Online quizzes in Moodle (v3.1)

MOODLE QUIZ QUESTION TYPES

Moodle quizzes supports a large number of question types. The type of questions included will depend on the subject and the learning outcomes. When designing questions for an online quiz it is important to consider what evidence of learning will be attained by completion of the quiz. Most commonly, the questions in online quizzes consist of multiple choice and true/false responses, and mostly are designed to test the acquisition of knowledge, and how well students remember facts and principles. By using different types of questions (e.g. paragraph, numerical) it is possible to test deeper learning, such as understanding and application. Quizzes can be comprised of a number of different types of questions, some of which can be marked automatically (e.g. multiple choice; true/false; short answer, numerical) while others must be manually marked (e.g. paragraph style questions).

This document outlines some of the different types of questions that can be used in Moodle quiz. Note that this is not an exhaustive list, but focuses on some of the least known or newer question types.

To set up a quiz, refer to the separate document that details how to do this.

Note 1: Copying from Word and pasting directly into the Moodle editor takes a lot of Microsoft formatting with it. It is advisable to paste first into *Notepad* on a PC, or *Notes* on a MAC and then recopy into Moodle. Failure to remove the Microsoft coding can result in your questions not operating correctly.

Note 2: Image file types that supported in Moodle are JPGF, GIF and PNG. Other formats (e.g. .TIF images will not work. supported work).

Select Missing Words Questions

This type of question allows students to complete a paragraph of text by selecting the missing words using drop-down menus. These questions can also be created using the Embedded (Cloze) question type, but *Select Missing Words* is easier to set up, and presents the feedback in a more accessible way. Figure 1 shows the question as a student sees it, while Figure 2 shows how the question is scripted in Moodle.
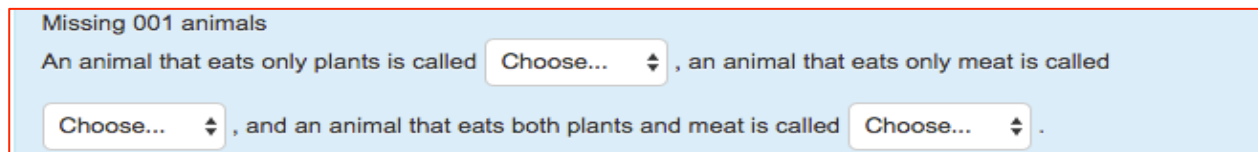

Figure 1 *Missing words question* **student view**

An animal that eats only plants is called [[1]], an animal that eats only meat is called [[2]], and an animal that eats both plants and meat is called [[3]].

Figure 2 Missing words question type scripting

To set up a *Select Missing Words* question

Turn editing on and use the *Administration block* to open the *Question Bank / Questions*

1. Select the category for your questions (if you haven't already created a category, do this first).
2. Click on *Create new question* and *Select missing words.*
3. Enter a question name and question text.
4. Set default mark.
5. Under *Choices*
   a. Determine if the choices will be randomised.
   b. For each [[number]] you have entered, in the corresponding numbered *Answer* field, enter **the correct answer** that students should select from each drop-down menu. For example, in the question above (**Error! Reference source not found.**) "An animal that eats only plants is called [[1]] will have the answer herbivore inserted into Choice 1 (Figure 3).

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6. Add feedback if desired, then *Save changes*.

Figure 3 *Select missing words* **correct responses**

Drag and Drop Questions

There are a number of different drag and drop questions in Moodle; Drag and drop into text, Drag and drop into markers, Drag and drop matching and drag and drop into image.

Drag and Drop into Text

Drag and drop into text allows students to be presented with a selection of words, which can then be chosen to drop into specific places in text. Figure 4shows how the student sees the question, while and Figure 5 and Figure 6 show the scripts for the question in Figure 4.

Note that the answers form groups, designated by colour. This is achieved by choosing Groups in the *choices* options. Choices that are within the same group may only be dropped in a gap with the corresponding colour. If you want the answers to be more than once, mark the *unlimited* checkbox next to those choices (Figure 6).

Figure 4 Student view of *Drag and Drop into Text* question*

Figure 5 Code for *Drag and drop into text* question

Figure 6 Choices (answers for *Drag and drop into text* question

To create a *Drag and Drop into text* question

1. Turn editing on and use the *Administration block* to open the *Question Bank / Questions.*
2. Select the category for your questions (if you haven't already created a category, do this first).
3. Click on *create new question* and select *Drag and drop into text.*
4. Enter a question name.
5. Enter question text. You can use the full functionality of the editor to state the question. Question text is written with two sets of square brackets [[n]] indicating the positioning of the gaps. The number 'n' inside the brackets indicates the correct choice from the list which follows the question. Drop zones can also be placed in lists and tables.
6. Enter the choices (answers) and if desirable, the groups that those choices belong to:
   a. Note that the text editor does not work in the choices section, however limited formatting of text using <sub>, <sup>, <b>, <i>, <em> and <strong> is allowed.
   b. Choices that are in the same group are colour coded and may only be dropped into a gap with a corresponding colour.
   c. Choices marked unlimited can be used in a number of locations.
   d. It is not possible to have choices with multiple lines. Instead of creating long sentences, give each a label and drag the label.
   e. Students can use the space bar to move between drop zones
7. Add feedback (recommended eg. Which part of the text book students should read to be able to improve.
8. Complete the other fields and click *Save changes.*

For further information on *Drag and drop into text* questions go to
http://www.open.edu/openlearnworks/mod/oucontent/view.php?id=52747&section=2.3.1

Drag and drop into image
This question type allows students to drag words, images or both from a list and drop them into pre-defined locations on an image (Figure 7).
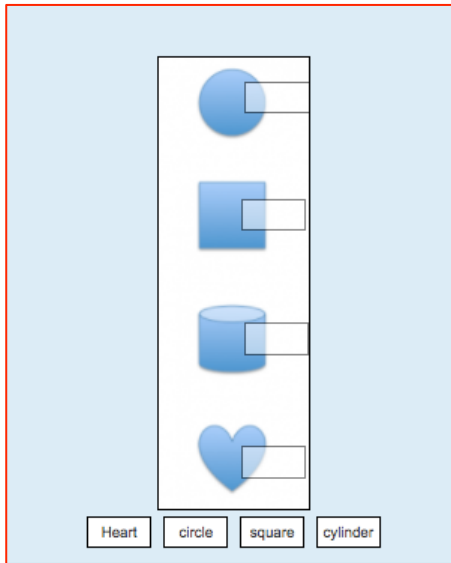
Figure 7 *Drag and drop into image* **question type**

To create a *Drag and drop into image* question

1. Turn editing on and use the *Administration block* to open the *Question Bank / Questions.*
2. Select the category for your questions (if you haven't already created a category, do this first).
3. Click on *create new question* and select *Drag and drop into image.*
4. Enter a question name.
5. Enter question text.
6. Provide General feedback if desired.
7. Enter the choices (answers) and if desirable, the groups that those choices belong to.
8. In the *Preview* section, click the background image button to upload an image (the only image formats that can be used are JPG, GIP, and PNG). Larger images will be displayed at a maximum of 600 x 400. Your image will then display under the file upload box.
9. In the *Draggable* items section, you can upload images if you leave the type as 'draggable image' or you can type in words if you change the type to 'draggable text'. You can use a mixture of both text and images in your question (Figure 8).
10. In the *Draggable* items section (Figure 8), choose whether the items will be shuffled, and choose which items go in which zones.
    a. Note that the text editor does not work in the choices section, however limited formatting of text using <sub>, <sup>, <b>, <i>, <em> and <strong> is allowed.
    b. Choices that are in the same group are colour coded and may only be dropped into a gap with a corresponding colour.
    c. Choices marked unlimited can be used in a number of locations.
    d. It is not possible to have choices with multiple lines. Instead of creating long sentences, give each a label and drag the label.
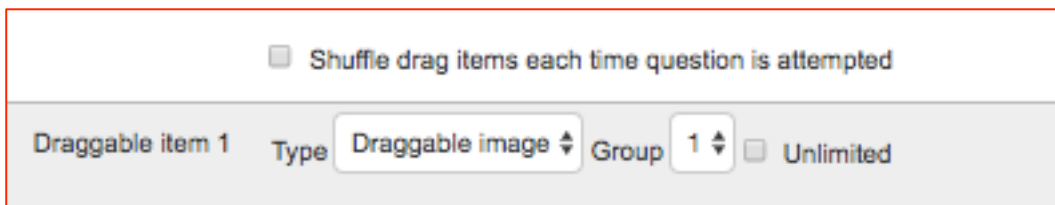

Figure 8 Draggable items options

For additional information on *Drag and Drop onto image* questions go to
https://docs.moodle.org/30/en/Drag_and_drop_onto_image_question_type

There are several other options for drag and drop questions;

Drag and drop markers question type
This question type requires students to drag and drop a marker onto a background image in a predefined location. This type of question differs from the *Drag and drop onto image* question type in that there are no areas on the underlying image that are visible to the student. This type of question is quite time consuming to set up, as you must 'plot' where the marker goes. Figure 9 shows the student view of a drag and drop markers.
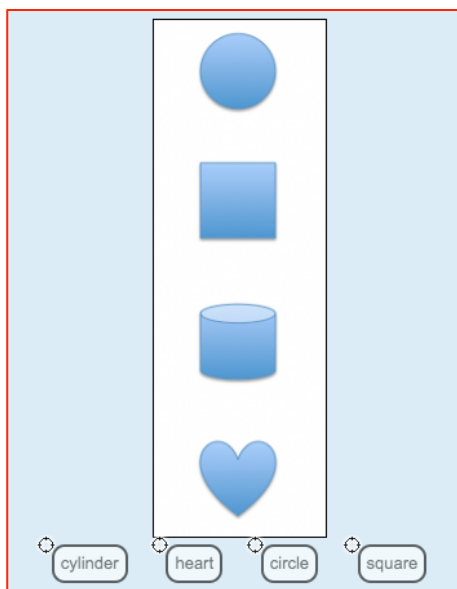

Figure 9 Student view of *Drag and drop markers* question type

- For information on how to set *Drag and drop markers* type questions, refer to
  https://docs.moodle.org/30/en/Drag_and_drop_markers_question_type
- To view a video which demonstrates how to set up a *Drag and drop markers* type question, watch the video at
  https://www.youtube.com/watch?v=mFpXDUw4Ofo

Numerical Questions

To a student, numerical questions look like short answer questions. The difference is that numerical answers can have an accepted error built in, allowing for a fixed range of answers to be evaluated as one answer. To create a *numerical question*:

1. Turn editing on and use the *Administration block* to open the *Question Bank / Questions.*
2. Select the category for your questions (if you haven't already created a category, do this first).
3. Click on *create new question* and select *Numerical.*
4. Enter a question name.
5. Enter question text.
6. Set a default mark.
7. Enter an accepted error for this answer. This is a range above or below the answer that Moodle will accept as a match. For example, if the correct answer is 5, but you will accept 4 or 6 as answers, your accepted error is 1.
8. Enter general feedback (optional). This may include the formula that should have been applied or other relevant information.
9. Put an answer in the *Answer Field.* Do this for all answers (depending on how many answers you will accept). For example, there may be a second answer, which is not perfect, but may warrant the awarding of 50%.

10. Determine if the units are also to be included (be specific in your question as to whether students should include this).
11. Click on *Save changes.*

Embedded answers (Cloze)

In an Embedded answer (Cloze) question the student is required to type a word or phrase and/or select answers from either a multiple choice selection or pull down menu in response to a question or series of questions. The value of this type of question lies in the ability to ask a number of different sub questions within the one quiz question. If only asking one question, or if students are not required to fill in a response, use a different question type, for example multiple-choice.

Embedded (Cloze) questions require a special 'syntax' showing what is being asked, the correct answer/s and also what the feedback (if provided) should say. Use caution when authoring embedded questions, as student responses must **exactly** match the responses you have written into the question. You must consider alternative spellings, plurals and phrases, which could be reversed but may still be correct. Figure 10 shows an example of a multiple choice question, while Figure 11 shows what the syntax looks like for a basic multiple-choice question.

Note: For multi-choice answers, *Select Missing* Words, a new Moodle question type, is easier to set up and lets you include more than one question subset in a question.
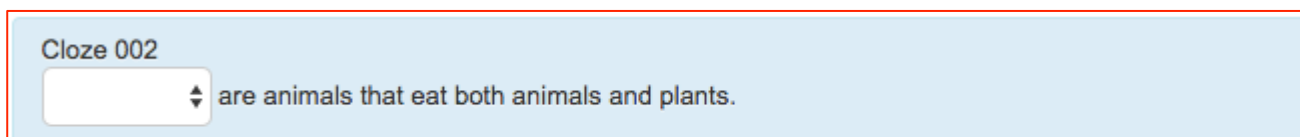
Cloze 002

[‡] are animals that eat both animals and plants.

Figure 10 Student view of an *Embedded (Cloze)* question type

{1:MC:carnivores#wrong~=omnivores} are animals that eat both animals and plants.

Figure 11 *Embedded (Cloze)* question type syntax for multiple choice question

Embedded (Cloze) questions: Short answer

Figure 12 shows the syntax for a short answer question without feedback

A cat is a {1:SHORTANSWER:%100%feline}

Figure 12 *Embedded (Cloze)* question type syntax for short answer question

Figure 13 shows an Embedded (Cloze) question with feedback. Note that each of the answers in this instance is separated by a tilde symbol (~). This question is worth 1 mark, feline is awarded full marks, with feedback *correct*, while canine is incorrect with the feedback of *incorrect, they are feline*.

A cat is a {1: SHORTANSWER:%100%=feline#correct~canine#incorrect}

Figure 13 *Embedded (Cloze)* question showing feedback

This type of question can also be set up so that students could type in one of a number of correct answers. Figure 14 shows a question where three answers are correct and of equal value.

{1:SHORTANSWER:%100%equilateral#~%100%isosceles~%100%scalene} triangles are one of the three main types of triangles, based on the length of their sides.

Figure 14 *Embedded Cloze)* question showing multiple correct answers

Figure 15 shows the syntax for a question with only one correct answer. Note the sequence ~*# is universal feedback if an answer other than equilateral.

> A triangle which has all three sides of equal length is called
> {1:SHORTANSWER:%100%equilateral#correct!~*#No, an equilateral triangle has all sides equal}

Figure 15 *Embedded (Cloze)* **question with one correct answer, showing feedback**

For a situation where case is important to the answer, use the following script. In this example (Figure 16) the student will be awarded 50% if they answer correctly but omit the capitalisation of the P in Paris. The C prior to the %100 signifies that the answer requires capitalisation to gain full marks.

> The Eiffel Tower is in {1:SHORTANSWER_C:%100%Paris#CORRECT~%50%paris#Requires capital P for full points.}

Figure 16 *Embedded (Cloze)* **question showing requirement for capitalisation and feedback for partial mark**

Embedded (Cloze) questions can use a combination of different types of questions. Figure 17 shows how such a question will appear to the students, with Figure 18 showing student response, with feedback. Note that Sydney is in yellow, as according to the script (Figure 19) this answer should begin with a capital S. Note that each of the correct answers is only one word. If the correct answer was a phrase (e.g. New South Wales) the coding would need to account for capitalisation of each word, and for phrases that can be written in more than one way, for each possible combination, including spaces (e.g. NSW / N.S.W etc.). In other words, you need to account for the myriad of responses that a student may give for correct answers. The syntax required for the questions in Figure 17 and Figure 18 is shown in Figure 19. Note that the equal sign (=) Figure 19 can only be used in multiple choice type cloze questions.

Figure 17 *Embedded (Cloze)* **question showing multiple questions**

Figure 18 *Embedded (Cloze)* **question showing student response and feedback**

> The capital city of New South Wales is {1:SHORTANSWER_C:%100%Sydney#correct~%50%sydney#did not use capital so half mark deducted}. Glasgow is in {:MC:Ireland#wrong~Wales#wrong~=Scotland}. The city that houses the Eiffel Tower is {1:SHORTANSWER_C:%100%Paris#correct~%50%paris#~50% was deducted because you forgot to put a capital at the beginning of the word}.

Figure 19 *Embedded (Cloze)* **question showing syntax**

To write a cloze question

1. Turn editing on and expand the *Administration block* to open the *Question Bank / Questions*.
2. Select the category for your questions (if you haven't already created a category, do this first).
3. Click on *create new question* and select *Embedded answers (cloze)*.
4. Use the above syntax as an example for writing your question.
5. Click on *decode and verify the question text* (located below the general feedback box).

6. You will then see another section that says *Question {#1} Short* answer (or something similar). Click on this to see each question, the default mark, the correct answer and feedback if provided to make sure your question is working the way you intended (Figure 20).
7. Depending on the number of sub questions, you may need to repeat this step.
8. Scroll to the bottom of the page and *Save changes*

Note: It is strongly recommended that you check your questions for accuracy before releasing to students. It is good practice to set up a practice quiz to allow students the opportunity to see how a Moodle quiz works. This is even more important if you have included Embedded (Cloze) questions.

Question definition
{1:SA:%100%feline#yes~canine#no}
Default mark
1
Answer
Feline
Grade
1
Feedback
Yes
Answer
Canine
Grade
0
Feedback
No

Figure 20 *Embedded (Cloze)* **question showing decode and verification**

For further information on Embedded (Cloze) question types, including detailed syntax explanations and information on numerical Cloze questions go to:
https://docs.moodle.org/27/en/Embedded_Answers_(Cloze)_question_type#Question_set-up

Cloze question Editor

While it is useful to understand the syntax for this type of question, a free cloze question editor is available from http://projects.ael.uni-tuebingen.de/quiz/htmlarea/index.php although this gives varying results.

Calculated simple questions

This type of question offers a way of creating individual numerical questions by the use of wild cards (e.g. {x} and {y}) that are substituted with random values, with the question graded in response to a correct answer formula. There is also an option for a *tolerance* field to allow a margin within which all responses are accepted as correct. Figure 21 shows an example of the text used in a Calculated simple question, while Figure 22 shows the same question as viewed by a student.

What is the area of a rectangle where the base is {x}cm and the height is {y} cm? Answer to two decimal places. Include only the number in metric not the measurement unit.

Figure 21 *Calculated simple question* **text**

simple calculated 01
What is the area of a rectangle where the base is 3.3 cm and the height is 8.0 cm? Answer to two decimal places. Include only the number in metric, not the measurement unit.

Answer:

Figure 22 *Calculated simple question* student view

To create a Calculated simple question:

1. Turn editing on and expand the *Administration block* to open the *Question Bank / Questions*.
2. Select the category for your questions (if you haven't already created a category, do this first).
3. Click on *create new question* and select *Calculated Simple*.
4. Enter a question name.
5. Enter question text.
6. Set a default mark.
7. Enter general feedback (optional). This may include the formula that should have been applied or other relevant information.
8. Enter an *Answer formula:* The answer must contain the wildcards that appear in the question text, as denoted by the {braces or curly brackets}.
9. Set the grade to 100% as this is the only answer in this question. If left to none the answer will be accepted as correct. If multiple answers are possible it is possible to set percentages, e.g. an answer half correct can be awarded 50% of the total mark.
10. Set a tolerance (optional).
11. Set the parameters for the formula. Variables should be enclosed in {braces or curly brackets}.
12. Click on the button that says *find the wild cards {x..} ...* to show the wild cards parameters.
13. Select the number of sets of wild card(s) values from the pull down menu and click *generate*.
14. Select the number of set(s) of wild card(s) values you would like to see and click *display.*
15. To see the formula and answers, open the *Wild card(s)* section.
16. Click on *Save changes.*

Further information on Simple calculated questions can be found at
https://docs.moodle.org/27/en/Simple_calculated_question_type