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Introduction

About the guide-

The purpose of the ZUMMIT TESTING(ZT) User Guide is to walk you through the procedures involved in creating and delivering assessments in ZUMMIT TESTING(ZT). It gives details on the parts you'll need to conduct tests and guides you through the entire process of administering tests in ZUMMIT TESTING(ZT), from creating your first item to getting your findings. You can use this manual to support the ZUMMIT TESTING(ZT) Core, Ignite, Pro, and Enterprise editions.

The User Guide begins with an introduction that explains what ZUMMIT TESTING(ZT) is and invites you to take a tour to get a general idea of how to set up and arrange your assessments using ZUMMIT TESTING(ZT). The "Look and Feel" of your ZUMMIT TESTING(ZT) instance can be customised, and this includes adding your own logo.

After the introduction, each section deals with a specific task you will need to carry out as part of working in ZUMMIT TESTING(ZT). These sections can be grouped together as follows:

- Setting up your ZUMMIT TESTING(ZT) instance
- Developing tests and test materials
- Running tests
- Processing completed tests.

In addition to these sections, the User Guide has an Appendix with further information including a Glossary of ZUMMIT TESTING(ZT) Terms and a section on the manual scoring environment that can be used with ZUMMIT TESTING(ZT) (the ZUMMIT TESTING(ZT) Grader).

➤ **Setting up your ZUMMIT TESTING(ZT) instance.**

Creating a ZUMMIT TESTING(ZT) instance

You can set up your ZUMMIT TESTING(ZT) instance with the help of two parts in the Guide.

Installing ZUMMIT TESTING(ZT): You may find information about the requirements for installing ZUMMIT TESTING(ZT) in this area, along with installation guides for various operating systems. For a summary of this section, see [here](#).

Managing ZUMMIT TESTING(ZT): This section contains information on managing users, roles, and permissions, as well as system administration. For a summary of this section, see [here](#).

➤ **Developing tests and test materials.**

The Guide contains three sections that provide details on creating exams and test materials.

Creating Test Materials: This section covers all aspects of test questions (items), including how they are made and what can be included in them. For a summary of this section, see [here](#).

Putting Tests Together: Here you can find information on assembling and configuring tests. See [here](#) for an overview of this section.

Managing your Resources: Everything you need to know about managing your resources, including how to store, reuse, import, export, and handle supporting materials, is covered in this section. For a summary of this section, see [here](#).

➤ **Running tests**

The Guide contains three sections that detail how to perform tests in ZUMMIT TESTING(ZT).

Preparing Test Sessions: How to get ready to deliver your tests, including converting them to the form needed and registering the people who are going to sit them – the test-takers. See [here](#) for an overview of this section.

Delivering Tests: How do you conduct your tests? This section provides details on testing facilities, proctoring, and the potential use of LTIs for test delivery. For a summary of this section, see [here](#).

Taking Tests: This section examines tests from the perspective of the test-taker and includes details on the tools that are available. For a summary of this section, see [here](#).

➤ **Processing completed tests**

The Guide contains one section that explains what to do when test takers have finished the exam.

Processing Completed Tests: This section examines the scoring procedure and what to do with the results. For a summary of this section, see [here](#).

An illustration of a common ZUMMIT TESTING(ZT) test item can be found below.

Luxembourg's neighbors

OAT, the company behind the TAO assessment platform, is located in Luxembourg or Lëtzebuerg as it is called in Luxembourgish language, a small country in Western Europe.

Which of the following countries share no border with Luxembourg?

- Belgium
- Germany
- Austria
- Denmark



The river Alzette in Luxembourg Pfaffenthal by Dieter Raber, released under CC BY-SA 4.0.

What is ZUMMIT TESTING(ZT)?

ZUMMIT TESTING(ZT) is an Open Source e-Testing platform that empowers you to build, deliver, and share innovative and engaging assessments online – in any language or subject matter.

ZUMMIT TESTING(ZT) (“Computer-Based Testing” or Testing Assisté par Ordinateur in French), was created by the University of Luxembourg and is now maintained primarily by Open Assessment Technologies (OAT).

ZUMMIT TESTING(ZT) is the first commercial-grade Open Source assessment development software on the market. It is QTI and LTI standards-based, and operates under audit-proof transparency. Developers can access the source code in order to create and administer their own tests, opening the user to a wide range of potential customizations. Complete ownership of test design has never been this easy; without the restrictions and high costs of proprietary testing, all assessments can easily be displayed with the educational institution’s signature details. Furthermore, ZUMMIT TESTING(ZT) is fully compatible with just about all of your favorite commercial add-ons.

As well as the traditional Open-Source e-Testing platform, OAT is in the process of releasing a series of stand-alone and add-on assessment products which reflect the needs of different sectors of the assessment community.

The following two specialist assessment products are already available for Enterprise customers:

ZUMMIT TESTING(ZT) Advance

ZUMMIT TESTING(ZT) Advance is a cloud-hosted assessment delivery platform tested with users of ages 6 and above and designed with a responsive design for various devices, the WCAG compliant interface supports the QTI standard and is extendable for custom interactions and adaptable test delivery. The ZUMMIT TESTING(ZT) User Guide will guide you through the processes involved in delivering assessments with ZUMMIT TESTING(ZT) Advance, with sections on the following topics:

- Preparing Test Sessions (how to get ready to prepare your tests for delivery and register the candidates who are going to sit them). See [here](#) for an overview.
- Delivering Tests (includes information on test centers and proctoring, as well as delivering tests using LTIs). See [here](#) for an overview.
- Taking Tests (includes everything the test-taker needs to know, for example what tools are available). See [here](#) for an overview.
- Processing Completed Tests (everything you need to know about the scoring process, and what to do with the results). See [here](#) for an overview.

ZUMMIT TESTING(ZT) Grader

ZUMMIT TESTING(ZT) Grader is a cloud-hosted online scoring solution that enables human marking of open responses for large-scale assessment programs and small-scale classrooms. ZUMMIT TESTING(ZT) Grader integrates with the scoring and data storage capabilities of ZUMMIT TESTING(ZT) Studio, Advance, and Insights, facilitating the end-to-end assessment cycle to close the feedback loop between teaching, learning, and assessment.

The ZUMMIT TESTING(ZT) User Guide will guide you through the processes involved in manual scoring using ZUMMIT TESTING(ZT) Grader, with sections on the following topics:

- Linking ZUMMIT TESTING(ZT) Advance to ZUMMIT TESTING(ZT) Grader (showing how the communication between the ZUMMIT TESTING(ZT) Advance and ZUMMIT TESTING(ZT) Grader works). See [here](#) for an overview.
- Setting up ZUMMIT TESTING(ZT) Grader (how to configure the manual scoring platform, including importing scorers, accessing ZUMMIT TESTING(ZT) deliveries and setting up scoring projects). See [here](#) for an overview.
- How to score an item in ZUMMIT TESTING(ZT) Grader (showing how the manual scoring process is carried out, including how to navigate the platform and how to score responses). See [here](#) for an overview.

The images below show two typical test questions which can be constructed in ZUMMIT TESTING(ZT) – one is a gap-fill exercise and the other a matching exercise.

Actual size

This preview may be scaled to fit your screen. The final rendering may differ.

Do you know the french poet Charles Baudelaire ?

QTI Gap Match is very useful for language proficiency or for memory test.

[paresse](#) [chasseresse](#) [Loire](#) [sonnets](#) [gloire](#)

Au pays parfumé que le soleil caresse,
J'ai connu, sous un dais d'arbres tout empourprés
Et de palmiers d'où pleut sur les yeux la
Une dame créole aux charmes ignorés.
Son teint est pâle et chaud; la brune enchanteresse
A dans le cou des airs noblement maniéres;
Grande et svelte en marchant comme une
Son sourire est tranquille et ses yeux assurés.
Si vous allez, Madame, au vrai pays de
Sur les bords de la Seine ou de la verte
Belle digne d'orner les antiquies manoirs,
Vous feriez, à l'abri des ombreuses retraites
Germer mille dans le cœur des poètes,
Que vos grands yeux rendraient plus soumis que vos noirs.



Submit

Typical test item

Actual size

Make pairs.
Each pair is composed of a planet of the Solar System and one of its moon.

					
Neptune	Jupiter	Moon	Ganymede	Triton	Earth

Submit

Follow the link to try out the demo version of ZUMMIT TESTING(ZT): [http://demo.Zummittesting\(ZT\)testing.com/](http://demo.Zummittesting(ZT)testing.com/)

Take a tour

This section takes you on a short tour of ZUMMIT TESTING(ZT), giving you an overview of how to prepare and organize your assessments using ZUMMIT TESTING(ZT).

Why use ZUMMIT TESTING(ZT)?

ZUMMIT TESTING(ZT) helps you set up and organize all types of assessments quickly and efficiently. ZUMMIT TESTING(ZT)'s simple architecture allows for the easy navigation of resources which enables you to re-use existing tests or parts of tests. You can also add new assessment material to previous assessments, including those used by other teachers or with other groups.

Putting an Assessment together

An assessment in ZUMMIT TESTING(ZT) consists of several building blocks: Interactions, Items and Tests.

An interaction is the most basic unit in an assessment, and takes the form of a question (e.g. multiple choice), or other task type (e.g fill-in-the-blank). An item is a set of interactions to be used together, along with any supporting material, and a test is a group of items, together with information on how they are ordered and presented to the test-taker.

Let's walk through the steps needed to create an assessment and manage your assessment resources.

1. Check what test items are already available.

Test items prepared by other users may be available to you, as well as items you have prepared yourself for previous assessments.

In ZUMMIT TESTING(ZT)'s Assessment Builder Bar, select the Items Itemsicon and examine the test items that are already available in the Library on the left.

If you do not have enough ready-to-go items, then you will need to create new ones utilizing ZUMMIT TESTING(ZT)'s item authoring tool.

The screenshot shows the Tao Learning Management System interface. At the top, there is a navigation bar with icons for Items, Tests, Test-takers, Groups, Deliveries, and Results. Below the navigation bar, a blue header bar contains links for Properties, Preview, Authoring, and Translate. The main content area is titled "Edit Item" and shows a form for an item named "Associate Things" with "QTI" as the Item Model. On the left side, there is a sidebar titled "Item Library" containing a tree view of items under "QTI Example Test", including "Associate Things", "Characters and Plays", "Chocolate Factory", etc. Below the tree view is a grid of icons for managing items: New class, Delete, Import, Export, Duplicate, Copy To, Move To, and New item.

2. Create items.

The Items page consists of three parts. On the left is the Library, where you can view the inventory of already existing items. In the center is the Canvas, where you can provide a label for a new Item and then author it, or edit the label, author or preview an exiting Item. And when you are Authoring an item, the Properties Panel will appear on the right, where you can select component settings for your items, interactions, and tests, such as your chosen scoring method. This three-part layout is a common feature of the ZUMMIT TESTING(ZT) system.

To create a new Item, you would select the New Item icon on the bottom of the left panel. See the chapter Creating a test item for more details.

3. Add interactions to your item.

Your new item will consist of interactions which are added by Authoring an item. Interactions include the following types: Common, Inline, Graphic, and Custom Interactions. For further information on these types, see the Interactions section.

For each type, the procedure to create interactions will vary. See detailed descriptions of these procedures in each Interaction section.

Identifier
i15444522233814228

Title
Item 12

Language
English

Populating your item with Interactions

4. Use your items in a test.

Once you have populated your item with interactions, you will need to build it into a test before you can use it in an assessment. A test can include one or more items.



To do this, select the *Tests* icon on the assessment builder bar. You can add items to a test by selecting them from the Test Library. See the chapter Creating a test for more details.

The screenshot shows the ZUMMIT TESTING (ZT) software interface. At the top, there is a navigation bar with icons for Items, Tests, Test-takers, Groups, Deliveries, and Results. Below the navigation bar, there are two tabs: Properties (selected) and Authoring. On the left, a sidebar titled 'Test' contains a folder icon labeled 'Test' with sub-options 'QTI Example Test' and 'Test 2'. Underneath these are several action buttons: 'New class', 'Delete', 'Import', 'Export', 'Duplicate', 'Copy To', 'Move To', 'New test' (which has a small hand cursor icon over it), and 'Publish'. A status message at the bottom of the sidebar says 'Creating a new Test'. On the right, the main panel is titled 'Test properties'. It contains fields for 'Label *' (set to 'Test 2') and 'Test Model' (set to 'QTI 2.1 Test Driver'). A 'Save' button is located at the bottom right of this panel.

5. Give your test a trial run.

You can try your test by setting up a test-taker account, or using the test preview (in newer versions of ZUMMIT TESTING(ZT)). A trial helps ensure everything will run as expected during the actual student assessment. After checking the Test with a trial run, the next step is to set up a Delivery.

6. Register Your Test-takers.

Students need to be registered as Test-takers in ZUMMIT TESTING(ZT) before the first assessment. In most cases, this is done by the instructor or course administrator using student rosters.

To do this, select the *Test-takers*  icon in the Assessment Builder Bar. See the chapter [Creating test-takers](#) for more details.

The screenshot shows the ZUMMIT TESTING software's 'Edit test-taker' interface. On the left, there is a sidebar with a list of student profiles. The main area is titled 'Edit test-taker' and contains fields for 'Label' (set to 'Test-taker 51'), 'Resource Identifier' (a URL), 'First Name', 'Last Name', 'Mail', 'Interface Language' (dropdown menu), 'Login', 'Password', and 'Repeat password'. At the bottom right of this area is a 'Save' button. To the right of the main form is a 'Add to group' panel with a tree view under 'Group' and checkboxes for selecting specific groups (tt1, tt2, tt0, tt14, tt41, tt26, tt23, tt20, tt45). Below this panel are buttons for 'all' and '10 next', and a 'Save' button.

7. Assign test-takers to Groups

After entering or uploading the [Test-taker profiles](#) of all your students in ZUMMIT TESTING(ZT), you will need to organize them into groups depending on which students are taking which assessments. It may be that an entire class of students is taking the same assessments, or it may be that you need to create smaller groups of test-takers for certain types of assessments.

Note: You only need to organize test-takers into groups at this point if you are not running your tests through [Test Centers](#). If your assessment set-up includes Test Centers, see [Using Test Centers](#) for more details.

To do this, select the *Groups*  icon in the assessment builder bar. See the chapter [Creating a group](#) for more details.

The screenshot shows the 'Edit class Group' page. At the top, there's a navigation bar with tabs: Items, Tests, Test-takers, Groups, Deliveries, and Results. Below the navigation bar, a blue header bar has a 'Properties' button. The main content area is titled 'Edit class Group'. It contains a form with a 'Label' field set to 'Group'. There are two sections with grayed-out fields: 'Lock' and 'Deliveries', both labeled 'Cannot be edited'. At the bottom of the form are three buttons: 'Add property' (with a pencil icon), 'Advanced Mode' (with a gear icon), and a large blue 'Save' button.

Groups

8. Publish and deliver your test

Before students can take the assessment you have prepared, the test needs to be assembled as a [Delivery](#).

Assembled deliveries govern when a test will be taken, which selected individuals or groups will take the test, and how long the test will last. They only take a few moments to put together.



To do this, you will need to select the *Deliveries* icon in the assessment builder bar. See the chapter [Creating a delivery](#) for more details.

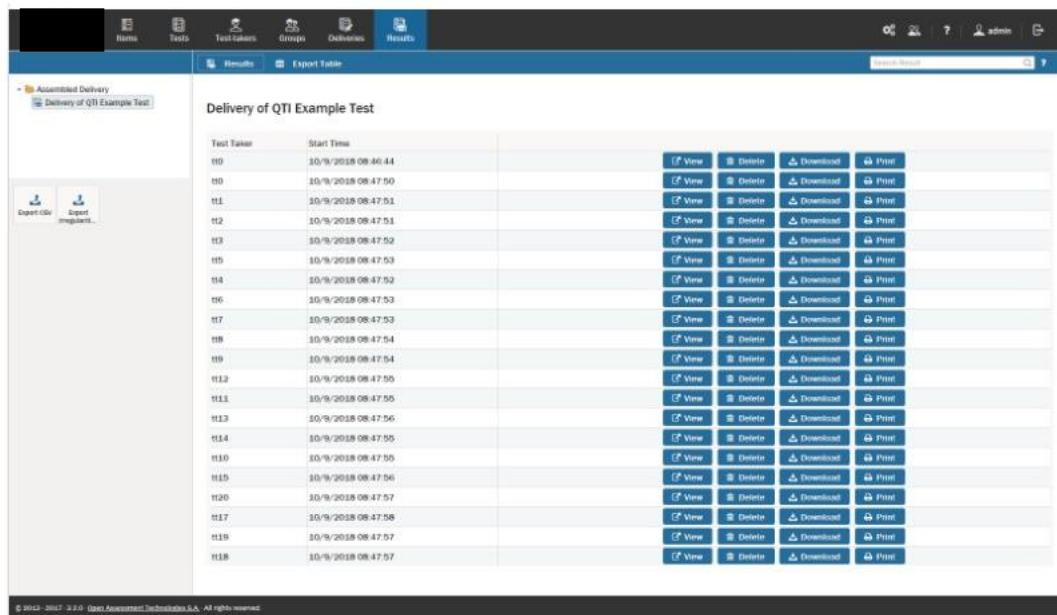
The screenshot shows the 'Edit class Assembled Delivery' page. At the top, there's a navigation bar with tabs: Items, Tests, Test-takers, Groups, Deliveries, and Results. Below the navigation bar, a blue header bar has a 'Properties' button. The main content area is titled 'Edit class Assembled Delivery'. It contains a form with a 'Label' field set to 'Assembled Delivery'. There are many fields listed, all of which are grayed out and labeled 'Cannot be edited': -Custom label for a delivery, -Start Date, -End Date, -Max. number of executions (default: unlimited), -Access, -Display Order, -Test Runner Features, -Excluded Subjects, -Result Server, -Lock, -Compilation Time, -Compilation Directory, -Delivery origin, and -Runtime.

Deliveries

9. View Your Results.

After the assessment is over, you will want to see how your test-takers did.

To do this, select Results in the assessment builder bar.
See the chapter [Viewing results](#) for more details.



The screenshot shows the ZUMMIT TESTING(ZT) interface. At the top, there is a navigation bar with icons for Items, Tests, Test-takers, Groups, Deliveries, and Results. The 'Results' icon is highlighted. Below the navigation bar, there is a sub-menu with 'Assisted Delivery' and 'Delivery of QTI Example Test'. On the left side, there are two buttons: 'Export CSV' and 'Export Ingestion...'. The main content area is titled 'Delivery of QTI Example Test' and contains a table with 18 rows of data. Each row represents a test-taker and includes columns for their name ('tt0' through 'tt18') and start time ('10/9/2018 08:40:44' through '10/9/2018 08:47:57'). To the right of each row is a set of four buttons: 'View', 'Delete', 'Download', and 'Print'. At the bottom of the page, there is a footer with the text '© 2012-2017 Open Assessment Technologies, LLC. All rights reserved.' and a link 'Viewing the Results'.

Customizing “Look and Feel”

By personalising your ZUMMIT TESTING(ZT) instance and adding your own branding to the ZUMMIT TESTING(ZT) product, you can make the environment uniquely yours and make it recognisable to your Test-takers and other users.

Note that ZUMMIT TESTING(ZT)'s Community Edition does not support modification.

To personalise your ZUMMIT TESTING(ZT) environment and add your own branding, follow these steps:

Select the Look and Feel tab by hovering over the Settings icon (seen as three cogs) on the Assessment Builder Bar's right side.

1. Select a look and feel for your environment.

The color scheme options for the background to your ZUMMIT TESTING(ZT) environment will appear on the screen.

In the default theme for the ZUMMIT TESTING(ZT) environment, the assessment builder bar is black, the Action Bar is blue, and the background is white, but there are nine other color scheme options to choose from.

Click on the screen of your choice to set the desired look and feel of ZUMMIT TESTING(ZT).

2. Upload your company's logo.

Having your company or organization's own logo on your ZUMMIT TESTING(ZT) environment makes the environment your own.

Select your logo file using the blue Browse button, or drag and drop the file from your hard drive.

Next, add a title, and the link which you would like to be activated. When a user clicks on your logo, the linked URL will open in a new window.

Now add the information Operated by to the page footer. You can add your organization or company's name, and an email address, in the boxes.

The screenshot shows the 'Look and Feel' configuration page of the TAO Platform. At the top, there is a navigation bar with various icons and links: Items, Tests, Test-Takers, Groups, Deliveries, Results, Media, Event Log, Test Centers, Extensions manager, LTI Consumers, Result Server Manager, Lists, Trees, and Look and Feel. A 'More' button is also present. Below the navigation bar, the main content area has a title 'Manage the Look and Feel of the TAO Platform'. It displays four preview windows showing different themes: 'TAO Default Theme', 'Cereal', 'Blue on White', and 'Dark Jade'. To the right of these previews is a section titled 'Upload your own logo' with a file input field, a 'Browse...' button, and a 'No file selected' message. Below this is a 'Drag file here' area. Further down, there are fields for 'Logo link' (containing 'http://www.taotesting.com') and 'Logo title' (containing 'Get Premium Edition!'). At the bottom, there is a section for adding 'Operated by' to the page footer, with a dropdown for 'Organisation' (set to 'Open Assessment Technologies'), a 'Discard changes' button, an 'Apply changes' button, and a copyright notice at the very bottom: '© 2013 - 2018 - 3.3.0-sprint82 - Open Assessment Technologies S.A. All rights reserved.' and 'Operated by Open Assessment Technologies'.

Click **Apply** changes to save the data if you are satisfied with what you have typed. If not, select **Reject changes**.

Additionally, your organisation or business might want to offer direct access to the ZUMMIT TESTING(ZT) environment through its own website. If your company has a subscription to ZUMMIT TESTING(ZT)'s Premium/Ignite Edition (or higher), you can create a shortcut to the ZUMMIT TESTING(ZT) environment using a URL that you control to send people straight to ZUMMIT TESTING(ZT).

Creating test material

Overview:

Test materials in ZUMMIT TESTING(ZT) fall into three categories:

- Test questions – or tasks – otherwise known as [Interactions](#) – which ask something of the test-taker
- Resources such as media and text, used as supporting material for a test question or task
- Assembled test [Items](#) which can be used in a test (and which contain either or both of the above)

The section *Creating Test Materials* provides an overview of these test materials. It shows you how to create test items, as well as how to configure them, to preview them and to classify them. In other words, this section shows you how to prepare test materials so that they can be used in a test.

Note: Supporting material such as images, audios and videos need to be prepared outside of ZUMMIT TESTING(ZT), though ZUMMIT TESTING(ZT) offers a way of storing and managing them in the [Asset Manager](#). See the section [Managing assets](#) for information on managing assets in the asset manager. This section also includes a chapter on creating (text) passages in the [Passage editor](#) for use as supporting material.

As test materials can only be used in tests when they have been integrated in test items, the remainder of this introductory section will have a closer look at what exactly an item is in ZUMMIT TESTING(ZT), and tells you where to find the information you need to construct items.

[Items](#)

“An item is a set of interactions (possibly empty) collected together with any supporting material and an optional set of rules for converting the candidate’s response(s) into assessment outcomes.”

– [Question and Test Interoperability standard, published by IMS Global](#).

1. Creating items.

Items first need to be created before they are populated with the desired interactions and any further material required so they can be used in assessments. See [Creating a test item](#) for information on how to do this.

The interactions which can be included in your items are listed and described in the sub-sections [QTI Interaction Types](#) and [PCI Interaction Types](#). Items may contain a single interaction (a simple item), or several closely-related interactions, all the same type or of a mixture of types (a composite item). Note that items contain interactions, but are not interactions themselves.

The supporting materials such as pictures and media (the second category described above) which can be included in your items are described in the sub-section [Adding other content](#). You can include resources you have stored in the Asset Manager, or you can insert resources into your test items directly from your hard drive.

2. Making decisions about your item.

There are some decisions you will need to take during the process of creating your item, and which need to be configured whilst authoring the item. These are configured when at the level of the interaction – i.e. when inserting the interaction into the item. You can configure the following aspects of your interaction:

- define how answer options are presented (to the test-taker)
- place constraints on the answer a test-taker can give
- give hints to the test-taker
- give feedback to the test-taker
- change the way the interaction is scored
- limit the time allowed for responses

See the chapters in the sub-section [Configuring Interactions](#).

For information on configuring the language of your item, see [Item language](#). For decisions on the style of your item, see the [Item Style Editor](#). To see the various possibilities for scoring the item, see the chapters on [Scoring items automatically](#) and [Scoring items manually](#).

3. Item workflow and classification.

Before finalizing your item, it is a good idea to preview and test-run it. For more information on how to do this, see step 5 in [Creating a test item](#). The status of an item starts as a draft, and goes through various stages before it is approved and can be used in a test. The chapter [Item Status](#) gives information on these stages. Finally, it can be classified as a certain type of item: the chapter [Classifying items using metadata](#) provides details on this.

Creating a test item:

[Items](#) are formed of questions and other types of [Interaction](#), allowing the Test-taker to interact with them. These items comprise parts of the Tests which are used to assess Test-taker performance. Items are created and populated with interactions, and can be combined with supporting materials such as titles, texts, images and other media, which help the [Test-taker](#) understand the expectations and context of the assessment material presented within.

Now, let's walk through the steps of creating an item.



1. Click on the *Items* icon in the [Assessment Builder Bar](#).

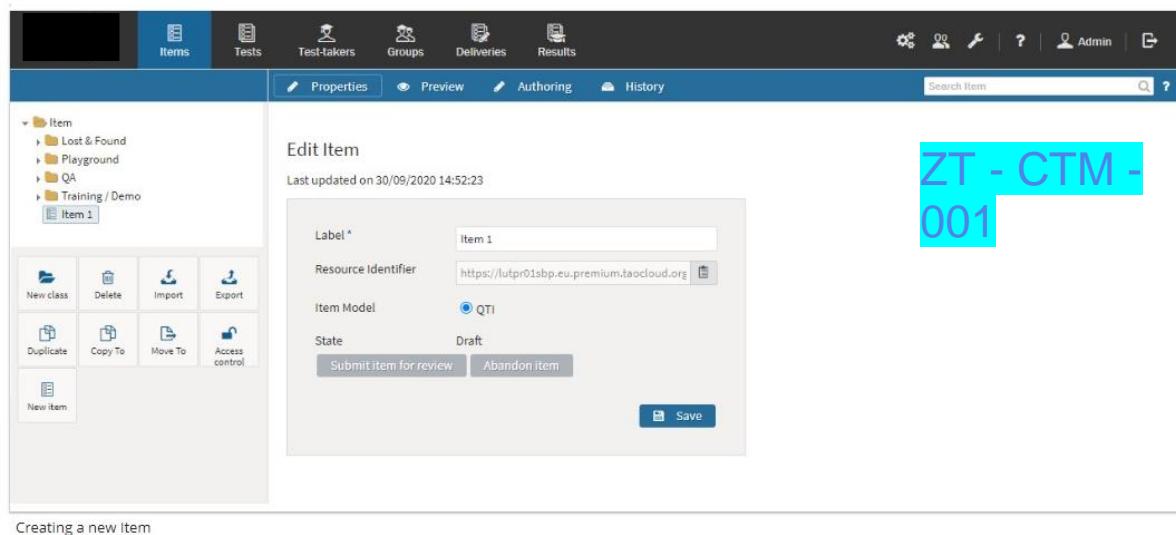
This will take you to the Items page. The [Library](#) on the left-hand side will show existing items. The last item to be edited (either by you or a previous user) will be highlighted in the library. In this tour, however, you will create a new item.



2. Click on the *New item* icon in the button bank under the library.

This will create a new item in the selected folder.

Note: To create a new item in a different folder, click on that folder in the library, and then select the New item icon in the button bank. To create a new folder (in ZUMMIT TESTING(ZT) these represent classes), click on the New class icon in the button bank. Select a location within the library, and the new folder (class) will be created there.



Note: The ‘Access control’  button (in the button bank under the library on the left) is only available if the extension Zummit testing(ZT)DacSimple is installed.

3. Label and save your item.

Creating a new item will bring up a new dialog box with the option to name (or label) your item. After labeling your item, click *Save*. This produces an empty item, which you can now populate with interactions.

4. Click on the *Authoring* icon in the Action Bar.

This will take you to the empty item you have created.

Before you start to author your item you will need to configure the language of the item, in the [Item Properties](#) to the right of the canvas, using the drop-down menu. For more information on how this is used and in particular on how to author items in RTL (right-to-left) mode (i.e. in languages such as Arabic or Hebrew), see the chapter on [Item language](#).

You can now start to fill this with content such as interactions, as well as any other resources that are needed. Interactions provide the question (or task) you wish to set for the candidates. They allow the test-taker to interact with the item. You may also add other content, in the form of images and other media, and texts, to your item, in order to provide further contextual information if needed. See the sections [Adding interactions](#) and [Adding other content](#) for information on what you can put in your item, and how to do it.

5. Preview your Item.

Once you have added the content you wish to the new item, you can preview it to see how it will appear to the test-taker, and what it looks like on various screen sizes. To preview your

interaction or item, click on the *Preview* button in the [Action Bar](#). A pop-up window will appear.

6. Test-run your Item.

At this stage, it is also a good test-run the item if it is to be scored automatically. Before you do so, however, you may need to configure the scoring method you wish to be used. The default scoring method used for items is that they are marked as either correct or incorrect (so if there are multiple parts to the questions (within one interaction) and one part of it is incorrect, all of it will be marked as incorrect).

If you want to keep this method there is no need to change the configuration. If you would like to learn more about the automatic scoring methods available, see the chapter [Scoring items automatically](#) for information on how to do this.

Note: It is also possible to score items manually in ZUMMIT TESTING(ZT) Grader, though only in the context of a full ZUMMIT TESTING(ZT) delivery. Manual scoring is only available to Ignite, Pro and Enterprise customers. See [Scoring items manually](#) for information on how to configure items for manual scoring.

Once the scoring method is configured, click the blue *Save* button in the pop-up window (the window will appear whether the interaction has been saved already or not, just to ensure that the latest version of the Interaction is not lost during testing).

Answer the question correctly or incorrectly to see if the interaction(s) in your item performs as expected. Clicking *Submit* will bring up a black screen below the demonstrated interaction which shows the score for the answer you have given. If the scoring method configured awards partial credit, it is a good idea to try out not only answers which are either completely correct or completely incorrect, but also to test the various ways in which partial credit may be awarded.

Once testing is completed, click the *Close* button at the top of the page.

This will take you back to the point where further changes to the interaction may be made (click on the item to return to *Authoring*), or where the Interaction can be dismissed until the test is assembled.

7. Select the settings for your item.

The remaining setting to be chosen for your new item is the ‘time dependent’ setting. This is done in the [Item Properties](#) to the right of the canvas.

Time dependent: Check the [Time dependent](#) box if you wish the length of time a test-taker takes to complete the item to be recorded. This information will be used when the response is processed.

Note: Existing items can be moved, copied, or duplicated. See the chapter [Moving, copying and duplicating items](#) for more information on this.

Overview-

Adding interactions:

“Interactions allow the candidate to interact with the item. Through an interaction, the candidate selects or constructs a response.”

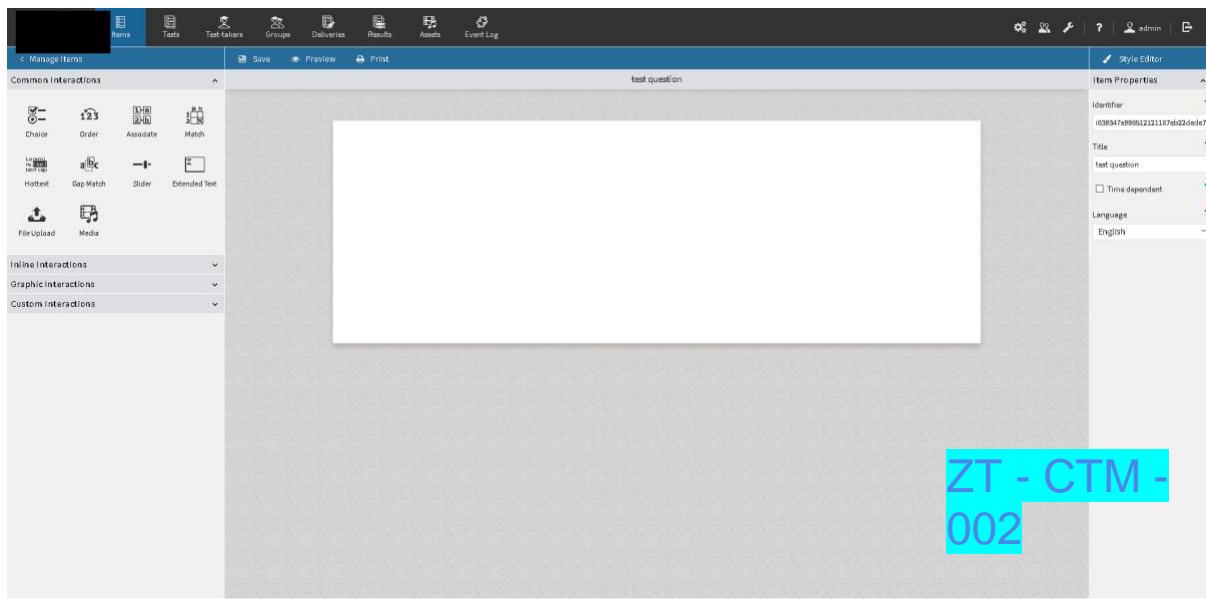
-Question and Test Interoperability standard, published by IMS Global.

[Interactions](#) are inserted into an item during the item authoring process. They are the building blocks for [Items](#) (which in turn are the building blocks for Tests), and serve as the basic unit for Test-taker responses. The term *Interaction* should not be considered interchangeable with the term *Item*: other than conceptually, interactions cannot exist outside of an item, thus there are no concrete instances of interactions outside of items. One way to conceptualize the difference is to compare a ZUMMIT TESTING(ZT) assessment to an examination delivered on paper, and think of the interaction as the pen the test-taker is holding, and the item(s) as the exam paper itself.

There are four categories of interaction: [Common Interactions](#), [Inline Interactions](#), [Graphic Interactions](#) and [Custom Interactions](#) (also known as PCI interactions). Currently, 19 of these interactions are recognized by the QTI standard. 17 of these are available in ZUMMIT TESTING(ZT). In the library on the left of your newly created item, you will see the *Common Interactions* catalog, and the other types of interaction are below this. You can navigate these catalogs to choose the types of interaction you want to use for your item. The following gives you a brief description of each category:

- Common Interactions (QTI) cover many of the simple interactions that are often used in assessment
- Inline Interactions (QTI) are interactions which contain text-based elements
- Graphic Interactions (QTI) are interactions which contain graphic elements
- Portable Custom Interactions (PCI) are developed for a specific scenario, mostly to fulfil a specific need of a customer

The image below shows the Interactions library: the Common Interactions catalog is open, and the other catalogues are below it.



Interactions Library

The two sub-sections of the Guide *QTI Interaction Types* and *PCI Interaction Types* contain chapters on each type of interaction available in ZUMMIT TESTING(ZT). Each of these chapters gives you information on how to use that interaction in your item.

Note that an item generally contains only one interaction type, but you can create an item which contains more than one interaction: Item complexity ranges from simple items with a single interaction to composite items with multiple interactions. Once you have added and prepared one interaction in your item, drag another interaction template from the [Interactions Library](#) onto the [Canvas](#) below or beside the interaction you have just authored, and repeat the authoring process for the new interaction.

In ZUMMIT TESTING(ZT), interactions include the mechanisms used to score the interaction itself. For simple Items, correct answers add to the Test score, unlike incorrect answers. Scoring a composite item using standard response templates (*match correct*, *map response*, or *map response point*) are often a more complicated sum. See the section on [Scoring](#) for more information on scoring.

With the exception of project-specific PCIs, each of the interactions is described in detail in its own chapter, either under *QTI Interaction Types* or *PCI Interaction Types*.

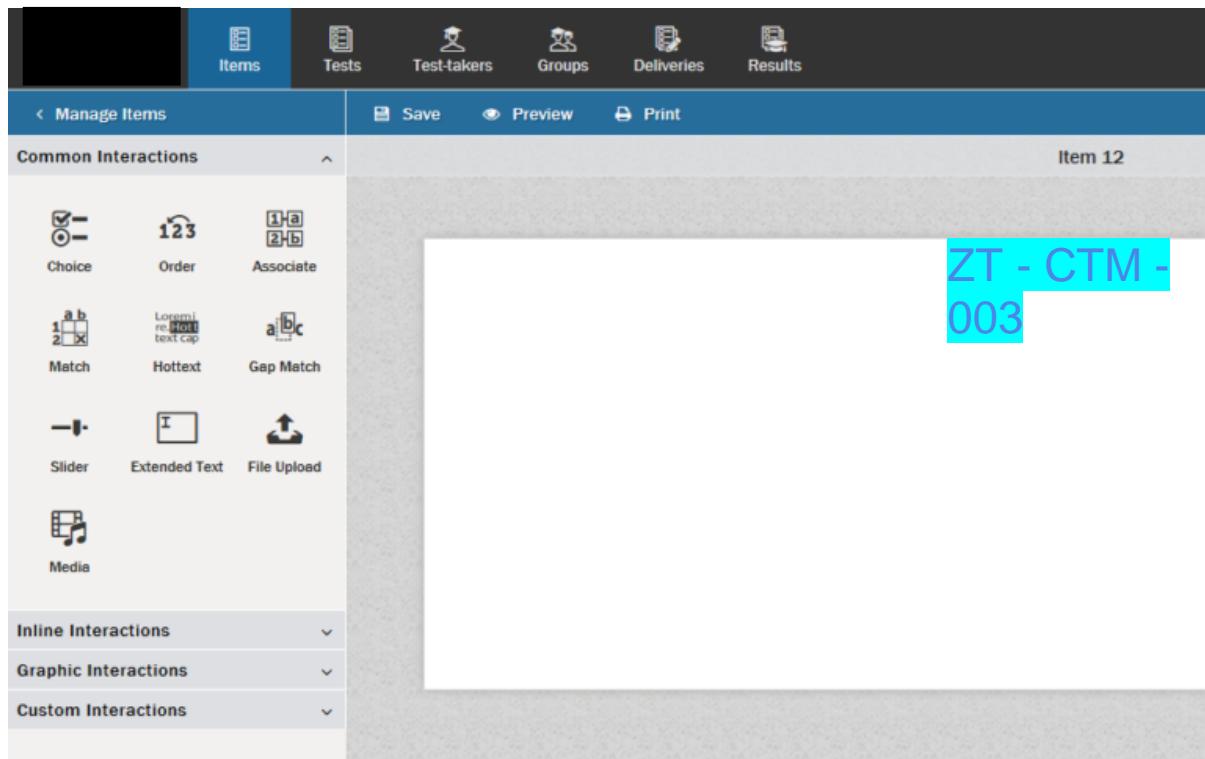
Note: Identifiers which can be configured in Interactions need to contain only ASCII characters due to QTI restrictions. ASCII character replacements are described on sites such as [Oracle](#) and [ASCII Code](#).

Qti interactions:

Question and Test Interoperability Interactions (QTIs) are the classical [Interactions](#) recognized by the QTI standard. There are three categories of QTI interaction: [Common Interactions](#), [Inline Interactions](#), and [Graphic Interactions](#).

In ZUMMIT TESTING(ZT), the following Common Interactions can be used in the creation of assessment items:

- [Choice Interaction](#)
- [Order Interaction](#)
- [Associate Interaction](#)
- [Match Interaction](#)
- [Hottext Interaction](#)
- [Gap Match Interaction](#)
- [Slider Interaction](#)
- [Extended Text Interaction](#)
- [File Upload Interaction](#)



Common Interactions

The Inline Interactions contain text-based elements. In ZUMMIT TESTING(ZT), the following Inline Interactions can be used in the creation of test items:

- [Inline Choice Interaction](#)
- [Text Entry Interaction](#)
- [End Attempt](#)

The screenshot shows the ZUMMIT TESTING (ZT) application's interface. At the top, there is a navigation bar with icons for Items, Tests, Test-takers, Groups, Deliveries, and Results. Below the navigation bar, a blue header bar contains the text '< Manage Items' and three action buttons: Save, Preview, and Print. The main content area is divided into sections: 'Common Interactions' (with a dropdown arrow), 'Inline Interactions' (selected, indicated by an upward arrow), 'Graphic Interactions' (with a dropdown arrow), and 'Custom Interactions' (with a dropdown arrow). In the 'Inline Interactions' section, there is a large letter 'A' labeled 'Block'. Below it, there are three interaction types: 'Inline Choice' (represented by a dropdown icon), 'Text Entry' (represented by a text input icon), and 'End Attempt' (represented by a hand icon with a checkmark). A cyan box highlights the text 'ZT - CTM - 004' in the top right corner of the main workspace.

Inline Interactions

Graphic Interactions contain graphic elements. In ZUMMIT TESTING(ZT), the following Graphic Interactions can be used in the creation of test items:

- [Hotspot Interaction](#)
- [Graphic Order Interaction](#)
- [Graphic Associate Interaction](#)
- [Graphic Gap Interaction](#)
- [Select Point Interaction](#)

The screenshot shows the 'Items' tab selected in the top navigation bar. Below it, a sidebar lists categories: 'Common Interactions', 'Inline Interactions', and 'Graphic Interactions'. Under 'Graphic Interactions', icons for 'Hotspot', 'Order', 'Associate', 'Gap Match', and 'Select Point' are displayed. To the right, a preview area shows a blue box with the text 'ZT - CTM - 005'.

Graphic Interactions

See the separate chapters in this section on each of the QTI interactions for information on how to use each one.

To create any of these types of interaction, once you have created a new Item, click on the *Common Interactions*, *Inline Interactions* or *Graphic Interactions* library on the left, depending on the type you want to use, and drag the appropriate interaction type onto the blank Item. Drop it onto the [canvas](#), and then populate the Item.

Choice Interaction

Choice [Interactions](#), or multiple choice questions, present a test type that has been made popular by such time-honored exams as the SAT, ACT, PSAT/NMSQT, etc. Choice interactions are preferable to free-response test interactions in cases where a large quantity of test questions need to be covered in a short exam period.

Luxembourg's neighbors

OAT, the company behind the TAO assessment platform, is located in *Luxembourg* or *Lëtzebuerg* as it is called in Luxembourgish language, a small country in Western Europe.

Which of the following countries share no border with Luxembourg?

- Belgium
- Germany
- Austria
- Denmark



The river Alzette in Luxembourg Pfaffenthal by Dieter Raber, released under CC BY-SA 4.0.

Choice Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Choice Interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Choice*  icon onto the blank item and drop it onto the [Canvas](#).

This provides the answer choices for your choice interaction.

2. Enter the question in the question field at the top of the interaction where it says *define prompt*.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

3. Enter the answer choices.

A choice interaction has three default answer choices. Click on *choice #1* to type the first answer choice in this field. Repeat this step with the other choices to populate the other fields with your answer choices.

You can add more choices by clicking the blue *Add Choice* field below the first three choices (keep clicking until the desired number of choices appear in the item), and you can delete choices by clicking the trash can  icon to the right of the choice you wish to delete.

4. After defining all answer choices, set the minimum and maximum number of answer choices that the Test-Taker will be asked to provide (before he can continue to the next question).

This can be done in the *Allowed Choices* boxes in the [Interaction Properties Panel](#) on the right. Setting the minimum to “0” allows the Test-taker to skip the question.

By default, your choice interaction is made of checkboxes. Leaving the maximum on “0” allows test-takers to select an unlimited number of choices.

To set up a [radio button](#) test interaction, select a maximum of 1. This means that your test-taker will not be allowed to select more than one choice. You can see on your interaction that radio buttons will be displayed.

5. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- present the answer choices in list format
- shuffle the choices
- present the answer options horizontally

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click *Response* on the right of the blue interaction header to define the correct answer(s).

This activates options for setting the correct answer.

7. Select the correct answer by clicking the box in front of it.

You can select more than one answer.

8. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

9. Click the blue *Done* button. Your choice interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Order Interaction

The Order [Interaction](#) gives Test-takers the opportunity to demonstrate their knowledge of a particular order of elements: chronological orders, priority orders, alphabetical or numerical orders, orders of size, etc.

Japanese History

Over various periods of history, numerous cities in Japan have served as the country's capital, amongst them the four cities below.

Can you put these cities in the correct historical order, starting with the earliest one?

Kyoto - 京都
Edo - 江戸
Nagaoka-Kyo - 長岡京
Tokyo - 東京



Golden Pavillon, Kyoto by Hans ter Horst, released under CC BY-SA 4.0

Order Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Order interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Order* icon  onto the blank item and drop it onto the [Canvas](#).

This creates a new Order Interaction window. There is a question field at the top, with two boxes underneath.

2. Enter the question in the question field, where it says *define prompt*.

This will describe the task given to the test-taker (“Place the following in chronological order”, etc.).

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

3. Fill in the options for each question in the box to the left.

There are three default options, but you can add more by clicking the blue *Add choice* field at the bottom. You can delete options by clicking the trash can  icon to the right of the option you wish to delete.

Note: Drag-and-drop is enabled for this type of interaction.

4. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- present the answer choices in list format
- shuffle the choices
- present the answer options horizontally
- specify the correct number of responses

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

5. Click *Response* on the right of blue interaction header to define the correct answer(s).

Then click on each option in the left-hand box in the desired order. The options will be transferred in this order to the right-hand box. If you are not satisfied with the order you have chosen, click in the right-hand box and then on the option which is in the wrong place. You can then click on the *up* or *down* arrow on the right to move it up or down respectively.

6. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

7. Click the blue *Done* button. Your order interaction is now complete.

After this step, you can preview and test-run your Interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Associate Interaction

The Associate [Interaction](#) assesses the Test-taker's ability to match associated words or phrases.

Languages of Europe

Most European languages belong to branches of the Indo-European language family.

Associate the languages and branches from the collection below - you can do this in any direction, each correct pairing equals a score of 1.

Slavic	Czech	Spanish	French	Russian	Danish
Romantic	Dutch	Germanic			



Picture: Green Chameleon, Unsplash License.

Associate Interaction

Once you have generated a new [Item](#), and clicked on [Authoring](#) in the [Action Bar](#), follow the steps below to create a new Associate Interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Associate* icon  onto the blank Item and drop it onto the [Canvas](#).

This opens a new Associate Interaction window. There is a question field at the top, two *answer tile* options below this, and then an example of linked boxes at the bottom.

2. Fill in the question field where it says *define prompt*, describing the associations (matches) being sought.

This could be in the form of a question ("Which country goes with which capital city?") or instructional ("Match the country with the capital city.").

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

Drag-and-drop is enabled for this type of interaction. Test-takers can also use click-and-click to move objects; this is an accessibility feature for test-takers with trouble using drag-and-drop.

3. Fill in the *answer tiles* for the question.

You will need more than two, so select *Add choice* as many times as needed to provide all the options to be made available to the test-taker.

Note: We recommend adding the appropriate matches first (e.g. the correct countries and capitals) in separate tiles first, and then adding the incorrect (unmatched) options.

4. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- limit the use of a choice
- shuffle the choices
- specify the correct number of associations

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

5. Click *Response* on the right of blue interaction header to define the correct answer(s).

This will provide all the answer tiles created in the previous step, and a series of associate pair boxes, which are to be filled in the next step.

6. Click on the first element to be associated, and then click on the first box. Click its match (association), and then click on the second box.

This will provide the first set of correct responses. Continue with this procedure until all association pairs have been linked in the association boxes, leaving the incorrect associations unmatched.

7. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

8. Click the blue *Done* button. Your associate interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Match Interaction

The Match [Interaction](#) provides Test-takers with a matrix upon which they can demonstrate their knowledge by accurately matching, or associating, selections from two different sets of

elements. Matching is carried out by placing check marks in squares where matching rows and columns intersect.

Match countries and languages

The people working on the TAO platform come from a multitude of countries and you get to hear a number of languages in the office every day.

Can you match the cities below with the language most likely to be spoken there?

	French	Hungarian	Polish	Dutch	Lithuanian
Budapest	<input type="checkbox"/>				
Vilnius	<input type="checkbox"/>				
Paris	<input type="checkbox"/>				
Amsterdam	<input type="checkbox"/>				
Warsaw	<input type="checkbox"/>				



Lithuania, Trakai Island Castle, picture by Julo, released under CC BY-SA 3.0.

Match Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Match interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Match* icon  onto the blank item and drop it onto the [Canvas](#).

This creates a new Match Interaction window. There is a question field at the top, and a default 2-row-by-2-column matrix beneath this.

2. Fill in the question field, where it says *define prompt*.

This should describe the match task expected of the test-taker.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

3. Insert in the rows the first set of elements, and in the columns the second set of elements that are to be matched with the first.

Using the *Add new row* and *Add new column* buttons, add as many rows and columns as will be needed to cover all the matches. If desired, add some unmatched elements in either the rows or the columns to provide an additional challenge for the Test-taker.

4. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- limit the use of a choice
- shuffle the choices
- specify the correct number of matches

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

5. Click *Response* on the right of blue interaction header to define the correct answer(s).

6. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

7. Click the blue *Done* button. Your match interaction is now complete.

After this step, you can preview and test-run your interaction using the instructions given in steps 5 and 6 in [Creating a Test Item](#).

Hottext Interaction

The Hottext [Interaction](#) gives Test-takers the opportunity to demonstrate their knowledge by showing, among several selections within a body of text, a specific type of word or phrase (e.g. a grammatically incorrect element, misspelling, main character in a story, capital city).

Find the spelling mistakes

Herbert George Wells (21 September 1866 – 13 August 1946) was an English writer and one of the fathers of science fiction.

The following text is an extract from [The time machine](#). It contains several spelling mistakes. We have already identified potential candidates, but we aren't sure at all.

Can you help us by checking those words you believe to be misspelled?

The time machine

The thing the Time Traveller held in his hand was a glittering metallic framework, scarcely larger than a small clock, and very delicately made. □ Their was ivory in it, and some transparent crystalline substance. And now I must be explicit, for this that follows—unless his explanation is to be accepted—is an absolutely unaccountable thing. He took one of the small octagonal tables that □ where scattered about the room, and set it in front of the fire, with two legs on the hearthrug. On this table he placed the mechanism. Then he drew up a chair, and sat down. The only other object on the table was a small shaded lamp, the bright light of which fell upon the model. There were also perhaps a □ dozen candles about, two in brass candlesticks upon the mantel and several in sconces, so that the room was brilliantly illuminated. I sat in a low arm-chair nearest the fire, and I drew this forward so as to be almost between the Time Traveller and the fireplace. Filby sat behind him, looking over his shoulder. The Medical Man and the Provincial Mayor watched him in profile from the right, the Psychologist from the left. The Very Young Man stood behind the Psychologist. We were all on the alert. It □ appears incredible to me that any kind of trick, however subtly conceived and however adroitly done, could have been played upon us under these conditions.

Source: [Project Gutenberg](#)



H.G. Wells by G.C. Beresford

Hot Text Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Hottext interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Hottext* icon onto the blank Item and drop it onto the [Canvas](#).

This creates a new Hottext Interaction window. There is a question field at the top, followed by a space (containing a sample text) in which to place the text containing the phrases to be highlighted as Hottext elements.

2. Fill in the question field, where it says *define prompt*.

This will describe the task given to the test-taker (“Find the mistakes”, “Pick the capital city”, etc.).

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

3. Copy and paste, or type in, the text which will contain the Hottexts.

The test-taker will choose the best option or options from the Hottext elements which answer the question.

4. Select a word or phrase and highlight it. When the *magic wand* button comes up, click it to confirm selection of the word or phrase as your Hottext Interaction.

This will create a Hottext element within the text. Typically, there will be one word or phrase that matches the response being sought, and several additional words or phrases that might be similar to the response being sought. There might be cases where more than one option is correct, or where none of the options are correct. At the end of the text, you can add a final Hottext element which allows the test-taker to state that there is no correct selection (e.g. “No error.”)

5. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- specify the correct number of answers

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click *Response* on the right of blue interaction header to define the correct answer(s).

This will produce the same window as before, but you now have the possibility of placing checkmarks by the right answer(s). Check all that apply.

7. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

8. Click the blue *Done* button. Your Hottext interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Gap Match Interaction

The Gap Match [Interaction](#) gives Test-takers the opportunity to demonstrate their knowledge in a manner similar to Match Interactions. A Gap Match, however, provides a set of match

words, some of which will fit into gaps within a selected text passage. In essence, this is a combination of a match interaction and a “fill the gap” question.

Find the missing words!

Charles Pierre Baudelaire (9 April 1821 – 31 August 1867) was a French poet whose most famous work is titled *Les Fleurs du mal* (The Flowers of Evil). The poem *À une dame créole* is part of this work.

Please complete the poem with words from the list below.

À une dame créole

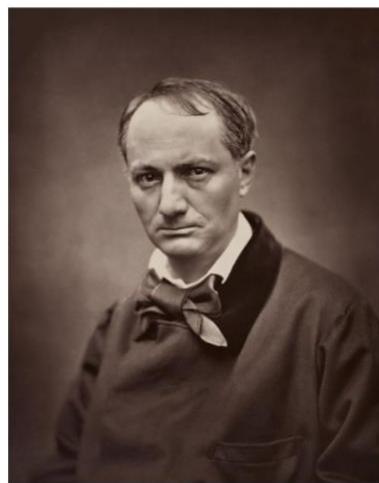
Au pays parfumé que le soleil caresse
J'ai connu, sous un dais d'arbres tout empourprés
Et de palmiers d'où pleut sur les yeux la
Une dame créole aux charmes ignorés.

Son teint est pâle et chaud; la brune enchanteresse
A dans le cou des airs noblement maniérés;
Grande et svelte en marchant comme une
Son sourire est tranquille et ses yeux assurés.

Si vous allez, Madame, au vrai pays de
Sur les bords de la Seine ou de la verte
Belle digne d'orner les antiques manoirs

Vous feriez, à l'abri des ombreuses retraites
Germer mille dans le cœur des poètes
Que vos grands yeux rendraient plus soumis que vos noirs.

Source: [Project Gutenberg](#)



Charles Baudelaire, picture by Étienne Carjat

Gap Match Interaction

Once you have generated a new [Item](#), and clicked on [Authoring](#) in the [Action Bar](#), follow the steps below to create a new gap match interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Gap Match* icon onto the blank Item and drop it onto the [Canvas](#).

This opens a new Gap Match Interaction window. There is a question field at the top, a middle field for the words which are to be matched, and a lower field for the gapped text, which contains a sample text.

2. Fill in the question field, where it says *define prompt*.

Typically this will be some variation of “Fill in the gaps from the following word set.”

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

3. Insert the text which will contain the gaps into the text field at the bottom.

The Gap Match elements will be extracted from this text.

4. Select the words or phrases you want to make into Gap Match elements within the text.

Click on the word or phrase in the text to highlight it. This will create a *magic wand* button.

Click on the *magic wand* to confirm your selected location for a Gap Match element. This creates a gap in the text, and places the word/phrase into the match words field.

Repeat as many times as is needed to adequately assess the test-taker’s knowledge of the passage.

Note: Drag-and-drop is enabled for this type of interaction.

5. If desired, add extra options into the match words field by clicking the *add choice* button.

Placing additional words into the match word field may prevent test-takers from successfully using “process of elimination” as a strategy.

Note: The choice #1 option will not automatically be filled and can be used as an extra option or should be deleted by clicking the trash can icon.

6. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- limit the use of a choice
- shuffle the choices
- oblige the test-taker to give an answer

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

7. Click *Response* on the right of blue interaction header to define the correct answer(s).

To define the correct answers, drag and drop the correct match words from the match word field onto the corresponding gaps in your text.

8. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

9. Click the blue *Done* button. Your gap match interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Slider Interaction

The Slider [Interaction](#) lets Test-takers demonstrate their knowledge of a numerical type, such as a percentage, a total, etc. The answer is conveyed by sliding an indicator on a horizontal scale.

Calculate a percentage

The TAO team members reside all over the world with offices in Boston, Luxembourg and Minsk.

Dan, who works in Boston wants to visit the Luxembourg office and then a few days later go to Minsk.

The distances between these cities are:

- Boston to Luxembourg: 3,572 miles
 - Luxembourg to Minsk: 973 miles

Once he arrives in Luxembourg, how much of the way has he done (in %, rounded up to a full integer)?



Boston Skyline, photo by Stephan Zech

Slider Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Slider interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Slider* icon  onto the blank Item and drop it onto the canvas.

This creates a new Slider interaction window. There is a question field at the top, followed by a graphical control element (a ‘slider’) indicating the scale covered by the answers to the question. Below the slider is the current value depicted by the slider (“0”).

2. Fill in the question field, where it says *define prompt*.

This will describe the task given to the test-taker, typically a question involving numbers or a fraction, etc.

Note: See the chapter on [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

3. Adjust the settings on the slider.

This can be done in the [Interaction Properties Panel](#) on the right.

First, set the upper and lower limits of the slider using the *Upper Bound* and *Lower Bound* boxes.

By default, the lower boundary is set to 0 and the upper to 100. These default values anticipate a percentage answer, but can be adjusted as desired, so long as the lower boundary is less than the upper.”

Next, adjust the intervals on the slider in the *Step* box. By default, the *Step* value is set to 1. These values should be customized to fit the question. (For example, in the question “What was the population of the Icelandic city of Reykjavik in 2014?”, the interaction properties for the answer, 120,000, might be set so that the lower value is 100,000, the upper value is 200,000, and the step value is 10,000.)

4. Click **Response** on the right of blue interaction header to define the correct answer(s).

This provides access to the actual slider, so that the answer can be set. You can do this by moving the indicator to the correct value.

5. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click the blue *Done* button. Your slider interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Extended Text Interaction

The Extended Text [Interaction](#) provides the means of examining the Test-taker's ability to reproduce a phrase, sentence, or text passage exactly. The answer must not deviate from the original in any way.

Usually, these [Items](#) are scored manually by a human scorer. In ZUMMIT TESTING(ZT) 3.3, authors can define outcome variables on the item level for scoring rubrics, for example for grammar, spelling, and contents.

Describe the view!

The picture below shows the St. Johanner Markt in Saarbrücken, Germany.

Describe what you see on this picture. The description is limited to 500 words!



Photo by LoKILeCh, released under CC BY-SA 3.0.

B **I** **U** x_2 x^2 Ω \rightarrow \leftarrow \equiv \neq \geq \leq Δ **Font** **Size**

0 of 500 words maximum.

Extended Text Interaction

Once you have generated a new item, and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Extended Text Interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Extended Text* icon  onto the blank Item and drop it onto the [Canvas](#).

This opens a new Extended Text Interaction window. There is a question field at the top, with an *extended text field* below it.

2. Fill in the question field, where it says *define prompt*.

The test-taker will be expected to remember the answer exactly, without any variation. Even an extra space will result in the answer being marked as incorrect.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using *italics* or *bold text* in your item, and inserting features such as *shared stimuli* or *media, tables* or *formulae*.

3. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- limit the length (or recommend the length) of an answer
- define a certain format

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

4. Click *Response* on the right of blue interaction header to define the correct answer(s).

Enter the expected answer in the answer field. Again, the test-taker is expected to answer exactly. Any variation(s) will result in the answer being marked as incorrect.

5. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click the blue *Done* button. Your extended text interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

File Upload Interaction

The File Upload [Interaction](#) provides an interface in which Test-takers can upload a pre-written essay, completed artwork, or other form of submission. Usually, these items are scored manually by a human scorer.

Spreadsheet formulas

Recreate the spreadsheet on the right in an editor of your choice and populate the gray cells. Upload the resulting file below.

You have to use functions for all calculations!

(i) Browse your computer and select the appropriate file.

	A	B	C	D
1	Sales	Product A	Product B	Total all products
2	January	25	89	
3	February	36	86	
4	March	89	12	
5	April	42	3	
6	May	63	5	
7	June	54	69	
8	July	12	8	
9	August	16	6	
10	September	78	7	
11	October	86	2	
12	November	84	1	
13	December	112	85	
14	Total this year			
15	Average per month			

File Upload Interaction

Once you have generated a new [Item](#), and clicked on [Authoring](#) in the [Action Bar](#), follow the steps below to create a new File Upload Interaction.

1. From the [Common Interactions Library](#) on the left, drag the *File Upload* icon  onto the blank item and drop it onto the [Canvas](#).

This opens a new File Upload Interaction window. There is a question/prompt field at the top, and a *Browse* box with which to upload the desired submission.

2. Fill in the question field, where it says *define prompt*.

Add an instruction for the test-taker to submit work, such as *Upload document*.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using *italics* or *bold text* in your item, and inserting features such as *shared stimuli* or *media, tables* or *formulae*.

3. Select the file type expected.

This can be done in the [Interaction Properties Panel](#) on the right by setting the Multipurpose Internet Mail Extension (MIME) type desired for the submission, if applicable.

If a MIME type is selected, this will allow the candidate to submit files of that particular type (*.pdf*, *.doc*, *.jpg*, etc.)

4. Click the blue *Done* button. Your file upload interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Media Interaction

The Media [Interaction](#) allows Test-takers to view a multimedia presentation (image slide show, YouTube video, etc.), usually in connection with another interaction.

Guess the language

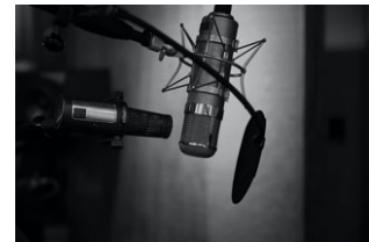
Valentina works at a radio station. Her interview guest today is Luca who opens the interview by playing a short excerpt of the song *Lenny* by Stevie Ray Vaughan on his guitar. They then talk about this song - we learn which album it was released on and what the main musical influences were.

First, listen to their conversation!



Do you know what language Valentina and Luca are speaking?

- Romanian
- Portuguese
- Italian



Picture: Neil Godding, Unsplash License.
Sound file: O.A.T., CC BY-SA 4.0

Media Interaction

Once you have generated a new [Item](#), and clicked on [Authoring](#) in the [Action Bar](#), follow the steps below to create a new Media Interaction:

1. From the [Common Interactions Library](#) on the left, drag the *Media* icon onto the blank item and drop it onto the [Canvas](#).
2. From the Common Interactions library, drag the *Media* icon  onto the blank item and drop the resulting box in the blue field that appears.

A [Resource Manager](#) window will appear with which you can select a media file. You can reuse a media file already in the resource manager, or you can upload a new one (note that size and file type restrictions apply). To select one from the list of previously uploaded media, highlight the appropriate one in the resource manager list and click the green *Select* button. To upload a new one, click on the blue *Add file(s)* button to browse the files on your computer, and then upload one to the resource manager by clicking the green *Upload* button.

Highlight the file you have chosen as your background by clicking on it, and it will appear on the right in the preview panel. Click *Select* in the bottom right of the window to continue.

Note: Alternatively, exit this resource window and enter the web address of an online video or audio resource in the box entitled Media file path or YouTube video address in the [Interaction Properties Panel](#). See [here](#) for supported media formats.

A new authoring window will appear with the media shown in the center of the canvas. Above the media file there is a question field.

3. Fill in the question field, where it says *define prompt*.

This will describe the task given to the test-taker (“View the following film”, “Listen to the inflections in the following sound recording”, etc.).

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

4. Set the playback method of the media device.

These property options will affect how the test-taker views/hears the media object while it is playing.

You can do this in the Interaction Properties panel on the right.

First, determine the size of the screen on which the video or audio will play in the *Width* and *Height* boxes.

Then check *autoplay* if the media device should begin playing when the interaction is opened.

Check *loop* if the media device should play over and over again. If this is checked, enter the number of times you wish the loop to be repeated in the *Max plays count* box.

Check *Pause* if the test-taker is permitted to pause and restart the media device during the interaction.

5. If desired, add a further interaction to the media interaction.

Usually, a Media interaction is used to present a film or sound clip, to which a series of questions may be added. Drag the appropriate interaction type from the Common Interactions menu on the left, and consult the relevant chapter of the User Guide for help on how to execute this interaction.

6. Click the blue *Done* button. Your media interaction is now complete.

You can now preview your Interaction using the steps given in step 6 of [Creating a test item](#).

Inline Choice Interaction

Inline Choice [Interactions](#) allow Test-takers to complete a “Fill in the Blank” question with one choice taken from a selected list of answers. Like with all inline interactions this interaction needs to be in a *Text Block*.

Do you know the names of these musicians?

The Beatles were an English rock band formed in Liverpool. Their career lasted from 1960 to 1970 and until today they are regularly cited as a major influence by many musicians.

For almost all the ten years the line-up consisted of four musicians:

One of the guitar players, was a founding member and also one of the two main composers. He wrote most of the Beatles' hits together with , the bass player. The other guitar player's name is , and the drums were played by .



Picture by Parlophone Music Sweden, released under CC BY-SA 3.0.

Inline Choice Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Inline Choice interaction:

1. From the [Inline Interactions Library](#) below *Common Interactions* on the left, drag the *Text Block A* onto the blank Item and drop it onto the [canvas](#).

This creates a field (containing a sample text) in which a text may be entered from a favorite source (a Word document or website, for instance), or typed in.

To enter your text, click inside the text field.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

2. Once you have entered the text, drag the *Inline Choice* icon  from the Inline Interactions library to a space next to where the test-taker will be expected to *fill in the blank*.

This brings up a pop-up window with three default choices. Enter the test-taker's answer options by highlighting the default entries (choice #1, etc.) and typing in each answer option. For fewer choices, click the trash can next to each choice to delete it. To add another choice, click the blue *Add Choice* field below the other choices to generate another field.

Repeat the above for each place in the text where you would like to the test-taker to fill in the blank.

Note: Remember to remove the actual words from the text that the Inline Choice blanks are designed to replace.

3. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- shuffle the choices
- oblige the test-taker to give an answer

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

4. To select the right answer, click on each Inline Choice element, and in the header bar of the resulting pop-up window, click *Response*.

This produces the same selection of options that the Test-taker will see. Simply select the correct response to set the right answer.

5. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback
- limit the duration of the test

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click the blue *Done* button. Your inline choice interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Text Entry Interaction

Text Entry [Interactions](#) allow Test-takers to complete a “Fill in the Blank” question with an exact text answer. This interaction needs to be in a *Text Block A*.

The Netherlands

The Netherlands is a country with most of its territory in Western Europe and several territories in the Caribbean. In Europe, it borders [] in the east, [] in the south, and the North Sea in the northwest.

The largest cities are Amsterdam, Rotterdam, The Hague, Utrecht, and Eindhoven. [] is the capital, but the government is located in [].

Its official language is [] but the province of Friesland has a secondary language, West Frisian.



Picture by Rudy van der Veen, released under CC0 1.0.

Text Entry Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Text Entry Interaction:

1. From the [Inline Interactions Library](#) below *Common Interactions* on the left, drag the *Text Block A* onto the blank Item and drop it onto the [Canvas](#).

This creates a field (containing a sample text) in which a text may be entered from a favorite source (a Word document or website, for instance), or typed in.

To enter your text, click inside the text field.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

The screenshot shows the tao authoring interface. On the left, there's a sidebar with categories like 'Common Interactions' (Choice, Order, Associate, Match, Hottext, Gap Match, Slider, Extended Text, File Upload, Media) and 'Inline Interactions' (A Block, Inline Choice, Text Entry, End Attempt). The main area shows a preview of 'Item 12' with a 'Question | Response' dialog containing placeholder text 'Lorem ipsum dolor sit amet...'. To the right, the 'Interaction Properties' panel is open, showing settings for 'Base' (set to 10), 'Placeholder Text' (empty), 'Constraints' (None), and 'Recommendations' (Length dropdown). The top navigation bar includes 'Items', 'Tests', 'Test-takers', 'Groups', 'Deliveries', 'Results', and 'Style Editor'.

Text Entry Interaction

2. Once you have entered the text, drag the *Text Entry* icon  from the Inline Interactions library to the space next to where the test-taker will be expected to *fill in the blank*.

This creates a pop-up window containing the blank, which is to be filled by the test-taker. No changes can be made here: the window just confirms that you have created the blank.

However, a correct answer will need to be selected and this is done in the *Response* mode.

Note: Remember to remove the actual words from the text that the Text Entry blanks are designed to replace.

3. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- insert a ‘placeholder’ text in the blanks
- define a certain pattern the answer must follow
- give a hint about the length of the answer

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

Note: The Base feature is used to set the number base for the interpretation of numerical values entered by the test-taker. By default this is 10, i.e. its interpretation is based on the decimal system. If it uses a different system, change this here.

4. Click *Response* in the pop-up window to define the correct answer(s).

This opens the response entry window, in which you can enter the correct answers.

Remember that you will need to produce an answer that the test-taker will be expected to match exactly, character-for-character, including spaces.

Repeat steps 2 and 4 until all the desired Text Entry blanks have been inserted into the text.

5. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback
- limit the duration of the test

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click the blue *Done* button. Your text entry interaction is now complete.

After this step, you can preview and test-run your interaction by following the instructions in Steps 5 and 6 in [Creating a Test Item](#).

[Hotspot Interaction](#)

The Hotspot [Interaction](#) gives Test-takers the opportunity to demonstrate their knowledge by selecting portions of an image (regions on a map, people in a line-up, etc.).

This interaction is one of a series of [Graphic Interactions](#) (the others are covered in their own sections). All graphic interactions can be found in the [Graphic Interactions Library](#).

Find the Palace of Versailles

The Palace of Versailles in France is famous, both for its architecture and its role in history.

For more than a century it served as the main residence of the king, before the monarchy abruptly ended with the French Revolution in 1789. When in 1783 the United Kingdom recognized the independence of the United States, the treaties were signed at Versailles. In more recent times, the First World War found its formal end with the Treaty of Versailles in 1919.

The map to the right shows the locations of historical sites in France. Which one is the Palace of Versailles?



Picture by [Anthony Choren](#), published under the Unsplash License.

You can select maximum 1 choice

Map based on the work of Superbenjamin, published under CC BY 3.0. We changed colors and font, added the sites.

Hotspot Interaction

Once you have generated a new [Item](#), and clicked on [Authoring](#) in the [Action Bar](#), follow the steps below to create a new Hotspot interaction:

1. From the Graphic Interactions library near the bottom of the *Interactions library* on the left, drag the *Hotspot* icon onto the blank Item and drop it onto the [Canvas](#).

Hotspot Interaction

2. Choose the desired background graphic.

A [Resource Manager](#) window will appear with which you can select a background graphic. You can re-use a background already in the resource manager, or you can upload a new one. To select one from the list of previously uploaded graphics, highlight the appropriate background graphic in the resource manager list and click the green *Select* button. To upload a new one, click on the blue *Add file(s)* button to browse the files on your computer, and then upload one to the resource manager by clicking the green *Upload* button.

Highlight the file you have chosen as your background by clicking on it, and it will appear on the right in the preview panel. Click *Select* in the bottom right of the window to continue.

A new authoring window will appear with the background graphic in the center of the canvas. Above the graphic there is a question field. On the left there is an [Associable Hotspot Panel](#) for inserting selected shapes that will represent *Associable Hotspots* into the background graphic (these include four different shapes: rectangle, circle, ellipse, and polygon). Below the Hotspot Panel there is a trash can icon, which allows you to delete a poorly-placed or misshapen Hotspot.

3. Fill in the question field, where it says *define prompt*.

This should cover such important information as what the background graphic represents, and what the test-taker is supposed to do in this interaction.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

4. Insert the Associable Hotspots onto the background graphic.

To insert a rectangle, click on one corner and drag it across the intended area the Hotspot is supposed to cover. To insert a circle or ellipse, select its center and drag outward or inward until the Hotspot is the right size. To insert a polygon, begin at one corner, then click on each corner in succession until the Hotspot is complete. You can make all the shapes bigger or smaller (or in the case of polygons change the shape), but if necessary, click on the problem Hotspot, click the trash can to delete it, and then try again.

5. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- specify the correct number of answers

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click *Response* on the right of the blue interaction header to set the Hotspots in the order required by the question.

This will bring up the same screen, but you can now assign scores to the Hotspots.

By default, a test-taker receives one point per completely correct interaction, so in the case of Hotspot interactions, the test-taker has to select all the correct Hotspots in order for the answer to be considered correct.

See step 7 for other scoring methods.

7. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

8. Click the blue *Done* button. Your hotspot interaction is now complete.

You can now preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Graphic Order Interaction

The Graphic Order [Interaction](#) gives Test-takers the opportunity to demonstrate their knowledge of chronological order, orders of importance, etc. as seen on a graphic (map, photo, or other image).

This interaction is one of a series of [Graphic Interactions](#) (the others are covered in their own sections). All graphic interactions can be found in the [Graphic Interactions Library](#).

Most populated states in the United States

The statistics in this question are based on the population estimate from July 1, 2018

The circles on the map below indicate the highest populated states in the US.

Can you put them in the right order (*1: highest, 5: lowest population*)?



Map based on the work of cburnett, published under CC BY-SA 3.0. We changed the colors and converted the format.

Graphic Order Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Graphic Order interaction:

1. From the Graphic Interactions library near the bottom of the *Interactions library* on the left, drag the *Order* icon  onto the blank Item and drop it onto the [Canvas](#).
2. Choose the desired background graphic.

A [Resource Manager](#) window will appear with which you can select a background graphic. You can re-use a background already in the resource manager, or you can upload a new one. To select one from the list of previously uploaded graphics, highlight the appropriate background graphic in the resource manager list and click the green *Select* button. To upload a new one, click on the blue *Add file(s)* button to browse the files on your computer, and then upload one to the resource manager by clicking the green *Upload* button.

Highlight the file you have chosen as your background by clicking on it, and it will appear on the right in the preview panel. Click *Select* in the bottom right of the window to continue.

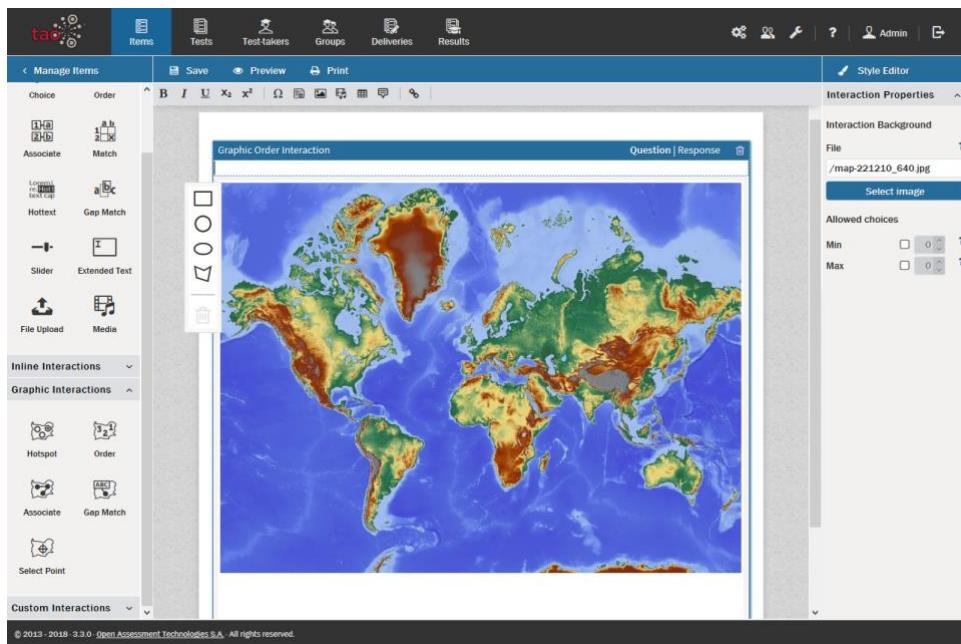
A new authoring window will appear with the background graphic in the center of the canvas. Above the graphic there is a question field. On the left there is an [Associable Hotspot Panel](#) for inserting selected shapes that will represent *Associable Hotspots* into the background graphic (these include four different shapes: rectangle, circle, ellipse, and polygon). Below the Hotspot Panel there is a trash can icon, which allows you to delete a poorly-placed or misshapen Hotspot.

3. Fill in the question field, where it says *define prompt*.

This should cover such important information as what the background graphic represents, and what the test-taker is supposed to do in this interaction.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

4. Insert the *Associable Hotspots* onto the background graphic.



To insert a rectangle, click on one corner and drag it across the intended area the Hotspot is supposed to cover. To insert a circle or ellipse, select its center and drag outward or inward until the Hotspot is the right size. To insert a polygon, begin at one corner, then click on each corner in succession until the Hotspot is complete. You can make all the shapes bigger or smaller (or in the case of polygons change the shape), but if necessary, click on the problem Hotspot, then click the trash can to delete it, and then try again.

5. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- specify the correct number of responses

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click *Response* on the right of the blue interaction header to set the Hotspots in the order required by the question.

This will bring up the same screen, but you can now numerically categorize the selected Hotspots. To do this, click on the number, then the Hotspot. Repeat until all numbers are assigned to Hotspots.

7. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

8. Click the blue *Done* button. Your graphic order interaction is now complete.

You can now preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Graphic Associate Interaction

The Graphic Associate [Interaction](#) gives Test-takers the opportunity to demonstrate their knowledge by depicting routes on a map or graphic in a prescribed way. This can be used for drawing out historical military marches, route-planning exercises, connecting the dots to form a missing piece of an image, etc.

This interaction is one of a series of [Graphic Interactions](#) (the others are covered in their own sections). All graphic interactions can be found in the [Graphic Interactions Library](#).

Match tools and materials

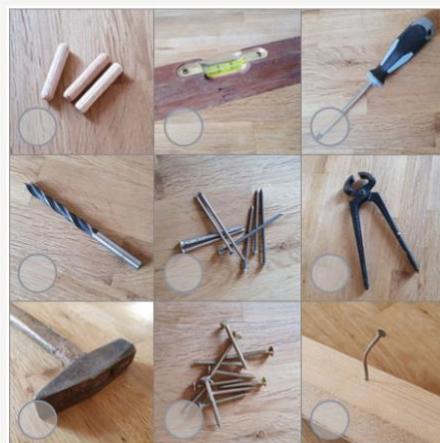
Carpenters use many different tools and materials in their daily work, but not every tool is right for every task.

The composite picture shows a selection of items that can be found in every workshop - can you match them up?

Build up to 4 pairs of tools and materials by clicking on the circles.



Picture by Joel & Jasmin Førestbird, released under the [Unsplash License](#).



Composite picture by O.A.T., released under CC BY-SA 4.0.

Graphic Associate Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Graphic Associate Interaction:

1. From the Graphic Interactions library near the bottom of the *Interactions library* on the left, drag the *Associate* icon  onto the blank item and drop it onto the [Canvas](#).
2. Choose the desired background graphic.

A [Resource Manager](#) window will appear with which you can select a background graphic. You can re-use a background already in the resource manager, or you can upload a new one. To select one from the list of previously uploaded graphics, highlight the appropriate background graphic in the resource manager list and click the green *Select* button. To upload a new one, click on the blue *Add file(s)* button to browse the files on your computer, and then upload one to the resource manager by clicking the green *Upload* button.

Highlight the file you have chosen as your background by clicking on it, and it will appear on the right in the preview panel. Click *Select* in the bottom right of the window to continue.

A new authoring window will appear with the background graphic in the center of the canvas. Above the graphic there is a question field. On the left there is an [Associable Hotspot Panel](#) for inserting selected shapes that will represent *Associable Hotspots* into the background graphic (these include four different shapes: rectangle, circle, ellipse, and polygon). Below the Hotspot Panel there is a trash can icon, which allows you to delete a poorly-placed or misshapen Hotspot. Below the background graphic is a gap match field for entering the answers (in the form of graphic elements).

3. Fill in the question field, where it says *define prompt*.

This should cover such important information as what the background graphic represents, and what the Test-taker is supposed to do in this interaction.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

4. Insert the *Associable Hotspots* onto the background graphic.

To insert a rectangle, click on one corner and drag it across the intended area the Hotspot is supposed to cover. To insert a circle or ellipse, select its center and drag outward or inward until the Hotspot is the right size. To insert a polygon, begin at one corner, then click on each corner in succession until the Hotspot is complete. You can make all the shapes bigger or smaller (or in the case of polygons change the shape), but if necessary, click on the problem Hotspot, then click the trash can to delete it, and then try again.

After the Hotspots are inserted, set the number of Hotspot matches that the test-taker will be asked to provide (before he can continue to the next question), giving the minimum and the maximum. This can be done in the *Allowed number of matches* boxes in the [Interaction Properties Panel](#) on the right.

5. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- limit the use of a choice
- specify the correct number of associations

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

6. Click *Response* on the right of the blue interaction header to select the associations between Hotspots (the answers).

By default, a test-taker receives one point per completely correct interaction, so in the case of Graphic Associate interactions, the test-taker has to select all the correct Hotspot pairs in order for the answer to be considered correct. Select the Hotspot pairs by clicking first on one Hotspot and then the associated Hotspot, until the pairs are all correctly connected by lines.

See step 7 for other scoring methods.

7. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

8. Click the blue *Done* button. Your graphic associate interaction is now complete.

You can now preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

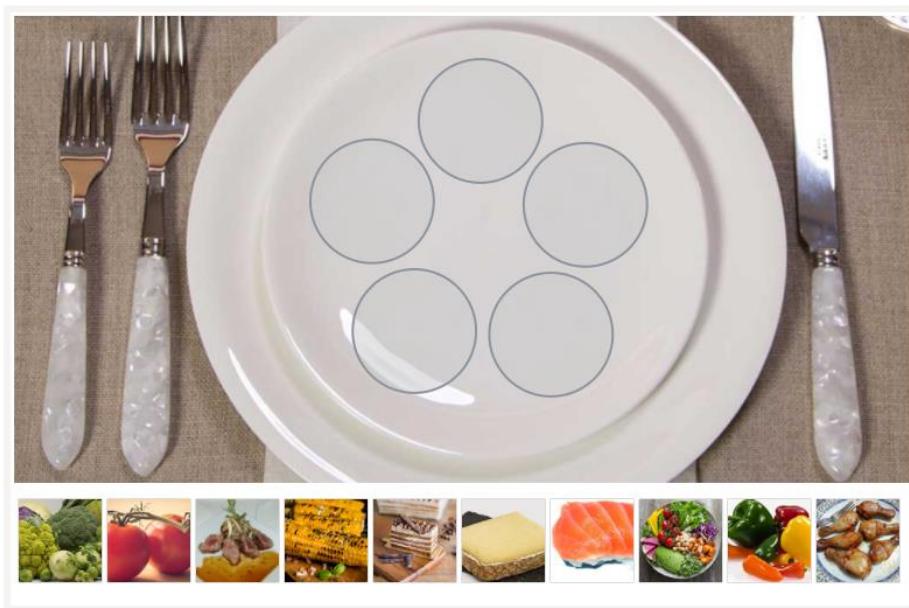
Graphic Gap Match Interaction

The Graphic Gap [Interaction](#) gives Test-takers the opportunity to demonstrate their knowledge about geographical regions, identify facts about portions of images (people in a group photo, etc.), or show other similar capabilities in picture matching.

This interaction is one of a series of [Graphic Interactions](#) (the others are covered in their own sections). All graphic interactions can be found in the [Graphic Interactions Library](#).

Select food for a vegetarian

Jessica is a vegetarian. She neither eats eggs nor dairy products. Can you help her to select food items from the selection below?



License Attribution

- Table setting: Didriks, CC BY 2.0
- Broccoli: Coyau, CC BY-SA 3.0
- Tomatoes: Sheila Sund, CC BY 2.0
- Lamb Chops: Tim P, CC BY 2.0
- Corn: Marius Dragne, CC0 1.0
- Cake: Anthony Espinosa, Unsplash License
- Cheese: Coyau, CC BY-SA 3.0
- Sushi: SwitcherCat, Public Domain
- Salad: Anna Pelzer, Unsplash License
- Peppers: Nikodem Nijaki, CC BY-SA 3.0
- Chicken Legs: Mousa Alhaddad, CC BY-SA 4.0

All pictures have been cropped

Graphic Gap Match Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Graphic Gap Interaction:

1. From the Graphic Interactions library near the bottom of the *Interactions library* on the left, drag the *Gap Match* icon  onto the blank Item and drop it onto the [Canvas](#).
2. Choose the desired background graphic.

A [Resource Manager](#) window will appear with which you can select a background graphic. You can re-use a background already in the resource manager, or you can upload a new one. To select one from the list of previously uploaded graphics, highlight the appropriate background graphic in the resource manager list and click the green *Select* button. To upload a new one, click on the blue *Add file(s)* button to browse the files on your computer, and then upload one to the resource manager by clicking the green *Upload* button.

Highlight the file you have chosen as your background by clicking on it, and it will appear on the right in the preview panel. Click *Select* in the bottom right of the window to continue.

A new authoring window will appear with the background graphic in the center of the canvas. Above the graphic there is a question field. On the left there is an [Associable Hotspot Panel](#) for inserting selected shapes that will represent *Associable Hotspots* into the background graphic (these include four different shapes: rectangle, circle, ellipse, and polygon). Below the Hotspot Panel there is a trash can icon, which allows you to delete a poorly-placed or misshapen Hotspot. Below the graphic is a gap match field where the answers should be entered (in the form of graphic elements).

3. Fill in the question field, where it says *define prompt*.

This should cover such important information as what the graphic represents, and what the test-taker is supposed to do in this interaction.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

4. Insert the *Associable Hotspots* onto the graphic.

To insert a rectangle, click on one corner and drag it across the intended area the Hotspot is supposed to cover. To insert a circle or ellipse, select its center and drag outward or inward until the Hotspot is the right size. To insert a polygon, begin at one corner, then click on each corner in succession until the Hotspot is complete. You can make all the shapes bigger or smaller (or in the case of polygons change the shape), but if necessary, click on the problem Hotspot, then click the trash can to delete it, and then try again.

After inserting the Hotspots, enter the answer graphics will in the gap match field below the background graphic.

Note: Drag-and-drop is enabled for this type of interaction.

5. Click the plus sign (+) within the gap match field as many times as is needed to create the correct number of gap match slots.

Clicking the plus sign will bring up the resource manager window. As during placement of the background graphic, the immediate choices will include all recently uploaded images. Simply select one graphic for each slot, or upload the necessary graphics.

Before uploading, resize the graphics: all graphics should be roughly the same size – ideally, a width that is one-sixth the width of the background graphic. If the selected graphics are not this size, they should be resized before uploading.

Once all the images are the correct size, click on the blue *Add file(s)* button at the top of the list of available graphics to locate and upload all the desired image files by clicking the green *Upload* button below the list.

After uploading the images, select the first answer graphic for the first slot, and repeat for all subsequent slots.

6. Complete optional configuration of the interaction if required.

You can choose to configure your interaction in the following ways:

- limit the use of a choice

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

7. Click *Response* on the right of blue interaction header to define the correct answer(s).

You can now select the correct associations between the answer graphics and the Hotspots on the graphic. To do this, drag and drop each answer graphic onto its corresponding Hotspot.

8. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- give partial credit for partially correct answers
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

9. Click the blue *Done* button. Your graphic gap interaction is now complete.

You can now preview and test-run your interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Select Point Interaction

The Select Point [Interaction](#) gives Test-takers the opportunity to demonstrate their knowledge by selecting an invisibly-defined portion of an image (region on a map, person in a line-up, etc.).

This interaction is one of a series of [Graphic Interactions](#) (the others are covered in their own sections). All graphic interactions can be found in the [Graphic Interactions Library](#) on the left.

Eyjafjallajökull Eruption 2010

In spring 2010 the eruptions of the volcano *Eyjafjallajökull* in Iceland caused major disruption to air travel across western and northern Europe.

Can you pinpoint the area in which the volcano is located on the map?



Picture by David Karnå, published under CC BY-SA 3.0

The map is the work of Max Naylor and in the public domain.

Select Point Interaction

Once you have generated a new [Item](#), and clicked on *Authoring* in the [Action Bar](#), follow the steps below to create a new Select Point Interaction:

1. From the Graphic Interactions library near the bottom of the *Interactions library* on the left, drag the *Select Point* icon  onto the blank item and drop it onto the [Canvas](#).
 2. Choose the desired background graphic.

A [Resource Manager](#) window will appear with which you can select a background graphic. You can re-use a background already in the resource manager, or you can upload a new one. To select one from the list of previously uploaded graphics, highlight the appropriate background graphic in the resource manager list and click the green *Select* button. To upload a new one, click on the blue *Add file(s)* button to browse the files on your computer, and then upload one to the resource manager by clicking the green *Upload* button.

Highlight the file you have chosen as your background by clicking on it, and it will appear on the right in the preview panel. Click *Select* in the bottom right of the window to continue.

A new authoring window will appear with the background graphic in the center of the canvas. Above the graphic there is a question field.

3. Fill in the question field, where it says *define prompt*.

This should cover such important information as what the background graphic represents, and what the test-taker is expected to select in this interaction.

Note: See the chapter [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

4. Complete optional configuration of the interaction if required. You can choose to configure your interaction in the following ways:

- specify the correct number of answers

These options are available in the [Interaction Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

5. Click *Response* on the right of blue interaction header to define the correct answer(s).

This opens the graphic with an [Associable Hotspot Panel](#) on the left, used for inserting selected shapes that will represent *Associable Hotspots* into the graphic (these include four different shapes: rectangle, circle, ellipse, and polygon). Below the Hotspot Panel is a trash can icon, which allows the user to delete poorly-placed or misshapen Hotspots.

To insert a rectangle, click on one corner and drag it across the intended area the Hotspot is supposed to cover. To insert a circle or ellipse, select its center and drag outward or inward until the Hotspot is the right size. To insert a polygon, begin at one corner, then click on each corner in succession until the Hotspot is complete. You can make all the shapes bigger or smaller (or in the case of polygons change the shape), but if necessary, click on the problem Hotspot, click the trash can to delete it, and then try again.

6. Insert the *Associable Hotspots* onto the background graphic.

Test-takers will not see these Hotspots on the background graphic, but selecting a point within the Hotspot will register it as a correct answer.

7. Set the weights to be awarded for each Hotspot.

In the scoring method normally used as a default, a test-taker receives one point per completely correct interaction (so the test-taker has to select all the correct responses in order for the answer to be considered correct).

In this type of interaction, however, each Hotspot is evaluated individually, and thus *Map Response* is used as the [Response processing](#) method (see [Response Properties Panel](#) on the right).

By clicking on each Hotspot, a pop-up window appears next to it, which allows you to set the weight to be awarded if the test-taker selects it correctly.

[Click here](#) for more details on how to use this scoring method, and how to set the values of the other associated properties.

8. Complete optional configuration of response if required.

You can choose to configure the interaction response in the following ways:

- limit the duration of a test
- insert modal feedback

These options are available in the [Response Properties Panel](#) on the right. See the section [Configuring Interactions](#) for details.

9. Click the blue *Done* button. Your Select Point interaction is now complete.

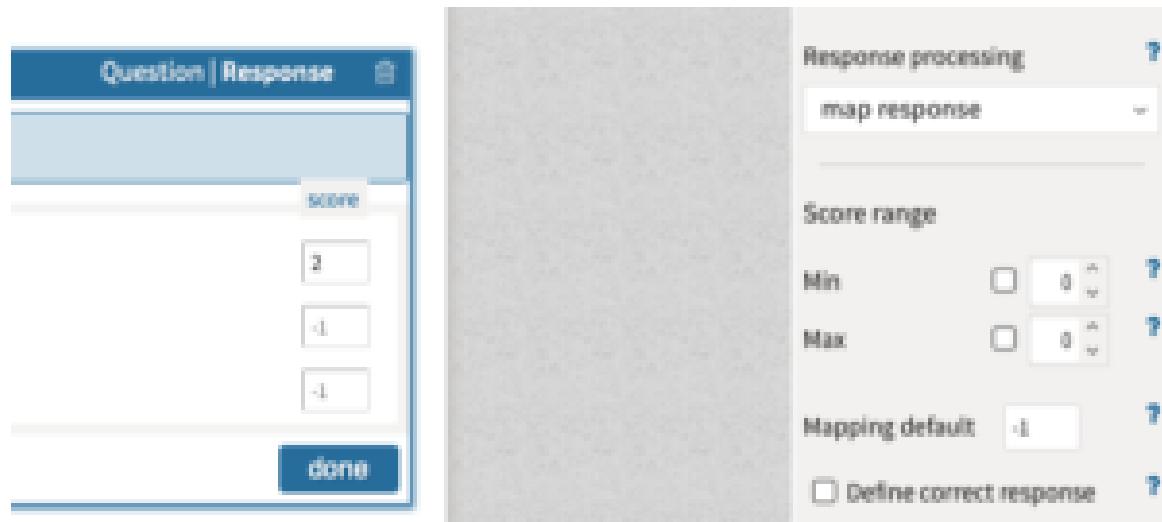
You can now preview and test-run your Interaction by following the instructions given in Steps 5 and 6 in [Creating a Test Item](#).

Overview: Configuring interactions

[Interactions](#) can be configured in a number of ways to suit your assessment scenario. This section tells you about the ways you can configure your interactions so that they do and appear as you want them to.

It contains chapters on adapting the way interactions are scored to suit your purposes ([Modifying the scoring method](#)), deciding whether you want to give some kind of assistance to the test-takers, and if so, what the nature of this should be ([Giving hints and feedback to the test-taker](#)), how to limit what test-takers give as a response to the question or task in the interaction ([Placing constraints on the response](#)), and finally, you have several different options with certain types of interaction (e.g. in choice interactions) on how to present the responses which test-takers choose from ([Displaying answer options](#)).

These are configured either in the [Interaction properties panel](#) or the [Response properties panel](#), depending on what it is you are configuring. The image below shows, on the right, where you access the properties from your interaction (by clicking on *Question* or *Response*), and on the left, the properties panel which opens (in this case for the Response, where scoring can be set).



Response properties

Modifying the scoring method

By default, a test-taker receives one point per completely correct interaction. You may wish to award partial credit for partially correct answers. This is not available for all types of interaction – the sections describing each interaction under [QTI Interaction Types](#) and [PCI Interaction Types](#) will tell you if this is possible for that particular interaction.

The scoring method is configured in the [Response Properties Panel](#) on the right of your interaction.

Some types of interaction require more than one response (for example Inline choice, Associate, or Hottext interactions). In these cases, according to the scoring method which is applied by default, the test-taker has to select all the correct choices in order for the answer to be considered correct. You may want to modify the scoring method if, for example, you want the test-taker to receive partial credit for selecting some, but not all, of the correct choices.

There is also the option of configuring the scoring method to award a higher weight to some of the choices than to others – in other words, to award more points for some responses.

See [Scoring items automatically](#) for more information.

Giving hints and feedback to the test-taker

Interactions can be configured to give hints to the test-taker such as indicating the number of correct responses in a choice-based interaction, and also to offer feedback as test-takers progress through a test item. These options are not available for all types of interaction. The chapters describing each interaction under [QTI Interaction Types](#) and [PCI Interaction Types](#) will tell you which options are available for that particular interaction.

Hints for the Test-taker

Options to provide hints are configured in the [Interaction Properties Panel](#) on the right of your interaction.

Specifying the correct number of answers

You can specify the *minimum* and *maximum* number of answers the Test-taker will be asked to provide (before he can continue to the next question) in the *Allowed Choices boxes* (depending on the type of interaction, this is sometimes labeled *Number of associations/matches*). By default these are empty, which means the test-taker can include as many (or as few) answer options as he likes. (Setting the minimum to 0 allows the test-taker to skip the question.)

Inserting a ‘placeholder’ text in the blanks

If you would like to put a text in the fields the test-taker is supposed to fill in, such as “Write your answer here”, enter it in the *Placeholder Text* field.

Giving hints about the text length

You can provide hints for the test-taker about the length of the text by filling in the *Recommendations* fields. This provides the test-taker with an expected length, in either characters or number of lines.

Inserting modal feedback

Giving feedback can be configured in the [Response Properties Panel](#) on the right of your interaction.

Modal feedback can be defined as a message presented to the Test-taker outside of the [Item](#), when the test-taker selects an answer. Feedback may be triggered by either a correct or an incorrect answer, depending on the conditions set by the test author. Follow the steps below if you would like the test-takers to receive modal feedback during this interaction.

Click on the *Add a Modal Feedback* button.

The screenshot shows the Tao test authoring interface. In the center, there is a modal dialog titled "Choice Interaction" with the sub-header "Question | Response". The dialog contains the instruction "Please define the correct response below." and three radio buttons labeled "choice #1", "choice #2", and "choice #3". At the bottom right of the dialog is a blue "done" button. To the left of the dialog, the main workspace shows a "Common Interactions" panel with various interaction types like Choice, Order, Associate, etc. On the right side of the interface, there is a "Response Properties" panel and a "Modal Feedbacks" panel. The "Modal Feedbacks" panel contains an "if" condition set to "correct", followed by a "then" statement labeled "Feedback" which is currently empty. Below this, there is a "else" statement also labeled "Feedback". A link "Add a modal feedback" is visible above the "else" statement. Further down, there is an "Outcome Declarations" section with a "SCORE" field and a link "Add an outcome". The top navigation bar includes tabs for Tests, Test-takers, Groups, Deliveries, and Results, along with standard save, preview, and print buttons.

Adding Modal Feedback to your Interaction

This opens a modal feedback panel in which you can insert the feedback and specify when it should be given.

Insert your feedback and feedback conditions. If the feedback is to be given when the test-taker gets the correct answer, then ensure that the *if*-statement is set to *correct*. You can also set it to *incorrect* or any numeric comparative relationship.

Then fill in the *then*-statement by first clicking on the blue *Feedback* button, and then entering the desired text in the pop-up window. When complete, click the *done* button. If alternative feedback for the opposite condition is required, click the *Feedback* button for the *else*-statement, and follow the same procedure used to set up the initial feedback.

If additional modal feedback is required, then click the *Add a Modal Feedback* button below your first Modal Feedback and repeat the above steps.

Placing constraints on the response

The responses required in an interactions can be configured in a number of different ways. They are not all available for all types of interaction – the sections describing each interaction under *QTI Interaction Types* and *PCI Interaction Types* will tell you which options are available for that particular interaction.

The first group are configured in the [Interaction Properties Panel](#) on the right of your interaction:

Limiting the use of a choice

If you want to limit the number of times a particular element is used, click on it. It will then appear in the Identifier box in the right-hand panel, which gives you the option of setting the *Allowed number of uses*. Setting this to a maximum of 1, for example, will mean that the test-taker can only use that element in one association/match.

If you want to limit the number of times a particular row or column is used, click on it. It will then appear in the *Identifier* box in the right-hand panel, which gives you the option to set the *Allowed number of uses*. (According to the interaction type, this is sometimes labeled *Allowed number of matches/associations*). Setting this to a maximum of 1, for example, will mean that the Test-taker can only use that element in one associated match.

Obliging the test-taker to give an answer

If you want to prevent test-takers from continuing to the next question without providing an answer, check the required box.

Note: For Gap Match interactions, this box appears after you have inserted the gaps in the text.

Defining a certain format or pattern

Plain text format is the default which is expected as input from the test-taker. If desired, you can specify the type of text format as either *preformatted text* or *XHTML* in the Format box.

You can also specify a certain [Pattern](#) which should be used in the answer. This can be done in the *Pattern Mask* box. Patterns can be set using regular expressions in the QTI creator. If the Test-taker's Response does not match the Pattern, an error is shown. The Response cannot be submitted until the input is corrected in line with the pattern.

Limiting the length of an answer

You can limit the length of text the test-taker enters in the answer field by setting a maximum length or word count. Alternatively, you can specify a certain *pattern* in *Constraints*

The following option concerns the time allowed for responses, and is configured in the [Response Properties Panel](#) on the right of your interaction:

Limiting the duration of the test

When authoring your item, click anywhere outside of the Text Space of the interaction. This will give you the option of setting the interaction as *Time dependent* (to be completed within a certain interval), by checking the check box. This option is covered in greater detail in Test Settings.

Displaying answer options

The answer options of some interactions, for example in choice-based interactions, can be presented to the test-taker in a number of different ways. This is not available for all types of interaction – the chapters describing each interaction under *QTI Interaction Types* and *PCI Interaction Types* will tell you which options are available for that particular interaction.

These options are configured in the [Interaction Properties Panel](#) on the right of your interaction:

Presenting the answer choices in list format

To present the choices as a list, select one of the options in *List* style, which is located below the *Allowed Choices* in the Interaction Properties panel.

Presenting the answer options horizontally

Answer choices can be presented either vertically or horizontally. This can be defined in the *Orientation* option, which is below the *List* style option. The default is vertical.

Shuffling the choices

Check the *Shuffle choices* box. This will randomize the order in which answer choices appear for each test-taker. In this manner, guessing or copying strategies is rendered useless. Where the order of items is unimportant, this is recommended.

One of the possible responses might be '*All of the above*', which will always need to be the last choice, and therefore needs to be pinned in this position. You can *pin* a response to its location in the order by clicking on the pin icon to the right of that choice.

Adding other content

An [Item](#) is formed of an [Interaction](#), or a set of interactions, which can be accompanied by other types of content. Interactions allow the candidate to interact with the item. Other content – resources such as media and text – can be used as supporting material for the test question or task being created.

Both Interactions and any other content are inserted into an item during the item authoring process. This section of the User Guide contains chapters on the form of the other content which you can use in items.

The main type of content you may wish to add is what are called [Assets](#) in ZUMMIT TESTING(ZT). See the chapter [Adding assets to an item](#) for information on how to use resources from the [Asset Manager](#) in your item.

If you want to create a (text) passage to add to the item (and have the Ignite/Premium edition of ZUMMIT TESTING(ZT)), see the chapter on the [Passage editor](#). If you are using ZUMMIT TESTING(ZT)'s Community edition, follow the instructions in [Inserting a passage \(or shared stimulus\)](#) to add a passage to your item from outside of ZUMMIT TESTING(ZT). You can also enter text into your item for direct use by [Inserting a Text Block](#) and then putting text into it (this method can be used for adding resources either in the form of supporting material, or to text-based interactions).

There is also a chapter on [Using math expressions](#) in items, as well as a chapter on the [Word processing options](#) which are available.

Finally, a description of the **End Attempt** option is included here, which can be inserted into your item if you'd like to give test-takers the option of exiting an item without submitting a response.

Inserting a Text Block

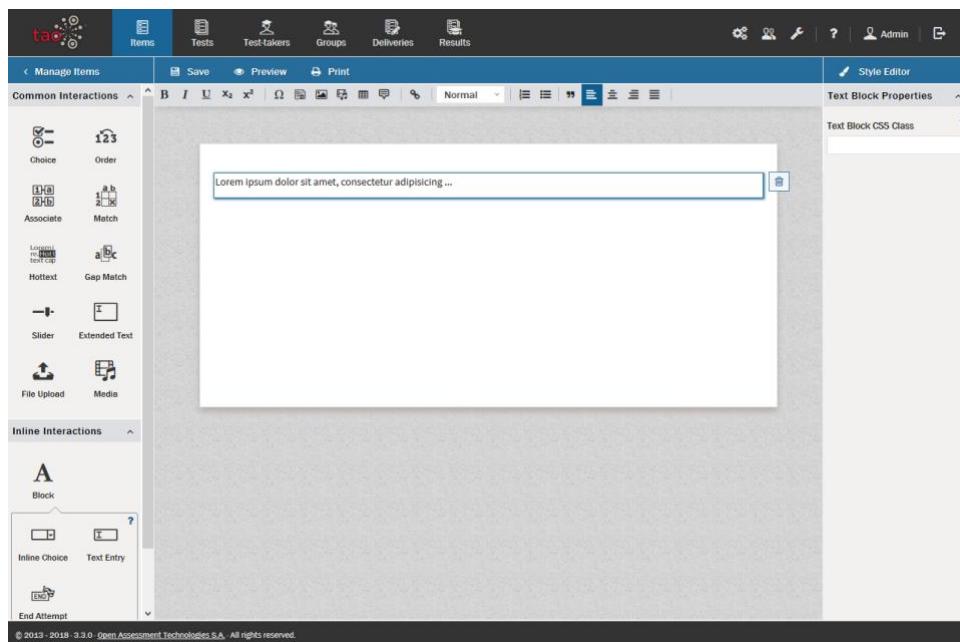
Text Blocks are used to insert text, but also other elements such as images, into an **Item**. A text block is basically a paragraph, and forms a framework into which either a text (or image) which is to be used as supporting material, or one of the two available text-based inline interactions (Inline Choice, Text Entry), is then inserted.

Text Blocks are represented by the icon **A** in the **Interactions Library** on the left, under **Inline Interactions**.

To use a text block in an item, follow the steps below.

1. Open a Text Block.

After you have created a new Item, drag a *Text Block* **A** from the **Inline Interactions Library** below **Common Interactions** on the left, onto the blank item and drop it onto the **Canvas**.



Text Block

This creates a field (containing a sample text).

2. Enter your text.

To do this, click inside the text field. You can enter a text here by copying and pasting text from any text editor, or website, for instance, or by typing your text in.

Note: See the section on [Word Processing Options](#) for details on text editing options such as using italics or bold text in your item, and inserting features such as shared stimuli or media, tables or formulae.

For more detail on how to create the two inline interactions which use *Text Blocks*, see the sections on [Inline Choice Interaction](#) and [Text Entry Interaction](#).

Another way to use blocks of content in ZUMMIT TESTING(ZT) is to create a passage using the [Passage Editor](#). These differ from text blocks in that they are .xml files, which, once created, are stored for re-use in the [Asset Manager](#).

Inserting a passage (or shared stimulus)

A stimulus is a piece of information, usually in text form, which sets the context for a question or a series of questions. A [Shared Stimulus](#) is one that is shared between multiple [Items](#).

Note: In most versions of ZUMMIT TESTING(ZT), the term “shared stimulus” has been replaced by the term “passage”.

Below is a template for a shared stimulus in the form of an empty XML file, which you can use to author a new shared stimulus (outside of ZUMMIT TESTING(ZT)):

```
<?xml version="1.0" encoding="UTF-8"?>
<div xmlns="http://www.imsglobal.org/xsd/imsqti_v2p1"
      xmlns:xi="http://www.w3.org/2001/XInclude"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" class="stimulus_content"
      xsi:schemaLocation="http://www.imsglobal.org/xsd/imsqti_v2p1
http://www.imsglobal.org/question/qtiv2p1pd2/xsd/imsqti\_v2p1.xsd">

<h1>Title</h1>
<p>Text here...</p>

</div>
```

To create a shared stimulus with a media file, reference the media file using its relative location and include it in a zip file together with the XML file, then import the zip file.

Adding Assets (or Media) to an item

Items and interaction can contain Assets (media), e.g. images, videos, sound files or passages (previously called shared stimuli). These can be files which are stored in the [Asset Manager](#), or files from your desktop.

Note: In some versions this is called the Media Manager, or the Resource Manager (and the files are called ‘Media’ rather than ‘Assets’), but they all function in the same way. The names are used interchangeably.

When you use a resource from the Asset library in an item it isn't integrated in your item, but instead is only referenced by it. This means that if the resource is updated, your item will automatically be modified to include the updated version of the resource. See the [Asset Manager](#) chapter of the User Guide for further details.

There are two ways of adding an asset, or resource, to your item. One is to use a Media interaction. Please refer to the chapter on [Media Interactions](#) for instructions on how to do this. The second is to add the asset using a Text Block. The steps below describe how to add an asset from your Asset library to a typical text block in your item.

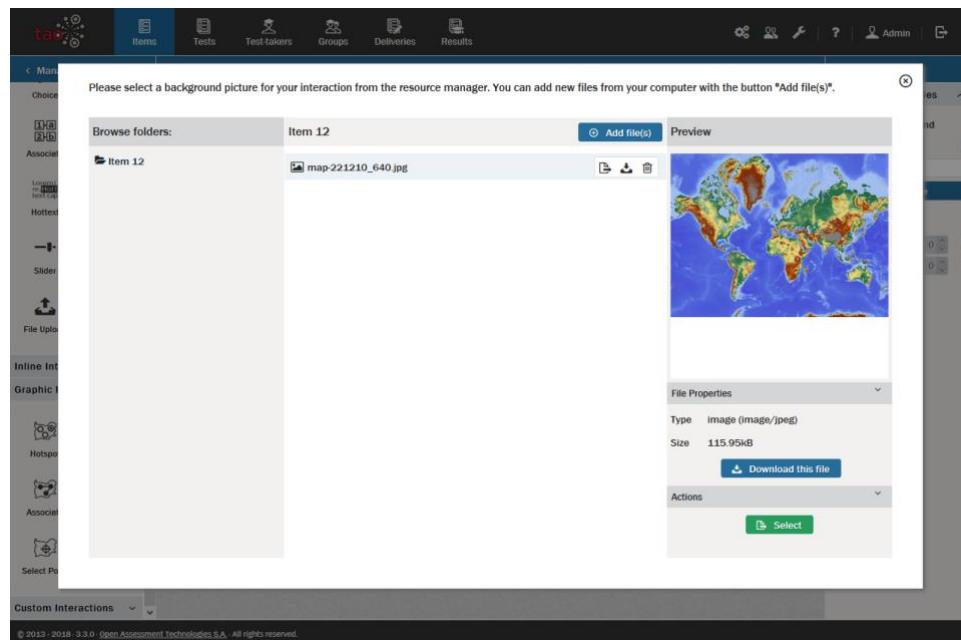
1. When authoring your new [Item](#), drag a text block onto the canvas from the Inline Interactions menu on the left.

A toolbar appears in the gray bar above the item containing a series of icons.

2. Click on the relevant icon to include a file from the Asset Manager in your item.

Using the image icon or the media (video, audio) icon will show you the resources available of that type in the Asset library. Clicking on the floppy disc icon will show you the passages (or shared stimuli) available.

Clicking on any of these icons will take you to the Asset Manager, shown in the image below. As with the main window, the left panel is a [Library](#): the Asset Library. The middle panel shows the list of assets which are available within the highlighted [Class](#) (i.e. folder) in the Asset library. The right panel provides a preview of the asset you select. Browse the assets available and choose one to include in your item.



Adding Media to your Item

3. Click the green *Select* button.

This uploads the asset you have chosen into the text block. If you begin typing without hitting return, the text will center vertically. If your text extends beyond the first line, however, it will wrap underneath the image (or other media). If the image is followed by a longer text, it is best to click on return on your keyboard at least once before starting to type.

Note: To include a media file from your desktop in your item, select the relevant icon in the toolbar (the landscape for an image, or the music tape for an audio or video file), and click on Add file(s), then the blue Browse button to browse your computer. Most image and audio formats are supported. When you save your item, the media file becomes an integral part of the item, and is not in the Asset library. To upload a new file to the Asset library, see the chapter on the [Asset Manager](#) for further details, or to create a new 'Passage' to add to the Asset library, see the chapter on the [Passage Editor](#).

Using math expressions

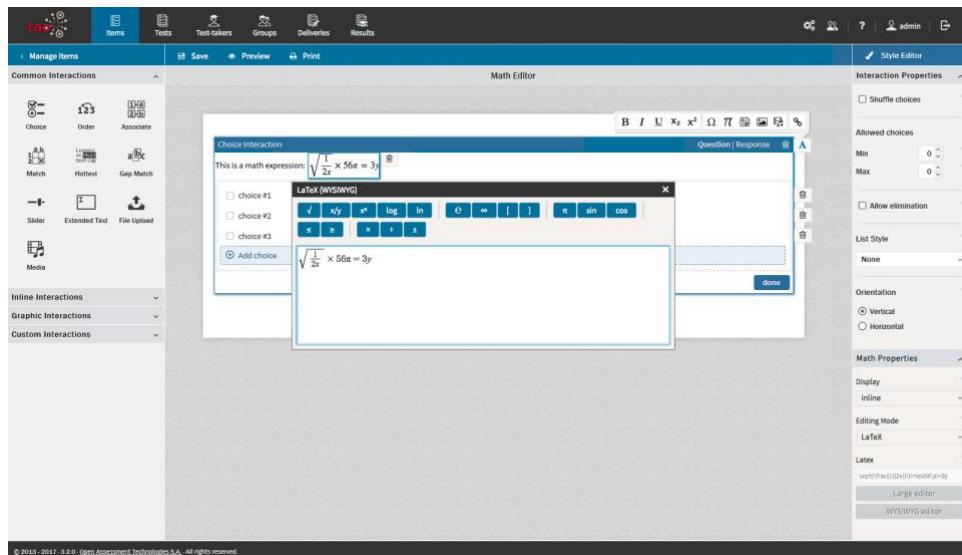
[Math Expressions](#) (i.e. mathematical operators), or formulae, can be employed in [Items](#) by using the [Formula Editor](#). The *Formula Editor* is a WYSIWYG editor based on [MathQuill](#), which allows you to use mathematical symbols to create LaTeX expressions containing mathematical operators. It is found in the Custom Interactions section.

To access the Formula Editor follow the steps below.

1. Once you have created a new Item, click on the Custom Interactions Library on the left, and drag the *Math Entry* icon onto the blank item and drop it onto the [Canvas](#).

The MathQuill editor can also be accessed from any block by selecting *Insert Math Expression* π and then clicking on the *WYSIWYG editor*.

A list of mathematical symbols will appear, with an empty text field below.



Formula Editor

2. Click on the mathematical symbols you wish to use.

These will appear in the text field and can then be used in the writing of mathematical formulae, such as questions on geometry.

Note: The Formula Editor only provides the possibility of drawing mathematical symbols, but does not carry out any calculation.

Word processing options

A [Text Editing Toolbar](#) is available to the [Item Author](#). This contains various tools for use when creating new [Interactions](#) and only appears when authoring a new [Item](#).

The toolbar will appear below the [Action Bar](#) once you have created a blank item, clicked on *Authoring*, and then dragged and dropped the interaction template of your choice from the [Interactions Library](#) on the left onto the [Canvas](#) in the middle. *Note: See the chapter [Creating a test item](#) for details on how to create an item.*

The toolbar contains two types of aids:

Style Features:

The icons towards the left of the bar can be used to make the text of the item appear in bold or italics, or to underline it. You can also include the text as a subscript or a superscript here.

Towards the right of the bar there are formatting options, which govern both text alignment and offer display possibilities, such as lists. These are available only at the level of the item (not at interaction level).

Feature Insertion:

Using the icons in the middle, you can insert a special character, a [shared stimulus](#), a math expression or formula (using the [Formula editor](#)), an image or other type of media, a table, a tooltip, or a link into your question.

Most of these functions work in the same way as in a typical text editor. The tooltip can be used to add explanations for the Test-taker about specific text fragments of the Test.

End Attempt

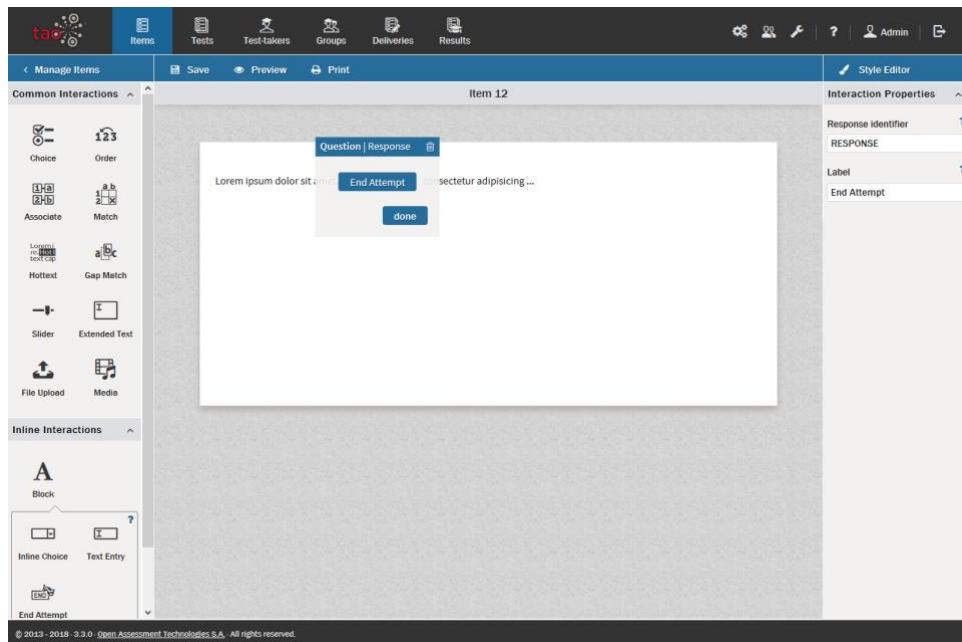
[End Attempt](#) offers Test-takers the possibility of exiting from a particular [Item](#) in a Test without completing it.

Note: Strictly speaking, End Attempt is an interaction as it allows the test-taker to interact with ZUMMIT TESTING(ZT) to end his/her attempt at an item. It has not been included with the descriptions of the other interactions, however, as it doesn't relate to a question/response scenario.

1. Including *End Attempt* in your test item.

The *End attempt* option can be added to a test item by means of an inline interaction inserted into a text block.

After you have created a new Item, a [Text Block](#) is inserted by dragging a *Text Block A* from the [Inline Interactions Library](#) below *Common Interactions* on the left, onto the blank Item and dropping it onto the [Canvas](#). This creates a field (containing a sample text).



End Attempt

To insert the *End Attempt* button, drag the *End Attempt* icon  from the *Inline Interactions* library below *Common Interactions* on the left, onto the text field and drop it onto the canvas.

A blue button will appear in the text box, reading *End Attempt*.

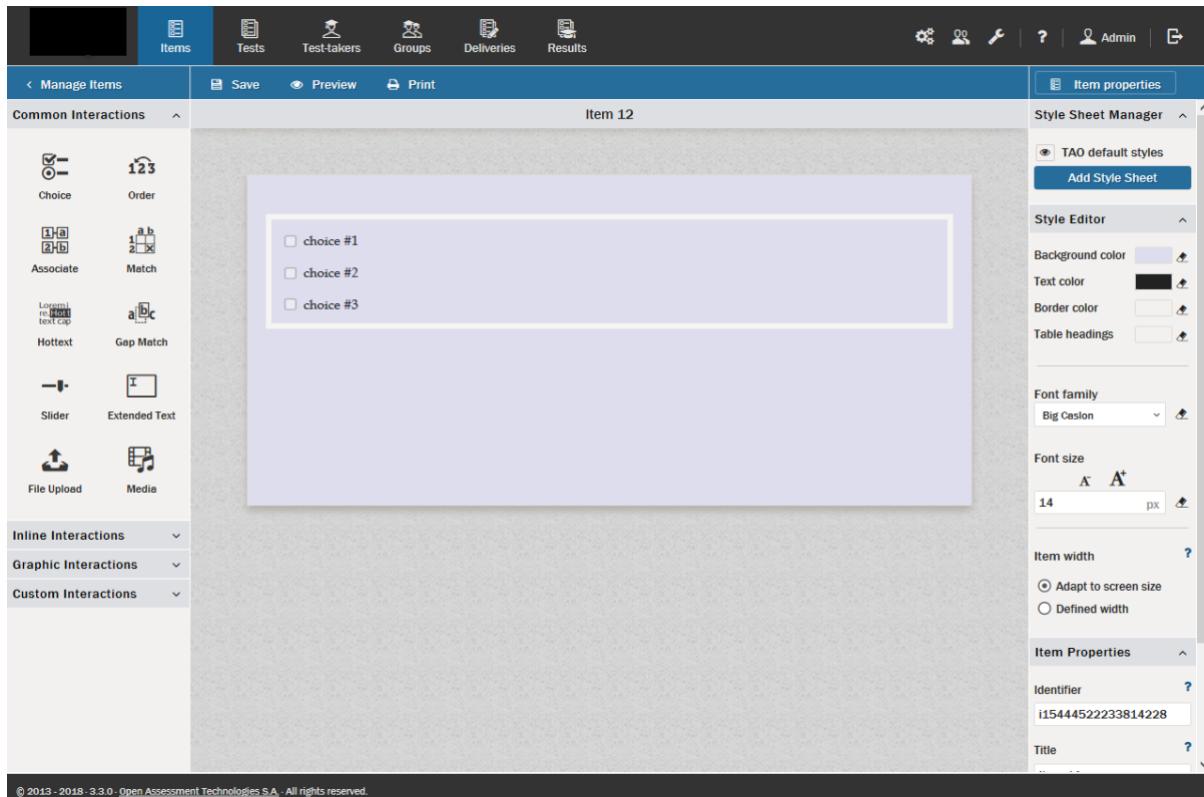
A test-taker can click on this button during a test to indicate that he/she wants to give up on that particular item. The test normally then moves on to the next item.

Item style editor

White, black, grey, and blue, all done up in a sans-serif font, can get boring after a while. The *Style Editor* can help you make your items look more appealing. The Style Editor is found in the ZUMMIT TESTING(ZT) interface above the [Properties Panel](#) on the right in an [Item](#) window. It should be noted that this feature is meant only to adjust the appearance of a small number of items. If you are dealing with larger item banks, you may want to get in touch with us to discuss the options for a customized version of ZUMMIT TESTING(ZT).

1. To access the Style Editor, click on the *Style Editor* button in the blue **Action Bar** above the Properties Panel.

This will turn the Properties Panel into a Style Editor panel. There are two parts to the editor, the *Style Sheet Manager* at the top, and the *Style Editor* below this.



Style Editor

2. If you have a style sheet ready for upload, click on the *Add Style Sheet* button.

This will provide an interface similar to that of adding a graphic into a Graphic Interaction. You can use an existing style sheet by clicking the *Add file(s)* button and uploading it.

If you wish to format the style for this item only, use the Style Editor below to enter the settings you would like to use for this item. The style editor has three parts: (1) Color, (2) Font, and (3) Item width.

3. Adjust the colors to your liking.

There are four color swatches that can be changed in accordance with your preferences, one for each of: *Background color*, *Text color*, *Border color*, and *Table headings*.

Clicking on any of these (e.g. *Background color*) opens a color editor panel which consists of a square surrounded by a color wheel (a swatch), and a text box below.

Select a color by moving the cross onto the desired hue on the color wheel. In the square you can then adjust the contrast (left and right) and brightness (up and down). You can use the text box to save a specific color setting when it is found as portions of Red, Green, Blue (in RGB hexadecimal-percent of primary color density).

The four swatches cover specific parts of any item and its [Interactions](#). The Background color provides the color backing of the entire item. The text color is used for all text within the item and its related interactions. The border color governs that of the borders of interactions. Finally, the table heading color swatch provides the color setting for interactions which use tables (such as Match).

4. Adjust the fonts to your liking.

Create the desired font by adjusting the *font family* and *font size*.

Click on the *Font Family* box, and select a font family besides Default.

There are three types of fonts available: Sans Serif fonts – lacking extra strokes at the ends of letters, Serif fonts – with the small, projecting strokes at the ends of letter, and Monospace fonts – resembling a typewriter, each letter being of equal width.

Using fonts which are not on this list requires setting up a style sheet.

To select a font size, click in the *font size* box and type in a number. There is no limit to the size of font that can be selected, but of course if the font is set too large it won't be displayed properly.

5. The item width can be set in the *Item width* box.

The default item width is set to adapt to the width of the user's screen. It is highly recommended that you do not change this setting.

Some institutions prefer students to take Tests only on specifically designated computers which have a specific screen width. ZUMMIT TESTING(ZT) offers the option to set the width for a given item. However, for most schools, setting a width presents a significant disadvantage in that a set width setting that doesn't adapt to screen size means different-sized computer screens may have problems displaying Items. If it is unnecessary to specify the item width, it is best to use the default setting.

6. If you are not satisfied with any of the settings you've selected, click on the *Eraser* icon on the right of any of the settings boxes, and the item will be restored to its default setting.

This is particularly useful if the settings selected for the item render an indecipherable result. Simply restore the default settings with a click.

Item language

[Items](#) are language-specific. The language configured for an item will be used for two things: to set the writing direction of your item (left-to-right or right-to-left), and to initiate the correct language for the text-to-speech functionality.

After you've created and saved your new item (these steps are described in the chapter [Creating a test item](#)), you will need to set the language in which you wish to author the item. The default language is English, and the default language direction is left-to-right (LTR). In other words, if these two settings correspond to your item already, you do not need to change the existing configuration.

To set the language of your item, follow the steps below.

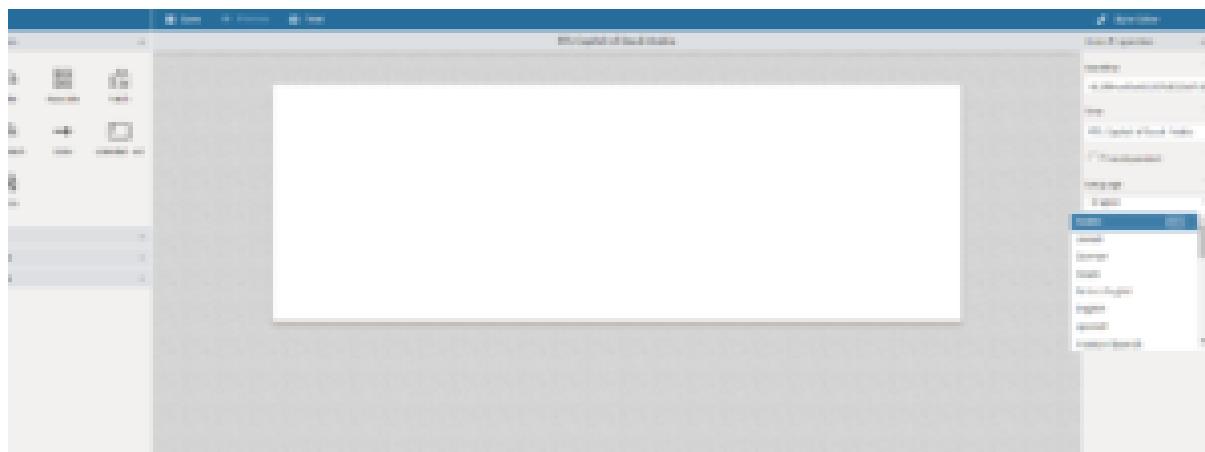
1. Select your item from the [Items Library](#).

This will take you to the empty item you have created. Click on the *Authoring* icon in the [Action Bar](#).

The [Item Properties](#) are located to the right of the canvas where you will author the item.

2. Select the language you need from the drop-down menu.

The example in the image below shows a new (still empty) item, for which the item author has selected Arabic as the language.



Setting the language of the Item

Note: If a language has the right-to-left mode activated there will be a RTL label next to it in the list of languages.

The language of your new item has now been configured, and you can start to author the item. Return to the chapter [Creating a test item](#) for information on how to do this.

Note: Your computer will need to be configured to write Arabic (or the RTL language of your choice) before you can author items in that language.

Item status

A newly created [Item](#) starts life as a *draft*, and must be submitted to a review process before it can be used in a Test.

There are different stages in the review process, and the *State* (or status) of an item shows the current stage of the item in question in this process.

The screenshot shows the 'Edit Item' dialog box in the center of the screen. At the top left of the dialog, there is a tree view under the 'Item' category, which includes 'Lost & Found', 'Playground', 'QA', 'Training / Demo', and 'Item 1'. The 'Item 1' node is selected. Below the tree view is a toolbar with various icons: 'New class', 'Delete', 'Import', 'Export', 'Duplicate', 'Copy To', 'Move To', and 'Access control'. On the right side of the toolbar, there is a 'Save' button. The main content area of the dialog has several fields: 'Label *' with the value 'Item 1', 'Resource Identifier' with the URL 'https://lutpr01sbp.eu.premium.taocloud.org', 'Item Model' set to 'QTI', and 'State' set to 'Draft'. There are two buttons at the bottom of this section: 'Submit item for review' and 'Abandon item'. Above the dialog, the main navigation bar of the application is visible, featuring tabs for 'Items', 'Tests', 'Test-takers', 'Groups', 'Deliveries', and 'Results'. The 'Items' tab is currently active. The top right corner of the interface includes a search bar labeled 'Search item', a magnifying glass icon, and a help icon.

Creating a new Item

The item in the image above has just been created, and therefore has the status (*State*) of being a draft.

To review an item, the following steps must be carried out:

1. Submitting an item for review.

The [Item Author](#) is responsible for submitting each new item for review.

As item author, click on the Items icon in the [Assessment Builder Bar](#). This will take you to the Items page. The [Library](#) on the left-hand side will show existing items.

Next, bring up the item you wish to submit for review by selecting it from the library. It will appear on the canvas, along with its properties. When a new item is created, it is automatically assigned *draft* status.

If you are happy with the new item, select *Submit item for review*. If not, you can either make further changes to it, or choose *Abandon item*.

Submitting the item for review changes its status to *Ready for review*. Selecting to abandon the item means that it will be marked as *Abandoned*.

2. Reviewing an item.

It is the responsibility of the [**Global Manager**](#) to review items marked *Ready for review*.

As the global manager, you can start the review by clicking on *Start item review* in the gray box below the status description.

The *State* will change to *In Review*.

When an item is *In Review*, three options will appear: *Accept Item*; *Item revision required*, and *Reject Item*.

If you decide that the item has passed the review, select *Accept Item*. Its *State* will change to *Final*. The item can now be used in a test.

If you decide that the item requires further revision, it will be returned to the item author, who will need to make the necessary modifications. In this case, its *State* changes to *Revision required*.

If you choose to reject the item, its state is changed to *Rejected*.

3. Revising an item.

After revising the item as item author, you can choose to *Resubmit item for review* if you are happy with the revisions you have made, or to *Abandon item*.

Clicking on *Resubmit item for review* will take the *State* back to *Ready for Review*, and the whole review process begins again. Abandoning the item means that its status will change to *Abandoned*.

6. Retiring an item.

A global manager can also decide to *retire* an item. If this is the case, the status of the item is changed to *retired*, which indicates that the item is no longer in use.

Note: The status of an item has no binding implications for its use in tests. Items should, however, be filtered by status during test assembly to ensure that only those which have passed the review process are inserted in tests.

See the section on [**Creating a test**](#) for information on how to use successfully reviewed items in tests.

Classifying items

As an institution's collection of [Items](#) grows, most test authors will find it increasingly unwieldy to locate the right set of [interactions](#) for a given Test. ZUMMIT TESTING(ZT)'s [Metadata](#) offers a way of finding relevant Items for your Tests easily, even when there are hundreds or thousands of Items to choose from.

Note: Although this section only covers Metadata that apply to Items, the procedures for applying Metadata to Tests, Test-takers, Groups, and Deliveries are very similar.

Properties define the Metadata entered for your items, and can be added to any item. Metadata is useful as it can help identify Items used in a specific course, for a specific instructor, within a specific Test, etc. Searches identify these specific Items so that they can be easily accessed.

Note: The Search option is only available for advanced installations, and does not form part of the official release.

Inserting or editing Properties

1. Click on an Item [class](#) to add or edit properties.

This brings up the Properties window for that particular class (folder). Properties define the Metadata which apply to a given Item. The Properties window for the class you are reviewing allows you to change the label of the class and shows the Properties which comprise the Metadata set for all the Items in that class. For items, the first four Properties listed cannot be edited: *Item Content*, *Original Filename*, *Item Model*, and *Lock*. Other Properties in the list of class Metadata can be both edited and, if necessary, deleted.

2. To add a new Property in the class Properties window, click on the blue *Add Property* button below the Property list.

This adds a new Property at the end of the list. Before it can be used in ZUMMIT TESTING(ZT), you will need to add information to it.

3. To edit a Property in the Properties window for the class, click on the Edit icon.

The *Edit* icon is located on the right, and looks like a pencil.

When in *Simple Mode* (default), the *Edit* icon brings up a box in which the Item's Properties can be edited. There are four fields to fill in. The first field allows the Property Label (name) to be changed from *Property_X*. The second field asks if the Property is language dependent; this indicates if the value of this field can be translated (the default is *false*). The third field asks for the Form Field Order: this defines the position of the new Property in the list of all the properties pertaining to that item. The fourth field asks for the field type. This is important as it describes how the Property is defined and modified. A drop-down menu provides six basic choices:

- Text (three options: *short-field*, *long-box*, and *long-HTML editor*)

- List (three options: *Single choice radio button*, *single choice drop down menu*, and *multiple choice check box*)
- Tree (*multiple node choice*)
- Calendar
- Password
- File

When in *Advanced Mode* (which can be selected once the *Edit* icon has been clicked), the box is different. The first two fields are the same (*Label* and *Is Language Dependent*), but the Form Field Order and Type are replaced with a Widget range, which provides a drop-down menu for selecting a Property Type (many more options are presented here), and a Resource Window, through which a Property resource type can be selected.

Once you've selected the values which apply to this Property, click on the blue *Save* button: This will save and reload the window. Remember that you can delete the Properties you add by clicking the *trash can* icon.

4. To edit a List used with an existing property, hover over the cogs icon in the [Assessment Builder Bar](#) and select *Lists* from the dropdown menu.

A window will appear showing all the available Lists which can be used with the Properties in your ZUMMIT TESTING(ZT) Library. On the right-hand side of the window you will find all the lists which might apply to any Item set created in your ZUMMIT TESTING(ZT) set-up. These can be edited or deleted here.

On the left-hand side of the window is the option to create a new list. To create a list, you need to enter the name of the new list, as well as the number of elements in it.

Using Metadata to Search for an Item

Reminder: The Search option is only available for advanced installations, and does not form part of the official release.

1. Select the criteria you wish to use in your Search for items.

In the search box on the right of the blue Action Bar, enter the value of any property for which you wish to retrieve the relevant items – for example, you may wish to retrieve all items containing multiple choice interactions. This can be any of the Metadata you entered in the Properties description: the Label field (if Items are named for easy retrieval), Language field, item Type, or any other Properties you defined for the items in the Class for which you are carrying out the search.

To make your search more specific, it is also possible to use the name of the Property as well as its value to guide the search. For example, you may wish to retrieve all items with a certain Label field. In this case the search criteria needs to take the form of the following example: *Label:biology*.

2. Once you've selected the filter criteria for your search, click on the blue *Search* button.

This will bring up a list of Items which meet your filter criteria. In this window, you can select any Item you wish to open. This could be to preview, or to author, or simply to identify where the Item is located for use in building your Test.

Putting tests together

Overview:

Tests

[Tests](#), or assessments, are assembled from individual [Items](#). Items are built from [Interactions](#), which are based on exercises such as multiple choice questions. Tests define the order of items, as well as how and when they are presented to the Test-taker. They also define the constraints and settings, including those related to time and navigation policies. Tests may be built from building blocks called *Item Sections* that logically sort Items into groups, making configuring a Test easier.

In ZUMMIT TESTING(ZT), assessments are assembled from individual items that are later delivered to test-takers through an automated [Delivery](#) system. If there are enough items within a test, they can be sorted and grouped into item sections according to any logical set of criteria. Tests should be given an appropriate title which helps test-takers to accurately identify the assessment if it appears in a list of other assessments which the test-taker must also take at the same time. Test designers must consider issues such as whether the test-taker will need to follow a linear path through a test – where questions need to be answered in a specific order, with no option to revisit them later – or whether questions can be answered in any order and revisited if desired. Time limitations and feedback are also important elements in successful test design.

This section provides an overview of how to put a new test together. See [Creating a test](#) for information on how to do this. (To create a new test, items first need to be created, so that they can be used in assessments. See [Creating a test item](#) for further information.)

The sub-section [Configuring tests](#) describes the choices you will need to make along the way: you will need to assign certain properties to your test – and there are four levels on which to do this, from the top test level down to the individual item level.

The image below shows a sample test, the SDG Quiz (on the Sustainable Development Goals of the United Nations).

The screenshot shows the tao testing platform's 'Manage Tests' section. A navigation bar at the top includes links for Home, Tools, Test-takers, Deliveries, Results, Assets, and Test-centres. On the left, a sidebar titled 'Select Items' lists various item categories: 'Items' (selected), 'Capitals of the world', 'Lost & Found', 'Phonetic Demos', 'QA', and 'Training / Demo'. Below this is a note: 'IMPORTANT NOTE: PLEASE READ!' followed by a large black redaction box. The main area is titled 'SDG Quiz' and contains a test titled 'testPart-1'. The test is divided into two sections: 'Section 1: About SDGs' and 'Section 2: Understanding SDG relationships and targets'. Each section contains four items, each with a dropdown menu icon. The first item in both sections is highlighted.

Sample test

Possible ways of scoring your test are described in [Scoring tests](#), and [Previewing a test](#) shows how to check that your test functions correctly.

Finally, there is a chapter on how to [publish a test](#) – i.e. convert it into a deliverable form.

Creating a test

ZUMMIT TESTING(ZT) defines a [Test](#) as a collection of [Items](#) designed to assess the academic progress of a Test-taker. This approach allows for the rapid assembly of tests administered across computer networks. If all you have is 30 minutes to create a 10-question quiz for your 8th grade class, ZUMMIT TESTING(ZT) can help.

The image shows an example of a constructed test. If there are enough items in a test, it can be divided into separate test-parts and sections (as described in the steps below).

The screenshot shows the ZUMMIT Assessment Builder interface. At the top, there is a navigation bar with icons for Items, Tests, Test-takers, Groups, Deliveries, and Results. On the far right, there are links for Admin and Help. Below the navigation bar, the main area is titled "Manage Tests". A "Save" button is visible at the top left of the main content area. The central part of the screen displays two sections of a test: "QTI Example Test" and "QTIExamples". Each section has a title, a toolbar with icons for edit, delete, and save, and a list of items. In the "QTI Example Test" section, there is one item: "1. Example_0_Introduction". In the "QTIExamples" section, there are seven items: "1. example_1_TAO", "2. example_2_Math", "3. Example_3_Baudelaire", "4. Example_4_Appearance", "5. Example_5_Picasso", "6. Example_6_Geography", and "7. Example_7_Geo 2". On the left side, there is a sidebar titled "Select Items" with a search bar and a list of available items. The list includes "QTI Example Test", "Planets and moons", "Elections in the United States, 2...", "Periods of History", "The Space Shuttle, 30 years of a...", "Chocolate Factory", "Associate Things", "Richard III (Take 2)", "Characters and Plays", "Identifying Sentence Errors", "UK Airports (Take 1)", "Modal Feedback", and "Item 12". At the bottom of the sidebar, it says "Selected items : 0". The footer of the page contains the text "© 2013 - 2018 - 3.3.0 - Open Assessment Technologies S.A. - All rights reserved."

Now, let's walk through the steps of creating a test.

1. Click on the Tests icon in the [Assessment Builder Bar](#).

This will take you to the Tests page, and will show the last test which you, or the user before you, created. On the left-hand side of your screen you will see the [Test Library](#) of existing tests. The last test which was created will be highlighted in the library. In this tour, however, you will create a new test.

2. Click on the *New test* icon in the button bank under the library.

This will create a new test in the highlighted folder.

Note: To create a new test in a different folder, select the desired folder in the library, and then click on the New test icon in the button bank. To create a new folder (in ZUMMIT TESTING(ZT) these represent new classes), click on New class in the button bank, and then give it a label. Highlight where to put the new folder relating to the new class.

The screenshot shows a software interface for managing tests. At the top, there's a navigation bar with tabs: 'Items', 'Tests' (which is selected), 'Test-takers', 'Groups', 'Deliveries', and 'Results'. Below the navigation bar, there's a toolbar with 'Properties' and 'Authoring' buttons. The main area is titled 'Test properties'. It contains fields for 'Label *' (set to 'Test 2') and 'Test Model' (set to 'QTI 2.1 Test Driver'). A 'Save' button is located at the bottom right. On the left, there's a sidebar with a tree view under the 'Test' category, showing 'QTI Example Test' and 'Test 2'. Below the tree, there are several buttons: 'New class', 'Delete', 'Import', 'Export', 'Duplicate', 'Copy To', 'Move To', 'New test' (with a hand icon over it), and 'Publish'.

Creating a new Test

3. Label and save your test.

Once you have created a new test, this will bring up a new dialog box which gives you the option of naming, or labeling your Test.

After labeling your test, click on *Save*. This produces an empty test, which you can now populate with items.

Note: It is always a good idea to save test assembly work every ten minutes or so, to prevent losing your work.

4. Click *Authoring* in the [Action Bar](#) to insert items into your test.

This will take you to the empty test you have created. You can now start to populate the [Canvas](#) in the middle (the test assembly) with items.

Tests can be divided into a hierarchy of two levels: [Test parts](#), and [Sections](#). A *Test part* is the first tier division of a test, while a *Section* is the second tier division.

Test divisions, however, are optional, and they are added in reverse order. For instance, if a test has no divisions, all items will simply be added to Part 1 Section 1. If only one level of division is needed, adding *sections* will allow a test to be divided into two. If both levels are required, you need to add new *test parts*. To add new *sections*, click on the blue *New section* button below the existing sections in the test. To add new *test parts*, click on the blue *New test part* button below the existing test parts.

At the start of any section, a *Rubric Block*, or explanatory text, can be entered prior to the insertion of items. To do this, click on the icon with the letter “A” on it, and then click on the blue *New Rubric Block* button that appears. Add your text in the space provided.

5. Search for items for your test.

The [Library](#) on the left shows the items which can be used in your test.

There are two ways of searching for items:

- Click on the *Item* drop-down menu above the library. The available item classes, or folders, will be shown in the library below. Click on the folder you wish to open, and the items in it will appear in the library. By selecting one of the two icons to the right of the *Item* drop-down menu you can choose to view the available items either as a list or in a tree.
- Click on the *plus* sign to the right of the *Search* box to carry out an advanced search. A dialog box will appear. Clicking on *Choose a value* in the *State* box will open a drop-down menu, which enables you to filter the available items according to their status. Items which have passed through the review process and have been approved are marked *final*, and it is recommended that you use only these items in your test. Ticking the box on the right will clear your selection. Alternatively, if you know the name of the item you are looking for, you can enter it in the *Label* box. Clicking on *Apply* will take you to that item. Click *Reset* to clear your selection.

From the library, select the item you wish to add, and then click on the blue button that reads *Add selected item(s) here*.

Note: It is easiest to add items in the order in which they are to appear in the delivered test. If an item is added out of order, however, this can be corrected by clicking the upward or downward arrow buttons which appear after the properties icon on the right of the item. Delete unwanted items by clicking on the trash can icon.

6. See the chapter on [Test Settings](#) for information on adjusting assessment settings such as the time/attempts to be allowed. See also [Configuring a test](#) for details of other configuration possibilities.

7. Finally, the scoring method must be defined for the test. Possible scoring methods are described in [Scoring Tests](#).

What you can do with your test

Existing tests can be moved, copied and duplicated. See the section [Moving, copying and duplicating tests](#) for information on how to do this.

Once a test has been created, it can be published directly from the Tests page, rather than going to the Deliveries page to assemble it. See the section [Publishing Tests](#) for information on how to do this.

Finding an existing test

You can use the *Search Test* button on the right of the Action Bar to look for already existing tests. A list of tests with that name will appear. Click on *Open* if you want to open one of them.

Configuring Tests

Overview

[Tests](#) can be configured in a number of ways to suit your assessment scenario. This section tells you about the ways you can configure your tests so that they do what you want them to, and also appear to the test-taker as you would like them to.

It contains a chapter on [Test settings](#). Here you can find information on how to set a time limit for your test, how to configure the test if you want the questions to be answered in a fixed order or not, how many attempts test-takers can have at particular items in the test, if they can pass on certain items, as well as if the items can be shuffled (in which case they appear in random order to the test-taker). It discusses briefly what settings are possible for scoring your test (there is more detailed information on this in [Scoring tests](#).)

It also contains a chapter on [Test-taker tool configuration](#). Here, you can find information about the [Test-taker tools](#) which are available in ZUMMIT TESTING(ZT). These comprise a set of tools designed to aid the Test-taker in various ways when taking Tests, many of which are accommodation tools which aim to improve accessibility.

Finally, there is a chapter on [Providing test-level instant feedback](#), which tells you how to configure the test to provide direct feedback about how well test-takers have done in their assessment.

Tests are configured in the [properties panel](#) of the test, as shown on the right of the image below. These are accessed by the cogs on the right of whatever part of the test you want to configure. The image below shows the properties for one of the items in the test (the cogs to the right of the item are blue).

Configuring tests

Test Settings

After creating a new [Test](#), it will be necessary in most cases to set various properties for the assessment and its individual parts. There are four levels in which properties may be assigned: the [Test](#) level, the [Test part](#) level, the [Section](#) level, and the [Item](#) level. These properties will appear in the [Properties Panel](#) on the right when you click on the appropriate properties icon (depicted as three interacting gears).

The *Test* level properties icon can be found in the Test bar at the top of the canvas. *Test part* level properties icons can be found in each grey *Test part* bar, while *Section* level properties icons will be found on the same line as the section label. *Item* level properties icons can be found next to the item's label.

Test Settings

1. Click on the *Test* level properties icon.

This brings up four panels on the right: general properties, *Time Limits*, *Scoring* and *Outcome Declarations*.

In the general properties, the *Identifier* box should normally be left as it is, though it is editable. However, the test *Title* can be renamed to make it easier for the Test-taker to identify.

In the *Time Limits* you can set a time limit for tests at either the item level or the test level. To limit the amount of time the test-taker has to complete the test, enter the maximum duration (in hours, minutes, and seconds). If late submissions are to be accepted, check the *Late submission allowed* box. If the duration is to be strictly enforced (i.e. no late submissions are allowed), leave this unchecked.

See the section on [Scoring Tests](#) for more information on *Scoring* and *Outcome Declarations*.

Test Settings

2. Click on the *Test-part* level properties icon.

This brings up three panels on the right: a general properties panel, an *Item Session Control* panel, and a *Time Limits* panel.

In the general properties panel, the *Identifier* box should be renamed as appropriate.

The *Navigation* box, or how the test-taker is allowed to answer questions, should be selected as either linear (first question first, second question second, etc.) or non-linear (can be answered in any order).

Select the *Submission* mode as either individual (submitted response by response) or simultaneous (submitted on completion of the *test-part*) by clicking in the appropriate box.



Settings for Test Parts

In the [Item Session Control Panel](#), set the following four properties:

Set *Max Attempts* to the number of attempts the test-taker may have (the default setting 0 permits an unlimited number of attempts).

Check the *Show Feedback* box if the test-taker should see the modal feedback (instant feedback) after completing this test-part.

Check the *Allow Comment* box if the test-taker may provide explanations for responses, or leave feedback for the test.

An *Allow Skipping* box will be visible if this has been configured on the server. If this box is checked, a *Skip* button will appear during the test for the questions in this test-part. The test-taker can choose to pass on any of the questions by selecting this button. In other words, if the test-taker selects the *Skip* button, they will be taken to the next question in the test and any answer given to the question on the screen will be disregarded, and therefore *not* submitted for processing.

Note: In contrast, if the test-taker selects the Next button, they will also be taken to the next question, but in this case any answer given will be submitted for processing.

Check the *Validate responses* box if only responses which are valid should be accepted. If this box is checked, constraints governing the test-taker's response (such as if the minimum and maximum choices specified for that question have been given) will be checked before the test-taker can proceed to the next question.



Item Session Control

The time limits section is similar in nature to the time limits section for the test level properties, except that the settings apply to the current test-part only.

A screenshot of the Test Management interface. The top navigation bar includes 'Tests' (highlighted), 'Items', 'Test-takers', 'Groups', 'Deliveries', and 'Results'. On the left, a sidebar lists various items like 'Planets and moons', 'Elections in the United States, 2004', etc. The main area shows a 'QTI Example Test' with sections 'Introduction' and 'QTIExamples'. The 'Introduction' section contains one item: '1. Example_0_Introduction'. The 'QTIExamples' section contains eight items: '1. example_1_TAO', '2. example_2_Math', '3. Example_3_Baudelaire', '4. Example_4_Appearance', '5. Example_5_picasso', '6. Example_6_Geography', '7. Example_7_Geo 2', and '8. Example_8_Geo 3'. To the right, a 'Properties' panel is open for the 'Introduction' section, showing settings for Identifier (set to 'Introduction'), Navigation (Non Linear selected), Submission (Individual selected), and Time Limits (Maximum Duration set to 00:00:00). A note says 'Late submission allowed'.

Time Limits for Test Parts

3. Click on the *Section* level properties icon.

This brings up eight panels on the right: general properties, *Test Navigation*, *Navigation Warnings*, *Test-taker Tools*, *Selection* properties, *Ordering*, *Item Session Control*, and *Time Limits*. The last two panels are the same as the last two in the test part properties, while the first six panels differ from previous levels.

Note: In the Ignite/Premium Edition of ZUMMIT TESTING(ZT), tests can be configured at section level to provide test-takers with the option of hearing the test content as well as reading it. This text-to-speech functionality allows the test-taker to hear the test questions, or parts of them, read aloud. See the chapter [Test-taker Tool Configuration](#) for more information.

The general properties include an identifier and title: the default name in the *Identifier* box should generally be maintained, while the *Title* can be changed to suit the test. In general, the *Visible* box should be checked (or else the test-taker is unable to see the section), and the *Keep Together* box should also be checked if it is important that the entire section be completed before moving onto the next section. *Categories* act as tag references, which may be displayed to the test-taker.

Settings for Test Sections

In the *Test Navigation* panel, if *Enable Review Screen* is checked, a review panel will appear on the left when a test-taker is taking the test.



How the Review Panel appears to the test-taker

The Review Panel in the example above shows a non-linear test. See the chapter on the [Review Panel](#) for more information on how it can be used.

If *Enable Mark for Review* is checked, the test-taker has the option of flagging items in the test (to be able to return to them later). Check *Informational Item Usage* if the item has been included in the test for informational purposes only. This prevents the item being treated as a question.

In the *Navigation Warnings* panel, check the boxes where you would like the test-taker to receive (or *not* receive) the warning in question.

In the *Test-taker Tools* panel, set the tools which should be made available to the test-taker for this section. See the chapter on [Test-taker Tool Configuration](#) for more information on the tools available.

The *Selection* panel asks if the delivered test section should include only some of the items assigned it (*Enable selection*), and if so, how many (*Select*). If *With Replacement* is checked while the selection mode is enabled, then questions may be repeated. Normally, they are only allowed to be used once in a Test sitting.

Ordering contains only one property setting, which is *Shuffle*. This setting randomizes the question order.

For *Item Session Control* and *Time Limits*, see the descriptions in the test-part properties above.

4. Click on the *Item* level properties icon.

This brings up seven panels: general properties, *Test Navigation*, *Navigation Warnings*, *Test-taker Tools*, *Weights*, *Item Session Control*, and *Time Limits*.

The last two panels are the same as the last two in both the test-part and section level properties. The three panels after the general properties (*Test Navigation*, *Navigation Warnings* and *Test-taker Tools*) are the same as in section level properties.

Note: In the Ignite/Premium Edition of ZUMMIT TESTING(ZT), the text-to-speech functionality (described above for section level properties) can be also configured at item level.

The general properties include entries for: *Identifier*, *Reference*, and *Categories*. It also includes check boxes to indicate if the item is *Required* and if it is *Fixed*.

The screenshot shows the ZUMMIT TESTING (ZT) software interface. The top navigation bar includes tabs for 'Tests', 'Test-takers', 'Groups', 'Deliveries', and 'Results'. Below this, a sidebar lists various filters and categories such as 'Elections in the United States, 2004', 'Periods of History', 'Chocolate Factory', and 'The Space Shuttle, 30 years of advent...'. The main content area displays two sections of test items. The first section, 'QTI Example Test', contains one item: '1. Example_0_Introduction'. The second section, 'QTIExamples', contains eight items: '1. example_1_TAO', '2. example_2_Math', '3. Example_3_Baudelaire', '4. Example_4_Appearance', '5. Example_5_picasso', '6. Example_6_Geography', '7. Example_7_Geo 2', and '8. Example_8_Geo 3'. Each item has a properties panel on the right, showing fields for 'Identifier' (e.g., 'item-1'), 'Reference' (e.g., 'http://tao.lmt/tao.nsf#1.149'), 'Required' (unchecked), 'Fixed' (unchecked), and 'Categories' (empty). A 'Navigation Warnings' panel is also visible on the right side of the interface.

Settings for Test Items

The *Identifier* and *References* boxes generally do not require modification. *Categories* act as tag references which may be displayed to the test-taker. If the *Required* box is checked, the item will appear in the test, even if less than the total number of items appears in a given test (in a section where selection is enabled). If the *Fixed* box is checked, the item will appear in a particular order, even if the section ordering calls for shuffling. Categories are not displayed to the test-taker; typically they are used to calculate aggregate scores (e.g. on sub-domains). For more information, see the chapter on [Scoring Tests](#).

For *Test Navigation*, *Navigation Warnings* and *Test-taker Tools*, see the description in the section level properties above.

In the *Weights* panel, the weight of that item can be adjusted. It is also possible to add further weights if you wish to enable the item to be scored in different ways for different tests. (The weight value to be used for a specific test should be selected in the *Weight* box in the *Scoring* panel in the test properties section above.) The default weight value for each item is 1. The chapter on [Scoring Tests](#) gives more information on weights.

For *Item Session Control* and *Time Limits*, see the descriptions in the test-part properties above.

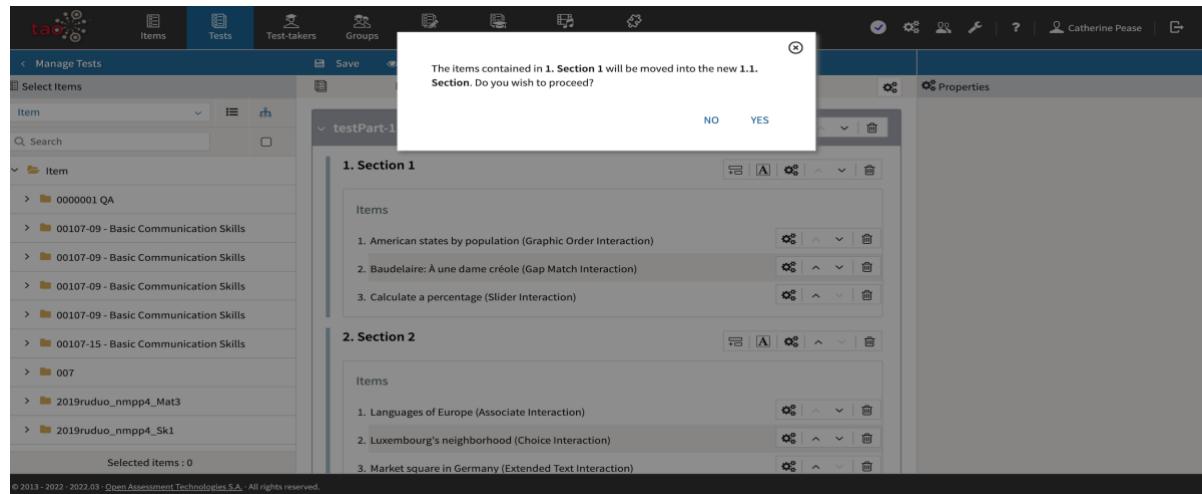
Test Section Shuffling

Test authors have the ability to shuffle entire sections defined in a test, so that those sections are presented in a random order to the test-taker during the delivery execution time. This feature is extending the already existing item shuffling functionality but at the section level. As a means to provide section shuffling, ZUMMIT TESTING(ZT) has the capability of having up to 3 levels of section. The items within shuffled sections will remain in their original order, i.e. they will not be shuffled themselves.

- - a. Create a new test or navigate to an existing test for which you'd like to apply section shuffling. To do this, follow the step-by-step instructions for [creating a new test](#).
 - b. Create a new section level by clicking the sub-section icon within the Test Section.



Note: A section cannot contain both other sections and items. If the current section includes items, a dialog box will appear to confirm that the items within the section will be moved to the new level. If empty, no warning will be displayed, as new sections can be added freely.



You can create up to 3 levels of a section to enable section shuffling.

- c. Click on the Properties icon within the parent section you are working in. The Properties pane on the right side of the screen will populate with details about the section property.
- d. Expand the Ordering tab within the Properties panel.
- e. Click the “Shuffle” checkbox to enable shuffling for the test section.

 Properties

Section 1

Identifier * ?

Title * ?

Visible * ?

Keep Together ?

Categories ?

Selection ▼

Ordering ^

Shuffle ?

Item Session Control ▼

Time Limits ▼

Note: The ‘Keep Together’ checkbox specifies whether or not the items within a sub-section will be shuffled as a block for test takers, or mixed with the other child items of the section when shuffling is enabled for the parent section.

Test-taker tool configuration

The [Test-taker Tools](#) comprise a set of tools designed to aid the Test-taker in various ways when taking Tests. Many of them are accommodation tools which aim to improve accessibility. The test-taker tools for a test can be found in the [Properties Panel](#) on the right.

To configure the test-taker tools for a specific test, follow the steps below.

1. Select the test for which the test-taker tools are to be configured from the [Test Library](#) on the left, and click on *Authoring*.

Test-taker tools can be configured either for a whole section of a test, or on a per-item basis. To configure the tools for a whole section, on the [Canvas](#) click on the cog wheels to the right of the section in question. To configure the tools for an individual item, click on the cog wheels to the right of the item in question.

In each case, the test-taker tools will appear in the properties panel on the right.



Test-taker Tool Configuration for a Section

2. Check the boxes next to each of the test-taker tools you wish to activate. The tools available can be divided into the following groups:

Calculators

ZUMMIT TESTING(ZT) provides three different calculators: a simple one, a BODMAS, functioning according to the BODMAS rule, and a scientific version, for solving science, engineering and mathematical problems.



Calculators

Note: If you select multiple calculators, only the most complex variety will be used!

Visual Aids

This set of tools can help a test-taker to focus visually on a particular part of the test question in various different ways:

Answer Eliminator: The Answer Eliminator allows the test-taker to eliminate answers in *Choice* interactions. This is useful if there is a long list of answer choices, and the test-taker has a learning disability.

The screenshot shows a test interface with a blue header bar. On the left is the 'tao' logo. In the center, it says 'QTI Example Test - Section 1'. On the right, there are icons for 'Test Taker' and 'Logout', and a progress bar showing '11%'.

Which of the following countries are not in the European Union?

Eliminate

- France
- Norway
- Germany
- Iceland
- Poland
- Turkey
- Spain

The screenshot shows a test interface with a blue header bar. On the left is the 'tao' logo. In the center, it says 'QTI Example Test - Section 1'. On the right, there are icons for 'Test Taker' and 'Logout', and a progress bar showing '11%'. Below the header, a button labeled 'AB Answer Eliminator' is visible.

Answer Eliminator

Answer Masking: Answer Masking allows the test-taker to mask and unmask answers in choice interactions

The screenshot shows a test interface with a blue header bar. On the left is the 'tao' logo. In the center, it says 'QTI Example Test - Section 1'. On the right, there are icons for 'Test Taker' and 'Logout', and a progress bar showing '11%'.

Which of the following countries are not in the European Union?

Answer Masking

- Poland
- Romania
- Germany
- Suisse

The screenshot shows a test interface with a blue header bar. On the left is the 'tao' logo. In the center, it says 'QTI Example Test - Section 1'. On the right, there are icons for 'Test Taker' and 'Logout', and a progress bar showing '11%'. Below the header, a button labeled 'X Answer Masking' is visible.

Answer Masking

Area Masking: Area Masking allows the test-taker to mask parts of the item with a movable mask.



Area Masking

Highlighter: The Highlighter allows the test-taker to highlight parts of the text in an item.



Highlighter

Line Reader: The Line Reader allows the test-taker to visually isolate a line of text.



Line Reader

Magnifier: The Magnifier provides the test-taker with a movable magnifier tool.



Magnifier

Zoom Tool: The Zoom Tool allows the test-taker to zoom in on an area of an item.



Zoom Tool

Text-to-Speech

The text-to-speech functionality allows the test-taker to hear the test questions, or parts of them, read aloud. It is configured on the [Section](#) and [Item](#) levels of a test.

Note: This functionality is only available in the ZUMMIT TESTING(ZT) Premium/Ignite Edition (or higher).

Capitals of the world

What is the capital city of the United Kingdom?



- Manchester
- London
- Birmingham



Text-to-speech

To carry out the steps below to activate this functionality for your test: After [Creating a Test](#), configure the [Properties](#) for each section or item for which you wish to activate the test-to-speech functionality. Click on the appropriate properties icon (depicted as three interacting cogs) for the relevant section/item. The *Section* level properties icon can be found on the right of each section. The *Item* level properties icon can be found on the right of each item. The properties will appear in the [Properties Panel](#) on the right. Open the drop-down menu [Test-taker Tools](#) and check the *Text to Speech* box at the bottom. The text-to-speech functionality is now enabled, and will be available to test-takers for the relevant sections or items of your test.

APIP Text-to-speech

The APIP (Accessible Portable Item Protocol) text-to-speech functionality is an alternative to the normal text-to-speech functionality. It works using pre-recorded files for each item in a test. When it is enabled, a *Play* button will appear on the right of the test item when the test-taker is sitting the test.

Note: The recordings used for this functionality need to be prepared outside of ZUMMIT TESTING(ZT) and then imported, as ZUMMIT TESTING(ZT) does not support the authoring of packages with APIP content. These can be in any format, but the format needs to be compatible with the browser used.

Scratchpad

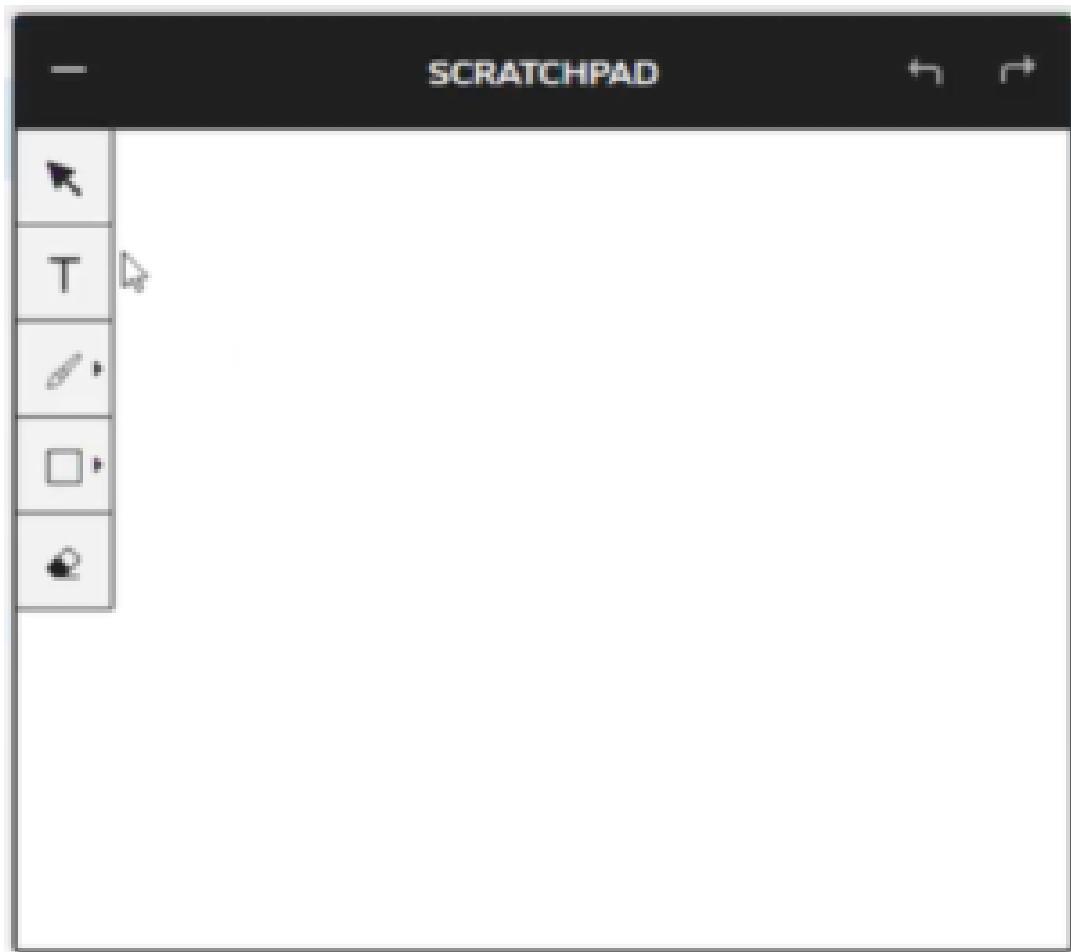
If you're using ZUMMIT TESTING(ZT) Advance (rather than the classic 3.x test-runner) to deliver your tests, you have the option of providing the test-taker with a place to make notes, in the form of a *Scratchpad*.

Using the three main tools available, test-takers can write and draw on the Scratchpad, incorporating any of the shapes and lines provided, in their notes. These tools are:

Text Tool: Used to write plain text. When selected, a text box appears in which the test-taker can write. This is represented by the T icon on the left-hand side.

Brush Tool: Used for drawings. When selected, the test-taker can sketch freehand on the Scratchpad. This is represented by the paintbrush icon on the left-hand side.

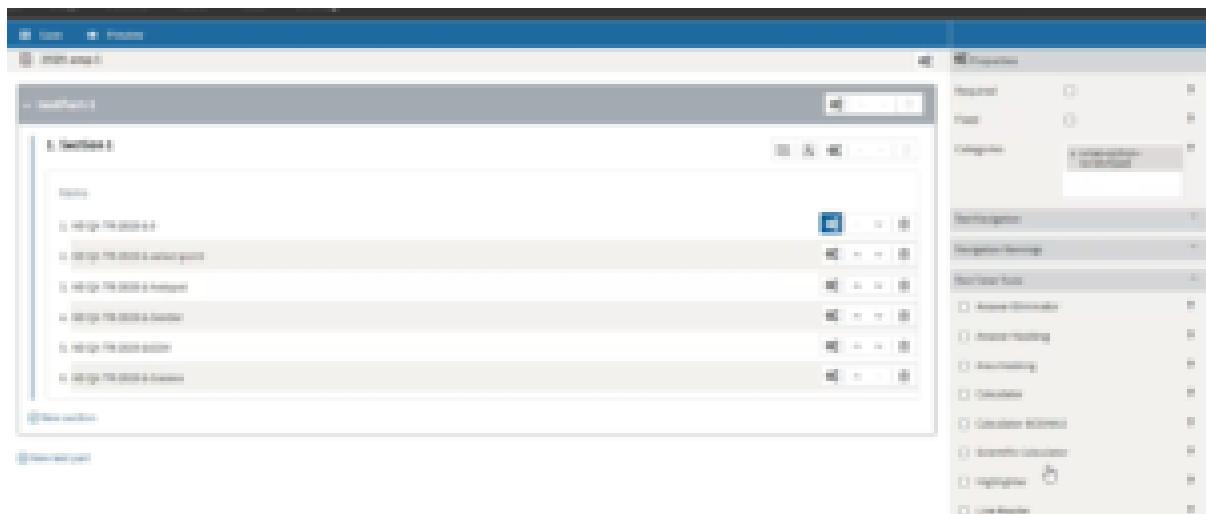
Shape Tool: Provides shapes. When selected, the test-taker can use rectangles, ellipses and lines in their notes. This is represented by the square icon on the left-hand side.



Scratchpad

Items on the scratchpad can be moved around using the *Select Tool* (arrow icon), or deleted using the *Erase Tool* (paint pot icon). The Scratchpad can be re-sized and moved around on the screen as the test-taker pleases.

The Scratchpad is configured on the Item level of a test. Instead of selecting it from the list of test-taker tools as you would the other tools described above, it is activated for the relevant items by adding the text *x-ZUMMIT TESTING(ZT)-option-scratchpad* in the *Categories* box in the Properties panel, as shown in the image below.



Activating the Scratchpad

Configuration is now complete. Any test-takers taking the test will have access to the selected tools, for the sections or items specified.

Providing test-level instant feedback

Test-takers often want direct feedback about how well they have done in their assessment. It is possible to configure a Test to offer them instant test-level feedback.

Follow the steps below to configure your test to provide test-level instant feedback:

1. Configure your test for [Outcome Processing](#).

Before you can provide test-takers with instant feedback on whether they have passed or failed, you need to configure the method of scoring for your test. To do this, click on Tests from the [Assessment Builder Bar](#), and select your test from the [Library](#).

Then, click on *Authoring* in the [Action Bar](#). Now you are in the test editor.

Next, click on the *Settings* icon to the right of test name at the top. This is depicted by three interlocking cogs.

After this, open the *Scoring* panel, and select *Cut score* in the drop-down menu of the *Outcome processing* box.

Then define a *Cut score* for your test.

Note: This needs to be a ratio (between 0.0 and 1.0) and is computed by dividing the maximum score by the total score. If Category score is checked, the same cut score will be applied to all categories (set to individual items)

When a *Cut score* has been defined, expand *Outcome declarations*, then regenerate the *Outcome variables*.

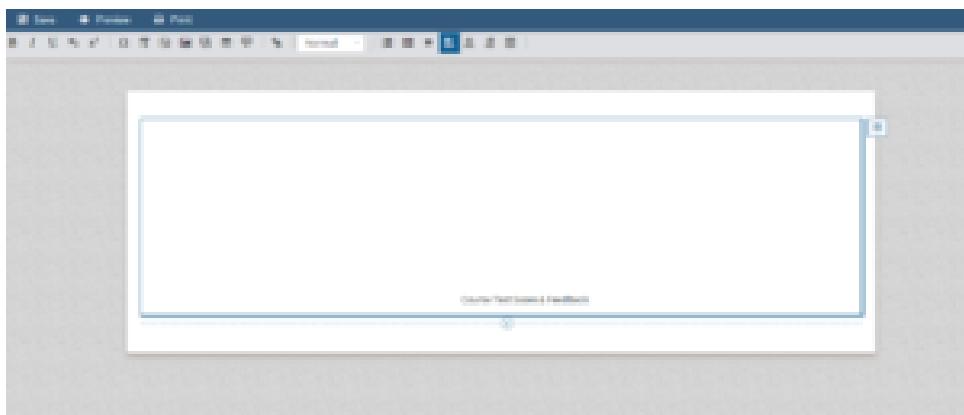
Note: The full set of Outcome variables can be found in the section [Scoring Tests](#).

2: Display the pass/fail captions.

The generated outcome variables can be used to display the appropriate pass or fail caption.

To do this, add a new [Test part](#) (or [Section](#)) at the end of the test.

Next, add an (informational) [Item](#) in the new test part (or section). If you don't have a suitable item already, you will need to prepare a new one. Follow the instructions in [Inserting a Text Block](#) for information on how to create an informational item. In the new item, add in a description such as 'Test Score and Feedback'. In order for the feedback you wish to give the test-taker to be displayed in a prominent position, it's a good idea to insert several blank lines at the top of your informational item (in other words, before the text). An example is given in the image below.



Informational item for feedback

Now you are ready to write your feedback. You will probably want to add two types – one for when the test-taker passes the test, and for when they fail. In the new test part (or section) you have created for your feedback, click on the A icon to the right of the test-part/section title. This adds a rubric block to the section. Then, click inside the blue *New Rubric Block* and insert an appropriate 'pass' caption, such as 'Well done!'. From the style options, make it a heading and select bold to make it stand out.

Add another rubric block by clicking inside the blue *New Rubric Block* below the first, and insert a 'fail' caption, such as 'Hard luck'.

Finally, specify when each of the captions should be displayed. To do this, click on the [Properties](#) icon on the right of each rubric block. The properties panel will open on the right.

If you would like the captions in a specific style, you can add a style sheet in the *class* box. This can also be left blank, however.

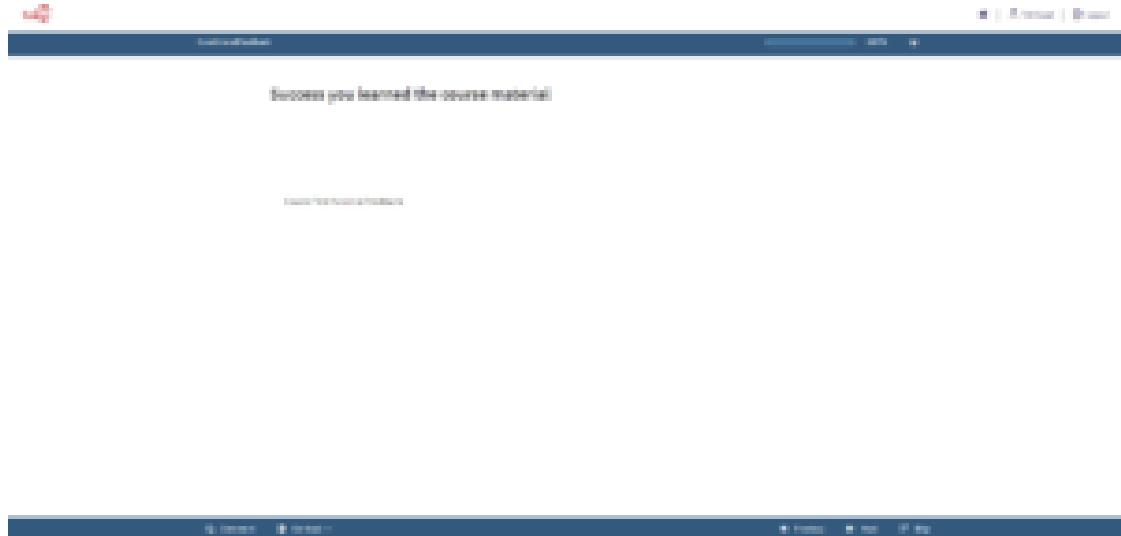
Then, click on the *Feedback Block* panel and check the *Activated* box so that your caption can be displayed as feedback.

Select the relevant outcome variable for your test (defined in the test-level properties) from the drop-down menu in the *Outcome* box, and then a value in the *Match Value* box which indicates the circumstances in which this caption should be displayed. For pass/fail captions, choose *PASS_ALL_RENDERING* from the menu in the *Outcome* box, and enter *passed* in the *Match value* box if the caption is for a positive result, and *not_passed* if the caption is for a negative result. *Note: The input in the 'Match value' box is case-sensitive.*

3. View the final outcome.

Save the test and create a new [Delivery](#) to view the final outcome.

The image below shows an example where the test-taker passed the test, and the feedback chosen was ‘Course success you learned the material’. The text beneath it is what was contained in the informational item. *Note: This is a generic informational item, which could be used to display the score as well as the feedback. It’s not recommended to leave the informational item empty.*



Example of feedback

Previewing a test

[Tests](#) can be previewed – or “test-run” – by test authors, to determine if they are set up correctly, make sense and run smoothly, and in order to see how they will appear to the test-taker.

There are several ways of test-running a test before it is used with test-takers. The simplest way is to use the *test preview*.

You will need to install the ZUMMIT TESTING(ZT) Extension: *Zummit testing(ZT)QTITestPreviewer* to preview your test in this way. Using the test preview, it is not necessary to either publish the test or to assign it to test-takers. The test preview allows you, as test author, to navigate through the test questions as a test-taker would.

Note: The function of the test preview is to show how the test would appear to the test-taker. No scores are generated when you take a test using the test preview. If you want to check the scoring method configured for your test, you will need to publish it and take it as a test-taker.

Follow the steps below to preview your test.

1. Select the test from the Tests library.

This will open the test on your screen.

2. Click on the *Preview* button on the blue bar above the open test.

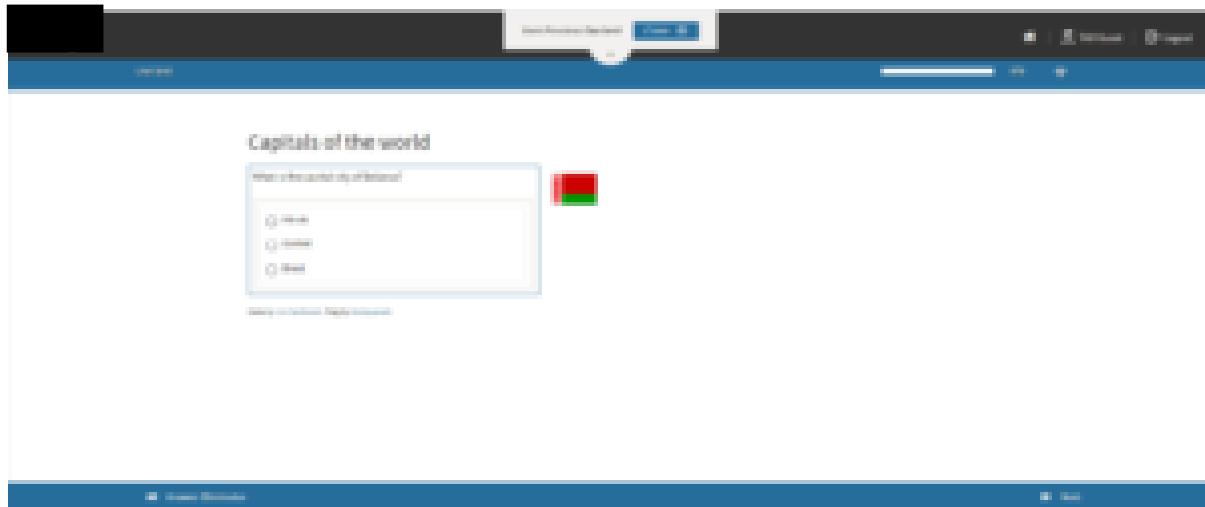
The first question of the test will be displayed on the screen, and any test-taker tools you have activated for this test (such as the highlighter or line reader) will appear along the bottom of the screen. The test-taker review panel will appear on the left if you have configured the test accordingly.

3. Take the test.

You can navigate through the test using the *Previous* and *Next* buttons on the bottom right, as a test-taker would. The percentage bar on the top left will show what percentage of the test has been completed (or test section, if you have them). If you have configured the test to give instant feedback, this will also be shown.

When you have answered all the questions, an *End test* button will appear. Normally, the test-taker would submit their answers using this button. Click on it to exit the test preview. This will take you back to the test in the test library.

The image below shows a sample test preview.



Example of a test preview screen

Note: As shown on the image, the user in a test preview is ZUMMIT TESTING(ZT) Guest. When a test preview is initiated, a new ZUMMIT TESTING(ZT) instance is automatically opened in which to run it, with the login ZUMMIT TESTING(ZT) Guest.

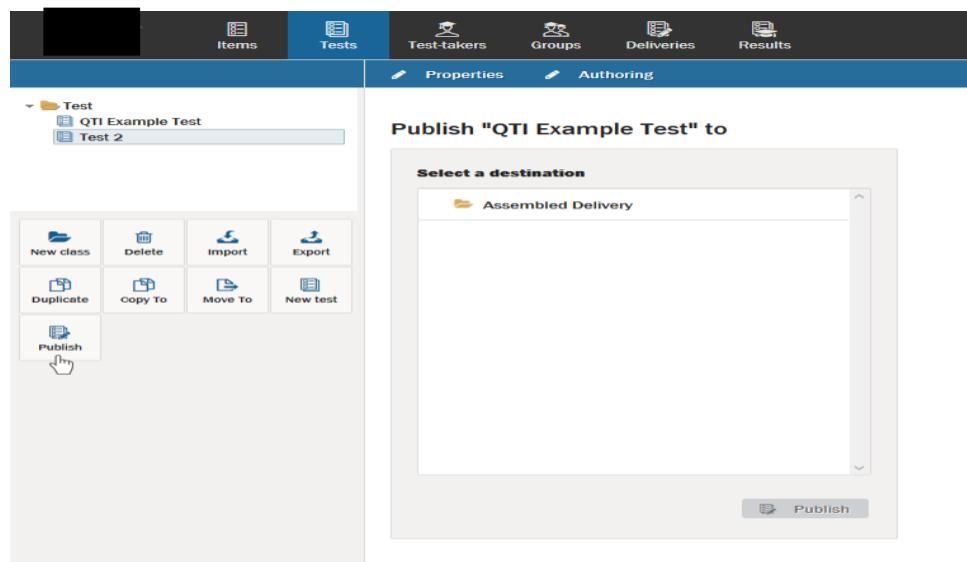
Publishing a test

Publishing a test means creating a [Delivery](#) for an assessment.

In ZUMMIT TESTING(ZT) there are two ways of creating a delivery: you can either follow the instructions described in the chapter [Creating a delivery](#), or you can publish a test directly from within the Test manager. The steps below show you how to publish the test directly.

1. Click on the *Publish* icon in the button bank under the library.

This will show the dialog below:



Publishing a test

2. Select the directory in which you want to create the delivery and click on *Publish* at the bottom of the dialog. A [Delivery](#) of your test will then be created in the folder you have selected. Remember that the library in this dialog refers to your deliveries and not your tests.

Note: If the background tasks functionality is installed on your version of ZUMMIT TESTING(ZT), the publishing process will be transferred to it (shown in a circle to the left of the [Properties](#) icon on the assessment builder bar). Clicking on the circle opens the list of tasks, containing information about each one. You can see here when the delivery has been created.

3. To configure the delivery you will still need to proceed as described in the section on [Deliveries](#). Open the delivery you have created to set the delivery properties in the same way you would when you create a delivery on the Deliveries page.

Managing your resources

Overview

Test materials, once created or imported into ZUMMIT TESTING(ZT), can be re-used in new test [Items](#) and when putting new [Tests](#) together.

This section tells you what you can do with your existing items and tests, as well as how to manage other resources which serve as supporting materials, such as media, so that they can be re-used.

It is divided into three sections. The section [*Managing items*](#) contains information on how to maintain multiple versions of an item, on importing and exporting items, and on moving, copying or duplicating items within the same device.

The section [*Managing assets*](#) contains information on the [Asset Manager](#), which is the area of the ZUMMIT TESTING(ZT) platform where you can store and access media files, such as images, and video and audio files. It also tells you how to create and store ‘passages’.

The section [*Managing tests*](#) contains information on how to import and export tests, and on moving, copying or duplicating tests within the same device.

Managing items

[Items](#), once created in ZUMMIT TESTING(ZT), can be re-used when putting new [Tests](#) together. This section tells you what you can do with your existing items, so that they can be re-used.

It contains chapters which provide you with information on how to maintain [multiple versions of an item](#), on [importing items](#) and [exporting items](#), and on [moving, copying or duplicating items](#) within the same device.

The image shows you the buttons in ZUMMIT TESTING(ZT), located below the Item library, with which you can carry out these actions.

Things you can do with your items

- Managing different versions of items

An existing [Item](#) can be modified and saved as a new version of the original item, either for purposes of updating the content, or so that item authors can collaborate on the creation of items.

You may wish to modify an existing item (which either you or another item author created) at a later date. For example, you may wish to change the wording of one of the questions, or put in a different image to reflect a change in emphasis. Here, you will probably want to save the original version, especially if it was authored by somebody else. Sometimes it's also useful to collaborate with other item authors on creating items, in which case you will need to save intermediate versions of them, which the other author can then build on.

The *Item History* function enables different versions of the same item to be maintained. Using *Item History*, both authors can see the history of an item (i.e. look at the different versions of it) and save new versions of the same item.

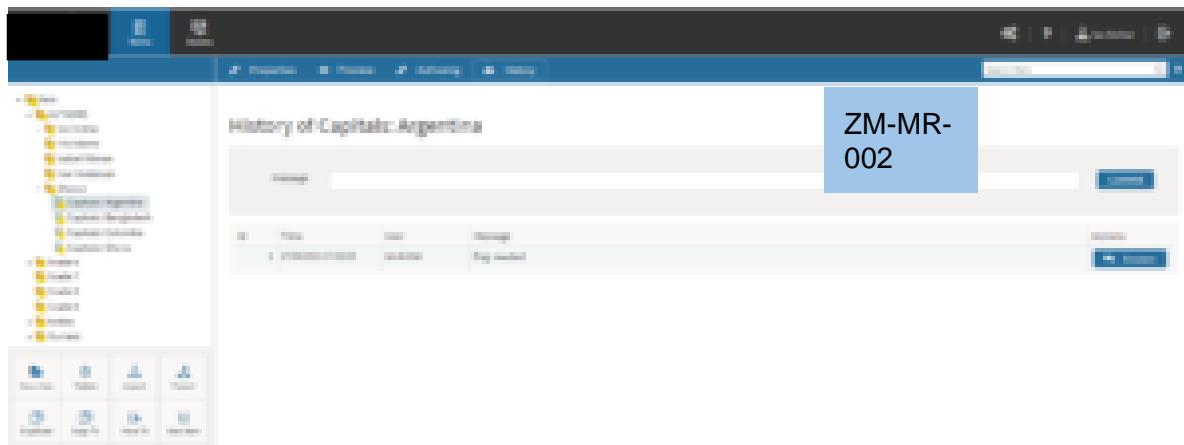
*Note: You will need to install the ZUMMIT TESTING(ZT) extension: *Zummit testing(ZT)*Revision in order to use Item History.*

Follow the steps below to make a revision to an existing item and save a new version.

1. Open the original item in the item library.

2. Click on the *History* icon next to *Authoring* in the action bar.

The image shows the history of an item which two authors are collaborating on. The message given in the first version of the item is telling the second author what task still remains for the item to be completed.



History of an item asking for the capital city of Argentina

Note: This is only necessary if the item doesn't yet have a 'history.' If it does – for example if you are the second author to contribute to an item you are collaborating on (as in the image above) and the first author has already described the initial version of the item using Item History – go straight to step 5.

3. Add a comment in the *Message* box.

This could be something which describes the original item, such as ‘this item uses images from Europe in the multiple choice question’.

4. Click on *Commit*.

This version will then be saved in the history of the item.

5. Make the desired changes to the item.

Modify the item as you wish, and save a second version, also describing it using the *History* icon by adding an appropriate text in the message box. The message would normally reflect the status of the item, or the specific change that has been made.

6. Click *Commit* again.

The new version will be saved with the time and user information as well as the message.

There are now two versions of the item, and the second version is the current ‘live’ version of the item. An old version can, however, be restored at any time, by going into *History* and clicking on the *Restore* button opposite the version you want to reactivate.

● Importing items

Items and Interactions can be imported from one computer to another, using an operation called *Import*.

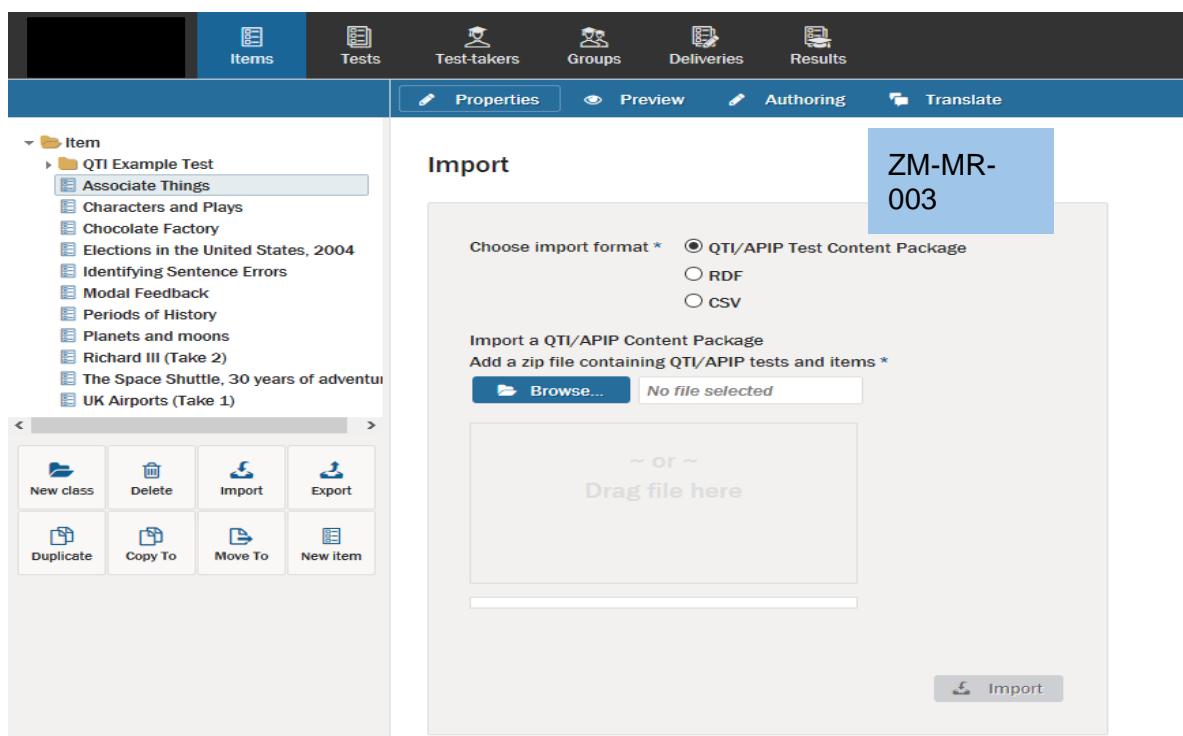
The steps to import items are as follows.

1. Click on *Items*  on the Assessment Builder Bar.

This will take you to the Item Library, which you will see on the left.

2. Click on the Item class  (i.e. folder) in the library that you wish to import the new item into.
3. Click on *Import*  in the button bank below the library.

This opens a dialog box which asks you to select the format of the item to be imported. The supported input formats are: *QTI* (*Question and Test Interoperability*) packages or items, *APIP* (*Accessible Portable Item Protocol*) packages, *RDF* (*Resource Description Framework*) or *CSV* (*Comma-Separated Values*) files. Be sure that the Item to be imported is in this format, or the import won't work.



The screenshot shows the 'Assessment Builder' software interface. At the top, there's a dark navigation bar with tabs: 'Items' (which is highlighted), 'Tests', 'Test-takers', 'Groups', 'Deliveries', and 'Results'. Below this is a blue header bar with buttons for 'Properties', 'Preview', 'Authoring', and 'Translate'. On the left, there's a sidebar titled 'Item' containing a tree view of item categories: 'QTI Example Test', 'Associate Things', 'Characters and Plays', 'Chocolate Factory', 'Elections in the United States, 2004', 'Identifying Sentence Errors', 'Modal Feedback', 'Periods of History', 'Planets and moons', 'Richard III (Take 2)', 'The Space Shuttle, 30 years of adventure!', and 'UK Airports (Take 1)'. At the bottom of this sidebar are buttons for 'New class', 'Delete', 'Import', 'Export', 'Duplicate', 'Copy To', 'Move To', and 'New item'. The main area is titled 'Import' and contains a form. It has a label 'Choose import format *' with three radio buttons: 'QTI/APIP Test Content Package' (which is selected), 'RDF', and 'CSV'. Below this is a section for importing a QTI/APIP Content Package, with a 'Browse...' button and a field showing 'No file selected'. There's also a 'Drag file here' area. At the bottom right of the import dialog is a large 'Import' button.

Importing Items

4. Click the blue *Browse* button to find the file intended for import (alternatively, the file may be dragged and dropped into the box below the button).
5. Once the item is selected, click on the blue *Import* button.

This will import the item into the Item library, after which it can be added to Tests, or modified.

● Exporting items

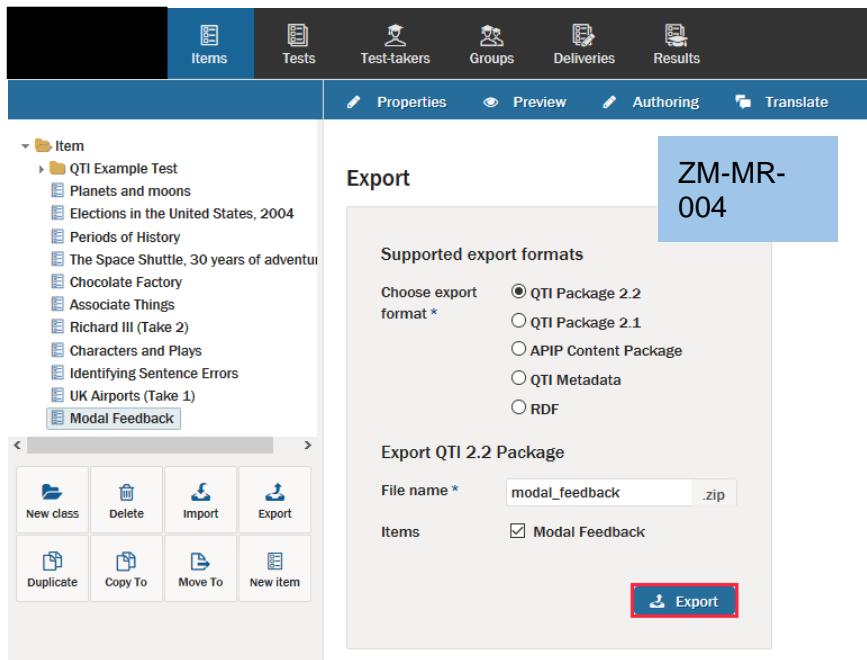
Interactions can be put together into Items on almost any computer that has access to ZUMMIT TESTING(ZT). However, there will be situations in which sharing Items will be useful. For instance, two teachers who teach the same course may collaborate and share the responsibility of creating questions for an upcoming Test.

This can be done in a few easy steps.

1. Click on the Items  icon in the Assessment Builder Bar .
2. Click either on a Class  (i.e. folder) or an Item symbol  in the Item Library on the left-hand side to select one or multiple items.
3. After the selection, click *Export*  in the button bank below the library.

The dialog box will ask you to choose an export format from the list: *QTI*, *APIP* or *RDF*. If the Item is to be exported as a Question and Test Interoperability (QTI) formatted document, it will save the file(s) as a compressed *.zip* file.

You also need to confirm that the folder or file highlighted is the one that should be exported, by checking the *Items* box.



Exporting Items

4. Click the blue *Export* button in the dialog box to continue with the export.

5. Select the location to which you want to export your item, and then click *Save*.

The item can then be transferred either to a data storage device or a computer network. The next step in the transfer is [to import the item onto the desired computer](#).

- Moving, copying and duplicating items.

Items can be moved, copied and duplicated within the same library.

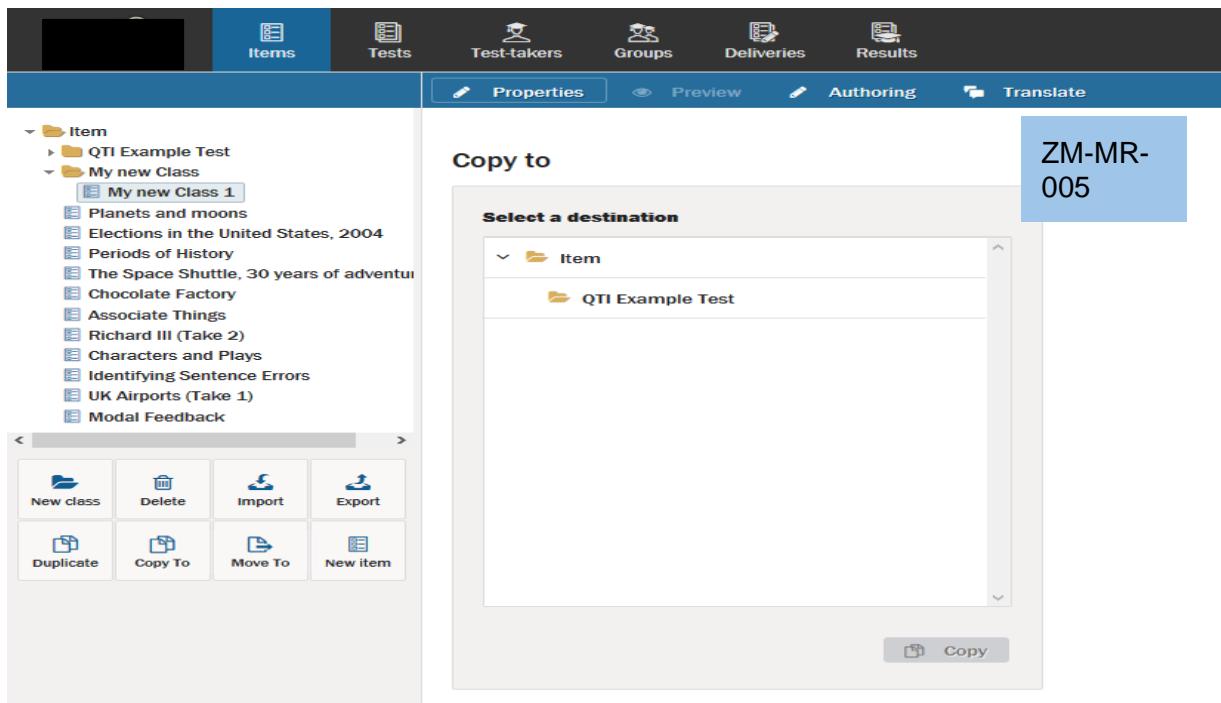
Moving or copying items

In any library in ZUMMIT TESTING(ZT) you can move elements to a different folder by dragging and dropping them to the new destination. This not only applies to items but also to tests and test-takers, etc. You can copy elements by duplicating and moving them to a different folder. This is, however, limited to desktop environments.

The buttons *Copy To* and *Move To* allow you to do this in a different, platform-independent way. First, click on the *Items* tab. This will take you to your items library, displayed on the left of your screen.

1. Click on the *Copy To*  or *Move To*  icon in the button bank under the library.

The following dialog will appear:



Copying an item

2. To copy or move a single item, open the item by clicking on it, then select the new folder and click on *Copy* or *Move* at the bottom of the dialog.

You can also move a whole folder (class) of items with its entire contents to another location in your items library. To do this, select the class in your library which you wish to move.

Next, click on the *Move To* button in the button bank under the library. Again, a dialog box will appear on the canvas. Select a destination folder and click on *Move*.

You will see a warning telling you that the properties of the original class will automatically be replaced by those of the destination class. This means that you will lose the metadata used in the original class, so it's a good idea to check that no vital information will be lost before you move the class to its new location. When you have checked this, click on *Ok* to continue.

Duplicating an item



You can make a copy of an already existing item by clicking on the *Duplicate* icon in the button bank under the library. This is similar to the *Copy To* button described above, but in this case, a duplicate will be created in the folder of the item you have duplicated, with the same name but with "bis" on the end.

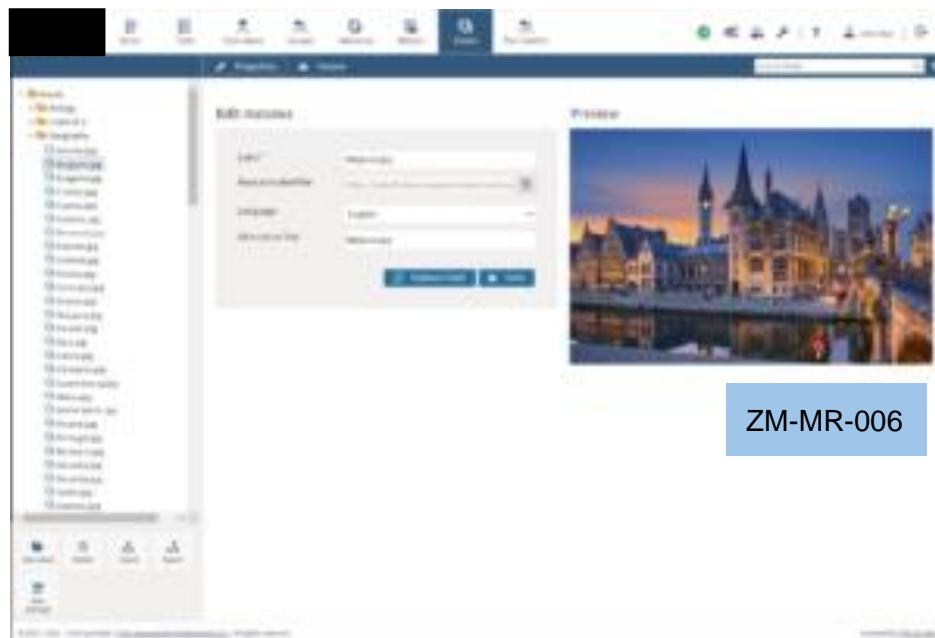
Managing assets

Assets are resources which serve as supporting materials in test Items. Once they have been created or imported into ZUMMIT TESTING(ZT), they can be re-used in new items. This section tells you how to manage these resources.

It contains a chapter on the Asset Manager. The Asset Manager provides a space to store assets (sometimes also called media), for example images, audio and video. It is a universally shared space on the ZUMMIT TESTING(ZT) platform, and storing your media files here means you don't need to keep uploading the same files for use in different items.

There is also a chapter on the Passage Editor, which you can use to create *passages* (also known as shared stimuli). Passages in ZUMMIT TESTING(ZT) are blocks of content, and are typically text passages, though they may contain illustrations. They are also used as supporting material for items, hence they are stored in the Asset Manager, along with your images, audio and video resources.

The image below shows the Asset Manager.



The Asset Manager

- Using asset manager

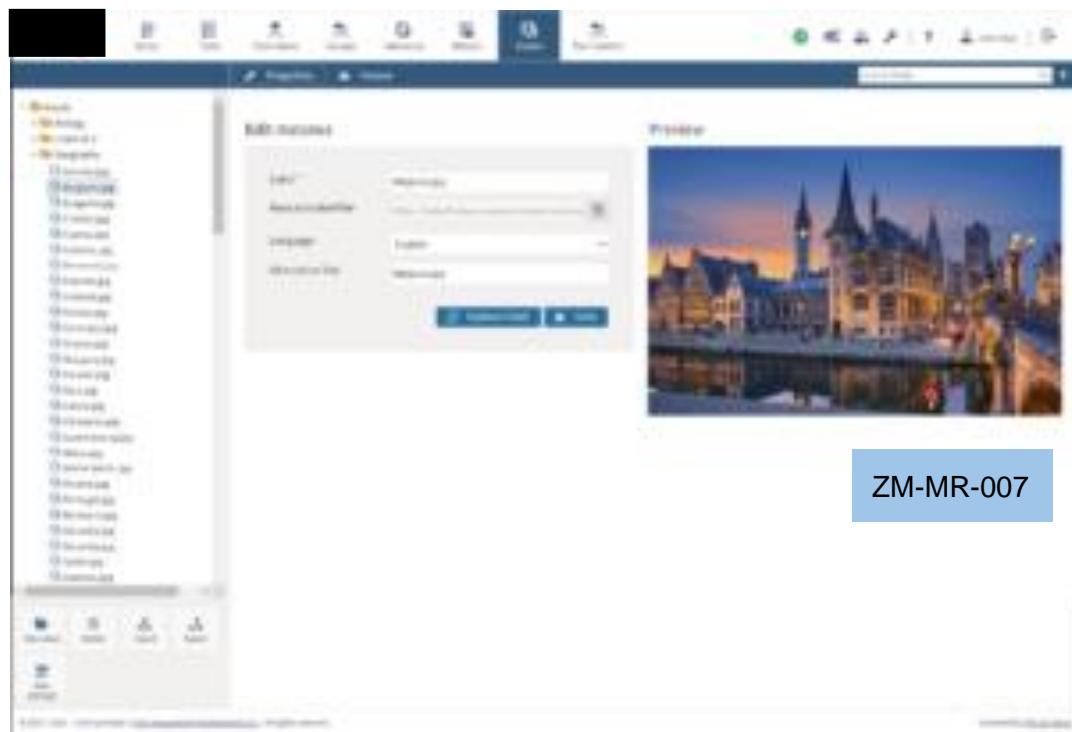
The Asset Manager provides a space to store Assets (media), i.e. images, audio and video and (text) passages (also known as shared stimuli). This is a universally shared folder, which means you don't need to keep uploading the same files for use in different items. The Assets folder will always appear as an option for choosing input when you are populating items.

Note: In some versions this is called the Media Manager (and the files stored in it are called 'Media' rather than 'Assets'), but they both function in the same way.

The Asset (or Media) Manager now offers a more efficient method of managing assets. Previously, when you saved your item, the resource you had inserted in your item became an integral part of it.

Now, when you use a resource from the Asset (or Media) library, it isn't integrated in your item, but instead is only referenced by it. When an asset is referenced (rather than integrated) in an item, the physical location of the asset is in the Asset Manager rather than in your item. The advantage of this is that there is only one version of it, so if it is updated, for example, all items which reference that particular resource will automatically also be updated.

The image shows the Asset Manager, with the Asset library on the left and an open asset on the canvas.



The Asset Manager

You will find the same buttons in the Asset Manager, as in most other functions, under the library on the left (*New class*, *Delete*, *Import*, *Export*, *Move To* and *Access Control*). The [New class](#), *Delete*, and *Export* buttons work in a very similar way to most of the other functions, as does *Move To* (use this to move a single file or a whole class to a different location) and *Access Control* (use this to restrict access to certain users).

The *Import* button works in a slightly different way in the Asset Manager. Follow the steps below to import a new asset.

1. Click on the *Assets* icon in the [Assessment Builder Bar](#). The Asset library will appear on the left. Select the folder in the library where you want the new asset to reside.

2. Click on the *Import* button in the button bank under the library. This will bring up a dialog box in the center of the screen.

3. Choose the input format. You have two choices – a file or a passage.

A *file* can be a picture, audio or video. The formats supported are: png, jpg, gif, svg, svgz (for images); mp3, ogg, vorbis, webm, mpeg, aac (for audio recordings); and mp4, ogv, mpeg, ogg, quicktime, webm, x-ms-wmv, x-flv (for video clips).

A *passage* – previously known as a shared stimulus – is an .xml file which contains a simple or complex text (a text with integrated images). See the [Passage Editor](#) chapter in the User Guide for information on how to create and edit *Passages*.

Note: It is possible to store pdf documents in the Asset Manager too. These can contain either just text, or images.

4. When you have chosen the input format, you can either select *Browse* to browse the files on your computer, or you can drag and drop the file into the space provided.

5. When the file has uploaded, click on *Import*.

Once the file has been imported, you will see the message *Asset imported successfully*. The new file will appear in the library on the left, in the Asset folder.

6. Click on *Continue*.

A dialog box labeled *Edit instance* will appear, with the details of the new asset. This contains the following information:

- *Label* (the name of your imported file)
- *Alternative Text* (rename the file here if you wish)
- *Language* (the default language is English, but you can change the language of the asset if appropriate)

If you want to replace the file with another, click on *Upload new asset*. Click *Save* to save the changes, including alternative text.

For information on how to use your assets in new items, see [Adding assets to an item](#). To create a new *Passage* to add to the Asset library, see the chapter on the [Passage Editor](#).

● Passage editor

Passages in ZUMMIT TESTING(ZT) are blocks of content, typically text passages. They are intended for use in reading assessments, though they may contain illustrations. Passages are

created using the [Passage Editor](#). They are stored in the [Asset Manager](#), so they can be used in multiple [Items](#). Passages are .xml files which contain a simple or complex text (a text with integrated images).

Creating a new Passage

To author a new passage to add to the Asset library, follow the steps below.

1. Click on the *Assets* icon in the *Assessment Builder Bar*.

The Asset library will appear on the left. Select the folder in the library where you want the new passage to reside.

2. Click on *New passage* under the library.

The new *passage* will appear on the canvas. Rename the label as needed.

3. Click on *Authoring* in the Action Bar to enter the Passage Editor.

Add your text to the blank canvas.

To integrate an image into the passage, use the icons situated above the canvas. This can be a file already available in the Asset library, or something from your desktop. It will appear on the screen. If you are happy with your choice, click on the green *Select* button at the bottom. This inserts the image into the passage.



Creating a

new passage in the Passage Editor

4. Click on *Preview* in the action bar to see what the final passage will look like.

5. Once you have finished editing, save the passage and return to the Asset Manager.

Editing an existing Passage

You may want to edit an existing passage, in order to replace it with an updated version. In this case, after Step One above, select the passage from the library, then jump to Step Three. From here on the steps are the same for both procedures.

Note: Remember that editing a passage will have an impact on every item that includes it.

For information on how to use your assets in new items, see [Adding assets to an item](#).

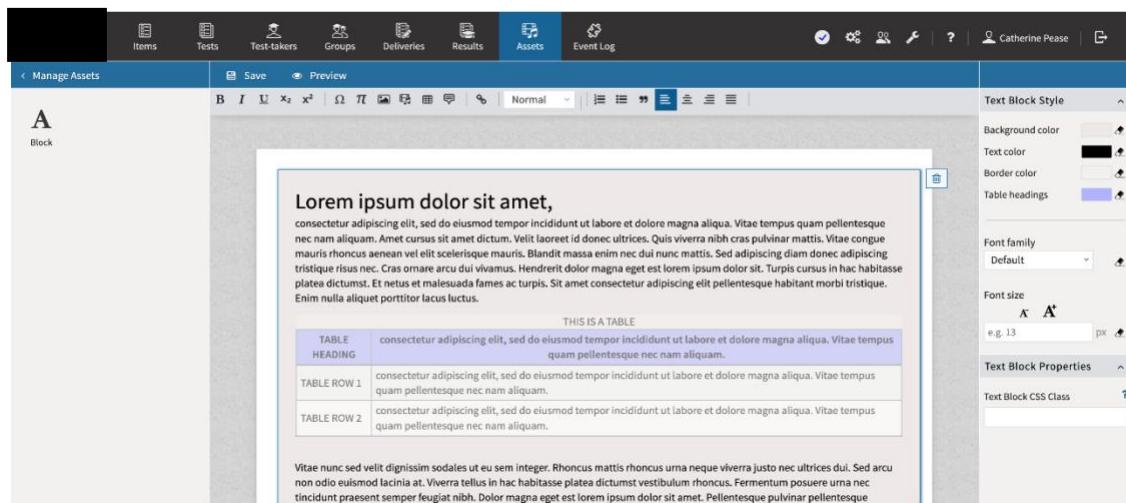
Styling Rich Passages

Item authors are able to create passages that mimic the look and feel of news articles, blog posts, poems, books, etc. in order to create more engaging test content for the test-takers.

Passages have been enriched with additional styling capabilities that allow authors to change the font, text color, background color, border color and table headings color.

The resulting passages can then be used in items and tests, while preserving their own styling and also adapting to the styling from the items. For instance, if the font is not defined in the passage, but is defined in the item, the one from the item will be used. However any styling applied to the passage will override any styling on that type of element from the item.

1. Create a new passage or navigate to the existing passage you would like to edit by following the instructions above.
2. Once inside the Passage Editor, you will see the Passage Properties panel open on the right side of your screen. Expand the Passage Style section to edit the background color of the passage, along with the text color, border color and table heading color.



Styling a passage in the Passage Editor

● Moving assets

Assets can be moved within the same library.

In any library in ZUMMIT TESTING(ZT) you can move elements to a different folder by dragging and dropping them to the new destination. This is, however, limited to desktop environments.

The *Move To* button allows you to do this in a different, platform-independent way.

1. Click on the *Assets* tab. This will take you to your assets library, displayed on the left of your screen. Click on the *Move To* icon in the button bank under the library.
2. To move a single asset, open the item by clicking on it in the library, then select the folder you'd like to move it to, and click on *Move* at the bottom of the dialog.

You can also move a whole folder (class) of assets with its entire contents to another location in your assets library. To do this, select the folder in your library which you wish to move.

Next, click on the *Move To* button in the button bank under the library. Again, a dialog box will appear on the canvas. Select a destination folder and click on *Move*.

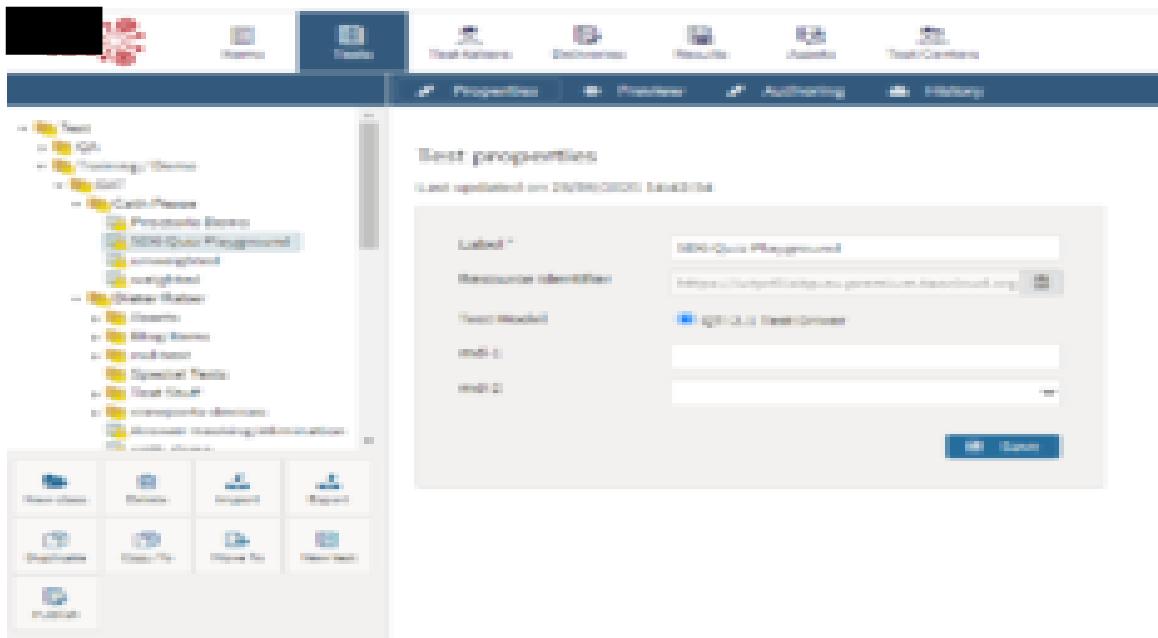
You will see a warning telling you that the properties of the original class will automatically be replaced by those of the destination class. This means that you will lose the metadata used in the original class, so it's a good idea to check that no vital information will be lost before you move the class to its new location. When you have checked this, click on *Ok* to continue.

Managing tests

[Tests](#), once created or imported into ZUMMIT TESTING(ZT), can be re-used in new assessment scenarios. This section tells you what you can do with your existing tests so that they can be re-used.

It contains chapters with information on how to [import tests](#), how to [export tests](#), and on [moving, copying or duplicating tests](#) within the same device.

The image shows you the buttons in ZUMMIT TESTING(ZT), located below the Test library, with which you can carry out these actions.



Buttons on the Tests screen

- Importing a test

Prepared Tests can be taken from any computer and imported onto any other computer that also has access to ZUMMIT TESTING(ZT). This is done using an operation called *Import*.

1. Click on the Tests icon on the [Assessment Builder Bar](#).

This will take you to the Test [Library](#), which you will see on the left.

2. Click on the Test class (folder) in the library in which you wish to import the new test.

3. Click on *Import* in the button bank below the library.

This opens a dialog box which asks you to select the format of the test to be imported. The supported input formats are: QTI (Question and Test Interoperability), RDF (Resource Description Framework) or CSV (Character-Separated Values).

The screenshot shows the Tao Assessment Builder interface. At the top, there is a navigation bar with icons for 'Items', 'Tests' (which is highlighted in blue), 'Test-takers', 'Groups', 'Deliveries', and 'Results'. Below the navigation bar is a toolbar with 'Properties' and 'Manage Schema' buttons. On the left, there is a sidebar titled 'Test' containing 'QTI Example Test'. The main area is titled 'Import' and contains a form for importing QTI/APIP content packages. It includes a radio button group for 'Choose import format' (with 'QTI/APIP Test Content Package' selected), a file upload input for 'Add a zip file containing QTI/APIP tests and items', and a 'Browse...' button. A preview window shows a file named 'item_2_1540311956.zip'. At the bottom right is a large blue 'Import' button.

Importing Tests

4. Click the blue *Browse* button to find the file intended for import (alternatively, the file may be dragged and dropped into the box below the button).
5. Once the Test is selected, click on the blue *Import* button.

This will import the Test into the Test library, for later use when you need to [create a delivery](#).

● Exporting a test

Tests may be assembled on almost any computer that has access to ZUMMIT TESTING(ZT). However, the capability to share tests will be useful in certain situations. For instance, a department may have standard performance expectations for its most basic courses, and these may be determined by a single test distributed to all the teachers of the department. Tests can be shared in a few easy steps.

1. Click on the Tests icon in the [Assessment Builder Bar](#).

2. Select the class (Test folder) you want to export in the [Test Library](#) on the left-hand side, or click on *New class* in the button bank below the library. This will create a new folder for the tests you would like to export.

Creating a new class (i.e. a new folder) allows you to place tests in a distinct location in order to be transferred from one computer to another. When doing this, the test class can be renamed in the *Edit test class* dialog box in the field marked *Label*. Clicking the blue *Save* button will create the class.

Note: Individual tests can be exported without creating a new class to transfer to. It may be helpful, however, to organize the entire export from a single folder.

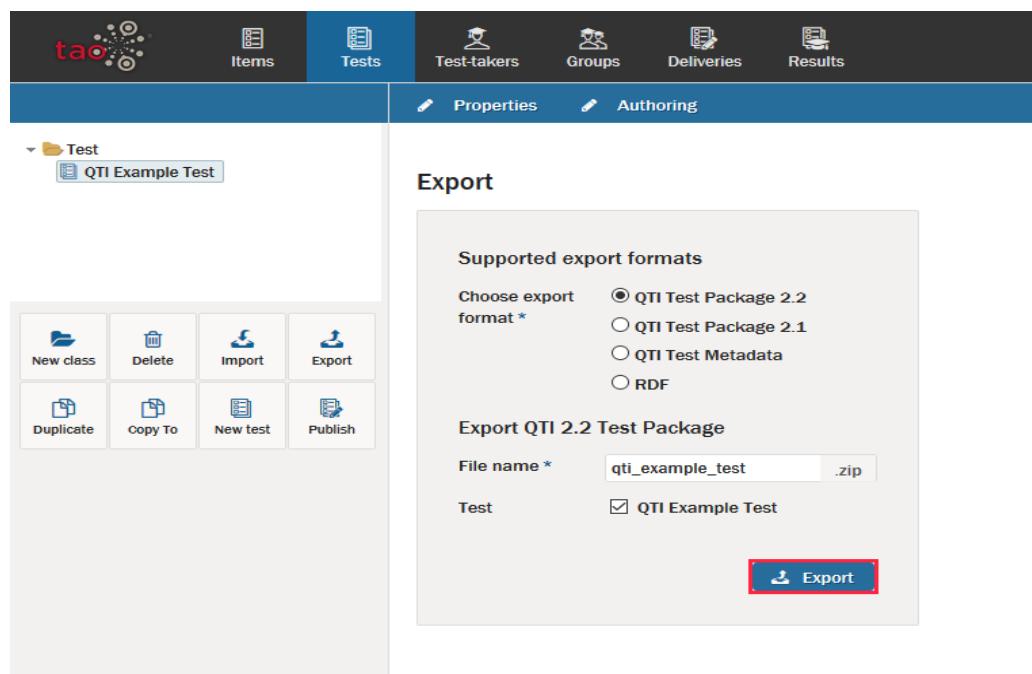
3. If you have created a new class for this purpose, move the tests you want to transfer to this new class in the Test library.

This selects the tests which are to be exported.

4. After clicking on the class, click *Export* in the button bank below the Library.

The dialog box will ask you to choose an export format: either QTI or RDF.

If the test is to be exported as a Question and Test Interoperability (.qti) formatted document, it will save the files as a compressed .zip file. Otherwise, the export will be in Resource Description Framework (.rdf) format.



Exporting Tests

5. Click the blue *Export* button in the dialog box to continue with the export.

6. Select the location to which you want to export your test, and then click *Save*.

The test can then be transferred either to a data storage device or a computer network. The next step in the transfer is to [import the test onto the desired computer](#).

- Moving, Copying and duplicating tests

Tests can be moved, copied and duplicated within the same library.

Moving or copying an existing test

You can make a copy of an already existing test. To do this, open the test by clicking on it in the tests library and click on the *Copy To* icon  in the button bank under the library.

A dialog box will appear on the canvas. Select a destination folder, and click on *Copy*. A copy of the test will then be created in the folder you have selected, with the same name but with “bis” on the end.

Move To  works exactly in the same fashion.

You can also move a whole folder (class) of tests with its entire contents to another location in your tests library. To do this, select the class in your library which you wish to move.

Next, click on the *Move To* button in the button bank under the library. Again, a dialog box will appear on the canvas. Select a destination folder and click on *Move*.

You will see a warning telling you that the properties of the original class will automatically be replaced by those of the destination class. This means that you will lose the metadata used in the original class, so it's a good idea to check that no vital information will be lost before you move the class to its new location. When you have checked this, click on *Ok* to continue.

Duplicating an existing test

You can duplicate an already existing test by clicking on the *Duplicate* icon in the button bank under the library. A copy will then be created in the folder of the test you have duplicated, with the same name but with “bis” on the end.

Exporting resources

There may be situations in which you'll want to back up your resources by exporting them from the version of ZUMMIT TESTING(ZT) you are working in. For instance, if you've installed ZUMMIT TESTING(ZT) Core using our simplified container method and want to access the latest version of the platform, you'll need to export your data from your current instance and import it into the new one to maintain your work.

Information on how [Items](#) can be exported is in the chapter [Exporting items](#).

Information on how [Tests](#) can be exported is in the chapter [Exporting a test](#).

Information on how [Test-takers](#) can be exported is in the chapter [Exporting test-takers](#).

Information on how [Groups](#) of Test-takers can be exported is in the chapter [Exporting groups](#).

Importing resources

There may be situations where you need to migrate resources from one ZUMMIT TESTING(ZT) instance to another. For example, if you've installed ZUMMIT TESTING(ZT) Core using our simplified container method and want to access the latest version of the platform, you'll need to export and re-import your resources to maintain your work.

Information on how [Items](#) can be exported is in the chapter [Importing items](#).

Information on how [Tests](#) can be exported is in the chapter [Importing a test](#).

Information on how [Test-takers](#) can be exported is in the chapter [Importing test-takers](#).

Information on how [Groups](#) of Test-takers can be exported is in the chapter [Importing groups](#).

Using built-in API's

ZUMMIT TESTING(ZT) offers a way to export and import data from a ZUMMIT TESTING(ZT) instance, as well as create new data for it, without having to start up the ZUMMIT TESTING(ZT) user interface. This is done using REST APIs. REST APIs use HTTP requests to access and use data. They can be used to read, update, create and delete data on your ZUMMIT TESTING(ZT) instance.

The REST APIs available in ZUMMIT TESTING(ZT) cover operations concerning:

- Items
- Tests
- Deliveries

- Results

They can be viewed and executed via <https://editor.swagger.io/>, which will lead you through the process, prompting you where necessary for the information required to execute the API.

Note: The usage of REST APIs requires technical knowledge, and they are designed for users such as (web) developers. It is necessary to have a minimal technical background, including knowledge of javascript and common API practises, to be able to use them.

Items

The APIs available for carrying out operations involving test items (i.e. those using the extension *extension-Zummit testing(ZT)-itemqti*) can be found here: [https://raw.githubusercontent.com/oat-sa/extension-Zummit testing\(ZT\)-itemqti/master/doc/rest.json](https://raw.githubusercontent.com/oat-sa/extension-Zummit testing(ZT)-itemqti/master/doc/rest.json).

Tests

The APIs available for carrying out operations involving tests (i.e. those using the extension *extension-Zummit testing(ZT)-testqti*) can be found here: [https://raw.githubusercontent.com/oat-sa/extension-Zummit testing\(ZT\)-testqti/master/doc/swagger.json](https://raw.githubusercontent.com/oat-sa/extension-Zummit testing(ZT)-testqti/master/doc/swagger.json).

Deliveries

The APIs available for carrying out operations involving deliveries (i.e. those using the extension *extension-Zummit testing(ZT)-delivery*) can be found here: [https://raw.githubusercontent.com/oat-sa/extension-Zummit testing\(ZT\)-delivery/master/doc/rest.json](https://raw.githubusercontent.com/oat-sa/extension-Zummit testing(ZT)-delivery/master/doc/rest.json).

Deliveries using LTI

The APIs available for carrying out operations involving deliveries with LTI (i.e. those using the extension *extension-Zummit testing(ZT)-ltideliveryprovider*) can be found here: [https://raw.githubusercontent.com/oat-sa/extension-Zummit testing\(ZT\)-ltideliveryprovider/master/doc/rest.json](https://raw.githubusercontent.com/oat-sa/extension-Zummit testing(ZT)-ltideliveryprovider/master/doc/rest.json) and [https://raw.githubusercontent.com/oat-sa/extension-Zummit testing\(ZT\)-lti/master/doc/rest.json](https://raw.githubusercontent.com/oat-sa/extension-Zummit testing(ZT)-lti/master/doc/rest.json).

Results

The APIs available for carrying out operations involving results (i.e. those using the extension *extension-Zummit testing(ZT)-outcome*) can be found here: [https://raw.githubusercontent.com/oat-sa/extension-Zummit testing\(ZT\)-outcome/master/doc/rest.json](https://raw.githubusercontent.com/oat-sa/extension-Zummit testing(ZT)-outcome/master/doc/rest.json).

OAT can provide training to developers on how to use these APIs if required. Please contact the [training team](#) for further information.