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# How to set up an interactive assessment on the TEAL2.O platform

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Improving Access to Science and Technology Higher Education in Resource-Poor Institutions  
through an Open Platform for Technology Enabled Active Learning Environment

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# INTRODUCTION

The main two types of assessment are *formative* and *summative*. The first one can be used even during the learning process to show the extent to which students assimilate the knowledge, and to identify the difficulties in understanding and acquiring the presented knowledge. The formative assessment is an intermediate assessment that applies mostly to course modules or chapters. Usually, it is not used for grading students.

The summative assessment on the other hand aims to provide the teacher (and student) with a clear picture of the extent to which the students have grasped the knowledge, and to what extent they are able to use and apply this knowledge. Summative assessment results can even show if the student is able to link different pieces of knowledge and make connections. The summative assessment is usually applied at the end of the course and is used to grade the students.

To assist with assessment, the TEAL2.O platform provides dedicated tools.

The present document guides the user in setting up an interactive assessment in the form of a H5P Interactive Activity. The assessment activities can be embedded into an interactive course presentation. The options for assessment activities are presented in Table I.

Table I. Objects used for Interactive Assessment (main menu)




Fill in the Blanks	
Single Choice Set	
Multiple Choice	
True/False Question	
Drag and Drop	

Table 2. Objects used for Interactive Assessment (secondary menu)

Drag the Words	Mark the Words
	

An assessment can be designed as a collection of assessment activities grouped in a Course Presentation. This kind of resource has the advantage that it offers the possibility to display an Overview and a Summary that synthesizes the results of all assessing activities. When the activities used to build the assessment can be approached interactively, the assessment becomes more attractive for the students on the one hand, and ensures better assessment on the other hand. The interactive feature of an assessment can be provided by the facilities offered by a Course presentation resource.

To set up an assessment, the first step is to create and open a *Course presentation*, and switch to *Settings* mode from the *Activity* list at the top-left corner of the screen (Fig. 1).

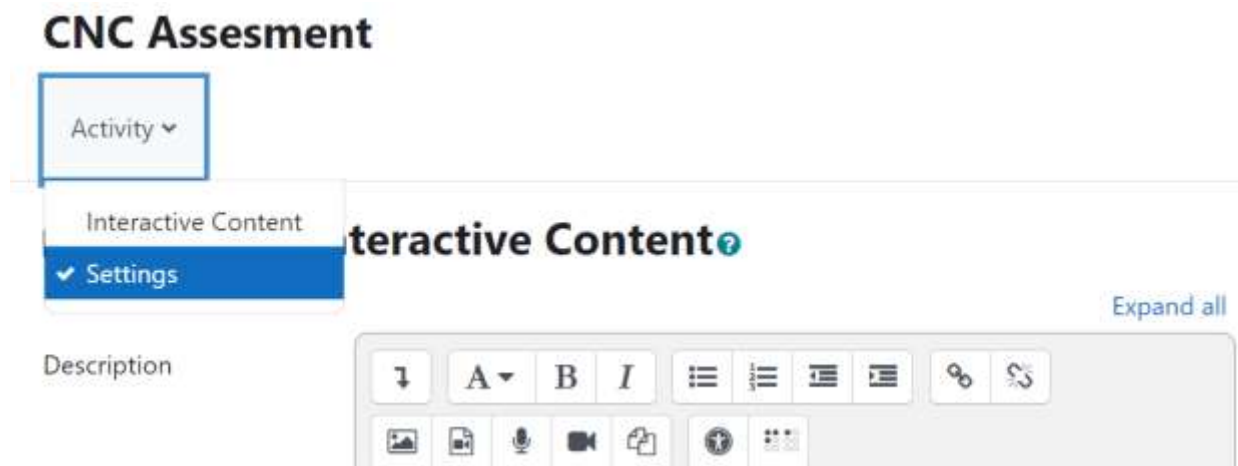


Fig. 1. Switching to Settings mode

Now, the editing menu will be available. Create the starting slides (a cover and an overview slide), and then a new one where to place the first assessment activity. Each new activity will be placed on a new slide. If needed, videos or pictures can be placed on separate slides, to support the next questions.

### → Fill in the Blanks

This type of assessment displays a text from which some words are missing. The student is asked to type the appropriate (missing) words. The text should have been presented to the students during the teaching – it could consist of definitions or consecrated statements. The missing words should be important ones, part of syntagms, so they do not create confusion.

## Assessment

### Please fill in the missing words:



The  relationship between MCS and PCS is given by the  and orientation of the axes in the two CSs.

Fig. 2. Fill in the Blanks. The appearance in Interactive content mode

- Insert the activity on the slide by clicking the appropriate button in the menu (Fig. 3)
- Edit the activity, using the Edit button. Type the text you want to be displayed.





Fig. 3. Fill in the Blanks. The button in the menu

- Place the missing words between the \* sign (asterisk), as in the example below (Fig. 4).



Fig. 4. Emphasizing the missing word in the editing process

- When editing is completed, press the Done button  to return to the slide.
- Several statements can be placed on the same slide.

- A Check button  accompanies the Fill in the Blanks activity. By pressing it, the result is displayed (Fig. 6): the correct answers are marked green, and the wrong or missing ones, red. Each correct filled-in word increases the score by 1, and each wrong one decreases it by 1.

Several PDs can be set and stored behind  ..  codes. While running the CNC program, one can  between the PDs stored, according to the needs.

 Check

Each Fig. 5. Fill in the Blanks. Before pressing Check

## Assessment

**Please fill in the missing words:** 

The  ✓ relationship between MCS and PCS is given by the  ✓ and orientation of the axes in the two CSs.

The quantitative  ✓ between the two CSs is established by the user, in terms of the  ✗ of PD reported to MCS.

Several PDs can be set and stored behind  ✓ ..  ✓ codes. While running the CNC program, one can  ✗ between the PDs stored, according to the needs.

 5/7

Fig. 6. Fill in the Blanks. After pressing the Check button

### → Single Choice Set

This activity challenges the students to answer questions that display several answers. Only one of those answers is correct. The order the answers are listed is randomly generated.

- Insert the activity on the slide
- Edit the activity by clicking the *Edit* button (Fig. 7).

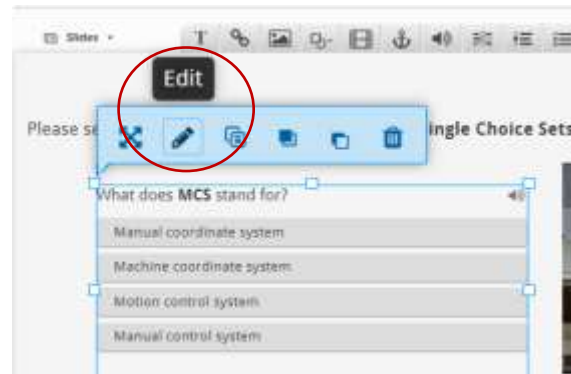


Fig. 7. The Edit button

Editing requires typing the question and the different answers in the appropriate fields of the form (Fig. 8). The correct answer must always be typed at the top of the answers list. One may add answers by pressing the button *Add answer* **Add answer**, and a new question by pressing the *ADD QUESTION* button **ADD QUESTION**



H-P<sub>hub</sub> Course Presentation

Tutorial Example Copy Paste & Replace

Assessment Single choice quizz Delete Done

Title \* Metadata  
Used for searching, reports and copyright information

Single choice quizz

List of questions \* Textual Default

What does MCS stand for?

Question \*  
What does **MCS** stand for?

Alternatives - first alternative is the correct one. \*

Alternative  
Machine coordinate system

Fig. 8. Editing the Single Choice Set

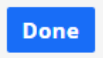
- When all the wanted questions and their answers have been edited, press the **Done** button  to go back to the slide.
- While working in the slide, it is possible to arrange the object (move, resize) using the tools offered in the menu. Alternatively, the squares at the corners and at the middle of the edges can be used to handle the size and position of the object (Fig.9).



Fig. 9. Editing the position and size of an object

When switching to *Interactive content*, during running the assessment, all the questions of the *Single Choice Set* will be displayed successively on the same slide. After the student selects an answer, it is marked in different color depending on whether it is correct or wrong (Fig. 10). If the selected answer is wrong, the correct one is emphasized. For each correct answer selected, the general score increases by 1. Wrong answers are not penalized.

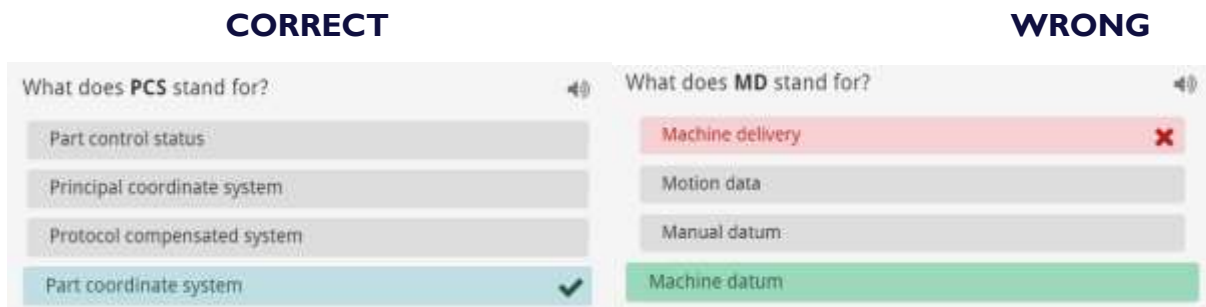


Fig. 10. *Single Choice Set*. The appearance of the correctly and wrongly answered questions

When the activity is finished (all the questions have been answered) the score of the activity is displayed on the same slide, and the student can advance to the next slide (Fig. 11).



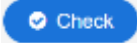
Fig. 11. *Single Choice Set*. The report displayed after finishing the activity

→ You can delete the *Simple Choice Set* by pressing Delete **Delete**. All the questions will be deleted, and the action cannot be undone.

Note: The editing techniques of the assessment activities described for *Fill in the Blanks* and *Simple Choice Set* are similar for all the objects, so they will not be repeated at the next ones.

## → Multiple Choice

This activity is similar to *Simple Choice Set* but offers some specific features:

- each question displays a set of answers, of which more than one can be correct
- on a slide, only one *Multiple Choice* can be displayed
- the question is accompanied by the *Check* button . By pressing it, the solution of the quiz is displayed. The selected answers are differently colored depending on whether they are correct and wrong, and the score for each selected answer appears. The general score of the activity is displayed at the bottom of the page. The correct answer(s) and the wrong one(s) increase and, respectively, decrease the score by 1.

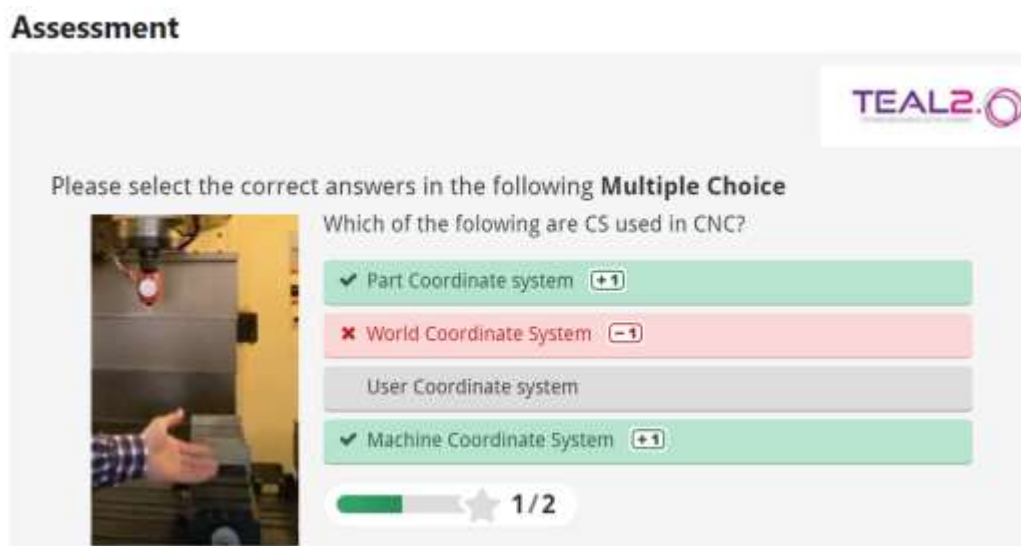



Fig. 12. *Multiple Choice*. The appearance of the question after solving the activity

- When editing the question, for each answer, a check box must be checked, indicating whether the respective answer is correct or not (Fig. 13).
- To add a new answer, use the **ADD OPTION** button , available at the bottom of the answers list.

Untitled Multiple Choice

Media

Question \*

Which of the following are CS used in CNC?

Available options \*

Machine Coordinate System

Text \*

Machine Coordinate System

Correct

Fig. 13. Multiple Choice. Editing the available options and setting the status of the option

### → True/False Question

This activity asks the student to decide whether a statement is true or false. Several statements can be placed on the same slide, but they have to be edited separately. Editing is very simple.

→ The statement must be typed, and the author has to mark whether it is *True* or *False* (Fig. 14).

True/False Question Please select the correct answer

Media

Question \*

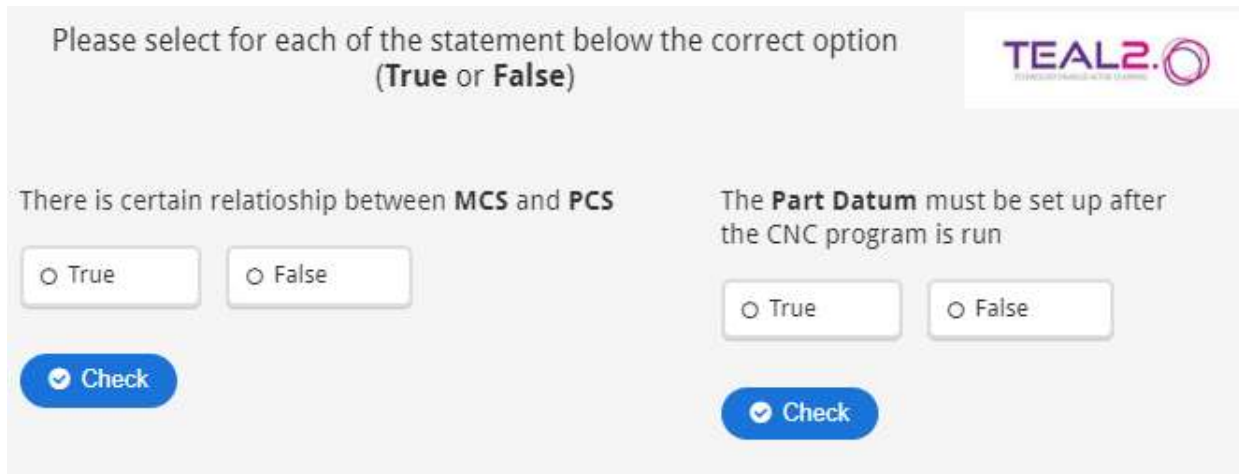
There is certain relationship between MCS and PCS

Correct answer \*

True  False

Fig. 14. True/False Question. Editing the question

→ The Check button accompanies every activity (Fig. 15).



Please select for each of the statement below the correct option  
(True or False)

TEAL2.0

There is certain relationship between **MCS** and **PCS**

True  False

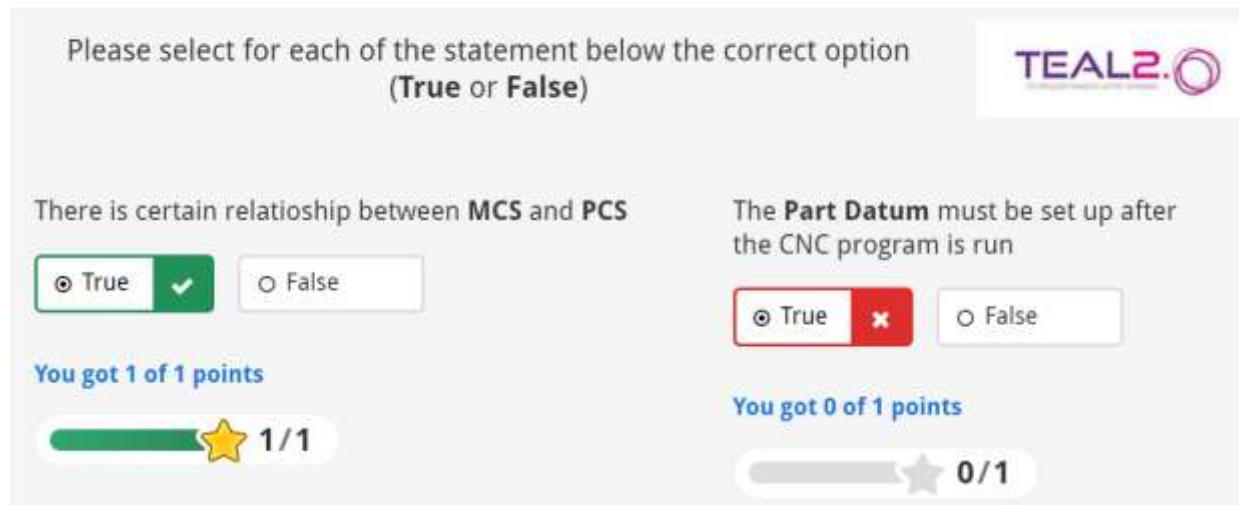
True  False

Check

Check

Fig. 15. True/False Question. The appearance in Interactive content mode

## Assessment



Please select for each of the statement below the correct option  
(True or False)

TEAL2.0

There is certain relationship between **MCS** and **PCS**

True  False

True  False

You got 1 of 1 points

1/1

You got 0 of 1 points

0/1

Fig. 16. True/False Question. The appearance after solving and pressing the Check button

## → Drag and Drop

This is one of the most challenging activities, both in terms of solving it by the students and in terms of editing it.

- The activity is always supported by one or more pictures.

- A list of words bound to certain pictures or areas of a larger picture is shown on the slide. The task of the students is to drag every word and drop it on the appropriate picture, or area of picture.
- You can set different types of relationships between the pictures/areas of a picture and words in the list: one to one, one to many, many to one, and many to many.

Editing this type of activity is more complex than others, and it is performed in several steps.

→ One or more images must be uploaded. If there are more images, they have to be arranged on the slide. This example refers to the Drag and Drop with a single, but complex image, that shows several specific areas, which can be clearly delimited within rectangles, and named.

→ The title of the activity is typed in the appropriate field

→ A picture is uploaded with the Add button  and the dialog box it opens.

→ After a picture is uploaded, it can be resized (the field *Specify how large the play area should be*, as in Fig. 17). When the image is prepared, a blank area must be reserved to be used to place the keywords (Fig. 18)

**Assessment** **Drag and Drop** **Delete** **Done**

**Title \*** Metadata

Used for searching, reports and copyright information

Drag and Drop Devices used to setup the Part Datum

**Step 1 Settings** **Step 2 Task**

**Background image**

Optional. Select an image to use as background for your drag and drop task.

**+ Add**

**Task size \***

Specify how large (in px) the play area should be.

620 x 310

Fig. 17. Drag and Drop. Adding the image to the activity

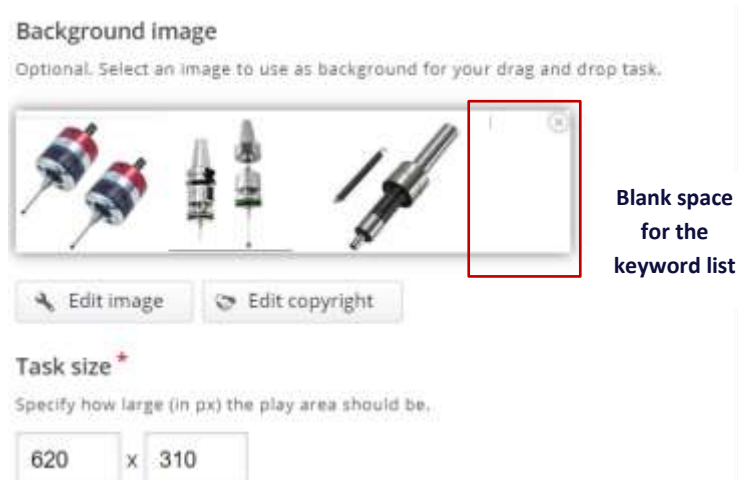


Fig. 18. Drag and Drop. Preparing the picture

→ To step forward through the editing procedure, press the button *Step 2*

→ Define the *Drop zones*. . This includes the following:

- Label the zone (through the field *Label*, Fig. 19). Type the label of the *Drop zone*, set the *Background Opacity* at the value of zero, and press the button *Done*.

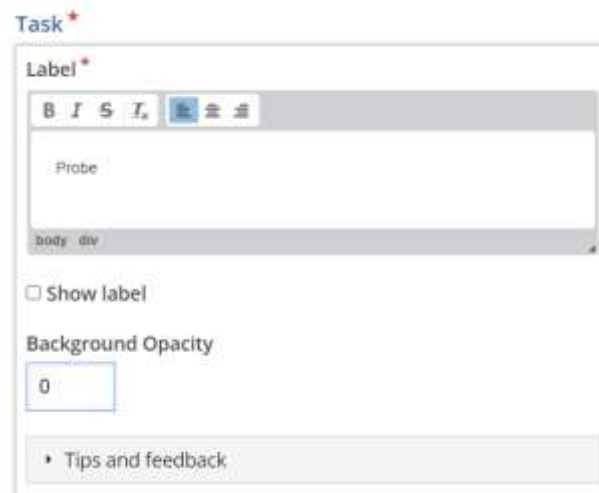


Fig. 19. Drag and Drop. Editing the data for a Drop zone



- Mark the desired area by means of a rectangle (Fig. 20) which can be resized and placed at the appropriate place on the picture.

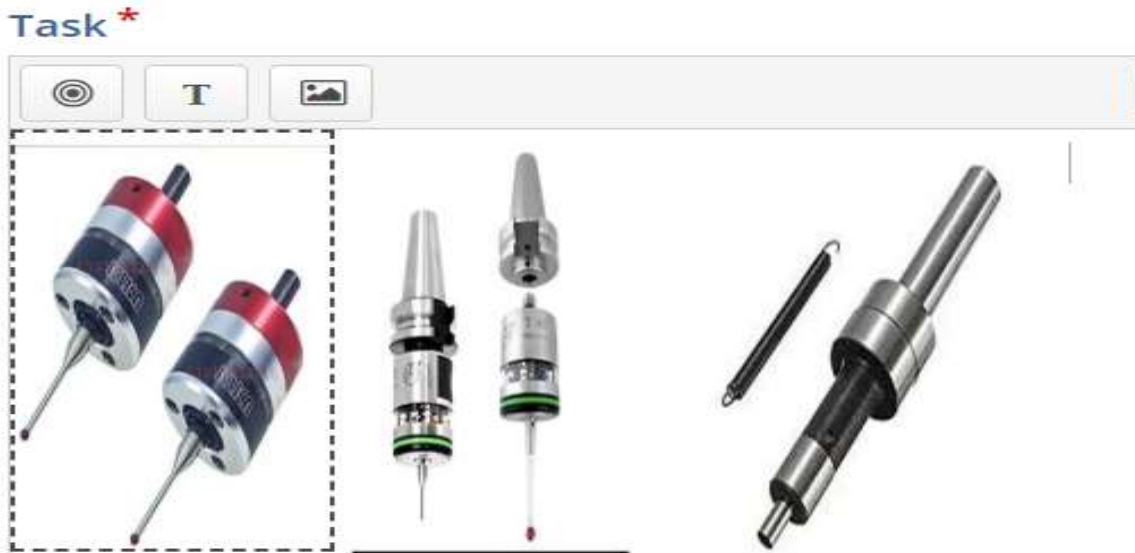


Fig. 20. Drag and Drop. Sizing and positioning the Drop zone

- Repeat steps 1.1 and 1.2 for every Drop zone you want to define (Fig. 20).

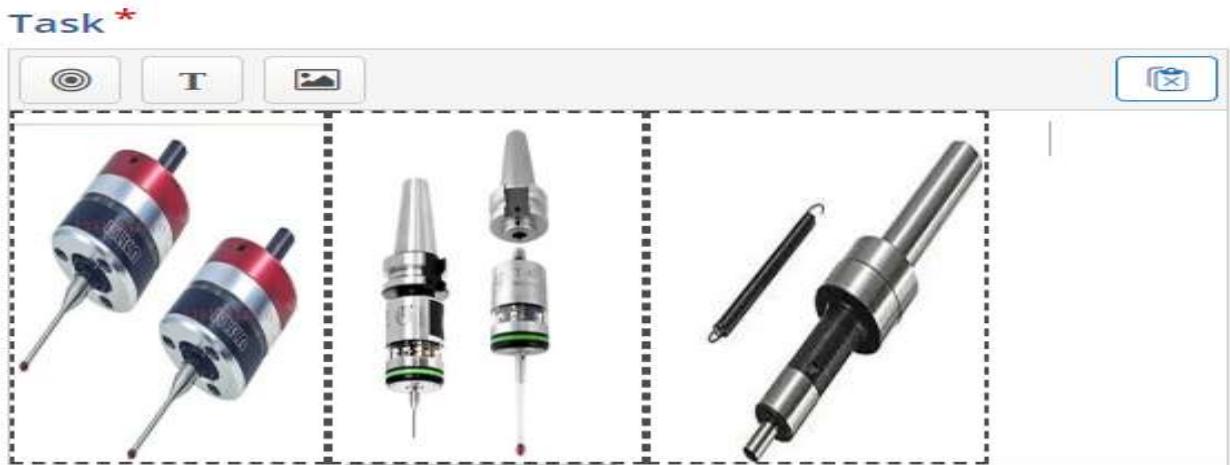


Fig. 20. Drag and Drop. The Drop zones have been set up

→ Create the list of Keywords.



- Type each Keyword and set its opacity at the value of zero.
- In the field Select drop zones, choose Select all. That means that the keyword is allowed to be dropped on any of the Drop zones.
- Press the button Done
- Go back to the picture and place the keyword on the area designed for the list of words. For easy management of the data, it is recommended that the Keyword be the same as the label of the Drop zone.

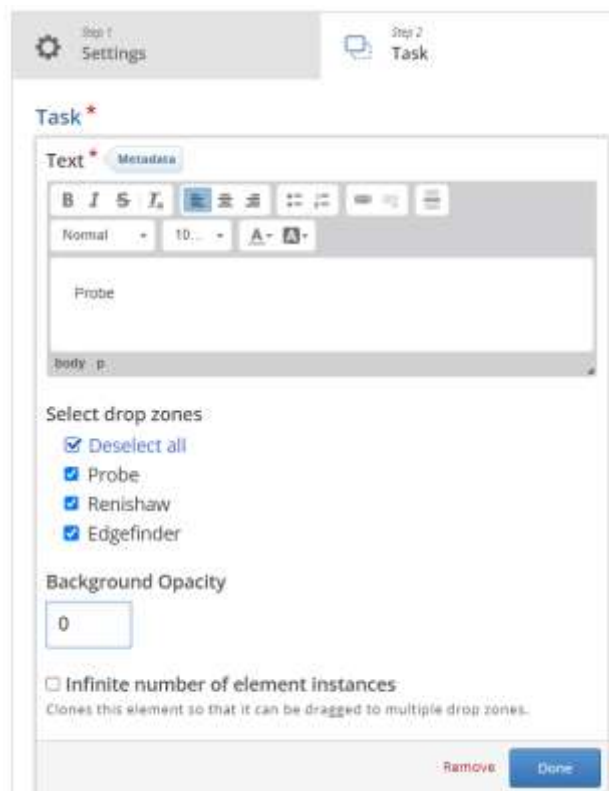


Fig. 21. Drag and Drop. Setting up the keywords

- Repeat this operation for every keyword you want to list.

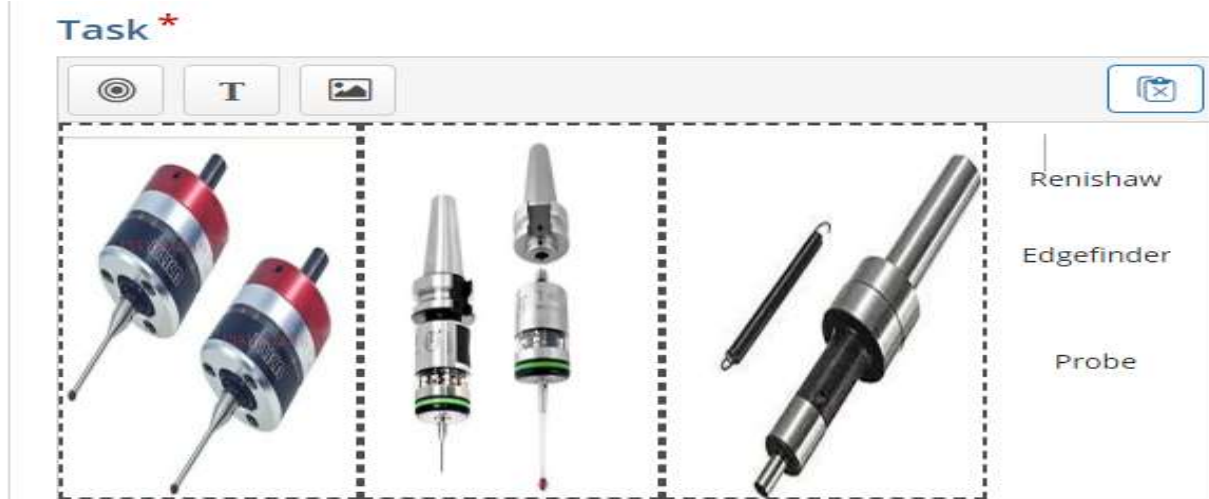



Fig. 22. Drag and Drop. The list of keywords

→ Bind each Keyword in the list to the appropriate Drop zone. To do that, click inside a Drop zone, press the *Edit button* , and select the keyword bound to this Drop zone (Fig. 23).

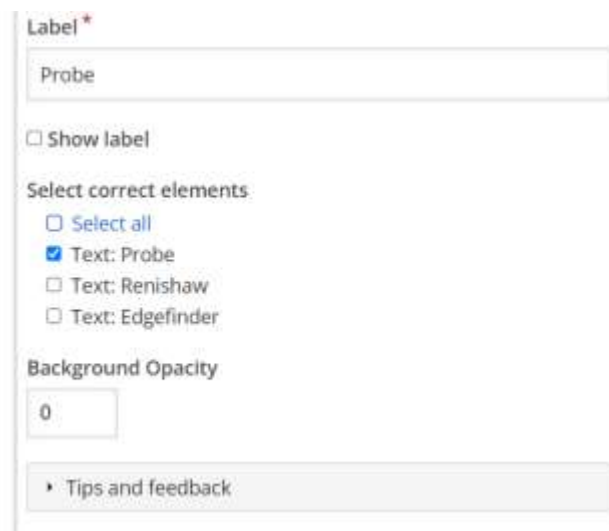


Fig. 23. Drag and Drop. Binding the keywords to the Drop zones

→ Repeat this step for each Drop zone. This way of binding keywords to Drop zones corresponds to the *One to one* relationship between the two categories. For the relationships

One to more and More to one, the binding must be done accordingly, that is the same Keyword can be bound to more Drop zones, and more keywords can be bound to a Drop zone.

- ➔ After all the assignments have been edited, press the Done button to return to the slide. Here, if needed, reshape and resize the object until it fits the size of the slide (Fig. 24).

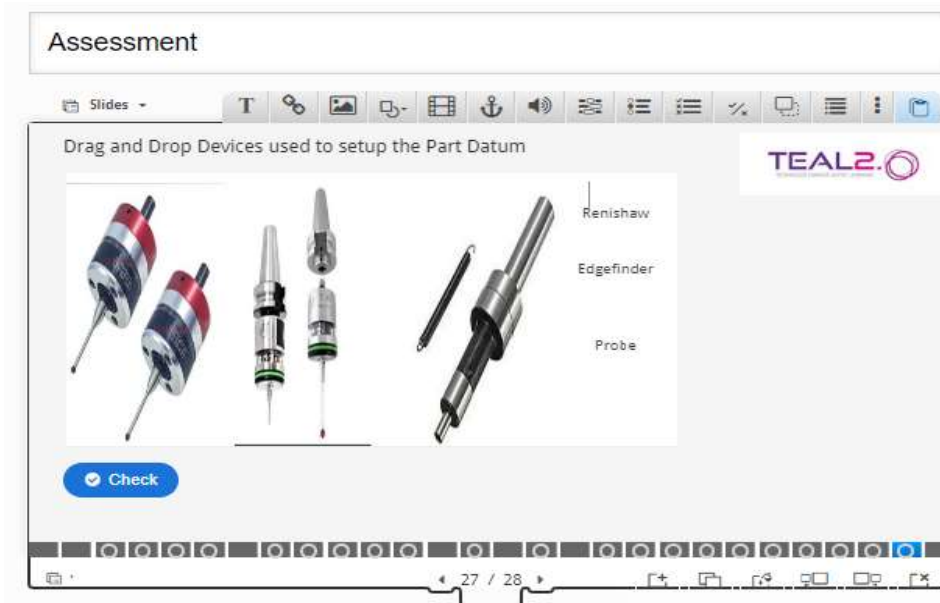


Fig. 24. Drag and Drop. The appearance in the Interactive content mode

- ➔ Now, the Drag and drop activity is ready, and the button Save and Display can be pressed to switch to the Interactive mode.
- ➔ Run the activity, solve it, and press the button Check to see a report displayed at the bottom of the slide (Fig. 25).



Fig. 25. Drag and Drop. The appearance after solving the activity and pressing the Check button

### → Drag the Words

This activity is similar to *Fill in the Blanks*, with the difference that it offers a list of words from which the student can pick up the words to place into the blanks of the statement. Editing is very simple.

- In the Text\* field, input the statement (Fig. 26).
- The words you want to be cut from the text and placed in the list of words will be created automatically if it is placed between asterisks (\*). In the place of the marked words in the statement, blank boxes will be created (Fig. 27).

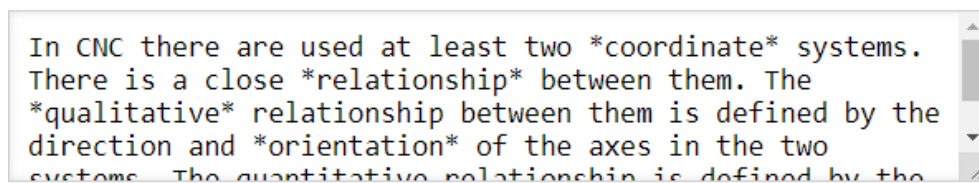


Fig. 26. Drag the Words. Editing the statement and editing the missing words

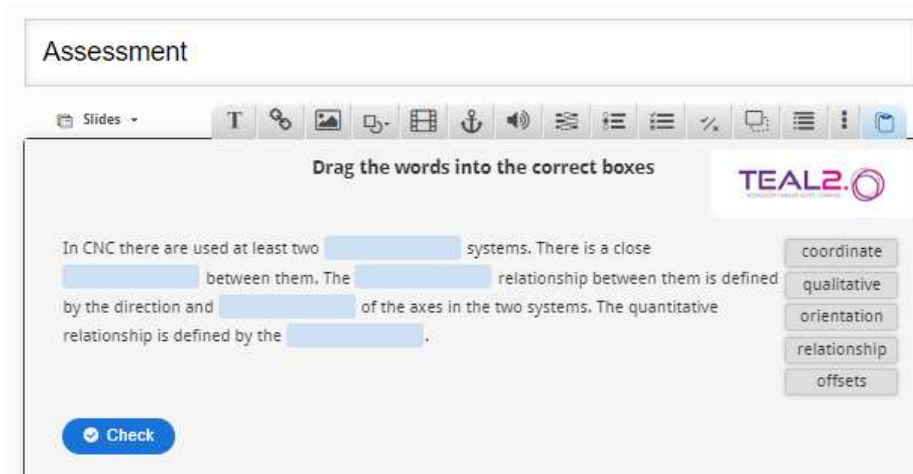


Fig. 27. Drag the Words. The appearance in the Interactive content mode

- The button *Check* is added automatically. Press it to display a report on the result at the bottom of the slide (Fig. 28).

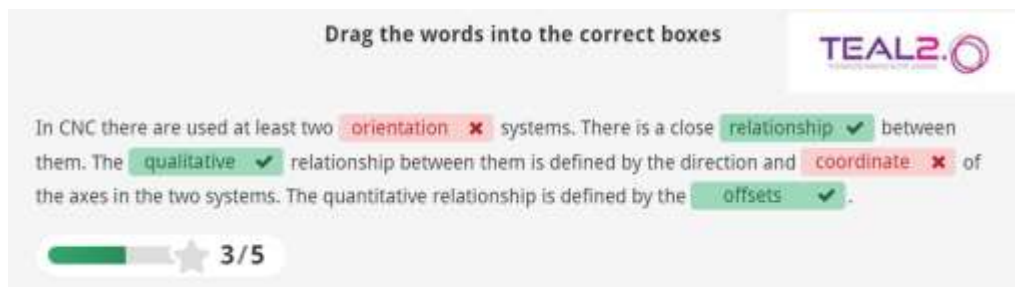


Fig. 28. Drag the Words. The appearance after solving and pressing the Check button

### → Mark the Words

This is a quiz that asks the students to review a list of words and mark those that meet a specified criterion.

- To edit the activity, in the field *Task description\** type the criterion for the selection of the words in the list.
- Edit the list of words in the field *Textfield\**, and place the correct words, namely those that have to be selected, between asterisks (Fig. 29).

### Task description \*

Describe how the user should solve the task.

The screenshot shows a rich text editor with a toolbar containing icons for bold, italic, underline, strikethrough, bulleted list, numbered list, link, unlink, and a dropdown menu set to 'Normal'. The text area contains the instruction: "In the following list, click all the **Codes** that point to technological functions."

### Textfield \*

The screenshot shows a textfield activity with a yellow background. It features an "Important instructions" section with a "Hide" button. The instructions are:

- Correct words are marked with asterisks (\*) before and after the word.
- Asterisks can be added within marked words by adding another asterisk, \*correctword\*\*\* => correctword\*.
- Only words may be marked as correct. Not phrases.

An example box shows: "The correct words are marked like this: \*correctword\*, an asterisk is written like this: \*correctword\*\*\*."

Below the instructions is a textfield containing the list of codes: "G04, M06, \*T12\*, G40, G54, \*F100\*, G73, G91, \*S4150\*, G17."


Fig. 29. Mark the Words. Editing the activity and emphasizing the correct words

→ Solve the quiz and press the Check button (the button is added automatically) to see the screen looking like in the picture below (Fig. 30).

## Assessment

In the following list, click all the **Codes** that point to technological functions.

G04, M06, T12 ✓ <sup>+1</sup>, G40, G54, F100 ✓ <sup>+1</sup>, G73, G91, S4150 ✓ <sup>+1</sup>, G17.

 3/3




Fig. 30. Mark the Words. The appearance after solving and pressing the Check button

- Depending on the size of each Mark the Words activity, several such objects can be placed on the same slide.



By the end of the editing of any quiz type some general settings can be applied.

## → Score Range

You can define several ranges that quantify the level of success. For each range you can link feedback to be displayed after solving the quiz and pressing the *Check* button (Fig. 31 and Fig. 32).

### Sample 1

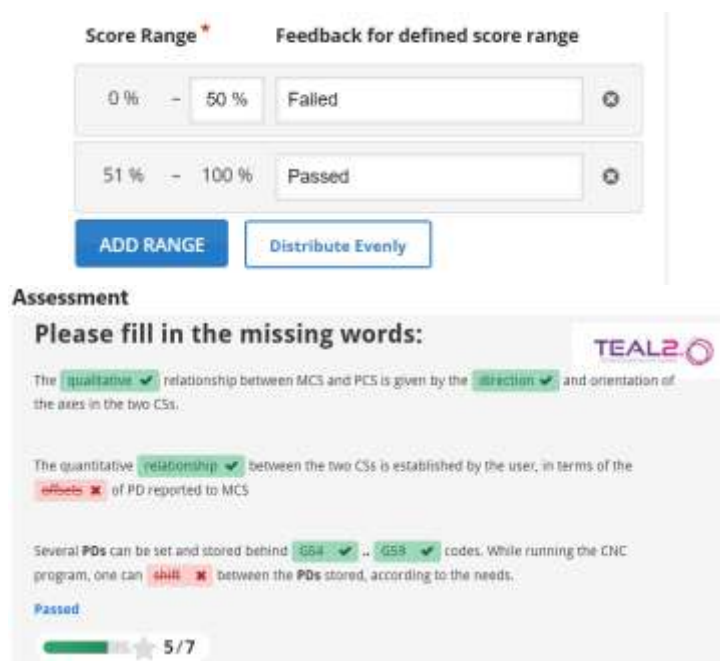


Fig. 31. Setting up the Score ranges and the appearance after pressing the Check button

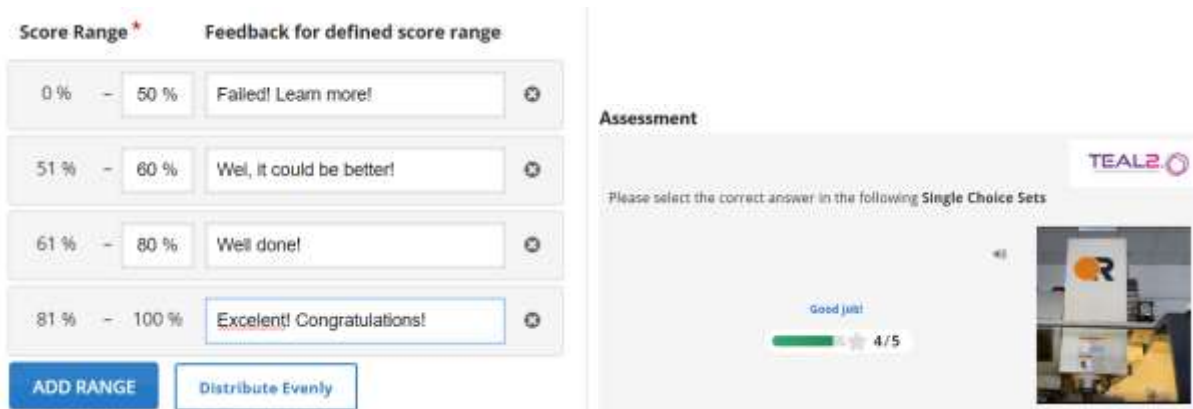


Fig. 32. Setting up the Score ranges and the appearance after pressing the Check button

### → The Summary slide

If desired, a *Summary* slide can be added at the end of the *Interactive Assessment*. This slide is automatically generated and displays a general report on the results of the assessment.

→ In the *Settings* mode, open the *Behaviour settings* at the bottom of the page of the interactive assessment and uncheck *Hide Summary Slide*

→ It is also important to hide the *Retry* and *Show Solutions* buttons on the *Summary* slide: uncheck the relevant checkboxes in the summary slide (Fig. 33). If you do not do this, the students would have the possibility to view first the solutions, and then solve the assessment, or to perform multiple attempts to solve the assessment, until the result is acceptable.

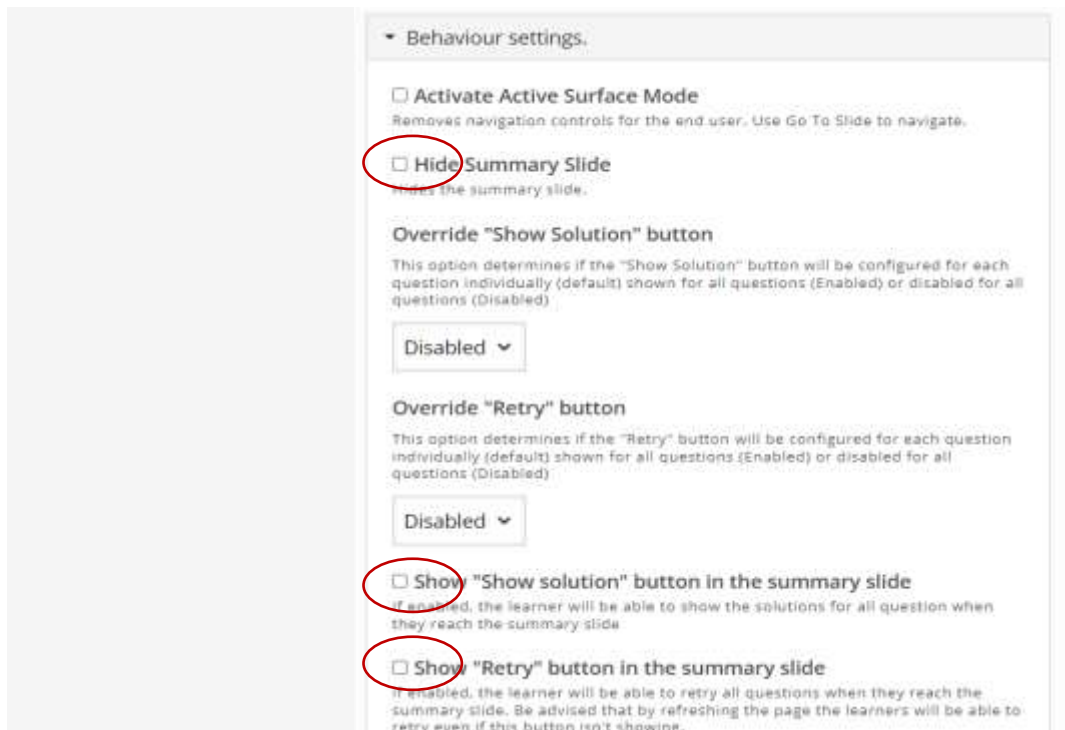


Fig. 33. Setting up the Behaviour settings for the Summary slide

In the figures below some examples of slides are presented. The Cover, Overview, Summary, and slides that display different assessment activities illustrate their appearance on the screen in Interactive content mode, namely as they are seen by the students

### The cover



Fig. 34. The Cover slide

## The Overview

This resource is a *Summative assessment* one



The goal of this assessment is to give a general appreciation of the level of knowledge acquired by the student at the end of the course.

The report at the end of the assessment can be used for grading the student.

The students are asked to solve several types of assessment issues: *Single-choice set, Multiple choice set, Fill in the blanks, True/False.*

Some problems are accompanied by images or videos. Watch them carefully!

Overview

2 / 28

Fig. 35. The Overview slide

## Fill in the Blanks

### Please fill in the missing words:



The  relationship between MCS and PCS is given by the  and orientation of the axes in the two CSs.

The quantitative  between the two CSs is established by the user, in terms of the  of PD reported to MCS

Several **PDs** can be set and stored behind  ..  codes. While running the CNC program, one can  between the **PDs** stored, according to the needs.

Check


Slide 11

◀ 11 / 28 ▶


Fig. 36. The Fill in the Blanks slide

## Simple Choice Set

Please select the correct answer in the following **Single Choice Sets**

What does **MCS** stand for? 

- Machine coordinate system
- Motion control system
- Manual coordinate system
- Manual control system




Quiz 1      3 / 28

Fig. 37. The Simple Choice set slide

## Multiple Choice

Please select the correct answers in the following **Multiple Choice**



Which of the following are CS used in CNC?

- Machine Coordinate System
- World Coordinate System
- Part Coordinate system
- User Coordinate system


Check

Quiz 2      4 / 28

Fig. 38. The Multiple Choice slide

## True/False Question

Please select for each of the statements below the correct option  
(**True** or **False**)



There is certain relationship between **MCS** and **PCS**

True  False

You got 1 of 1 points

1/1

The **Part Datum** must be set up after the CNC program is run

True  False

You got 1 of 1 points

1/1

Quiz 5 12 / 28

Fig. 39. The True/False Question slide



## Drag and Drop

Drag the labels to the appropriate place on the picture



Fig. 40. The Drag and Drop slide, sample 1

## Drag and Drop Probe, Edgefinder, Renishaw

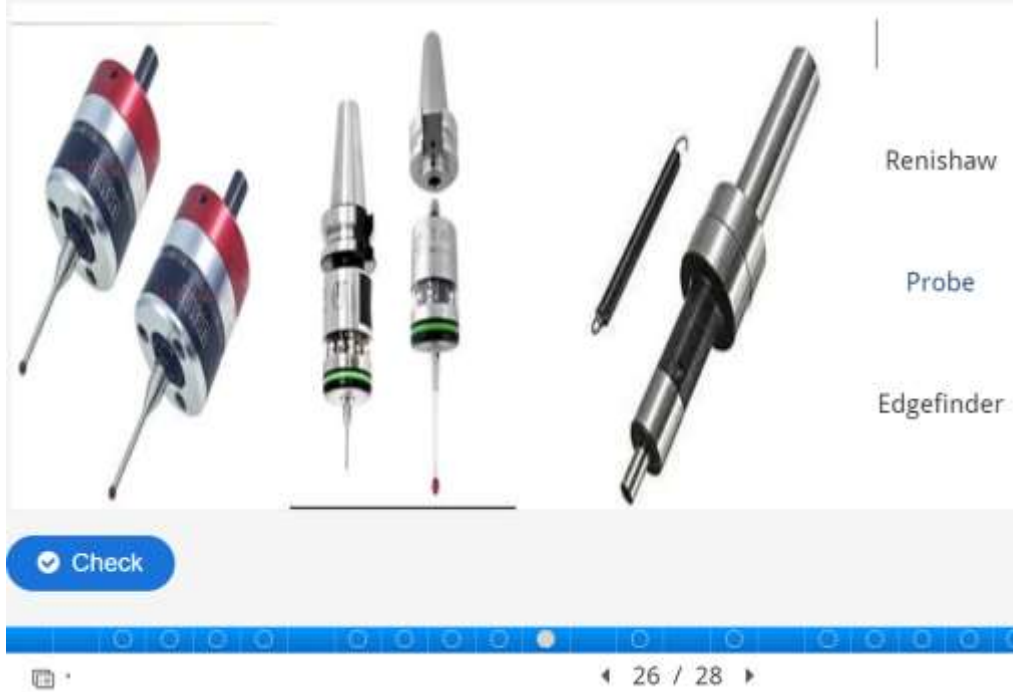


Fig. 40. The Drag and Drop slide, sample 2

## Drag the Words

**Drag the words into the correct boxes**

**TEAL2.**

In CNC there are used at least two  systems. There is a close  between them. The  relationship between them is defined by the direction and  of the axes in the two systems. The quantitative relationship is defined by the .

◀ 6 / 28 ▶

Fig. 41. The Drag the Words slide

## Mark the Words

In the following list, click all the **Codes** that belong to technological functions.

G04, M06, T12 ✓ <sup>+1</sup>, G40, G54, F100 ✓ <sup>+1</sup>, G73, G91, S4150 ✓ <sup>+1</sup>, G17.

3/3

In the following list, click all the **G Codes** that belong to the group that controls the **tool radius compensation**

G04, G40 ✓ <sup>+1</sup>, G28, G03, G42 ✓ <sup>+1</sup>, G92, G41 ✓ <sup>+1</sup>, G54, G17.

3/3

18 / 28

Fig. 42. The Mark the Words slide

## The Summary

### Summary

You have stepped through an assessment.

In the next slide, you will find a report on your assessment.

The red encircled ratio (see the picture) in the next slide represents your **overall success percentage**.

By pressing the two buttons at the bottom of the next page you can either view the correct answers, or run again the assessment.

**Note:** the picture next to it is just a sample, with no connection to your results.

The screenshot displays a presentation slide titled 'Summary' with the TEAL2 logo in the top right. The main content area shows a 'CNC Assessment' report. The report includes a table with the following data:

Item	Score/Total
Slide 3: Single choice question	5/5
Slide 4: Limited Multiple Choice	3/3
Slide 5: Limited Single Choice Set	5/10
Slide 6: Limited Drag the words	5/5
Slide 8: Limited Multiple Choice	3/3
Slide 9: Limited Multiple Choice	4/4
Slide 10: Limited Multiple Choice	3/3
Slide 11: Limited Multiple Choice	5/5
<b>Overall Score</b>	<b>82 / 93</b>

The 'Overall Score' row is highlighted with a red circle. The slide footer contains a navigation bar with 'Summary' on the left and '30 / 31' in the center.

Fig. 43. The Summary slide

## The Summary (the general result of the Assessment)

Slide	Score / Total
Slide 3: Single choice quizz	5/5
Slide 4: Untitled Multiple Choice	2/2
Slide 5: Untitled Single Choice Set	9/10
Slide 6: Untitled Drag the Words	5/5
Slide 7: Untitled Drag the Words	8/8
Slide 9: Untitled Multiple Choice	2/2
Slide 10: Untitled Multiple Choice	4/4
Slide 11: Untitled Multiple Choice	2/2

Total Score  ★ 90 / 100



Fig. 43. The Summary (total score) slide