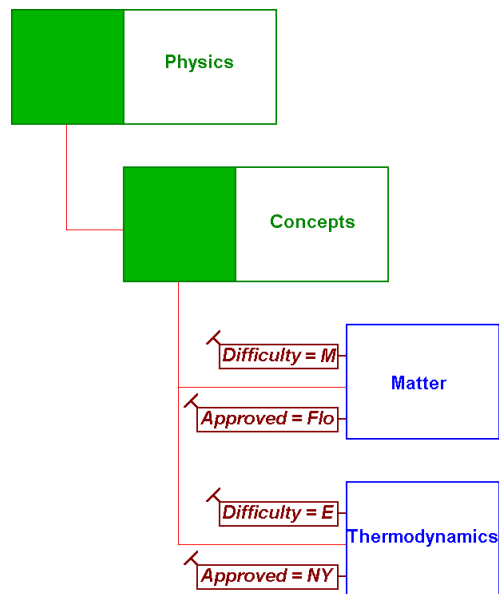


Figure 29 Tagged Questions

## 1.8 Question status indicator

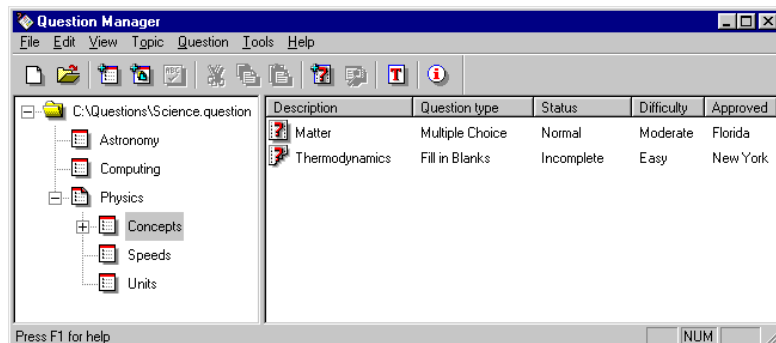
Each question authored in *Perception* has a **Status** that can be modified as the question is developed. The possible status values and their typical uses are:

<b>Normal</b>	The question is ready to be made available for inclusion into assessments.
<b>Incomplete</b>	The question is still being developed and is not ready for participants to take.
<b>Retired</b>	The question is no longer used in assessments and is only retained for historical purposes.

For example, if there are several people authoring a question, a status of **Incomplete** can be assigned to it until it is formally released. The status can then be changed to **Normal**.

A question always has one of the above status values, and will be set to **Normal** by default.

These status values have been used in the questions **Matter** and **Thermodynamics** in *Figure 30* below:



**Figure 30** *Question Status Values Assigned to Questions*

The question status is part of the **Control information** shown in *Figure 16* above. It is set when using the *Question Wizard* (see 3 *The Question Wizard* below), or in the *Question Editor* (see 4.1.2 *Defining question properties* below).

## 1.9 Other question features

### 1.9.1 Question notes

*Question notes* are used by authors to record useful information and comments about a question as it is developed. They are added to a question with the *Question Editor* (see 4.1.2 *Defining question properties* below).

A question note can be created, updated or removed by an author.

Each question note contains a heading (or **Label**), the name of the author who created it and the date on which it was created or most recently modified.

### 1.9.2 Participant comments

When you define a question type (see 1.2 *Question types* above), you can specify whether or not to offer participants a box in which they can submit their feedback to the organization providing the assessments. You do this in *Question Editor* (see 4.3.1 *Question Editor question types* below).

A question that offers participants the opportunity to submit their feedback is shown in *Figure 31* below:

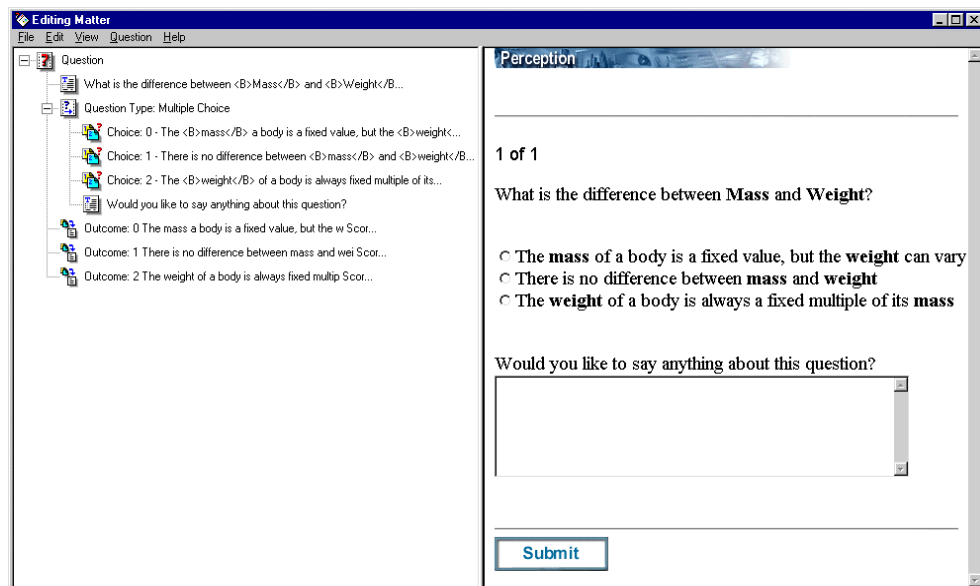


Figure 31 Participant Comments Enabled for a Question



You can specify the wording that invites the feedback (which is **Would you like to say anything about this question?** in *Figure 31* above).

You can also specify the **Height** and **Width** of the box in which a participant types their comments.

Participant comments are particularly useful when you are beta testing questions.



## 2 Question Manager

### 2.1.1 What does Question Manager do?

*Question Manager* is the first of two Windows-based applications within *Perception*. It enables you to create questions with scores and feedback. *Question Manager* holds its questions within easily manageable topics, which are all stored within a question database.

One of *Question Manager's* key features is its easy-to-use Wizard, a powerful tool that enables novice users to create fully featured questions from its intuitively invoked menus.

The table below shows the different types of questions that can be created with the *Question Wizard*.

Question Basis	Response	Wizard
<b>Giving Information</b>	None, they study a screen of text and/or graphics and then click a button when they are ready to continue.	<b>Explanation</b>
<b>Selecting Options</b>	Participants select option from a set of either 3, 4 or 5 possibilities.	<b>Likert scale</b>
	A drop-down list of possible responses is used to choose the answer to a question.	<b>Matching</b>
	Participants choose an option button for one or more items.	<b>Matrix</b>
	A number of choices are offered to the participant who selects one of them as the correct answer.	<b>Multiple choice</b>
	A number of choices are offered to the participant who can select one, any, all or none of them as the correct answer.	<b>Multiple response</b>
	Participants make choices from a drop-down menu for one or more items.	<b>Pull-down list</b>

Question Basis	Response	Wizard
<b>Selecting Options</b>	<p>The participant places a list of options in an order.</p> <p>The participant chooses a word or phrase from a drop down list.</p> <p>The participant chooses either “True” or “False” as the answer.</p> <p>The participant chooses either “Yes” or “No” as the answer.</p>	<p><b>Ranking</b></p> <p><b>Select a blank</b></p> <p><b>True/False</b></p> <p><b>Yes/No</b></p>
<b>Text Entry</b>	<p>The participant submits a long, free-range text “essay” as the answer.</p> <p>The participant enters a short text in one or more blank spaces.</p> <p>The participant enters text in to a box of one or more lines as the answer.</p>	<p><b>Essay</b></p> <p><b>Fill in Blanks</b></p> <p><b>Text match</b></p>
<b>Numeric Operations</b>	<p>The participant gives a number as the answer.</p>	<p><b>Numeric</b></p>
<b>Image Recognition</b>	<p>Participants see a picture and use the mouse to “drag” each of several markers to the place they think is correct and then “drop” them.</p> <p>Participants see a picture and use the mouse to “drag” a marker to the place they think is correct and then “drop” it.</p>	<p><b>Drag and drop</b></p> <p><b>Hotspot</b></p>
<b>Animation</b>	<p>The participant sees a Macromedia® Flash™ animation in their browser and gives the appropriate kind of answer.</p>	<p><b>Macromedia Flash</b></p>

For a more flexible way of creating questions, *Question Manager* also features the *Question editor*, a powerful tool with which more advanced users can create an even wider set of question options or even add their own question definitions and templates. Advanced users can also edit questions directly in QML.

*Question Manager* holds its questions in a question database. These files have the **.question** extension, but are held by default in **.MDB** (Microsoft *Access* Database) format, so you can open and view them in Microsoft *Access* or other programs that can read **.MDB** files, making the application even more flexible.

### 2.1.2 Using SQL Server and Oracle question databases

*Perception* version 3 allows you to use the *SQL Server* or Oracle formats for your question databases.

These databases are accessed via a technology called **ODBC**, which must be installed on your PC. Depending on which database format you are using with *Perception*, you will need to ensure that you have the appropriate **ODBC** drivers on your authoring PC.

If you are using *SQL Server* or Oracle databases you will access them with an **ODBC Data Source Name (DSN)**.

With *SQL Server* or Oracle databases, you can use one “authoring” database that includes the database tables from both the question databases and assessment databases referred to in this guide.

For full instructions on setting up *SQL Server* or Oracle databases for use with *Question Manager*, consult the file:

**c:\perception3\author\resources\documents\authorinstallreadme.html**

(assuming that you installed *Perception* to **c:\perception3**).

Additional information can be found on the *Perception* support site at:

<http://www.questionmark.com/perception/help/>

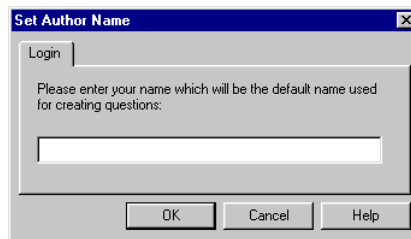
## 2.2 Starting Question Manager

If your *Perception* system is installed in the default directory (**c:\perception3**) then you can start *Question Manager* by running the program:

**c:\perception3\author\Question Manager.exe**

### 2.2.1 Running Question Manager for the first time

If you are running *Question Manager* for the first time, you will see the screen below:

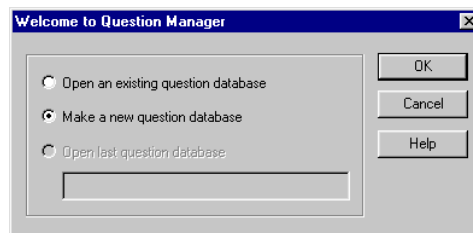


**Figure 32** *Starting Question Manager for the first time*

You must enter a name that will be recorded as the question author for any questions that you create.

This name can be displayed in *Question Manager* (see 2.7 *Displaying question information*) and can be changed later (see 2.11 *Option Settings dialog*). If the author's name is changed and then an existing question is modified, both author names will be recorded.

Then click **OK**:

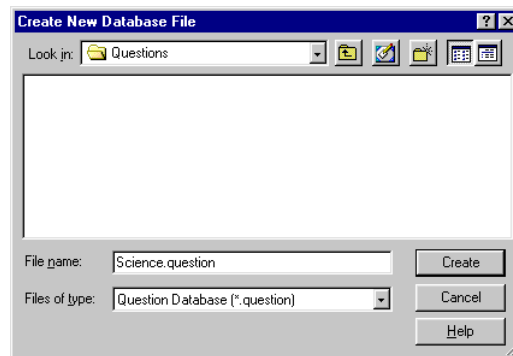


**Figure 33** *Creating the first Question Database*

If you do not have any question databases, click **OK**.

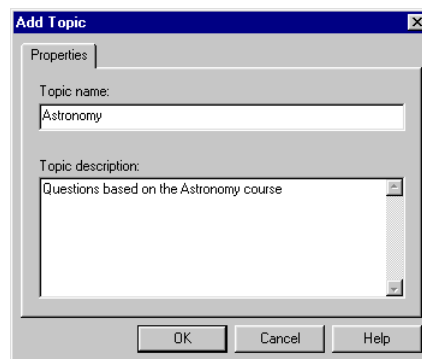
If you wish to open an existing version 3 question database, see 2.2.4 *Opening an existing question database file*.

If you clicked **OK**, you will see the screen below:



**Figure 34** *Selecting the first Database Name*

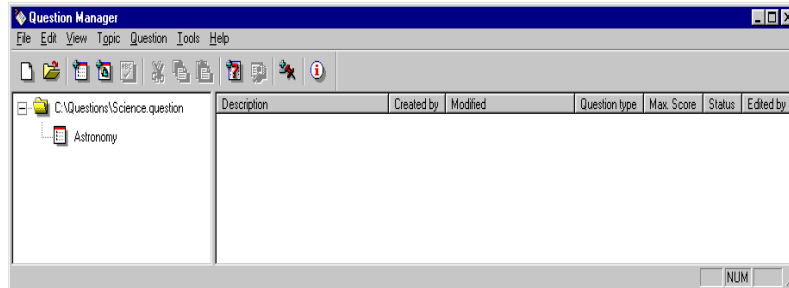
To create a new version 3 question database, enter its **File name** and click **Create**:



**Figure 35** *Adding the first Topic*

*Question Manager* now prompts you to add your first topic. You must enter the **Topic name** and you may enter a **Topic description**.

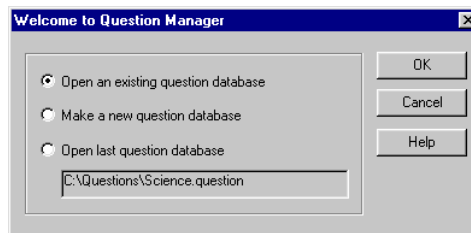
Then click **OK** and you will see the *Question Manager* window:



**Figure 36** *Question Manager Window*

### 2.2.2 Running Question Manager subsequently

If you are not running *Question Manager* for the first time, you will see *Figure 37* below:

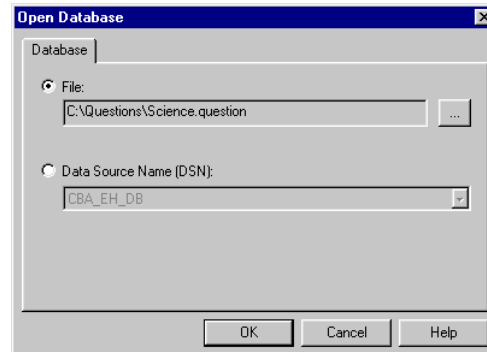


**Figure 37** *Opening an existing Question Database*


If you select **Open last question database** and click **OK**, you will see the *Question Manager* window (*Figure 36*).

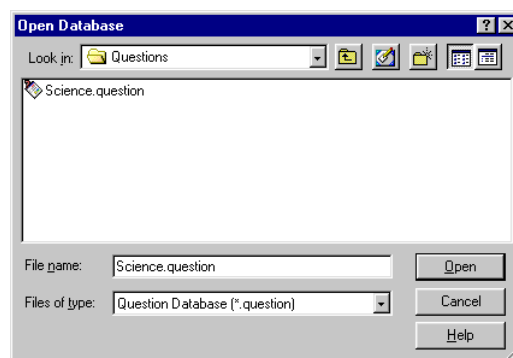
If you select the option **Open an existing question database** and click **OK**:





**Figure 38** *Selecting Question Database Access Method*

To select a question database file, select the **File** option and then click :



**Figure 39** *Selecting a Database File Name*

Locate the database file that you wish to open and click **Open**. You will now see the *Question Manager* window (Figure 36).

To select a question database DSN, select the **Data Source Name (DSN)** option in Figure 38:

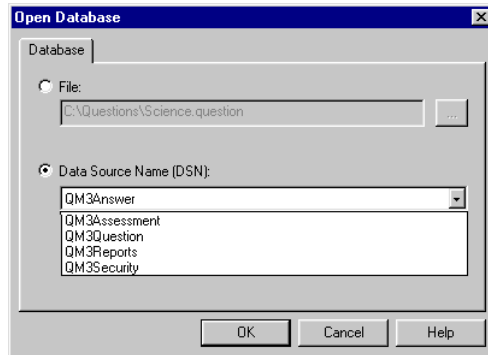


Figure 40 Selecting a Question Database DSN

Use the drop-down list to select the DSN that you require and click **OK**. You will now see the *Question Manager* window (Figure 36).

### 2.2.3 Creating a new question database

If you wish to create a new question database, select **File | New Database...** or use the **New Database** icon on the toolbar:

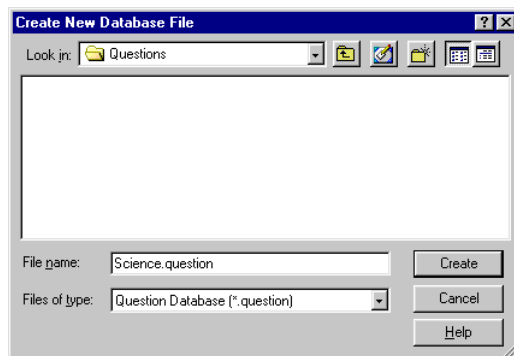
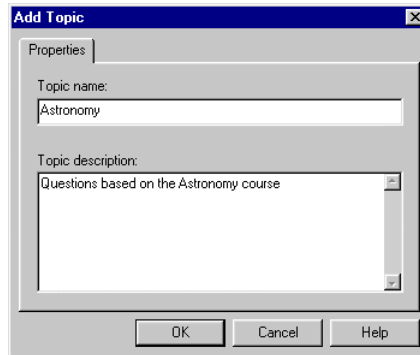


Figure 41 Selecting a new Database Name

To create a new version 3 question database, enter its **File name** and click **Create**:



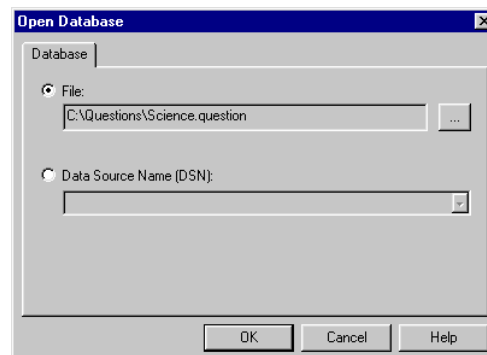
**Figure 42** Adding a new Topic

*Question Manager* now prompts you to add your first topic. You must enter the **Topic name** and you may enter a **Topic description**.


Then click **OK** and you will see the *Question Manager* window (Figure 36).

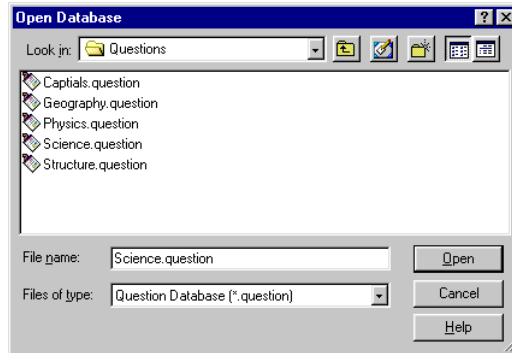
#### 2.2.4 Opening an existing question database file

If you wish to open another question database, select **File | Open Database...** or use the **Open Database** icon on the toolbar:



**Figure 43** Selecting Question Database Access Method

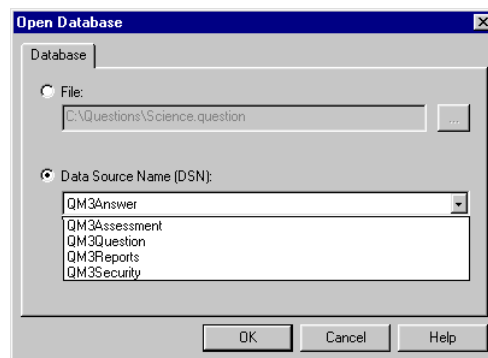
To select a question database file, select the **File** option and then click :



**Figure 44** *Selecting a Database File Name*

Locate the database file that you wish to open and click **Open**. You will now see the *Question Manager* window (Figure 36).

To select a question database DSN, select the **Data Source Name (DSN)** option in Figure 43:

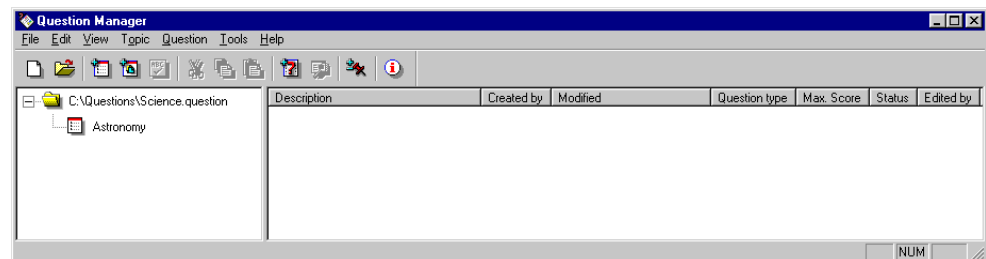


**Figure 45** *Selecting a Question Database DSN*

Use the drop-down list to select the DSN that you require and click **OK**. You will now see the *Question Manager* window (Figure 36).

## 2.3 The Question Manager window

If you've used Microsoft Windows products before, you'll find most of *Question Manager's* Windows components familiar. If you need more information about standard window features, see your Windows documentation.



**Figure 46** *The Question Manager Window*

These are the components of your *Question Manager* window:

- **Toolbar**  
Clicking buttons in the toolbar lets you carry out various procedures (these are duplicates of menu commands). See 2.5 *The toolbar* for a description of the buttons.
- **Topic pane (left hand view)**  
Displays the filename of the database you are working with and the topic structure within the database.
- **Question pane (right hand view)**  
Displays all the questions in a specific topic. The following information is displayed by default:
  - The question's **Description**
  - Who the question was **Created by**
  - When it was last **Modified**
  - The **Question Type**
  - The **Max. Score** that can be awarded for the question
  - The question's **Status**
  - Who the question was last **Edited by**

Other information can be displayed in addition to this (see 2.7 *Displaying question information* below).

## 2.4 The menu bar

The *Question Manager* menu bar is a typical Windows menu bar. Click on any item to see the menu and then click an option within that menu to carry out the operation.

### 2.4.1 File menu

The following options are available under the *Question Manager* **File** menu:

- **New Database...**  
This option creates a new question database.
- **Open Database...**  
This option opens an existing question database.
- **Save As...**  
If the question database is in Microsoft *Access* format, this option makes a copy of the current database and saves it under a new name.
- **Import**  
This option has three sub-menus, **ASCII...**, **QML...** and **QTI XML...** These options allow you to import questions into a question database from an ASCII formatted file. This file can contain valid QML or QTI XML.  
(See 2.6 *Importing and exporting questions* for more details on importing.)
- **Export...**  
This option has two sub-menus, **QML...** and **QTI XML...** These options allow you to export selected questions to file in either of the QML or QTI XML formats.  
(See 2.6 *Importing and exporting questions* for more details on importing.)
- **Exit**  
This menu option enables you to exit *Question Manager*.

A list of the last four most recently used question databases is also shown.

## 2.4.2 Edit menu

The following options are available under the *Question Manager* **Edit** menu:

- **Cut Question(s)**  
This option enables you to select question(s) and reinsert elsewhere. It will delete the highlighted questions in their original positions after being reinserted using **Paste Question(s)**.
- **Copy Question(s)**  
This option copies the selected question(s), which can then be retrieved using **Paste Question(s)**. Questions can be re-pasted as many times as the user wishes, providing they are not deleted.
- **Paste Question(s)**  
This option places the last question(s) that have been cut or copied into your selected topic.
- **Select All Questions**  
This option selects all the questions in the current topic.

## 2.4.3 View menu

The following options are available under the *Question Manager* **View** menu:

- **Toolbar**  
Select this command to hide or show the *Question Manager* toolbar. Hiding the toolbar offers a larger screen area to view topics and question descriptions.
- **Status Bar**  
The **Status Bar** shows what the selected menu option enables you to do. Select this command to hide or show the *Question Manager* **Status Bar**. Hiding the **Status Bar** offers a larger screen area to view topics and question descriptions.
- **Sort...**  
This option enables users to sort their questions in a given topic into any of the five categories that appear on the *Question Manager* interface (by default, these are **Description**, **Created by**, and **Question Type**).  
These may also then be sorted into either ascending or descending orders. By default, questions are shown by description order. Note that if two questions have the same description, then *Question Manager* will sort by modified date as its second sort procedure. The sorting only affects the order questions are displayed in *Question Manager*.

- **Arrange Columns...**

This option allows you to choose which information is displayed by *Question Manager* (see 2.7 *Displaying question information* below).
- **Refresh**

This command redraws the *Question Manager* desktop showing the latest question information. Selecting this option enables you to view changes to topics and questions made by other users who are simultaneously editing the same database.
- **Tryout**

Tryout uses the format and template files defined in the **Option Settings** dialog to layout the questions. You may need to set the correct template to display the questions the way you want them to appear.

If you have *Internet Explorer 4* or higher installed then you can fully tryout the selected questions. It does not have to be set up as your default browser but it does need to be installed to utilize the full benefit of **Tryout**.

A tryout window is used to display the selected questions as they would appear in the server software during an assessment. Answering the questions and pressing the **Submit** button displays the score achieved and any feedback.

If you do not have *Internet Explorer 4* or higher installed then you cannot answer questions when previewing, or see scores and feedback. You can preview what the questions will look like but you cannot answer them.

### 2.4.4 Topic menu

The following options are available under the *Question Manager* **Topic** menu:

- **Add Topic...**

This option allows you to create a new topic or subtopic within your topic structure. See 2.8.1 *Adding a new topic or subtopic* for details.
- **Edit Topic...**

Use this option to change the **Topic name** and **Topic description** for an existing topic within your topic structure. See 2.8.2 *Editing a topic or subtopic* for details.
- **Delete Topic**

If a topic within your topic structure does not contain any questions or subtopics, you can use this option to delete it. See 2.8.3 *Deleting a topic or subtopic* for details.
- **Rename Topic**

This option is used to rename an existing topic or subtopic within your topic structure. See for 2.8.4 *Renaming a topic* details.



- **Add Topic Outcome...**  
If you wish to create topic outcomes, use this option to create them for topics or subtopics within your topic structure. See 2.8.5 *Adding a topic outcome* for details.
- **Edit Topic Outcome...**  
To change the definition of a particular topic outcome, use this option. See 2.8.6 *Editing a topic outcome* for details.
- **Delete Topic Outcome**  
This option enables you to delete specific topic outcomes. See 2.8.7 *Deleting topic outcome* for details.

## 2.4.5 Question menu

The following options are available under the *Question Manager* **Question** menu:

- **Add Question...**  
Selecting this option opens the *Question Wizard* dialog box to enable users to add questions. (For more information on this menu item, see chapter 3 *The Question Wizard*.)
- **Edit Question**  
Accesses the *Question Editor*, a powerful tool to edit questions, choices and outcomes. To enable this option, first highlight an existing question. See chapter 4 *The Question Editor* for more details.
- **Edit in QML**  
QML is the language in which *Perception* creates and holds its questions. By selecting this option, advanced users can edit their questions in *Perception's* internal language, QML. *Perception* will open the *QML Editor*, which displays the QML code for the selected question. See chapter 5 *The QML Editor* for more on the *QML Editor*.
- **Delete Question(s)**  
Select this option to delete a highlighted question or multiple questions within a topic. Multiple questions may be selected by holding the control key down while selecting questions with the mouse.
- **Change Description**  
Select this option to change the description of a question. This will select the description of the question in the main window of *Question Manager*, enabling you to type a new one into the highlighted box. To deselect, click anywhere on the screen outside the highlighted box, or press **Esc**.

- **Change Status...**  
The question status was explained in 1.8 *Question status indicator*. Use this option to change the status of a question (the default is **Normal**).
- **Assign Tags...**  
The concept of question tagging was introduced in Part 2: 2.2 *Classifying questions with tags* above.  
To add question tags and tag values to a question, or to delete them from a question, select this option and refer to 2.9.8 *Tagging Questions* below.

### 2.4.6 Tools menu

The following options are available under the *Question Manager Tools* menu:

- **Define Tags...**  
The concept of question tagging was introduced in Part 2: 2.2 *Classifying questions with tags* above. To define your own tags and tag values, select this option and refer to 2.9.1 *The Tag Tool* below.
- **Spell Check**  
This menu item lets you spell check your questions in the **Whole Database...**, **Current Topic...** or **Selected Questions...** (See 2.10 *Spell checking questions* for more details.) Selecting any of these will run the spell checker on any questions that are currently highlighted. You can also choose to ignore to spell check some words; for example, words, which contain all capitalized characters, or where the first character is only capitalized. These options and others are set via the **Options Settings** dialog. See 2.11.3 *Spell Check tab* for more details.
- **Check Graphics**  
This option enables you to display the graphics that are referenced in the database and check that they are located in your default graphics directory. However, only graphics that are included using the *Question Editor*, or the *Question Wizard* are found and not those referenced directly in HTML.  
Running this option creates a table in your default browser to view the results. This will indicate where appropriate links have been made or missed, together with a description of the question and the topic each graphic is in.  
Graphics used in drag-and-drop questions are also checked. These are marked in the table by an asterisk (\*) in the **Filename** field.
- **Check Multimedia**  
This menu item is similar to the **Check Graphics** facility except that it searches for multimedia files referenced within your questions instead.

- **Options...**

This option enables you to set *Question Manager's* default options for its resource directories, how *Question Manager* is to startup and the spell checking options. See 2.11 *Option Settings dialog* for more about the **Option Settings** dialog.

## 2.4.7 Help menu

The following options are available under the *Question Manager* **Help** menu:

- **Contents**

This option accesses the *Question Manager* contextual help files.

- **Perception Support Website**

This option calls your default browser and connects you to the Questionmark *Perception* support site to discover the latest information on all aspects of *Perception*.

- **Find Assessment Content**

This option calls your default browser to enable you to connect to the *AssessmentStore*.

- **Upgrade Software**

This option calls your default browser to enable you to connect to the Questionmark website to find out about upgrades that are available for *Perception*.

- **About Licensing...**

This supplies information about your *Perception* license.

- **About Question Manager...**

This supplies version information about *Question Manager*.

## 2.5 The toolbar

The *Question Manager* Toolbar is fixed as follows:

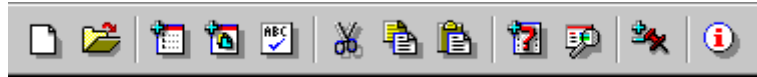


Figure 47 The *Question Manager* Toolbar

Icon	Function	Equivalent Menu Option
	Creates a new question database.	<b>File   New Database...</b>
	Opens an existing question database.	<b>File   Open Database...</b>
	Adds a new topic or subtopic.	<b>File   Add Topic...</b>
	Adds a topic outcome to a topic or subtopic.	<b>File   Add Topic Outcome...</b>
	Spell checks the selected questions within a topic.	<b>Tools   Spell Check   Selected Questions...</b>
	Cuts the selected questions.	<b>Edit   Cut Question(s).</b>
	Copies the selected questions.	<b>Edit   Copy Question(s).</b>
	Pastes previously selected questions into the topic.	<b>Edit   Paste Question(s).</b>
	Adds a new question to a selected topic.	<b>Question   Add Question...</b>
	Tries out highlighted questions (see note below).	<b>View   Tryout.</b>
	Enables new tags and tag values to be defined.	<b>Tools   Define Tags...</b>
	Opens the <i>Perception</i> help file.	<b>Help   Contents.</b>

**Note:** Tryout uses a web browser control if *Internet Explorer 4* or higher is installed, or if not it allows questions to be previewed in the default browser.

## 2.6 Importing and exporting questions

There are three methods by which question data can be interchanged:

- **With ASCII files**

You can import existing questions in text or word-processor format in ASCII format. You must simply put some marker characters into the text to indicate where the start of each question and choice is, save the questions in ASCII text format, and import them straight into *Question Manager*. This is also useful if you have some authors without access to *Question Manager*, for example if they use a non-Windows computer like a Macintosh. They can create questions in a word-processor, and send them for importing on a PC.

You can only import multiple choice, multiple response and explanation questions in ASCII format.

You can either use the default marker characters (see 2.6.1 *Importing ASCII questions formatted with default markers* below) or you can define your own (this is explained in 2.6.2 *Importing ASCII questions formatted with user-defined markers* below).

- **With QML files**

You can also import or export questions that are in QML format (see Part 2: 3.3 *Question Markup Language*).

These operations are described in 2.6.3 *Importing questions from QML* and 2.6.4 *Exporting questions as QML* below.

- **With QTI XML files**

In addition, it's possible to import from (and export to) the IMS QTI XML language by using QML.

Details can be found in 2.6.5 *Importing questions from QTI XML* and 2.6.6 *Exporting questions as QTI XML* below.

### 2.6.1 Importing ASCII questions formatted with default markers

The default question markers are:

Marker	Usage
<C+>	Put at the start of each right choice (scores 1 point).
<C>	Put at the start of each wrong choice (scores 0 points).
<C->	At the start of each choice you want negatively marked (scores -1 points).
<D>	Follow this by the description for the question.
<F>	Use this to define feedback for the preceding choice.
<M>	This allows you to define the MIME type for all questions following. For example, <M>text/html makes all text HTML rather than plain, and <M>text/plain reverts to plain text that is the default.
<Q>	Put at the start of a line before each question.
<S>	Determines whether shuffling of choices is used: <S>Y turns shuffling of choices on. <S>N turns shuffling of choices off.
<T>	Use this to set all questions after this marker to be multiple response ones. (Putting <T>MC makes following questions multiple-choice, the default.)
<#>	This makes the line a comment or note, and is ignored on import.

The following ASCII file contains an explanation question, then a multiple-choice question and finally a multiple response question:

```

<#>    This is a sample Explanation Question
<M>    text/html
<Q>    <i>Physical Features</i>
<D>    Physical Geography

<#>    This is a sample Multiple Choice Question
<M>    text/plain
<T>    MC
<Q>    The tallest mountain in the world is:
<D>    Mountains
<C->   Mount Rushmore
<F>    Mount Everest is the tallest mountain in the world
<C->   Kilimanjaro
<F>    Mount Everest is the tallest mountain in the world
<C+>  Mount Everest
<F>    Correct.
<C->   Mont Blanc
<F>    Mount Everest is the tallest mountain in the world

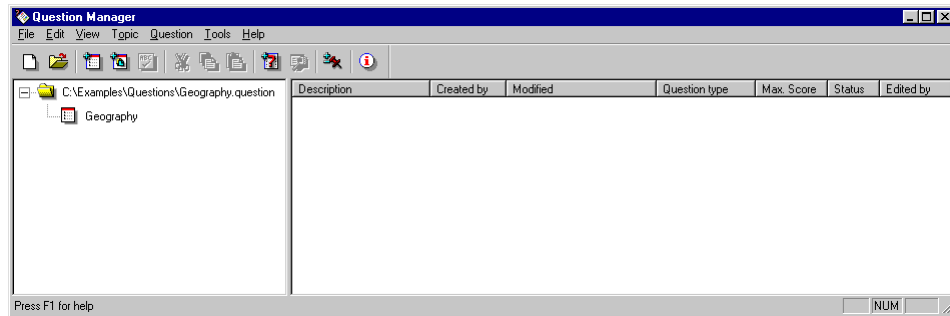
<#>    This is a sample Multiple Response Question
<M>    text/html
<T>    MR
<Q>    Which of these countries has a coastline:
<D>    Coastlines
<C->   Switzerland
<F>    <b>Switzerland</b> does not have a coastline
<C->   Austria
<F>    <b>Austria</b> does not have a coastline
<C>    Holland
<F>    <i><b>Holland</b> is correct</i>
<C>    Kuwait
<F>    <i><b>Kuwait</b> is correct</i>
<C->   Uganda
<F>    <b>Uganda</b> does not have a coastline

```

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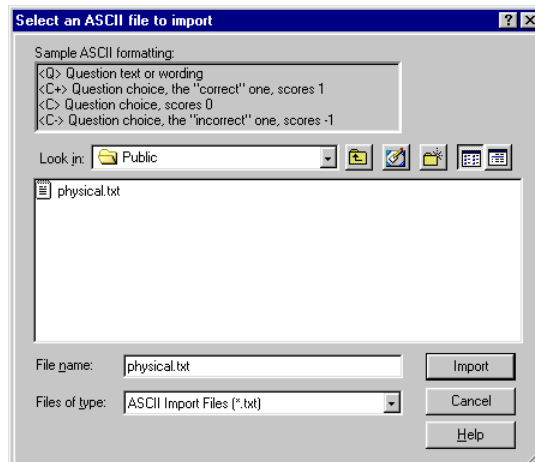
Note the use of the HTML tags `<b>`, `</b>`, `<i>` and `</i>`. These are part of the text and do not act as markers.

This ASCII file can be imported using the **File | Import | ASCII...** menu option in *Question Manager*. If you start with an empty topic:



**Figure 48** *Importing Questions in ASCII: Initial Screen*

and then select **File | Import | ASCII...**

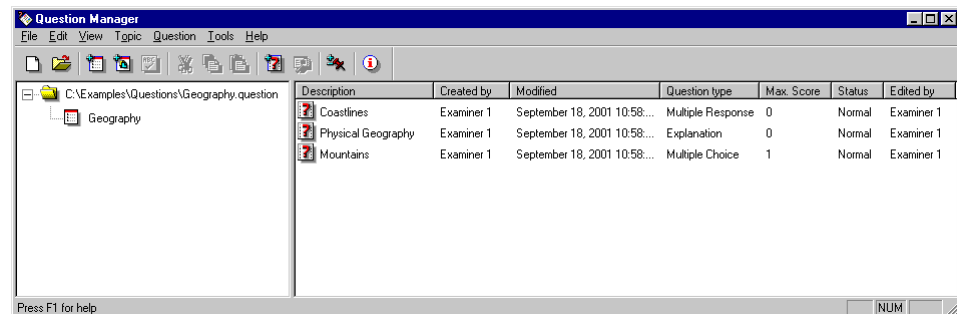


**Figure 49** *Importing Questions in ASCII: Choose File*

You can now select the text (.txt) file that contains the above questions.



When you have done this, click **Import**:



**Figure 50** *Importing Questions in ASCII: Imported Questions*

The questions have now been imported successfully.

## 2.6.2 Importing ASCII questions formatted with user-defined markers

This is a useful technique if you want to use any of the standard markers (such as <C>) as text rather than as delimiting characters, if you have questions already laid out in another way, or if you just prefer to use another convention.

The default question markers are:

Variable	Default
Start_Question	<Q>
Correct_Choice	<C+>
Choice	<C>
Negative_Choice	<C->
Feedback	<F>
Mime	<M>
Description	<D>
Comment	<#>
Question_Type	<T>

To use different marker codes for ASCII import, use an ASCII editor such as Notepad to open the file **Question Manager V3.ini** and include a new section called **[ASCII Import]** in it. This file is normally found in your Windows directory.

## Question Manager

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The file **Question Manager V3.ini** should be updated after installing the software, as the installation process will overwrite it.

A new set of marker codes could be defined by inserting the following **[ASCII Import]** section in the file **Question Manager V3.ini**:

```
[ASCII Import]
Start_Question=?
Correct_Choice=+
Choice==
Negative_Choice=-
Feedback=*
Mime=|
Description=#
Comment=!
Question_Type=~
```

In the above **[ASCII Import]** section, all the markers have been re-defined. If any had not been, they would have taken their default values.

**Question Manager** must be re-started if necessary for the new settings to take effect.

The ASCII question file given in the example above could now be prepared with the new marker codes:

```

!      This is a sample Explanation Question
|      text/html
?      <i>Physical Features</i>
#      Physical Geography

!      This is a sample Multiple Choice Question
|      text/plain
~      MC
?      The tallest mountain in the world is:
#      Mountains
-      Mount Rushmore
*      Mount Everest is the tallest mountain in the world
-      Kilimanjaro
*      Mount Everest is the tallest mountain in the world
+      Mount Everest
*      Correct.
-      Mont Blanc
*      Mount Everest is the tallest mountain in the world

!      This is a sample Multiple Response Question
|      text/html
~      MR
?      Which of these countries has a coastline:
#      Coastlines
-      Switzerland
*      <b>Switzerland</b> does not have a coastline
-      Austria
*      <b>Austria</b> does not have a coastline
=      Holland
*      <i><b>Holland</b> is correct</i>
=      Kuwait
*      <i><b>Kuwait</b> is correct</i>
-      Uganda
*      <b>Uganda</b> does not have a coastline

```

Importing this file will give the same results as in *Figure 50*.

### 2.6.3 Importing questions from QML

A QML file can be imported using the **File | Import | QML...** menu option in *Question Manager*. If you start with an empty topic:

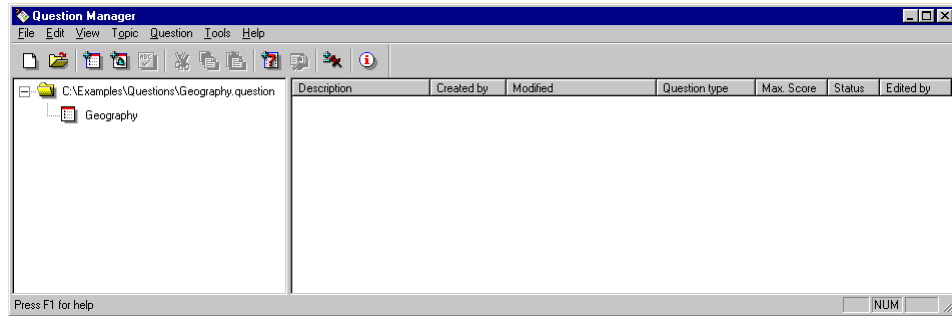


Figure 51 Importing Questions in QML: Initial Screen

and then select **File | Import | QML...**:

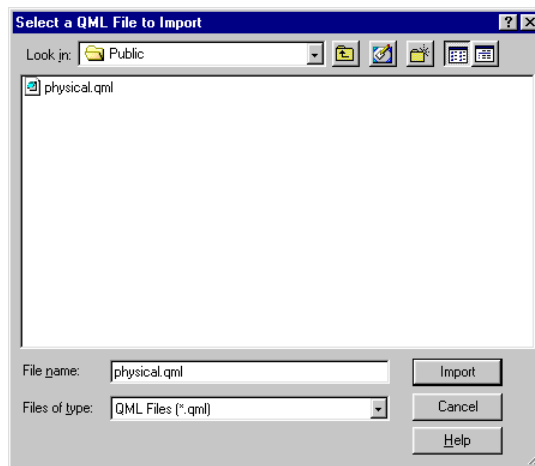
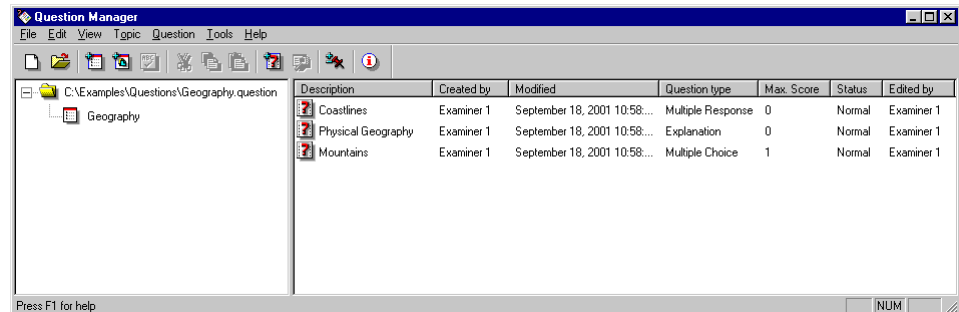


Figure 52 Importing Questions in QML: Choose File

You can now select the QML (.qml) file that you wish to import.

When you have done this, click **Import**:

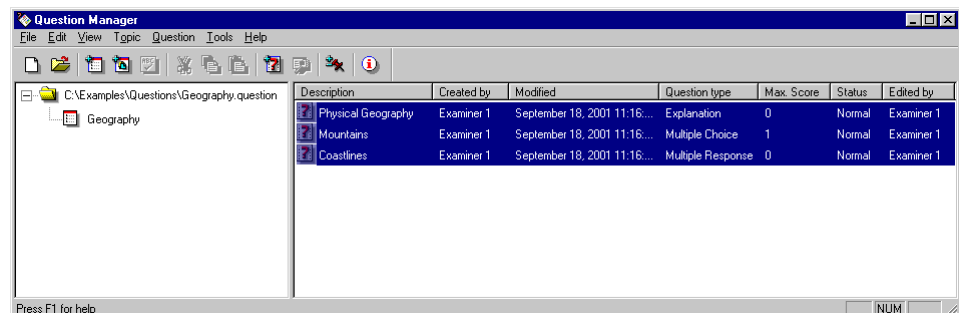


**Figure 53** *Importing Questions in QML: Imported Questions*

The questions have now been imported successfully.

#### 2.6.4 Exporting questions as QML

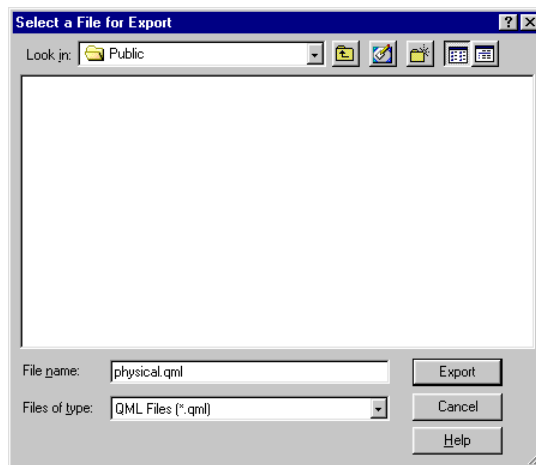
Questions can be exported to a QML file using the **File | Export | QML...** menu option in *Question Manager*. If you start with an empty topic:



**Figure 54** *Exporting Questions in QML: Selecting Questions*

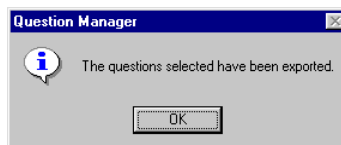
Highlight the questions that you wish to export and then select **File | Export | QML...**

On the screen that appears (*Figure 55*) select the QML (.qml) file that you wish to export the highlighted questions to.



**Figure 55** *Exporting Questions in QML: Selecting QML File*

When you have chosen a QML (.qml) file, click **Export**:

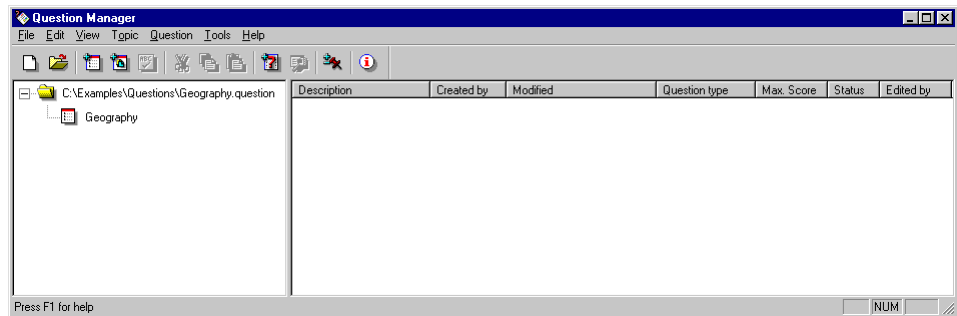


**Figure 56** *Exporting Questions in QML: Confirmation*

The selected questions have now been exported successfully to the chosen QML (.qml) file. Click **OK** to return to *Question Manager's* main screen.

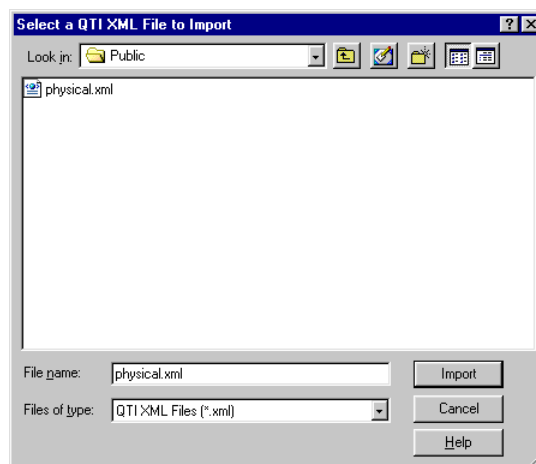
## 2.6.5 Importing questions from QTI XML

A QTI XML file can be imported using the **File | Import | QTI XML...** menu option in *Question Manager*. If you start with an empty topic:



**Figure 57** *Importing Questions in QTI XML: Initial Screen*

and then select **File | Import | QTI XML...**:

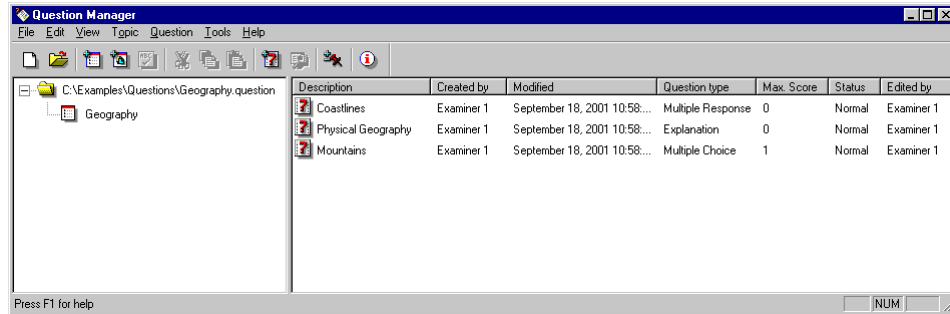


**Figure 58** *Importing Questions in QTI XML: Choose File*

You can now select the QTI XML (.xml) file that you wish to import.

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When you have done this, click **Import**:

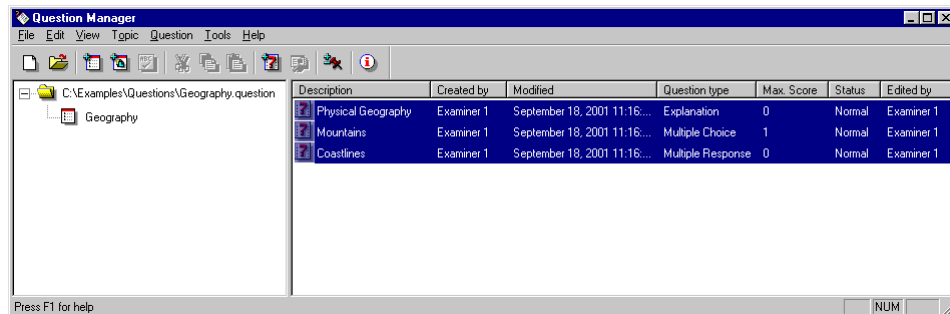


**Figure 59** *Importing Questions in QTI XML: Imported Questions*

The questions have now been imported successfully.

### 2.6.6 Exporting questions as QTI XML

Questions can be exported to a QTI XML file using the **File | Export | QTI XML...** menu option in *Question Manager*. If you start with an empty topic:

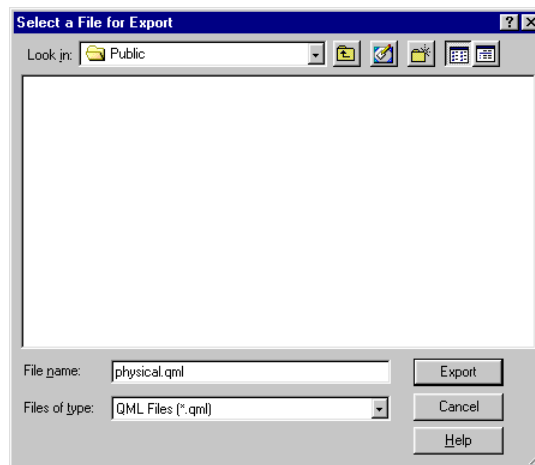


**Figure 60** *Exporting Questions in QTI XML: Selecting Questions*

Highlight the questions that you wish to export and then select **File | Export | QTI XML...**

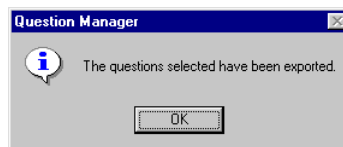
On the screen that appears (*Figure 55*) select the QML (.xml) file that you wish to export the highlighted questions to.





**Figure 61** *Exporting Questions in QTI XML: Selecting XML File*

When you have chosen an XML (.xml) file, click **Export**:

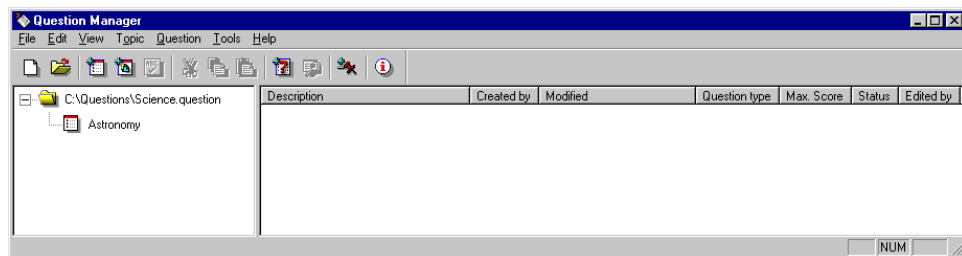


**Figure 62** *Exporting Questions in QTI XML: Confirmation*

The selected questions have now been exported successfully to the chosen XML (.xml) file. Click **OK** to return to *Question Manager's* main screen.

## 2.7 Displaying question information

In the right hand pane of *Question Manager's* window, various columns appear that give information about questions:



**Figure 63** *The Question Manager Window*

The columns that *Question Manager* displays by default are shown in *Figure 63* above.

It is possible to show or hide all these columns except for the question **Description**, and also to create other columns that show additional information.

The information that can be shown in columns is defined in 2.7.1 *Information available for questions* below.

If you wish to change the columns that appear, refer to 2.7.2 *Customizing the display* below.

You can also sort the display according to the values that appear in any of the columns that are displayed. To do this, consult 2.7.3 *Sorting the display* below.

### 2.7.1 Information available for questions

The question information that you can display in columns consists of:

Column	Information
<b>Description</b>	This describes the question and is always present
<b>Created by</b>	This shows who created the question originally
<b>Modified</b>	This shows when the question was most recently changed
<b>Question Type</b>	This shows question type: <ul style="list-style-type: none"> <li>• <b>Drag and drop</b></li> <li>• <b>Essay</b></li> <li>• <b>Explanation</b></li> <li>• <b>Fill in Blanks</b></li> <li>• <b>Java</b></li> <li>• <b>Macromedia® Flash™</b></li> <li>• <b>Matching</b></li> <li>• <b>Matrix</b></li> <li>• <b>Multiple Choice</b></li> <li>• <b>Multiple Response</b></li> <li>• <b>Numeric</b></li> <li>• <b>Pull-down list</b></li> <li>• <b>Ranking question</b></li> <li>• <b>Select a blank question</b></li> <li>• <b>Text Match</b></li> </ul>
<b>Max. Score</b>	This shows the greatest score that can be awarded for each question
<b>Status</b>	This shows the status ( <b>Normal</b> , <b>Incomplete</b> or <b>Retired</b> ) of each question
<b>Edited by</b>	This shows who edited the question most recently
<b>Encrypted</b>	This shows whether the question is encrypted
	This applies to questions that have been included in a question database as a result of having imported a Qpacked assessment (see Part 4: 2.15 <i>Using Qpacked assessments</i> for details)
<b>Tags</b>	You can select any defined tag (see 2.9 <i>Working with Tags</i> ) and display the tag value that is assigned to it for each question

## 2.7.2 Customizing the display

If *Question Manager* is using the default display columns:

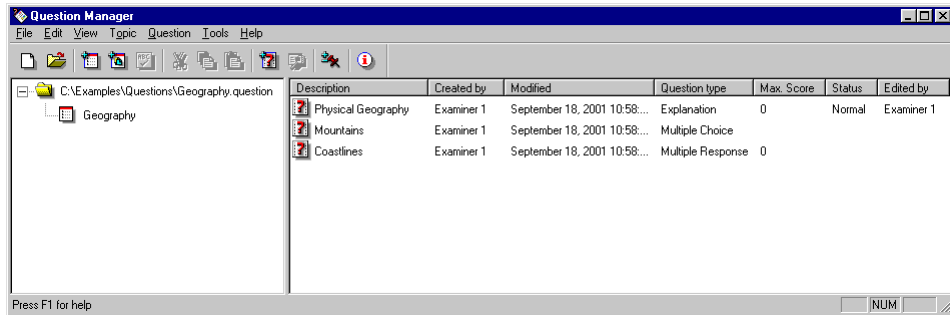


Figure 64 Default Question Display Columns

To adjust them, select **View | Arrange Columns...**

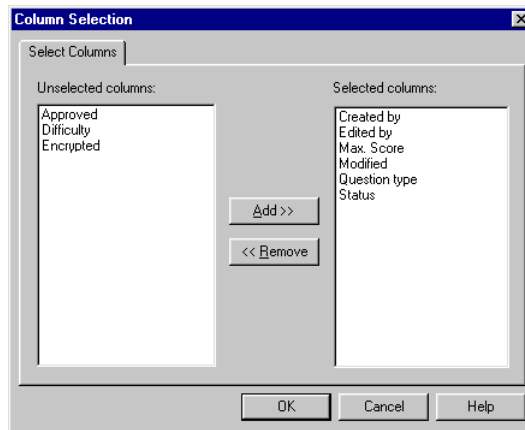


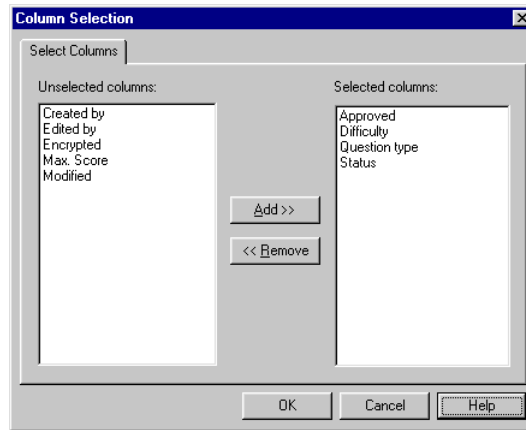
Figure 65 Selecting Display Columns for Question Manager

The available columns are all shown, with the tags identified by their names.

To add a column to the display, select it in the left hand pane of *Figure 65* above and click **Add >>**.

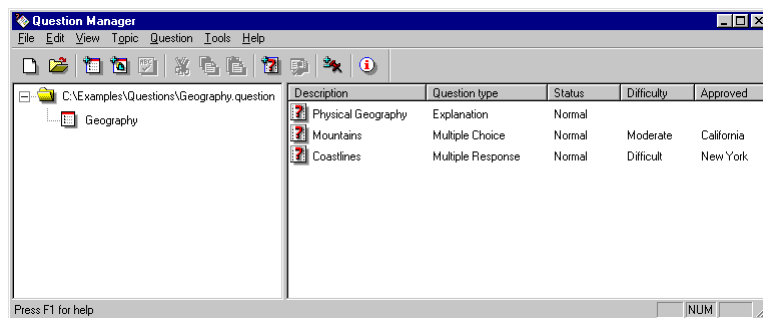
To remove a column from the display, select it in the right hand pane of *Figure 65* above and click **<< Remove**.

You can now select which columns are displayed in *Question Manager*:



**Figure 66** Changing Display Columns for *Question Manager*

Then *Question Manager* will appear as below:



**Figure 67** Adjusted *Question Display Columns*

### 2.7.3 Sorting the display

To sort the questions according to the entries in a particular column, select **View | Sort...**

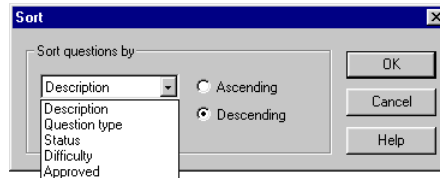


Figure 68 *Sorting Display Columns for Question Manager*

Use the drop-down list to select which column to sort on, and choose either the **Ascending** or **Descending** option button. Click **OK** when you are ready to sort.

If the questions in *Figure 67* are sorted by **Description**, then you will see *Figure 68* below:

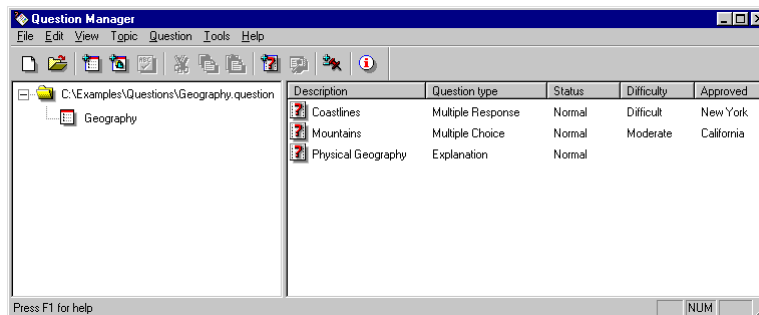


Figure 69 *Questions Sorted by Description*

## 2.8 Working with topics

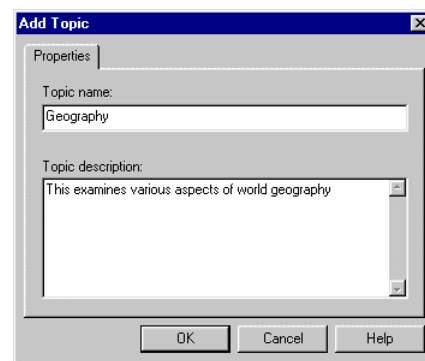
The concepts of topics, subtopics and topic structures were introduced in Part 2: 2.1 *Organizing questions by topics* above, and an example topic structure is outlined in 1.5 *Organizing questions into topics* above.

Also, the concept of topic outcomes was introduced in Part 2: 2.1.2 *Topic Outcomes*.

*Question Manager's* **Topic** menu (see 2.4.4 *Topic menu* above) allow you to manage your topics and their topic outcomes.

### 2.8.1 Adding a new topic or subtopic

To add a new topic or subtopic to an existing question database, choose the **Topic | Add Topic...** command or click the **Add Topic** icon to access the **Add Topic** dialog box:

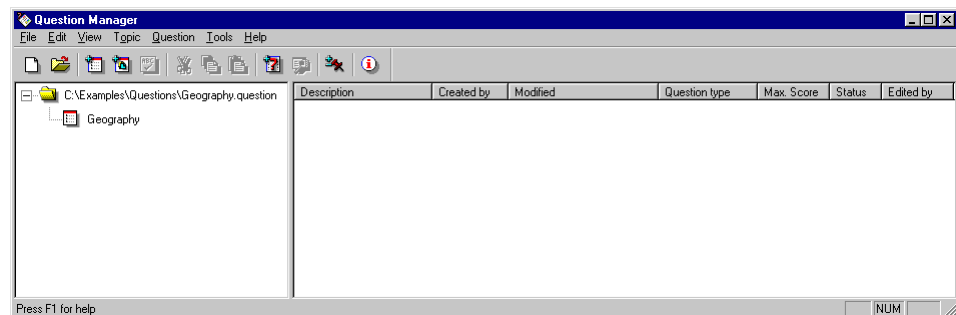


**Figure 70** Adding a new Topic to a Question Database

You must enter the **Topic name**, which can include any characters except double quotes ("), single quote ('), the pipe (|) and the backslash (\) characters.

You may also enter a **Topic description**.

When you have done this, click **OK**:



**Figure 71** New Topic in a Question Database

You have created a new topic called **Geography**.

### 2.8.2 Editing a topic or subtopic

To edit an existing topic or subtopic, highlight it and choose **Topic | Edit Topic...**

You will see a screen similar to *Figure 70* that allow you to change the **Topic name** and the **Topic description**.

### 2.8.3 Deleting a topic or subtopic

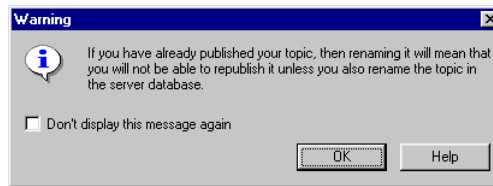
To delete a topic or subtopic, highlight it and choose **Topic | Delete Topic**.

The highlighted topic will then be deleted.

Note that this option is only available for topics and subtopics that are empty. If a topic contains any questions or subtopics it cannot be deleted. This applies even if a topic contains no questions and empty subtopics.

### 2.8.4 Renaming a topic

To change the name of a topic or subtopic, select it in the left hand pane of *Question Manager* and choose **File | Rename Topic**:



**Figure 72** Adding a new Topic to a Question Database

This highlights the name of the topic, and you can then type in the new topic name.

Press **Enter** to rename the topic or subtopic.

**Note:** *When using Perception for Web:*  
You should only rename topics if it is absolutely necessary to do so. If a topic has already been published to the server database then its old name will exist with the same internal topic ID. In such a case, you will not be able to republish your topic unless you also rename the topic in the server database.



## 2.8.5 Adding a topic outcome

When you have a topic structure such as the one shown below, you can add topic outcomes to it.

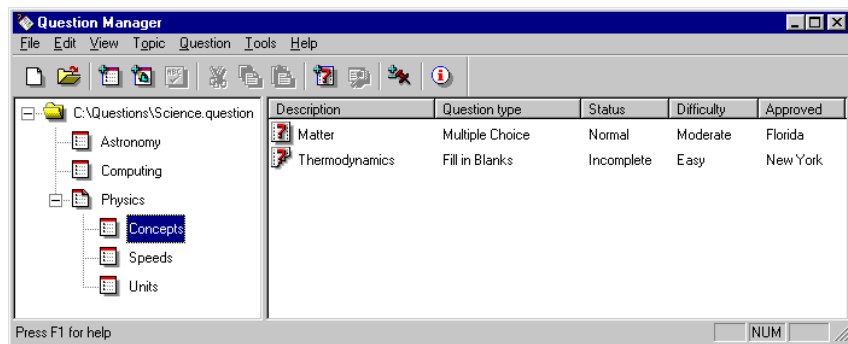


Figure 73 Topic Structure without Topic Outcomes

In Figure 73 above, the topic **Concepts** is highlighted. To add a topic outcome, choose **Topic | Add Topic Outcome...**:

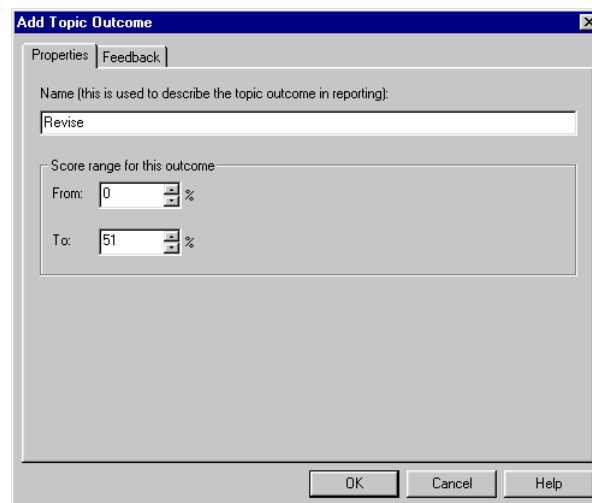


Figure 74 Defining the Score Range for a Topic Outcome

## Question Manager

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Type in a **Name** by which the topic outcome can be identified.

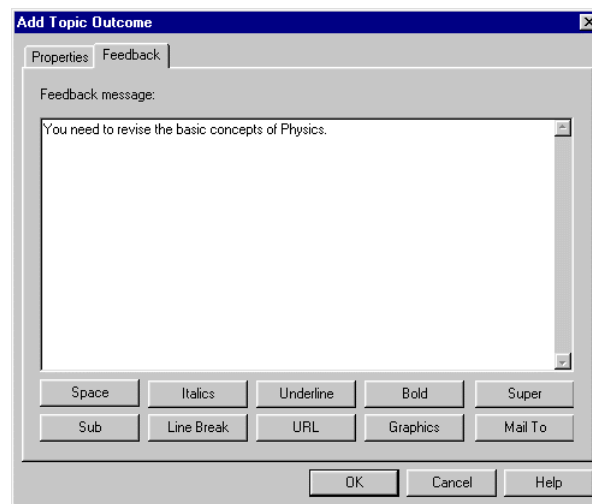
You must now define a range of scores (as a percentage) for the topic that will cause this topic outcome to be processed.

If one of the questions **Matter** or **Thermodynamics** are selected for an assessment, then this topic outcome will be processed if the participant's score for the one selected is within the defined score range.

If both of the questions **Matter** or **Thermodynamics** are selected for an assessment, then this topic outcome will be processed if the participant's overall score for both questions is within the defined score range.

Enter the lower value for the score range in the **From** box, and the upper value in the **To** box.

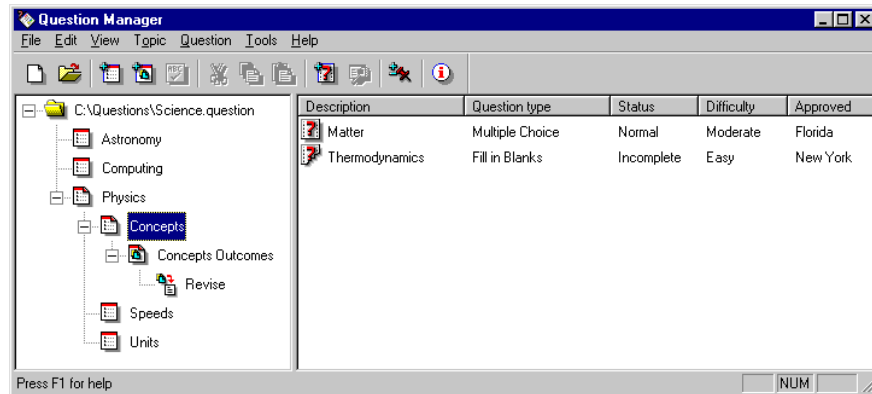
Now click the **Feedback** tab:



**Figure 75** *Defining the Feedback for a Topic Outcome*

Type in any feedback that you wish the participant to see if their score for the questions selected from the topic **Concepts** is within the range defined for this topic outcome.

Click **OK** when you are ready to create your topic outcome:



**Figure 76** Topic Structure with a Topic Outcome

Topic scores are used in assessments for incorporation into reports (see Part 4: 3.2.4 *The Reported Topics tab in the Control Block dialog box*).

Individual topic scores can also be used to define *prerequisite topic scores* within assessments. These are used to set a minimum score that must be achieved by a participant for all the questions belonging to a particular topic.

If the prerequisite topic scores is not achieved, then the participant does not pass the assessment. If an assessment contains questions from more than one topic, then any of the topics may be given a prerequisite topic score.

See Part 4: 3.5.2 *Using prerequisite topic scores to control results* for details of using prerequisite topic scores.

## 2.8.6 Editing a topic outcome

To edit an existing topic outcome, highlight it and choose **Topic | Edit Topic Outcome...**

You will see a screen similar to *Figure 74* that allows you to change the **Name** of the topic outcome and its score range.

You can also click the **Feedback** tab and change the feedback that the participant sees if they trigger the highlighted topic.

### 2.8.7 Deleting topic outcome

To delete a topic outcome, highlight it and choose **Topic | Delete Topic Outcome**.

The highlighted topic outcome will then be deleted.

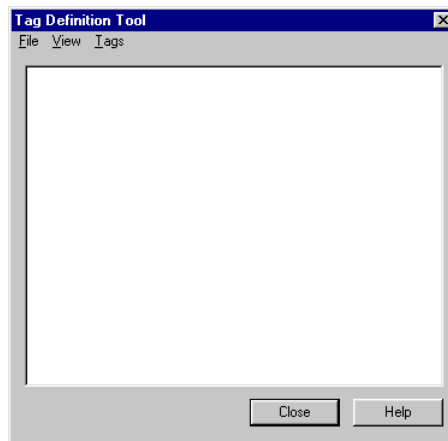
## 2.9 Working with Tags

The concepts of tags was introduced in Part 2: 2.2 *Classifying questions with tags* above, and an example topic structure is outlined in 1.7 *Question tags* above.

Tags are defined with the *Tag Tool* (see 2.9.1 *The Tag Tool* below), and are then available to be incorporated into questions (see 2.9.8 *Tagging Questions* below).

### 2.9.1 The Tag Tool

To begin defining your tags, choose **Tools | Define Tags...**:



**Figure 77** *The Tag Tool Window*

The tag tool has the following menus of its own:

### File menu

The following options are available under the *Tag Tool File* menu:

- **Export All Tags...**  
This option allows you to save all the tags and tag values that you have created into an external (.tag) file (see 2.9.7 *Exporting Tags* below)
- **Import Tags...**  
This option allows you to include previously exported tags from an external (.tag) file (see 2.9.6 *Importing Tags* below)
- **Close**  
This option closes the *Tag Tool*

### View menu

The following options are available under the *Tag Tool View* menu:

- **Expand All**  
This option shows all of the tags and their tag values in the *Tag Tool* display.
- **Contract All**  
This option only shows the tags in the *Tag Tool* display.

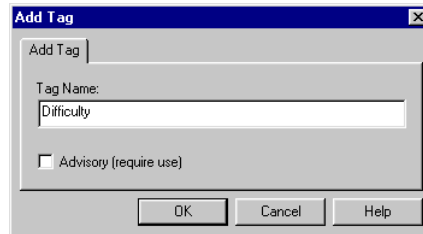
### Tags menu

The following options are available under the *Tag Tool Tags* menu:

- **Add Tag...**  
This option adds a new tag (see 2.9.2 *Adding a Tag* below)
- **Add Value...**  
This option adds a new tag value to an existing tag (see 2.9.3 *Adding a Tag Value to a Tag* below)
- **Delete...**  
This option deletes a tag (see 2.9.4 *Deleting a Tag* below) or a tag value (see 2.9.5 *Deleting a Tag Value* below)

## 2.9.2 Adding a Tag

To add a new tag, choose **Tags | Add Tag...** from the *Tag Tool*:

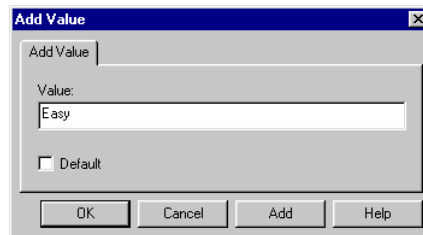


**Figure 78** *Adding a New Tag*

Type in the **Tag Name**, and tick the **Advisory** box if you wish the tag to be mandatory.

Every new question that is created after an advisory tag is defined must have a tag value assigned to it.

Click **OK** to define the tag:

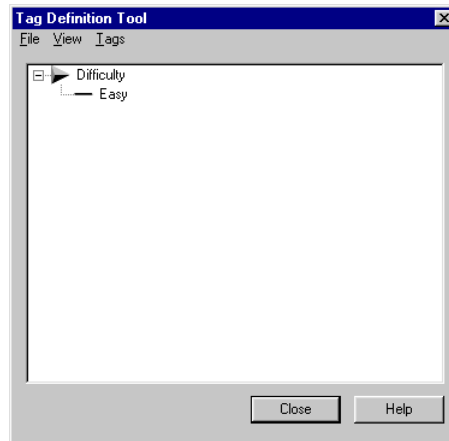


**Figure 79** *Adding the first Tag Value to a Tag*

If you do not wish to create any values for your new tag at this stage, click **Cancel**. You can add tag values later (see 2.9.3 *Adding a Tag Value to a Tag* below).

To create a tag value for your new tag, enter it under **Value** and tick **Default** if you wish it to be assigned by default when the tag is selected for use in a question.

Now click **OK**:

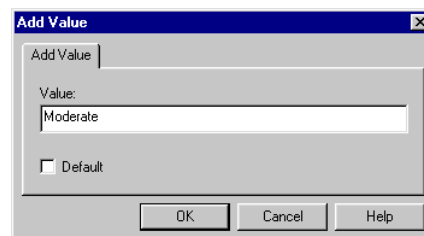


**Figure 80** *Tag with single Tag Value*

The new tag **Difficulty** with a single tag value **Easy** has been created.

### 2.9.3 Adding a Tag Value to a Tag

To add a new tag value to a tag highlight the tag and choose **Tags | Add Value...** from the *Tag Tool*:



**Figure 81** *Adding a Tag Value to a Tag*

To create a new tag value for the tag, enter it under **Value** and tick **Default** if you wish it to be assigned by default when questions are created.

Click **OK** to add this new tag value.

### 2.9.4 Deleting a Tag

To delete a tag, highlight it in the *Tag Tool* and choose **T**ags | **D**elete....

You will see a message asking you to confirm the deletion.

Click **OK** to delete the tag.

Note that you cannot delete a tag that is being used by any question in the question database.

### 2.9.5 Deleting a Tag Value

To delete a tag value, you must have the tag that it belongs to expanded. Highlight it in the *Tag Tool* and choose **T**ags | **D**elete....

You will see a message asking you to confirm the deletion.

Click **OK** to delete the tag value.

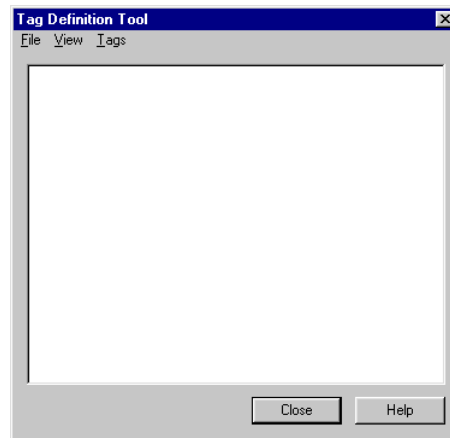
Note that you cannot delete a tag value that is being used by any question in the question database.



## 2.9.6 Importing Tags

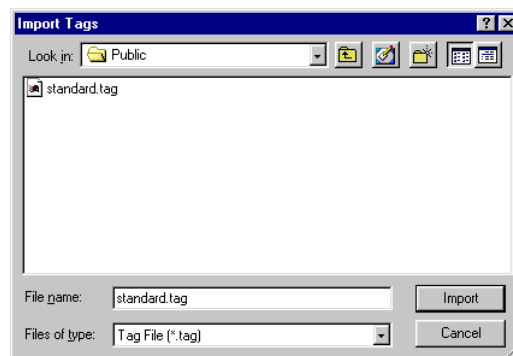
You can include previously exported tags from an external (.tag) file with the **File | Import Tags...** option in the *Tag Tool*.

Suppose that no tags are defined in a question database:



**Figure 82** *The Tag Tool Window*

If you now choose **File | Import Tags...**:



**Figure 83** *Selecting Tag File for Importing*

If you select the an external (.tag) file and click **OK**:

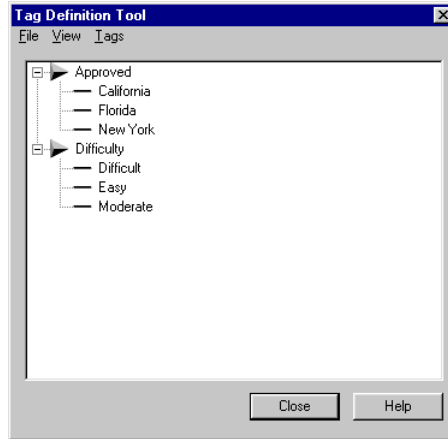


Figure 84 Imported Tags and Tag Values

The tags stored in the file **standard.tag** have been successfully imported.

You can import more tags provided that their names do not clash with existing ones.

### 2.9.7 Exporting Tags

You can save all the tags and tag values that you have created into an external (**.tag**) file with the **File | Export All Tags....** option in the *Tag Tool*. If the tags shown below are defined in a question database:

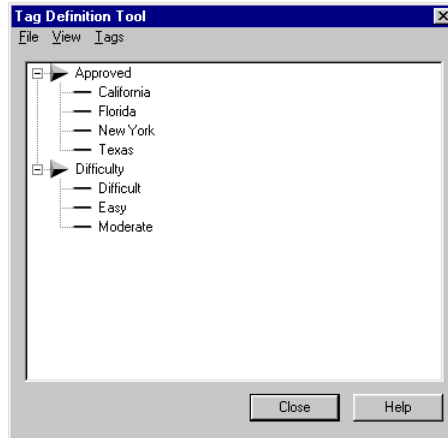
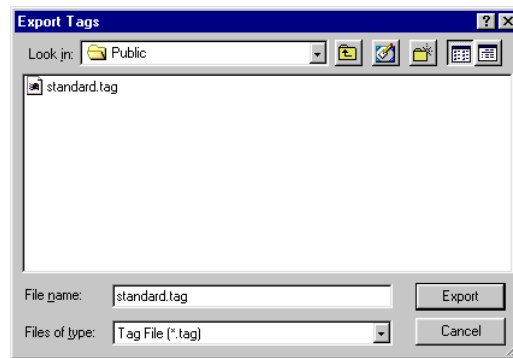


Figure 85 Tags and Tag Values

You can now choose **File | Export All Tags...**:



**Figure 86** *Selecting Tag File for Exporting*

If you select the an external (.tag) file and click **OK**:



**Figure 87** *Confirmation of Tag Export*

Click **OK** to return to the *Tag Tool*.

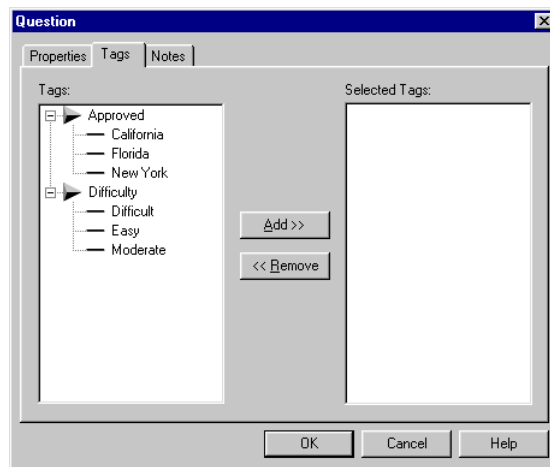
## 2.9.8 Tagging Questions

When you have defined your tags and tag values, you can configure *Question Manager* to prompt the author for tags and tag values to be added to a question when it is created with the *Question Wizard* (see 3 *The Question Wizard* below).

You can also add tags to questions with the *Question Editor* (see 4.1.3 *Applying question tags* below).

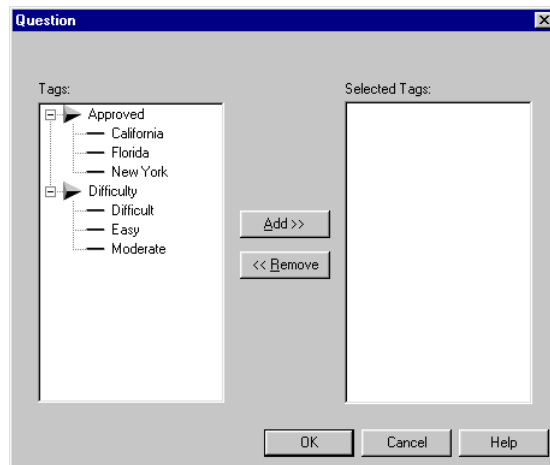
The basic method of adding tags to questions is outlined below.

If you are using the *Question Wizard* you will see *Figure 88* below when you begin adding tags to a question:



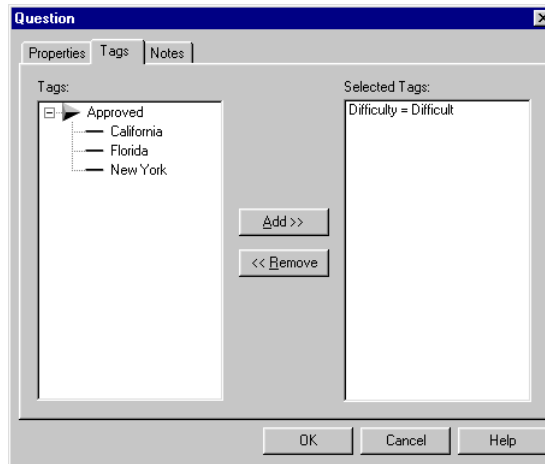
**Figure 88** Tags and Tag Values Available for Adding to Questions (with Question Wizard)

If you are using the *Question Editor* you will see *Figure 89* below when you begin adding tags to a question:



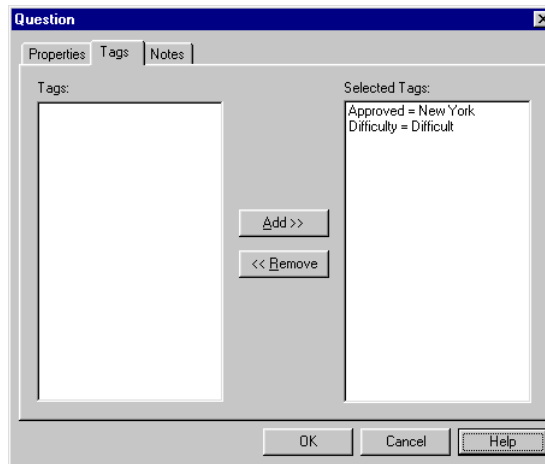
**Figure 89** Tags and Tag Values Available for Adding to Questions (with Question Editor)

If you now highlight the tag value **Difficult** under the tag **Difficulty** and click **Add>>**:



**Figure 90** Single Tag and Tag Value added to a Question

If you now highlight the tag value **New York** under the tag **Approved** and click **Add>>**:



**Figure 91** All Tags, each with a Tag Value, added to a Question

To remove any tag and tag values that are included in the question, highlight them in the right hand pane under **Selected Tags** and click **<< Remove**.

Tag equations are used to select questions according to their tags and tag values in *Assessment Manager*. This is described in Part 4: 2.10.4 *Selecting tagged questions from a topic or subtopic*.

### 2.10 Spell checking questions

It is possible to spell check the entire database, a selected topic or selected questions. All three options are found on the **Tools** menu under the **Spell Check** item.

There is also a **Spell Check** tab on the **Options Settings** dialog, which lets you define which elements of a question you would like to ignore (for example, **Ignore words with numbers**) – see 2.11.3 *Spell Check tab* for more details.

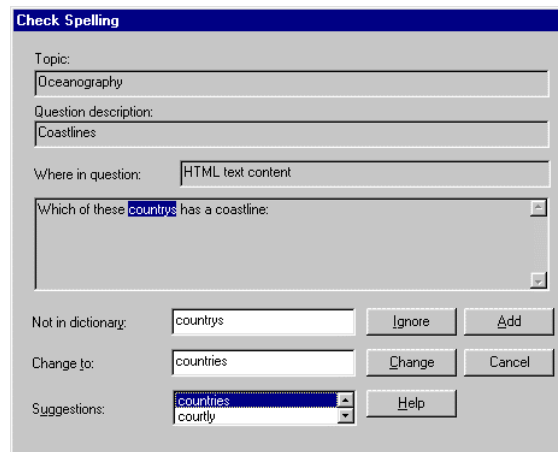


Figure 92 *Spell Checking Questions*

Each element of a question is passed in to the spell checker individually. The dictionary used is the one defined in the **Options Settings** dialog. You can set the language of the dictionary. The default is American English (**US English**), but **UK English** and other languages can easily be selected. If a word is not found in the dictionary then it is highlighted as shown above and a suggestion is offered. You can click the **Ignore** button for any errors highlighted which are in fact correctly spelt. If a word is used a lot within your organization then you can click **Add** to insert it in to your customized dictionary. Or you can click **Change** to use the suggestion offered.

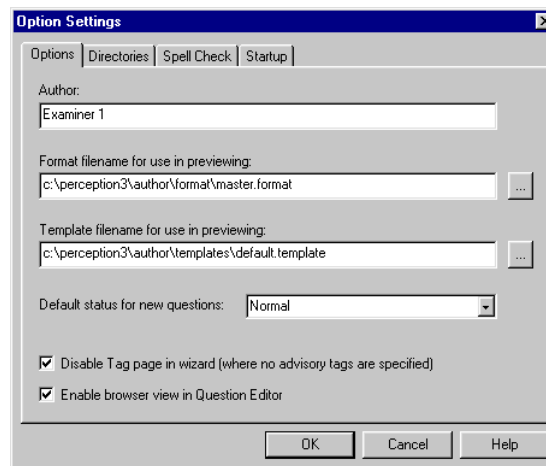
## 2.11 Option Settings dialog

The option settings for *Question Manager* are:

- **Main options**  
These options specify the default author name, question status, formatting, tag handling and browser setting for all new questions created in *Question Manager* (see 2.11.1 *Options tab* below)
- **Directories**  
These options define the directories that contain the graphics, multimedia, hotspot and Java files for all new questions created in *Question Manager* (see 2.11.2 *Directories tab* below)
- **Spell Check options**  
These options control how the spell checker works within *Question Manager* (see 2.11.3 *Spell Check tab* below).
- **Startup options**  
These options specify what *Question Manager* does when it starts (see 2.11.4 *Startup tab* below).

### 2.11.1 Options tab

To access the main option settings for *Question Manager*, choose **Tools | Options...** and click the **Options** tab:



**Figure 93** Setting *Question Manager*'s Main Options

You can now specify the name of the **Author**, the format and template files used for previewing.

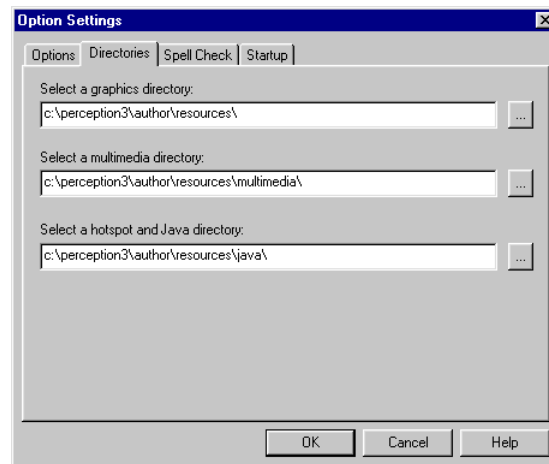
The **Default status for new questions** enables you to define which question status (see 1.8 *Question status indicator*) is assigned to newly created questions.

If you do not wish authors using the *Question Wizard* to be prompted for question tags, tick **Disable Tag page in Wizard**. Note that this does not apply to advisory tags.

If you wish authors using the *Question Editor* to see the browser view, tick **Disable browser view in Question Editor**.

### 2.11.2 Directories tab

To access the directory option settings for *Question Manager*, choose **Tools | Options...** and click the **Directories** tab:



**Figure 94** Setting *Question Manager*'s Directory Options

The **Directories** tab of the **Option Settings** dialog allows you to set the graphics, multimedia, hotspot and Java directories. The directories you enter here are where your graphics, multimedia and Java files, referenced in your questions, will be stored. These directories are important during publishing. *Assessment Manager* reads these directories and copies all resources referenced in the questions within the assessment being published. (See chapter 2 *Assessment Manager* for more details.)

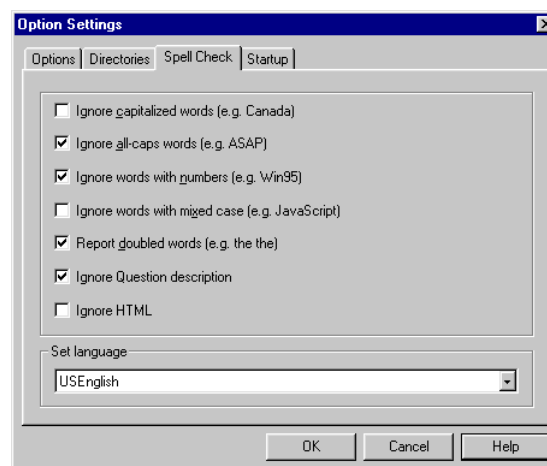


These directories are also the same directories that are used when the **Check Graphics** or **Check Multimedia** options are used from the **Tools** menu. (See 2.4.6 *Tools menu* for more details.)

These values are all saved in the file **Question Manager V3.ini**, which resides in your Windows directory.

### 2.11.3 Spell Check tab

To access the spell check option settings for *Question Manager*, choose **T**ools | **O**ptions... and click the **Spell Check** tab:



**Figure 95** Setting *Question Manager*'s Spell Checking Options

The **Spell Check** tab allows you to set the language that you spell check your questions with. It also allows you to choose to ignore certain words or elements within your questions. This is useful when you have particular questions containing words or characters, which will not spell check correctly.

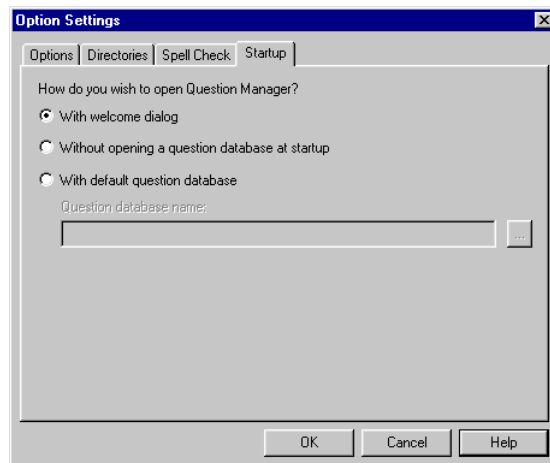
For example, if you have many proper names in your questions then you might like to select **Ignore capitalized words**. Or if you have many abbreviations in your question's text then selecting the **Ignore all-caps** words box will not spell check these words. By selecting **Ignore words with numbers** the spell checker will skip words such as zip or post codes. **Ignore words with mixed case** might be useful if the question is about one of the technologies such as ActiveX or JavaScript. However, it might be useful to report typos such as "pErception". **Report double words** is also useful for catching typos. Smaller words such as "of" or "to" are very easily typed twice by mistake.

The **Question description** is usually taken from the question wording. If you are spell checking questions which have had their descriptions auto-generated in this way then it would be better to not select **Ignore Question description**. However, if you have edited the descriptions yourself and are happy with them then you can safely select this option. It is important to remember that the question's description is used to identify the question when reporting.

You can also select to **Ignore HTML**. HTML content usually contains many tags such as **<br>**, which represents a new line. Selecting this option will ignore all HTML content inserted in the Question Editor, including HTML choices and feedback.

### 2.11.4 Startup tab

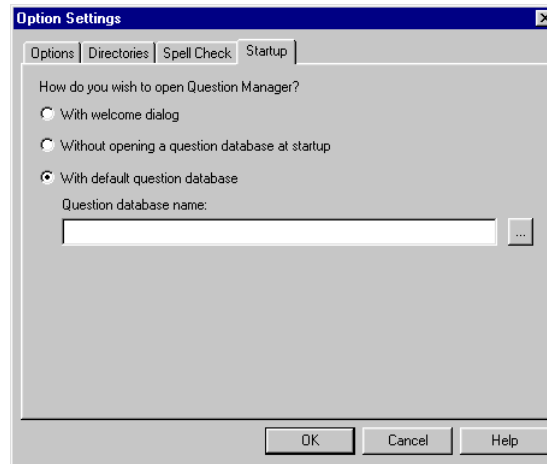
To access the startup option settings for *Question Manager*, choose **Tools | Options...** and click the **Startup** tab:



**Figure 96** Setting *Question Manager*'s Startup Options (Continued...)

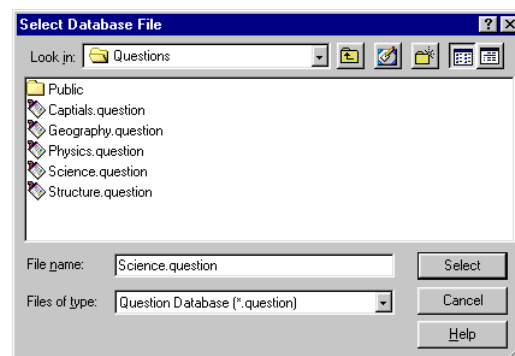
By selecting the **With welcome dialog** button you get three options when *Question Manager* starts: **Open an existing question database**, **Make a new question database** and **Open last question database**. The last database opened is also displayed.

If you select **With default question database**:



**Figure 97** *Setting Question Manager's Startup Options (...Continued...)*

You can now click the browse button to specify the question database that will be opened by default every time *Question Manager* is started:



**Figure 98** *Setting Question Manager's Startup Options (...Continued)*

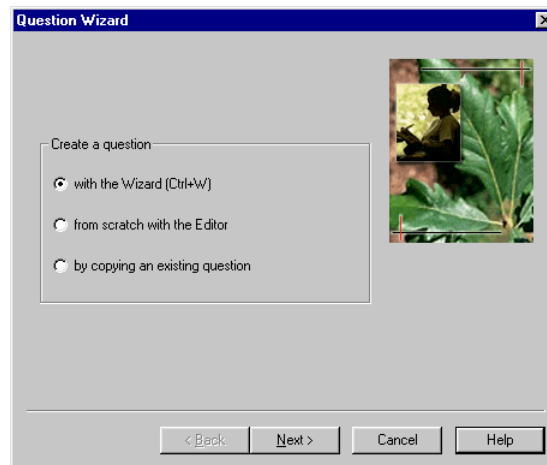


## 3 The Question Wizard

### 3.1 Opening the Question Wizard

The *Question Wizard* is the easiest and quickest way to construct questions with *Question Manager*. It provides a number of standard question formats. For a more versatile method of creating and editing questions in *Question Manager*, see chapter 4 *The Question Editor*.

To access the *Question Wizard*, select the **Questions | Add Question...** command, press **Ctrl+Q** or click the **Add Question** icon. The *Question Wizard* will appear. Alternatively, you can select **Ctrl+W** to enter the Wizard directly:



**Figure 99** Starting the *Question Wizard*

In the dialog box, select to **Create a question with the Wizard** and click on **Next>**:

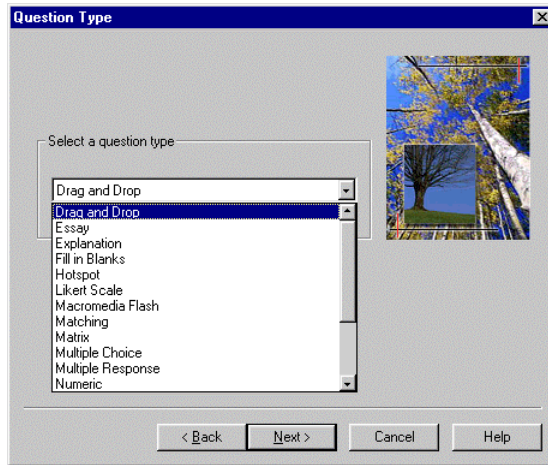


Figure 100 The Question Wizard: Question Type

The wizard types you can choose from are described in 3.2 *Question Wizard Types* below.

Select a wizard type in the **Question Type** dialog box and select **Next>**. This will call the **Question Text** dialog box:

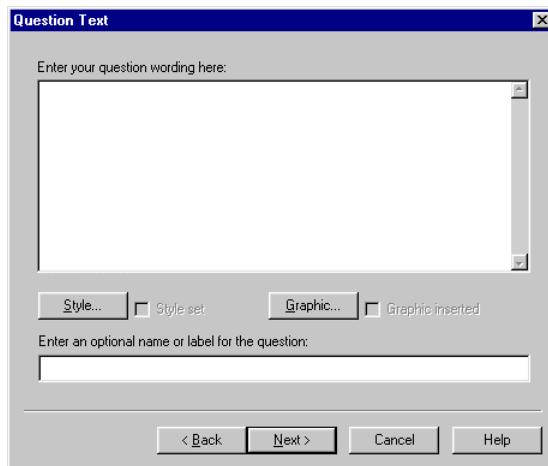


Figure 101 The Question Wizard: Question Text

Enter your question wording in the upper box.

The Wizard offers a range of different text styles for your question. To choose a text style, click on **Style...** and select a style from the drop-down list (for more information see 3.21 *Using the Set Style dialog box*).

When a style is set, the **Set style** check box will be ticked. To remove the style, simply deselect the check box **Set style**, and the style will be removed after a prompt for confirmation.

Advanced users can define styles in the **style.format** file.

The Wizard also enables you to incorporate graphics into your question by clicking on **Graphic...** (see 3.22 *Adding graphics to a question*).

When a graphic is inserted, the **Graphic inserted** check box will be ticked. To remove the graphic, simply deselect the check box **Graphic inserted**, and the graphic inserted will be removed after a prompt for confirmation.

The **Question Text** dialog box also gives you the option of adding a description or label to the question by adding text to the small text box. If you don't set your own description, the Wizard will make one for you from your question wording.

The screens that you now see depends on the wizard type that you selected in *Figure 100* above.

## 3.2 Question Wizard Types

*Question Wizard* provides ten question types to select from:

- **Drag-and-drop**  
Participants place several graphical markers on the background graphic to indicate their answers (these are the “hot” areas).
- **Essay**  
An essay question enables a long, free-range text to be submitted as the answer to a question. They are scored outside *Perception*.
- **Explanation**  
An explanation question is a screen of text and/or graphics with a button the user presses to continue. Such questions are not marked (that is, they get zero points).

- **Fill in Blanks**

A fill in blanks question contains text with entry fields for words, which are missing. One or more blanks may be defined.

A hotspot question is a **drag and drop** question with only one “hot” area. The participant places a single marker on an image to indicate the answer.

- **Likert scale**

A Likert scale question is a **multiple choice** question that asks the user to assign an option from a set of either 3, 4 or 5 possibilities to a question.

- **Macromedia Flash**

A Macromedia® Flash™ question enables you to use a Flash™ object. This object presents a question to the participant and returns the answer to *Perception*.

- **Matching**

Matching questions offer the participant a drop-down list of possible responses to a question.

- **Matrix**

Matrix questions are logically similar to **pull-down list** questions in that they allow the participant to choose one option from a list of choices. However, in a matrix question the choices are presented with option buttons and selection questions use a drop-down menu.

- **Multiple choice**

In a multiple choice question the participant selects a single choice from a number of choices to answer the question. The participant must select a single choice as the answer.

- **Multiple response**

A multiple response question is like a multiple choice, except that instead of being required to make one (and only one) choice, the user is allowed to make none, or more than one choice.

- **Numeric**

In a numeric question, the user answers by typing in either a whole number or a real number. Answers can be defined within a specified range, with scores being assigned for accuracy.



- **Pull-down list**

These questions enable you to present a series of items for a number of choices available in a drop-down menu. The user can select from the items for each choice. This question can be used as a multiple statement question, for “True” or “False” questions or to present several multiple choice questions on the same screen.

- **Ranking**

Ranking questions require the participant to place a list of options in an order.

- **Select a blank**

A select a blank question invites the participant to choose the correct word or phrase from a drop down list that corresponds to a blank area of text.

- **Text match**

A text match question is answered by typing some text in to an entry field. This can be anything from a single word to several lines.

- **True/False**

A True/False question is a **multiple choice** question that asks the user to give a “True” or “False” answer to a question.

- **Yes/No**

A Yes/No question is a **multiple choice** question that asks the user to give a “Yes” or “No” answer to a question.

## The Question Wizard

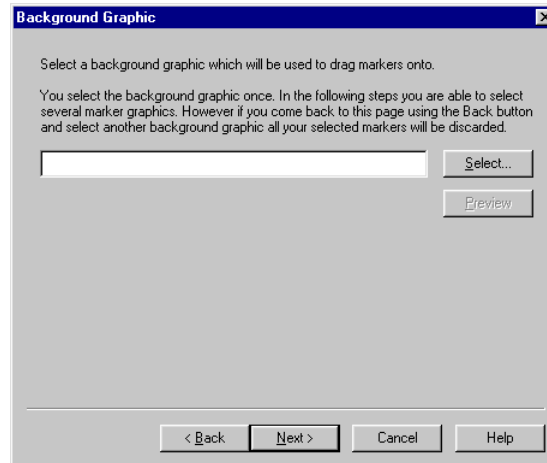
---

These Question Wizards create questions of the following question types (see 1.2 *Question types* above):

<b>Question Wizard</b>	<b>QuestionType</b>
<b>Drag-and-drop</b>	Drag and drop
<b>Essay</b>	Essay
<b>Explanation</b>	Explanation
<b>Fill in Blanks</b>	Fill in blanks
<b>Hotspot</b>	Drag and drop
<b>Likert scale</b>	Multiple choice
<b>Macromedia Flash</b>	Macromedia Flash
<b>Matching</b>	Matching
<b>Matrix</b>	Matrix
<b>Multiple Choice</b>	Multiple choice
<b>Multiple Response</b>	Multiple response
<b>Numeric</b>	Numeric
<b>Pull-down list</b>	Pull-down list
<b>Ranking</b>	Ranking
<b>Select a blank</b>	Select a blank
<b>Text Match</b>	Text match
<b>True/False</b>	Multiple choice
<b>Yes/No</b>	Multiple choice

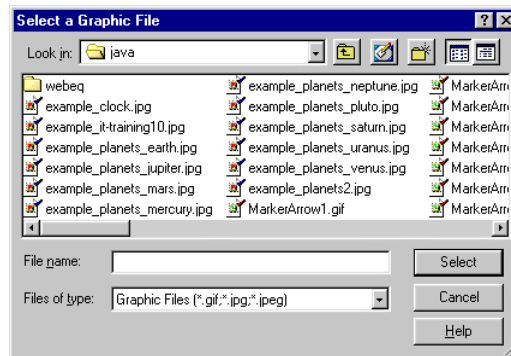
### 3.3 Creating a drag-and-drop question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify a graphic that will act as a “background”. Participants will drag and drop other marker graphics on to this background to indicate their answers:



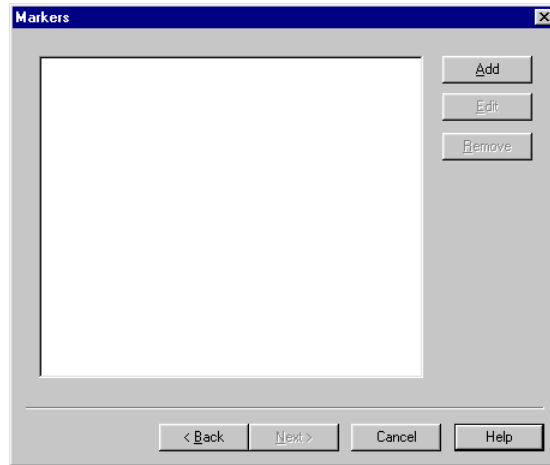
**Figure 102** Drag and Drop Wizard: Background Graphic

To choose a background graphic, click **Select**:



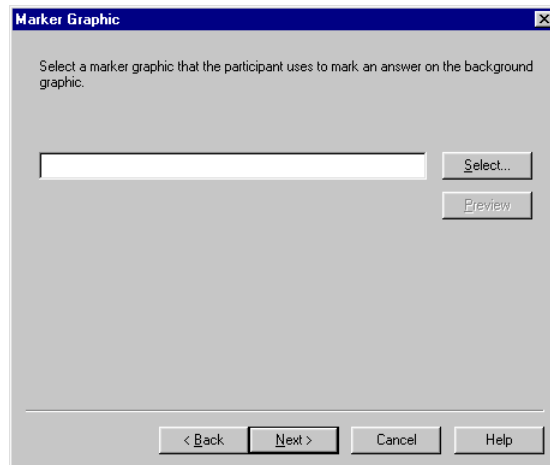
**Figure 103** Drag and Drop Wizard: Background Graphic Selection

Locate and highlight the file that contains the background graphic that you wish to use, and click **Select**:



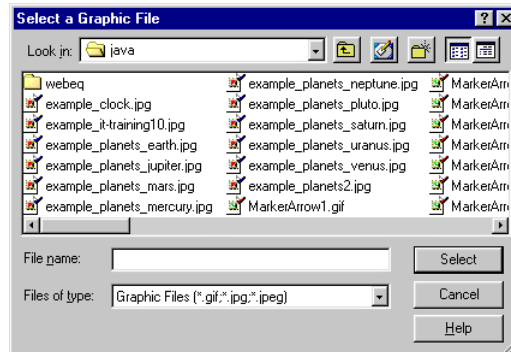
**Figure 104** *Drag and Drop Wizard: Marker Graphic*

You can now choose one or more marker graphics that the participant will drag and drop on the background graphic. To do this, click **Add**:



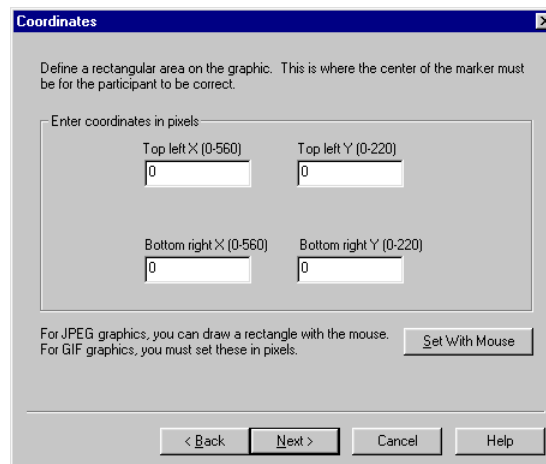
**Figure 105** *Drag and Drop Wizard: Add Marker Graphic*

To choose a marker graphic, click **Select**:



**Figure 106** Drag and Drop Wizard: Marker Graphic Selection

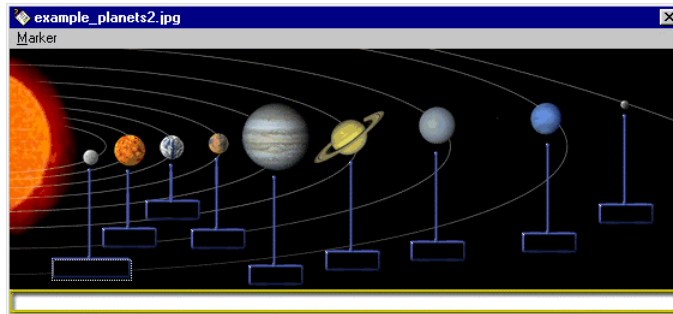
Locate and highlight a file that contains the marker graphic that you wish to use, and click **Select**:



**Figure 107** Drag and Drop Wizard: “Hotspot” Location

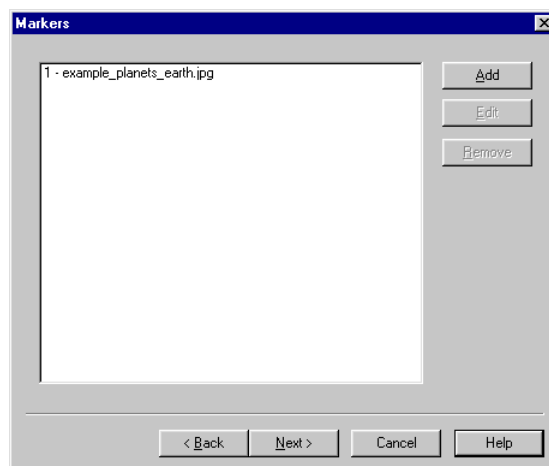
You must define the “hot” area on the background graphic that the participant must drop the marker graphic on to. To do this, either enter the co-ordinates or click **Set With Mouse**.

You can only use the **Set With Mouse** with **.gif** files. If you choose this method:



**Figure 108** *Drag and Drop Wizard: Mouse Selection of “Hotspots”*

Click the left-mouse down to start your selection and drag it whilst keeping it down to complete the selection area. Use the menu option **Marker | Save and Exit** to save your coordinates to the dialog above:



**Figure 109** *Drag and Drop Wizard: Selected Marker Graphic*

To add another marker, click **Add** again.

When you have added all your markers, click **Next>**.

**Figure 110** Drag and Drop Wizard: Scores

If you wish to set only one score that is awarded when all the markers are placed correctly, choose the **Score for all markers correct** option and enter the score in the box underneath.

Alternatively, you can set a score for each marker being placed correctly by choosing the **Score each markers individually** option, highlight each marker in turn, enter its score and click **Set**. Click **Next>** when you have defined your scores:

**Figure 111** Drag and Drop Wizard: Feedback

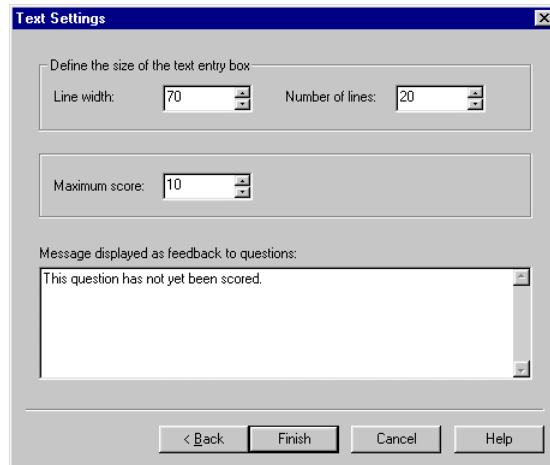
You can now enter some feedback.

You can add some more specific feedback with the *Question Editor* (see 4.7.1 *Constructing outcomes for drag and drop questions*).

Click on **Finish** to create your drag and drop question.

### 3.4 Creating an essay question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the dimensions of the box in which the participant will type their essay:



The screenshot shows a dialog box titled "Text Settings" with a close button in the top right corner. The dialog is divided into three main sections. The first section, "Define the size of the text entry box", contains two spinners: "Line width" set to 70 and "Number of lines" set to 20. The second section, "Maximum score:", has a spinner set to 10. The third section, "Message displayed as feedback to questions:", contains a text area with the text "This question has not yet been scored." At the bottom of the dialog are four buttons: "< Back", "Finish", "Cancel", and "Help".

**Figure 112** *Essay Wizard: Text Settings*

You can enter the **Line width** and the **Number of lines** for the text box.

You can also set a **Maximum score** for the essay.

When you have entered this information, click on **Finish** to create your essay question.

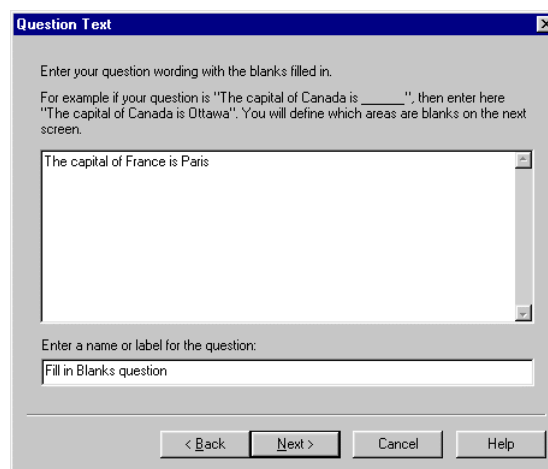


### 3.5 Creating an explanation question using the Wizard

The **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) is the only screen you see with this Wizard. The text you enter will be used as an explanatory text in an assessment.

### 3.6 Creating a fill in blanks question using the Wizard

The fill in blanks Wizard has its own **Question Text** dialog box:



**Figure 113** *Fill in Blanks Wizard: Question Rubric*

A fill in blanks question invites the participant to insert words in areas of the question wording where the words are missing. The blanks are shown as text entry boxes when the question is displayed in a web browser or in *Presenter*.

A fill in blanks question uses the default label **Fill in Blanks question**. It is recommended that you change this to a more meaningful label whenever you create a fill in blanks question.

When you have entered the question wording, click **Next>**:

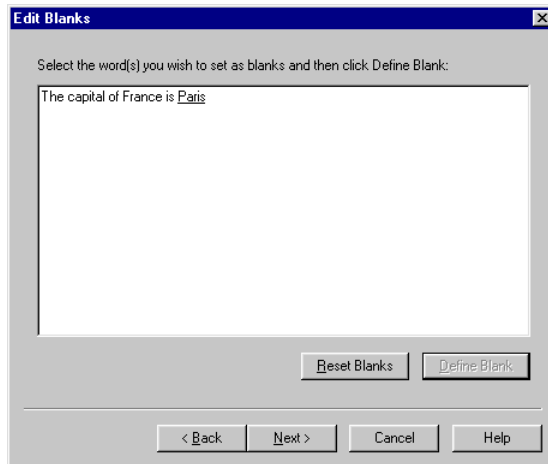


Figure 114 Fill in Blanks Wizard: Selecting Blanks

To indicate the blank areas, highlight them with the mouse and then click **Define Blank**.

If you make a mistake you can start again by clicking the **Reset Blanks** button. Selecting this option removes all previously defined blanks and not just the last one.

When you have done this, click **Next>**:

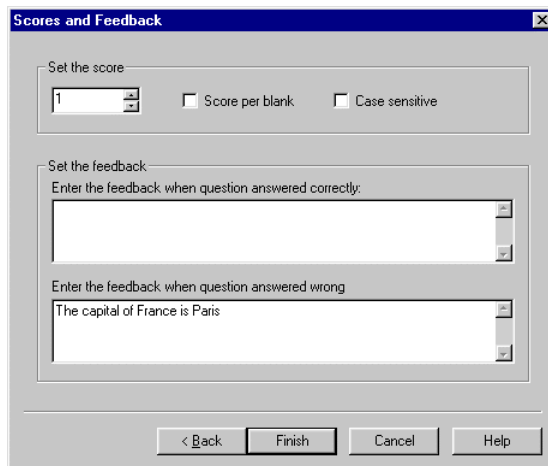


Figure 115 Fill in Blanks Wizard: Scores and Feedback

You can now enter the scores and feedback.

By default the question wording is supplied as the feedback when the question has been answered incorrectly. You can also add feedback for when the question is answered correctly.

If more than one blank has been defined then you can either set to **Score per blank** or set one score if all the blanks are answered correctly. If you select to **Score per blank** then each gap gets the same score.

If you do not select to **Score per blank** then the score you set will only be given if all blanks are answered correctly.

You can also select **Case sensitive** to make letter case significant when scoring the answers.

### 3.7 Creating a hotspot question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify a graphic that will act as a “background”. Participants will move a marker graphic on to this background to indicate their answer:

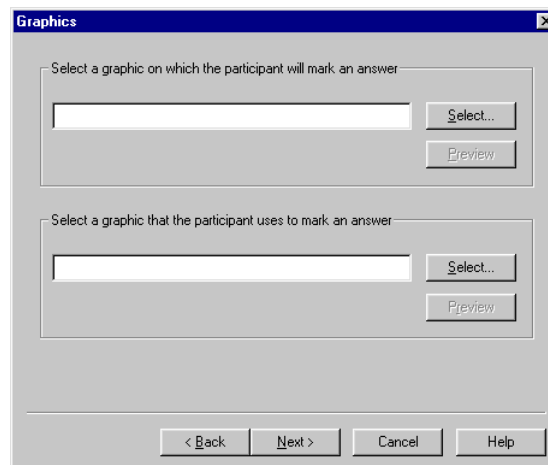


Figure 116 Hotspot Wizard: Graphics

To choose a background graphic, click the upper **Select**:

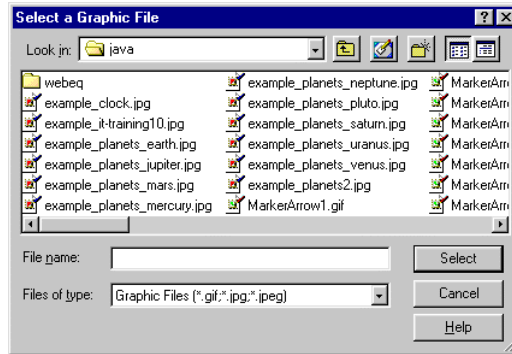


Figure 117 Hotspot Wizard: Select Graphic File

Locate and highlight a file that contains the background graphic that you wish to use, and click **Select**:

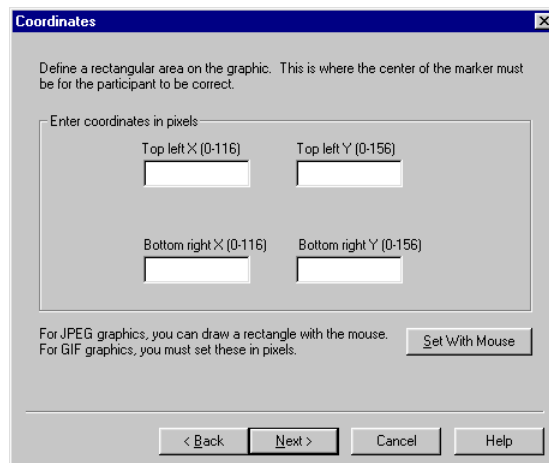
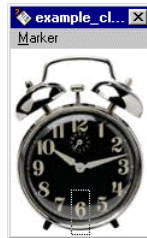


Figure 118 Hotspot Wizard: “Hotspot” Location

You must define the “hot” area on the background graphic that the participant must drop the marker graphic on to. To do this, either enter the co-ordinates or click **Set With Mouse**.

You can only use the **Set With Mouse** with **.gif** files. If you choose this method:



**Figure 119** *Hotspot Wizard: Mouse Selection of “Hotspot”*

Click the left-mouse down to start your selection and drag it whilst keeping it down to complete the selection area. Use the menu option **Marker | Save and Exit** to save your coordinates to the dialog above.

Click the lower **Select** on *Figure 116* to choose the marker graphic, and then click **Next>**:

 A screenshot of a 'Feedback' dialog box. It contains a section 'Set the score for answering correctly' with a text box containing the number '1'. Below this is a section 'Set the feedback' with two text boxes: 'Enter the feedback when question answered correctly:' and 'Enter the feedback when question answered wrong:'. At the bottom are four buttons: '< Back', 'Finish', 'Cancel', and 'Help'.

**Figure 120** *Hotspot Wizard: Feedback*

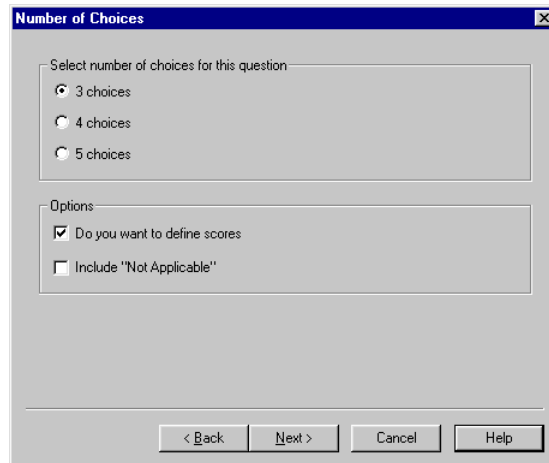
You can now enter some feedback.

Click on **Finish** to create your hotspot question.

You can also use the drag and drop Wizard (see 3.3 *Creating a drag-and-drop question using the Wizard* above) to create graphical questions that use several markers on a single background.

### 3.8 Creating a Likert scale question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the number of choices that the participant will be offered:



**Figure 121** *Likert Scale Wizard: Select Number of Choices*

You can select either **3**, **4** or **5** choices to be presented to the participant.

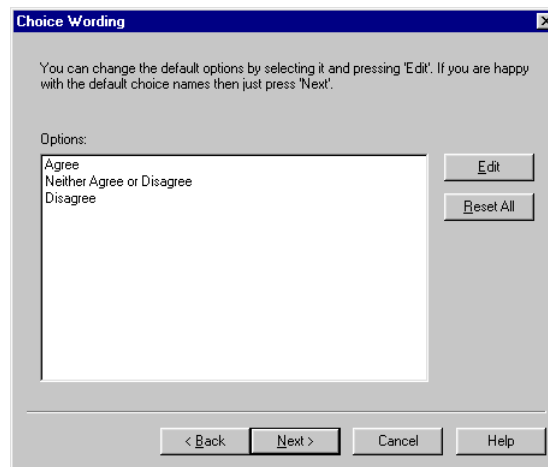
To assign scores to the answers, tick **Do you want to define scores**.

You can also tick **Include “Not Applicable”** to add an extra “Not Applicable” choice.

Click **Next>** when you have set your Likert Scale choices up and you will see *Figure 122* below.

By default, Likert Scale choices are worded as follows:

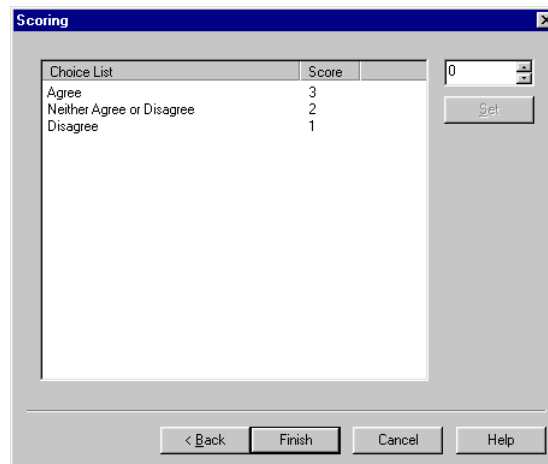
<b>3 Choices</b>	<b>4 Choices</b>	<b>5 Choices</b>
<b>Agree</b>	<b>Strongly Agree</b>	<b>Strongly Agree</b>
<b>Neither Agree or Disagree</b>	<b>Agree</b>	<b>Agree</b>
<b>Disagree</b>	<b>Disagree</b>	<b>Neither Agree or Disagree</b>
	<b>Strongly Disagree</b>	<b>Disagree</b>
		<b>Strongly Disagree</b>



**Figure 122** *Likert Scale Wizard: Select Wording for Choices*

To change the wording of a choice, highlight it with the mouse and click **Edit**.

Click **Next>** when you have specified your choice wording:



**Figure 123** *Likert Scale Wizard: Select Scoring for Choices*

If you asked to assign scores, you can now do so.

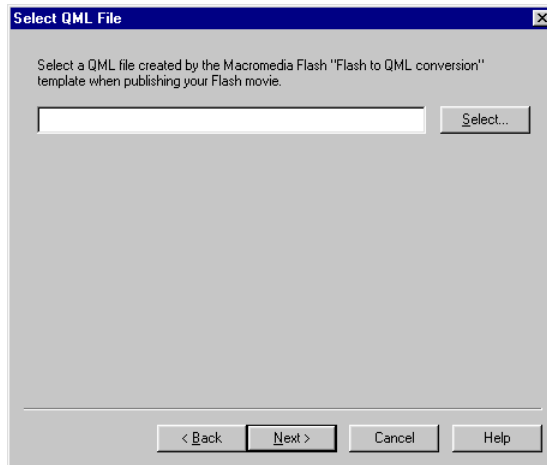
By default, Likert Scale choices are scored as follows:

Choice	Number of Choices		
	3	4	5
Strongly Agree		4	5
Agree	3	3	4
Neither Agree or Disagree	2		3
Disagree	1	2	2
Strongly Disagree		1	1
Not Applicable	0	0	0

Click on **Finish** to create your Likert Scale question.

### 3.9 Creating a Macromedia® Flash™ question using the Wizard

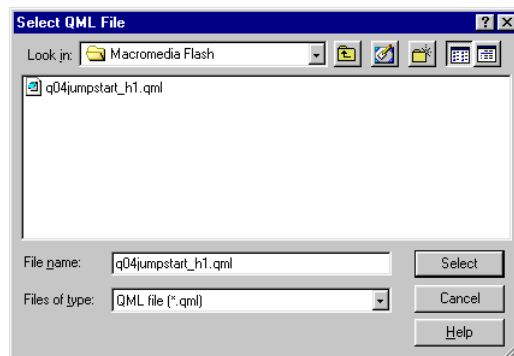
After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to select a QML file that is required for creating a Macromedia Flash question. This QML file is generated from the Macromedia software:



**Figure 124** *Macromedia Flash Wizard: QML File*

To choose the QML file, click **Select**:



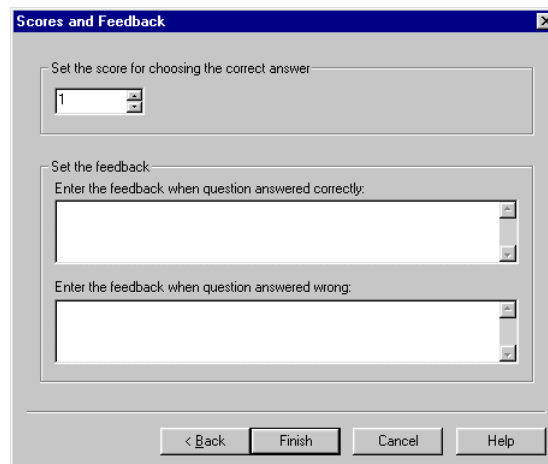


**Figure 125** *Macromedia Flash Wizard: Select QML File*

To create a Macromedia Flash question, you must have two files of the same file name (excluding the file extension) available in the same folder:

- A Macromedia® Flash™ Object with the file extension **.swf**
- A QML file with the file extension **.qml**, published from Macromedia® Flash™ using the **Flash to QML** template

Locate and highlight the QML file you require and click **Select**:



**Figure 126** *Macromedia Flash Wizard: Scores and Feedback*

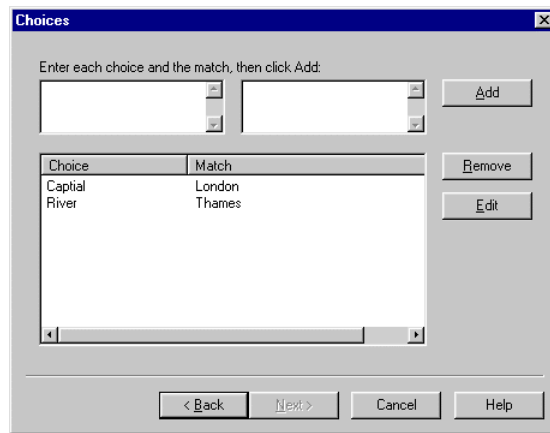
You can now enter the scores and feedback. Click on **Finish** to create your Macromedia Flash question.

For further information on creating Flash questions, see the *Perception* support site at:

<http://www.questionmark.com/perception/help/>

### 3.10 Creating a matching question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the question choices:



**Figure 127** *Matching Wizard: Create Choices*

Enter a choice in the upper left box and its corresponding match in the upper right box and click **Add** to include it in the question. Click **Next>** when you have created your question choices:

The screenshot shows a dialog box titled "Scores and Feedback". It has a title bar with a close button (X). The dialog is divided into two main sections. The first section is titled "Set the score for choosing the correct answer" and contains a spin box with the value "1" and an unchecked checkbox labeled "Score per match". The second section is titled "Set the feedback" and contains two text input fields. The first field is labeled "Enter the feedback when question answered correctly:" and the second is labeled "Enter the feedback when question answered wrong:". At the bottom of the dialog, there are four buttons: "< Back", "Finish", "Cancel", and "Help".

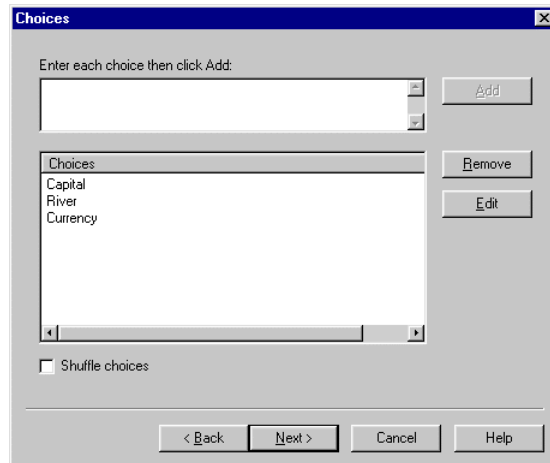
**Figure 128** *Matching Wizard: Scores and Feedback*

You can now enter the scores and feedback.

Click on **Finish** to create your Matching question.

### 3.11 Creating a matrix question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the question choices:

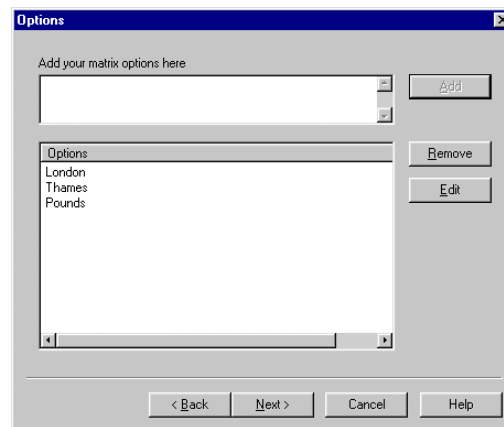


**Figure 129** *Matrix Wizard: Create Choices*

Enter a choice in the upper box and click **Add** to include it in the question. You can enter as many choices as you wish.

If, at any stage, you wish to delete a choice from the list, highlight it and click on the **Remove** button. Or if you wish to alter the text entered then click on the **Edit** button.

Click **Next>** when you have created your question choices:

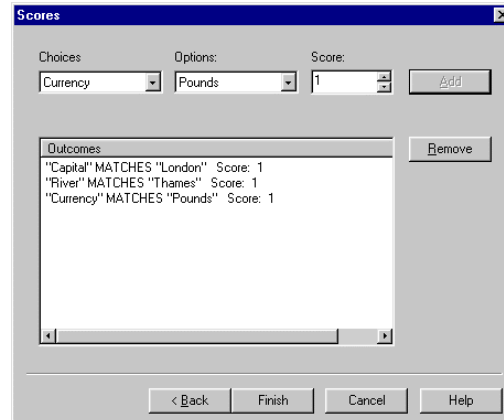


**Figure 130** *Matrix Wizard: Specify Options*

Enter the options that you wish to be available for each of the choices in the upper box and click **Add** to include it in the question.

If, at any stage, you wish to delete an option from the list, highlight it and click on the **Remove** button. Or if you wish to alter the text entered then click on the **Edit** button.

Click **Next>** when you have created your question options:



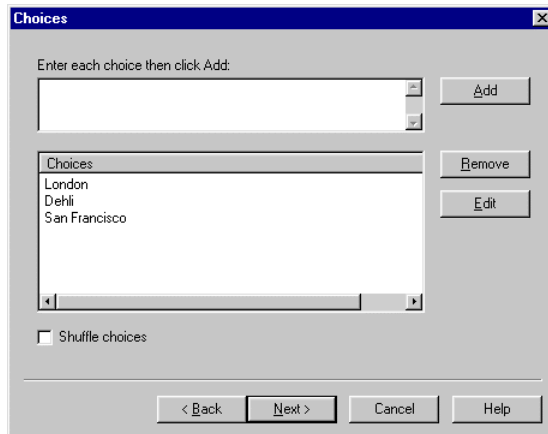
**Figure 131** *Matrix Wizard: Scores*

This screen allows you to define scores for each combination of choice and option.

Click **Finish** to create your Matrix question.

### 3.12 Creating a multiple choice question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the question choices:



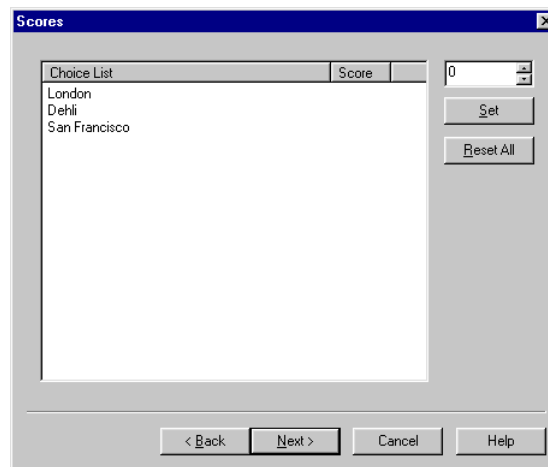
**Figure 132** *Multiple Choice Wizard: Create Choices*

Complete the **Enter each choice then click Add** edit box with an option, clicking **Add** to include it as an answer choice. You can enter as many choices as you wish. If, at any stage, you wish to delete the answer from the list of choices, highlight it and click on the **Remove** button. Or if you wish to alter the text entered then click on the **Edit** button.

The **Choices** dialog box also offers you the option to **Shuffle choices**, simply by selecting the option. By enabling the **Shuffle choices** option, *Question Manager* includes a feature that will change the order of the choices in your question, each time a participant sees the question.

In addition, it is possible to **Select a group of choices as the correct answer**.

Once you have entered your choices, click on **Next**:



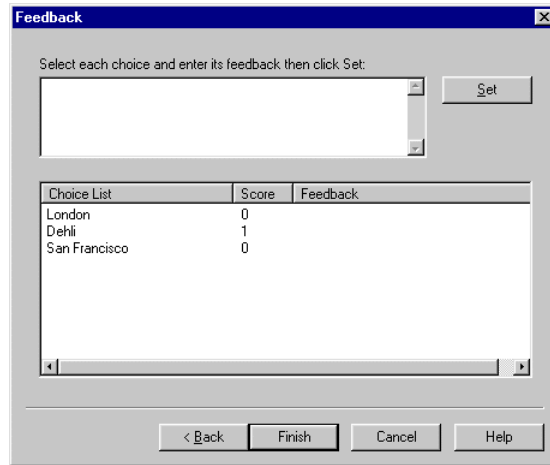
**Figure 133** *Multiple Choice Wizard: Scores*

The **Scores** dialog box enables you to determine a result for each of the designated choices. To set a score, highlight the choice by clicking on it and type the result in the score box or click on the adjacent spin controls. Click **Set** to save the score.

In a multiple-choice question, usually one choice is the correct answer. Therefore, one choice would be given a score of **1**, for example, and the other choices would usually score **0**. However, you can assign varying scores if you choose.

When a participant selects one of the answers, the score and feedback (if any) is given for that choice only. The **Scores** dialog box also enables you to **Reset All** the scores back to zero.

Once you have scored the choices to your satisfaction, click on **Next**:



**Figure 134** *Multiple Choice Wizard: Feedback*

The **Feedback** dialog box is an optional tool that enables you to provide additional information to participants, tailored to the answer they have selected. To create feedback for your question:

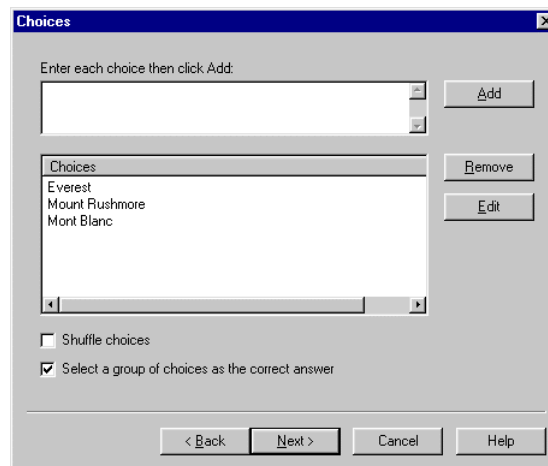
- 1) Select a choice by clicking on it, or multiple choices by using the **Ctrl** key.
- 2) Type in the appropriate feedback for the selected choice and click **Set**. This feedback will be shown to the participant, if the choice is selected.

When you are satisfied with the question and answer construction, click **Finish** to create your multiple choice question.



### 3.13 Creating a multiple response question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the question choices:



**Figure 135** *Multiple Response Wizard: Create Choices*

A multiple response question is similar to a multiple-choice one except that you can select more than one choice as the correct answer. You can select each choice, score it and also apply feedback. However, it is also possible to define a group of choices as the correct answer.

Add your choices in a similar way as described in 3.12 *Creating a multiple choice question using the Wizard* above. You can **Select a group of choices as the correct answer**.

Once you have entered your choices, click on **Next**:

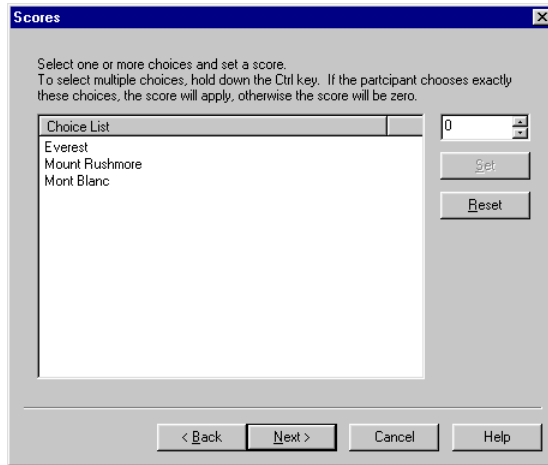


Figure 136 Multiple Response Wizard: Scores

Highlight each of the choices you wish to group and then **Set** a score. Use the **Ctrl** key to select more than one choice. If all of the highlighted choices here are selected by a participant in an assessment then they will be awarded the score defined. If, however, only part of the group defined is selected then they will score **0**.

Click **Next>** when you have set your scores:

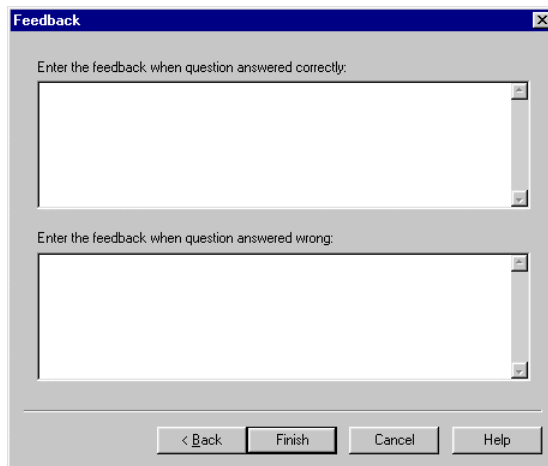


Figure 137 Multiple Response Wizard: Feedback

The final screen when defining a group of choices allows you to enter the feedback that is given to participants when they answer correctly and also the feedback that is given to participants when they answer incorrectly.

If you decide not to define a group then the Wizard works similarly to a multiple choice question (see 3.12 *Creating a multiple choice question using the Wizard* above).

Each choice can be assigned an individual score and feedback. The score for the question is the sum of the scores for the choices selected.

Click **Finish** to create your multiple response question.

### 3.14 Creating a numeric question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify an answer:

**Figure 138** *Numeric Wizard: Define Answer*

You can choose not to score the question by deselecting the **Do you want to define scores** check box.

If you do choose to score it then enter the **Correct answer** to your question. The final box in the Answer dialog box enables you to **Enter a range** within which the participant's answer must fall to be considered correct.

Once you are satisfied with your answer, click **Next>**:

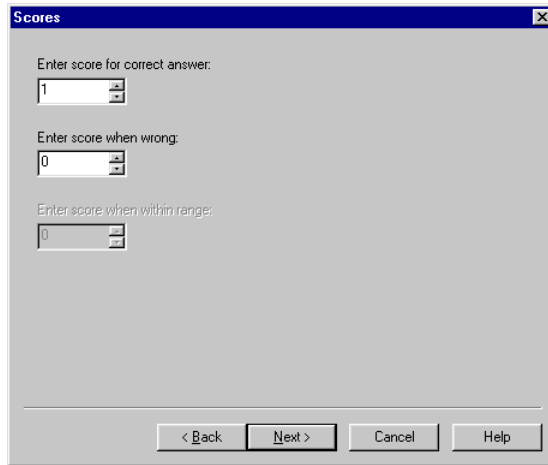


Figure 139 Numeric Wizard: Scores

You can now **Enter score for correct answer** (usually be the highest score) and **Enter score when wrong** (often zero).

If you have entered a numeric range in the **Answer** dialog box, then you must also allocate a score in the **Enter score when within range** box.

Click **Next>** when you have set your scores:

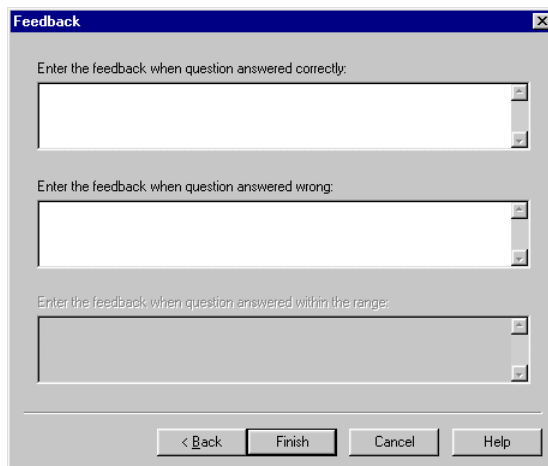


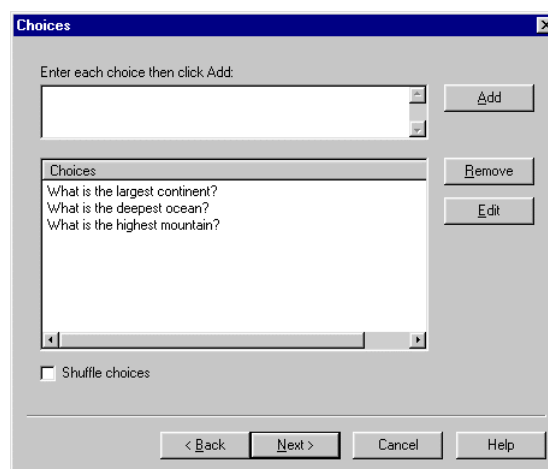
Figure 140 Numeric Wizard: Feedback

You can now enter your feedback.

Click **Finish** to create your numeric question.

### 3.15 Creating a pull-down list question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the question choices:



**Figure 141** *Pull-down List Wizard: Create Choices*

Complete the **Enter each choice then click Add** edit box with an option, clicking **Add** to include it as an answer choice. You can enter as many choices as you wish. If, at any stage, you wish to delete the answer from the list of choices, highlight it and click on the **Remove** button. Or if you wish to alter the text entered then click on the **Edit** button.

The **Choices** dialog box also offers you the option to **Shuffle choices**, simply by selecting the option. By enabling the **Shuffle choices** option, *Question Manager* includes a feature that will change the order of the choices in your question, each time a participant sees the question.

Once you have entered your choices, click on **Next**:

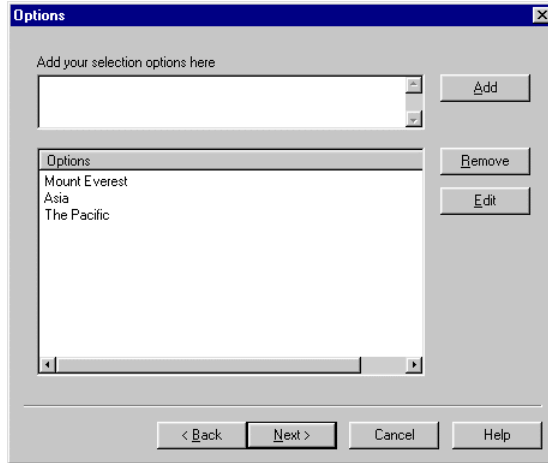


Figure 142 Pull-down List Wizard: Define Options

Complete the **Enter your selection options here** edit box with an option, clicking **Add** to include it as an option.

If, at any stage, you wish to delete the option from the list of options, highlight it and click on the **Remove** button. Or if you wish to alter the text entered then click on the **Edit** button.

Click **Next>** when you have specified your options:

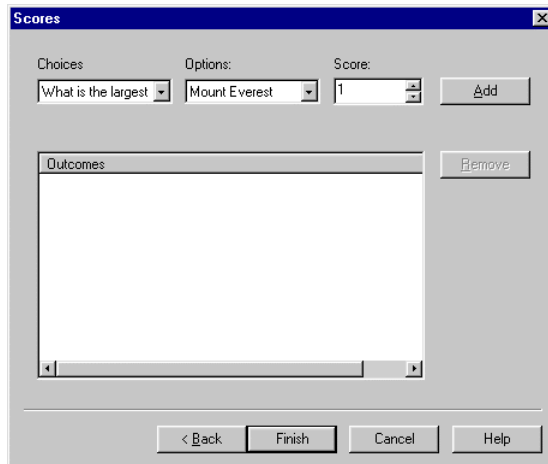


Figure 143 Pull-down List Wizard: Scores

You can select combinations of **Choices** and **Options** from the drop down lists to form **Outcomes**.

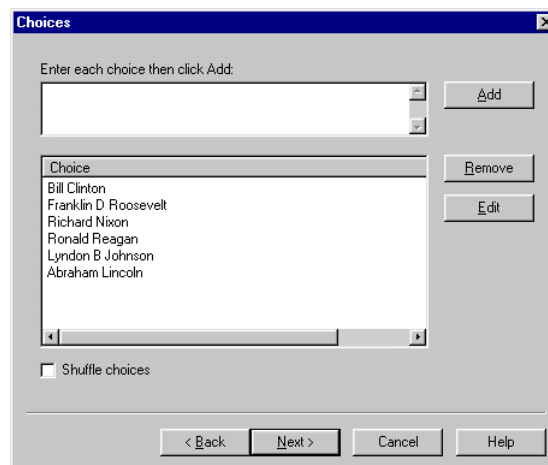
You can also set a score for each **Outcomes** and include it in the question by clicking **Add**.

When you have added all the scored **Outcomes** that you wish to, click **Next>**:

Click **Finish** to create your pull-down list question.

### 3.16 Creating a ranking question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the question choices:

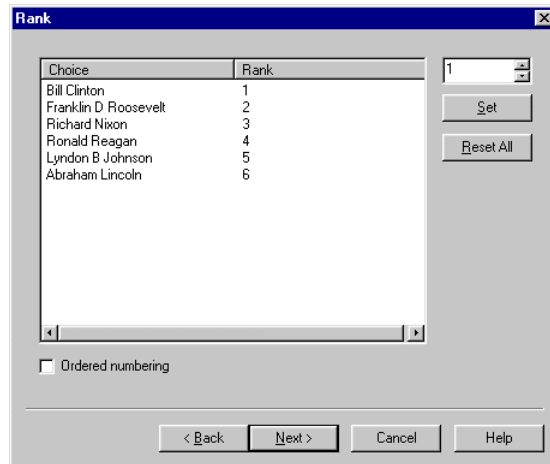


**Figure 144** *Ranking Wizard: Create Choices*

Complete the **Enter each choice then click Add** edit box with an option, clicking **Add** to include it as an answer choice. You can enter as many choices as you wish. If, at any stage, you wish to delete the answer from the list of choices, highlight it and click on the **Remove** button. Or if you wish to alter the text entered then click on the **Edit** button.

The **Choices** dialog box also offers you the option to **Shuffle choices**, simply by selecting the option. By enabling the **Shuffle choices** option, *Question Manager* includes a feature that will change the order of the choices in your question, each time a participant sees the question.

Once you have entered your choices, click on **Next**:



**Figure 145** *Ranking Wizard: Define Rankings*

You can now define the correct ranking for the questions.

To assign a ranking to a choice, highlight it with the mouse and enter the desired rank in the box above **Set**. Then click **Set**.

If you wish your rankings to appear as ordinal numbers (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>..., and so on) tick the **Ordered numbering** box.

Click **Next>** when you have defined your rankings:



Scores and Feedback

Set the score for choosing the correct answer:

1

Set the feedback:

Enter the feedback when question answered correctly:

Enter the feedback when question answered incorrectly:

< Back Finish Cancel Help

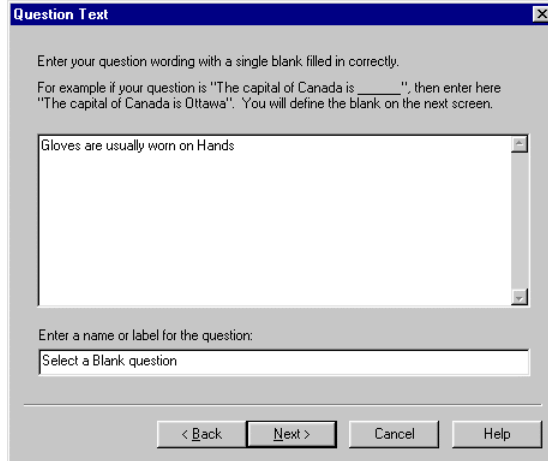
**Figure 146** Ranking Wizard: Scores and Feedback

You can now enter your scores and feedback.

Click **Finish** to create your ranking question.

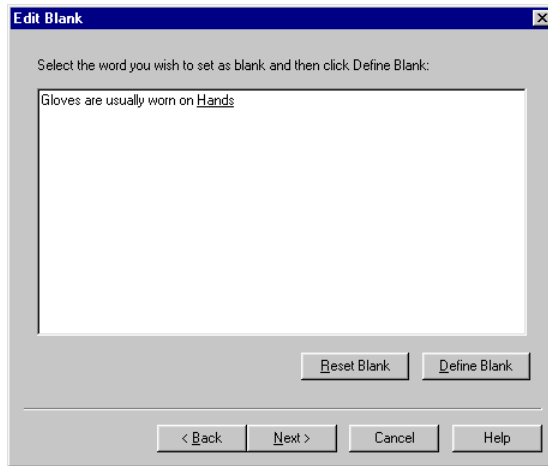
### 3.17 Creating a select a blank question using the Wizard

The select a blank Wizard has its own **Question Text** dialog box:



**Figure 147** *Select a Blank Wizard: Specify Wording*

A select a blank question invites the participant to insert a missing word in the question. It uses the default label **Select a Blank question**. It is recommended that you change this to a more meaningful label whenever you create a select a blank question. When you have entered the question wording, click **Next>**:

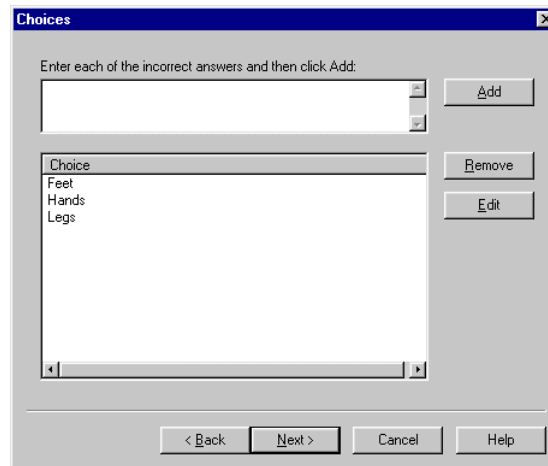


**Figure 148** *Select a Blank Wizard: Define Blanks*

To indicate the blank area, highlight it with the mouse and then click **Define Blank**.

If you make a mistake you can start again by clicking the **Reset Blanks** button. Selecting this option removes the previously defined blank.

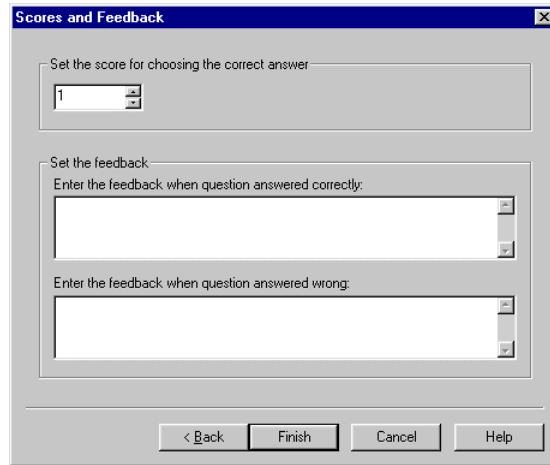
When you have done this, click **Next>**:



**Figure 149** *Select a Blank Wizard: Create Choices for Blanks*

Complete the **Enter each choice then click Add** edit box with an option, clicking **Add** to include it as an answer choice. You can enter as many choices as you wish. If, at any stage, you wish to delete the answer from the list of choices, highlight it and click on the **Remove** button. Or if you wish to alter the text entered then click on the **Edit** button.

When you have entered your choices, click **Next>**:



**Figure 150** *Select a Blank Wizard: Scores and Feedback*

You can now enter the scores and feedback.

By default the question wording is supplied as the feedback when the question has been answered incorrectly. You can also add feedback for when the question is answered correctly.

Click **Finish** to create your select a blank question.

### 3.18 Creating a text match question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the dimensions of the text entry box for the question:

**Figure 151** *Text Match Wizard: Define Text Entry Box*

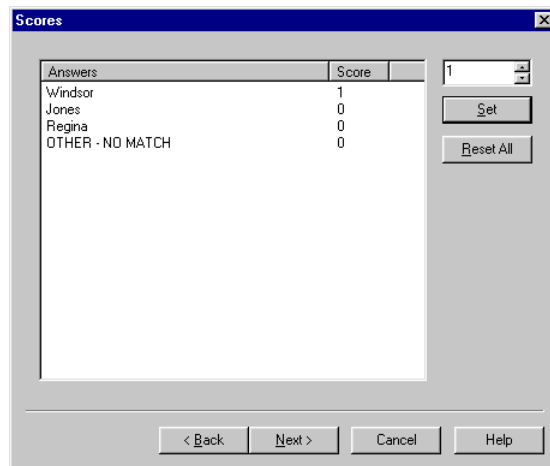
You can choose either a **Single line** entry or a **Multiple lines** entry. The **Line width** is the amount of characters permitted in a single line. Click **Next>** when you have defined your text enter box:

**Figure 152** *Text Match Wizard: Define Answers*

You then enter possible answers to be scored. In the **Answers** dialog box, complete the **Enter each of your answers and click Add** box, clicking **Add** to include it as a possible scored option. You can enter as many answers as you wish. If, at any stage, you wish to delete the answer from the list, highlight it and click on the **Remove** button.

The **Answers** dialog box also offers you the option to make the scoring **Case sensitive**.

Once you have entered your answers, click **Next**:

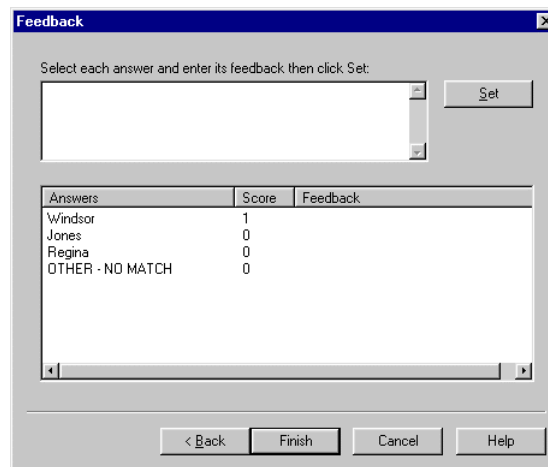


**Figure 153** *Text Match Wizard: Scores*

You can now determine a result for each of the designated choices.

To set a score, highlight the choice by clicking on it and type in the result in the score box. Click on **Set** to enter the score.

You can reset all the scores back to zero by clicking on the **Reset All** button. Once you have scored the answers, click on **Next**:

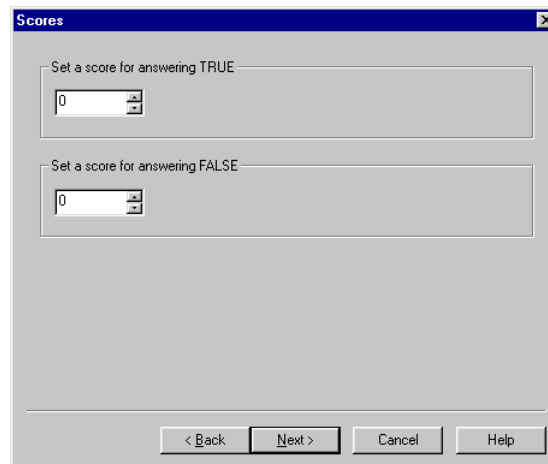


**Figure 154** Text Match Wizard: Feedback

You can now enter the feedback. Click **Finish** to create your text match question.

### 3.19 Creating a True/False question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the scores for both possible answers:

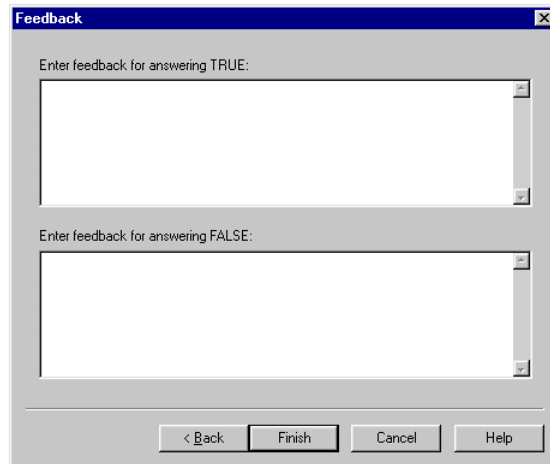


**Figure 155** True/False Wizard: Scores

In the upper box, **Set a score for answering TRUE.**

In the lower box, **Set a score for answering FALSE.**

Click **Next>** when you have set your scores:



The screenshot shows a dialog box titled "Feedback" with a blue title bar and a close button (X) in the top right corner. The dialog box has a light gray background and contains two text input areas. The first area is labeled "Enter feedback for answering TRUE:" and the second is labeled "Enter feedback for answering FALSE:". Both areas have a vertical scrollbar on the right side. At the bottom of the dialog box, there are four buttons: "< Back", "Finish", "Cancel", and "Help".

**Figure 156** *True/False Wizard: Feedback*

In the upper box, **Set feedback for answering TRUE.**

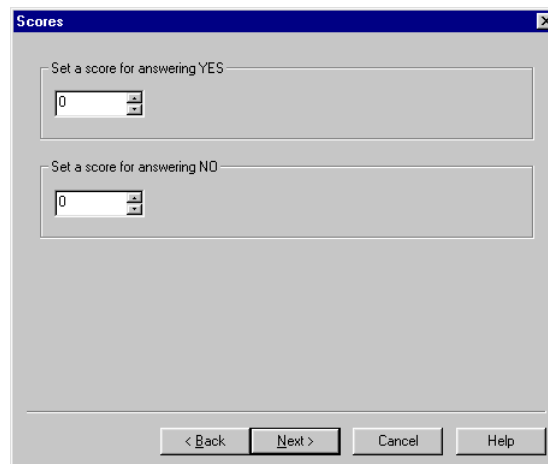
In the lower box, **Set feedback for answering FALSE.**

Click **Finish** to create your True/False question.



### 3.20 Creating a Yes/No question using the Wizard

After the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) you will be asked to specify the scores for both possible answers:

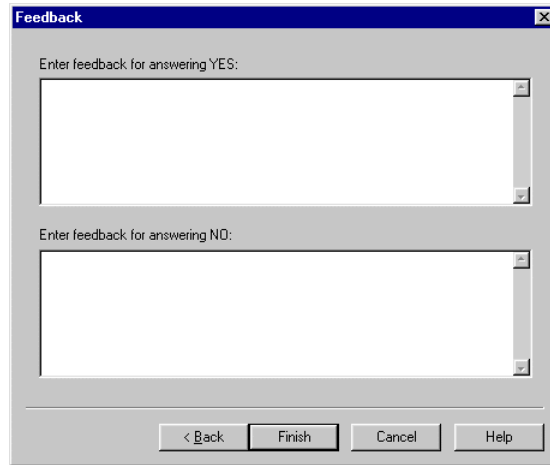


**Figure 157** *True/False Wizard: Scores*

In the upper box, **Set a score for answering YES.**

In the lower box, **Set a score for answering NO.**

Click **Next>** when you have set your scores:



**Figure 158** *True/False Wizard: Feedback*

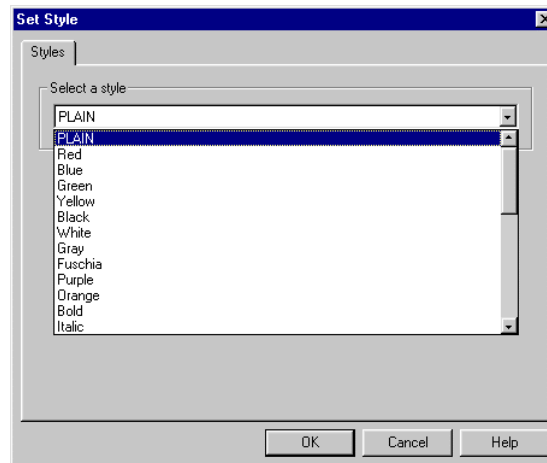
In the upper box, **Set feedback for answering YES.**

In the lower box, **Set feedback for answering NO.**

Click **Finish** to create your Yes/No question.

### 3.21 Using the Set Style dialog box

The **Set Style** dialog box enables you to set the style of the text to be used in the question wording. It is called by clicking on the **Style...** button in the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) within the *Question Wizard*:



**Figure 159** *Setting a Style for the Question Wording*

In the **Select a style** drop-down box, click on the down arrow to reveal the options that the *Question Wizard* offers. Selecting one of the colors will show the text in that color, while selecting, for example, bold or underline will display the text in these attributes. (These are read from **style.format** file.)

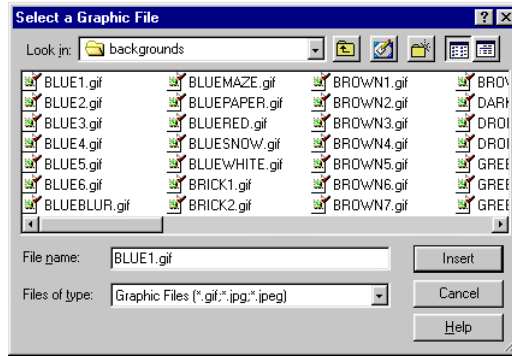
Then select the color or style you want from the list by clicking on it.

Click **OK**. This will take you back to the **Question Text** screen in the Wizard.

The **Style set** check box should now be selected to signify that the operation has been completed successfully. To remove the style, simply deselect the check box **Style set**, and the style inserted will be removed after a prompt for confirmation. Advanced users can define styles in the **style.format** file.

### 3.22 Adding graphics to a question

To add a graphic to a question, click on the **Graphic...** button in the **Question Text** dialog box (see 3.1 *Opening the Question Wizard* above) within the *Question Wizard*:



**Figure 160** Using a Graphic in the Question Wording

Choose the graphic you wish to use by finding the correct folder.

In the **Look in** field, find the graphics file you want, and click on its name. The name appears in the **File name** box.

Click **Insert** and the graphic will then automatically be added to your question.

Graphics are stored in the directory, specified in your **Option Settings** (see 2.11.1 *Options tab* above).

All graphics referenced in your questions are stored in this directory.

## 4 The Question Editor

### 4.1 Introduction

#### 4.1.1 Entering the Question Editor

The *Question Editor* provides a more versatile method of creating questions in *Question Manager* than the *Question Wizard*. Text blocks, graphics, HTML elements and complex outcomes all become possible when using the Editor.

The Editor can be activated to edit an existing question, either by double clicking on that question, by right-mouse clicking over a question and selecting **Edit** or by selecting **Question | Edit Question**.

You may find it useful to create new questions using the Wizard, or **by copying an existing question**, and then using the Editor to make changes. But if you wish to use the *Question Editor* to create a question from scratch, select the **Question | Add Question...** command.

Click on **Finish** to enter the Editor. This will call a dialog where it is possible to set some of the question's properties.

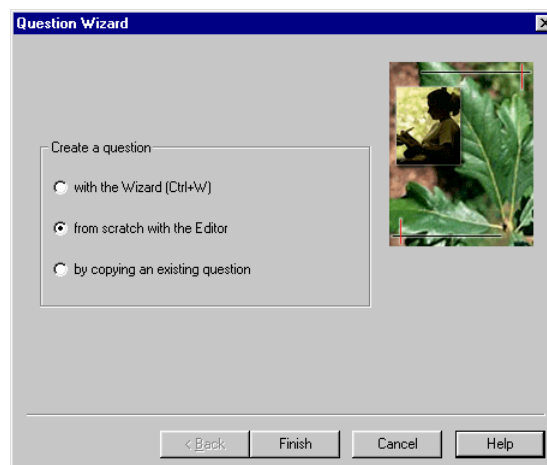


Figure 161 *Question Editor: Creating a Question*

### 4.1.2 Defining question properties

You will now see this screen:

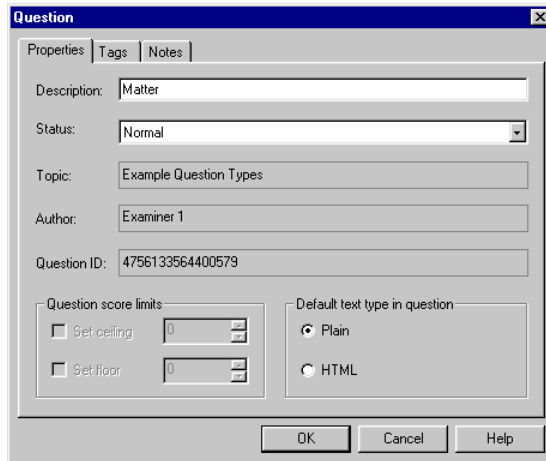


Figure 162 Question Editor: Setting Question Properties

The **Question** dialog box describes some key properties of your question:

- The **Description** is a text label for the question. It is significant in that it is stored in the answer database with results from the question, and so appears in reports presented by Perception. It's sensible to put useful, descriptive or cataloguing text here.
- The Status may be set as **Normal**, **Retired**, or **Incomplete**:  
A **Normal** question will be published to assessments as normal.  
A **Retired** question retained only for historical purposes.  
An **Incomplete** question is still being developed and cannot be published to an assessment
- If you choose to present all questions in a topic, they are presented in alphabetical order of question description, so it can also be useful to start a description with an alphabetic code.
- The question's **Topic** is shown in the dialog, but cannot be changed here. To change the topic that a question belongs to, you need to move (or copy) the whole question to the desired topic.
- The **Author** name is set when the question is created, according to the value set in the **Option Settings** dialog.

- The **Question ID** is a unique number allocated within the database to identify the question. It is used to identify the question within *Perception*, and is shown here in case you need to know it.
- You can set a maximum score for the question with the **Set Ceiling** option.
- You can set a minimum score for the question with the **Set Floor** option.
- Additionally you can set the **Default text type in question**. This refers to the mode in which new answer choices and feedback will be created in – either plain text or HTML. This information can be changed, at a later stage, independent of this setting.

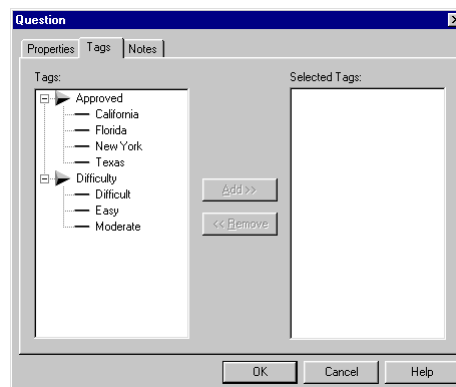
To apply or add question tags, click the **Tags** tab and refer to 4.1.3 *Applying question tags* below.

To enter or update question notes, click the **Notes** tab and refer to 4.1.4 *Adding and updating question notes* below.

If creating a question, complete the **Question** dialog box by entering a **Description** for your new question in the text box provided. When you are happy with this description, click **OK**.

### 4.1.3 Applying question tags

If you click the **Tags** tab, you will see the screen below:

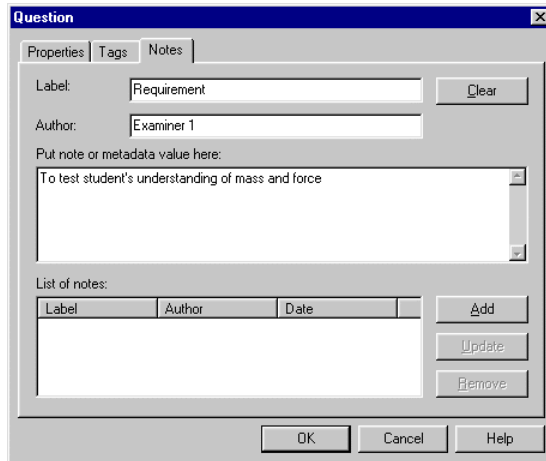


**Figure 163** *Question Editor: Applying Question Tags*

The use of this screen is described with examples in 2.9.8 *Tagging Questions* above.

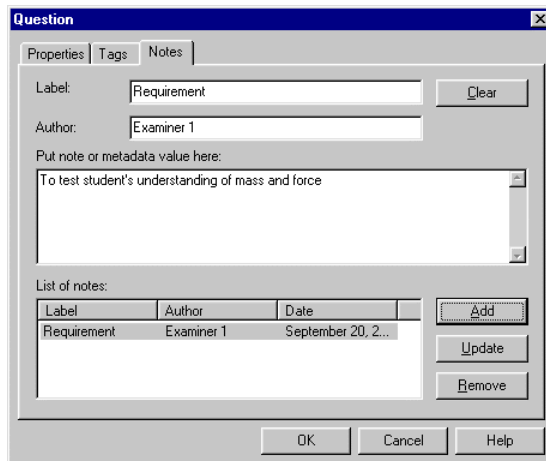
### 4.1.4 Adding and updating question notes

If you click the **Notes** tab, you will see the screen below:



**Figure 164** *Question Editor: Composing the first Question Note*

To add a question note, give it a **Label** by which it can be identified and then type the text of the note under **Put note or metadata value here**. The **Author** will be entered automatically. Click **Add** when you are ready to include the note to your question:



**Figure 165** *Question Editor: Adding the first Question Note*



To add another question note, create a new **Label** and then type its text under **Put note or metadata value here**. The **Author** will be entered automatically.

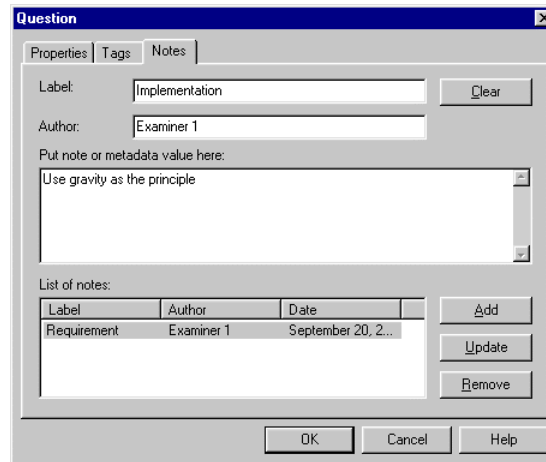


Figure 166 Question Editor: Composing a Question Note

Click **Add** when you are ready to include this note to your question:

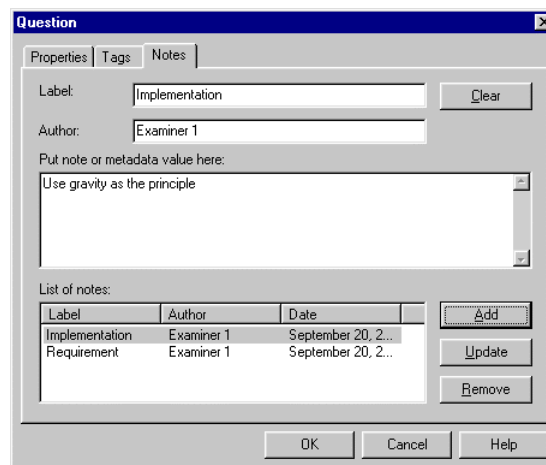


Figure 167 Question Editor: Adding a Question Note

To change a question note, highlight it in the box under **List of notes**:

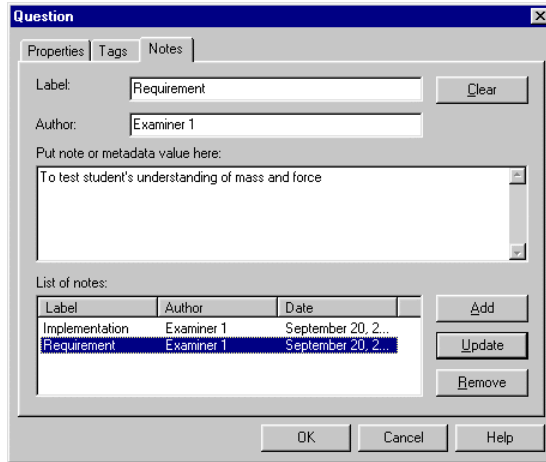


Figure 168 Question Editor: Changing a Question Note

Make the changes to the selected question note and click **Update**:

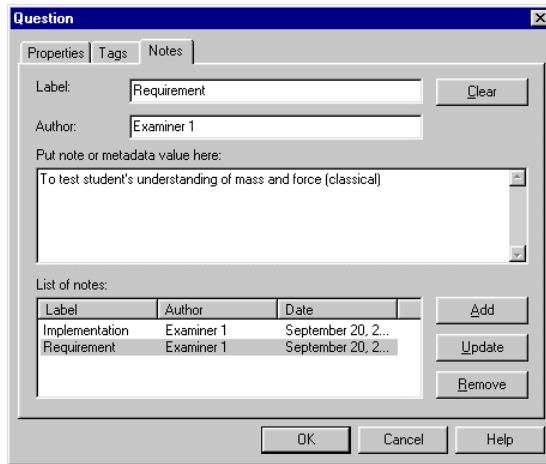


Figure 169 Question Editor: Updating a Question Note

To remove the **Label** and the information under **Put note or metadata value here** click **Clear**.

## 4.2 The Question Editor desktop

### 4.2.1 The Question Editor window

There are two views to a question in the *Question Editor*. A question may be viewed statically or dynamically (shown below). If you have *Internet Explorer* version 4 or higher installed then it is possible to view a question dynamically by selecting **Enable browser view in Question Editor** from the **Options** tab on the **Options Settings** dialog. Or select **View | Enable Browser View** from within a question. If selected the menu item will be replaced with **Disable Browser View**, which returns the Editor to its static view.

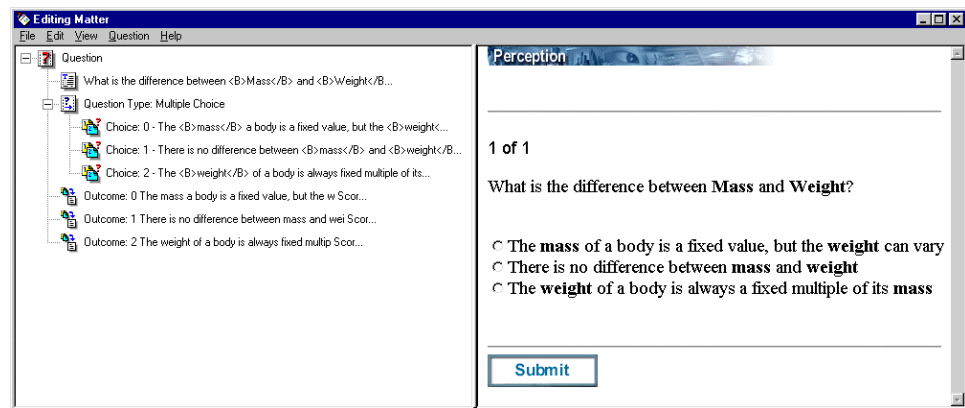


Figure 170 *Question Editor: Window*

### 4.2.2 The different elements of a question

Each element or block within the question has its own icon and is shown separately in the question window. The information contained within the block can be accessed by double clicking on each icon, or highlighting the block description and selecting **Question | Edit...**

The question elements are shown below:



#### **Question**

This contains the question properties, tags and notes – see 4.1.2 *Defining question properties* above.



#### **Text**

This shows text content within the question. This can be plain text, HTML, a URL or MathML. Double clicking on this icon enables you to edit the text and its style – see 4.4 *Adding and editing content*.



#### **Graphic**

This shows graphical content, (that is, that a graphic is incorporated within the question). Double clicking on this icon will enable you to change your graphic – see 4.4.6 *Graphic content*.



#### **Multimedia**

This shows multimedia content. Double clicking on this icon will enable you to change your multimedia file – see 4.4.7 *Multimedia content*.



#### **Question Type**

This is the start of the answer to the question. Double clicking on this icon opens the **Answer** dialog box, which enables you to define question type and some other information – see 4.3.2 *Defining question type and answer options*.



#### **Choice**

This shows a choice in the question. See 4.5 *Choices* for more on choices.



#### **Outcome**

This shows an outcome, which lets you define scores and feedback. See 4.6 *Outcomes in the Question Editor* for more on outcomes.

### 4.2.3 The Question Editor menu

The *Question Editor* has its own menu bar and range of options. These give you complete control over your question construction.

The following options are available under the *Question Editor File* menu:

- **Save** saves changes to the question being edited.
- **Save and Exit** enables you to leave *Question Editor* and save the changes.
- **Cancel** closes *Question Editor* without saving any of the changes.

The following options are available under the *Question Editor Edit* menu. Each applies to a single content, choice or outcome block in the question. You can copy and paste between questions.

- **Cut** removes the selected block from its current position. When **Paste** is selected, it is then inserted in the new position.
- **Copy** copies the selected block.
- **Paste** inserts a previously cut or copied block into the current position.
- **Delete** simply deletes the selected question content, choice or outcome.

The following options are available under the *Question Editor View* menu:

- **Enable Browser View / Disable Browser View** enables you to switch the Editor from a static view to a dynamic view and vice versa.
- **Preview** allows you to view a graphic or multimedia file by opening the default browser.
- **Preview and See as HTML** opens *Notepad* and displays the HTML source of your question. The source is generated from the template files.
- **Tryout** opens either the default browser, or a new window if *Internet Explorer 4* or higher is installed. The question can only be fully tried out if *Internet Explorer 4* or higher is installed – also see 2.4.3 *View menu*.

The Editor's **Question** menu contains the essential tools that enable you to build your questions, choices and outcomes:

- **Edit...** enables you to edit the currently selected block.
- **Question Type...** enables you to select what type of question you wish to build, or to change the type if already created. Note that explanation questions do not have a question type set.
- **Add Content** lets you add one of the following content blocks:
  - **Add Content | Text...**  
With this option you can add text content
  - **Add Content | Graphic...**  
This enables you to add graphics to your question
  - **Add Content | Multimedia...**  
To add multimedia content, use this option
- **Add Choice...** inserts a new choice.
- **Add Outcome...** inserts a new outcome.

The **Help** menu gives you the same help options as in the rest of *Question Manager*.

## 4.3 Choosing a question type from the Question Editor

### 4.3.1 Question Editor question types

The *Question Editor* does not have any question types built into its program. It takes the list of available question types from the format file. The name and location of the format file, usually **master.format**, is defined in the **Option Settings** dialog (see *Figure 93* under 2.11.1 *Options tab* above). The shipped format file includes all the question types used by the Wizard.

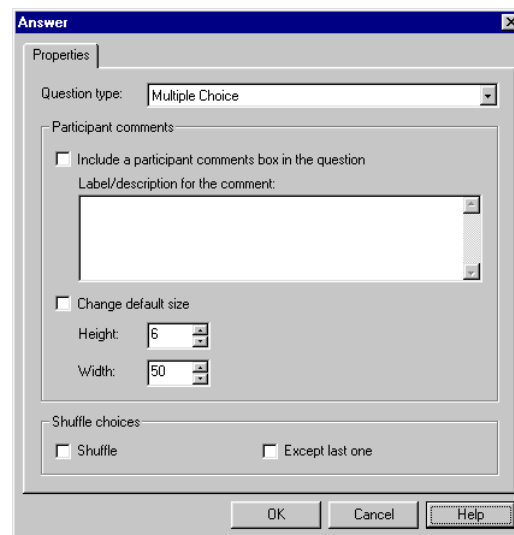
If an extra question type is added into the format file, then it becomes available within the Editor. If a question type is removed from the format file, then you can no longer edit questions of that type. This allows great flexibility in the use of *Perception* because, if a new question type is introduced, no program changes are needed. But it does mean that the Editor is open-ended, and does not specifically guide you on how to use it for specific question types.

**Explanation** questions are treated in the Editor as being questions without a type, so they do not have an answer block. They simply have one or more content blocks, and no choices or outcomes.

Check the *Perception* support site for information on other question types that are possible with *Perception*.

### 4.3.2 Defining question type and answer options

The **Answer** dialog enables you to select the type of question you wish to ask. The dialog box can be called in a variety of ways including double clicking on the answer icon, or by selecting **Question | Question Type...**



**Figure 171** *Question Editor: Specifying Question Type and Answer Options*

To use the **Answer** dialog box:

- 1) Click on the down arrow to reveal the question types available and make a selection by clicking on it.
- 2) You may also shuffle the way question choices are presented to the participant. Simply tick the **Shuffle choices** box to enable the option.
- 3) If you tick **Shuffle choices** with a multiple choice question, the last of your choices will be fixed in this position if you also tick **Except last one**.
- 4) When you are satisfied with your selection, click **OK**.

## 4.4 Adding and editing content

### 4.4.1 Overview

Content is the *Perception* term for the question wording you put in your questions. There are several kinds of content you can put into questions:

- **Plain Text** content is simple, ordinary text. You can optionally assign a single style to plain text to describe how it is to be presented. See 4.4.2 *Plain text content* below.
- **HTML** content consists of text that is treated as HTML, for users who are familiar with the HTML language. See 4.4.3 *HTML content* below.
- **URL** content enables you to include a hyperlink in your question. See 4.4.4 *URL content* below.
- **MathML** content consists of text that is treated as HTML, for users who are familiar with the HTML language. See 4.4.5 *MathML content* below.
- **Graphic** content consists of single graphics file, usually in **.GIF** or **.JPG** format. The graphical file is not stored inside the question database, but is referenced as an external file. See 4.4.6 *Graphic content* below.
- **Multimedia** content consists of sound and movie files. The following file extensions are supported: **.avi**, **.mov**, **.mpeg**, **.mpg**, **.qt**, **.au**, **.mid** and **.wav**. See 4.4.7 *Multimedia content* below.

If you want to present text in different styles, you can either have several plain text content blocks, each in a different style, or else if you are familiar with HTML, you can use HTML codes to define the styling.

To create new content, you select an element in the question you want to insert the content after and use the **Add Content** menu item, choosing the kind of content you want to create. To edit existing content, you double click on it.

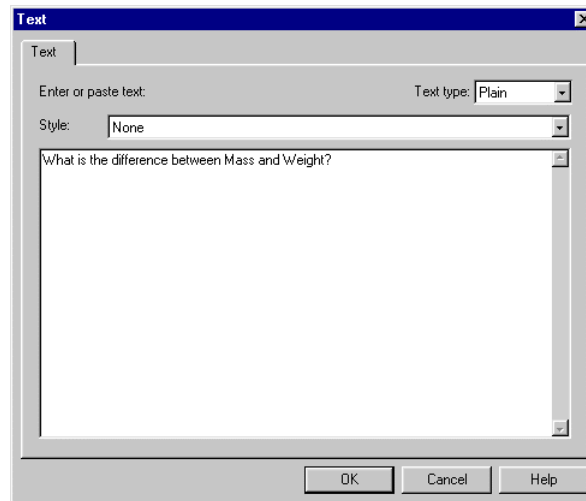
The total size of a question is limited to 32,000 characters (including all information needed to describe elements), but apart from this there is no limit to the length of any content. See 4.4.8 *Including a link to an HTML page* for how you can add links into questions to display further pages of unlimited length.

Remember that you can view what your question looks like at any time by using the **Tryout** menu command.



#### 4.4.2 Plain text content

To make plain text content, select **Question | Add Content | Text...** from the *Question Editor* Window (Figure 170) and then select **Plain** in the **Text type** drop-down list:



**Figure 172** *Question Editor: Adding Plain Text Content*

Enter text for the content in the text box. The software will automatically word-wrap text for you, or if you prefer to set your own line ends, then use the **Enter** key to put in line ends or blank lines.

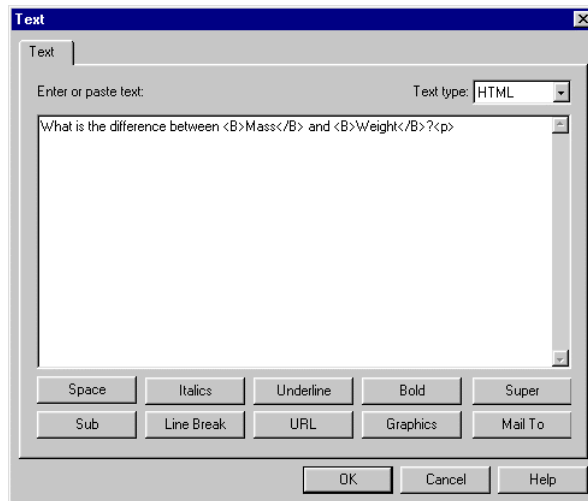
Optionally, choose a text **Style** by selecting a choice from the drop-down box revealed by clicking on the down arrow. These styles are defined in the **style.format** file, and can be added to or changed by editing the format file. If you do change the file, it's important to change the version used on the server software as well.

When you are happy with the text for your question, click **OK**.

You can easily copy and paste text from another program into text content. Copy it to the clipboard from another program, by selecting the text and using a **Copy** menu item, or by pressing **Ctrl+C** on the keyboard. Then to paste it into your content, return to *Perception*, move the cursor to where you want it, and press **Ctrl+V**.

### 4.4.3 HTML content

To make HTML content, select **Question | Add Content | Text...** from the *Question Editor* Window (*Figure 170*) and then select **HTML** in the **Text type** drop-down list:



**Figure 173** *Question Editor: Adding HTML Content*

Enter text and HTML tags for the content in the text box.

You can also use the buttons shown below to generate common HTML tags.

Button	Action
<b>Space</b>	Clicking this button will insert the HTML code <code>&amp;nbsp;</code> ; This will be rendered as a non-breaking space.
<b>Italics</b>	If you highlight some text, clicking this button will enclose it with the HTML tags <code>&lt;i&gt;</code> and <code>&lt;/i&gt;</code> , and it will be rendered in bold. If no text is highlighted, the empty HTML tag pair <code>&lt;i&gt;&lt;/i&gt;</code> will be inserted at the cursor position.

Button	Action
<b>Underline</b>	<p>If you highlight some text, clicking this button will enclose it with the HTML tags <code>&lt;u&gt;</code> and <code>&lt;/u&gt;</code>, and it will be underlined when rendered.</p> <p>If no text is highlighted, the empty HTML tag pair <code>&lt;u&gt;&lt;/u&gt;</code> will be inserted at the cursor position.</p>
<b>Bold</b>	<p>If you highlight some text, clicking this button will enclose it with the HTML tags <code>&lt;b&gt;</code> and <code>&lt;/b&gt;</code>, and it will be rendered in bold.</p> <p>If no text is highlighted, the empty HTML tag pair <code>&lt;b&gt;&lt;/b&gt;</code> will be inserted at the cursor position.</p>
<b>Super</b>	<p>If you highlight some text, clicking this button will enclose it with the HTML tags <code>&lt;sup&gt;</code> and <code>&lt;/sup&gt;</code>, and it will be rendered as a superscript.</p> <p>If no text is highlighted, the empty HTML tag pair <code>&lt;sup&gt;&lt;/sup&gt;</code> will be inserted at the cursor position.</p>
<b>Sub</b>	<p>If you highlight some text, clicking this button will enclose it with the HTML tags <code>&lt;sub&gt;</code> and <code>&lt;/sub&gt;</code>, and it will be rendered as a subscript.</p> <p>If no text is highlighted, the empty HTML tag pair <code>&lt;sub&gt;&lt;/sub&gt;</code> will be inserted at the cursor position.</p>
<b>Line Break</b>	<p>Clicking this button will insert the HTML code <code>&lt;br&gt;</code>. Anything after this will appear on a new line.</p>
<b>URL</b>	<p>Clicking this button will enable you to generate a hyperlink by entering the URL you wish to link to and the text that you wish to appear as the hyperlink.</p> <p>The HTML code:</p> <pre>&lt;a href="hyperlink url" target="_blank"&gt;hyperlink text&lt;/a&gt;</pre> <p>will be inserted at the cursor position (where <b>hyperlink url</b> is the URL that you give and <b>hyperlink text</b> is the text).</p>
<b>Graphics</b>	<p>Clicking this button will enable you to include a graphic by entering the graphic file name and alternative text.</p> <p>The HTML code <code>&lt;img src=image filename alt=image text&gt;</code> will be inserted at the cursor position (where <b>image filename</b> is the graphic file that you give and <b>image text</b> is the text).</p>

Button	Action
Mail To	<p>Clicking this button will enable you include a link to an email address by entering the email address, the email subject and the link text.</p> <p>The HTML code</p> <pre data-bbox="635 577 1283 629">&lt;a href="mailto:email address?subject=email subject"&gt;email link&lt;/a&gt;</pre> <p>will be inserted at the cursor position (where email address is the email address that you give, email subject is the subject and email link is the hyperlink text).</p>

When you are happy with the marked up text for your question, click **OK**.

#### 4.4.4 URL content

To include a URL in your content, select **Question | Add Content | Text...** from the *Question Editor* Window (Figure 170) and then select **URL** in the **Text type** drop-down list:

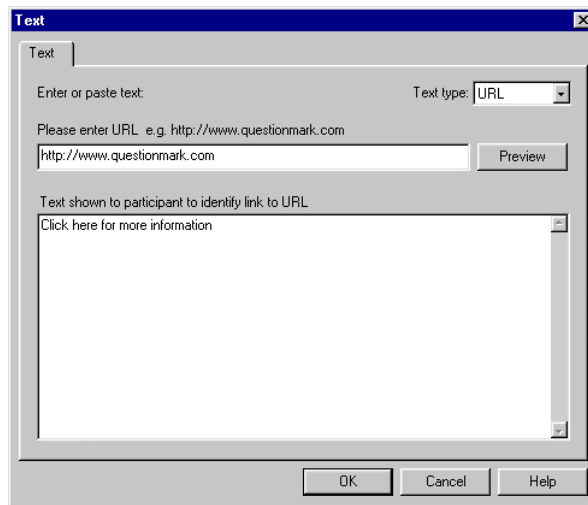


Figure 174 *Question Editor: Adding a URL in the Content*

Enter the URL that you wish to link to in the upper box and the text for the hyperlink in the lower one. When you are happy with the URL, click **OK**.



### 4.4.6 Graphic content

To add graphics to a question, select **Question | Add Content | Graphic...** from the *Question Editor Window* (Figure 170):

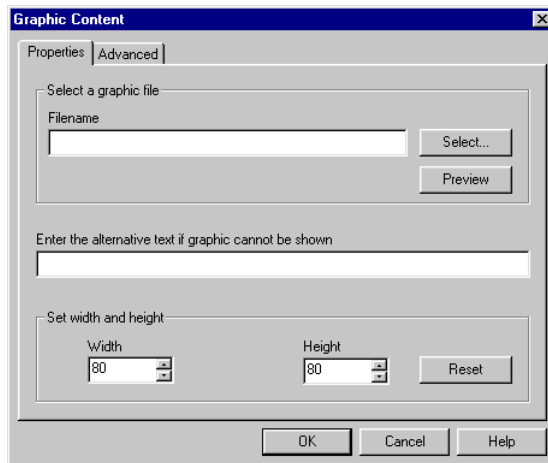


Figure 176 Question Editor: Adding Graphic Content

Click **Select...** to choose the graphic you wish to insert:

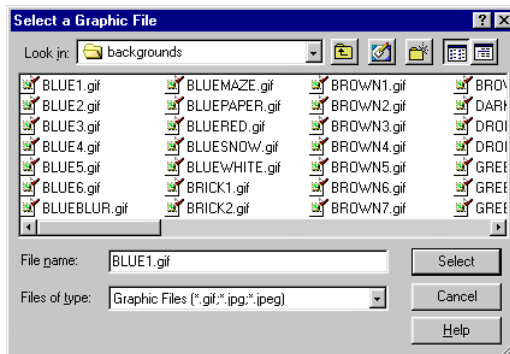


Figure 177 Question Editor: Selecting a Graphic for Content

You will usually want to import only **.GIF** or **.JPG** files, as these are the most widely used graphics file types on the web. If you have graphics in another format, you should convert them using an external package.

Locate the graphic and click **Select**.

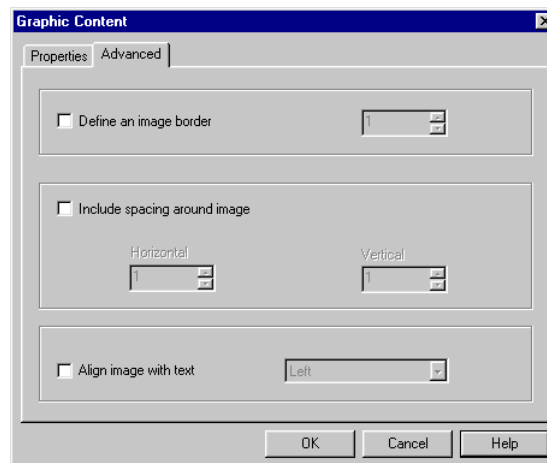
The file will be copied into your graphics directory when you click **OK**.

You can click **Preview** in *Figure 176* to open your web browser and display the graphic.

You can also define **alternative text if graphic cannot be shown**. This is the text that will appear when the participant passes their mouse over the graphic. It is also useful if the graphics cannot be displayed for some reason.

When a graphic is inserted its height and width are automatically read from the file. These values are also shown in the **Graphic Content** dialog box.

The **Advanced** tab of the **Graphic Content** dialog allows you to set other common attributes, which are available in HTML:



**Figure 178** *Question Editor: Controls for Graphic Content*

If the **Define an image border** is selected then a border will appear around the graphic. The border value is sized in pixels.

Similarly, if **Include spacing around image** is selected then this will prevent text wrapping right up to the edge of the graphic both horizontally and vertically.

If **Align image with text** is selected then the graphic is aligned with the text. **Left** and **Right** are probably the most useful as they create a new floating type graphic which finds the next available margin to allow text to wrap. The other options are an attempt to get graphics to do exactly what you want them to do. **Top** aligns the graphic with the top of the tallest item in the line. **Middle** aligns the center of the graphic with the baseline of the current line. **Bottom** aligns the bottom of the graphic with the baseline of the current line.

To change what graphic is referenced at a later time, double click on the graphic content block, and select the graphic you would like to change it to. All graphics referenced in questions are copied to the graphics directory specified in the **Option Settings** dialog, usually `c:\perception3\author\resources` (see *Figure 94* under 2.11.2 *Directories tab* above). You can check which graphics are referenced from the database using the **Check Graphics** command on the **Tools** menu of the main part of *Question Manager*.

All graphics for all questions are copied into the same directory. You can re-use the same graphic in different questions, but it's important to select the graphic each time from the graphics directory specified in the **Options Settings** dialog. If you insert a graphic with the same graphic name as one previously inserted, then it is still copied into the graphics directory but its name will be modified with an appended index number. For example, if the graphic is named **logo.gif** then if it inserted again it will copied as **logo1.gif**, and so on.

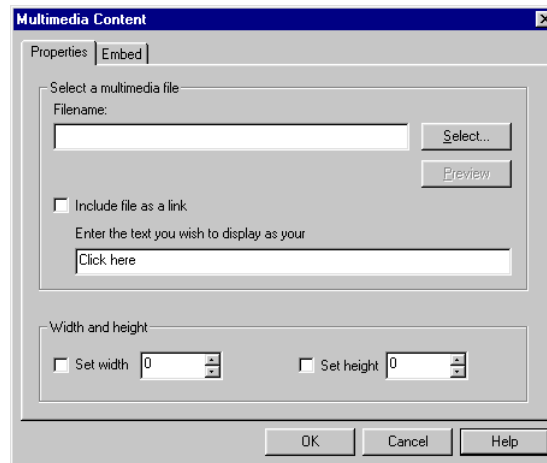
If you want more control over graphics than are provided by graphical content, you are also free to directly reference graphics within HTML content. You can also use HTML to include your graphics in choices and feedback.

<b>Note:</b> Graphics that are referred to in HTML content will not be published automatically. They must be copied manually.
---



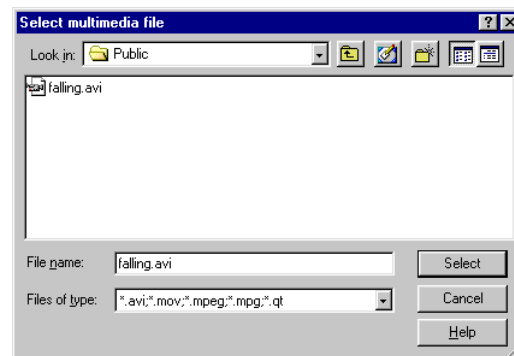
#### 4.4.7 Multimedia content

To add multimedia to a question, select **Question | Add Content | Multimedia...** from the *Question Editor Window (Figure 170)*:



**Figure 179** *Question Editor: Adding Multimedia Content*

Click **Select...** to choose the multimedia file you wish to insert:



**Figure 180** *Question Editor: Selecting a Multimedia File for Content*

You can choose from the following files **.avi**, **.mov**, **.mpeg**, **.mpg**, **.qt**, **.au**, **.mid** and **.wav** files. (You must ensure that the participants have the facilities necessary to support these multimedia types when they view the question.)

Locate the graphic and click **Select**.

You can click **Preview** in *Figure 179* to open your web browser and display the graphic.

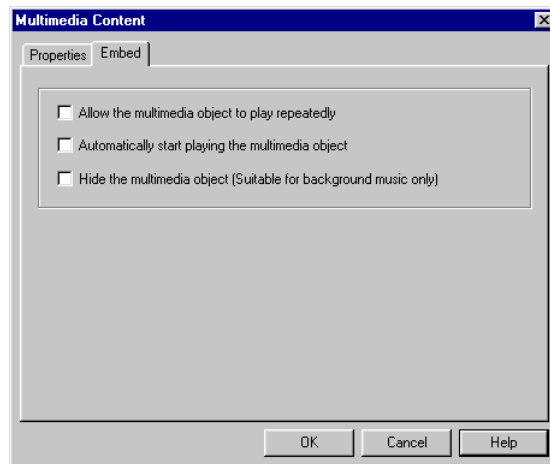
Use **Set width** and **Set height** to set the height and width, in pixels, of the selected multimedia file when it is displayed.

There are two ways of inserting a multimedia object; one of these is to have a text link to the object and the other is to embed the object so that it is part of the web page. If you select **Include file as a link** then you can also enter some text for the link. The default is **Click here**.

With *Perception for Windows*, it is advisable to use embedded multimedia only.

**Note:** *Linked Multimedia with Windows delivery*  
*Perception for Windows* will never replace the browser window contents with the multimedia, it will either open a new browser window to display it, or call the relevant application to display it.

If **Include file as a link** is deselected then the controls on the **Embed** tab are active:



**Figure 181** *Question Editor: Controls for Embedded Multimedia Content*

It is important to be aware that multimedia can only be displayed if the participants have the facilities necessary to support it.

You can select **Allow the multimedia object to play repeatedly** which will continually play the file inserted. **Automatically start playing the multimedia object** if not selected will require the participant to manually start the object. If a sound file is used then selecting **Hide the multimedia object** could be selected.

All multimedia files inserted are copied to the **c:\perception\qresources\multimedia** directory. This directory may be defined in the **Options Settings** dialog. There is also a facility to **Check Multimedia** that ensures that all multimedia files referenced within your questions are within the directory specified. You can also reference multimedia within HTML if you want to.

#### 4.4.8 Including a link to an HTML page

If you publish assessments for Web delivery (see Part 6:1.1 *Publishing for web deployment* below) then it is possible to incorporate hyperlinks in questions.

The easiest way to do this is by adding URL content (see 4.4.4 *URL content* above), but you can also do this with HTML.

One of the key strengths of HTML is that it allows hyperlinks. This allows one HTML document to be linked to another, allowing the user to move from a link in one document to another different document. You can put these links in HTML content, or in any other place within the software that permits HTML. This includes choices, feedback or the introduction or final text in an assessment.

You make a link with the “anchor” tag. This allows a document URL to be specified together with text or an image, which will be displayed to the participant. The text or image will be active and clicking on it will cause the browser to load the document specified instead of the document currently being viewed. The syntax is:

```
<A HREF="URL to go to">Text to display</A>
```

For example:

```
<A HREF="http://www.qmark.com/perception/help/">
Click here to go to the Perception support site
</A>
```

This allows an author to include any additional reference material they wish, such as literary extracts, pictures or graphs, reference manuals or even multimedia. These materials can be on the same web server as the questions, or another one. It is wise to check that you are not violating any copyright restrictions by including other people’s material in this way, and you should also check that the URL you are linking to is not going to change, or become unavailable during the lifetime of the question.

A disadvantage of using links is that the linked document replaces the *Perception* document that the participant is viewing. They can return to it using their browser navigation controls, but it is easy to get confused. To avoid this, you can specify that you wish the linked document to be opened in a new window by using the “target” attribute of the “anchor” tag. The syntax:

```
<A HREF="URL to go to" TARGET="_new">Text to display</A>
```

will create a new window the first time the link is visited, but subsequent visits, or visits to other links with the same target, will open in the same window (which may be hidden under other windows). To get it to open in a new window every time use **TARGET="\_blank"**.

## 4.5 Choices

Question choices are explained in 1 *The structure of questions* above.

- In a matrix, multiple choice, multiple response or selection question, the participant sees a number of choices and can select from them. Each of these choices is a separate choice block in the question, created and edited separately.
- In a fill in blanks, text match or numeric answer question, each area the participant can fill in is also treated as a choice. So a question “What is the capital of China?” might have one choice which is the answer area. But a question “Fill in the blanks in the following text” would have one choice for each gap to be filled in the text.
- In other question types, the concept of choice is used to mean whatever, or however, the participant answers the question. For example, the Drag-and-drop choice defines the graphic that is used to mark where the correct answer is.
- Explanation questions have no choices, as there is no answer to make.

When defining a choice, you define only the range of answers the participant can make. All scoring information and what happens after the answer is made, is held in the outcomes to a question, not in the choices.

Each choice has an ID, which is used to refer to the choice from outcomes. It doesn't matter what this ID is, as the participant never sees it, but it is important that each choice has a different ID, which should be less than 50 characters.

There is no system limit to the number of choices you can have in a question. However, the QML coding for each question has a limit of 32,000 characters, which means that you cannot add choices to a question indefinitely.

### 4.5.1 Making and editing choices

If you make a question in the Wizard, the software creates one choice block for each choice in your question. If you are making a question from scratch, or want to add extra choices, you do so with the **Question | Add Choice...** menu command, which takes you to the **Choice** dialog box. To open the **Choice** dialog box to edit an existing choice, double click on the choice icon in the Editor.

You can insert choices only in the answer part of the question (that is, within the **Question Type** branch). Unless you choose to **Shuffle choices**, they are displayed to the participant in the order they are displayed in the Editor. If you shuffle them, the order is randomized when the question is delivered. You can cut and paste choices around in the usual way to define the order.

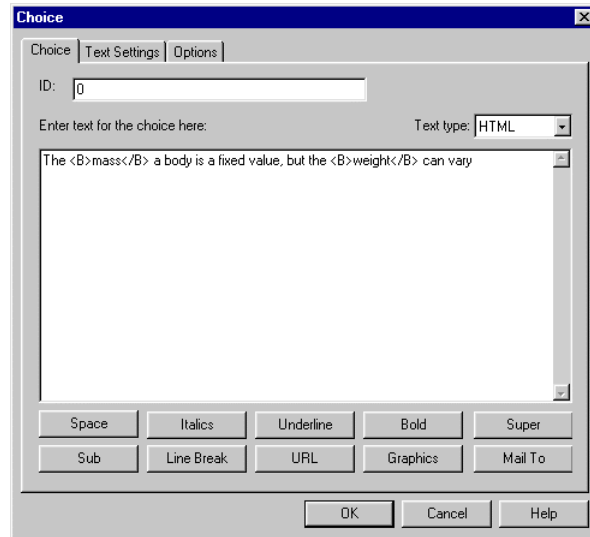
There are three tabs to the **Choice** dialog:

- **Choice** enables you to set the ID, and any choice text.
- **Text Settings** is used in text, essay and numeric entry question types, allowing you to define the size of text entry boxes.
- **Options** are used in matrix, pull-down list, matching and ranking questions.

When you are editing a choice, the Editor does not prevent you from accessing facilities inappropriate to the current question type. For example, you are not prevented from seeing the width and height of a text box for a multiple choice question choice. But it is not generally useful to do such things, and can lead to non-functioning questions.

### 4.5.2 Using the Choice tab in the Choice dialog box

The **Choice** tab enables you to create an ID and optional text for a question answer.



**Figure 182** *Question Editor: Defining a Question Choice*

- Every choice should have an **ID**, which is usually a number. You should enter a unique value for every choice in all question types.
- For most question types, you can place your choice wording under **Enter text for choice here**.

The text will be treated as **Plain**, **HTML** or **MathML** according to the **Text type** that you set.

The following question types do not permit a **Text type** to be set:

- **Essay**
- **Fill in blanks**
- **Macromedia® Flash™**
- **Numeric**
- **Text match**

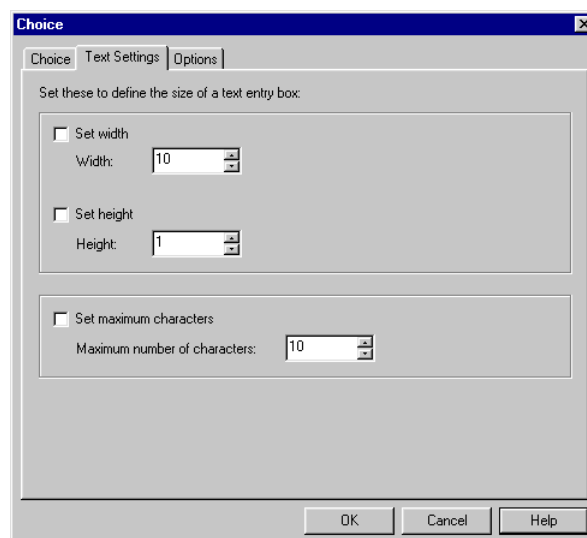
**Explanation questions** do not have choices, and **drag and drop** questions use the **Marker** tab instead of the choices tab (see 4.5.5 *Using the Marker tab in the Choice dialog box* below).

In choices which ask for text, numeric or similar responses, you would usually only set the **ID** on this tab, as the other areas are not relevant. However, if you do set the choice wording in a text choice, it will be used to set a starting value in the choice when presented to the participant. Usually the text box is presented blank, for the participant to fill in, but if you want it to start off with some text in it, put it in as choice wording. You should use only plain text, as HTML codes could make the question fail to work.

For example, if you want to make a question where the participant has to correct the English of a sentence, then you can put the sentence to be corrected in the choice wording. Or, if you have several choices, and want to label each one, then you can do so with a label here that the participant will see.

### 4.5.3 Using the Text Settings tab in the Choice dialog box

The **Text Settings** tab is useful in text and numeric questions, and lets you define the size of your text entry box. However, the height is not applicable for numeric and fill in the blanks question types.



**Figure 183** *Question Editor: Question Choice Text Controls*

You can set the **Width** and **Height** of the text box and the **Maximum number of characters** permitted. In multiple choice and other question types, this tab is not useful.

For essay questions, you can set the **Width** and **Height** of the text box but the **Maximum number of characters** is not applicable.

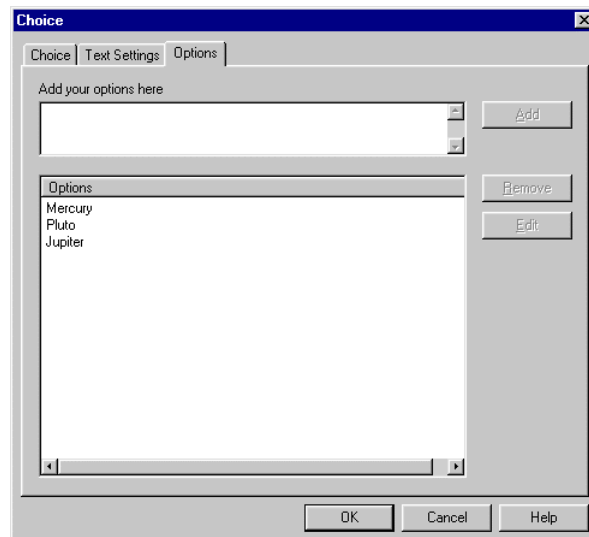
To define the size of the text entry box check the box for either **Set width** or **Set height** and either, type in the size in the adjacent text box or click on the directional arrows until you reach the correct figure. If you do not select the boxes, then the default values will be used (taken from the format file).

To set the maximum number of characters the participant can enter, check the **Set maximum characters** check box and either type in the maximum number in the adjacent text box, or click on directional arrows until you reach the correct figure.

You can see what the question will look like by leaving the dialog and using the **Tryout** menu command. Some participants may be using systems that will not display the text box size correctly, or enforce the maximum characters limit. You should ideally check out your questions on the systems that participants might be using.

### 4.5.4 Using the Options tab in the Choice dialog box

The **Options** tab is only used in matrix, pull-down list, matching and ranking question types. You should not use it for other question types, unless directed to.



**Figure 184** *Question Editor: Question Choice Options*

In a selection question, each choice is presented to the participant with some options to choose from. For example, there may be a series of statements, and the participant must select which is true or false, or you can match choices against options, or assign numbers to choices. You define the options that apply to each choice in the **Options** tab.



To add options:

- 1) In the upper text box, type the option text you wish to offer to the participant for a choice. You can use any characters apart from the following characters: `<>"#`, and you can only use plain text, not HTML text. When you are happy with the choice, click on **Add** to the right of the text box.
- 2) The option will then appear in the **Options** text box below.
- 3) Repeat the procedure to add further options.
- 4) To delete an option, highlight it in the **Options** text box below and click on **Remove**. Similarly, to edit an option, which has already been added, select it in the **Options** text box and click on **Edit**, or double-click on the highlighted item.

When you are satisfied that you have the options you wish to present to the participant, either choose another tab, or click **OK** to close the dialog box.

Each choice in a matrix or selection question is created and edited separately. Although it's common practice to make the options for each choice the same, this is not mandatory. You can have different options for each choice, or for some choices. The options are independently set for each choice block.

If you are making a new question with the options the same for all the choices, you may find it helpful to create the first choice and then use **Copy** and **Paste** to duplicate it a number of times, with the options in. Then you can just edit each choice to set the choice text, without having to repeatedly enter the options for each choice.

If you need to make changes to the options for all the choices, you have to do it for each choice. If this happens to you often, you may find it useful to open up the question in the *QML Editor* (see chapter 5 *The QML Editor*) as this will show you the entire question with all the choices together.

### 4.5.5 Using the Marker tab in the Choice dialog box

Drag and drop questions use the **Marker** dialog box rather than **Choice** dialog box:

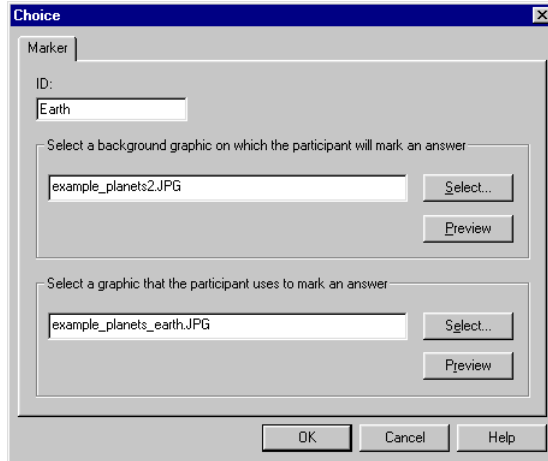


Figure 185 Question Editor: Marker Graphics (drag and drop questions only)

An ID is required for a drag and drop question. It should be less than 50 characters long.

To change the background graphic, click the upper **Select...**:

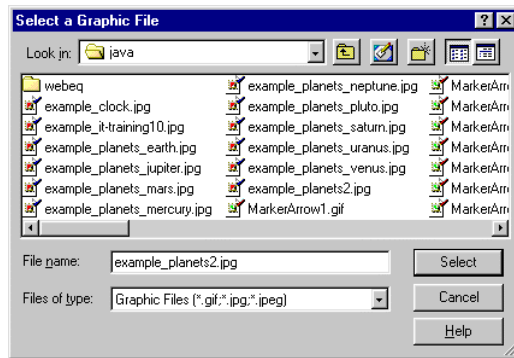
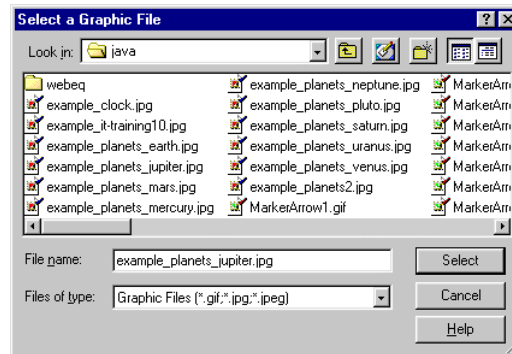


Figure 186 Question Editor: Selecting a Background Graphic (drag and drop questions only)

Locate the graphic and click **Select**.

You can click **Preview** in *Figure 185* to open your web browser and display the graphic.

To change the marker graphic, click the lower **Select...**:



**Figure 187** Question Editor: Selecting a Marker Graphic (drag and drop questions only)

Locate the graphic and click **Select**.

You can click **Preview** in *Figure 185* to open your web browser and display the graphic.

When a graphic is selected, it is copied to the drag-and-drop and Java directory, which is usually either `c:\perception3\author\resources\java` or `c:\perception3\server\resources\java`. This directory is specified in the **Options Settings** dialog on the **Directories** tab. If you repeat the same graphic name, then it is still copied into the **java** directory but its name is modified with an appended index number. For example, if the graphic is named **AlamClock.gif** is inserted again, it will be copied as **AlamClock1.gif**, and so on. Both graphics may be previewed in the default web browser.

*Perception* installs various standard markers that can be found in either:

`c:\perception3\author\resources\java`

or:

`c:\perception3\server\resources\java`

The marker graphics will be aligned by default along the bottom of the image, from left to right. This can be changed in the *Template Editor* – see Part 5: 2 *Template Editor* for details.

## 4.6 Outcomes in the Question Editor

The question content and choices define how the question is presented to the participant and what options there are for the participant to answer. But the choices are free of any information about which answer is “right” or “wrong”, and what scores or feedback are associated with certain answers.

You set up outcomes to define what the results of the question mean. Outcomes have three effects:

- They can set a score for the question.
- They can set a name or label for the results of the question.
- They can set feedback.

Outcomes are used when results are reported on, and outcome names are critical to this process. If outcome names are changed then reports can become confused and unclear.

The main information that outcomes define is the score in points for the question. You decide the scores for different possible answers by setting the outcomes. Although you can use scoring in other ways, you will usually want to give a positive score for getting a question right, and a zero or negative score for getting it wrong.

It’s common to use the same score for getting each question right, for example, that all questions are scored out of 5 or else that all questions get 1 point for being right and 0 points for being wrong. But you can, if you prefer, set different scores for different questions (for example, assign a higher score for a harder or more important question).

Outcomes can also assign a label of your choice to questions. In a testing environment, you could assign labels like “Right” or “Wrong” to answers. In a surveying environment, you could use labels like “Male” or “Female” or anything else you want. These labels are used in reporting and also used to control jumps within your assessment (see 3.4.2 *Creating and editing jumps* for how you use outcomes in jumps).

Outcomes also allow you to define feedback that is given to the participant after the question or after the assessment. Feedback is optional, but can be useful to give information as to why the participant was right or wrong.

A question can have any number of outcomes. Each outcome has a condition attached to it, which is evaluated after the question has been answered. A condition might be that a particular choice or combination of choices has been chosen, or it might be that a particular value has been entered into a text choice. Each outcome is evaluated sequentially. If the condition is met, its action is taken. If not, the next outcome is evaluated.

If you define no outcomes to a question, or if none of the conditions are met, the score is zero, and there is no feedback or outcome name defined.

When defining an outcome, you first specify the condition for when the outcome applies. For example, the condition might be if a particular choice is chosen, or if the participant answers in a certain way. You then specify:

- The **ID** or name of the outcome.
- The scoring effect of the outcome, typically that if the outcome condition is met, then the score is set to a specific value.
- The feedback message that is given if the outcome is met.

For example, suppose there is a multiple choice question asking who was the first American president, giving a number of choices including the correct one, George Washington. Then you might want to set up two outcomes:

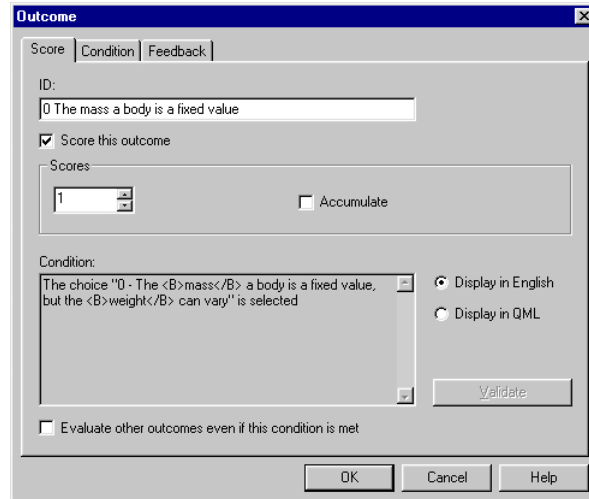
- 1) One outcome would apply if George Washington was chosen, would have an **ID** of **Right**, and would give a score of one point, and might have a feedback message of **Well done, that is correct**.
- 2) And the other outcome would apply if any other choice was chosen, would have an **ID** of **Wrong** and would give a score of zero points, with a feedback message of **No, that's wrong. It was George Washington**.

#### 4.6.1 Creating and editing outcomes

Outcomes are always placed at the end of a question. To add a new outcome, you use the **Add Outcome...** menu command. To edit an existing outcome, you double click on it. If you make a question with the Wizard, it will make some outcomes for you, which you can freely edit.

Outcomes are evaluated in the order in which they are displayed in the *Question Editor*. So the order of outcomes can be important – you can easily move them around with **Cut** and **Paste**.

When creating or editing an outcome, you see the **Outcome** dialog box. This has three tabs, which let you set a **Score**, a **Condition** and **Feedback**. The screenshot below shows the **Score** tab of the **Outcome** dialog:

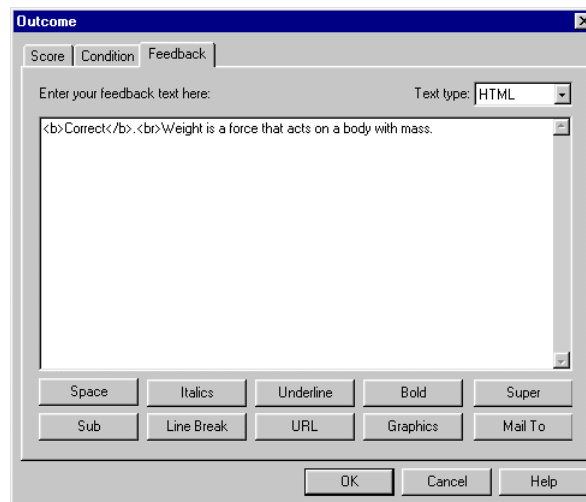


**Figure 188** *Question Editor: Outcome Scoring*

- The **ID** is the label or name for the outcome. You can make outcomes without an ID, but it's strongly recommended that you set a useful name here, as the reporting software uses outcome names extensively to analyze results. You should make one outcome for each separate kind of answer you want reported on.
- You select **Score this outcome** if you want the outcome to have an effect on the scoring, and then you set the score as a number below. If the condition is met, this becomes the score the participant gets for the question. You select **Accumulate** if you want the score for this outcome to be added to the score so far. (See 4.6.3 *Multiple outcomes* on multiple outcomes for an explanation of this.)
- The **Condition** is under what circumstances the outcome is met. You can choose to **Display in English** or **Display in QML**. If you display it in English, then you use the **Condition** tab of the dialog box to set or change the condition. (See 4.6.2 *Setting conditions* for details.) If you set the condition in QML, then you can type it here, and use the **Validate** button to check it is legal. See the *Technical Data Complete Reference* for information on QML syntax.

- Typically once a condition is met, further outcomes are not evaluated. But there are some circumstances in which you may want to permit multiple outcomes for the same question, in which case you select **Evaluate other conditions even if this condition is met**. (See 4.6.3 *Multiple outcomes* for more information.)

The **Feedback** tab of the dialog simply allows you to type in some feedback text:



**Figure 189** *Question Editor: Outcome Feedback*

Type in your text, and choose whether it is **Plain**, **HTML**, **MathML** or a link to a **URL**.

If you use HTML, then you can include links or multimedia, just the same as in HTML content.

## 4.6.2 Setting conditions

A condition is the circumstance in which the outcome applies, and can be a combination of any number of the following:

- **Always happens** (that is, this condition is always true).
- **Anything else** (that is, this condition is true, unless another outcome's condition has already been met).
- **Not answered** (that is, the question is not answered).
- If a particular choice is selected.
- If the answer to a numeric choice is equal to a number, or in a numeric range. Or if the answer is greater than another number. For example, if the condition is: **Choice is a number greater than 10.0**, then the following answers will make this outcome apply: 10.000001, 11, 10E2, and the following will be false: 10.0, 10, -10, 9, 10E-1. Equally, the answer can be less than another number.
- If the answer to a text choice matches exactly to a word, or text string, with or without considering letter case.
- If the answer to a text choice matches a text string, but is misspelled. If the correct answer is **Word** then the misspelled text may be:

The same size text with two letters transposed (for example, **Wrod**).

The same size and one incorrect letter (for example, **Wird**).

One character longer with the extra letter interspersed (for example, **World**).

One character shorter with a letter left out (for example, **Wod**).

- If the answer to a text choice includes particular text. If the correct answer is **Word** then the following will give correct answers:  
**Word, wordplay, sword, swords, Take my word for it, not word.**

The following will be false:

**raw ordinary, take my world for it, swards.**

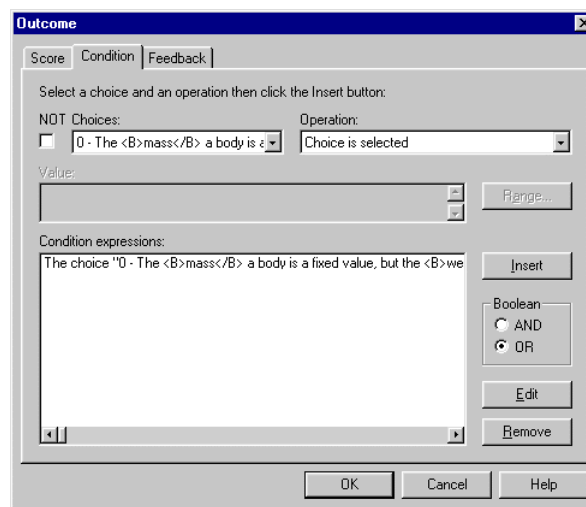
You can set letter case to be considered or ignored.

- For drag-and-drop questions there will be one or more answers defined as an area bound by a rectangle whose top left corner and bottom right corner are specified. The participant moves a marker onto a position on a graphic and if its center is within the rectangle then it is a correct answer. For example, you might display a map of the world, and ask the participant to pinpoint one or more countries. (Circles and polygons may also be defined using QML.)
- The inverse of any of the above (for example, a choice is not selected or a text choice does not match something).



The simplest of conditions are just one of the above, for example, that a choice is selected, or that a text answer choice matches a particular word, but you can also combine conditions into Boolean expressions, using the **AND** and **OR** operators. For example, you can make a condition that applies if one choice is selected **AND** another one is. Or, if a choice matches one word **OR** another word – for example, if your question asks what is the capital city of China, you can make a condition that applies if the answer is Peking or Beijing.

The screenshot below shows the **Condition** tab of the **Outcome** dialog box, where the condition is that one choice or another choice is chosen:



**Figure 190** *Question Editor: Outcome Conditions*

When creating a condition, you set up each part of the condition in the top part of the dialog box, and then you add it into the list of **Condition expressions** at the bottom of the dialog box.

To edit or delete an existing condition, you select it, and click **Edit** or **Remove**. To add a new condition, you fill in the details at the top of the box, and click **Insert**.

- 1) If you want to invert the condition (for example, make it apply if a choice is not chosen) select the **NOT** box.
- 2) Select a choice from the **Choices** drop-down menu. This will show all the choices in the question, and also the options Anything else (**OTHER** in QML), Always happens (**TRUE** in QML) and **Not answered** (**NOANSWER** in QML).
- 3) You then choose from the **Operation** drop-down menu, making an appropriate selection for the choice and question type as to what the condition means:
  - In a multiple choice or multiple response question, the usual operation is **The choice is selected**, which means what it says.
  - A multiple response question can use the condition **All choices selected** to define an outcome that corresponds to all the choices being selected by the participant.
  - If you choose options **Anything else** and **Always happens**, you do not make any selection, as these do not need any operations.
  - In a numeric question, with a numeric choice, the usual operation is **Choice is a number equal to** (that is, the answer is a particular number), **Choice is a number in a range from** (that is, the answer is in a numeric range), **Choice is a number greater than** or **Choice is a number less than** another number.
  - In a fill in blanks or text match question the usual operations are:
    - Choice matches exactly** (that is, the answer is a particular word or text string).
    - Choice is text matching ignoring letter case** (that is, the same but ignoring whether the text is UPPER or lower case).
    - Choice matches the text misspelled** (that is, the answer is correct but not spelt correctly).
    - Choice includes the text** (that is, the actual answer is within the answer given).
    - Choice includes the text ignoring letter case** (that is, the actual answer is within the answer given but ignoring letter case).
  - In a matching, matrix, pull-down list or ranking question, you also use **Choice matches exactly** to mean that the answer to a choice matches an option you have set.
  - In a drag-and-drop question the operation to define a rectangle as the correct answer is **Choice is in the area bound by**:

It's important to choose an operation that is relevant to the question type, as the *Question Editor* does not prevent you from entering a meaningless or impossible condition (for example, that a numeric choice is selected, or that a multiple choice question choice matches a number). The *Question Editor* does not enforce rules about certain outcomes only going with certain question types, to allow for future flexibility. But this means that you have to watch what is happening yourself.

- 3) For some operations, you then need to set a Value, either a number or some text that the operation applies to:
- For **Choice is a number equal to** you enter the number it must be equal to.
  - For **Choice is a number in a range from**, you use the **Range...** button to enter the range, from one number to another one.
  - For **Choice is a number greater than** or **Choice is a number less than** you enter a number that satisfies your condition.
  - For **Choice matches exactly** or **Choice is text matching ignoring letter case**, you enter the text, or for a selection question the name of the option to match.
  - For **Choice matches the text misspelled**, you enter the text spelt correctly.
  - For **Choice includes the text** or **Choice includes the text ignoring letter case**, you simply enter the text.
  - For **Choice is in the area bound by:** you use the **Range...** button to enter the coordinates of the top left and bottom right corners of a rectangle.

Choices are identified by the Choice ID and the name of the graphics file selected as the marker. In this way, the same marker can be used several times.

- 4) You choose from **AND** and **OR** to define how different parts of the condition work together, and then click the **Insert** button to insert into the list of **Condition expressions**.
- One condition **AND** another means that both must apply for the outcome to be active.
  - One condition **OR** another means that either (or both) must apply for the outcome to be active.
  - If three or more conditions are present, the expression is evaluated from left to right, for example, A **OR** B **AND** C is treated as (A **OR** B) **AND** C.

### 4.6.3 Multiple outcomes

The easiest way to use outcomes is to think of different kinds of answer that you want to score or report on separately, and then make one outcome for each.

It is good practice to include a final outcome with the condition set to **Anything else**. This is used if none of the preceding outcome conditions were met. This “catch-all” condition will be used if an answer is given which doesn't match any of the conditions. For instance in a text match question, the participant may give any number of different answers. Unless they have been predefined as an outcome, they will be captured by the final outcome, and can be given a label, and feedback if you desire.

Normally when an outcome condition is met no further outcomes are evaluated. This may be overridden by setting **Evaluate other conditions even if this condition is met** in the **Outcome** dialog, which means that evaluation will continue to the next outcome. Care must be taken in constructing a final outcome when evaluation is set to continue; if this is set to **Always happens** this outcome will be used even if the correct answer was identified in the preceding conditions. In this case, set the final outcome to **Anything else**, which will be used only if none of the preceding outcomes have been used.

If multiple outcomes are used, then the IDs for all are stored in the answer database, and the reporting software will usually inform you of all. If you do not want to see one of the outcomes in the reporting software, leave its ID blank.

If multiple outcomes are evaluated, the feedback presented to the participant will be the feedback for each outcome where the condition is met, in the order of the outcomes. The feedback from one outcome will be joined with the feedback of previous ones.

The score is by default the score of the outcome that is last evaluated, as each outcome that applies will replace the previous score. But this may be overridden by setting **Accumulate** in the **Outcome** dialog, which means that the score is added to the score so far, not replacing it. If you set **Evaluate other conditions even if this condition is met** on, you will usually also want to set **Accumulate** on, so that the score for the question is the sum of the scores for the outcomes that are true.

The following example illustrates the meaning of these fields. Suppose you have these outcomes, the conditions for all three of which are met by the answer:

- Outcome **A**. Score 1. Feedback “abc”.
  - Outcome **B**. Score 2. Feedback “def”.
  - Outcome **C**. Score 3. Feedback “ghi”.
- 1) Consider first if none of the outcomes have **Evaluate other conditions even if this condition is met** on. Then Outcome **A** will be evaluated first, and the score will be 1, and the feedback will be “abc”.
  - 2) Then imagine that all the outcomes have **Evaluate other conditions even if this condition is met** on, but none have **Accumulate** on. Then all three outcomes will be evaluated, but the score for Outcome **C** will override the previous scores, and the score will be 3. The feedback will be “abcdefghi”.
  - 3) Finally consider if all the outcomes have **Evaluate other conditions even if this condition is met** on, and all have **Accumulate** on. Then all three outcomes will be evaluated, and each score will be added so that the score for the question will be 6. The feedback will be “abcdefghi”.

Multiple outcomes allow a very powerful range of options to happen after a question, but also need some care in working out. If you are using outcomes in this way, you will want to carefully tryout your questions using the server software prior to delivering them to real participants, to check that your logic is accurate. You may also find that learning QML and viewing questions in QML will help you design complicated outcomes.

## 4.7 Constructing outcomes for each question type

### 4.7.1 Constructing outcomes for drag and drop questions

Drag and drop conditions define areas on the graphical image using pixel coordinates. The top left corner of an image is 0,0 and the bottom right corner of the image is x,y where x is the width of the image and y is the height. The software compares the position of the center of the graphical marker and tests if this is within the area or not. You should usually make your area larger than the size of the marker, to deal with possible confusion by the participant as to which part of the marker counts for pointing purposes.

Because outcomes are evaluated in the order in which they are defined you can use overlapping areas. For instance, if you choose a point on the image as your correct answer, you can define successive outcomes using larger size rectangles and award lower marks the further the participant gets from the right answer area.

You can define three types of area – rectangular areas, circular areas and polygonal areas. Usually it's best just to use rectangles, but if you have a need for circles or polygons, you can use these, though you have to encode them in QML (see Part 2: 3.3 *Question Markup Language* above and the *Technical Data Complete Reference*).

To define a rectangle, you set the coordinates of its top left and bottom right coordinate. You do this by entering in these coordinates using the **Enter Coordinates** dialog available if the **Range...** button is clicked from the **Conditions** tab of the **Outcome** dialog. Or if your graphic is a JPEG graphic, you can use the *Graphical Editor* by clicking **Set with Mouse**.

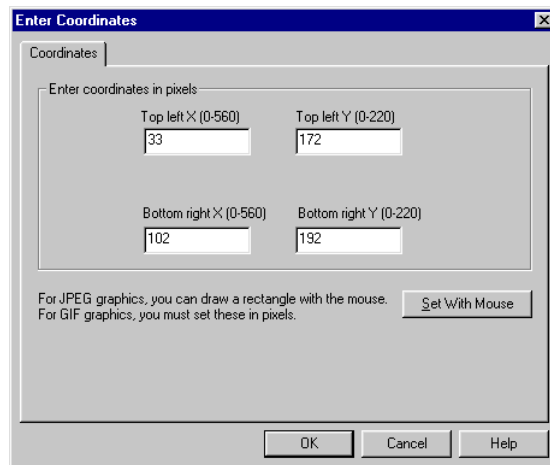
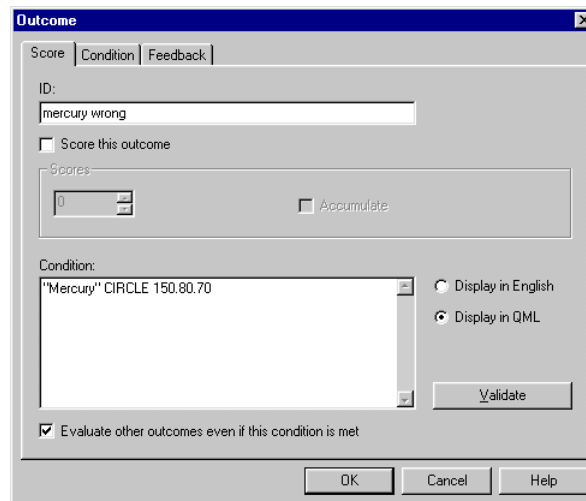


Figure 191 Question Editor: Drag and Drop Markers

To define a circular area, set your outcome to display the condition in QML, and then enter the choice ID, followed by the word **CIRCLE** followed by the coordinates of the center of the circle and the radius in pixels. For example in the screenshot below, a circle of 70 pixels is defined around the position 150,80.



**Figure 192** Question Editor: Drag and Drop Scoring

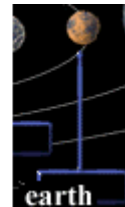
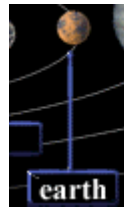
You can define a polygon with three or more points, each point being defined by a coordinate in the order in which they occur on the area's perimeter. It is assumed that the first and last points are joined. Outcome conditions consist of the choice ID, followed by the type of area, followed by the coordinates where each coordinate or number is separated by spaces. For example:

**"mercury" POLY 218,82 248,64 280,22 308,53 357,37 363,85 317,103 281,69 250,111**

**Note:** When selecting your coordinates for "hot" areas, it is important to remember that when the participant places the marker to signify an answer, it is the center of the graphic that must be within your coordinates.

This may have implications on how strict your "hot" areas are. For examples, you may wish to make a "hot" area smaller than your marker graphics size, meaning that the participant needs to be more accurate when positioning the marker.

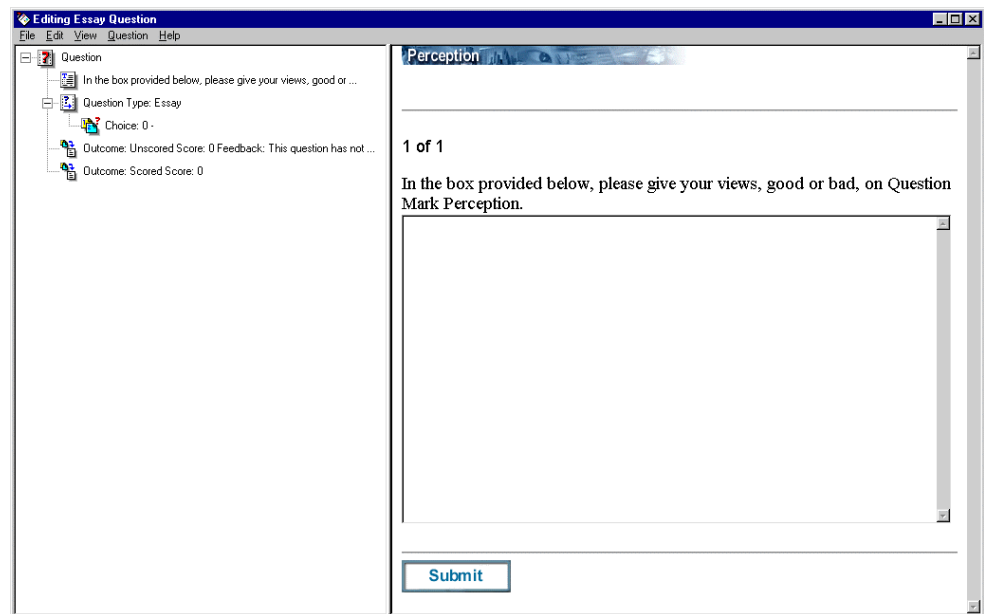
The positions of the markers in the left and right figures are both considered as being correct, as the absolute center of the marker graphic lies within the coordinates of the blue rectangle.





## 4.7.2 Constructing outcomes for essay questions

If you create an essay question with the *Question Wizard*, it will look similar to the screen below when it is opened with the *Question Editor*:



**Figure 193** *Question Editor: Outcomes for Essay Questions*

Two outcomes have been created. The **Unscored** outcome is used to display a message to the participant and is set by default to appear always.

The **Scored** outcome is used to set a maximum score for the essay when it is graded using other software, for example Questionmark's *Essay Grader*. The default settings mean that this outcome will never appear, but it enables external software to ascertain the maximum score.

### 4.7.3 Constructing outcomes for fill in blanks questions

This question type is essentially a text match question with more than one choice in which a text value may be entered, although the two question types are normally formatted differently when displayed to allow the answers to be spaced within other text. However, if only one blank is used then it is the same as a text match question.

Outcomes for fill in the blanks questions must perform a text match on a number of choices, either in the same or successive outcomes. As with multiple response questions, two methods may be employed to construct outcomes:

- Use the setting **Evaluate other conditions even if this condition is met** option in conjunction with the **Accumulate** scoring option. Check the value of the first choice and add or subtract marks as appropriate then the value of each of the other choices in turn.
- Use the **AND** operator in the condition to match the correct combination of choices. This demands that all the choices specified match their respective answers.

The two may also be used in conjunction; a single outcome using **AND** operators to check that all the required choices are correct, followed by single outcomes for each choice which continue evaluating and accumulate the scores.

You can also use this question type to ask people to enter two or more things in any order. For example, if the question is “Name the two countries which have land borders with the USA”, then you can define two text entry boxes (choices). You can then define the following outcomes.

- One outcome with a label of “Both right” might test for the first choice being “Canada” **AND** the second choice being “Mexico”.
- Another outcome with a label of “Both right” might test for the first choice being “Mexico” **AND** the second choice being “Canada”. This needs to be a separate outcome, as it’s not possible to combine this with the logic of the previous condition.
- An outcome with a label of “One right” might test for either choice being “Mexico” or either choice being “Canada”.
- And finally an outcome with condition **Anything else** could catch all other answers.

You can also use the **Choice matches the text misspelled**, **Choice includes the text** or the **Choice includes the text ignoring letter case** conditions for this question type.

#### 4.7.4 Constructing outcomes for matching questions

If you use the *Question Wizard* to create a matching question, and do not tick the **Score per match** option when defining the scores and feedback (see *Figure 128*), only two outcomes will be created:

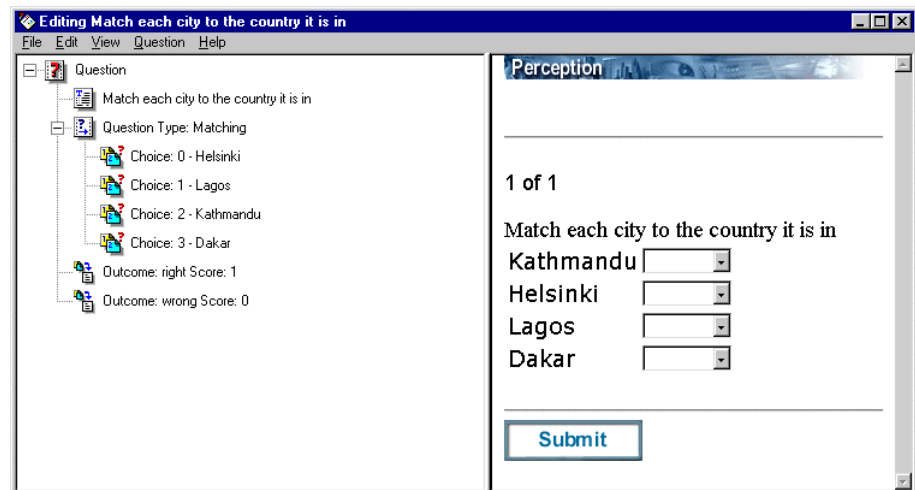


Figure 194 Question Editor: Outcomes set by Default for Matching Questions

Rather than just have “right” and “wrong” outcomes, you can use *Question Editor* to create a separate outcome for each correct choice:

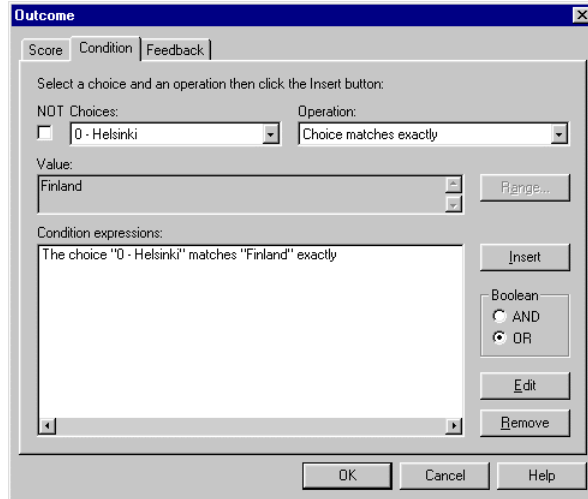


Figure 195 *Question Editor: Outcome Conditions for Matching Questions*

This shows one such outcome being created. If you **Accumulate** the scoring for each outcome:

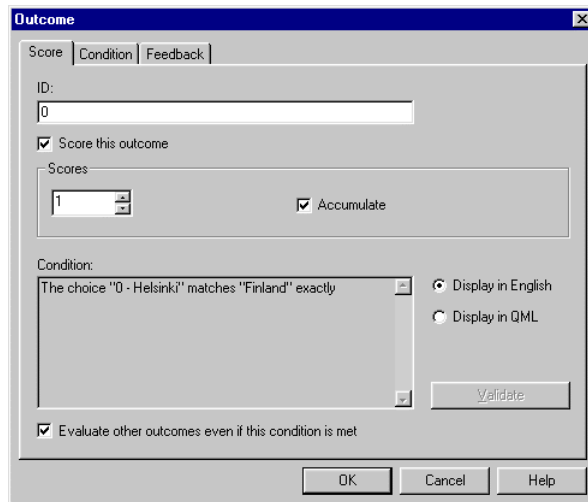


Figure 196 *Question Editor: Outcome Scoring for Matching Questions*

You will create a question that scores 0, 1, 2, 3 or 4 according to the number of correct choices the participant makes:

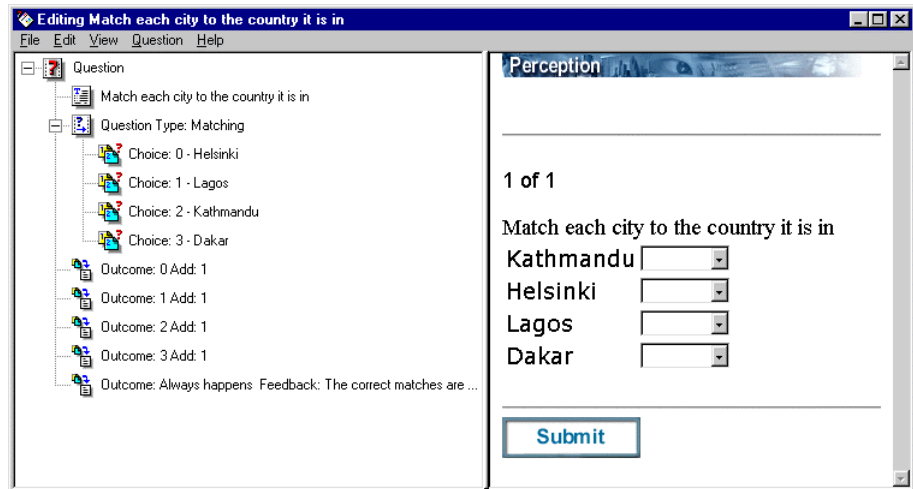


Figure 197 Question Editor: Outcomes added for Matching Questions

It is also possible to implement a more sophisticated scoring and feedback scheme that deals with every possible combination of choices:

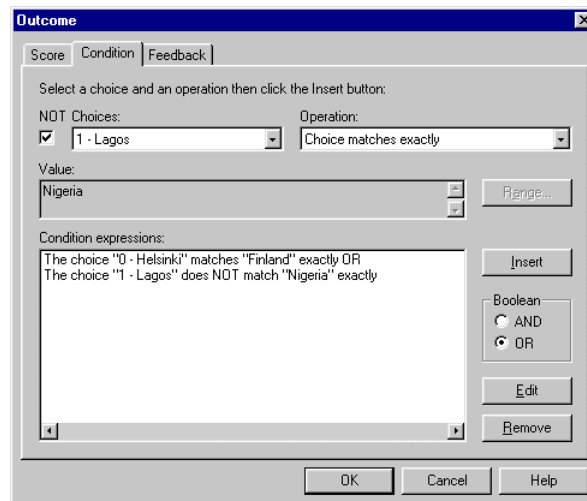


Figure 198 Question Editor: Outcome Conditions added for Matching Questions

#### 4.7.5 Constructing outcomes for matrix and pull-down list questions

Constructing outcomes for this question type is similar to the methods used for multiple response and fill in blanks questions. The option selected by the participant for each choice is returned as text and the outcomes checked for matches with the answer text. But in this case, the answers that the participant may give are restricted to the options presented to them.

A single outcome may test for the correct combination of text values using the **AND** operator or the **Evaluate other conditions even if this condition is met** option may be used to check each choice in turn.

#### 4.7.6 Constructing outcomes for multiple choice questions

In a multiple choice question, the participant either answers one of the choices, or else leaves the question unanswered. There are only a limited number of circumstances to consider in the outcomes. Here are some different ways in which you can construct outcomes:

- 1) You can have one outcome for each choice, with the score and feedback for each choice defined in the outcome. This is how questions created by the Wizard are made. Because each choice has its own outcome, it's easy to produce graphs in the reporting software showing which choices are chosen.
- 2) If you also want to catch unanswered questions and give appropriate feedback, you do the same as 1), but also add a **Not answered** outcome to catch unanswered questions.
- 3) If you don't need an analysis by choice in the reporting software, you can reduce the number of outcomes to the following two:
  - One outcome for the correct choice, with its score and feedback
  - One outcome using the **Anything else** condition, which deals with all incorrect answers and to the case when the question is unanswered.
- 4) If you have long feedback, which you don't want to repeat in every outcome, you can have an initial outcome with condition **Always happens** which gives the feedback but has no score or label, and which evaluates other outcomes after it. Then you can follow with outcomes as in 1) or 2) or 3).

### 4.7.7 Constructing outcomes for multiple response questions

Constructing outcomes for multiple response questions is more complicated since a participant may select more than one of the choices, or indeed all of them. How to proceed depends on how you want the question scored and how you want feedback constructed. Two main strategies are possible for this question type:

- 1) Make one outcome for each choice. Use the setting **Evaluate other conditions even if this condition is met** option in conjunction with the **Accumulate** scoring option. Each choice can be selected in turn and for each correct option that is selected a point may be added to the question score.
- 2) Use the **AND** operator in the condition to match the correct combination of choices. Also, use the **NOT** operator to **AND** the choices which are not correct. This approach is especially appropriate if you want to give a score for the question only if the participant gets it exactly right.

This is best illustrated with an example. Suppose a question has six choices ABCDEF, and it is correct to choose three of them, say ACE, then these are the two different ways of making the outcomes:

- 1) Make one outcome for each choice, with **Evaluate other conditions even if this condition is met** and the **Accumulate** scoring option. Give a score of say 1 point to each of ACE, and a score of 0 points or -1 points for each of BDF. You can set different feedback for each choice, which will be joined when given. This will mean that the score for getting the question right is 3 points. Something to watch out for if you take this approach is that a participant could try to select all options. If you don't give negative marks for wrong choices, there is nothing to stop this – they still get maximum points.
- 2) Make one outcome for getting the question right, consisting of a condition where A is chosen **AND** B is **NOT** chosen **AND** C is chosen **AND** D is **NOT** chosen **AND** E is chosen **AND** F is **NOT** chosen. This can score 1 point, or however many points you want. Make another outcome with condition **Anything else**, for all other answers, scoring zero.  
You can if you wish expand this option, with additional outcomes for partially right answers. For example, you might define an outcome matching AC but **NOT** BDEF that gives 2 points and so on.

If you don't want to make separate feedback for each choice, then make an outcome with a blank ID and with condition **Always happens** at the top of your list of outcomes, and put the feedback there.

### 4.7.8 Constructing outcomes for numeric questions

As with text match questions (see 4.7.11 *Constructing outcomes for text match questions*), constructing outcomes for numeric questions necessitates testing the value the participant has given for the choice. But this time, both the value and the answer are interpreted as numbers.

Four tests are available for numeric questions. They are whether the two numbers are equal, whether the value given falls within a range between two numbers or whether one number is greater or less than another. Both whole numbers and real numbers containing a decimal point may be used in the condition and entered as an answer. Scientific numbers with an exponent are also permitted. Perception tries to ensure that participants can enter only numbers into numeric choices, but if the participant does manage to enter text, this will always fail to match with a number.

If the question has a single right answer, then usually you would make one outcome, which finds this and another outcome, which finds **Anything else**. Or you might make a middle outcome, which finds numbers in a range from the right answer, and allocates a partial score. For example, if your question is “What is the value of  $\pi$  to two decimal places?” then you might have outcomes:

- If the answer is 3.14, give full marks.
- If the answer is in the range 3.1 to 3.2, give partial marks.
- If the answer is **Anything else**, give zero marks.

Remember that because outcomes are evaluated sequentially, if the answer is 3.14, then the first outcome only will be evaluated, so you do not need to worry that the second one is also met, as it will not be reached.

If you are conducting a survey, and you want to assign the numbers into bands for analysis, then this is easily done using outcomes. For example if you are asking people how old they are, then you can make outcomes for age bands 0-18, 19-35, 36-50 and 51-100, or however, else you want to analyze them. These outcomes are easily built by using the **Choice is a number greater than** or **Choice is a number less than** conditions. *Enterprise Reporter* will then automatically analyze them in these bands, and the raw data will also be available if you need it.



If you are using numbers with decimal places, the following guidelines indicate how these are marked.

- If the number in the condition is specified as a real number (for example, “1.1”, then only an answer of this exact number will make the condition true). The answer of “1” as a whole number will not match.
- If the number in the condition is specified as a whole number (for instance “1”), then any real number will match if the digit before the decimal point is “1”, from “1.00001” to “1.99999”. In this case, the digits after the decimal point are discarded, not rounded.
- When a range is specified as the condition, the upper and lower limits of the range are included, so the condition “1 TO 3” will allow all three numbers, “1”, “2” and “3” as right answers. When the range is specified with whole numbers, any real number that is truncated to a whole number within that range is also accepted, from “1.00001” to “3.99999”.
- When the range is specified using real numbers, both numbers in the range must be real numbers. You should not mix whole and real numbers within the range.
- Numbers in scientific notation may also be used. For example, 10E2, 10E-3, 10.0E2.

You can create numeric questions with more than one choice. In that case, you will want to use the same guidelines as for multiple response questions (see 4.7.7 *Constructing outcomes for multiple response questions*) and fill in blank questions (see 4.7.3 *Constructing outcomes for fill in blanks questions*) to determine the way you structure their outcomes.

#### 4.7.9 Constructing outcomes for ranking questions

As with matching questions, outcomes for ranking questions are created with “right” and “wrong” outcomes by default (see 4.7.4 *Constructing outcomes for matching questions* above), and more complex outcomes corresponding to partially correct responses can be constructed in a similar way.

#### 4.7.10 Constructing outcomes for select a blank question questions

As with matching questions, outcomes for select a blank questions are created with “right” and “wrong” outcomes by default (see 4.7.4 *Constructing outcomes for matching questions* above).

However, a select a blank question can be treated as a series of multiple choice questions (see 4.7.6 *Constructing outcomes for multiple choice questions*) and more complex outcomes corresponding to partially correct responses can be constructed.

#### 4.7.11 Constructing outcomes for text match questions

You need to use great care in designing open text questions that can be marked. The only text questions that it is safe to mark are ones where the number of possibly right answers is strictly limited, typically questions where the answer is short and factual.

For example, these might be questions that you can safely deliver and mark in a computerized exam, because there is only one answer, or only a small number of answers:

*What is the capital city of Italy?*  
*Name a country other than the USA, which uses the dollar as its currency?*  
*Which Word 97 menu item do you copy and paste from?*  
*What is the French word for "sickness"?*

On the other hand, these questions would be very difficult, if impossible to mark properly as there are too many possible answers to enumerate:

*Describe the shape of the country Italy.*  
*How did the word “dollar” come to be used as the name for US currency?*  
*How would you copy and paste some text in Word?*  
*Translate this paragraph into French.*

Text match marking usually follows a “waterfall” principle, where one condition is evaluated and then another, until a condition that matches applies. Your conditions may be:

- **Exact match**

The answer must match exactly a value. Leading and trailing spaces are ignored. So “Rome” will match “ Rome ”. But spaces within text are not ignored. So “capital of Italy” (two spaces between each word) will not match “capital of Italy” (one space between each word).

You can set that letter case matters or not. If it does matter, then “Rome” will not match “rome”. Usually you should only set that letter case matters if you are testing language or keyboard skills or in some situation where getting the wrong letter case is important. Otherwise you run the risk of penalizing participants who are not proficient at typing.

Exact matches are good if the right answer is a word or phrase that you want typed in exactly.

- **Misspellings**

If an exact match is not made, you may wish to look for a misspelling, where one letter is wrong. (See 4.6.2 *Setting conditions* for more details.)

Other misspellings, which do not fit into this algorithm will not be found automatically and will need to be trapped in other ways. For example, if you are looking for an answer of “Philadelphia” and your students sometimes spell it “Filadelfia”, you will need to trap this yourself.

- **Included in text**

An alternative condition is to check whether text is included in the answer. For example if you check to see if “word” is included in an answer, it will be found in answers of “sword” “words do not hurt me” or “not a word”, but not in “worlds” or “low order.” Again this can be with or without letter case.

- **Boolean combinations**

You can combine any of the above with the **NOT**, **OR** and **AND** operators to make expressions containing these conditions to create sophisticated marking algorithms.

Here are some examples of how you can use these conditions to make useful questions:

### **What is the capital city of Canada?**

This is a simplest kind of text question, where there is one right answer, which must be given. Possible conditions might be the following:

- If the answer matches “Ottawa” exactly ignoring case, then score 2 points and give feedback for being right.
- If the answer matches “Ottawa” misspelled, then score 1 point, and give feedback with the correct spelling.
- If the answer is anything else, score 0 and give feedback for being wrong.

You could omit the middle condition if you prefer.

### **Who wrote the play “Hamlet”?**

Another common kind of question is where there is a single factual answer but there might be a number of different ways of saying it. There would be two approaches to marking this question. One approach would be as follows:

- If the answer includes “Shakespeare”, then score 1 point and give feedback for being right.
- If the answer is anything else, score 0 and give feedback for being wrong.

And the other approach would be:

- If the answer matches “Shakespeare” exactly, then score 1 point and give feedback for being right.
- If the answer matches “Will Shakespeare” exactly, then score 1 point and give feedback for being right.
- If the answer matches “William Shakespeare” exactly, then score 1 point and give feedback for being right.
- If the answer is anything else, score 0 and give feedback for being wrong.

The advantage of the first approach is that it is simpler, but it does permit longer answers that might be wrong to be marked right. For example “Shakespeare, Bacon, Goethe, Miller, (and all the other authors I can think of)...” would be marked right. The advantage of the second approach is that it will never mistakenly mark a wrong answer right, but it may miss a possible right answer, for example “W. Shakespeare” would not be marked right.

You need to think carefully about which answers you will permit, and which answers you won't.

### **Name the two planets that are closer to the Sun than Earth**

In this more complex example, the participant must name Venus and Mercury in either order. The simplest way of doing this would be to make a condition:

- If the answer includes “Venus” AND the answer includes “Mercury”, score 1 point and give feedback for being right.
- If the answer is anything else, score 0 and give feedback for being wrong.

More complex conditions could exclude the other planets and also give partial marks for getting one right, for example:

- If the answer includes “Venus” AND the answer includes “Mercury” AND the answer does not include “Mars” AND the answer does not include “Jupiter” AND the answer does not include “Saturn” AND the answer does not include “Uranus” AND the answer does not include “Neptune” AND the answer does not include “Pluto”, score 2 points and give feedback for being right.
- If the answer includes “Venus” AND the answer includes “Mercury”, score 1 point but give feedback saying they have included other planets too.
- If the answer includes “Venus”, score 1 point and give feedback saying that “Venus” is correct but “Mercury” is also there.
- If the answer includes “Mercury”, score 1 point and give feedback saying that “Mercury” is correct but “Venus” is also there.
- If the answer is anything else, score 0 and give feedback for being wrong.

Note that, because outcomes are always evaluated in order then only one of the above will ever apply.

With all questions it's important to try them out and get them piloted by people before you use them for real assessment purposes. With text match questions, this is especially true. The question is safest to use for simple questions where there is a single or very small number of right answers. Open text questions are a powerful tool, because they do not prompt the user with the answer, but they also can be misused. Consider your questions carefully, because it's a common pitfall for someone to think of an answer which should be right, but which has not been included in the design.

You can make text match questions with more than one choice (that is, more than one text area the participant can answer in). See 4.7.3 *Constructing outcomes for fill in blanks questions* above to discover how to construct outcomes for fill in blanks questions.

## 5 The QML Editor

### 5.1 Invoking the QML Editor

In addition to the *Question Editor*, *Question Manager* also enables users to edit questions using its *QML Editor*.

To invoke the *QML Editor* select a question, and choose **Question | Edit in QML** from the main *Question Manager* menu, or right-mouse click and select **Edit in QML** from the resulting menu:

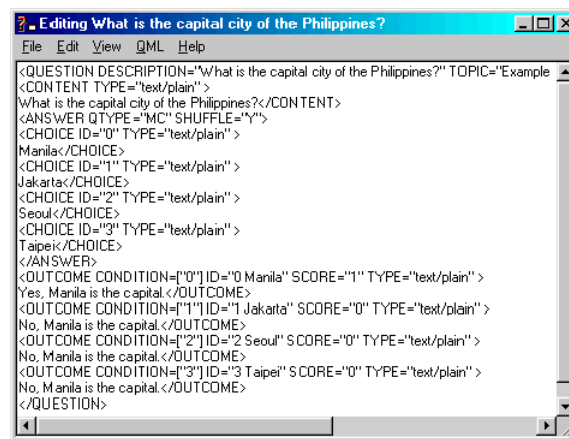


Figure 199 QML Editor: Window

The *QML Editor* presents the question as a text definition using QML.

For a full description of the QML language, see the *Perception* support site at:

<http://www.questionmark.com/perception/help/>

## 5.2 The QML Editor menus

### 5.2.1 File, Edit, View and Help menus

The *QML Editor* is essentially a text editor.

The **File** menu enables you to **Save**, **Save and Exit**, or **Cancel** any changes made, and then quit the Editor.

The **Edit** menu enables you to **Cut**, **Copy** or **Paste** portions of the QML text. It is also possible to search and replace portions of the QML text from this menu (see 5.2.3 *Search and Replace* below) with the **Find...**, **Find Next** and **Replace...** options.

The **View** menu enables you to **Preview and See as HTML**. This generates a text document containing the HTML source code and opens it in Windows Notepad. This enables the author to check the HTML that the question will produce. **Tryout** is also available on this menu. Its function depends on whether Internet Explorer 4 or higher is installed. If it is then the question can be fully tried out, however, if it is not then it can only be previewed in the default web browser.

The **Help** menu in the QML Editor offers the options **Contents**, **Perception Support Website** and **About Question Manager...** These are the same as in *Question Manager*.

### 5.2.2 The QML menu

The **QML** menu offers a number of shortcuts to enable you to insert the correct QML syntax for the question elements.

#### **Content**

This will insert opening **<CONTENT>** and closing **</CONTENT>** tags, including any highlighted text within the tags.

#### **Answer...**

This will insert opening **<ANSWER>** and closing **</ANSWER>** tags, allowing the author to specify the question type to be used. It also allows the author to specify that they wish the order of choices to be randomized on presentation by inserting the attribute **SHUFFLE=YES** in the opening tag.

#### **Choice**

This will insert opening **<CHOICE>** and closing **</CHOICE>** tags, and should be done with the cursor inside the **ANSWER** element. Each choice will automatically be given an ID, starting with **ID="0"** and incrementing each time a choice is inserted; **ID="1"**, **ID="2"** and so on.



**Outcome**

This will insert opening `<OUTCOME>` and closing `</OUTCOME>` tags, and should be done with the cursor after the closing `</ANSWER>` tag. Like the choice option, this will automatically generate incremental outcome IDs. A score of **0** will also be assigned to each outcome and a condition corresponding to one of the choice IDs. The condition IDs are also automatically incremented each time an outcome is inserted.

**Validate**

This will check the QML syntax of the question definition, and either confirms that it is valid, or reports on any errors found. If errors are found, the **Details** button will show the line on which the software thinks the error has occurred, a brief description of the problem and the last word (or **token**) that it examined before finding the error. This can help you track down errors in the QML syntax.

**Note:** The **Validate** function is automatically called before the question is saved, so that invalid question definitions cannot be saved to the database.

### 5.2.3 Search and Replace

The edit menu offers options to search and replace portions of the QML text as shown below:

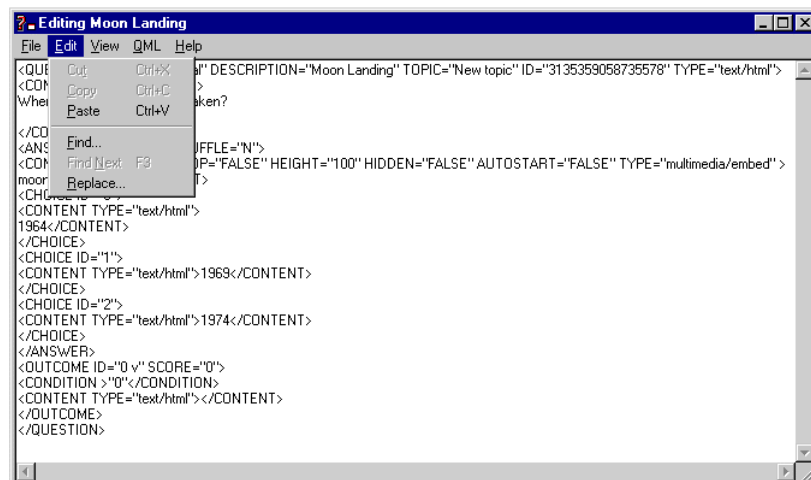
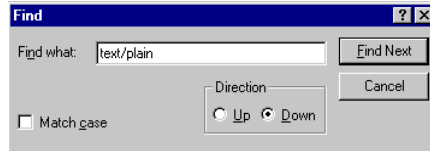


Figure 200 QML Editor: Edit Menu

To find all occurrence of the string “text/plain”:

- 1) Click on the **F**ind... on the edit menu and the screen below appears:

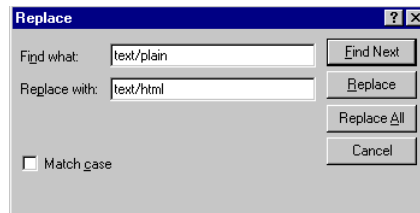


**Figure 201** *QML Editor: Finding QML Text*

- 2) Enter “text/plain” next to **F**ind what:
- 3) Now click on **F**ind Next and the first occurrence of “text/plain” will be highlighted
- 4) Now click on **F**ind Next again to find the next occurrence of “text/plain”

To replace all occurrence of the string “text/plain” with “text/html”:

- 1) Click on the **R**eplace... on the edit menu and the screen below appears:



**Figure 202** *QML Editor: Finding and Replacing QML Text*

- 2) Enter “text/plain” next to **F**ind what:
- 3) Enter “text/html” next to **R**eplace with:
- 4) Now click on **R**eplace and the first occurrence of “text/plain” will be replaced with “text/html”
- 5) Now click on **R**eplace again to replace the next occurrence of “text/plain” with “text/html”
- 6) Click on **R**eplace **A**ll to replace all occurrences of “text/plain” with “text/html”

# **Part 4: Building Assessments**



# 1 The structure of assessments

The broad structure of a typical assessment is shown in *Figure 2* and is described in Part 2: 1.1 *How are assessments made up?* How assessments in *Perception* are built up from the elements shown in *Figure 203*.

The assessment elements are referred to as the *assessment blocks*, or just *blocks*. The blocks are:

- **Control Block**

This information consists of:

- An **assessment name** for the assessment
- An **assessment time limit** for the assessment (see 1.1.2 *Assessment time limit* below)
- The **Template file for assessment** that determines how the assessment appears to the participant (see 1.1.3 *Assessment template* and 1.5 *Templates* below)
- Whether to **Record results in database** (see 1.9.1 *Question notes* below)
- The **Type of feedback**, how to **Display feedback to which questions** and **Disable feedback for unscored questions** (see 1.1.4 *Assessment feedback* below)
- The **security password to control publishing and scheduling**, whether the assessment **Requires monitoring** (see 1.7 *Monitored assessments* below) and whether to **Prevent open access to the assessment** (see 1.1.5 *Assessment security* below)
- Which **topics in an assessment to be reported on** (see 1.1.6 *Assessment topic reporting* below)

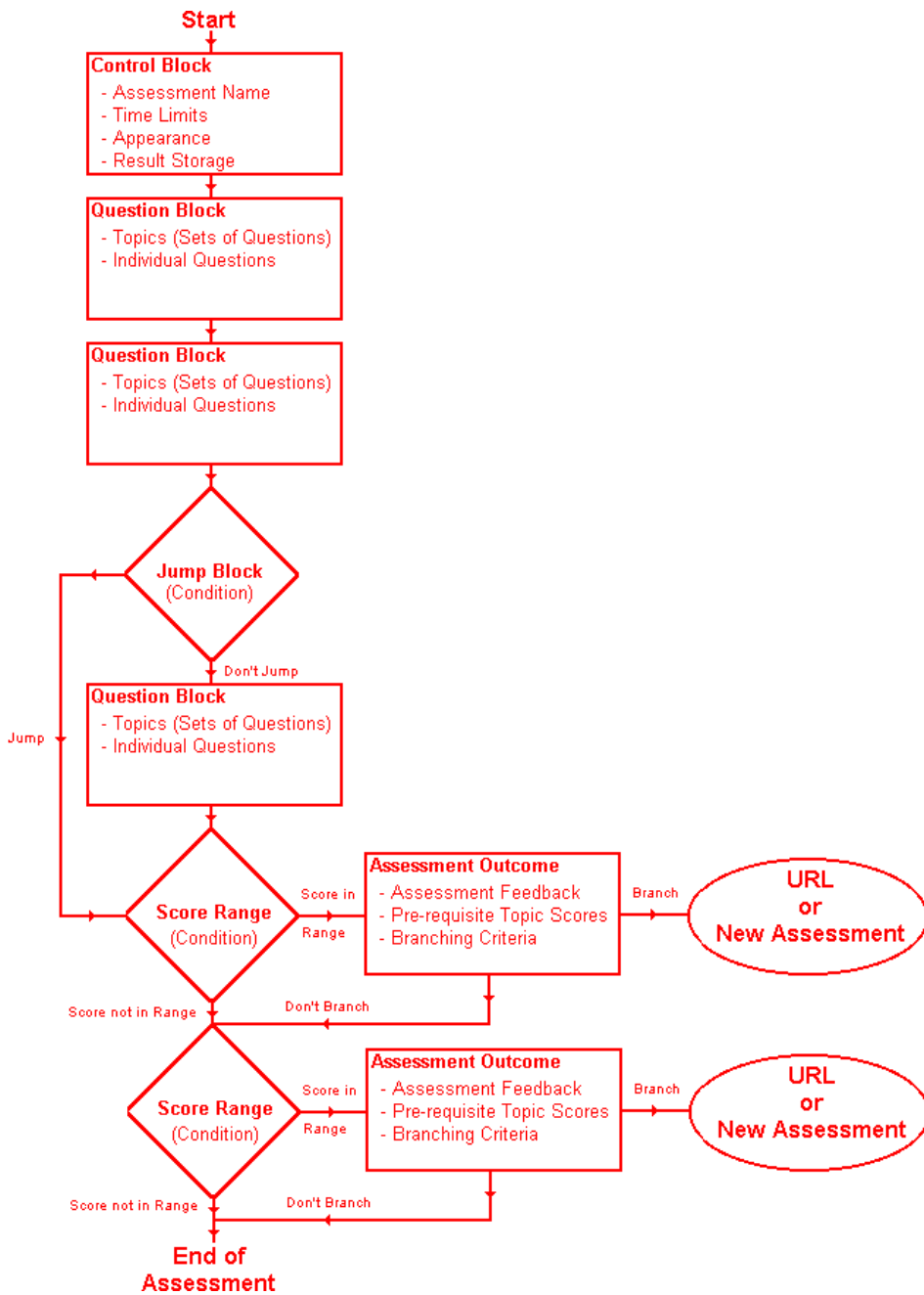
- **Question Block**

This is a selection of questions from the default question database (see 2.11.1 *Options tab* below).

Questions may be selected individually from the database in the following ways:

- Individually from the question database
- As a complete set of questions in a topic or subtopic
- As a random selection of questions from a topic or subtopic
- As a selection of tagged questions from a topic or subtopic
- As a selection of tagged questions from of all the questions in the question database

## The structure of assessments



**Figure 203** Detailed Construction of a Typical Assessment

These selection methods are described in 2.10 *Adding questions to assessments* below.

Topic structuring was explained in Part 3: 2.1 *Organizing questions by topics* and the concept of question tags in Part 3: 2.2 *Classifying questions with tags*.

- **Jump Block**

When a participant has answered the questions in a question block, they can progress to another question block, or to the end of the assessment.

This is done with a jump block, which determines where participants go next according to their performance in the last question block from which they have answered questions.

A jump block uses a **Condition** to examine the results of the last question block and decides where to direct the participant. The criteria against which participants can be evaluated are:

- Whether they have or have not experienced a specific question **Outcome** in the last question block
- Whether their **Last block score** is equal to, not equal to, or is less or greater than a specific number of **points** or **percentage**
- Whether their **Assessment score** is equal to, not equal to, or is less or greater than a specific number of **points** or **percentage**

These methods are described in 1.3 *Jump blocks* below.

Jump blocks enable assessments to be used for “adaptive” tests.

If no jump block is included after a question block, then the software will progress to the next question block.

- **Assessment Outcome**

The overall performance for a participant over a complete assessment can be categorized with assessment outcomes. These each define a **Score range** which defines which percentage scores for the assessment trigger the assessment outcome.

An assessment outcome specifies:

- How total score and topic information is displayed
- Whether the participant must achieve a **Prerequisite** score for one or more topic in order to “pass” the assessment
- **Feedback** given to the participant if they trigger the assessment outcome
- **Branching**, which defines where to go at the end of the assessment (another assessment or a URL)

The following sections show you an example of how an assessment is built up from these blocks.

The illustrations show you how the assessment appears in *Assessment Manager* at various stages. It is not necessary to understand how these tools work at present, but you can find a full description of *Assessment Manager* in 2 *Assessment Manager* below.

## 1.1 The control block

### 1.1.1 Assessment name

The assessment name need not be unique because each assessment has a unique **Assessment ID**.

However, it is recommended that you give each assessment a meaningful and descriptive name.

### 1.1.2 Assessment time limit

The assessment time limit restricts the participant to a given period.

Other timing and scheduling controls are provided in *Enterprise Manager* (part of the *Perception Server* software) – see the *Web Deployment Guide for Perception Version 3* for details.



### 1.1.3 Assessment template

Templates are explained in Part 5: 1 *Templates explained* below.

### 1.1.4 Assessment feedback

The options for controlling the feedback given to participants are detailed in 3.2.2 *The Feedback tab in the Control Block dialog box* below.

### 1.1.5 Assessment security

The security facilities that *Assessment Manager* provides are described in 3.2.3 *The Security tab in the Control Block dialog box* below.

Further security measures are available in *Enterprise Manager* (part of the *Perception Server* software) – see the *Web Deployment Guide for Perception Version 3* for details.

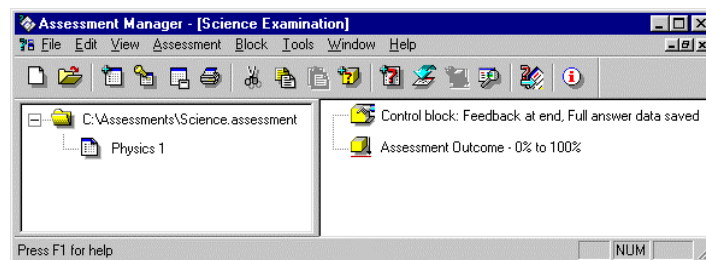
### 1.1.6 Assessment topic reporting

If an assessment contains at least one question selected from a particular topic, then a *prerequisite topic score* can be set for that topic. This means that participants must achieve a specified minimum score for the topic to “pass” the assessment.

A full explanation of prerequisite topic scores is given in 3.5.2 *Using prerequisite topic scores to control results* below.

### 1.1.7 Example control block

*Figure 204* below shows a control block within an assessment:



**Figure 204** *Assessment Blocks: Control Block*

## 1.2 Question blocks

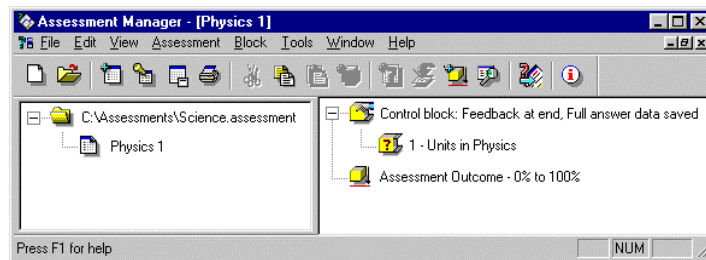
When building an assessment, question blocks are added (see 3.3 *Question blocks* below) into which questions can be selected in the following ways:

- **One at a time**
- **A topic (or subtopic) at a time**
- **At random from a topic or subtopic**
- **By tag from a topic or subtopic**
- **By tag from a topic or subtopic, and at random**
- **By tag from the whole question database**
- **By tag from the whole question database, and at random**

All these methods are described in 2.10 *Adding questions to assessments* below.

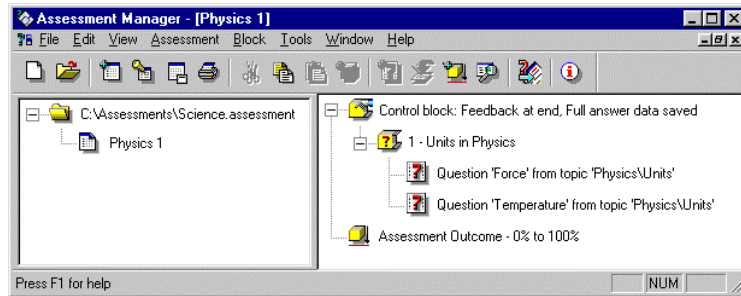
### 1.2.1 Example question blocks

*Figure 205* below shows an empty question block added to an assessment:



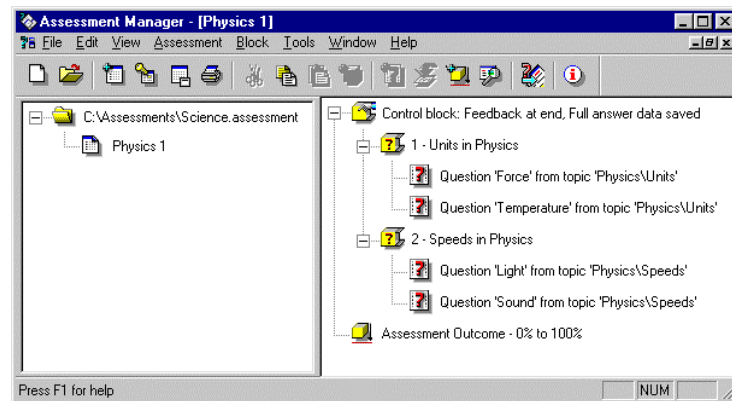
**Figure 205** *Assessment Blocks: Single Question Block*

*Figure 206* below shows two questions added to the question block illustrated in *Figure 205* above:



**Figure 206** *Assessment Blocks: Single Question Block with Questions*

Figure 207 shows Figure 206 enhanced to include two question blocks that each contain two questions:



**Figure 207** *Assessment Blocks: Multiple Question Blocks with Questions*

### 1.3 Jump blocks

A jump block is used to transfer control between assessment blocks.

A condition is evaluated within a jump block, and then the result used to determine which control block to execute next.

### 1.3.1 Example jump block

Figure 208 shows a jump block added to the assessment shown in Figure 207:

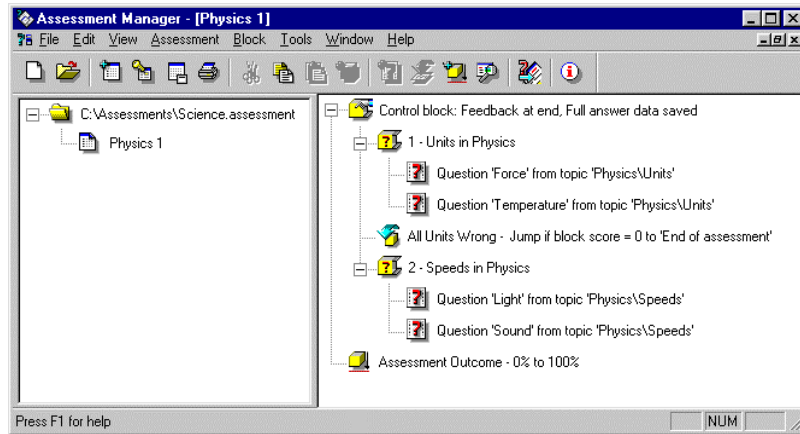


Figure 208 Assessment Blocks: Jump Block

In this example, participants who score zero in the first two questions (**Force** and **Temperature**) will not be able to take the other questions.

Participants who score more than zero in the first two questions will go on take the other.

## 1.4 Assessment outcomes

An assessment outcome contains a score band that determines when it is processed.

It will display feedback to participants whose score is within the score band that is specific to that score range.

It also defines actions specific to that score range that are taken at the end of an assessment.

Assessment outcomes are explained in 3.5 Assessment outcomes below.

### 1.4.1 Assessment information

This contains a unique **label** for the assessment outcome, and the range of scores that determine when it is processed.

### 1.4.2 Prerequisite topic scores

If at least one question is selected from a particular topic, then a *prerequisite topic score* can be set for that topic. This means that participants must achieve a specified minimum score to reach the assessment outcome.

Prerequisite topic scores are explained in 3.5.2 *Using prerequisite topic scores to control results* below.

### 1.4.3 Assessment outcome feedback

Assessment outcomes can contain feedback that is given to participants who achieve a score in the range for an assessment outcome. More details are given in 3.5.3 *Creating feedback that depends on assessment score* below.

### 1.4.4 Assessment branching

When an assessment outcome is processed, another assessment or an external program or URL can be called according to branching rules contained in the assessment outcome. This is detailed in 3.5.4 *Setting branching at the end of an assessment* below.

### 1.4.5 Example assessment outcomes

Figure 209 below shows the assessment in Figure 208 with five assessment outcomes added. These classify participants according to their performance:

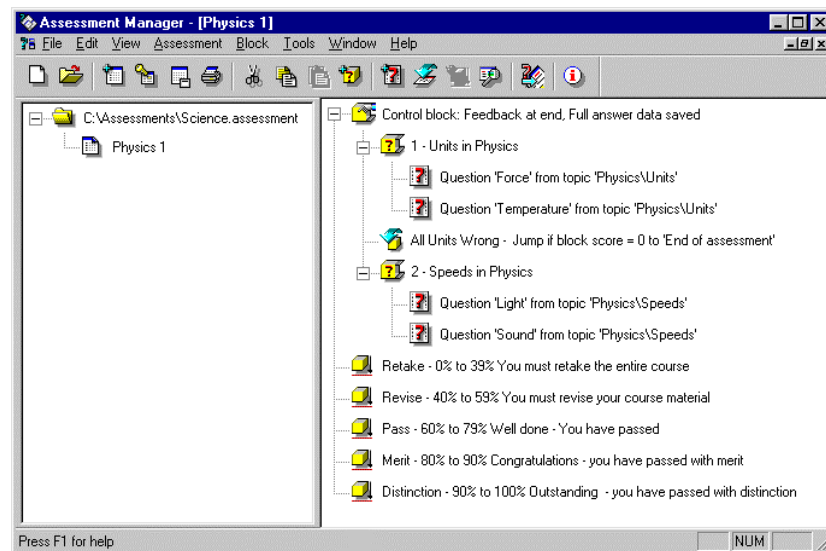


Figure 209 Assessment Blocks: Assessment Outcomes

## 1.5 Templates

When an assessment is presented to a participant, the information that is stored for it by *Perception* is converted into HTML and then displayed.

*Templates* allow you to change the appearance of the converted HTML using a series of pre-defined variables. These variables are contained in *template files*.

*Assessment Manager* lets you decide which template is used for an assessment. Assessments either use one template file, specified in the assessment's control block, or separate template files for each question block, allowing for different styles to be used for different sets of questions.

A full explanation of templates, and guide to working with them, appears in Part 5: 1 *Templates explained* below.

Further information about templates can be found on the *Perception* support site at:

<http://www.questionmark.com/perception/help/>

## 1.6 Publishing assessments

Publishing is the means by which assessments are delivered to participants. This can be by preparing them for a web server or by creating a form that only requires a Windows based PC.

### 1.6.1 Publishing assessments for web enabled participants

You will usually build your assessments on a development server and, when you are ready (or when you are authorized to do so) you will need to deliver them.

To do this, you can upload them to a production server.

The process of publishing for web delivery enables you to upload your question database, assessment database, and all other required files (some of which you do not need to be aware of) to your production server.

Publishing for web delivery is explained in Part 6:1.1 *Publishing for web deployment* below.

When participants have taken assessments, their results can be analyzed and reported on with *Enterprise Reporter* (see the *Web Deployment Guide for Perception Version 3*).

### 1.6.2 Publishing assessments for desktop based participants

You can deliver assessments to participants without using server by *publishing for windows delivery*.

This is an alternative method of copying the necessary information from your question database, assessment database, and all other required files to a directory on your PC.

The contents of this directory can then be copied to a CD, moved on to a LAN or to a standalone system.

A special program (called *Presenter*) is contained in the directory, and the participant simply runs this program from wherever it is made available to take assessments.

Publishing for Windows delivery is explained in Part 6: 1.2 *Publishing for Windows delivery* below.

### 1.6.3 Qpacking assessments

Assessments can be *Qpacked*, that is exported to external files called *Qpack files*.

These Qpack files can then be passed to other authors who may import them. This enables assessments to be readily exchanged and archived.

The process of Qpacking an assessment is explained in Part 6: 1.3 *Qpacking assessments* below.

The steps required to import a Qpack file are described in 2.15 *Using Qpacked assessments* below.

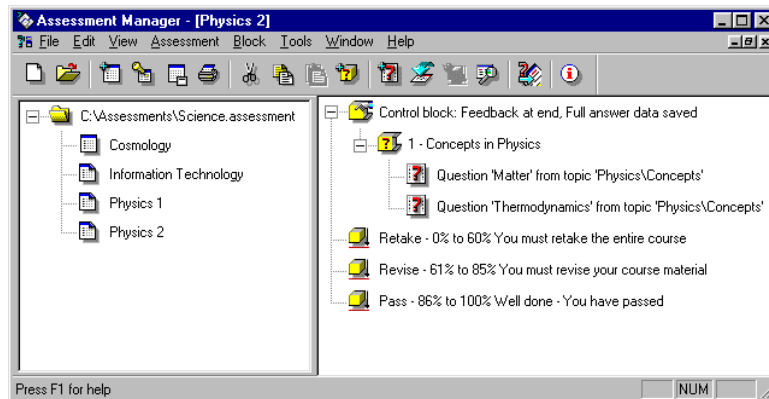
## 1.7 Monitored assessments

An assessment can be set to require *monitoring*. This means that a proctor or invigilator must check the identity of a participant before the participant is allowed to take the assessment.

Monitor security can be controlled with Enterprise Manager (see the *Web Deployment Guide for Perception Version 3*).

## 1.8 Example assessments

Figure 210 shows a typical assessment database:



**Figure 210** Assessment Blocks: Multiple Assessments in Assessment Database

In this example, there are four assessments (**Cosmology**, **Information Technology**, **Physics 1** and **Physics 2**) in the assessment database **Science.assessment**.

The right hand pane shows the assessment **Physics 2**. This assessment contains a control block and the question block **1 - Concepts in Physics**. The question block in turn contains the questions **Matter** and **Thermodynamics**.

Finally, there are three assessment outcomes, **Retake**, **Revise** and **Pass**.



## 2 Assessment Manager

### 2.1 Introduction

#### 2.1.1 What does Assessment Manager do?

Once you have created your questions within *Question Manager*, you can put them into an “assessment” with *Assessment Manager*. “Assessment” is the name used in *Perception* for a test or survey or other material delivered using the software.

Assessments are held in assessment databases. These files have a **.assessment** extension, but can be held in Microsoft *Access* **.MDB** format, SQL Server format or Oracle format. If your assessment databases are held in Microsoft *Access* **.MDB** format, you can open and view them in Microsoft *Access* or other programs that can read **.MDB** files.

A single database can hold any number of assessments. Assessments contain question and other blocks – see chapter 3 *Assessment blocks* for a full description of blocks.

#### 2.1.2 Using SQL Server and Oracle question databases

*Perception* version 3 allows you to use the *SQL Server* or Oracle formats for your question databases.

These databases are accessed via a technology called **ODBC**, which must be installed on your PC. Depending on which database format you are using with *Perception*, you will need to ensure that you have the appropriate **ODBC** drivers on your authoring PC.

If you are using *SQL Server* or Oracle databases you will access them with an **ODBC Data Source Name (DSN)**.

With *SQL Server* or Oracle databases, you can use one “authoring” database that includes the database tables from both the question databases and assessment databases referred to in this guide.

For full instructions on setting up *SQL Server* or Oracle databases for use with *Question Manager*, consult the file:

**c:\perception3\author\resources\documents\authorinstallreadme.html**

(assuming that you installed *Perception* to c:\perception3).

Additional information can be found on the *Perception* support site at:

<http://www.questionmark.com/perception/help/>

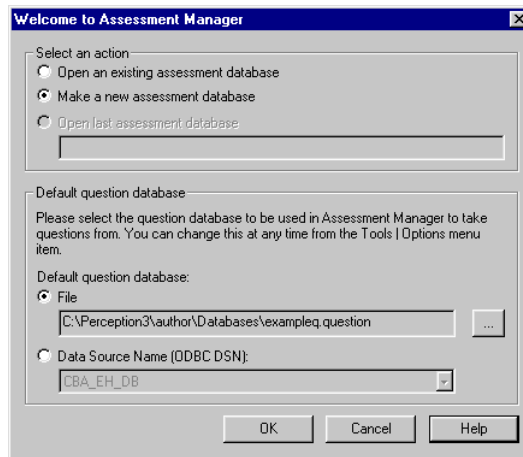
## 2.2 Starting Assessment Manager

If your *Perception* system is installed in the default directory (**c:\perception3**) then you can start *Assessment Manager* by running the program:

**c:\perception3\author\Assessment Manager.exe**

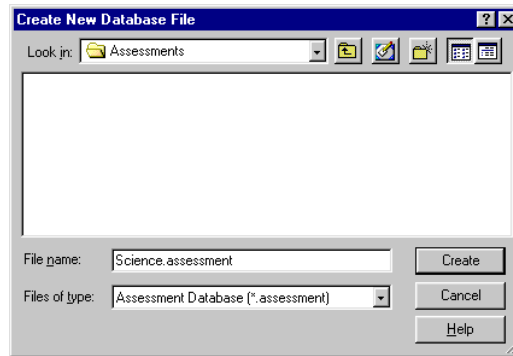
### 2.2.1 Making a new assessment database with Assessment Manager

When you run *Assessment Manager* you will see the screen similar to the one below:



**Figure 211** Starting Assessment Manager: New Assessment Database Option

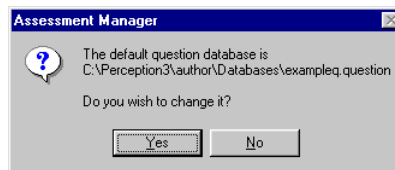
Select the option to **Make a new assessment database** and then click **OK**:



**Figure 212** *Creating the first Assessment Database*

Point to the directory in which you wish to **Look in** to create a new assessment database and type in its **File name**.

Then click **Create**:



**Figure 213** *Selecting a Question Database for Assessments*

When *Perception* is installed, the question database **exampleq.question** is supplied for you. If you have made another question database and you wish to use it as an item bank for building assessment, click **Yes**:

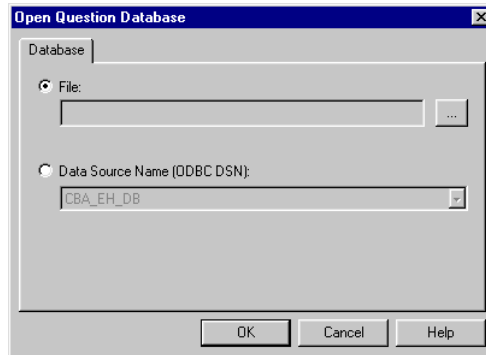



Figure 214 Specifying a Question Database File for Assessments

To select a question database file, select the **File** option and then click :

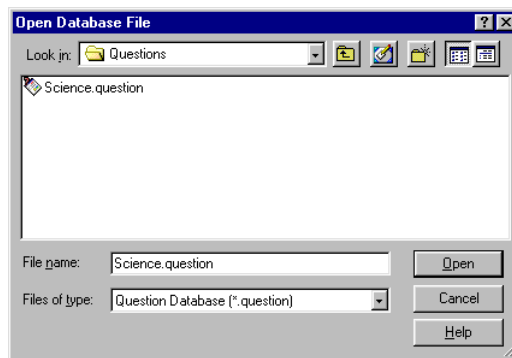


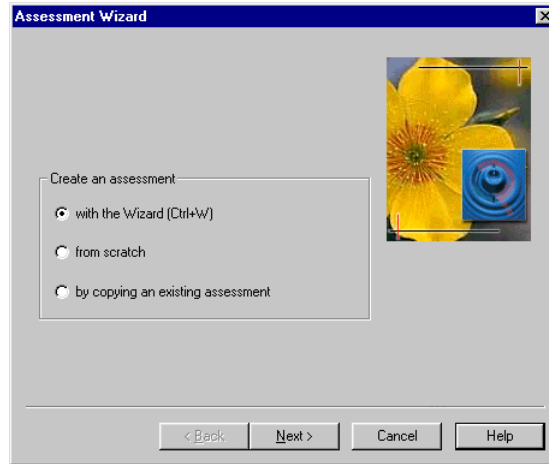
Figure 215 Selecting a Question Database File for Assessments

Locate the question database file that you wish to use and click **Open**.

To select a question database DSN, select the **Data Source Name (ODBC DSN)** option in *Figure 214*.

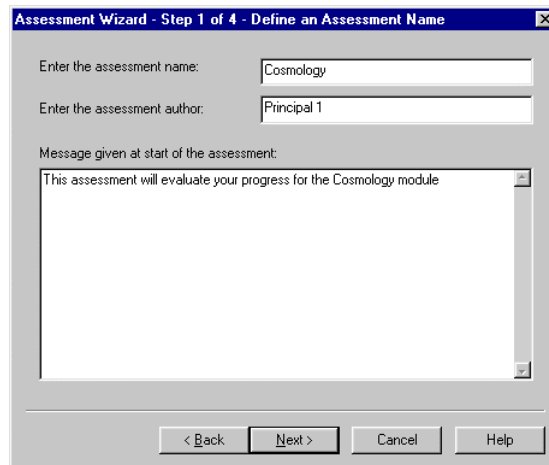
You can now select a DSN as shown in *Figure 40*. Use the drop-down list to select the DSN that you require and click **OK**.

You will now be prompted to create your first assessment:



**Figure 216** *Running Assessment Wizard for the first time*

To create your first assessment with the *Assessment Wizard*, click **Next>**:

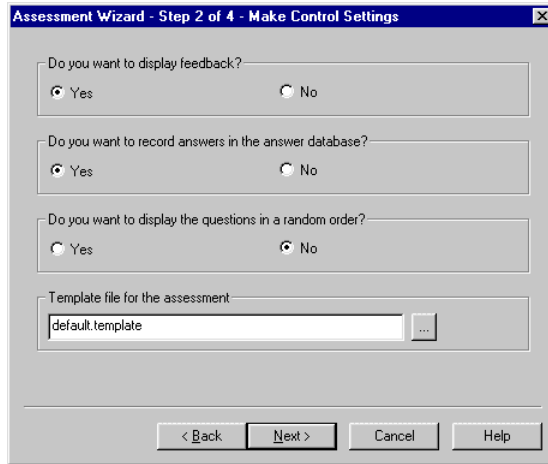


**Figure 217** *Name and Details for the First Assessment*

You must now **Enter the assessment name** and you may also **Enter the assessment author**.

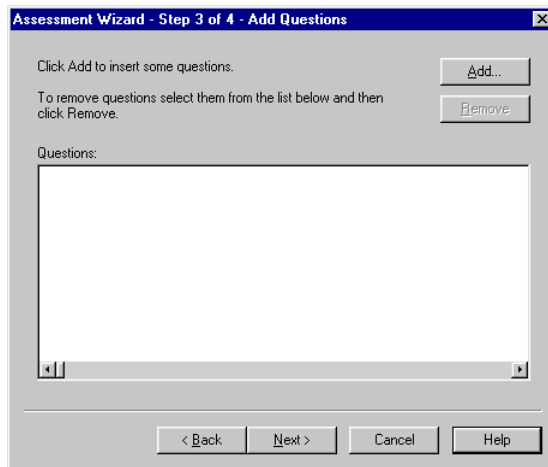
You can also type in the **Message given at start of assessment**.

When you are satisfied with the details you have entered, click **Next>**:



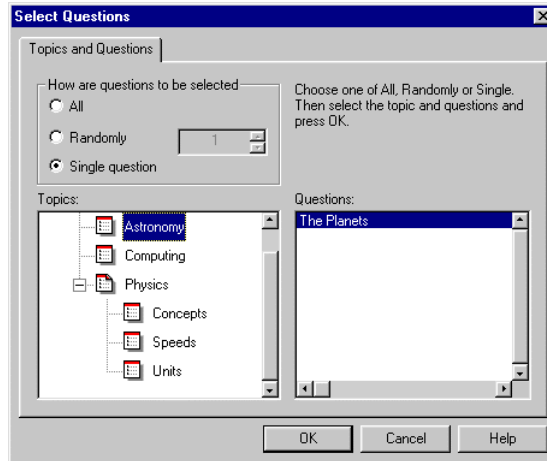
**Figure 218** Control Information for the First Assessment

This information is held in the assessment's control block, full details of which are given in 3.2 *The control block* below. Click **Next>** to accept these defaults:



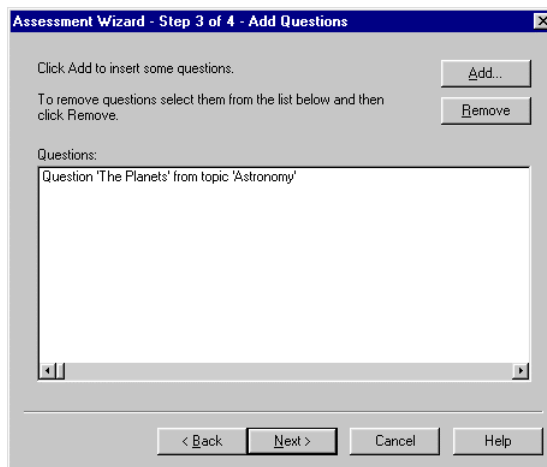
**Figure 219** Adding Questions to the First Assessment

To include your first question in the assessment, click **Add...**



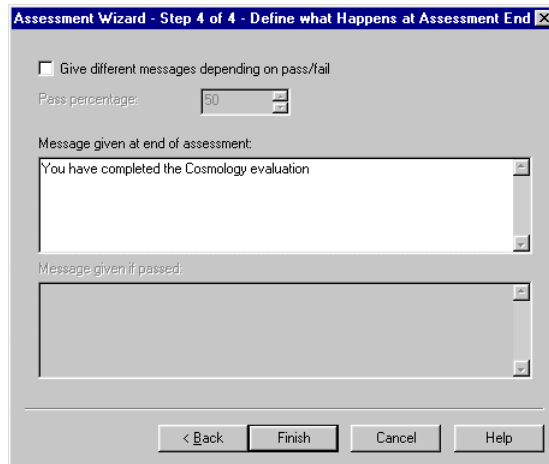
**Figure 220** *Selecting a Single Questions for the First Assessment*

If you select the option **Single question**, highlight the topic **Astronomy** and then highlight the question **The Planets**, you can click **OK** to add this question.



**Figure 221** *Single Question included in the First Assessment*

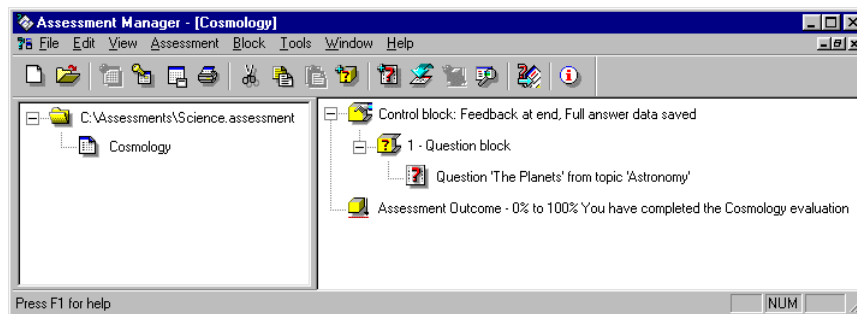
Now click **Next**> to accept this question:



**Figure 222** *Specifying how the First Assessment Ends*

This screen enables you to create one or two *assessment outcomes*. These are detailed in 3.5 *Assessment outcomes* below.

The default is to create one assessment outcome that is always used. Type in the message to be shown to participants at the end of the assessment and click **Finish**:



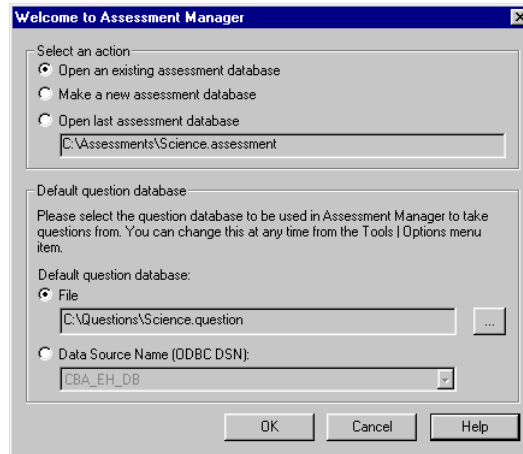
**Figure 223** *Assessment Manager Window*

You have now created a new assessment database and a new assessment.



### 2.2.2 Opening an assessment database with Assessment Manager

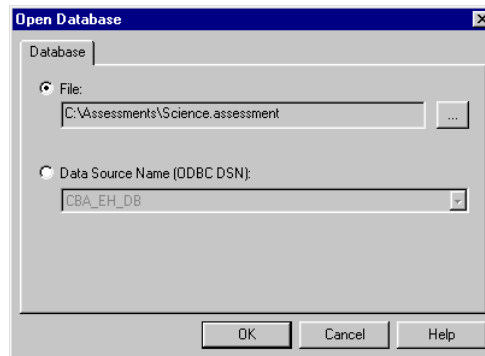
When you run *Assessment Manager* you will see the screen similar to the one below:




**Figure 224** Starting Assessment Manager: Open Existing Assessment Database Option

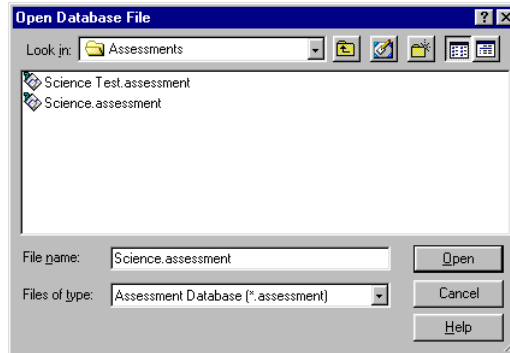
If you select **Open last assessment database** and click **OK**, you will see the *Assessment Manager* window (Figure 223).

If you select the option **Open an existing assessment database** and click **OK**:



**Figure 225** Selecting Assessment Database Access Method

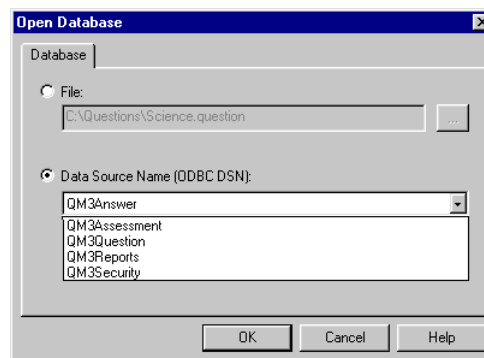
To select an assessment database file, select the **File** option and then click :



**Figure 226** *Selecting a Database File Name*

Locate the database file that you wish to open and click **Open**. You will now see the *Assessment Manager* window (Figure 223).

To select an assessment database DSN, select the **Data Source Name (ODBC DSN)** option in Figure 225:

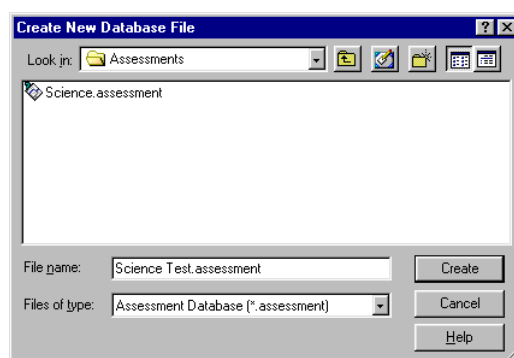


**Figure 227** *Selecting an Assessment Database DSN*

Use the drop-down list to select the DSN that you require and click **OK**. You will now see the *Assessment Manager* window (Figure 223).

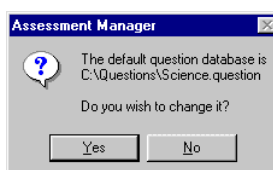
### 2.2.3 Creating a new assessment database

If you wish to create a new assessment database, select **Assessment | New Database...** or use the **New Database** icon on the toolbar:



**Figure 228** *Creating a new Assessment Database*

To create a new assessment database, enter its **File name** and click **Create**:



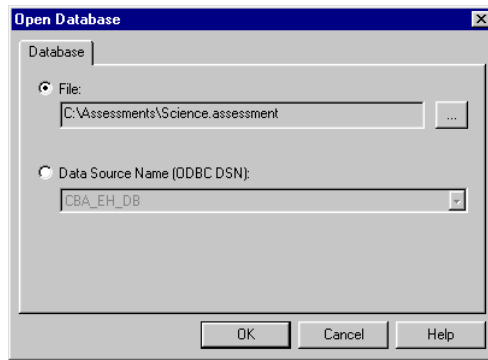
**Figure 229** *Changing the Default Question Database*

You can now specify which question database to use as an item bank as described in 2.2.1 *Making a new assessment database with Assessment Manager* above.


When you have selected your question database, you will be prompted to create an assessment. This process is as described in 2.2.1 *Making a new assessment database with Assessment Manager* above.

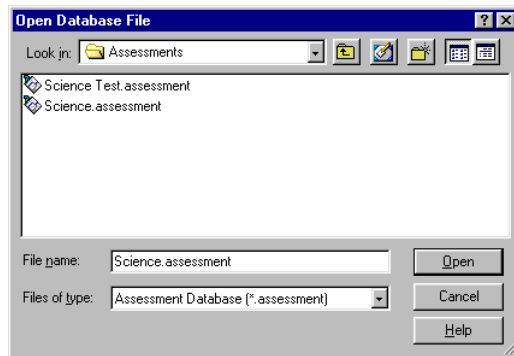
### 2.2.4 Opening an existing assessment database file

If you wish to open another assessment database, select **File | Open Database...** or use the **open database** icon on the toolbar:



**Figure 230** *Selecting Assessment Database Access Method*

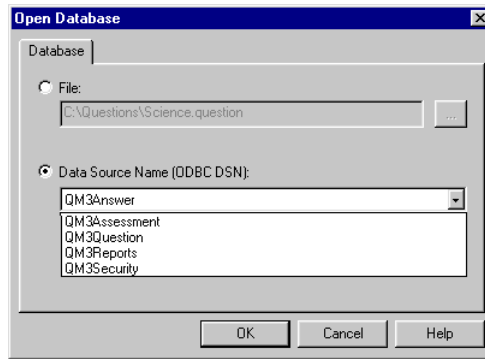
To select an assessment database file, select the **File** option and then click :



**Figure 231** *Selecting a Database File Name*

Locate the assessment database file that you wish to open and click **Open**. You will now see the *Assessment Manager* window (*Figure 223*).

To select an assessment database DSN, select the **Data Source Name (ODBC DSN)** option in *Figure 230*:

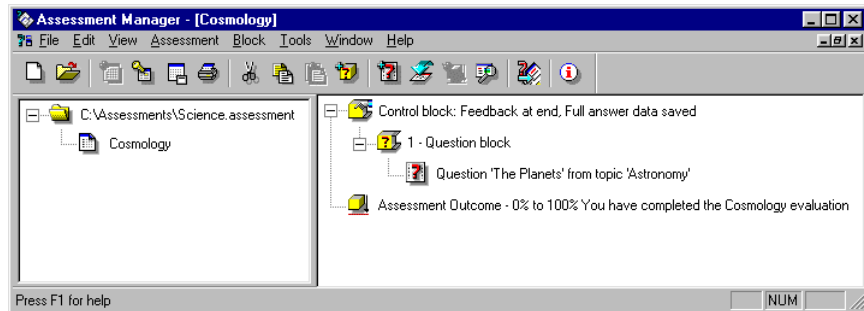


**Figure 232** *Selecting an Assessment Database DSN*

Use the drop-down list to select the DSN that you require and click **OK**. You will now see the *Assessment Manager* window (*Figure 223*).

## 2.3 The Assessment Manager window

As with Question Manager, you'll find most of *Assessment manager's* Windows components familiar.



**Figure 233** *Assessment Manager Window*

These are the components of your *Assessment Manager* window:

- **Toolbar**  
Clicking buttons on the toolbar lets you carry out various procedures (these are duplicates of menu commands). See 2.5 *The toolbar* for a description of the toolbar.
- **Assessment pane (left hand pane)**  
Displays the **.assessment** database you are working with and the assessments within the database.
- **Assessment component pane (right hand pane)**  
Displays information about an assessment, including question blocks and jump details.

## 2.4 The Assessment Manager menu bar

The *Assessment Manager* menu bar is a typical Windows menu bar. Click on any item to see the menu and then click an option within that menu to carry out the operation.

### 2.4.1 File menu

The following options are available under the *Assessment Manager* **File** menu:

- **New Database...**  
This option creates a new assessment database.
- **Open Database...**  
Enables you to open an existing assessment database.
- **Save As...**  
If the assessment database is in Microsoft *Access* format, this option makes a copy of the current database and saves it under a new name.
- **Exit**  
Exits *Assessment Manager*.

A list of the last four most recently used assessment databases is also shown.

## 2.4.2 Edit menu

The following options are available under the *Assessment Manager* **Edit** menu:

- **Cut Block**  
Enables you to select a block within an assessment and reinsert elsewhere. It will delete the highlighted block in its original position after being reinserted using **Edit | Paste Block**.
- **Copy Block**  
Copies the selected block that can then be retrieved using **Edit | Paste Block**. A block can be re-pasted as many times as the user wishes, providing the original is not deleted.
- **Paste Block**  
Places a block that has previously been copied or cut into your assessment.

## 2.4.3 View menu

The following items are available under the *Assessment Manager* **View** menu:

- **Toolbar**  
Hides or replaces the *Assessment Manager* toolbar. Hiding the toolbar offers a larger screen area to view assessments and questions.
- **Status Bar**  
Hides or replaces the *Assessment Manager* **Status Bar**. Hiding the **Status Bar** offers a larger screen area to view assessment.
- **Refresh**  
Selecting this option enables you to view changes to assessments made by other users who are simultaneously editing the same database.
- **Tryout**  
Trying out can only be applied to question blocks, question references and assessment outcomes. If you have *Internet Explorer 4* or higher installed then you can tryout one of these blocks. If you tryout a question block or question reference then it is possible to answer them and view your score and any feedback. However, if it is not installed then the block can only be previewed in the default browser.

### 2.4.4 Assessment menu

The following options are available under the *Assessment Manager* **Assessment** menu:

- **New Assessment...**  
Creates a new assessment.
- **Open Assessment...**  
Opens an existing assessment.
- **Close Assessment**  
Closes an active assessment.
- **Delete Assessment**  
Deletes an assessment.
- **Rename Assessment**  
Renames an existing assessment. Left-mouse clicking on a highlighted assessment will also allow you to rename the assessment.
- **Publish Assessment for Web Delivery**  
This option has two sub-menus, **to Access...** and **via ODBC...** Both of these options publish an assessment to another database and, if selected, its questions and also other resources referenced. See Part 6: 1.1 *Publishing for web deployment* for more information on publishing.
- **Publish for Windows Delivery...**  
The Publishing Wizard is started with this option, enabling assessments to be published for delivery on a CD, over a network or on a standalone system. A full account of this process is given in Part 6: 1.2 *Publishing for Windows delivery*.
- **Publish to Qpack...**  
This lets you Qpack your assessments into Qpack files. These enable you to exchange assessments with other question authors.
- **Import from Qpack...**  
This lets you work with assessments supplied by other authors as Qpack files.
- **Print Assessment...**  
This option allows you to print either questions or answers within an assessment on any available printer. This is described in 2.12 *Printing an assessment* below.
- **Properties...**  
This displays information about an assessment such as the ID (as set within the database), name, date last modified and its author.



## 2.4.5 Block menu

The following items are available under the *Assessment Manager* **Block** menu:

- **Add Question Block...**  
Enables you to create a new block of questions. It allows you to create a name for the block, establish the settings for feedback to participants, shuffle the questions as they are delivered to the participants and pick a background template.
- **Add Questions to Block...**  
Enables you to add questions to a question block from topics in a question database. You can choose a topic and add selected questions to your assessment. It provides a range of options to enable you to select those questions.
- **Add Jump Block...**  
Creates a conditional jump to another question block or the end of an assessment.
- **Add Assessment Outcome...**  
Enables you to create another score band and branch to another assessment or URL.
- **Edit...**  
Enables users to edit a block or questions within a block. Selecting this option will call up the dialog box for editing the appropriate block.
- **Delete**  
Permanently deletes a block. To use, select the block or questions you wish to delete and then click on **Block | Delete** from the menu. This displays a box to enable you to confirm that you wish to delete the selection.

### 2.4.6 Tools menu

The following items are available under the *Assessment Manager* **Tools** menu:

- **Edit Templates...**  
This option enables you to edit existing templates or create new ones. These are fully explained in Part 5: 1 *Templates explained*.
- **Call Question Manager**  
This option launches Question Manager to view or edit the default question database, which is specified in the **Options Settings** dialog.
- **Options...**  
You can set *Assessment Manager's* default options for **Author**, **Default question database**, **Default template file for new assessments** and **Template directory**.  
If you intend to publish for Windows, you can specify the **Location of the Presenter program**, the **Location of format file to use in publishing** and the **Location of other system files**.  
You can specify how you would like *Assessment Manager* to open, whether with a default assessment database or a **Welcome** dialog. See 2.14 *Setting Assessment Manager's defaults* for more details.  
The tool that you use for editing templates can be set up. You can choose whether to use Questionmark's *Template Editor* (see Part 5: 2 *Template Editor* below) or another editor if you prefer.

## 2.4.7 Window menu

The following items are available under the *Assessment Manager* **Window** menu:

- **Cascade**  
Places open assessments on top of each other. The title bars of assessments open will be displayed. Click on an assessment's title bar to bring it to the front.
- **Tile**  
**Tile** displays all open assessments in the *Assessment Manager* worktop.
- **Arrange Icons**  
This enables you to rearrange assessment icons into *Assessment Manager*'s default sequence.

The **Window** menu also displays a list of open assessments. Choose the assessment you wish to work on by selecting it in this list. Alternatively you may click on its title bar, if it is visible.

## 2.4.8 Help menu

The following options are available under the *Assessment Manager* **Help** menu:

- **Contents**  
This option accesses the *Assessment Manager* contextual help files.
- **Perception Support Website**  
This option calls your default browser and connects you to the Questionmark *Perception* support site to discover the latest information on all aspects of *Perception*.
- **Find Assessment Content**  
This option calls your default browser to enable you to connect to the *AssessmentStore*.
- **Upgrade Software**  
This option calls your default browser to enable you to connect to the Questionmark website to find out about upgrades that are available for *Perception*.
- **About Licensing...**  
This supplies information about your *Perception* license.
- **About Assessment Manager...**  
This supplies version information about *Assessment Manager*.

## 2.5 The toolbar

The *Assessment Manager* Toolbar is fixed as follows:

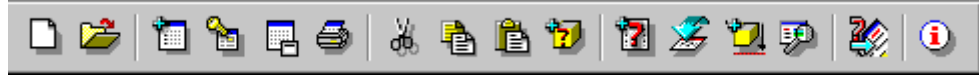


Figure 234 The Assessment Manager Toolbar

Icon	Function	Equivalent Menu Option
	Creates a new assessment database.	<b>File   New Database...</b>
	Opens an existing assessment database.	<b>File   Open Database...</b>
	Adds a new assessment.	<b>Assessment   New Assessment...</b>
	Publish to Access.	<b>Assessment   Publish Assessment for Web Delivery...</b>
	Publish for Windows Delivery.	<b>Assessment   Publish for Windows Delivery...</b>
	Print Assessment.	<b>Assessment   Print Assessment...</b>
	Cuts the selected question blocks.	<b>Edit   Cut Block</b>
	Copies the selected question blocks.	<b>Edit   Copy Block</b>
	Pastes previously selected question blocks.	<b>Edit   Paste Block</b>
	Adds a new question block to the assessment.	<b>Block   Add Questions Block...</b>
	Adds a question to a question block.	<b>Block   Add Questions to Block...</b>
	Adds a jump block to an assessment.	<b>Block   Add Jump Block...</b>
	Adds an assessment outcome to an assessment.	<b>Block   Add Assessment Outcome...</b>
	Tries out highlighted assessments (see note below).	<b>View   Tryout</b>
	Calls <i>Question Manager</i> .	<b>Tools   Call Question Manager</b>
	Opens the <i>Perception</i> help file.	<b>Help   Contents</b>

**Note:** Tryout uses a web browser control if *Internet Explorer 4* or higher is installed, or if not it allows questions to be previewed in the default browser.

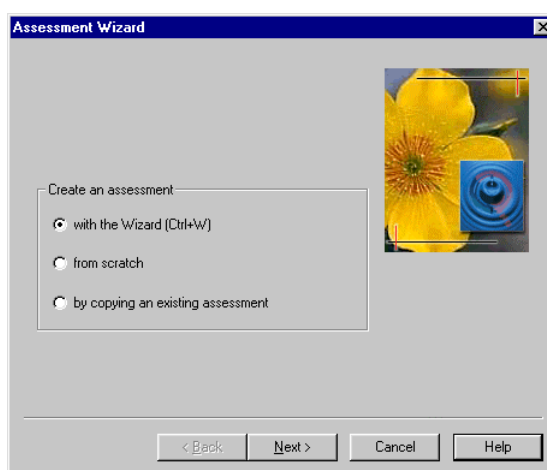
## 2.6 Setting up an assessment

### 2.6.1 Introduction

If you are a new *Assessment Manager* user, we recommend that you refer to the *Getting Started with Perception version 3* Guide.

You can have as many databases as you require when authoring.

To create a new assessment, select **Assessment | New Assessment...** or use the **new assessment** icon on the toolbar:



**Figure 235** *Creating a New Assessment*

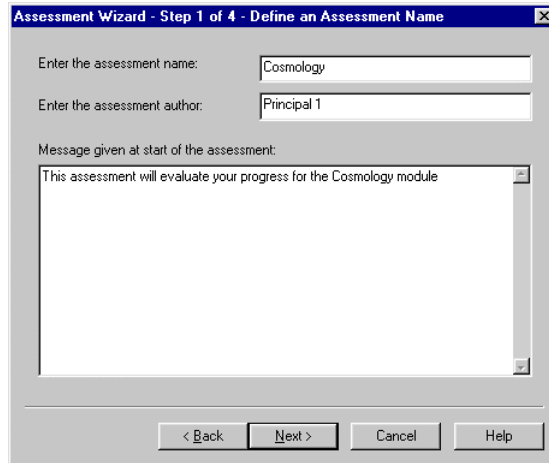
There are three ways to create a new assessment:

- **With the Wizard**  
This starts the *Assessment Wizard* that guides you through the creation of an assessment. See 2.7 *Creating a new assessment with the Wizard* for details.
- **From scratch**  
This enables you to create a minimal assessment which you then add to. See 2.8 *Creating a new assessment from scratch* for details.
- **By copying an existing assessment**

This enables you to use copy an assessment and then adapt it. See 2.9 *Creating a new assessment by copying an existing assessment* for details.

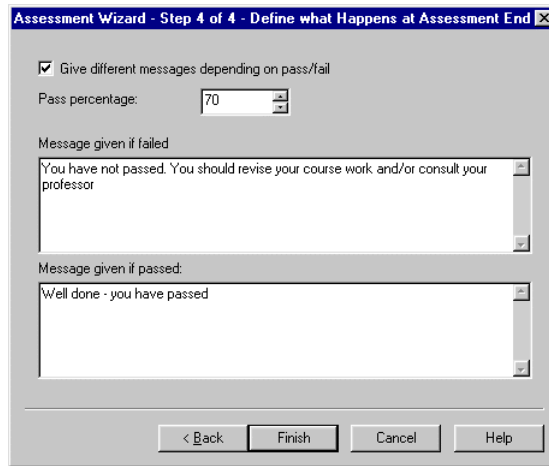
## 2.7 Creating a new assessment with the Wizard

If you click **Next** on *Figure 236*, you will start the *Assessment Wizard*:



**Figure 236** *Assessment Wizard: Assessment Details*

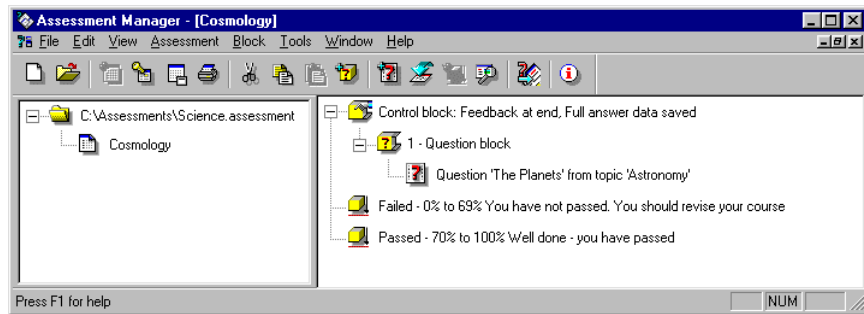
The process of creating an assessment with the *Assessment Wizard* from this point on is shown in *Figure 218* through to *Figure 223* above. Instead of the single assessment outcome shown in *Figure 222* above, we could create a “pass” outcome and a “fail” outcome:



**Figure 237** *Assessment Wizard: Specifying how Assessment Ends*

In *Figure 237* above, a “pass” score of 70% has been set and two assessment outcomes have been defined, one for a “pass” score (of 70% or more) and one for a “fail” score (of less than 70%).

Type in the messages to be shown to participants at the end of the assessment in each case and click **Finish**:

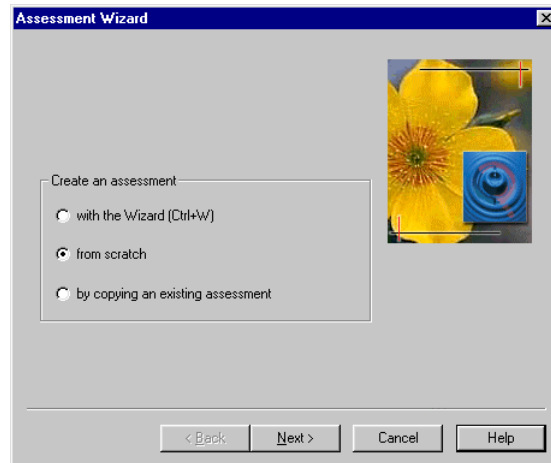


**Figure 238** *Assessment Wizard: Completed Assessment*

You have now created a new assessment with one question and two question outcomes.

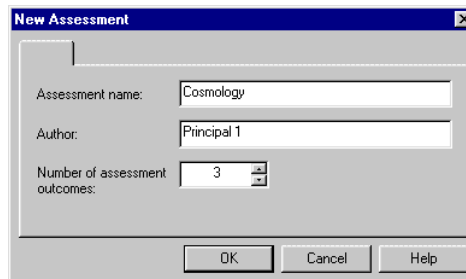
## 2.8 Creating a new assessment from scratch

To create a new assessment from scratch, select **Assessment | New Assessment...** or use the **New Assessment** icon on the toolbar:



**Figure 239** *Assessments from Scratch: Starting*

Now select the option **from scratch** and click **Next>**:



**Figure 240** *Assessments from Scratch: Assessment Details*

You must now type in the **Assessment name** and you may also give the name of the **Author**.

You can also choose the number of assessment outcomes that you need.

When you have done these things, click **OK**:



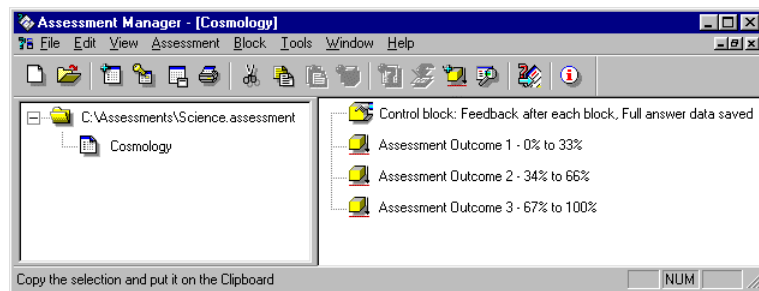


Figure 241 Assessments from Scratch: Basic Assessment Structure

You now have a minimal assessment with a control block and three assessment outcomes.

To build on this structure, you can work with the assessment blocks by using the methods described in 3 *Assessment* blocks below.

To add a question block, select **Block | Add Question Block...**:

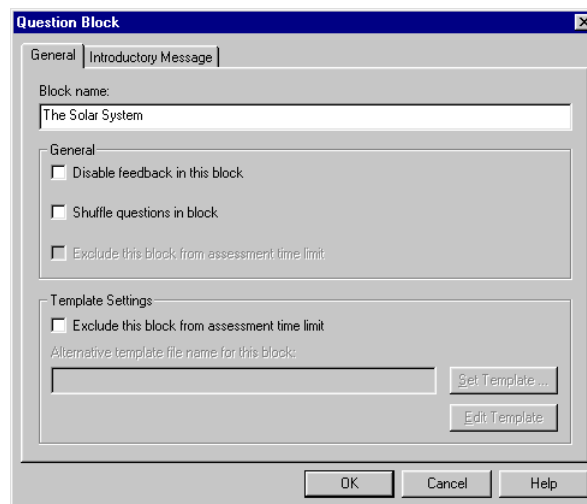


Figure 242 Assessments from Scratch: Question Block Details

Enter a **Block name** and click on the **Introductory Message** tab:

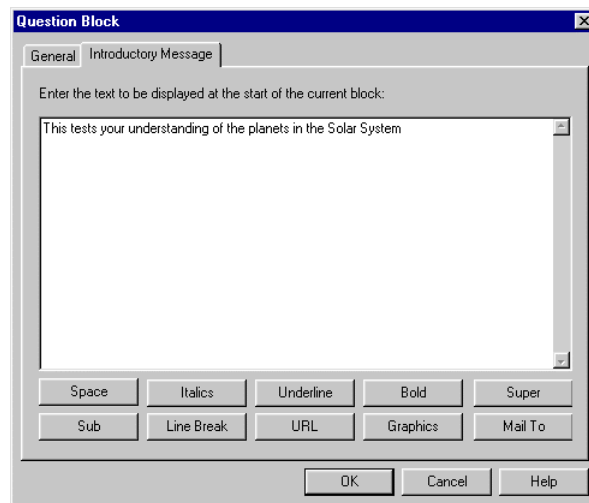


Figure 243 Assessments from Scratch: Question Block Introduction

Enter a message that you wish to present to participants who take this block of questions.

Note that your message can be entered in HTML using the buttons shown. These work in the same way as for HTML question content (see Part 3: 4.4.3 *HTML content* above).

When you are ready, click **OK**:

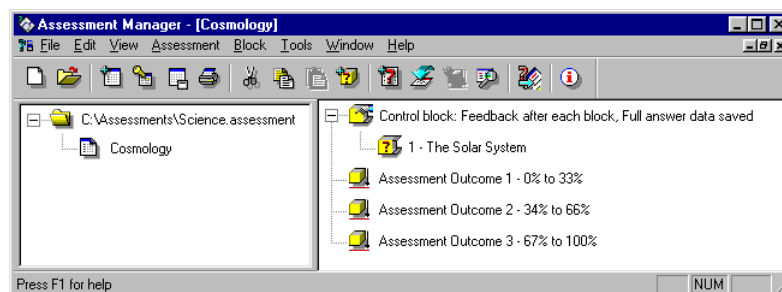


Figure 244 Assessments from Scratch: Assessment with Question Block Added

You have now added a question block to the assessment.

Next, you can add a question to the assessment by selecting **Block | Add Questions to Block...**

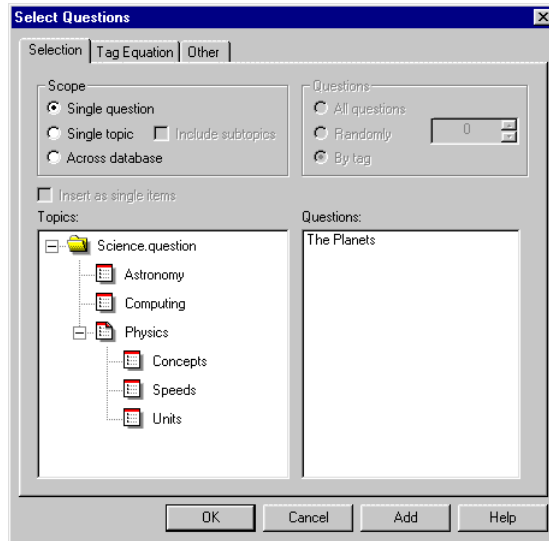


Figure 245 Assessments from Scratch: Adding Questions

The ways in which questions can be selected are fully described in 2.10 *Adding questions to assessments* below.

If you select the option **Single question**, highlight the topic **Astronomy** and then highlight the question **The Planets**, you can click **OK** to add this question:

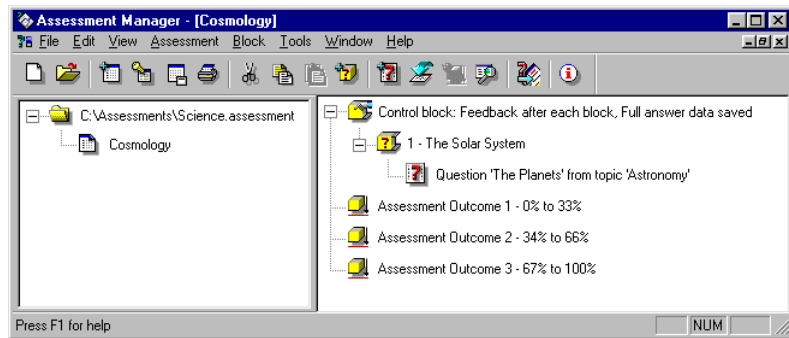


Figure 246 Assessments from Scratch: Assessment with Question Added

You could now add more questions to the question block in the assessment.

To see how a jump can be added, highlight **1 – The Solar System** and select **Block | Add Jump Block...**

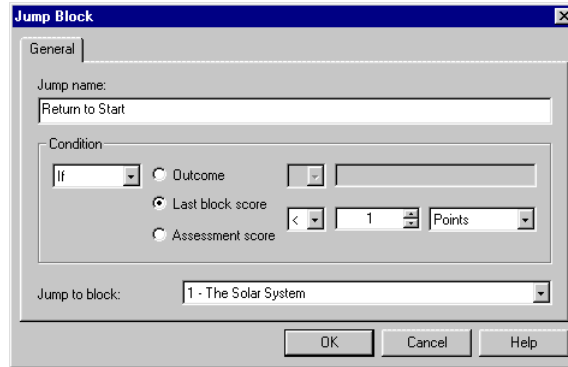


Figure 247 Assessments from Scratch: Jump Block

In Figure 247 above, the jump has been given a name (**Return to Start**) and the participant will jump to the start of the first (and only) block if they score less than 1 point (the range for this question is 0 to 9 points).

In other words, a participant must keep taking the question until they get at least one of the nine possible answers correct.

Click **OK** to add this jump block:

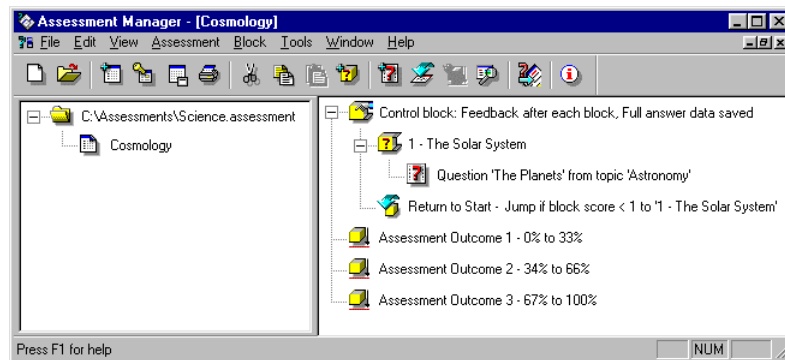


Figure 248 Assessments from Scratch: Assessment with Jump Added

Finally, you can modify the three assessment outcomes that were created in Figure 241 above.

If you highlight **Assessment Outcome 1** and select **Block | Edit...**

The screenshot shows a dialog box titled "Assessment Outcome" with four tabs: "Outcome", "Prerequisites", "Feedback", and "Branching". The "Outcome" tab is active. It contains a text field "Record results with this label:" with the value "Retake". Below this is a "Score range" section with two input fields: "Lowest score:" set to "0" and "Highest score:" set to "35", both followed by a percentage sign. At the bottom of the dialog are three checkboxes: "Display total score on final page" (checked), "Display topic feedback on the final page" (unchecked), and "Display topic scores/outcomes on the final page" (unchecked). At the very bottom are three buttons: "OK", "Cancel", and "Help".

**Figure 249** *Assessments from Scratch: Assessment Outcome Condition*

This assessment outcome has been renamed **Retake** and will be processed when a participant scores between 0% and 35%.

The use of **Prerequisites** (or *prerequisite topic scores*) is covered in 3.5.2 *Using prerequisite topic scores to control results* below.

Techniques for **Branching** at the end of assessments are discussed in 3.5.4 *Setting branching at the end of an assessment* below.

You can now click the **Feedback** tab and type in the feedback that participants who achieve this assessment outcome will see:

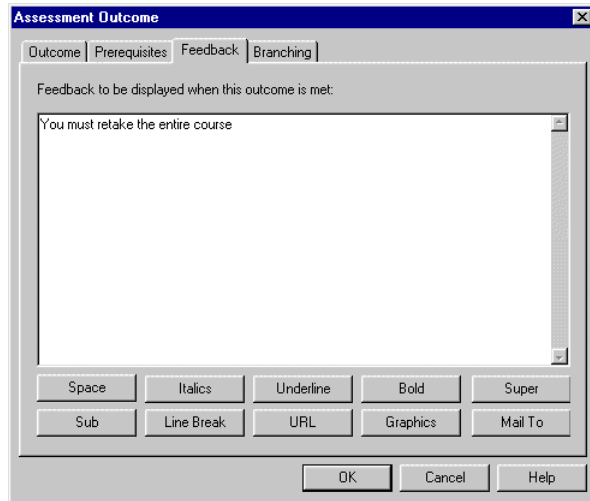


Figure 250 Assessments from Scratch: Assessment Outcome Feedback

Note that your feedback can be entered in HTML using the buttons shown. These work in the same way as for HTML question content (see Part 3: 4.4.3 *HTML content* above).

When you have entered the feedback, click **OK**:

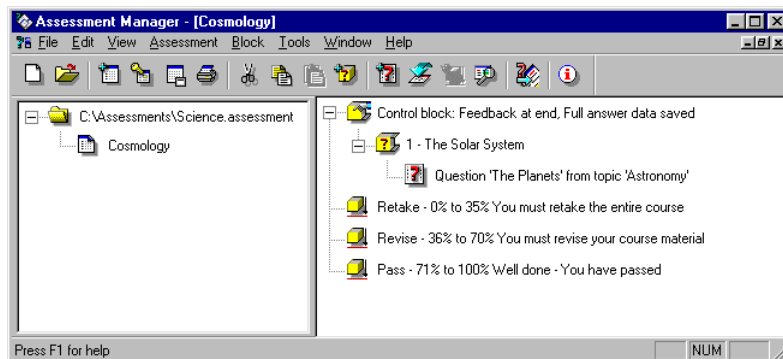
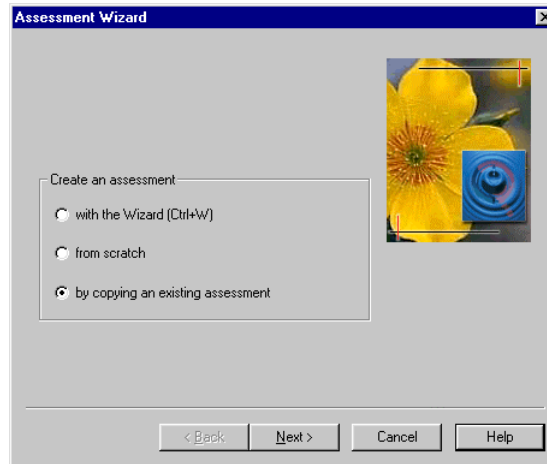


Figure 251 Assessments from Scratch: Assessments with Defined Assessment Outcomes

The assessment now has three assessment outcomes that correspond to 0-3 correct answers, 4-6 correct answers and 7-9 correct answers (assuming the range of scores for this question is 0 to 9 points).

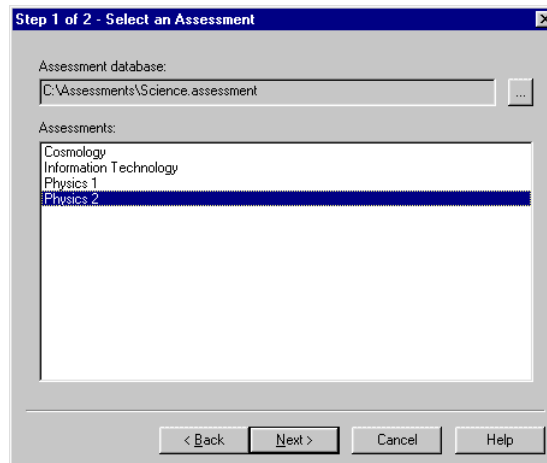
## 2.9 Creating a new assessment by copying an existing assessment

To copy an existing assessment and use it to start a new one, select **Assessment | New Assessment...** or use the **new assessment** icon on the toolbar:




**Figure 252** *Assessments by Copying: Starting*

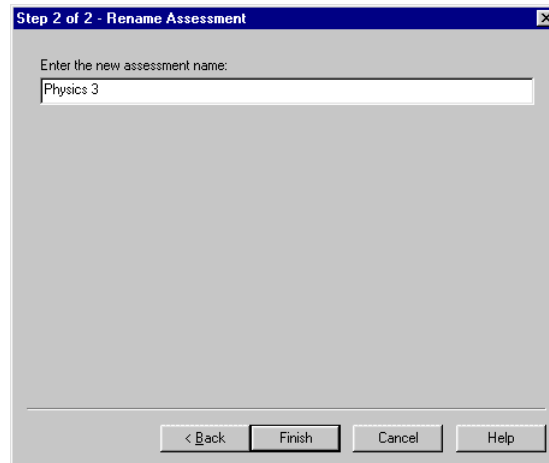
Now select the option **by copying an existing assessment** and click **Next>**:



**Figure 253** *Assessments by Copying: Selecting Existing Assessment*

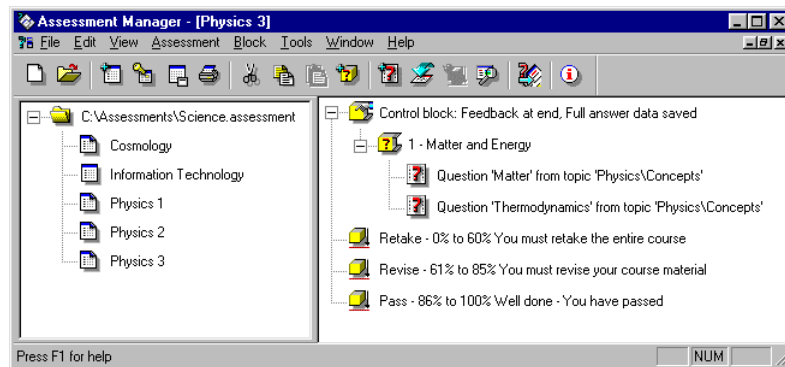
First, select the assessment database from which you wish to copy an assessment by clicking and then click . Then select an assessment database.

All the assessments in the assessment database are shown, highlight the one you wish to copy and click **Next>**:



**Figure 254** *Assessments by Copying: Selecting New Assessment*

Now **Enter the new assessment name** and click **Finish**:



**Figure 255** *Assessments by Copying: Copied Assessment*

In this example, the assessment **Physics 2** has been copied to **Physics 3** and you can modify it as explained in 2.8 *Creating a new assessment from scratch* above.

Full details of how to use the assessment blocks are given in 3 *Assessment blocks* below.



## 2.10 Adding questions to assessments

You can add questions to a question block by selecting **Block | Add Questions to Block...**

The various methods for selecting questions are:

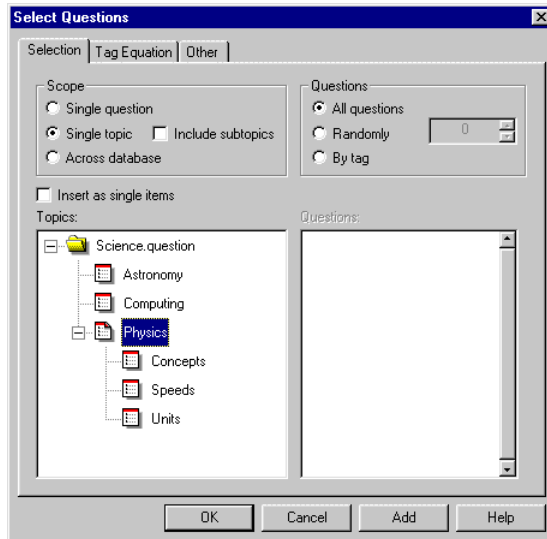
- **One at a time**  
This is described in 2.10.1 *Selecting questions individually* below.
- **A topic (or subtopic) at a time**  
This is described in 2.10.2 *Selecting all questions in a topic or subtopic* below.
- **At random from a topic or subtopic**  
This is described in 2.10.3 *Selecting a random selection of questions from a topic or subtopic* below.
- **By tag from a topic or subtopic**  
This is described in 2.10.4 *Selecting tagged questions from a topic or subtopic* below.
- **By tag from the whole question database**  
This is described in 2.10.5 *Selecting tagged questions from the whole question database* below.
- **By tag from a topic or subtopic, and at random**  
This is described in 2.10.6 *Selecting tagged questions at random* below.
- **By tag from the whole question database, and at random**  
This is described in 2.10.6 *Selecting tagged questions at random* below.

### 2.10.1 Selecting questions individually

This process is described in 2.8 *Creating a new assessment from scratch* above (see *Figure 245*).

### 2.10.2 Selecting all questions in a topic or subtopic

To select a topic full of questions:



**Figure 256** *Assessment Question Selection: Whole Topic or Subtopic*

Select the **Single topic** and **All questions** options and then highlight the topic that you wish to select.

In *Figure 256* above, no questions would be selected because the topic **Physics** contains only the subtopics **Concepts**, **Speeds** and **Units**. It does not have any questions of its own (this is the way item banks are often arranged).

If you tick **Include subtopics**, then all the questions in the subtopics **Concepts**, **Speeds** and **Units** will be added to the assessment when you click **OK**:

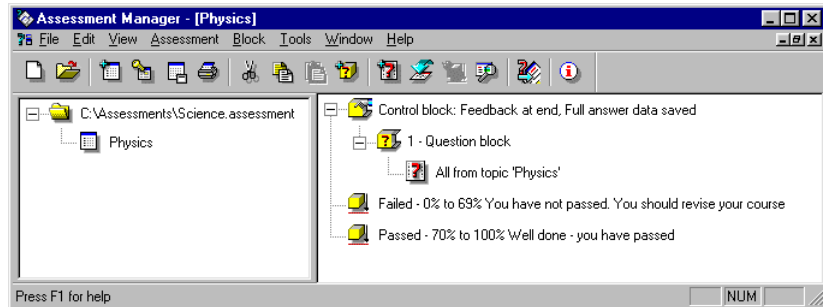


Figure 257 Assessment Question Selection: Whole Topic or Subtopic in Assessment

### 2.10.3 Selecting a random selection of questions from a topic or subtopic

To select questions at random from a topic or subtopic:

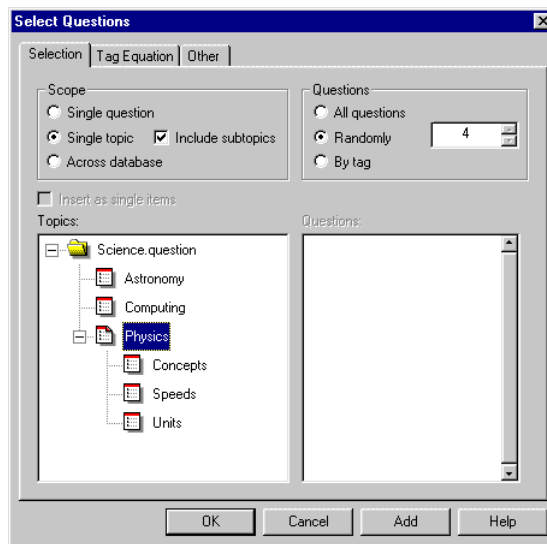


Figure 258 Assessment Question Selection: Randomly from Topic

Select the **Single topic** and **Randomly** options and then highlight the topic from which you wish to make a random selection of questions.

Enter a number in the box next to the **Randomly** option that is greater than 0 but not more than one less than the number of questions available.

Note that the random selection will be made every time the assessment is taken. This is possible because all the questions are published even though not all of them are used every time.

If you tick **Include subtopics**, then all the questions in the subtopics **Concepts**, **Speeds** and **Units** will be available for selecting at random.

Click **OK** when you are happy with your random selection criteria:

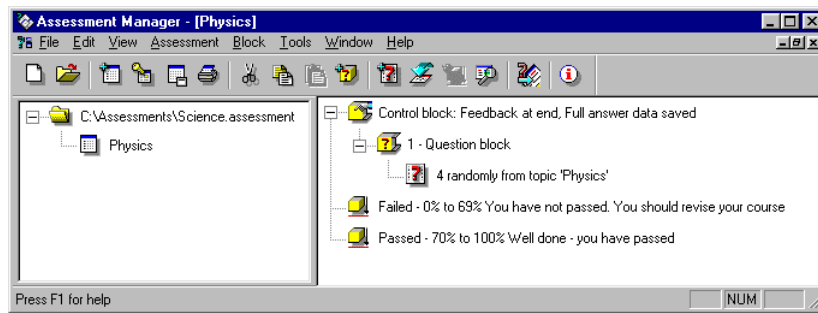


Figure 259 Assessment Question Selection: Random Questions in Assessment

### 2.10.4 Selecting tagged questions from a topic or subtopic

To select questions from a topic or subtopic according to tags and their tag values:

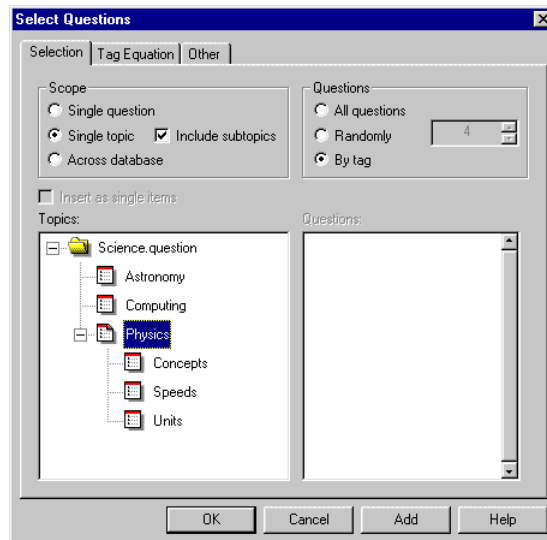


Figure 260 Assessment Question Selection: By Tag from Topic or Subtopic

Select the **Single topic** and **By tag** options and then highlight the topic from which you wish to select questions.

If you also tick **Include subtopics**, then all the questions in the subtopics **Concepts**, **Speeds** and **Units** will be available for selecting by tag.

Click on the **Tag Equation** tab when you are happy with your topic selection criteria:

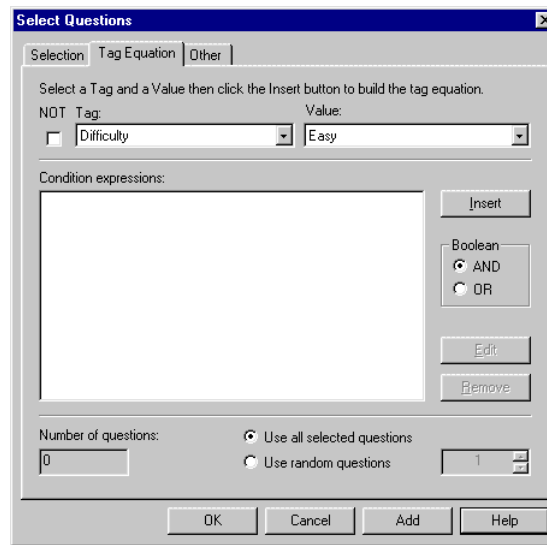


Figure 261 Assessment Question Selection: Tag Equation Screen

You can now create a *tag equation*.

First, select the tag you wish to use from the first drop-down list, and then select the value for it in the second drop-down list.

You can include a logical **NOT** operator by ticking the **NOT** box.

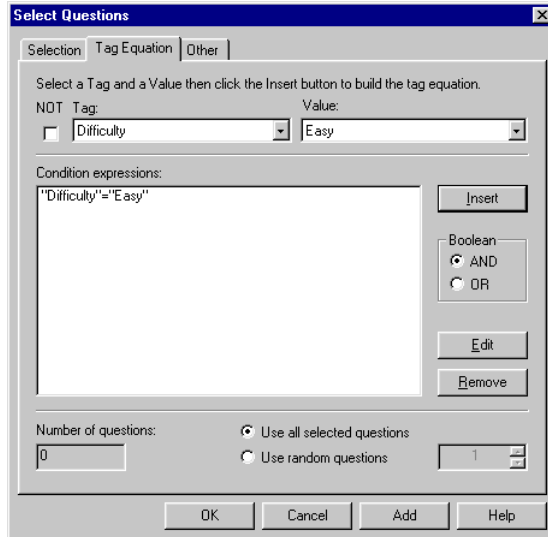
The **NOT** operator only applies to questions that have a tag and tag value assigned to them. This means that the tag equation:

**NOT Difficulty = Moderate**

Would only cause a question to be selected if they had a the **Difficulty** tag assigned to them, and also that its tag value was not **Moderate**.

Unless you wish to select questions at random from those that satisfy the tag equation, make sure that the option **Use all selected questions** is ticked (**Use random questions** is the default).

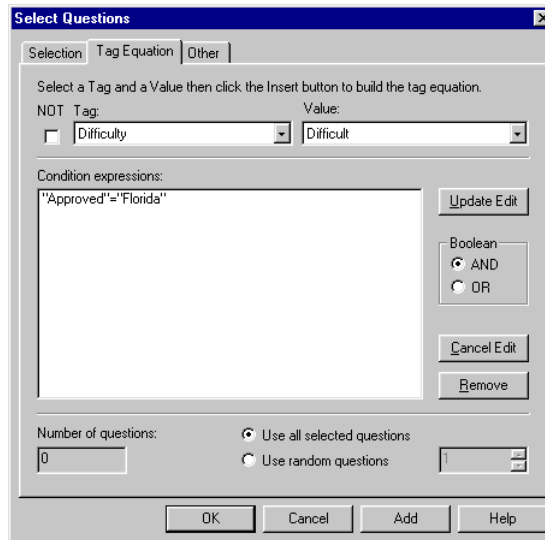
When you are satisfied with this term in your tag equation, click **Insert**.



**Figure 262** *Assessment Question Selection: Simple Tag Equation*

This can now be used as a simple tag equation on its own, or you can add terms to it.

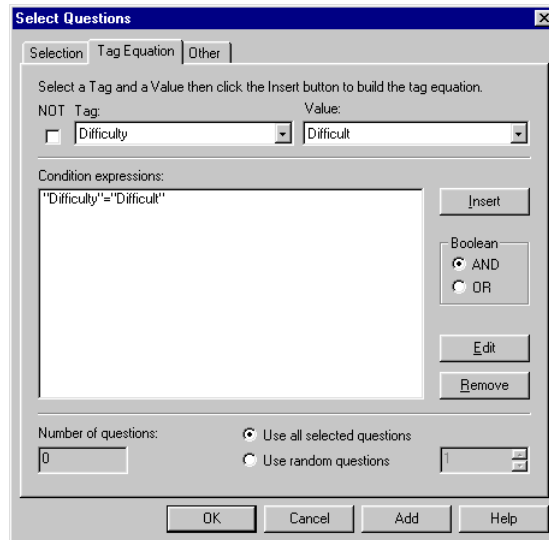
To change this term, highlight it and click **Edit**. You can now select a new tag and tag value from the drop-down lists:



**Figure 263** *Assessment Question Selection: Updating a Tag Equation*

Unless you wish to select questions at random from those that satisfy the tag equation, make sure that the option **Use all selected questions** is ticked (**Use random questions** is the default).

Click **Update Edit** to change the tag equation:



**Figure 264** *Assessment Question Selection: Updated Tag Equation*

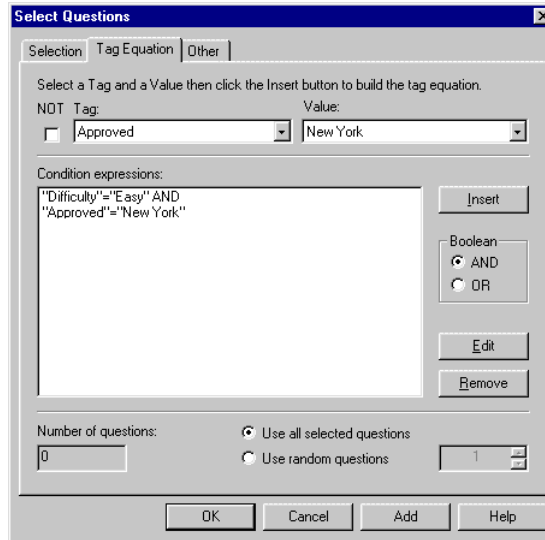
To delete the tag equation, highlight it and click **Remove**.

To add another term, select the next tag you wish to use from the first drop-down list, and then select the value you want to select for in the second drop-down list.

Again, you can include a logical **NOT** operator by ticking the **NOT** box (remembering that the **NOT** operator only applies to tagged questions – see 2.10.4 *Selecting tagged questions from a topic or subtopic* above).



When you are satisfied with this term in your tag equation, click **Insert**:



**Figure 265** *Assessment Question Selection: Complex Tag Equation*

In this case, the logical **AND** operator is included between the first and second terms because the **AND** option was selected when you clicked **Insert**.

You can use the logical **OR** operator instead by selecting the **OR** option before you click **Insert**.

Unless you wish to select questions at random from those that satisfy the tag equation, make sure that the option **Use all selected questions** is ticked (**Use random questions** is the default).

When you are satisfied with your tag equation, click **OK**:

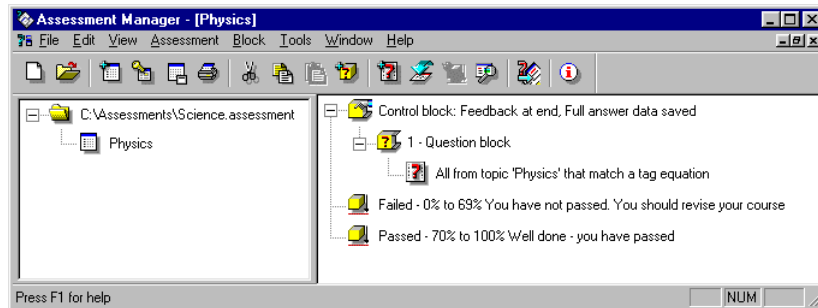


Figure 266 Assessment Question Selection: Tagged Questions from Topic in Assessment

### 2.10.5 Selecting tagged questions from the whole question database

To select a questions from the entire question database according to tags and their tag values:

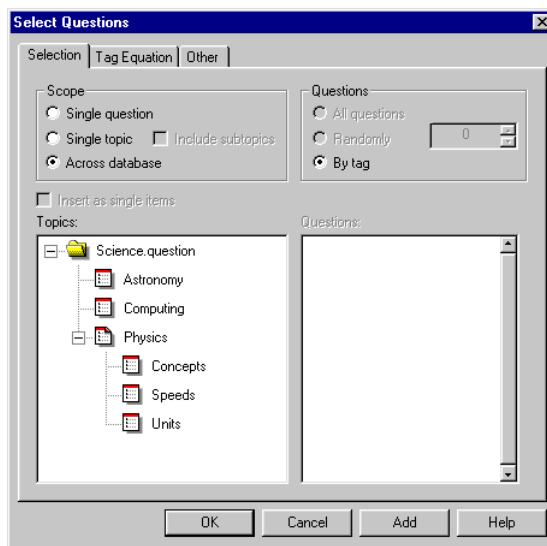
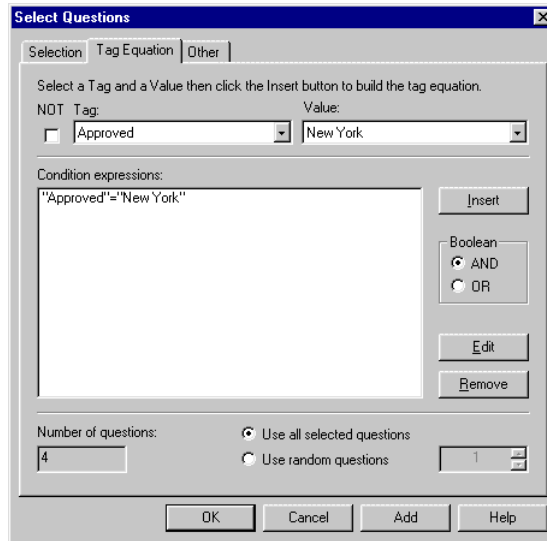


Figure 267 Assessment Question Selection: By Tag from Database

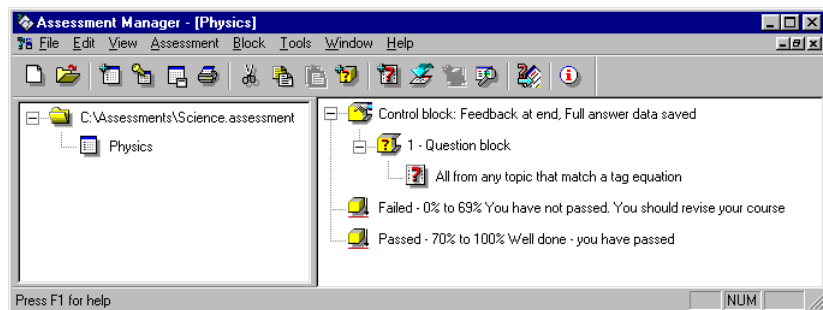
Select the **Across database** and **By tag** options and click on the **Tag Equation** tab when you are ready:



**Figure 268** *Assessment Question Selection: Simple Tag Equation*

Creating a tag equation here is exactly the same here as for selection by tag from topics and subtopics (see 2.10.4 *Selecting tagged questions from a topic or subtopic* above).

When you are satisfied with your tag equation, click **OK**:



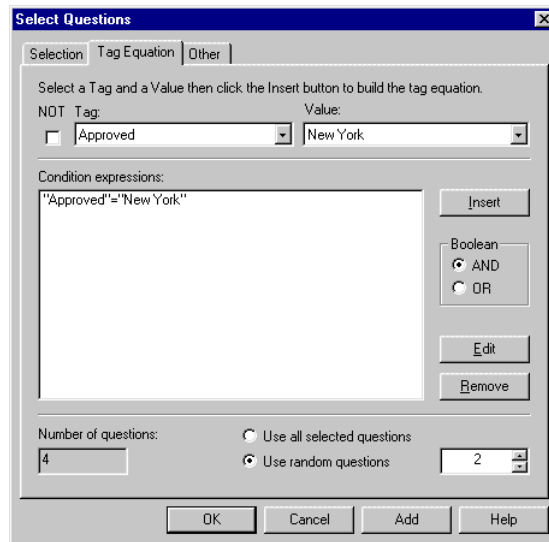
**Figure 269** *Assessment Question Selection: All Tagged Questions in Assessment*

### 2.10.6 Selecting tagged questions at random

*Assessment Manager* allows you to select questions by tag (explained in 2.10.4 *Selecting tagged questions from a topic or subtopic* and 2.10.5 *Selecting tagged questions from the whole question database*) or to selecting questions at random (described in 2.10.3 *Selecting a random selection of questions from a topic or subtopic*).

In addition, *Assessment Manager* allows you to select questions at random from those that have first satisfied a tag equation.

To do this, create a tag equation and ensure that the **Use random questions** option (which is the default) is selected, and not **Use all selected questions**:



**Figure 270** *Assessment Question Selection: By Tag and at Random*

Now enter a number in the box next to **Use random questions** that is greater than 0 but not more than one less than the number of questions available.

Note that the random selection will be made every time the assessment is taken. This is possible because all the questions are published even though not all of them are used every time.

Click **OK** when you are happy with your combined tag equation and random selection criteria. If you are selecting questions by tag from a topic or subtopic, you will see *Figure 271* below:

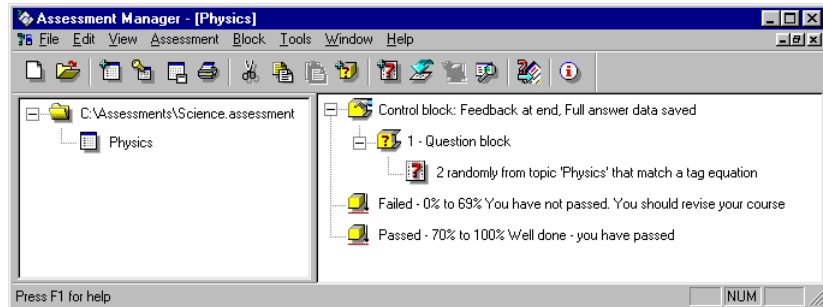


Figure 271 Assessment Question Selection: By Tag and at Random from a Topic

However, if you are selecting questions by tag from the whole question database, you will see Figure 272 below:

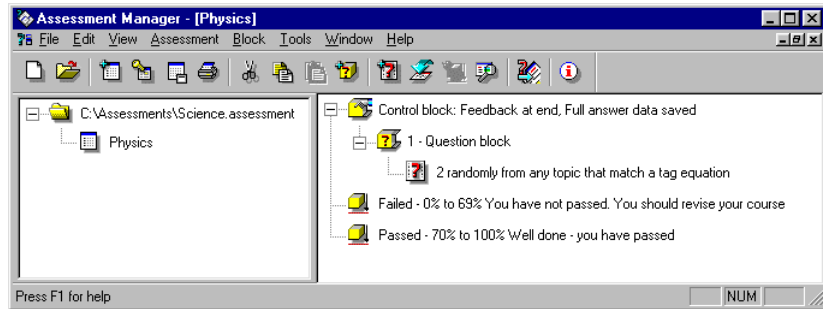


Figure 272 Assessment Question Selection: By Tag and at Random from Database

## 2.11 Trying out assessments

Question blocks, question references and assessment outcomes can all be tried out. If you have *Internet Explorer 4* or higher installed then you can answer the questions and view their feedback. If you do not then you will only be able to preview the questions. You will only be able to see how they look and not answer them.

- 1) Select a question reference, question block or assessment outcome that you want to preview by highlighting it.
- 2) Click **View | Tryout**, click the toolbar button or select **Tryout** from the right-click mouse menu. This will automatically open the questions in a new window if *Internet Explorer 4* or higher is installed or the system's default web browser, and display the selected questions or assessment outcome.

You can tryout a question block, but need to publish the assessment and take it as a participant would to tryout the assessment as a whole.

## 2.12 Printing an assessment

*Assessment Manager* enables you to make printouts for reference purposes.

If participants are intended to take tests on paper, you can use this facility to create the printed assessment papers. You would typically:

- Print out the questions and give them to participants
- Print out the answers and give them to whoever is doing the manual scoring

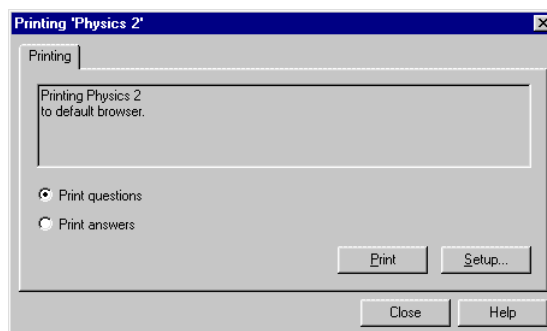
You can print assessments in the following ways:

- From your browser
- Use *Assessment Manager* to print directly to the printer
- Create a document that can be printed in Microsoft Word or another editor or word-processor.

When printing, you can print either a question paper or an answer paper. The question paper contains the questions, usually formatted for answering on paper. The answer paper contains the right answers.

If an assessment contains multiple blocks, it is printed as a single document (all in one block). And if an assessment contains jumps, these are ignored on printing.

To print an assessment, select it in *Assessment Manager* and then select **Assessment | Print Assessment...** You can also right-mouse click on the assessment and choose **Print Assessment...** Either of these displays the dialog below:



**Figure 273** *Assessment Printing: Starting*

To set up how the assessment will be printed, click the **Setup...** button and refer to 2.12.1 *Setup assessment printing – Output tab* below. Any settings made are stored, and used as the defaults each time you print an assessment, until you change them.

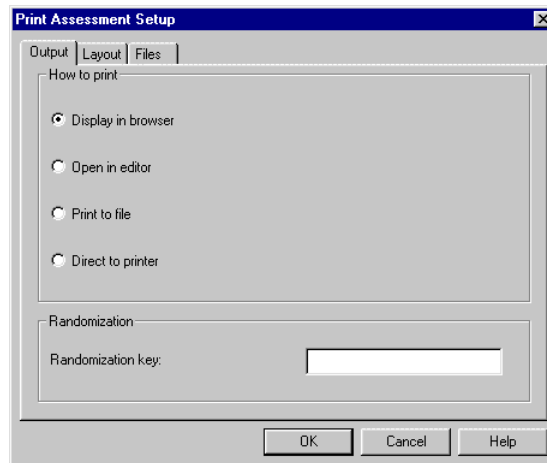
To print the questions, select **Print questions** and click the **Print** button. This will print the questions in the assessment according to what has been defined in the **Setup...** dialog.

To print the answers, select **Print answers** and click the **Print** button. This will print the right answers or scoring instructions according to what has been defined in the **Setup...** dialog.

See 2.12.5 *Examples of printed questions and answers* for more information on how questions and answers appear when they are printed out.

### 2.12.1 Setup assessment printing – Output tab

If you select **Setup...** you will see the screen below:



**Figure 274** Assessment Printing: Setup Output

First, select one of the following:

- **Display in browser** to see the printout with your PC's usual browser.
- **Open in editor** also makes a file on disk, but opens the output file with an editor or word-processor. You define which editor is used on the **Files** tab (see 2.12.3 *Setup assessment printing – Files tab* below).
- **Print to file** uses a specified file that contains the printout. The name and path is defined in the **Files** tab (see 2.12.3 *Setup assessment printing – Files tab* below).
- **Direct to printer** sends the questions or answers directly to the printer. This works best if you have Internet Explorer 4 or higher on your system, as then it will bring up a printing dialog which will print the document directly without needing to display it. With other browsers, the document will usually be displayed in the browser.

You can also define a **Randomization key**. When assessments select questions at random, present choices within questions in a random order, or do both of these, they appear differently to the participant each time they are taken or printed.



Usually, each time you print an assessment a different selection is made. The question and answer printout will both refer to the same selection and choice order only if you print them out one after the other without closing the **Print Assessment...** dialog.

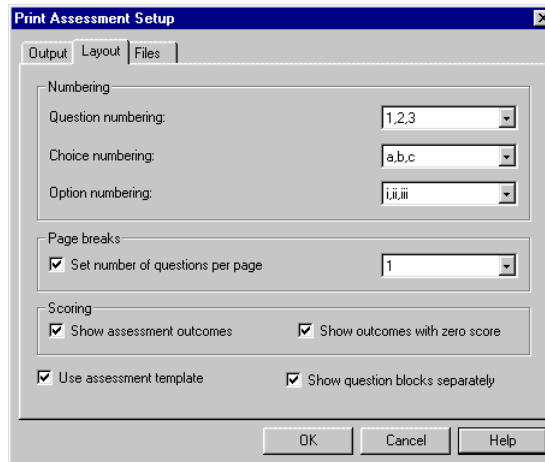
However, sometimes you might want the same randomization selections to be made each time you print. You can do this by setting a **Randomization key** of up to 25 characters in this dialog. If this key is set, then each time the questions or answers are printed, the same random selection is made. This can be useful (for example) in repeatedly printing the same version of an assessment, or printing the answer sheet to questions that were printed on an earlier occasion.

If you want to control how the printed output is laid out, consult 2.12.2 *Setup assessment printing – Layout tab* below.

2.12.3 *Setup assessment printing – Files tab* shows you how to define the main files used in the printing process.

## 2.12.2 Setup assessment printing – Layout tab

You can also control the appearance of the output with the **Layout** tab:



**Figure 275** *Assessment Printing: Setup Layout*

The **Question numbering**, **Choice numbering** and **Option numbering** settings define how questions, choices and options in matrix, pull-down list and ranking questions are shown on the printout.

Possible formats are:

- Digits (1, 2, 3... and so on)
- Lower case letters (a, b, c... and so on)
- Upper case letters (A, B, C... and so on)
- Lower case Roman numerals (i, ii, iii... and so on)
- Upper case Roman numerals (I, II, III... and so on)

You can then specify how many questions are to fit on each page. To set this, tick **Set number of questions per page** and set a number between 1 and 10. This starts a new page after that number of questions, but will not shrink questions to fit.

Setting page breaks in this way will only work with some browsers. For best results, Internet Explorer 5 or higher is recommended. To control the pagination with other browsers, you may need to output to a word processor program like Microsoft Word.

**Scoring** controls two aspects of the information included when printing answers. Neither of these have any effect on the output of questions.

**Show assessment outcomes** defines whether score bands are shown in the printing of answers.

**Show outcomes with zero score** shows whether outcomes with a score of zero, or without a score defined, are included in the scoring information. If you are printing answers to allow manual scoring, it's usually best to set this off so you only see the information that affects scoring.

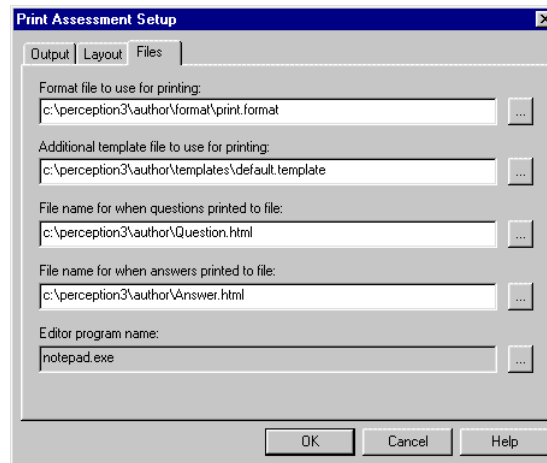
**Use assessment template** controls whether the template defined in the assessment is used when printing. This is usually on, meaning that any special formatting defined in the assessment template is used. When set to off the assessment template is ignored, which can be useful when assessments have templates with formatting that looks good on screen, but which print poorly.

Only the template defined in the control block of the assessment is used for printing, any other templates defined within blocks are ignored.


**Show question blocks separately** defines whether the printout is to show each block separately. If set on then a header is printed for each block and the questions are numbered starting at 1 for the first question in each block. If this is off then no block headers are shown and the questions are numbered from 1 to the maximum number in the assessment.

### 2.12.3 Setup assessment printing – Files tab

This tab defines some of the files used in the printing process.



**Figure 276** Assessment Printing: Setup Files

Each filename may be entered as text or browsed for using the adjacent  button.

The **Format file to use for printing** is the main format file used to generate the HTML. This is normally the standard file **print.format** that is installed in the **\perception3\author\format** directory.

Advanced users can modify this file, or make their own template files to modify it. You must make such template files in ASCII format. For full information on how formatting works, consult the *Perception* support site at:

<http://www.questionmark.com/perception/help/>

For more information on the file **print.format**, see 2.12.4 *Using the print formatting file* below.

The **Additional template used for printing** may be left blank. If defined then it should point to a template file that contains settings or text overriding the defaults in **print.format**. This allows users to make different layouts for different printing purposes.

It is also possible to set a template to produce output suitable for export to another system or for data exchange. The file **printscoring.template** is shipped with *Perception* and prints answers as an ASCII text document, rather than HTML, as an example of this.

**File name when questions printed to file** gives the name of the file used when printing questions. This is normally **question.html** on the usual template path. You can change this if you want to write to a different file, or if question papers are to be retained for further use. When not printing to file, this filename is used as a temporary file and overwritten without warning. If a template is being used to format the output as ASCII text then the extension **.txt** should be used instead of **.html**.

**File name for when answers printed to file** does the same as above but is used when printing answers.

**Editor program name** is the name of the program to be used to open the printout when **Open in editor** is set in the **Output** tab (see 2.12.1 *Setup assessment printing – Output tab* above). This is normally a text editor like Windows Notepad or a word processor program like Microsoft Word.

### 2.12.4 Using the print formatting file

A number of print formatting settings can be made in template files. The most commonly used settings are:

Variable	Function
<b>SHOW_PRINT_CHOICE_NUMBERS</b>	<p>This defines whether to show numbering for choices. Possible values are:</p> <ul style="list-style-type: none"> <li><b>1</b> – Each choice in a question will be numbered, using the style of numbering set as explained in 2.12.2 <i>Setup assessment printing – Layout tab</i> above</li> <li><b>0</b> – Do not number question choices</li> </ul> <p>The default is <b>1</b>.</p>
<b>SHOW_PRINT_OPTION_NUMBERS</b>	<p>This defines whether to show numbering for options in pull-down list and matrix questions. Possible values are:</p> <ul style="list-style-type: none"> <li><b>1</b> – Each option in pull-down list or matrix questions will be numbered, using the style of numbering set as explained in 2.12.2 <i>Setup assessment printing – Layout tab</i> above</li> <li><b>0</b> – Do not number options in pull-down list or matrix questions</li> </ul> <p>The default is <b>1</b>.</p>
<b>SHOW_ANSWER_BOXES</b>	<p>This defines whether to show boxes for answers in the question sheet. Possible values are:</p> <ul style="list-style-type: none"> <li><b>1</b> – Give an explicit place (an answer box) for participants to enter their answer</li> <li><b>0</b> – Do not show answer boxes</li> </ul> <p>The default is <b>1</b>.</p>

Variable	Function
<b>SHOW_SCORING_ID</b>	<p>This defines whether to show the outcome ID or name in the answer printout. Possible values are:</p> <ul style="list-style-type: none"><li><b>1</b> – Show the outcome ID or name along with the scoring instructions</li><li><b>0</b> – Do not show the outcome ID or name</li></ul> <p>The default is <b>0</b>.</p>
<b>SHOW_SCORING_QUESTIONS</b>	<p>This defines whether to include the question wording and choices in the printout of answers. Possible values are:</p> <ul style="list-style-type: none"><li><b>1</b> – Include the question wording and choices</li><li><b>0</b> – Do not include the question wording and choices</li></ul> <p>The default is <b>1</b>.</p>
<b>SHOW_SCORING_FEEDBACK</b>	<p>This defines whether or not to include feedback text in the answer printout. Possible values are:</p> <ul style="list-style-type: none"><li><b>1</b> – Include the feedback text</li><li><b>0</b> – Do not include the feedback text</li></ul> <p>The default is <b>0</b>.</p>

You can also define the text used in printouts by using certain variables in the file **print.format**.

The variable **PRINT\_TIME\_LIMIT\_TEXT** defines the text displayed if there is a time limit for the assessment.

The default setting is:

**PRINT\_TIME\_LIMIT\_TEXT=Assessment time limit**

You could change this to, for example:

**PRINT\_TIME\_LIMIT\_TEXT=Time limit for this test**

The entire layout of the HTML being printed is defined in the file **print.format**. Advanced users can change this, for example, to prevent any information about the time limit appearing in the printout, you could find the following lines:

```
TIMED=<BR>%PRINT_TIME_LIMIT_TEXT% %SESSION.TIMELIMITHOURL%
%SESSION.TIMELIMITHOURS_TEXT%, %SESSION.TIMELIMITMIN%
%SESSION.TIMELIMITMINS_TEXT%
```

and replace them with:

```
TIMED=
```

There are different settings in the file **print.format** for the question and answer printouts, so you can define the layouts of each independently. The variables available for questions are:

Variable	Function
<b>PRINT_START</b>	The first entry in the output document, usually an HTML header.
<b>PRINT_HEADER</b>	This writes the header for the document, for example the assessment title.
<b>PRINT_BLOCK_HEADER</b>	This is used if <b>Show question blocks separately</b> is set (see 2.12.2 <i>Setup assessment printing – Layout tab</i> above) and shows information for each block in the assessment.
<b>PRINT_BLOCK</b>	This shows all the questions in a block.
<b>PRINT_END_BLOCK</b>	This is used if <b>Show assessment outcomes</b> is set (see 2.12.2 <i>Setup assessment printing – Layout tab</i> above) and formats the score band information.
<b>PRINT_END</b>	This finishes the document, usually HTML close tags.

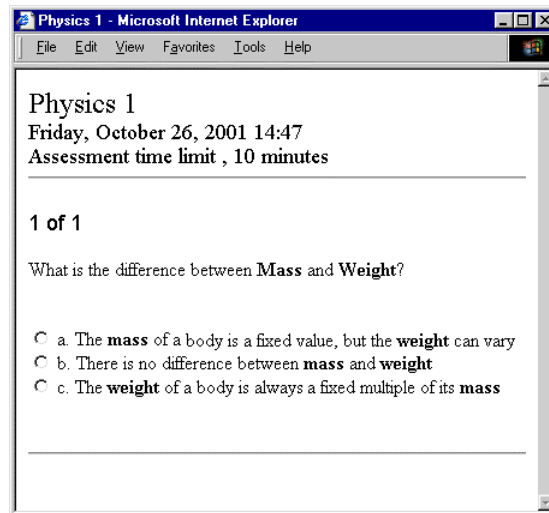
For each question variable there is a corresponding answer variable that has the same function, as shown below:

<b>Question Variable</b>	<b>Answer Variable</b>
PRINT_START	PRINT_SCORE_START
PRINT_HEADER	PRINT_SCORE_HEADER
PRINT_BLOCK_HEADER	PRINT_SCORE_BLOCK_HEADER
PRINT_BLOCK	PRINT_SCORE_BLOCK
PRINT_END_BLOCK	PRINT_SCORE_END_BLOCK
PRINT_END	PRINT_SCORE_END



### 2.12.5 Examples of printed questions and answers

If you select **File | Print assessment...** you can obtain a question printout similar to *Figure 277* below (when displayed in a browser):



**Figure 277** *Assessment Printing: Example of Printed Questions*

You can also obtain an answer printout similar to *Figure 278* below:

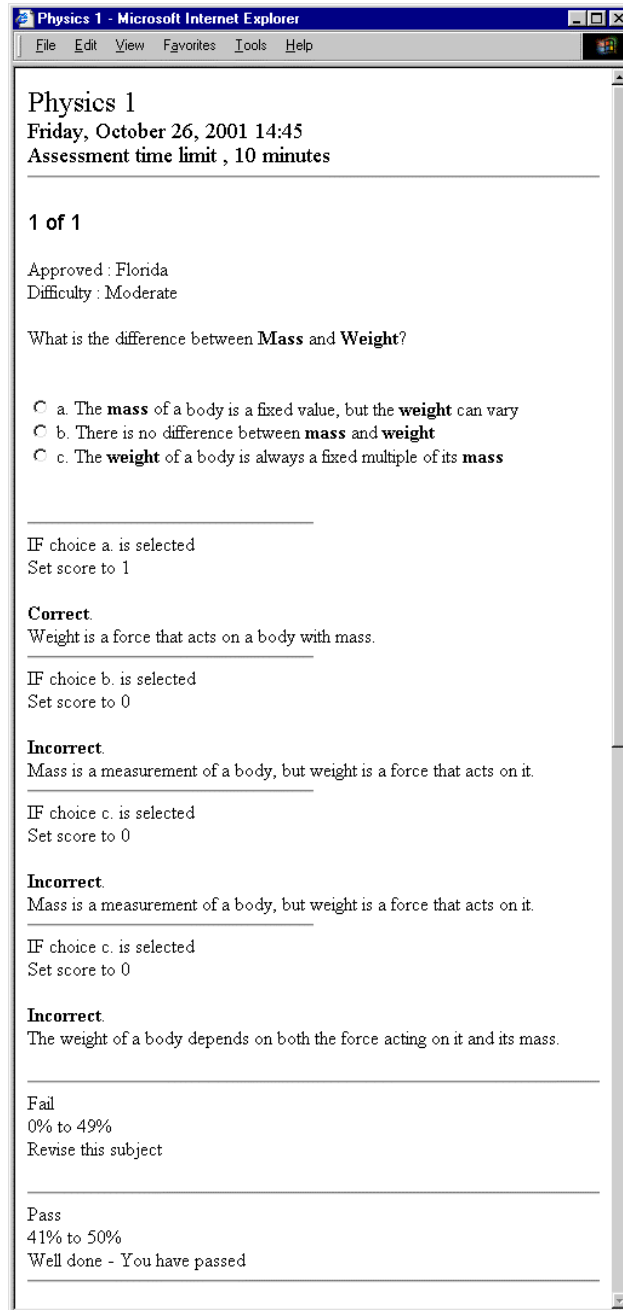
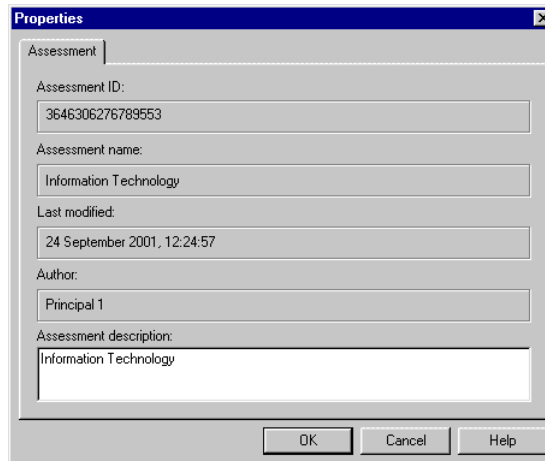


Figure 278 Assessment Printing: Example of Printed Answers

## 2.13 Assessment properties

You can view an assessment's properties by right-mouse clicking on the assessment and selecting **Properties** from the resulting menu.



**Figure 279** *Assessment Properties*

The information displayed is the **Assessment name**, the **Assessment ID**, the date the assessment was **Last modified** and its **Author**.

The **Assessment description** is also included, and it can be changed in this box.

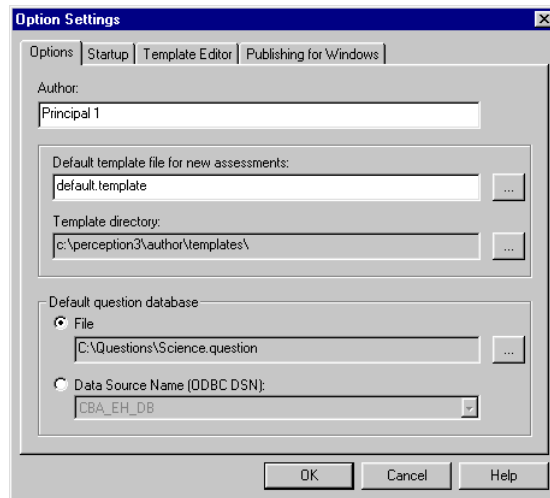
You can copy the **Assessment ID** by selecting it and then typing **Ctrl+C**.

If you publish the assessment for Web delivery, you can use the **Assessment ID** as part of the URL to start an assessment.

## 2.14 Setting Assessment Manager's defaults

### 2.14.1 Options tab

If you select the **Tools | Options...** menu option in *Assessment Manager*, you will see the **Option Settings** dialog box. It has four tabs: **Options**, **Startup**, **Template Editor** and **Perception for Windows**:



**Figure 280** *Assessment Options: Details*

The **Options** tab enables you to set default options in four areas via the following fields:

- **Author**  
This enables you to set the name of the user to whom *Assessment Manager* will automatically assign a new assessment (see 2.6 *Setting up an assessment*). To change the default, simply retype the **Author's** name in the text box.
- **Default template file for new assessments**  
This option enables you to specify the template that *Assessment Manager* sets as your standard assessment template for newly created assessments. Click the button to the right of the box or type in a new template filename to change it.
- **Template directory**  
This enables you to change the directory to which *Assessment Manager* refers for templates. Click the button to the right of the box or type in a new template directory to change it.


- **Default question database**

This option specifies the question database from which questions may be added to an assessment.

You can change this to another database when viewing another assessment.

It is the database where the assessment being viewed will look to find its question references. It is also the same database that will get published when you publish your assessment.

If the questions referenced within the assessment cannot be found in the database specified here, then you will not be able to view the assessment properly.

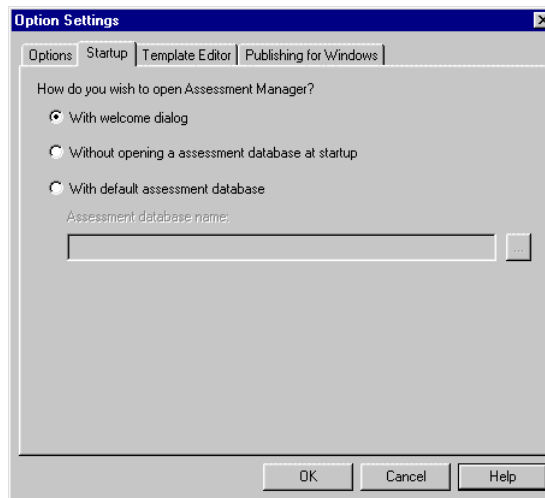
To select another database as a file, select the **File** option and click  to the right of the text box.

To select another database as a DSN, select the **Data Source Name (ODBC DSN)** option and use the drop-down list to the right of the text box to select the DSN.

These values are all saved in the file **Assessment Manager.ini**.

### 2.14.2 Startup tab

The **Startup** tab enables you to define how you would like *Assessment Manager* to open:



**Figure 281** *Assessment Options: Startup Information*

The options are:

- **With welcome dialog**

This option displays the **Welcome to Assessment Manager** dialog shown in *Figure 211* above.

When *Assessment Manager* is opened, the options **Open an existing assessment database**, **Make a new assessment database** or to **Open last assessment database** are offered.

The last assessment database is read in from the **Assessment Manager.ini** file from the **Recent File List** section.

A default question database may also be set. This is the database which is read when question references are inserted in to assessments.

- **Without opening an assessment database at startup**

*Assessment Manager* will start without opening an assessment database.

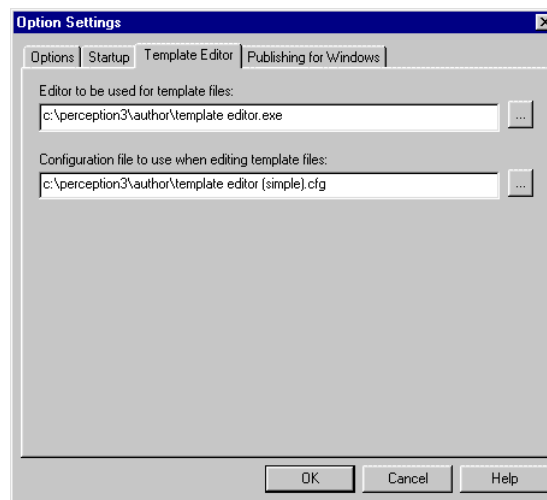
- **With default assessment database**

*Assessment Manager* will open the same database each time it is started. The **Assessment database name** is specified in the lower box.

### 2.14.3 Template Editor tab

This enables you to specify the **Editor to be used for template files**. *Perception* and *Perception for Windows* are both supplied with the *Template Editor*, which is a simple, powerful tool for setting up your templates. A complete guide to the *Template Editor* appears in Part 5: 2 *Template Editor*.

If you installed *Perception* to the directory **c:\perception3**, the *Template Editor* is installed in the directory indicated below:



**Figure 282** *Assessment Options: Template Editor Information*

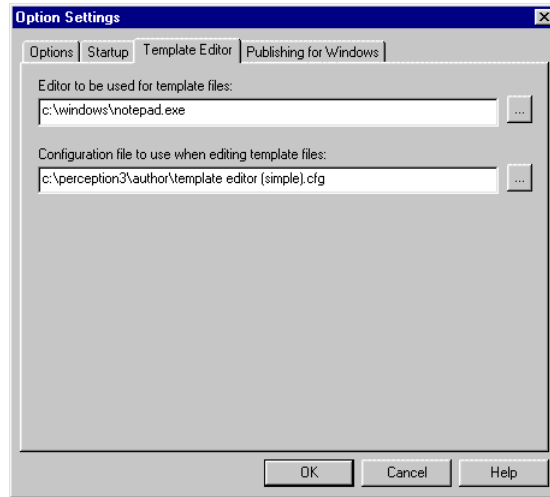
The *Template Editor* requires a configuration file that you specify under **Configuration file to use when editing template files**. Two such configuration files are installed with the software:

**c:\perception3\author\template editor (simple).cfg**

**c:\perception3\author\template editor (full).cfg**

(assuming that the software is installed in **c:\perception3**).

If you do not wish to use the *Template Editor*, you can use an ASCII editor such as **Notepad** as shown below:



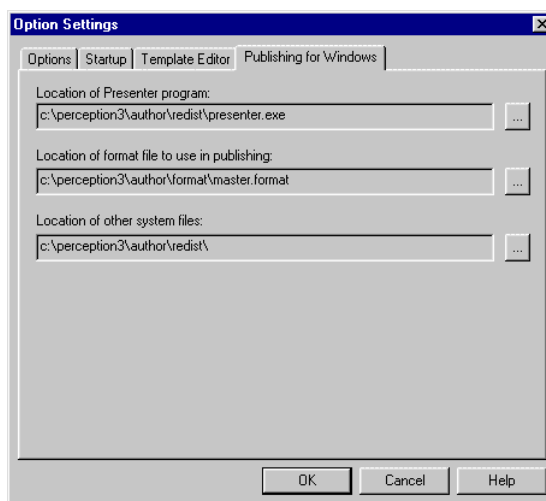
**Figure 283** *Assessment Options: Alternative Editor for Templates*

In this case you do not need to enter the **Configuration file to use when editing template files**.



#### 2.14.4 Publishing for Windows tab

If you have installed *Perception for Windows*, you can specify the **Location of Presenter program**, the **Location of format file to use in publishing** and the **Location of other system files** that *Perception for Windows* uses.



**Figure 284** *Assessment Options: Windows Delivery Information*

The default locations are shown above.

This tab is particularly useful if you wish to configure *Perception for Windows* yourself.

## 2.15 Using Qpacked assessments

When you have built an assessment, you can export it (or Qpack it) to a Qpack file which can then be passed to other others who may import it. This enables assessments to be readily exchanged and archived. The process of Qpacking an assessment is explained in Part 6: 1.3 *Qpacking assessments* below.

If you have a Qpacked assessment that you wish to include in an assessment database, you can first create a blank assessment database (or use an existing one):

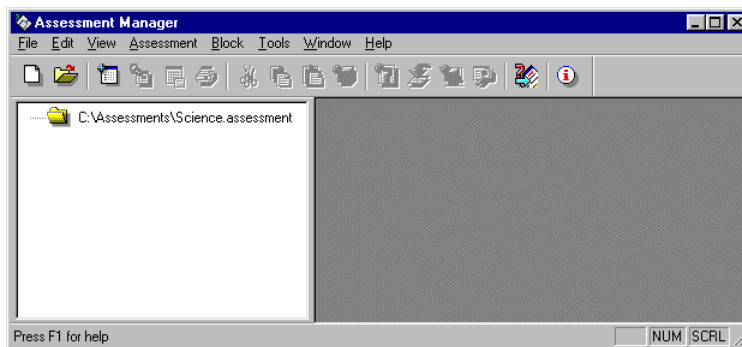


Figure 285 *Qpack Import: Blank Assessment Database*

Then select **Assessment | Import from Qpack...**:

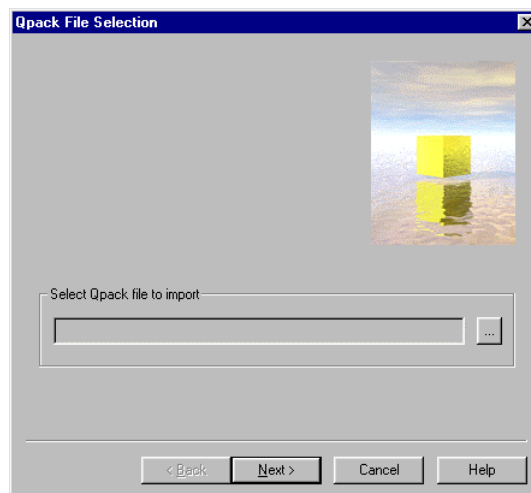

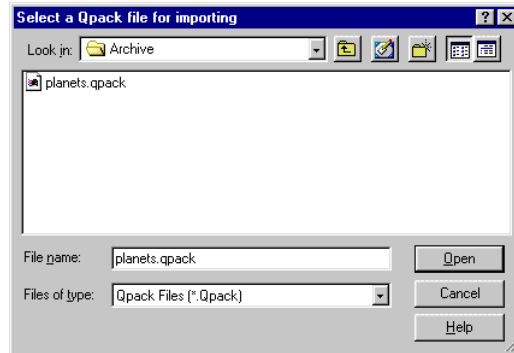


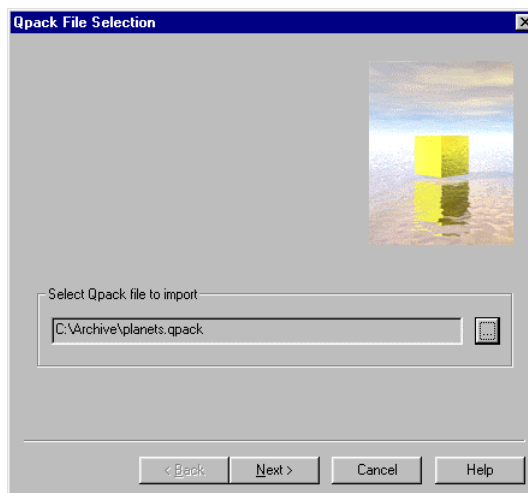
Figure 286 *Qpack Import: Start*

Click  to select the Qpack file that contains the assessment you wish to import:



**Figure 287** *Qpack Import: Selecting Qpack File*

Point to the directory in which the Qpack file is located, select the Qpack file and click **Open**:

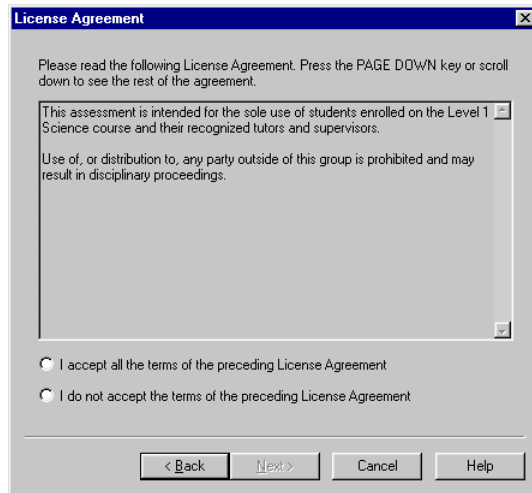


**Figure 288** *Qpack Import: Selecting Qpack File Ready for Importing*

If this is the **.Qpack** file you wish to import, click **Next>**.

If the **.Qpack** file has been created with the **offer license agreement on import** (see Part 6: 1.3.1 *Publishing an assessment to Qpack*) option, you will initially see *Figure 289* below.

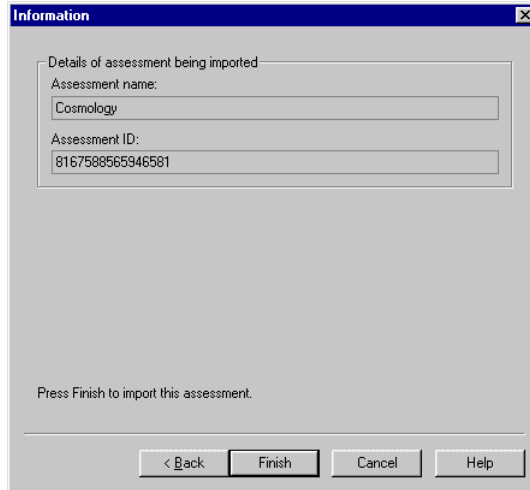
If the **.Qpack** file has not been created with the **offer license agreement on import** you will see *Figure 290* below.



**Figure 289** *Qpack Import: License File Text for Details of Qpack File being Imported*

If you select the lower option (**I do not accept the terms of the preceding License Agreement**), you will then see a **Finish** button which you can click to return to *Assessment Manager* and the **.Qpack** will not be imported.

If you select the upper option (**I accept all the terms of the preceding License Agreement**) and click **Next>**, you will see *Figure 290* below.



**Figure 290** *Qpack Import: Details of Qpack File being Imported*

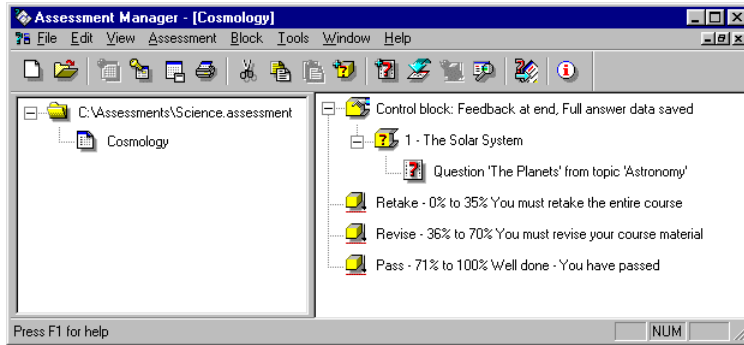
This shows you the **Assessment name** and the **Assessment ID** (which must be unique within an assessment database). If you are satisfied with these values, click **Finish**:



**Figure 291** *Qpack Import: Confirmation*

## Assessment Manager

Now click **OK** to see your imported **.Qpack** file:



**Figure 292** *Qpack Import: Assessment Imported from Qpack File*

## 3 Assessment blocks

### 3.1 Introduction

*Assessment Manager* uses a system of blocks to build its assessment. There are four different types of blocks available to build an assessment:

- **Control block**

This contains the settings for how the assessment is to be delivered. This includes time limits, feedback settings, messages, and which template is used. Also, you can control which question topics are reported on.

- **Question blocks**

These contain sub-blocks that specify which questions and topics are used. They enable you to add questions from a topic individually, randomly or in their entirety.

- **Jump blocks**

These enable you to branch to another part of an assessment. Jump blocks can be set depending on question outcomes or scores.

- **Assessment Outcomes**

These enable you to name and establish score bands for an assessment, and to give a message to the participant scoring within the band. Branching enables users to branch to another assessment or another program or URL.

A further feature is the ability to require that participant to achieve a specified minimum score for one or more topics that they must attain to “pass” the assessment.

Each assessment must contain a single control block, at least one question block and at least one assessment outcome.

There is no practical limit to the number of question blocks in an assessment or to the number of questions in each block.

You can include jump blocks in assessments if you want to move between different parts of the assessment according to participant's responses. The control block is always first in the view in *Assessment Manager*, and the assessment outcomes are always last. Question and jump blocks can be freely mixed.

When the assessment is delivered, each question block corresponds to a document containing questions sent to the participant. If there are three question blocks, then this means that the assessment is divided into three sections, presented to the participant one at a time.

If you are using *Question by question delivery*, all questions within a single question block will be presented one at a time. *Question by question delivery* is a template facility.

## 3.2 The control block

### 3.2.1 Creating and editing a control block

When you make a new assessment, the control block is automatically created.

To view or edit the options set, either double click on the control block icon in the assessment control pane or highlight the block in the pane and choose **Block | Edit...**

The **Control Block** dialog box has four tabs, **Control**, **Feedback**, **Security** and **Reported topics**.

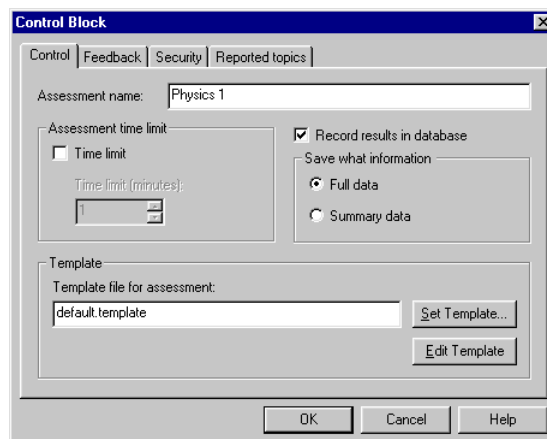


Figure 293 Assessment Control Block: Control Information



The **Control** tab lets you do the following:

- You can change the name of the assessment, by entering a new name in the **Assessment name** box.
- You can set a time limit for an assessment by checking the **Time limit** box and then specifying the number of minutes below.
- You can control what information is saved in the answer database, when the assessment is run. If you don't want any results written to answer database, then do not select **Record results in database**, and no record of the assessment will be saved. If you do record results, you can choose whether to record **Full data**, which saves everything, or **Summary data**, which saves only some data, by choosing the radio button next to the appropriate command.

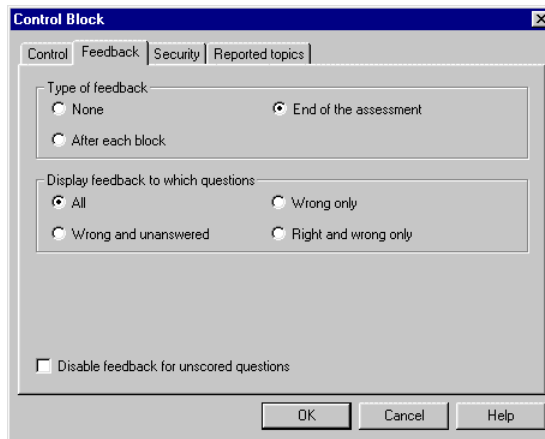
The difference between **Full data** and **Summary data** is that **Summary data** does not save the answer and score for each question, just the results for the assessment as a whole. Whereas **Full data** saves everything, including the answer and score for each question.

- The assessment's layout is controlled by a template which is set by filling in the **Template file for assessment**. When an assessment is created, the **Option Settings** dialog defines which template is placed here, but you can change it at any time by either typing in a new name or using the **Set Template...** button. You can also view or edit the selected template with the **Edit Template** button. See Part 5: 1 *Templates explained* for more on templates, and Part 5: 1.4.1 *Linking a template to an assessment* for a description of this setting.

You can also set the template for each question block to override this setting, see 3.3.2 *The Question Block dialog box* for how to do this.

### 3.2.2 The Feedback tab in the Control Block dialog box

The **Feedback** tab in the control block dialog box lets you define whether feedback is given to the participant when the assessment is presented, and if so how it is presented:



**Figure 294** Assessment Control Block: Feedback

The **Feedback** tab allows you to do the following:

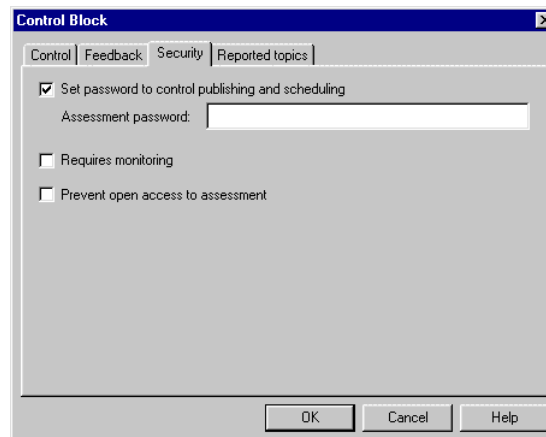
- The **Type of feedback** section of the dialog box enables you to specify if feedback is offered **After each Block**, at the **End of the assessment** or **None** at all. For a survey, or for an exam where you do not want to give feedback, set **None**. For a test that you want to present feedback for, you can choose whether to give the feedback **After each block** or at the **End of the assessment**. Feedback **After each block** means that after the participant submits each block in an assessment, the server sends back a document with feedback on the block before sending the next block of questions. Feedback at the **End of the assessment** is presented at the same time as the final page from a score band, after all the questions are presented. If your assessment only has one block and you want to present feedback, then it's recommended that you set feedback at the **End of the assessment** rather than **After each block**. This will be simpler for the participant. The participant will see one document with the questions followed by one document with the results, rather than one document with the feedback and one document with the final page.

- The **Display feedback to which questions** assessment of the dialog box allows you to define which questions have feedback presented for them. What the feedback consists of is defined in the template file. It usually consists of the question mirrored back to the participant with the score achieved, and the feedback text defined for the outcome in *Question Manager*. The options are:
 

<b>All</b>	Feedback is always given.
<b>Wrong only</b>	Feedback is only given for questions the participant gets wrong (that is, does not get the maximum score for).
<b>Wrong and unanswered</b>	Feedback for unanswered questions is given as well as that for <b>Wrong only</b> .
<b>Right and wrong only</b>	Feedback is given only on questions that were answered, omitting unanswered questions.
- To **Disable feedback for unscored questions**, select the box. This means questions that are not scored (that is, explanation questions or questions with a maximum score of zero) are not given feedback. This is especially useful to set if you have questions asking for information mixed in with assessment questions. For example, if you start your assessment asking for someone's department or location, you wouldn't want to present feedback to this question.

### 3.2.3 The Security tab in the Control Block dialog box

The **Security** tab is shown below:



**Figure 295** Assessment Control Block: Security Settings

An **Assessment password** can also be set for web delivery. It must be no more than 10 characters. The password is particularly useful if you do not want anyone to overwrite your assessment during publishing. Before a password-protected assessment is overwritten its password must be supplied correctly. (See 1.1.1 *Publishing an assessment to Access* for more details.) Also, you will only be able to schedule an assessment in *Enterprise Manager* if you know this password.

Setting an **Assessment password** has no effect with Windows delivery.

If the assessment requires monitoring (that is, participant must be signed in by a proctor or invigilator who can check their identity before they take the assessment), tick **Requires monitoring**.

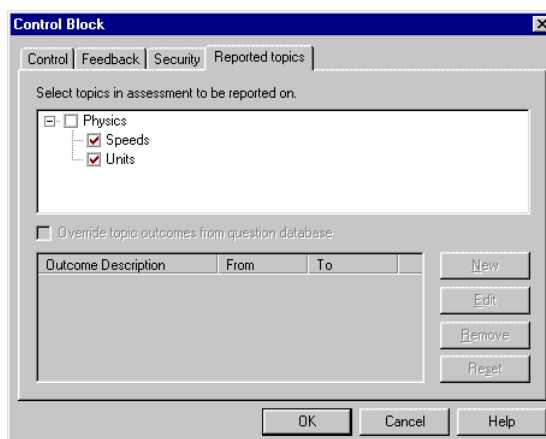
It is also possible to define specific assessments that need monitoring. A monitor is a proctor or invigilator who can check the identity of a participant. If an assessment is monitored, a participant can only take it if a monitor signs them in.

If you intend to publish for web delivery, then all assessments are displayed as available to any participant using **open.dll** unless you select **Prevent open access to assessment**. In this case, the assessment will not appear when a participant runs **open.dll** regardless of whether they have been scheduled to run it or not. A participant will only be able to take the assessment if they run **perception.dll** and they have been explicitly scheduled to do so.

If you intend to publish for windows delivery, selecting **Prevent open access to assessment** will ensure that assessments must be scheduled in *Enterprise Manager* or they will not be shown in this list. If an assessment is not scheduled in *Enterprise Manager* then *Presenter* can only run it by branching at the end of another assessment.

### 3.2.4 The Reported Topics tab in the Control Block dialog box

The **Reported topics** tab lets you determine which question topics are used in reporting:



**Figure 296** *Assessment Control Block: Selecting Topics for Reporting*

Those topics or subtopics that you tick will have scores calculated and stored in the answer database, and made available for reporting.

If you display topic scores or feedback on the final page, only those topics or subtopics ticked here will be displayed. Topics that you do not tick here will never have a topic score, topic outcome or topic feedback shown.

For topics that you do report on, you can redefine the topic outcomes in the question database, by selecting the topic and ticking **Override topic outcomes from question database**. You can then use the bottom half of the dialog box to redefine the topic outcome names, score ranges and topic feedback for this assessment.

## 3.3 Question blocks

### 3.3.1 Creating and editing question blocks

When you add or edit question blocks, you refer to the questions and topics in a question database. The information about which question database these questions are in is not stored in the assessment database. This means that when you copy questions from one database to another, you don't need to amend the assessment.

You specify which question database the questions are in from the **Option Settings** dialog within *Assessment Manager* (see 2.14 *Setting Assessment Manager's defaults* for details on how to do this). If you are only using one question database, this setting will apply to all assessments and so you do not need to alter it. If you are using many question databases, you will need to set this so that your assessment refers to the appropriate question database.

To add a new question block to an assessment:

- 1) Select **Block | Add Question Block...** to bring up the **Question Block** dialog box.
- 2) Fill in any settings in the dialog box (see 3.3.2 *The Question Block dialog box* for details), then click **OK**.
- 3) You will then see the **Select Questions** dialog box, which is explained in 2.10 *Adding questions to assessments*.

Each question block contains one or more sub-blocks or references to questions. A reference can be:

- **A single question**
- **A selection of all questions in a topic**
- **A selection of a random number of questions in a topic**
- **A number of questions selected by tag**
- **A random number of questions from those selected by tag**

Each block is delivered separately to the participant unless *Question by question delivery* is used, in which case a question at a time will be presented. If you want many questions to be presented to the participant at the same time, you put them all in one block. If you want questions to be presented individually, you put each question in a separate block.

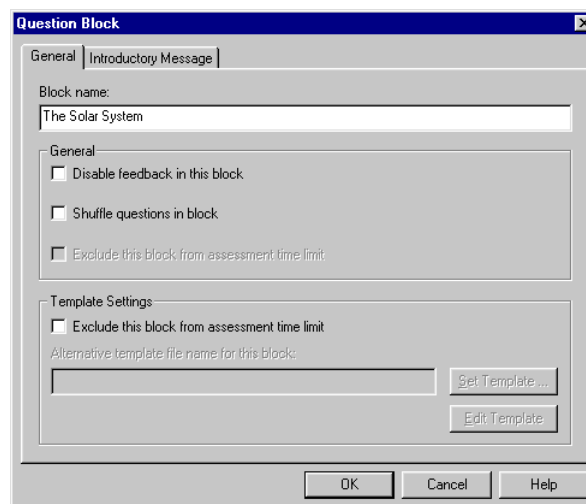
Question blocks and references are shown hierarchically in the assessment window.

When you create a question block, you create the block and the references, but when you edit them, you edit each separately.

To edit a question block, double click on it, and you will see the **Question Block** dialog box. To edit the question reference, double click on it, and you will see the **Select Questions** dialog box. To add a new question reference to an existing question block, use the **Block | Add Questions to Block...** menu item or click its icon.

### 3.3.2 The Question Block dialog box

The **Question Block** dialog box contains some general information about the question block. It has a **General** tab and an **Introductory message** tab.



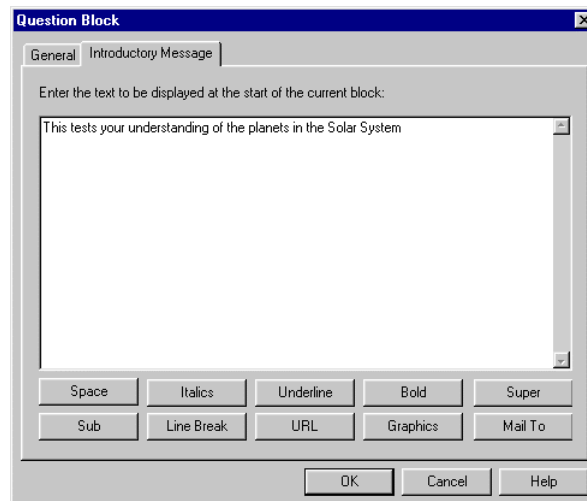
**Figure 297** Assessment Question Block: Question Block Details

The **General** tab allows you to do the following:

- In the **Block name** text box, you can set a name for the block, which can help you organize your blocks and jumps in *Assessment Manager*. The name is not usually displayed to the participant, so you can leave it with the default setting if you prefer.
- You can choose to **Disable feedback in this block**. If you select this, it means that even if feedback is set in the control block for the assessment, it will not be given for this block. Feedback can, for example, be disabled in an introductory block that asks the name or demographic details of the participant. This introductory block could be followed by blocks of questions that do give feedback.
- If you set **Shuffle questions in block**, then each time the assessment is presented, the order of the questions in the block will be randomly shuffled. Thus the participant will see them in a random order. Shuffling question order in this way can be a useful security measure and it also removes possible bias in the ordering of questions. Any shuffling for the block is additional to any randomizing when selecting questions.
- You can **Exclude this block from assessment time limit** if a time limit has been set in the control block (see 3.2.1 *Creating and editing a control block* above). This means that a participant has no time limit for the questions in this question block, and that the time taken for them is not taken into account when the assessment time limit is enforced.
- You can choose to **Use different template in this block**. If so, then this block uses the template set in this dialog box, instead of the one defined in the control block for the assessment, and so gives this question block a different layout. You can select the template to be used with the **Set Template...** button, and also view or edit it with the **Edit Template** button. See Part 5: 1 *Templates explained* for more on templates, and Part 5: 1.4.2 *Linking a template to a question block within an assessment* for a description of this setting.



To add an introductory message, select the **Introductory message** tab in the dialog box:



**Figure 298** *Assessment Question Block: Question Block Introduction*

Type in an introductory message in the text box. Any introductory message is displayed at the top of the document presented to the participant. You can type in up to 16,000 characters of text, which is treated as HTML text (that is, it can contain HTML tags). If you have a large amount of introductory text, you may want to create it in an external program and copy and paste it into *Assessment Manager*.

### 3.3.3 Making question results easy to access from the answer database

The **Other** tab in the **Select Questions** dialog box lets you put the answer or outcome to a question in a special field in the answer database, which can then be used in reports. The **Other** tab can only be accessed when a single question reference is made – you can't use it if you are selecting all or a random number of questions.

The answer database consists of several tables. The top-level table is the results table, which contains a record for each participant who has taken, or is currently taking, an assessment. It holds information such as the name of the participant and the score for the assessment. It also has ten "special" fields called **Special\_1** through to **Special\_10**. These fields can be set when assessments published either for the web or for Windows delivery are taken, but they are only reported on by *Enterprise Reporter*. *Windows Reporter* does not use them.

You can assign the answer or outcome for specific questions to these fields, which means that the results of the question are available at the top-level in reporting.

For example, if you ask a participant some demographic questions at the start of an assessment (for example, which department or location they are in), you might want to analyze your results on the basis of these questions. If you assign the results to the special fields, the information will be available easily in reporting. See the *Web Deployment Guide for Perception Version 3* for more details of how these fields are used in reporting.

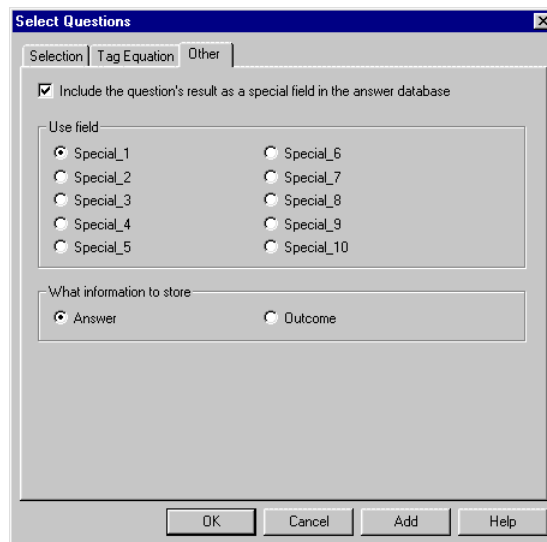


Figure 299 Assessment Question Block: Special Fields

The **Other** tab enables you to do the following:

- 1) To activate the fields on the tab, select the box to **Include question's results as a special field in the answer database**. Remember that this only applies if you are selecting a single question.
- 2) Select which of the ten fields are to be used underneath **Use field**. It's your responsibility to make sure that two questions do not use the same field – if they do, one will overwrite the other. And if the question is asked more than once, for example because of a jump backward, the last answer counts.
- 3) In the **What information to store** area, indicate whether you wish to store the **Answer** or **Outcome** name in the special field. Each field is 50 characters long, and the answer or outcome name is truncated if it is too long. For text questions you will probably want to store the answer, but if you have classified the question with useful outcome names you might find the outcome name more useful for other questions.

## 3.4 Jump blocks

### 3.4.1 How jumps work

Usually, the question blocks in an assessment are presented one by one in order, until the end of an assessment is reached. However a jump block can change the order in which question blocks are presented, either by skipping forwards, missing out some blocks, or else going back to re-present a previous block.

Jumps allow you to control how a participant proceeds through an assessment depending on what has happened so far. Jumps are a very powerful tool to let you create assessments that act flexibly depending on what the participant does. Using jumps allows you to make “adaptive” tests.

Jumps add an extra level of complexity into *Perception*. You should take care in using them, especially backward jumps, as it is easily possible to create undesirable situations – for example an assessment that infinitely repeats, asking some questions and then jumping back to ask them again. You should always tryout your assessments with jumps with the server software, or *Presenter*, prior to presenting them to real participants, to check your logic works as intended.

If you use jumps to go backwards, and ask a question block a second time, the software behaves as if there was a second copy of the block. The participant does not redo his/her answers to the previous questions, but instead the questions are asked from scratch a second time. This means that if the question block uses randomization, the random selection is done again if the block is jumped back to. And if answers are stored in the answer database, they are stored a second time as if the questions had been repeated in the assessment.

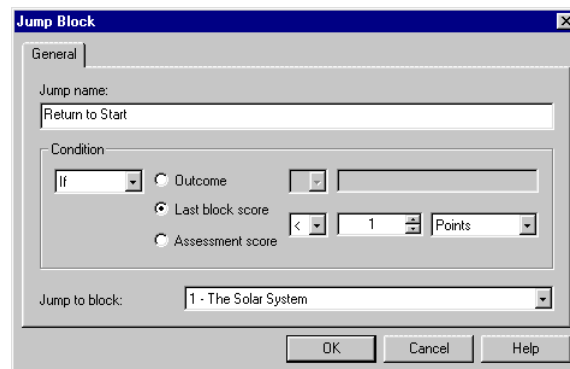
The total score for an assessment is the sum of the scores of all questions in all blocks sent to the participant. If you jump back to a block, the scores for its questions count again, so if a question is asked twice, the score is counted each time. In addition, if you jump over a block, its score does not count towards the maximum score. If you have three question blocks, each with a maximum score of 10 points, and someone answers the first block with a score of 10 out of 10, and then jumps to the end of the assessment, the score for the assessment will be 10 out of 10, and not 10 out of 30.

### 3.4.2 Creating and editing jumps

To add a new jump:

- 1) Highlight the block after which you wish to insert the jump.
- 2) Select **Block | Add Jump Block...** or click on the icon on the *Assessment Manager* toolbar to display the **Jump Block** dialog box.
- 3) Define the jump details in the dialog box, and click **OK** to save it.

You can edit an existing jump by double clicking on it:



**Figure 300** *Assessment Jump Block: Conditions*

This shows the **Jump Block** dialog box, which lets you set the following:

- You can define a name in the Jump name box. This is useful within *Assessment Manager* to identify the jump, but the name is not shown to the participant.
- You choose whether the jump is to happen always or only if a condition is met. Set **Always** in the left hand drop-down box for an unconditional jump. To create conditional jumps, select **If**.
- For a conditional jump, you can choose to jump depending on the outcome to a question in the preceding question block, or depending on the assessment score or the score for the last question block.
  - If you set **Outcome**, then you type an outcome name in the box to the right of the radio button and choose one of = (equal to) or != (not equal to). The jump happens if any of the questions in the preceding block result (or do not result if != used) match the exact outcome name. For example, if one of the questions in the preceding block asks whether someone is male or female, and has outcomes called “Male” and “Female”, then you would jump if the outcome were one of these.
  - To jump based on the score, you choose one of **Last block score** or the total **Assessment score**. You then define the jump by clicking on the drop-down menus to select what this is compared to, and whether the score is treated as a number in points or as a percentage. The operators to compare scores are = (equal to), != (not equal to), > (is greater than) and < (is less than). For example, in the screenshot above, the jump happens if the assessment score is less than 50%.
- Finally, choose whether to jump to the end of the assessment or to another question block by selecting from the menu to the right of the **Jump to block** box.

It's possible and often useful to create several jump blocks after a question block. Each jump is evaluated in turn and if it applies, a jump is made to its destination, but if it does not apply, the next jump is evaluated.

Here is a simple example of using jumps to create a repeating menu of choices.

- 1) Make a question block with a single question in it with three possible choices, **A**, **B** and **Exit**. Set outcomes with IDs **A**, **B** and **Exit** depending on which choice the participant makes.
- 2) Make a jump block that jumps to the end of the assessment if the outcome is **Exit**.
- 3) Make a jump block that jumps to 6) if the outcome is **B**.
- 4) Ask questions in topic **A**.
- 5) Jump always to 1).
- 6) Ask questions in topic **B**.
- 7) Jump always to 1).

## 3.5 Assessment outcomes

### 3.5.1 Creating and editing assessment outcomes

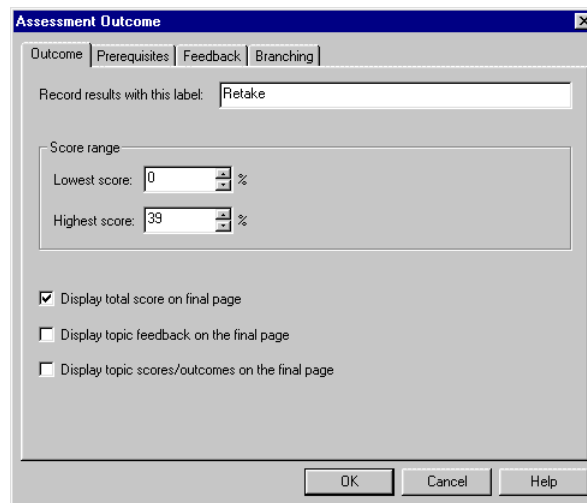
An assessment outcome contains a score band that determines when it is processed.

It also defines actions at the end of an assessment. You can have up to 100 different score bands, each applying to a different range of scores. For example, you could have one for 0-30%, one for 31%-60% and one for 61% to 100%.

Each assessment outcome consists of a name, a final message and optional branching details. The name is stored in the answer database, as the result of the assessment. The final message is displayed to the participant, and if branching is defined, then appropriate action (run assessment, execute program or browse to URL) is performed after the final page is displayed. The layout of the final page containing the message is defined by the template file, but can contain the final score as well as the message defined in the score band.

Assessment outcomes are automatically added as part of the process of creating a new assessment. You can create additional assessment outcomes with the **Block | Add Assessment Outcome...** menu item, or with the toolbar icon. And you can edit assessment outcomes by double clicking on them. Assessment outcomes are always placed after all question and jump blocks.

You define assessment outcomes with the **Assessment Outcome** dialog box:



**Figure 301** *Assessment Outcome: Score Range*

The **Outcome** tab lets you define:

- The **label** located at the top of the dialog box option lets you specify a name for the assessment outcome by typing in the name in the text box provided. This name is stored in the answer database and used in reporting.
- The range of scores that the assessment outcome applies to by typing in the **Lowest score** and **Highest score** in the text box provided or select a score by using the spin controls.

At the end of an assessment, *Perception* calculates the total score as a percentage of the maximum score and compares this against the score bands set up in the assessment outcomes. The percentage score is rounded as necessary. If more than one assessment outcome corresponds to the score achieved, the first one in the order displayed in *Assessment Manager* is used, provided that any *prerequisite topic score* (see 3.5.2 *Using prerequisite topic scores to control results* below) set for the assessment outcome is met.

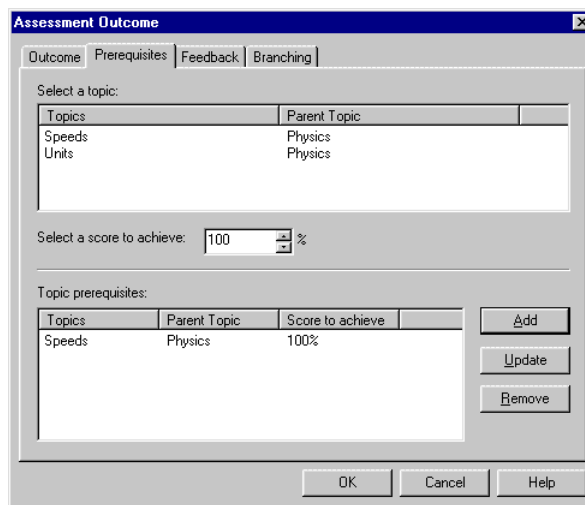
- Tick **Display total score on final page** to show the participant their overall score for the assessment when they have completed it.
- Tick **Display topic feedback on the final page** to show the participant their feedback for each topic within the assessment when they have completed it.
- Tick **Display topic scores/outcomes on the final page** to show the participant their scores for each topic and the names of any topic outcomes applicable to their performance when they have completed it.

### 3.5.2 Using prerequisite topic scores to control results

Assessments include questions drawn from an item bank that are selected from one or more of the topics (or subtopics) within it.

If at least one question is selected from a particular topic, then a *prerequisite topic score* can be set for that topic. This means that participants must achieve a specified minimum score for the topic to reach this assessment outcome.

Prerequisite topic scores are set with the **Prerequisites** tab:



**Figure 302** *Assessment Outcome: Setting Topic and Topic Score*

Select the topic for which you wish to set a prerequisite topic score in the upper box, and enter its required minimum score in the box next to **Select a score to achieve**. Then click **Add**.

You can add a prerequisite topic score for any, all or none of the topics whose questions are used in the assessment.

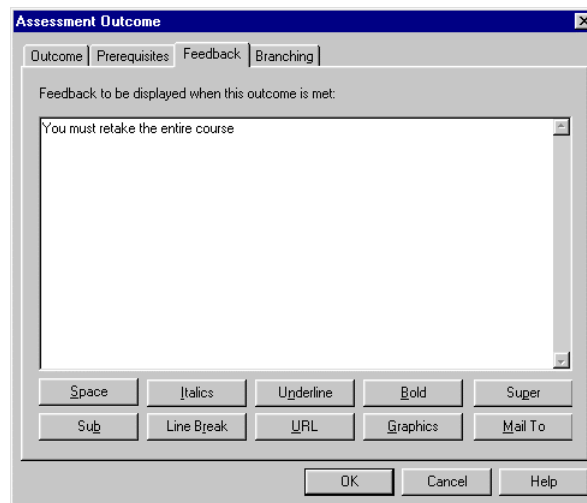
To change a prerequisite topic score, highlight it in the lower box and click **Update**.

To delete a prerequisite topic score, highlight it in the lower box and click **Remove**.



### 3.5.3 Creating feedback that depends on assessment score

The **Feedback** tab lets you define the feedback that is given to participants who achieve a score in the range for an assessment outcome:



**Figure 303** *Assessment Outcome: Setting Topic and Topic Score*

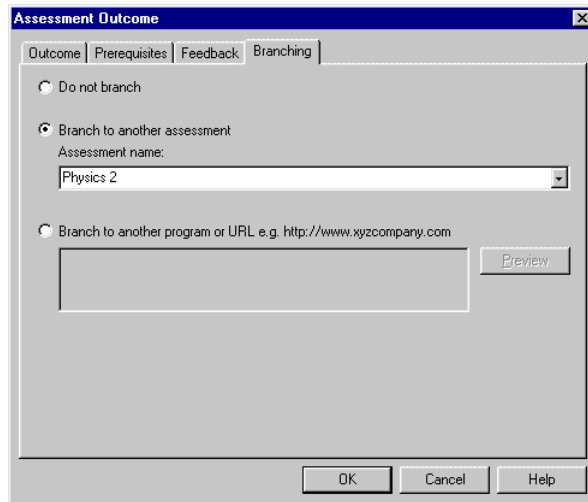
Type in the message you wish to give to participants.

Note that your feedback can be entered in HTML using the buttons shown. These work in the same way as for HTML question content (see Part 3: 4.4.3 *HTML content* above).

The feedback can be up to 16,000 characters long, and you can cut or copy text from another application using **Ctrl+C** and then pasting it from the clipboard into the box using **Ctrl+V**.

### 3.5.4 Setting branching at the end of an assessment

The **Branching** tab lets you define a branch at the end of an assessment. Branches let you define an action that will occur when participants reach the end of an assessment. They also enable you to set up sequences of assessments that follow each other.



**Figure 304** *Assessment Outcome: Creating Branches at End of Assessment*

The **Branching** tab allows you to do the following:

- Choose **Do not branch** if you do not want any branching to happen at the end of the assessment. Depending on what is set in the format and template file, the participant may see a **Home** button (or a **Finish** button in *Presenter*) to go back to a list of assessments.
- Choose to **Branch to another assessment** by selecting the radio button for this. Select the **Assessment name** to branch to from the drop-down menu that shows a list of assessments in the database. The participant will then see a link on the final page to this assessment, and will start it when the link is followed. The assessment being branched to must have been published before the assessment branching to it is taken.

- To **Branch to another program or URL**, select the radio button for this and type in the full URL of the page you wish to jump to. This can be a fixed web page or a program. The participant will see a link on the final page to this, and can use it to branch to the appropriate program or URL.

If you are publishing for web delivery, you can also show a report on the results using **%SESSION.REPORT%** as the URL. (See the *Web Deployment Guide for Perception Version 3* for more details.)

If you are publishing for Windows delivery, you must take care to ensure that any program or URL that you branch to will be available on the participant's system.



# **Part 5: Templates**



# 1 Templates explained

## 1.1 The concept of templates

When you install *Perception* version 3, the appearance of any assessments that you create will be presented to participants with a standard design for their layout and format. This standard design is stored in a *template*. A template can be linked to either an assessment or a question block within an assessment with *Assessment Manager* (see 1.4 *Using templates in Assessment Manager* below).

However, you can choose from a range of different designs supplied with the software by choosing one of a range of standard templates.

Templates are contained in *template files*, which make it possible for you to create your own custom templates. You can start with one of the templates supplied with *Perception* and modify it to suit your needs, or you can produce your own original template from scratch.

Template files (see 1.2 *How template files work* below) can contain settings for almost 300 separate *template variables*, each of which adjusts a specific aspect of your participant screen design.

These variables give you great scope and versatility if you wish to customize your participant interface. For example, you might wish to implement your own house style using your own logo and distinctive color scheme. You could also vary the formatting used before or after a question choice appears. See the *Perception* support site for a full description of all the available template variables. You can reach this on the web at:

<http://www.questionmark.com/perception/help/>

Another popular feature of template variables is that they enable you to implement *question by question delivery* which restricts the participant to only seeing the current question at any given time. You can also define specific screens for questions delivered in this way (see 1.3 *Presenting questions one at a time* below).

In addition, the *Template Editor* (see chapter 2 *Template Editor* below) that comes with *Perception* enables you to use and set these variables quickly and efficiently without needing to know anything about the internal structure of template files.

*Template Editor's* previewing facility (see 2.4 *Previewing what the participant sees with a template* below) lets you see straight away how any setting that you make changes the screen as it appears to a participant, giving you the opportunity to experiment and create prototype templates.

## 1.2 How template files work

*Perception* stores question information in QML (see Part 2: 3.3 *Question Markup Language* above), a text description of the question content, choices and outcomes. This is then converted into HTML when the question is tried out in *Question Manager*, or an assessment using these questions is either tried out in *Assessment Manager* or presented by the *Perception Server* software. The conversion process is controlled by the **.format** files.

Template files allow a *Perception* author to change the appearance of the converted HTML using a series of pre-defined variables. The value of the variables used in a template file overwrites the default value of the variables found in the **.format** files, meaning that if a variable is not re-defined in a template file, the format file's default value is used.

Template files are ASCII files, usually stored in the **\perception3\server\templates** directory, and could be edited using any ASCII text editor, such as *Notepad* or an HTML editor.

However, this requires a knowledge of the syntax used in template files, and is usually unnecessary because the *Template Editor* (see chapter 2 *Template Editor* below) can be used to edit templates and also allows instant previews.

## 1.3 Presenting questions one at a time

Sometimes, you might wish to make sure that a participant has attempted the first question before moving on to the second, and then tries the second question before taking the third, and so on. This method is known as *question by question delivery* and is supported in *Perception*.

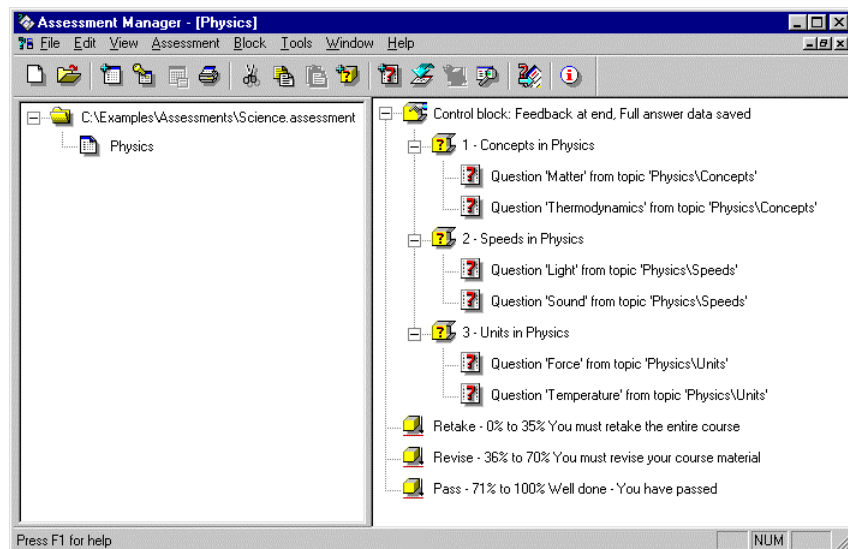
Question by question delivery is only available to participants using Internet Explorer version 4 or higher.

Many of the template variables are used to control the participant screens that are used when question by question delivery is enabled.



## 1.4 Using templates in Assessment Manager

To show how templates can be used to control how the participant sees questions, the example assessment (**Physics**) below is used:



**Figure 305** *Templates: Example Assessment*

A template may be used to govern the presentation of the entire assessment (see 1.4.1 *Linking a template to an assessment* below).

However, an individual question block within an assessment can have its own template (see 1.4.2 *Linking a template to a question block within an assessment* below). All other question blocks will use the template linked to the assessment unless they also have their own specific template linked to them.

### 1.4.1 Linking a template to an assessment

To link a particular template to an assessment, you must edit its control block as explained in Part 4: 3.2.1 *Creating and editing a control block* above:

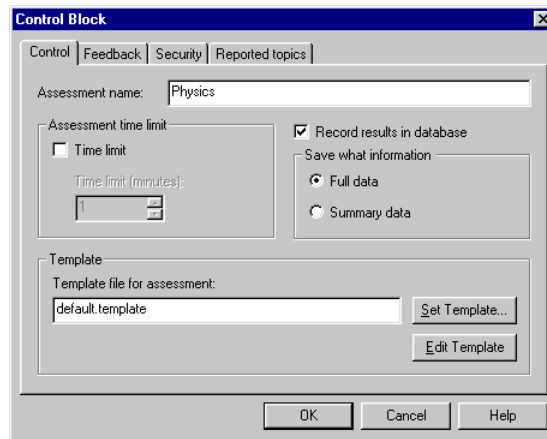


Figure 306 Templates: Default Template linked to an Assessment

This assessment is using the default template, which is in the template file **default.template**. Click **Set Template...** and you will be able to choose a new template for the assessment:

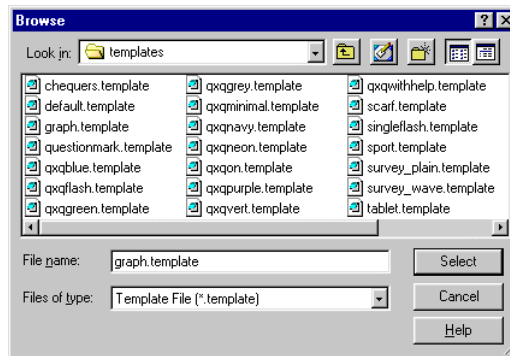


Figure 307 Templates: Selecting a new Template for an Assessment

Select the template you require and click **Select**:

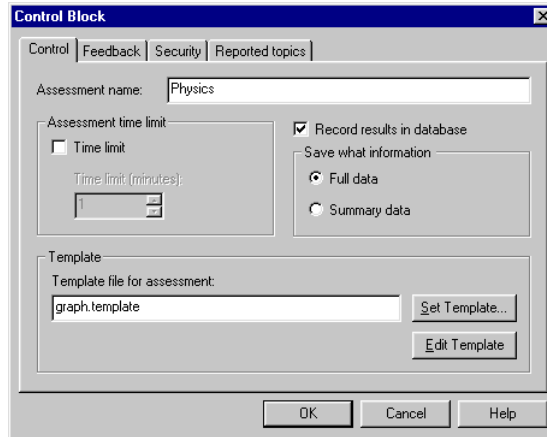


Figure 308 Templates: Alternative Template linked to Assessment

The template **graph.template** will now be used with the assessment **Physics**.

### 1.4.2 Linking a template to a question block within an assessment

To link a particular template to a question block within an assessment, you must edit the question block as explained in Part 4: 3.3.1 *Creating and editing question blocks* above:

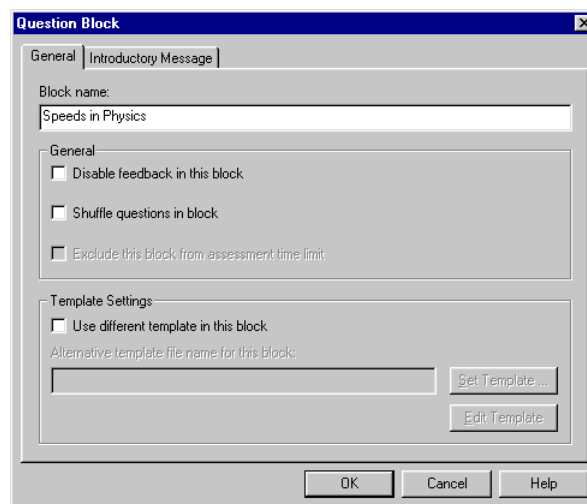
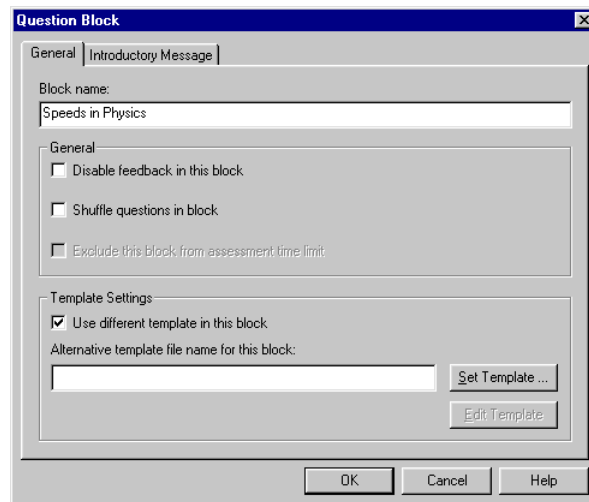


Figure 309 Templates: Question Block with same Template as Assessment

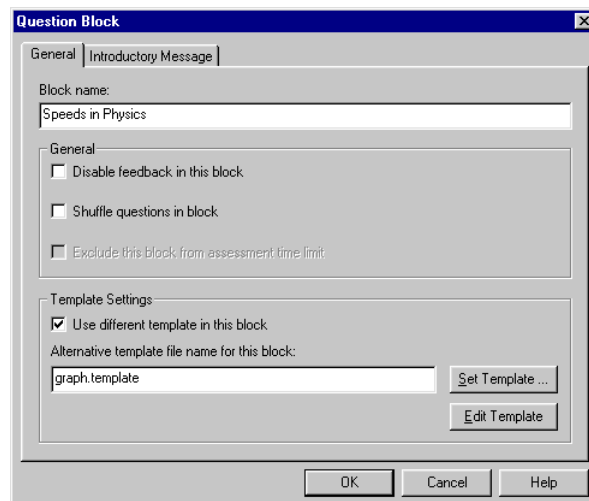
## Templates explained

To use a template for this question block that is different to the one linked to the assessment, tick **Use different template in this block**:



**Figure 310** *Templates: Linking different Template to Question Block*

Now click **Set Template...** and you will be able to choose a new template for the question block in the same way as for an assessment (see *Figure 307* above):



**Figure 311** *Templates: Alternative Template linked to Question Block*

## 1.5 Example of using templates

If the question block 2 – **Speeds in Physics** shown in *Figure 305* above is displayed with the default template, it appears like this:

Physics - Speeds in Physics

Perception

Physics - Speeds in Physics

This assessment will test your understanding of measurement in Physics

---

1 of 2

What is the speed of light *in vacuo* ( $c_0$ )?

25 million meters per second  
 300 million meters per second  
 500 million meters per second

---

2 of 2

Give the approximate speed of sound in meters per second (+ or - 10.)

Assume dry air at Standard Temperature and Pressure (STP.)  
Precision required: 2 significant figures.

---

**Figure 312** *Templates: Example of Question Block with Default Template*

If the alternative template **graph.template** is linked to this question block, it appears as shown in *Figure 313* below.

The template **graph.template** is installed with *Perception*. An example of a customized template that uses question by question delivery is illustrated in *Figure 328* and *Figure 329* below.

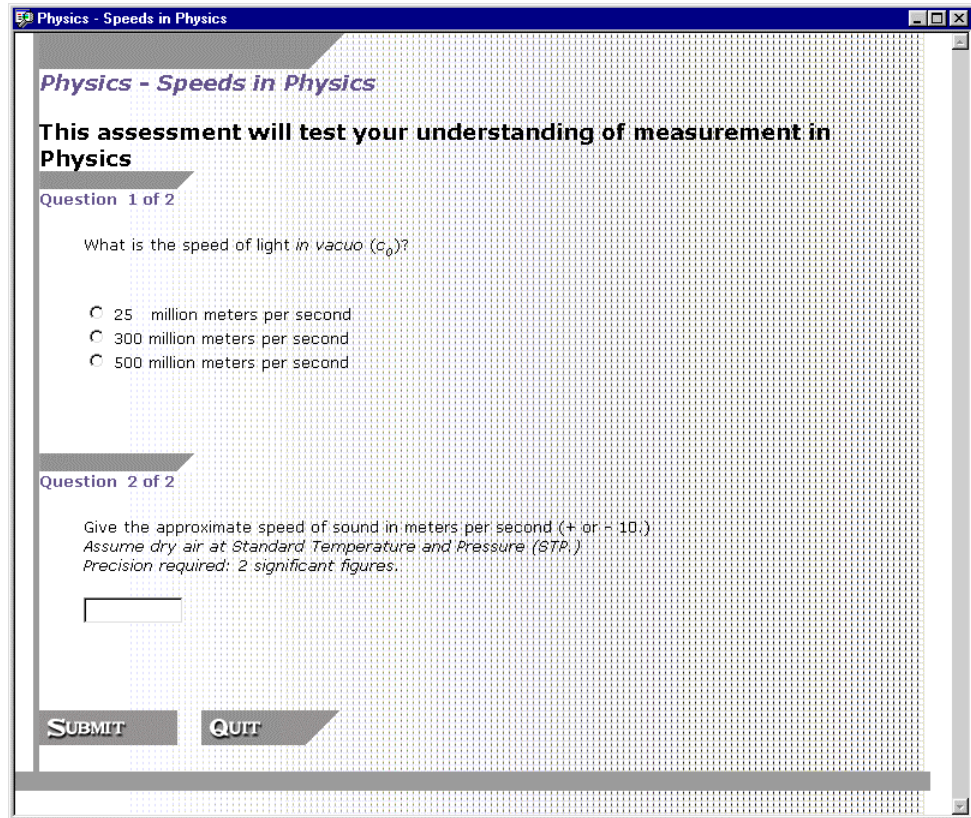


Figure 313 Templates: Example of Question Block with Alternative Template

## 2 Template Editor

The *Template Editor* enables you to work with the template variables. It is designed to avoid all the work of editing the templates directly as ASCII files, and it has a preview facility so that you can see immediately the effect of any changes you apply.

### 2.1 Setting up the Template Editor configuration

The *Template Editor* can be used with the simple configuration, which gives you a small but useful selection of these variables, or with the full configuration that provides all of the variables.

It is also possible for advanced users to set up their own configuration.

#### 2.1.1 Selecting the configuration with Assessment Manager

To select the configuration that you wish to use with *Template Editor*, use the **Tools | Options...** menu option in *Assessment Manager* and then click the **Template Editor** tab:

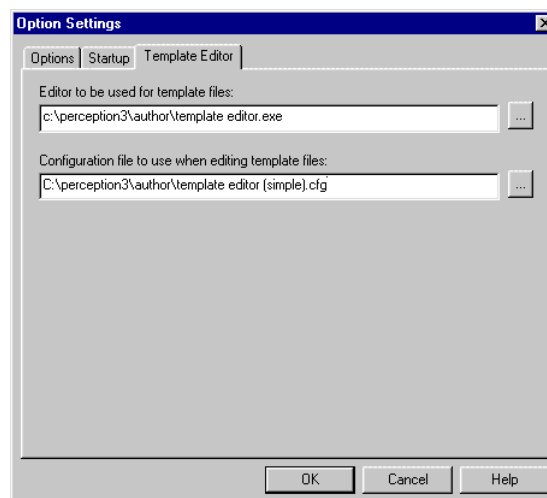

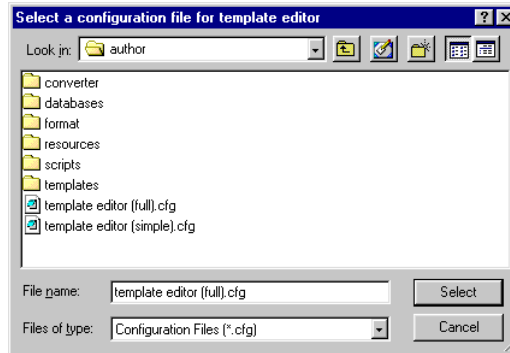


Figure 314 *Template Editor: Simple Configuration*

Now click the lower :

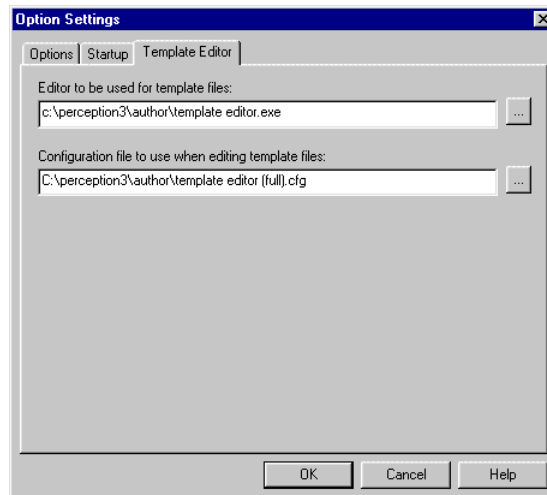


**Figure 315** *Template Editor: Selecting Configuration*

To use the simple configuration, choose **template editor (simple).cfg** and click **Select**.

To use the full configuration, choose **template editor (full).cfg** and click **Select**.

In *Figure 316* below, the configuration has been changed from the simple configuration to the full configuration:



**Figure 316** *Template Editor: Full Configuration*



### 2.1.2 Editing the configuration file

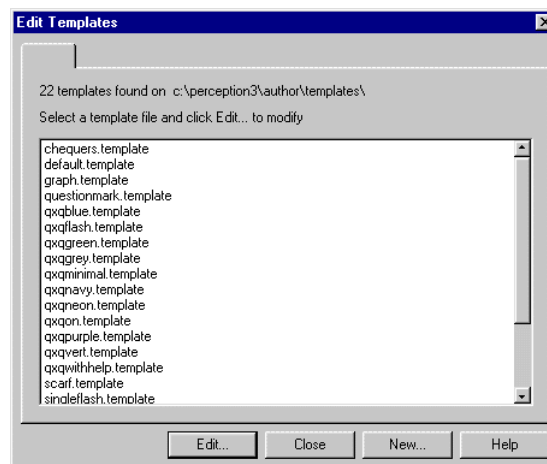
The configuration files **template editor (simple).cfg** and **template editor (full).cfg** are located in **c:\perception3\author** (if you installed to **c:\perception3**) and can be edited to create a new configuration file.

This is only recommended for advanced users, who can find out more about this technique on the *Perception* support site at:

<http://www.questionmark.com/perception/help/>

## 2.2 Starting Template Editor

To start using *Template Editor*, select the **Tools | Edit Templates...** menu option in *Assessment Manager*:



**Figure 317** *Template Editor: Choosing a template*

Select a template and click **Edit...** to begin editing it.

Alternatively, you can click **New...** to create a template from scratch from which you can build your own template.

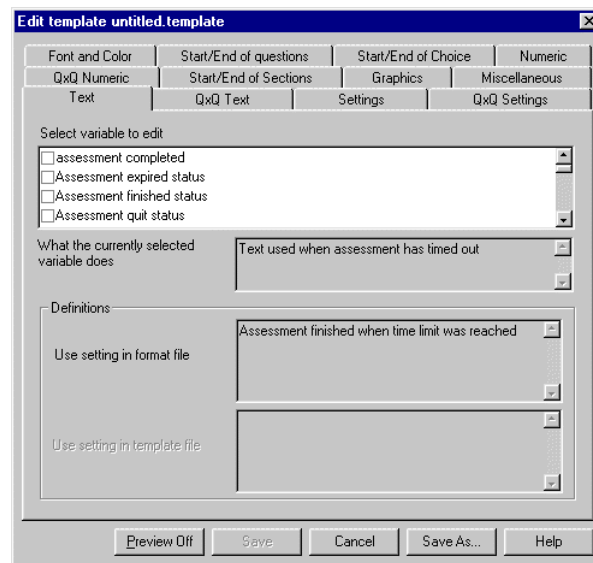
## 2.3 How to customize your participant screens

To create your own custom templates, you can either start with a blank one or modify an existing one.

You can use *Template Editor* to change custom templates later on.

### 2.3.1 Creating a brand new template from scratch

If you start *Template Editor* and click **New...** on *Figure 317*, you will see the screen below:



**Figure 318** *Template Editor: Blank Template*

You now have a blank template to work with, in which all of the template variables are set to their default values.

To change the **assessment completed** variable, which defines the message shown to the participant at the end of the assessment, tick the box next to it:

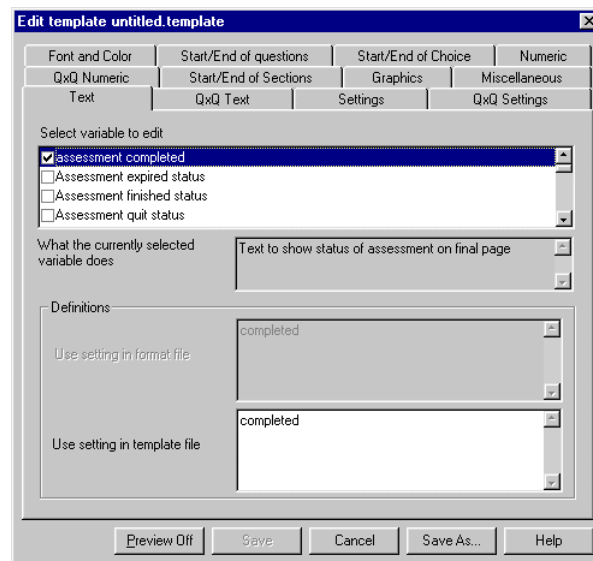


Figure 319 Template Editor: Changing a Template Variable

In the lower box, you can change the message:

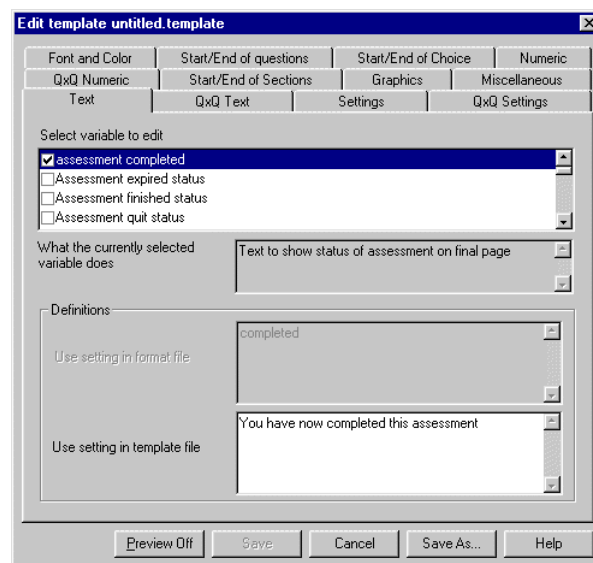
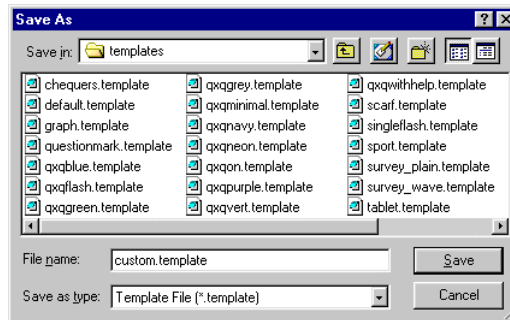


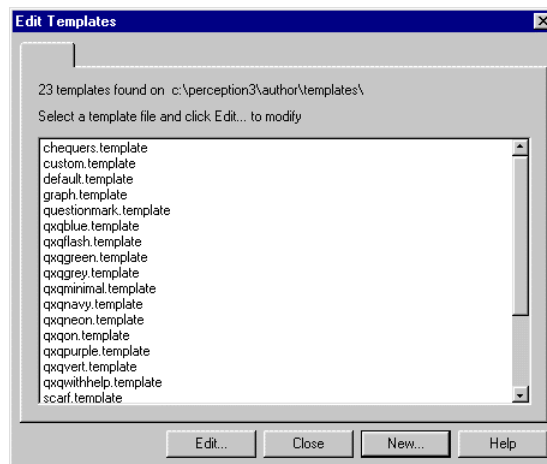
Figure 320 Template Editor: Updated Template Variable

If you now click **Save As...**



**Figure 321** *Template Editor: Saving a New Template*

The new template name **custom.template** has been specified as the **File name** for this template. Click **Save**:



**Figure 322** *Template Editor: New Template Created*

The new template **custom.template** will now be available for editing whenever *Template Editor* is started.

### 2.3.2 Creating a brand new template from an existing template

To start with an existing template, simply start *Template Editor* and choose the template for editing.

Then use the **Save As...** facility as shown in *Figure 321* to copy it.

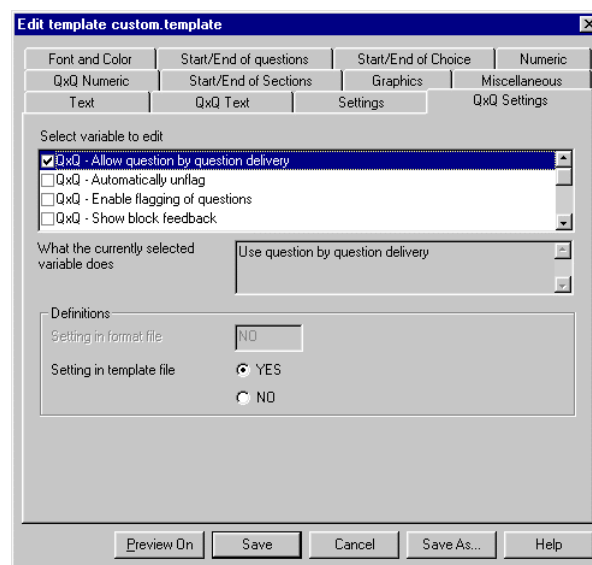
You must start *Template Editor* again, select the new template and then edit it.

### 2.3.3 Changing an existing template

If you have created a new template, you can start *Template Editor* at any time, select the template and click **Edit...** to continue editing it.

## 2.4 Previewing what the participant sees with a template

When you are using *Template Editor*, you can click **Preview On** at any time:



**Figure 323** *Template Editor: Changing a Template Variable*

In *Figure 323* above, the template **custom.template** has been set to use question by question delivery.

Initially, the preview screen will be behind the tabs screen:

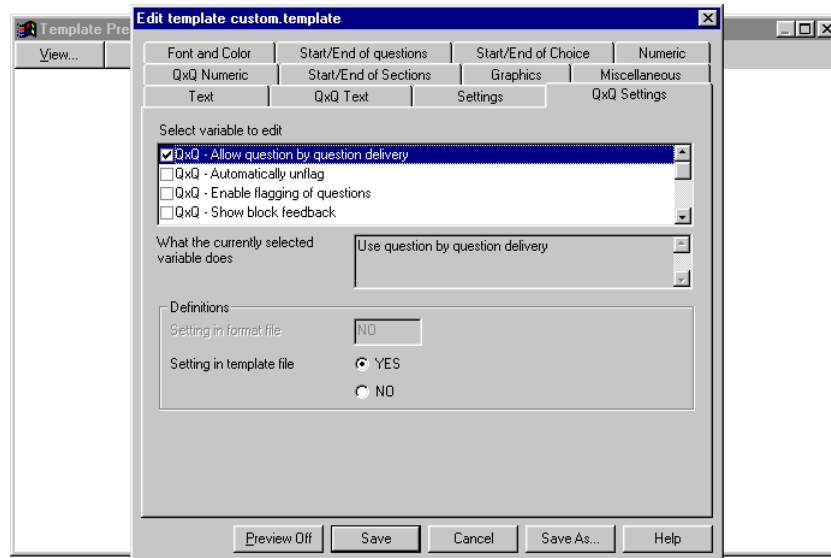


Figure 324 Template Editor Preview: Window (behind Tabs)

To minimize the tabs screen, click **Hide Editor**:

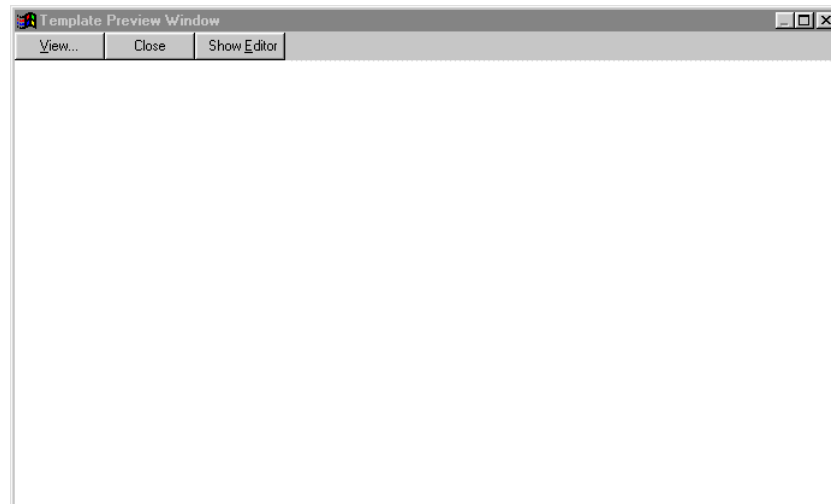
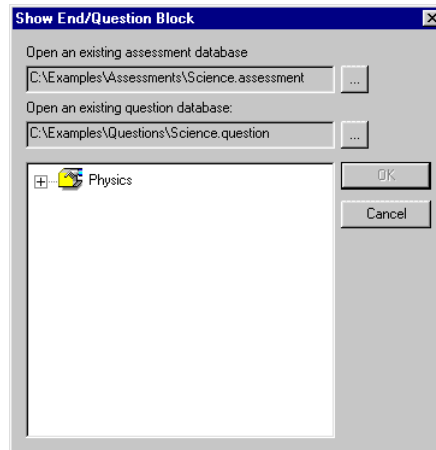


Figure 325 Template Editor Preview: Window with Tabs hidden

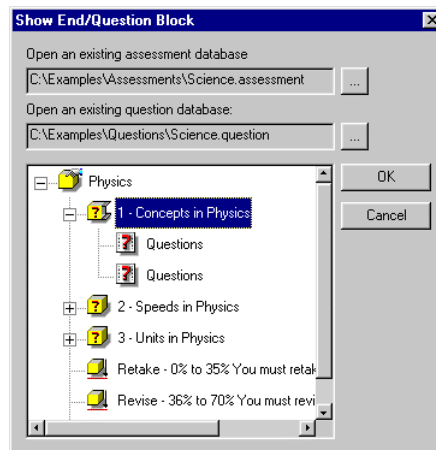
You can return to the tabs screen at any time by clicking **Show Editor**.

To see how questions will appear to a participant, click **View...**



**Figure 326** *Template Editor Preview: Selecting an Assessment*

Use **+** and **-** to expand the assessment into question blocks, and select a question block for previewing:



**Figure 327** *Template Editor Preview: Selecting a Question Block*

Click **OK** to see the selected question block as it will appear to the participant:

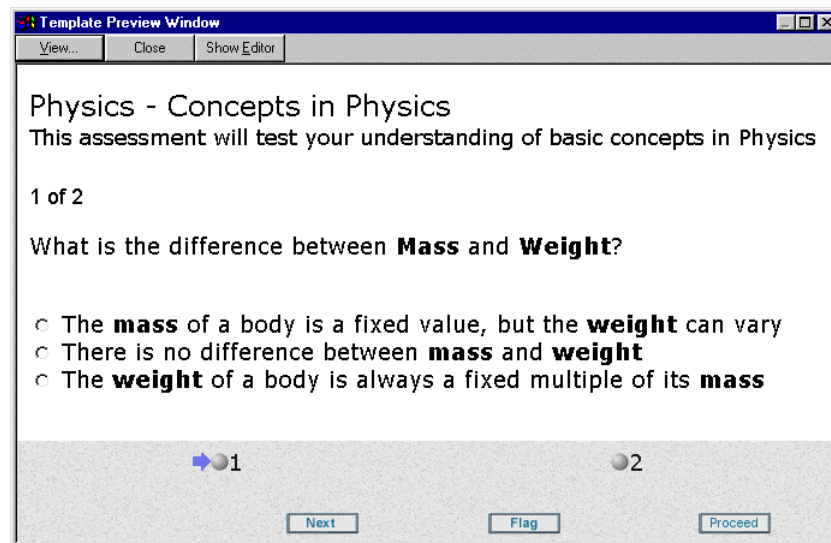


Figure 328 Template Editor Preview: Question by Question Delivery (First Question)

In this example, you can click the button next to the number 2 to see the second question in the question block as it will appear to the participant:

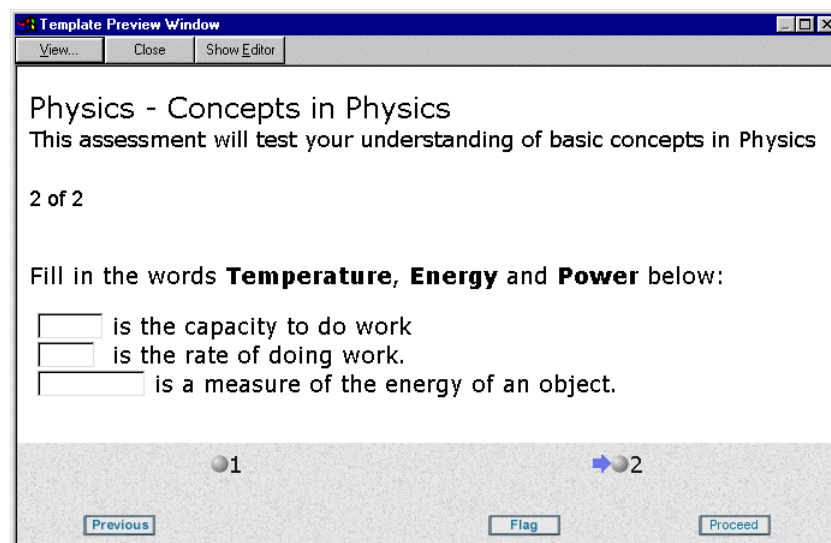


Figure 329 Template Editor Preview: Question by Question Delivery (Next Question)



**Part 6:  
Publishing  
Assessments**



# 1 Publishing assessments

Publishing is the means by which assessments are delivered to participants.

There are three kinds of publishing:

- Assessment | Publish Assessment for Web Delivery**

*Web delivery* enables you to upload your question database, assessment database, and all other required files to a server. This was explained in Part 4: 1.6.1 *Publishing assessments for web enabled participants* above, and the procedure for doing it with *Assessment Manager* is described in 1.1 *Publishing for web deployment* below.
- Assessment | Publish for Windows Delivery...**

*Windows delivery* enables you to deliver assessments to participants without using a server. This was explained in Part 4: 1.6.2 *Publishing assessments for desktop based participants* above, and the procedure for doing it with *Assessment Manager* is described in 1.2 *Publishing for Windows delivery* below.
- Assessment | Publish to Qpack...**

Assessments can be *Qpacked* into external files called *Qpack files* that can then be passed to other authors. *Qpacking* was explained in Part 4: 1.6.3 *Qpacking assessments* above, and the procedure for doing it with *Assessment Manager* is described in 1.3 *Qpacking assessments* below.

The assessment (**Physics 1**) shown in *Figure 330* below will be published in each of the three possible ways in the examples given in this chapter:

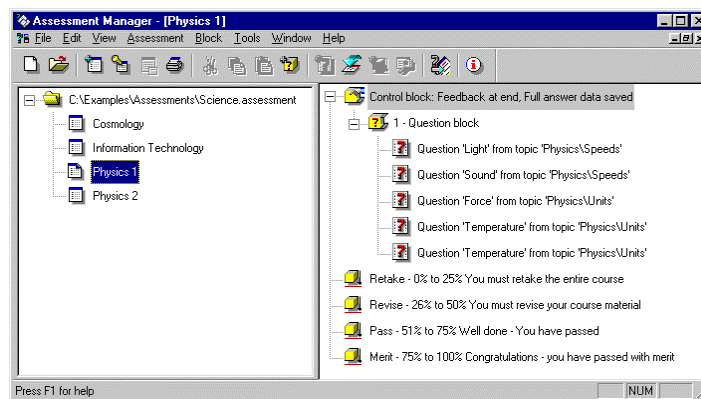


Figure 330 Publishing: Example Assessment

## 1.1 Publishing for web deployment

The authoring **.question** and **.assessment** databases can be published to the databases on the web server. These are often called **masterq.question** and **mastera.assessment**. *Assessment Manager's* publishing facility enables you to do this. Your license file determines whether you can use only Microsoft *Access* databases or whether you can use other databases via the **ODBC** mechanism.

There is also an option to copy graphics, multimedia and template files when publishing. However, any graphics, multimedia or other files referenced directly in HTML must be manually copied to the server.

This section deals with how assessments and questions are moved from their authoring databases to the server databases. Generally speaking, the databases on the server will only contain finished questions and assessments. They will not be used when editing or modifying individual questions.

In some organizations there can be more than one author where they might all share their authoring databases or even work exclusively from each other. Each author will need to make their assessments, questions and other resources available on the server. This process is called publishing. Assessments and topics are copied to the server assessment and question databases respectively, and the resources are copied to the appropriate directories on the server.

There can be more than one assessment with the same name but there can be only one topic with the same name. Assessments and topics both use internal IDs which must be unique and are generated when they are created. It is unlikely that two authors will ever generate the same ID.

If you select **Assessment | Publish Assessment for Web Delivery** with the example assessment you will see two further options:

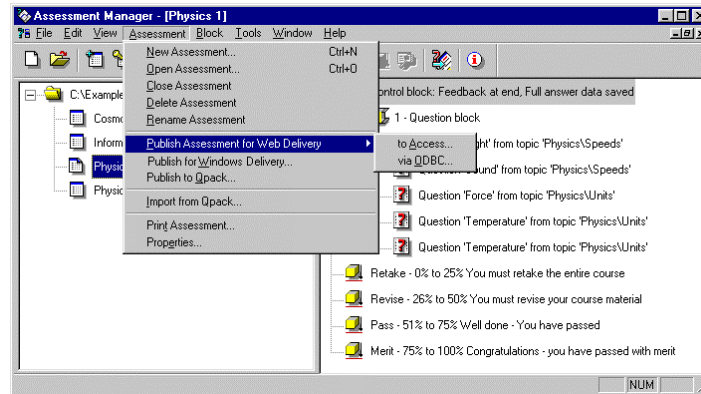


Figure 331 Publishing for Web Delivery: Selecting Database Type

If you are using Microsoft *Access* databases on your webserver, select **Assessment | Publish Assessment for Web Delivery | to Access...**

If you are using databases that use the **ODBC** mechanism on your webserver, select **Assessment | Publish for Windows Delivery | via ODBC...** This is generally used if you are using remote databases such as *SQL Server* or *Oracle*.

### 1.1.1 Publishing an assessment to Access

If you selected **Assessment | Publish Assessment for Web Delivery | to Access...** in *Figure 331* above, you will see the screen below:

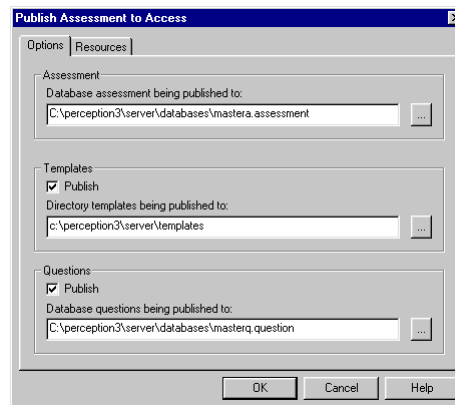


Figure 332 Publishing for Web Delivery: Selecting Access Databases for Publishing

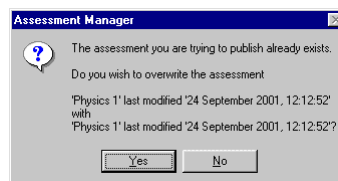
First, specify the **Database assessment being published to** by clicking  and then selecting the appropriate assessment database file. This can be either a new assessment database file or an existing one.

You can also publish your question database to the web server by ticking the box below **Questions**. Then specify the **Database questions being published to** by clicking  and then selecting the appropriate question database file. This can be either a new question database file or an existing one.

If you are using your own templates, you can also publish these by clicking the box below **Templates** and specifying the **Directory templates being published to** in the same way as for assessments and questions. Note that template files may be overwritten during the publishing process. You are prompted to do so as and when a template file is found on the server with the same file name. You can select to publish your templates and questions simply by selecting the options, and then selecting a directory and also a database to publish to respectively.

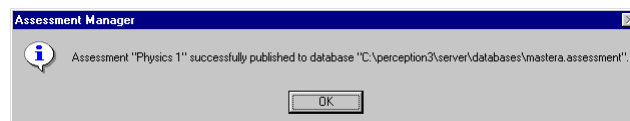
If you wish to publish resources such as graphics and multimedia files, click the **Resources** tab and refer to 1.1.3 *Publishing graphics and multimedia* below.

Click **OK** to publish the assessment. If you have published this assessment before, you will see the screen below:



**Figure 333** *Publishing for Web Delivery: Selecting Databases for Publishing*

Click on **Yes** to publish this assessment so that it replaces the previous one:

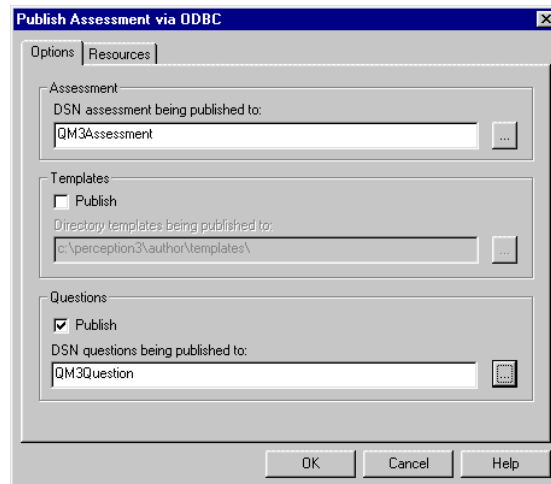


**Figure 334** *Publishing for Web Delivery: Selecting Databases for Publishing*

Click on **OK** to return to the *Assessment Manager* main screen.


### 1.1.2 Publishing an assessment via ODBC

If you selected **Assessment | Publish Assessment for Web Delivery | via ODBC...** in *Figure 331* above, you will see the screen below:



**Figure 335** *Publishing for Web Delivery: Selecting ODBC DSNs for Publishing*

Publishing via **ODBC** is similar to publishing to *Access* (see 1.1.1 *Publishing an assessment to Access* above) except that you select DSN names instead of database file names.

To display the list of available DSN names click . From the list select a DSN name ensuring it corresponds to the correct database file.

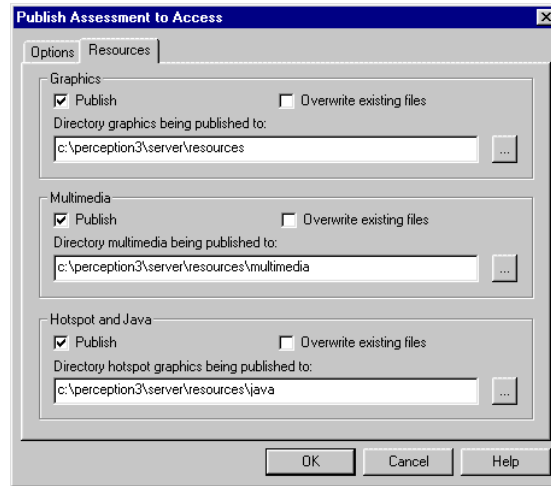
Before the publishing process can start you will need to login to the databases supplying the correct user name and password.

If you wish to publish resources such as graphics and multimedia files, click the **Resources** tab and refer to 1.1.3 *Publishing graphics and multimedia* below.


You can also prevent your assessments from being overwritten by other users working with the same databases by setting an assessment password – see Part 4: 3.2.3 *The Security tab in the Control Block dialog box* on how to do this. If an assessment has a password then it must be supplied at the time of publishing.

### 1.1.3 Publishing graphics and multimedia

To publish an assessment's graphics and multimedia files, select the **Resources** tab:



**Figure 336** *Publishing for Web Delivery: Publishing Resources*

Then select the **Publish** box for the resources you wish to publish and click  to locate the correct directory where the resources are to be copied to.

Select to publish **Hotspot and Java** if you have any hotspot or drag and drop questions within the assessment being published, as these graphics are stored in a separate directory.

All of these files may be overwritten during the publishing process. If you have modified any of your resource files then to update the files on the server they must be overwritten. However, in most cases this is unlikely and it is not necessary to copy them again.



## 1.2 Publishing for Windows delivery

As well as publishing assessments to a web server, *Assessment Manager* also allows you to publish them for delivery by three other methods:

- Distribution to participants on a CD
- Over a network
- Via a standalone PC

Each model applies to a PC running Windows, but none of them involve a web server.

These options are only available if publishing for Windows delivery is set in the license file.

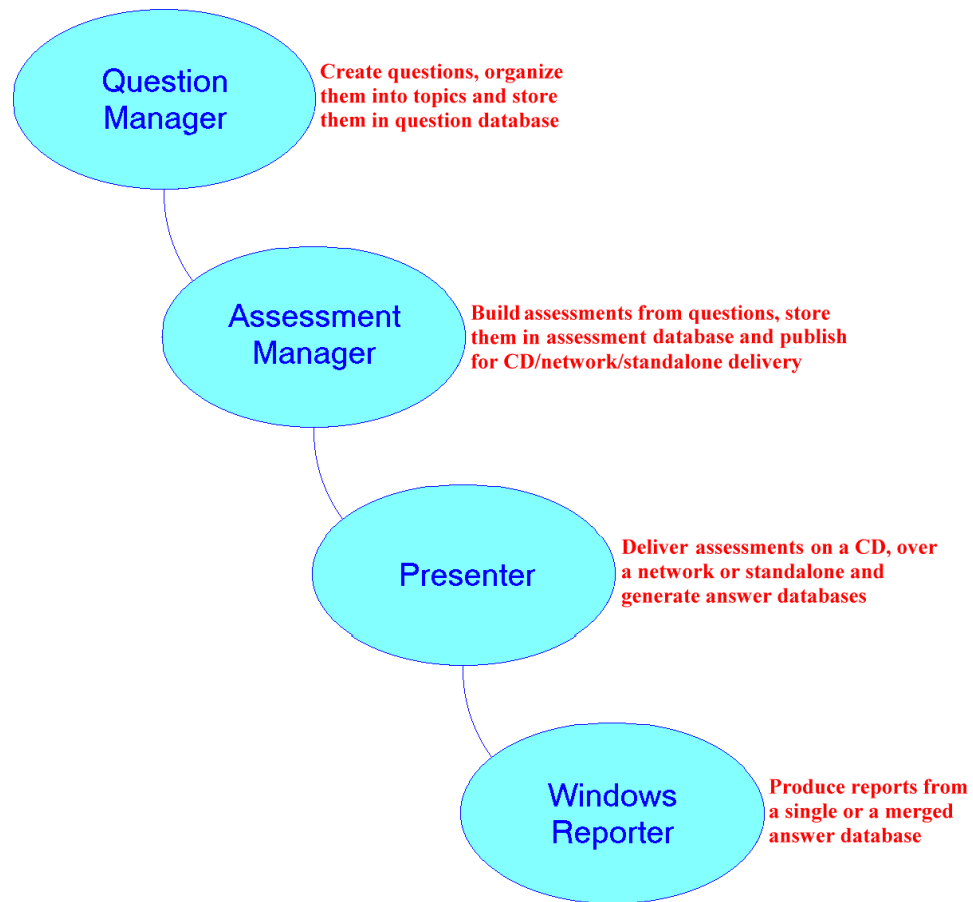
When assessments have been published for Windows delivery, participants can use Questionmark *Presenter* to take them and receive their results.

*Windows Reporter* is provided for reporting on participant results, and it is able to merge several sets of results supplied by diverse participants if necessary.

The complete process of authoring, delivery and reporting is illustrated in *Figure 337* below.

The basic steps are:

- 1) Questions are authored with *Question Manager*
- 2) Assessments are built up from questions with *Assessment Manager*
- 3) Assessments are published for windows delivery with *Assessment Manager*
- 4) Participants run *Presenter* to take assessments
- 5) Answer databases are collected in from distributed locations
- 6) Separate answer databases are merged (if necessary) with *Windows Reporter*
- 7) Reports are generated with *Windows Reporter*



**Figure 337** *Publishing for Windows Delivery: Process Diagram*

A complete explanation of publishing for Windows delivery can be found in the *Perception for Windows Deployment Guide for Perception Version 3*.

## 1.3 Qpacking assessments

Assessment packaging enables an assessment, together with its questions, templates and graphics, to be compressed into a single, compressed **.Qpack** file.

Packaged assessments, or **.Qpack** files, can only contain complete assessments, they cannot include individual questions.

### 1.3.1 Publishing an assessment to Qpack

If you select **Assessment | Publish to Qpack...** with the example assessment you will see the screen below:

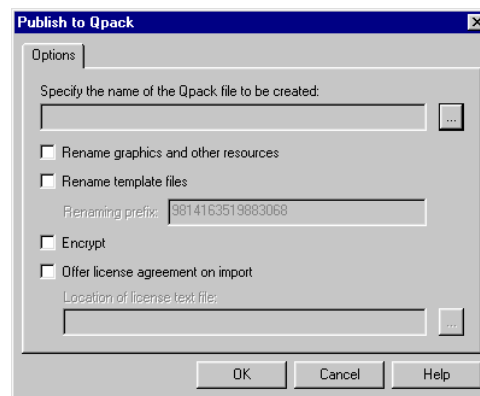


Figure 338 Publishing to Qpack: Options Available

First, **Specify the name of the Qpack file to be created** by clicking the upper **...**:

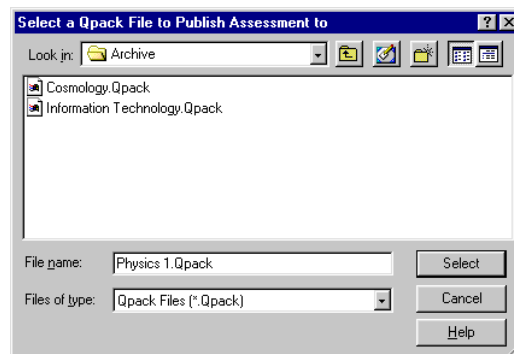


Figure 339 Publishing to Qpack: Select Qpack File

You can either select a new **.Qpack** file or an existing one (which will be overwritten) to contain your packaged assessment and then click **Select**.


If you wish to give your graphics (and other resources such as multimedia and java files) a different name in the package, tick the **Rename graphics and other resources** box in *Figure 338* above and then set the *renaming prefix*.

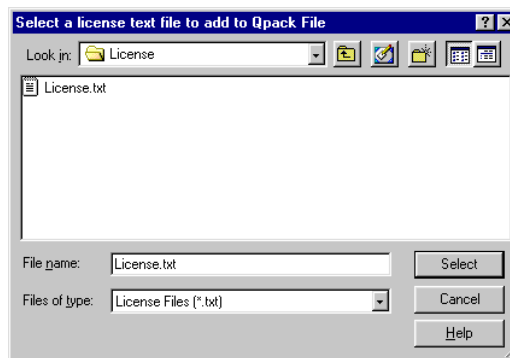
If you wish to give your templates a different name in the package, tick the **Rename template files** box. This uses the same renaming prefix as the graphics.

The renaming prefix is a text string that you enter in the **Renaming prefix** box that is added to the front of files that you are renaming.

If you do not give a renaming prefix, the assessment ID is used.

Tick the **Encrypt** box to encrypt the questions in the packaged assessment. If you do this, authors who import your questions will be able to use them in assessments, but will not be able to change them. Nor will they be able to view the scoring algorithms.

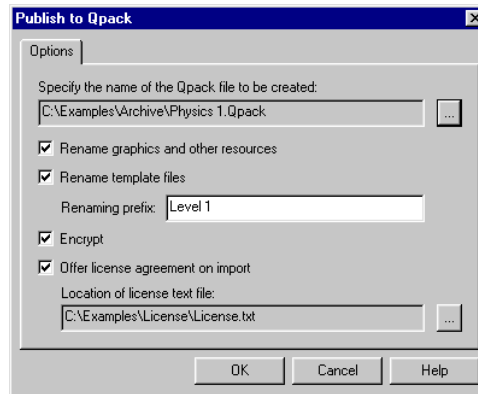
If you wish to present a license agreement screen to authors who import this **.Qpack** file subsequently, tick the **offer license agreement on import** box and click  to select the license text file:



**Figure 340** *Publishing to Qpack: Select License File*

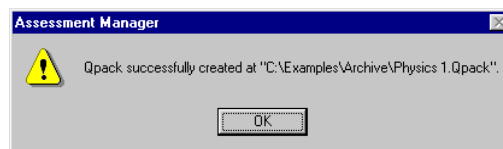
Select the file containing the text of your license agreement (this must be a **.txt** file) and click **Select**.

The options screen should now look similar to this:



**Figure 341** *Publishing to Qpack: Options Selected*

Click **OK** to create your **.Qpack** file:



**Figure 342** *Publishing to Qpack: Options Selected*

Now click **OK** to return to *Assessment Manager*.

Packaged assessments can be imported into *Assessment Manager* from **.Qpack** files, which makes it easy to transfer assessments between *Perception* installations (see Part 4: 2.15 *Using Qpacked assessments* for details).



# **Part 7: Reference Material**





# 1 Other documentation

A comprehensive set of documentation is supplied for this version of *Perception*. Its components are detailed below.

## Printed Guides

The following printed documents are available:

*Getting Started with Perception Version 3*

*Authoring Guide for Perception Version 3*

*Web Deployment Guide for Perception Version 3*

*Perception for Windows Deployment Guide for Perception Version 3*

These documents are aimed at both new and moderately experienced authors, and those with some experience as administrators.

## Online Help

A context-sensitive online help facility is available for all *Perception* software.

## Perception Support Site

The *Perception* support site contains additional information about *Perception* version 3. This includes an extensive knowledgebase and details of any updates. You can reach this on the web at:

<http://www.questionmark.com/perception/help/>



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