



## Creating quizzes in Moodle

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## Introduction

This guide provides a basic introduction to quizzes in Moodle

The Quiz activity in Moodle allows you to design and set quizzes consisting of a large variety of question types, including multiple-choice, true / false, and short answer questions.

*For a description of the question types available in Moodle, please see Appendix 1.*

Moodle questions that you create are kept in the course question bank and can be re-used within courses and between courses. Quizzes can allow multiple attempts. Each attempt is automatically marked, and you can choose whether to give feedback and/or show the correct answers.

### **IMPORTANT:**

- *It is **strongly** recommended that you only use the Quiz tool in Moodle for formative assessment.*

*If you wish to use online quizzes for summative purposes, please consider using Questionmark Perception*

### **Creating a quiz in Moodle consists of a three step process:**

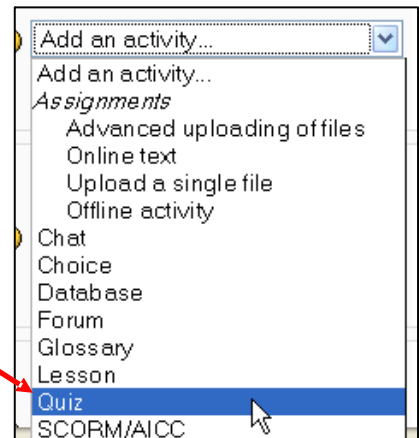
- (1) **You set up the quiz activity** and configure its options, which specify the rules for how users will interact with the quiz.
- (2) **You create the questions** that sit in the **question bank** (a database that holds.
- (3) **You then add the questions to the quiz body.**

## Adding a quiz activity

When you add a quiz activity to a Moodle course, you are essentially creating a container (**quiz body**) for your questions and setting the rules for how the students will interact with the quiz.

(1) Make sure you are on the home page of the course and that you are in **Editing** mode (if you are not, click on the **Turn Editing on** button).

(2) Decide where you wish to add the quiz (i.e. which course section you want it to go in) and then click on the **Add an activity** menu and select **Quiz**.



(3) You will now see the Quiz editing page. **Remember that there are help buttons available if you need them (?)**.

In the first section of this screen:

Updating Quiz in topic 3 ?

Name

Introduction ?

Trebuchet | 1 (8 pt) | Lang | **B** | *I* | U | ~~S~~ | x<sub>2</sub> | x<sup>2</sup> | [Icons]

This is a quiz on parts of the flower. There are three questions of which you are allowed one attempt. You will be scored one mark for each correct answer.

Path: body

Give the quiz a descriptive name.

Type an introduction for the quiz. Include any special instructions for taking the quiz, such as the number of attempts and/or how it will be scored.

(4) The **Timing** section is concerned with the timing of the quiz.

You can specify times when the quiz is accessible for students to make attempts. To enable this feature, uncheck the Disable tick boxes and then enter dates and times.

You can set time delays between attempts.

You can set a time limit. To enable this feature, check the Enable tick box and the enter

(5) The **Display** section allows you to set how many questions are displayed and whether to shuffle the questions or not.

You can set how many questions appear on a page – this is useful if you have a lot of questions in your quiz.

Choose “Yes” if you want to shuffle the questions. The order of questions in the quiz will be randomly shuffled each time a student attempts the quiz.

Choose “Yes” if you want to shuffle within questions. The parts making up the individual questions will be randomly shuffled each time a student starts an attempt at this quiz.

(6) The **Attempts** section allows you to set the number of attempts for your quiz.

Choose how many attempts are allowed.

If multiple attempts are allowed and this setting is set to Yes, then each new attempt contains the results of the previous attempt.

Adaptive questions allow students to have multiple attempts at the question before moving on to the next question. The adaptive question can adapt itself to the student's answer, for example by giving some hints before asking the student to try again. If you choose Yes for this option then the student will be allowed multiple responses to a question even within the same attempt at the quiz.

(7) The **Grades** section allows you to choose which score is recorded, whether to apply penalties for incorrect answers, and the numerical format the grade will be displayed.

If only one attempt is allowed for the quiz, select "First attempt".

When multiple attempts are allowed, there are different ways you can use the grades to calculate the student's final grade for the quiz. Click the Help button for more information.

If a quiz is run in adaptive mode then a student is allowed to try again after a wrong response. In this case you may want to impose a penalty for each wrong response to be subtracted from the final mark for the question. **This setting has no effect unless the quiz is run in adaptive mode.**

This option determines how many digits will be shown after the decimal point when the grade is displayed. A setting of 0 for example means that the grades are displayed as integers. **This setting is only used for the display of grades, not for the display or marking of answers.**

(8) The **Review** section controls what information students will be shown when they review their attempts at this quiz at various stages. By default, all the options are selected – deselect the ones you don't wish to use.

For more information, click on the help button.

(9) The **Security** section is concerned with how secure you want to make the quiz. As you should only be using the Quiz activity for **formative** assessment, you should leave the options at their default settings (as shown below).

Leave these settings as they are.

(10) The **Common module settings** section:

**Common module settings**

Group mode No groups

Visible Show

If you are using groups in your Moodle course, this option allows you choose whether the quiz should be organized by group.

This option allows you to Show (or make available) or Hide (keep hidden) the new quiz.

(11) The **Overall feedback** section allows you to set overall feedback the student will see when they have completed the quiz. **Note: this is only applicable if you have selected the “General” option in the Review section (step 8 above).**

**Overall feedback**

Grade boundary 100%  
Feedback

Grade boundary   
Feedback

Grade boundary   
Feedback

Grade boundary   
Feedback

Grade boundary   
Feedback

Grade boundary   
Feedback

Grade boundary 0%

The text that is shown can depend on the grade the student got.

For example, if you entered:

Grade boundary: 100%  
Feedback: "Well done"  
Grade boundary: 40%  
Feedback: "Please study this week's work again"  
Grade boundary: 0%

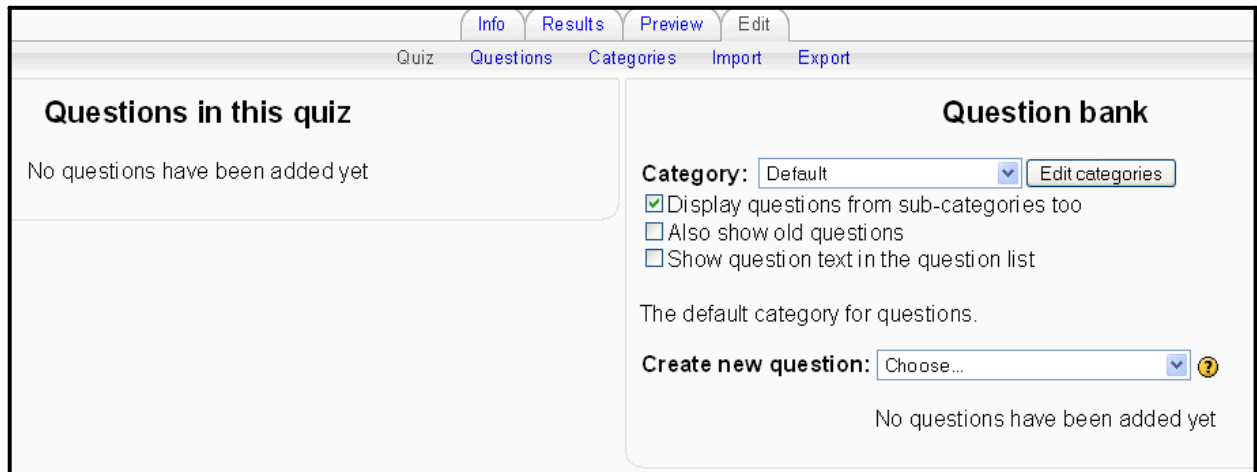
Then students who score between 100% and 40% will see the "Well done" message, and those who score between 39.99% and 0% will see "Please study this week's work again". That is, the grade boundaries define ranges of grades, and each feedback string is displayed to scores within the appropriate range.

(12) At the bottom of the screen, click on the “Save changes” button.

This will take you to the second editing screen where you will create the questions for your quiz.

## Editing a quiz

After you have set up the quiz activity, you will be presented with a screen similar to the one below, which is the Edit screen.

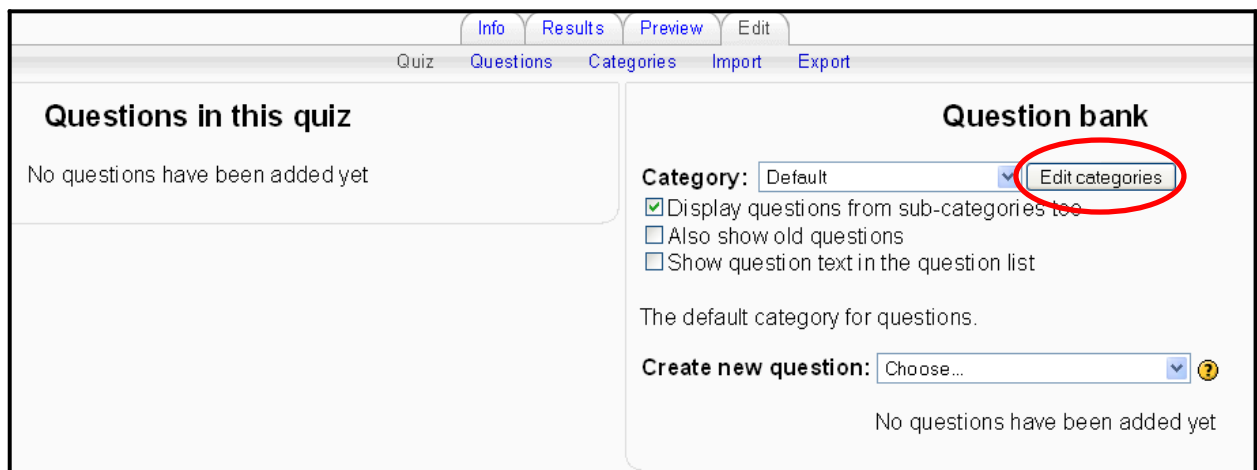


(a) The left-hand side of the screen displays the questions that have been added to the current quiz (**Questions in this quiz**). Since this is a new quiz, there are no questions here.

(b) The right-hand side of the screen displays the **Question Bank**. This is where the questions you create are stored. Questions are organised into **categories**. Categories are used to organise the quiz questions for your course, and they can be a container for sharing questions between courses. Initially each course has only one category called "Default". It is good practice to create more categories to organize your questions before you start creating questions.

## Creating a category

(1) On the Editing quiz page, click **Edit categories**





(2) You will now see the **Categories** screen. Under the **Add category** part of the screen:

The screenshot shows the 'Add category' form in Moodle. At the top, there are tabs for 'Info', 'Results', 'Preview', and 'Edit'. Below these are navigation links for 'Quiz', 'Questions', 'Categories', 'Import', and 'Export'. The main heading is 'Add category'. The form contains the following fields:

- Parent:** A dropdown menu with 'Top' selected.
- Category:** A text input field containing 'Parts of the Flower'.
- Category info:** A text input field containing 'Questions about parts of the flower'.
- Publish:** A dropdown menu with 'No' selected.
- Action:** An 'Add' button.

(3) In the **Category** text box, type in a name for your new category (in this case "Parts of the Flower")

(4) In the **Category info** text box, type in some information about the category.

(5) Then click the **Add** button.

(6) The screen will refresh and you should now see confirmation that your new category has been added (circled below).

The screenshot shows the 'Add category' form after submission. A green message 'The category 'Parts of the Flower' was added' is circled in red. Below the form is a table listing categories:

Category	Category info	Questions	Publish	Delete	Order	Parent
Default	The default category for questions.	0	×		↓	---
Parts of the Flower	Questions about parts of the flower	0	×	×	↑	Top

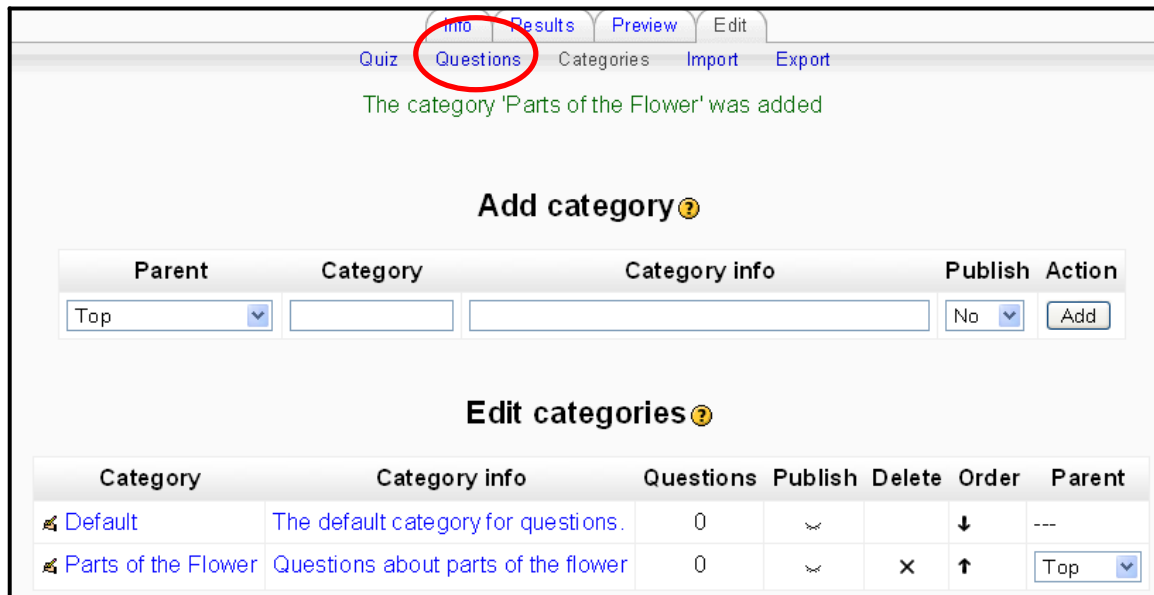
Now you can start creating some questions for your quiz!

## Creating a multiple-choice question

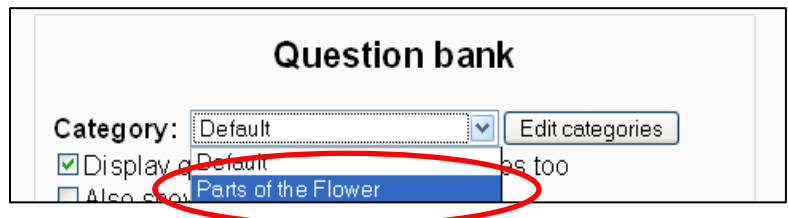
Multiple-choice questions types allow one or more answers to be chosen by providing check boxes next to the answers. Each answer may carry a positive or negative grade, so that choosing ALL the options will not necessarily result in good grade. If the total grade is negative then the total grade for this question will be zero.

Feedback can be associated either with specific answers, or with the question as a whole.

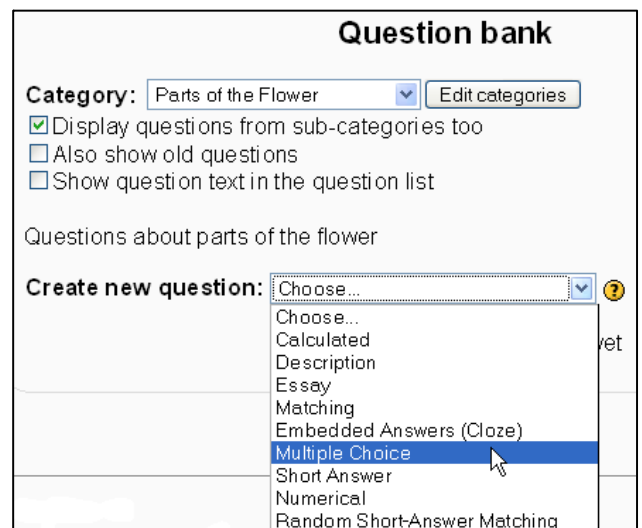
(1) Click on the **Questions** link on the navigation bar.



(2) The Question bank screen will appear. In the Category drop-down menu, select the category that you wish the question to be stored in (in this case “Parts of the Flower”).



(3) In the Create new question drop-down menu, select **Multiple Choice**.



(4) You will now see the **Editing a Multiple Choice Question** screen. Remember: if you want to find out more about an option, click on a Help button (?).

(5) In the first part of the screen:

**Editing a Multiple Choice question** ?

Category: Parts of the Flower

Question name\*: petal

Question text: Which part of the flower is brightly coloured to attract insects?

Make sure the category still shows as the one you want the question to be stored in (in this case "Parts of the Flower").

Give the question a descriptive name. You'll use the name to track your questions later so "Question 1" isn't a good idea. The name will be used in the question lists on the quiz editing page. **It will not be shown to the students, so you can choose any name that makes sense to you and possibly other teachers.**

In the Question text box, type the actual question that you want the students to see.

(6) In the next part of the screen:

Format: HTML format

Image to display: None

Default question grade\*: 1

Penalty factor\*: 0

General feedback:

Path:

One or multiple answers?: One answer only

Shuffle answers:

Select an image to display if you want to add a picture to the question. The available images are those you have uploaded to the Moodle files area. For the student, the image appears immediately after the question text and before the answer options.

Set the maximum number of marks for this question

The 'penalty factor' only applies when the question is used in a quiz using adaptive mode. Click the Help button for more information.

You can add general feedback. This is text that appears to the student after he/she has answered the question.

Choose whether students can only select one answer or multiple answers.

Choose whether to shuffle the answer options.

(7) The next part of the screen presents you with the response choices.

**Choice 1**

Answer: Neutral

Grade: None

Feedback:

Trebuchet 1 (8 pt)

Sorry, that is incorrect.

Path: ?

Write your first answer in the Choice 1 text field.

Enter a grade percentage for the answer. If the answer is wrong, enter "None". If it is correct and the question is a single-answer question, select "100%". In a multiple-answer question, the grades for each correct answer must add up to 100%.

You can add feedback for each response. It may be a bit more work, but it is good practice to tell the students why each answer is right or wrong using the feedback area.

**Choice 2**

Answer: Acidic

Grade: 100 %

Feedback:

Trebuchet 1 (8 pt)

Well done. That is correct.

Path: ?

Fill in the rest of the response choices in the rest of the form. Any unused areas will be ignored.

**Choice 3**

Answer: Alkaline

Grade: None

Feedback:

Trebuchet 1 (8 pt) Lang

Sorry, that is incorrect.

Path: ?

(8) The next section allows you to add overall feedback for correct/partially correct/incorrect responses. This is particularly useful for multiple-response questions, where it is difficult to control what feedback students see just using the answer-specific feedback.

**Overall Feedback**

For any correct answer

Trebuchet 1 (8 pt) Lang
**B** *I* U ~~S~~     $\times$   $x^2$

Path:

For any partially correct answer

Trebuchet 1 (8 pt) Lang
**B** *I* U ~~S~~     $\times$   $x^2$

Path:

For any incorrect answer

Trebuchet 1 (8 pt) Lang
**B** *I* U ~~S~~     $\times$   $x^2$

Path:

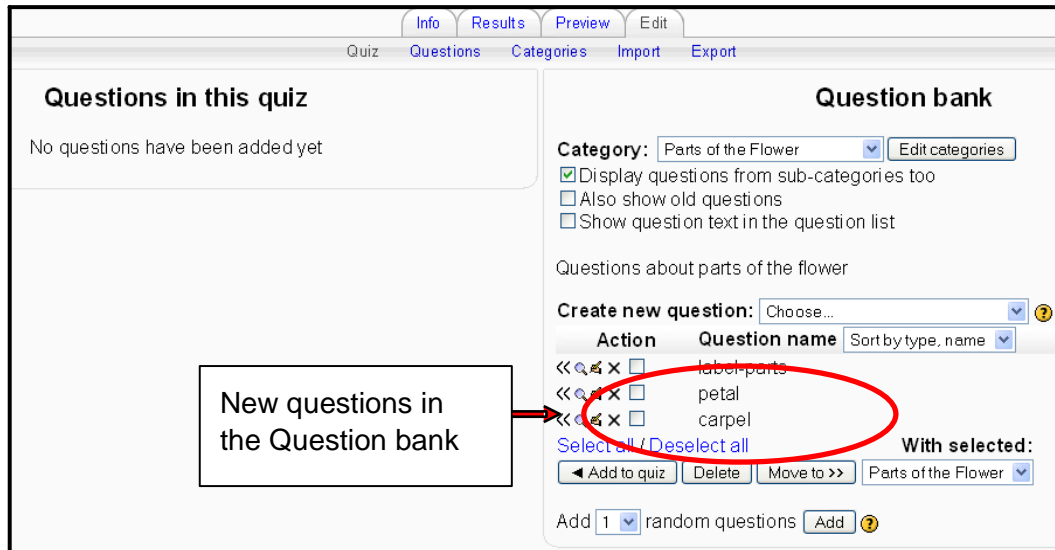
(9) When you have finished creating your multiple-choice question, click on the **Save changes** button at the bottom of the screen.

Save changes

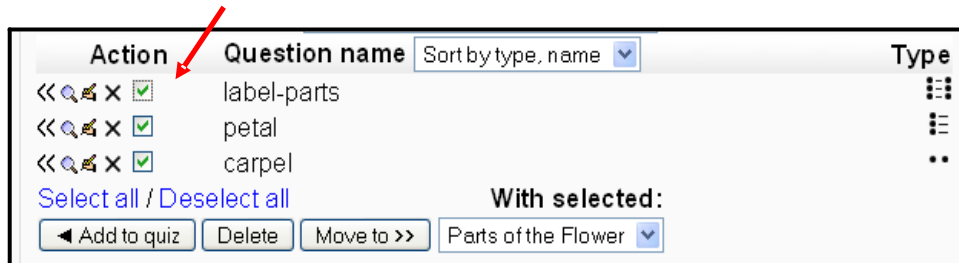
You will be returned to the Quiz editing screen.

# Adding questions to a quiz

After creating a question, it will appear at the bottom of the right-hand side of the Quiz editing screen. At this stage, it is only available in the Question bank area – it is not yet part of the quiz.

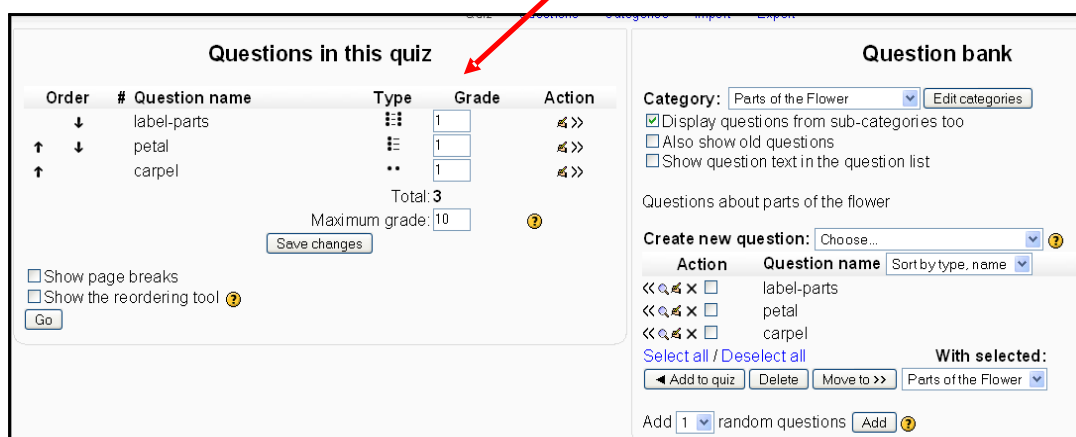


(1) In the Quiz editing screen, select the questions you want to include in the quiz, by clicking on the check box next to the question.



(2) Once you've selected the questions, click on the **Add to quiz** button.

(3) Your questions will appear on the left-hand side of the screen, under **Questions in this quiz**.



**Note:** once your students have started taking the quiz, you can no longer add or remove questions from the quiz.

(4) You can change the order of the questions by clicking on the arrow buttons on the left side of the list of questions.

Order	#	Question name	Type	Grade	Action
↓		carpel	••	1	🔊 >>
↑ ↓		label-parts	⋮	1	🔊 >>
↑		petal	≡	1	🔊 >>

Total: 3  
Maximum grade: 10

Save changes

(5) You can also set the number of points for each question in the Grade column. This allows you to set the relative weight of each question in the quiz. You may want to make certain questions or question types worth more than others. You should also set the 'Maximum grade' for the whole quiz. This does not have to be equal to the sum of the grades for the individual questions. The grades achieved by the students will be rescaled to be out of this maximum grade.

Order	#	Question name	Type	Grade	Action
↓		carpel	••	1	🔊 >>
↑ ↓		label-parts	⋮	1	🔊 >>
↑		petal	≡	1	🔊 >>

Total: 3  
Maximum grade: 3

Save changes

For this quiz, the "Maximum grade" has been changed to "3"

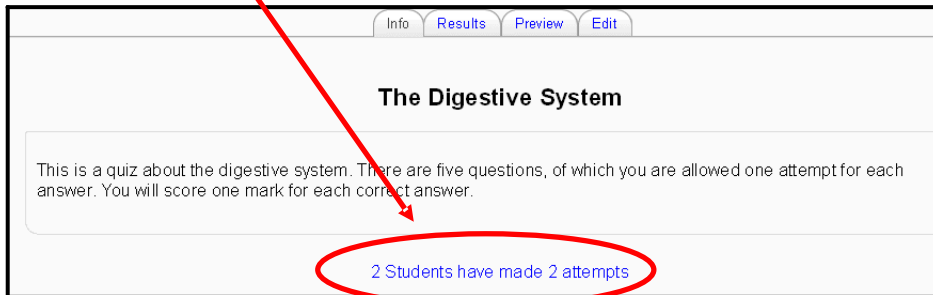
(6) Now click on the **Save changes** button. If you don't, then any changes you make to the Grade column won't be saved when you exit the editing screen.

(7) Return to the home page of your course and you should see the link to your quiz in the course section you specified.

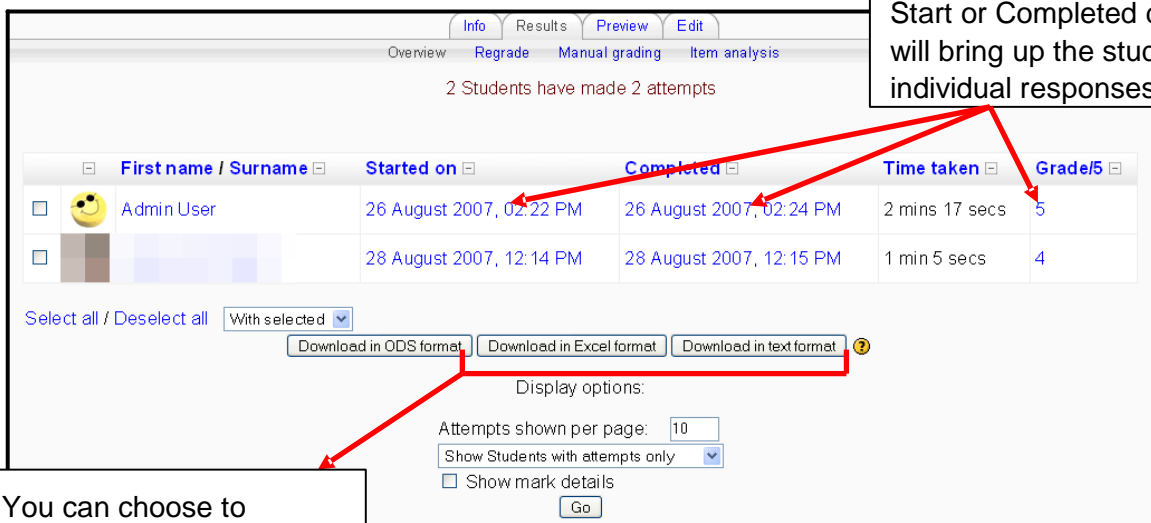
(8) It is a good idea to try out the quiz before letting your students loose on it! Click on the quiz link from the home page of your course page and follow through the quiz. Answer the questions and submit the quiz. You will see the feedback and responses your students will see.

# Managing quizzes

Once students start to take the quizzes, you will have a lot of data available. If you click on the quiz link on the home page of your course, the introductory page will tell you how many students have attempted the quiz.



Clicking on this link will take you to the Results screen (alternatively, you can click on the Results tab). This shows you the results for each student who has attempted the quiz.

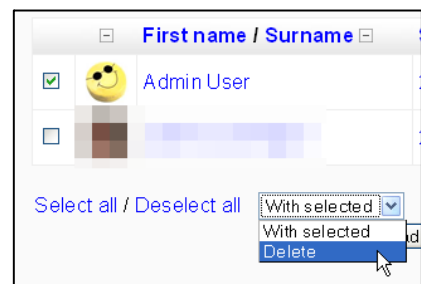


Clicking on either: the Grade, Start or Completed date links will bring up the student's individual responses.

You can choose to download the data from this screen in an Excel or text format.

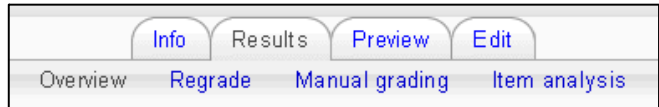
If you want to delete an attempt by a student, click on the checkbox next to the student's name and select the "Delete" option in the "With selected" drop-down menu.

Note: this is a good way of getting rid of your own preview attempts so you have clean data in your reports.





The other options on the second menu (underneath the tabbed menu) are:



- (1) **Regrade** – this will recalculate the quiz grades if you have changed the possible number of points for the quiz or a question.
- (2) **Manual grading** - the grade of any question in a quiz can be manually overridden, and a comment added. A teacher can do this from the review page. There are also some question types that Moodle does not grade automatically (at the moment only the Essay question). This report helps you grade questions of these types by listing just the questions that still need to be graded.
- (3) **Item analysis** – This is a tool for evaluating the reliability of your questions. The columns are briefly explained below. More details can found by clicking on the Help icon (?).

Q#	Question text	Answer's text	partial credit	R. Counts	R.%	% Correct Facility	SD	Disc. Index	Disc. Coeff.
(200)	stomach : Where are conditions like in the stomach?	Neutral	(0.00)	0/2	(0%)	100 %	0.000	0.00	-999.00
		Acidic	(1.00)	2/2	(100%)				
		Alkaline	(0.00)	0/2	(0%)				
		Cold	(0.00)	0/2	(0%)				
(201)	function : Choose the correct parts of the digestive system which perform the following functions:	Where digestion is completed: Small intestine	(1.00)	2/2	(100%)	80 %	0.283	0.40	0.50

**(a) % Correct Facility** - this is a measure of how easy or difficult is a question for quiz-takers. It is calculated as:  $FI = (X_{average}) / X_{max}$  (where  $X_{average}$  is the mean credit obtained by all users attempting the item, and  $X_{max}$  is the maximum credit achievable for that item). If questions can be distributed into correct / incorrect categories, this parameter coincides with the percentage of users that answer the question correctly.

**(b) SD (Standard Deviation)** - this parameter measures the spread of answers in the response population. If all users answers the same, then  $SD=0$ . SD is calculated as the statistical standard deviation for the sample of fractional scores (achieved/maximum) at each particular question.

**(c) Disc. Index (Discrimination Index)** - this provides a rough indicator of the performance of each item to separate proficient vs. less-proficient users. This parameter is calculated by first dividing learners into thirds based on the overall score in the quiz. Then the average score at the analysed item is calculated for the groups of top and bottom performers, and the average scored subtracted.

**(d) Disc. Coeff. (Discrimination Coefficient)** - this is another measure of the separating power of the item to distinguish proficient from weak learners.

The discrimination coefficient is a correlation coefficient between scores at the item and at the whole quiz.

You can choose to download the data from this screen in an Excel or text format.

## Effective quiz practices

Using the Quiz tool effectively can boost your course's effectiveness, and promote student performance. While a computer-scored quiz is a different performance than more open-ended assessments, it does give a valuable window into student thinking, especially when you use good strategies, and a little creativity.

Using the Quiz tool effectively takes some work and practice. The first thing to do is to use effective question design strategies. If you ask good questions, you'll get useful data about your students' performance and understanding of the material. Of course, the converse is also true. There is a lot of literature about effective assessment design available. Here are just a few ideas:

- Tie each question to a course goal. After all, you want to know whether your students are achieving the goals of the course, so why not ask them directly?
- Try to ask multiple questions about each important idea in the class. This gives you more data points about student understanding.
- When writing a multiple-choice question, make sure each wrong answer represents a common misconception. This will help you diagnose student thinking and eliminate easy guessing.
- Write questions requiring your students to think at different levels. Include some recall questions, some comprehension questions and some application and analysis questions. You can determine where students are having problems in their thinking. Can they recall the material, but not apply it?
- Test your questions. After you've established an initial question bank, use the system reports to determine which questions are useful, and which aren't. As you write new questions, give them a lower point value and throw in a few to establish their reliability.

## Appendix 1: Questions types in Moodle

### **Calculated**

Calculated questions offer a way to create individual numerical questions by the use of wildcards that are substituted with individual values when the quiz is taken.

### **Description**

This is not a real question. It simply prints some text (and possibly graphics) without requiring an answer. This can be used to provide some information to be used by a subsequent group of questions, for example.

### **Essay**

In response to a question (that may include an image) the respondent writes an answer in essay format.

### **Matching**

A list of sub-questions is provided, along with a list of answers. The respondent must "match" the correct answers with each question.

### **Embedded Answers (Cloze Test / Gap Fill)**

These very flexible questions consist of a passage of text (in Moodle format) that has various answers embedded within it, including multiple choice, short answers and numerical answers.

### **Multiple Choice**

In response to a question (that may include a image) the respondent chooses from multiple answers. There are two types of multiple choice questions - single answer and multiple answer.

### **Short Answer**

In response to a question (that may include a image), the respondent types a word or phrase. There may several possible correct answers, with different grades. Answers may or may not be sensitive to case.

### **Numerical**

From the student perspective, a numerical question looks just like a short-answer question. The difference is that numerical answers are allowed to have an accepted error. This allows a continuous range of answers to be set.

### **Random Short-Answer Matching**

From the student perspective, this looks just like a Matching question. The difference is that the sub-questions are drawn randomly from Short Answer questions in the current category.

### **True/False**

In response to a question (that may include a image), the respondent selects from two options: True or False.