DigiEdu4SEN

D2.2 Overview of types of digital editable templates that can be used in digital education materials

WP2 - Program Analysis and Framework Development for Inclusive Digital Education

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About the DigiEdu4SEN project

DigiEdu4SEN (Digital Education for Special Educational Needs) is a pioneering new EU-funded project focused on enhancing the learning experiences of people with disabilities all over Europe.
The main objective of the project is to develop high-quality, accessible, and inclusive digital materials tailored for learners with various disabilities — increasing learners' engagement and participation, improving their overall performance. The international initiative takes a scientific and professional approach to creating innovative digital learning content that addresses a broader range of needs, making it a versatile and inclusive educational solution.

This document represents the D2.2 Overview of types of digital editable templates that can be used in digital education materials deliverable of the Building Digital Education Environment for Learners with Special Education Needs (DigiEdu4SEN) project no. 101132759, financed under ERASMUS-EDU-2023-PI-FORWARD call, topic: ERASMUS-EDU-2023-PI-FORWARD-LOT1.

As an integral component of WP2 - Program Analysis and Framework Development for Inclusive Digital Education, a Think Tank Workshop was convened to propose digital content tailored to different program levels for learners with disabilities. An overview of types of multimedia editable templates on digital educational platform and authoring tool (IZZI) was presented to the consortium.

This document presents an overview of the most appropriate components that can be adjusted and is not an exclusive list of components.

The DigiEdu4SEN Consortium

DigiEdu4SEN consortium is an international collaboration between 11 organisations from 7 countries from across Europe and beyond, each bringing a unique set of skills and experiences. We are in the process of including 12th partner into the consortium which will result in a consortium spanning 8 countries. The Consortium unites practitioners, policymakers, and digital content experts, with a shared goal of effecting real, systemic change in inclusive education.

No	Partners	Acronym
1	PROFIL KLETT D.O.O.	PK
2	SVEUČILISTE U ZAGREBU	UNIZG ERF
3	HOGSKOLEN I INNLANDET	INN UNI
4	REGIONALEN TSENTAR ZA PODKREPA NA PROTSESA NA PRIOBSHTAVASHTO OBRAZOVANIE SOFIA GRAD	RCSIE
5	ŠKOLA ZA ODGOJ I OBRAZOVANJE PULA	STE Pula
6	HASKOLI ISLANDS	UI
7	MATRIX INTERNET APPLICATIONS LIMITED	Matrix
8	PADAGOGISCHE HOCHSCHULE OBEROSTERREICH	PH OOE
9	MINISTARSTVO RADA, MIROVINSKOGA SUSTAVA, OBITELJI I SOCIJALNE POLITIKE	MROSP

No	Associate Partners	Acronym
1	Central Queensland University	CQU
2	National Association of Resource teachers	NART

No	Joining Partners	Acronym
1	Stadt Frankfurt am Main der Magistrat, Charles Hallgarten Schule in Germany	CHS

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3.	29.04.2024	Kristina Ferara Blašković	Nola Santini

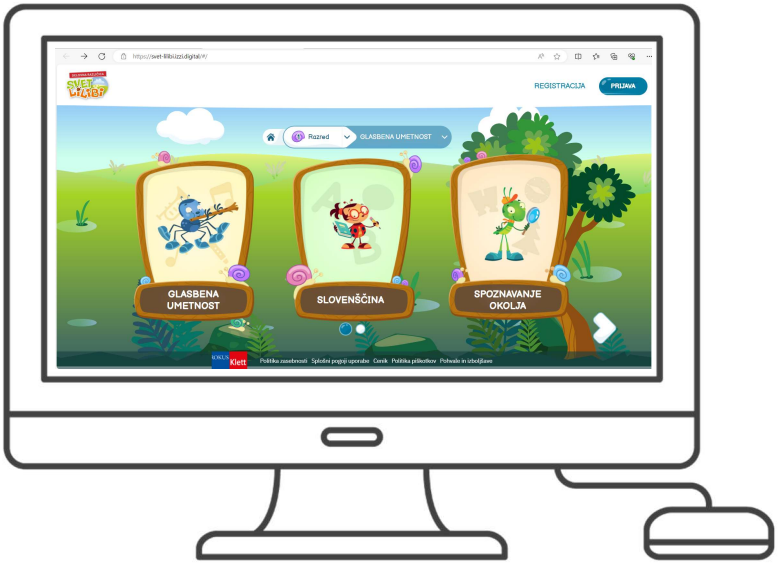
Digital platform and authoring tool for creating digital educational materials - IZZI

Profil Klett has developed a cutting-edge digital educational platform IZZI (https://izzi.digital/) that integrates the latest tools and solutions for producing, distributing, and managing digital educational content. This platform offers a comprehensive package of over 100 components for creating interactive content, functioning akin to building blocks. By creatively combining these components, users can generate modern digital materials that enhance learning and teaching experiences for students and educators alike. Additionally, the platform provides tools for effective teaching, learning, and monitoring individual and group progress. All digital content on the platform can be easily switched between standard and dyslexic fonts, improving accessibility for users with reading difficulties. Furthermore, the platform offers various inclusive viewing options and ensures responsiveness across all devices, including mobile phones, tablets, laptops, desktop computers, and smart boards. Content can be accessed both online and offline, and the platform is designed to be highly accessible and fully compliant with WCAG 2.0 accessibility standards.

IZZI platform consists of two types of environments: PYP and IZZI. PYP stands for Primary Years Programme and denotes a distribution application tailored for preschool and early primary school students. The PYP distribution application is specifically designed with the youngest learners in mind. While it offers pre-existing content across five subjects (mathematics, science, English, music, and art), it also allows creation of entirely new material. Within the distribution application, gamified and interactive content finds its place in a section named *Playground*.

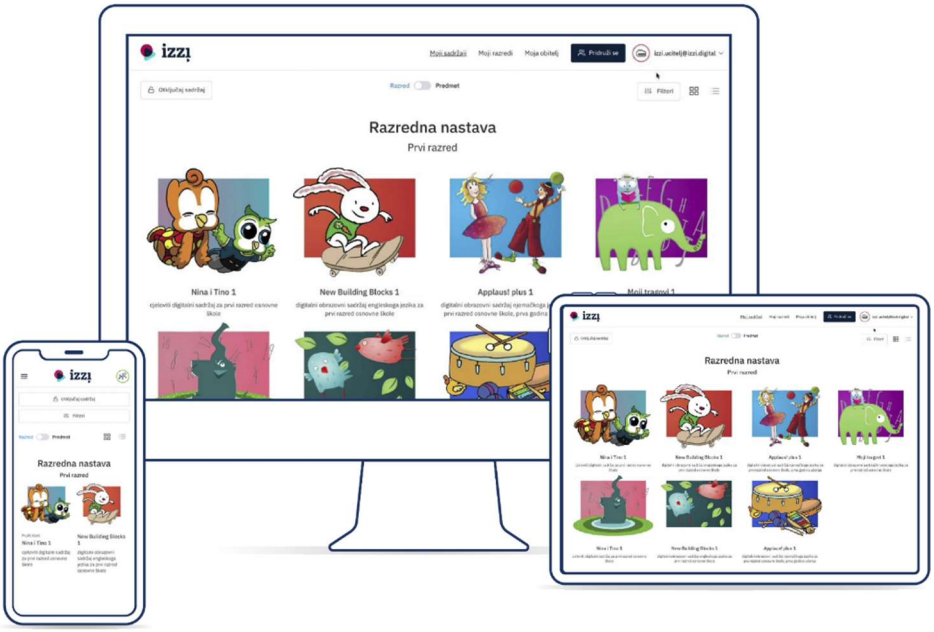
IZZI and PYP environments differ in design, functionalities, content formats, and target age groups. The PYP distribution environment is aimed at a younger age group, children from preschool to 4th grade. PYP's design is highly vibrant, motivating, filled with colorful hues, and children's symbols. PYP content is organized into PYP sliders to make everything accessible within one screen, and the content is browsed by scrolling through the slides (from left to right, like in a book). It's entirely tailored to children who haven't yet developed advanced digital skills. While IZZI distribution environment can be adapted to different age groups thanks to the variety of activity types and a streamlined, very simple design.

PYP design example



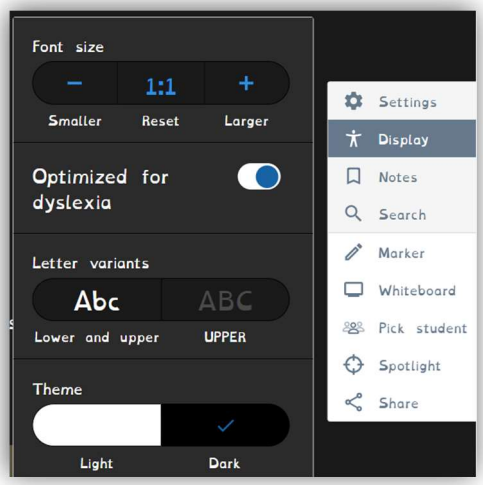
IZZI design example

Video: [IZZI bookshelf functionalities (youtube.com)]



Digital Accessibility

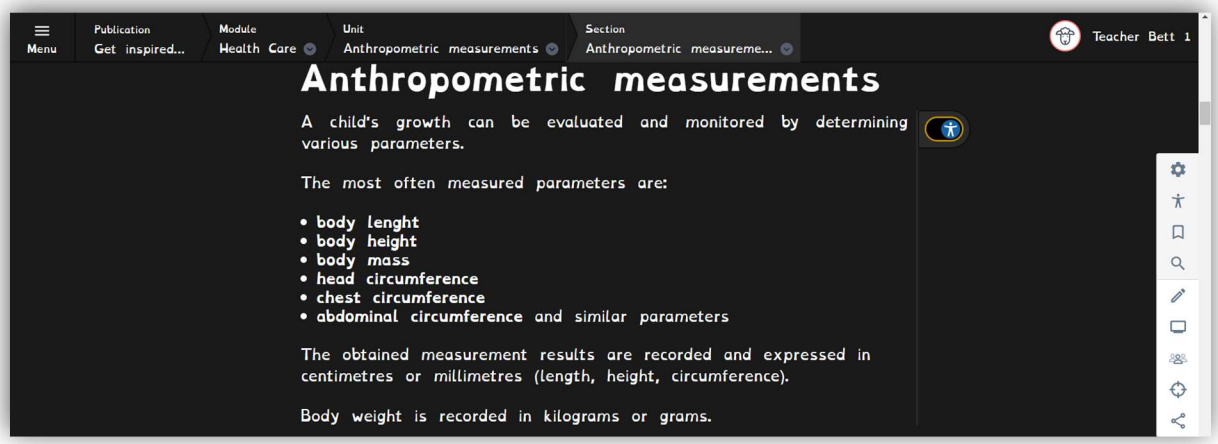
Ensuring digitally accessible educational content is essential for students with special educational needs (SEN). Digital accessibility means that content is designed and developed in a way that enables all users, including those with disabilities, to access, interact with, and benefit from it. For students with SEN, digital accessibility is not just a convenience—it's a necessity. Accessible content allows these students to fully participate in learning activities, engage with educational materials, and demonstrate their knowledge and abilities on equal footing with their peers. Whether it's providing alternative formats such as audio descriptions, subtitles, or text-to-speech functionality for students with visual impairments, dyslexia, or other learning disabilities, or ensuring that interactive elements are keyboard accessible for students with mobility impairments, digital accessibility plays a crucial role in creating an inclusive learning environment.



Example 1: Accessibility options

IZZI platform is committed to meeting all mandatory accessibility requirements and continually strives to exceed them by enhancing accessibility features. Regular updates and improvements ensure that it remains in line with the latest accessibility standards and guidelines.

Therefore, IZZI provides alternative inclusive versions of the same content (e.g. regular and adapted version of the text, audio recordings, alt descriptions of images, videos, and video titles, etc.). Besides there is a toolbar with several options for students to personalize content: bookmarks, notes, highlights, drawings, stresses, change of font size or case, light and dark theme, optimization for students with dyslexia.



Example 2: Dyslexia font

Overview of digital editable templates/components

This is a comprehensive overview of digital editable templates/components available on IZZI platform for creation of digital educational materials. technology to enhance the learning experience and engage learners in new and exciting ways. IZZI platform offers a diverse range of tools and features designed to empower educators to create dynamic and interactive educational content tailored to the needs of every student, providing them with accessible and customizable resources, interactive learning tools, fostering a more inclusive and supportive learning environment.

IZZI platform provides a variety of components that serve as the building blocks for creating digital educational materials. These components include text blocks, image blocks, video blocks, audio blocks, interactive quizzes, assessments, simulations, and more. Educators can easily integrate these components into their lessons to create engaging and interactive learning experiences.
Below described digital editable templates/component that can be used in the digital units are divided into two categories: multimedia and interactive elements.

Multimedia and interactive elements are utilized to enrich digital content by incorporating various forms of media such as images, videos, audio files, animations, and interactive components. Their primary purpose is to enhance user engagement, facilitate understanding of complex concepts, and convey information in a more dynamic and interactive manner.

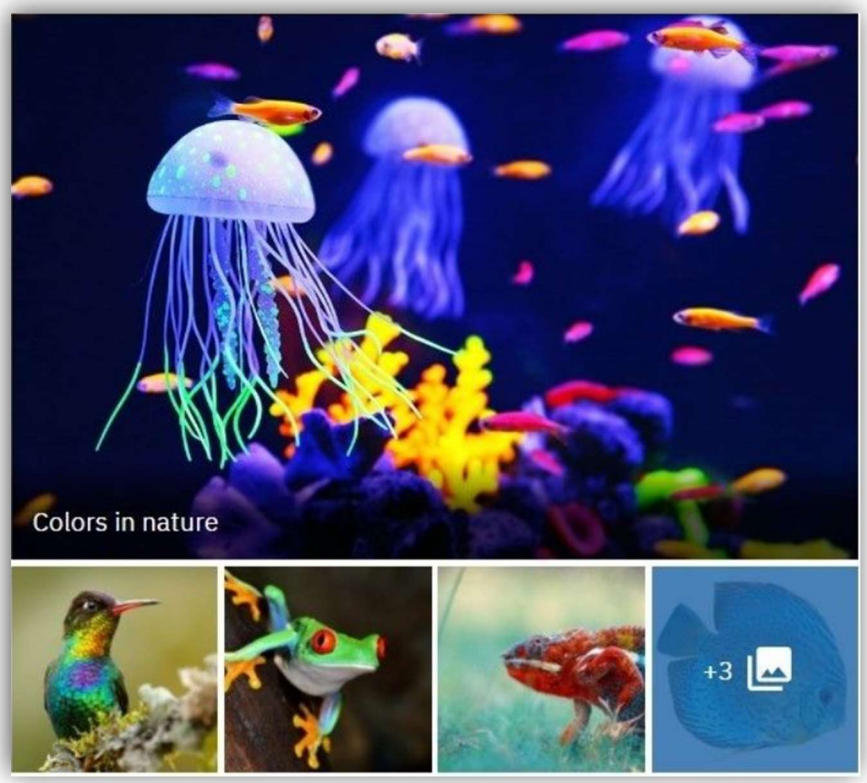
Multimedia Elements

Multimedia elements encompass a wide range of digital assets that serve to complement textual content. These elements include but are not limited to images, videos, audio clips, animations, infographics, interactive graphs, and simulations. Each multimedia element is carefully selected and integrated into digital platforms to enhance the overall user experience and effectively convey information. They are strategically employed to capture the audience's attention, illustrate key points, provide visual demonstrations, and cater to diverse learning styles. Ultimately, multimedia elements play a crucial role in making digital content more engaging, informative, and memorable.

Image

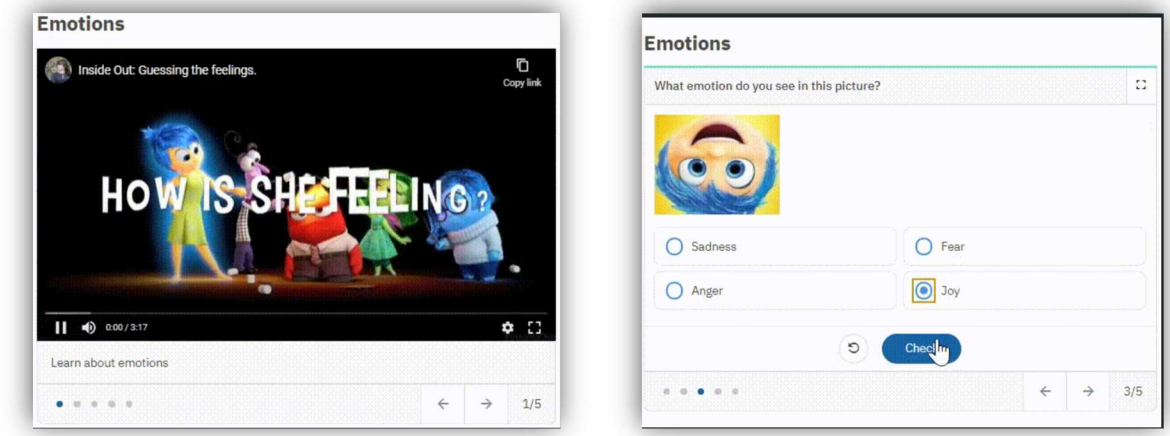
The Image block serves as a versatile tool for enhancing the visual aspect of digital material by enabling the presentation of images in various formats to showcase visuals effectively:

- collection of images presented as a slideshow.



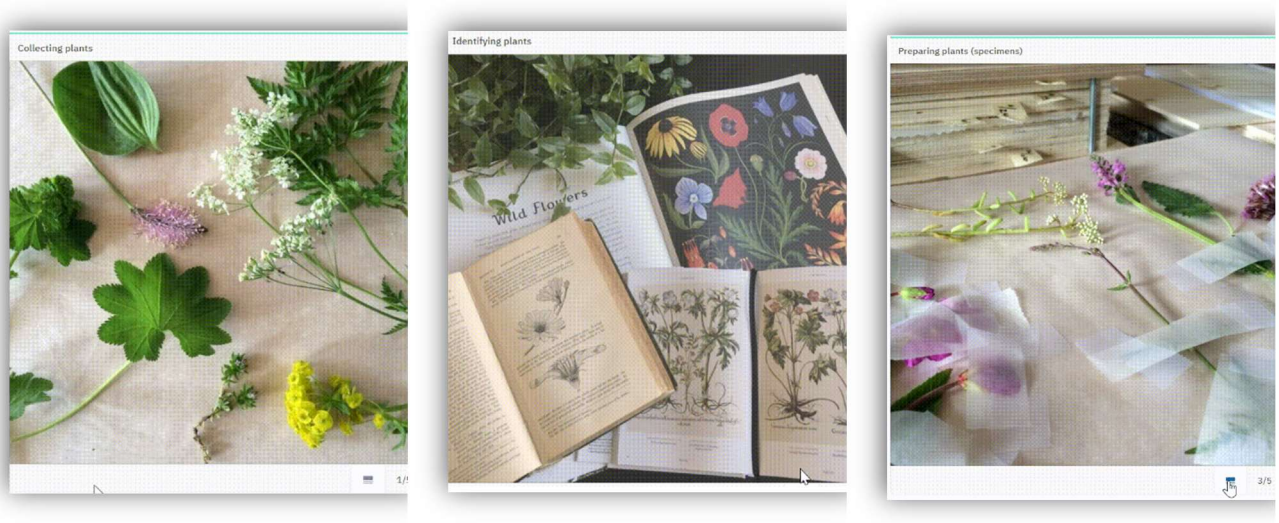
Example 1: Slideshow of images

- images combined with other types of content in a series of slides grouping different content together (video, images and text, quiz). Possibilities of content combinations are quite numerous, this one is used when is crucial for students to focus on one content after another, without revealing the content that came before or after at the same time.



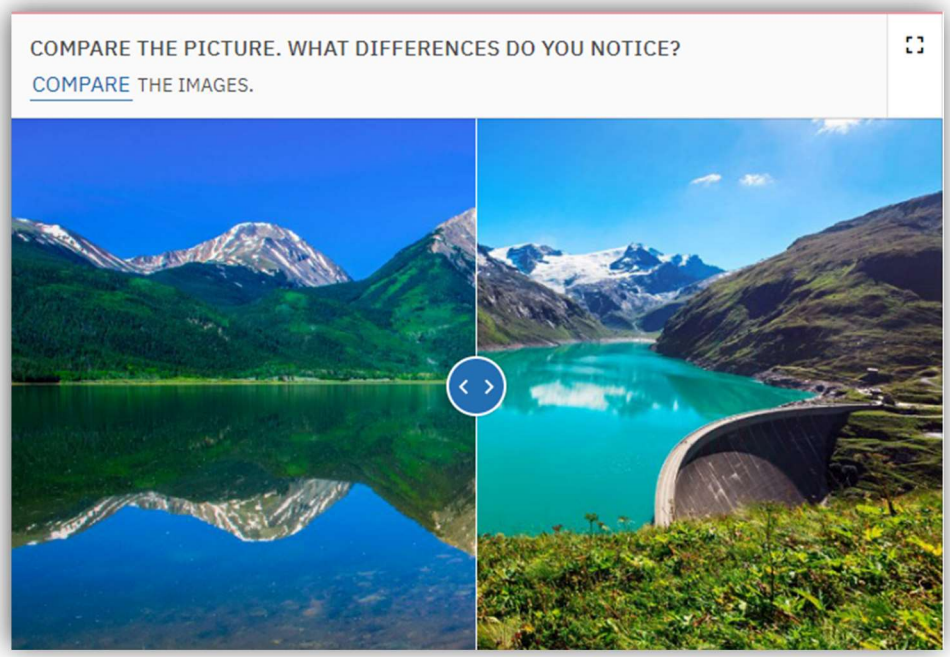
Example 2: Object slider

- images showcasing each step individually, with subsequent steps appearing below the previous one. This option is ideal for presenting processes sequentially, where users initially focus on the top slide, then reveal the next one below it, while retaining visibility of the previous step above.



Example 3: Object slider steps

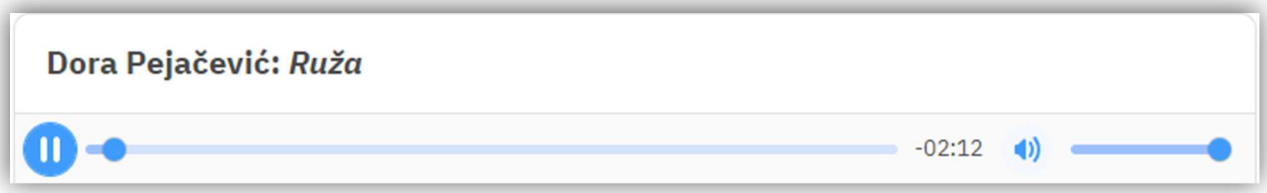
- image compare - where the user compares two images that are placed one on top of the other.



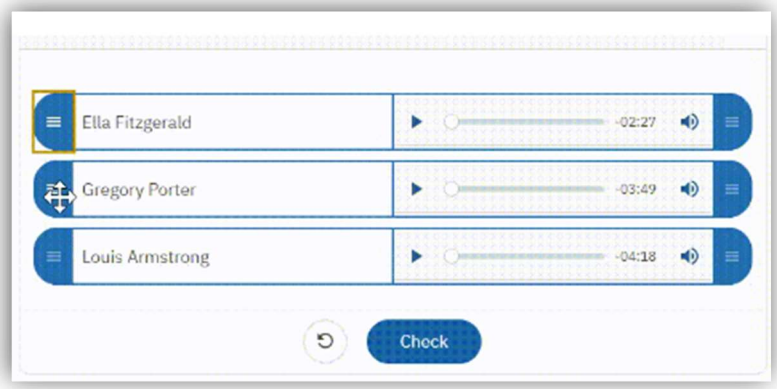
Example 4: Image compare

Audio

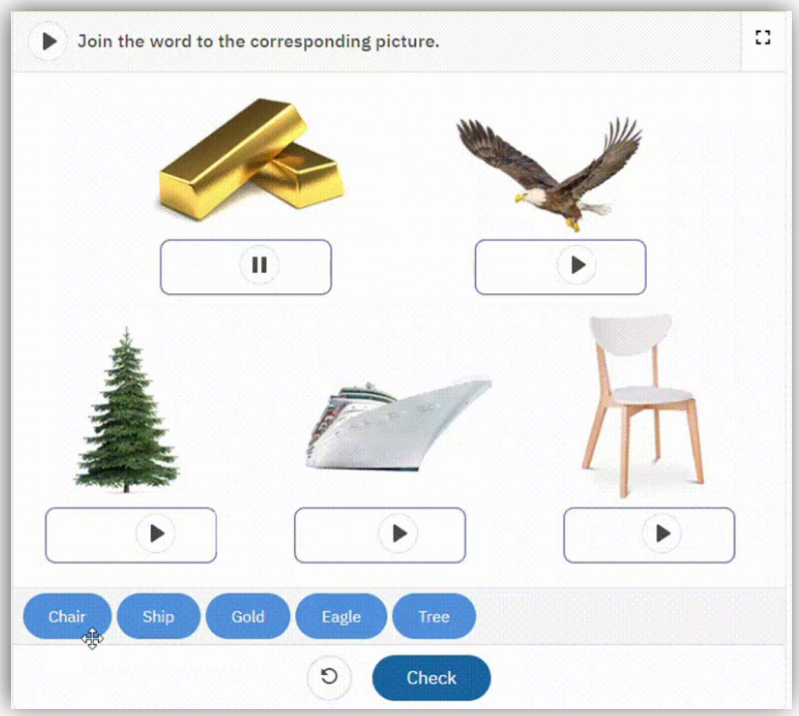
IZZI platform enables audio block as an independent block or to be utilized to supplement other blocks with audio files. Possibilities of audio integration in other blocks are numerous. Below are a few examples of such integration.



Example 1: Audio



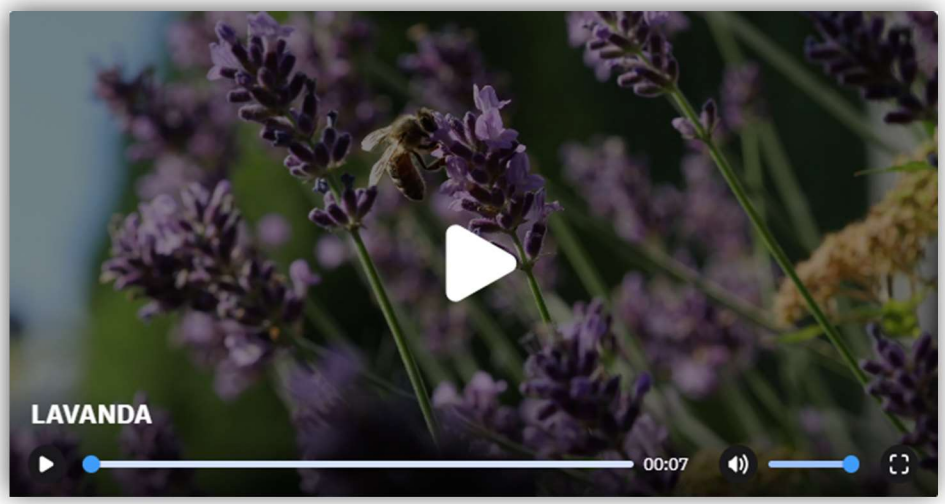
Example 2: Audio as a part of other element



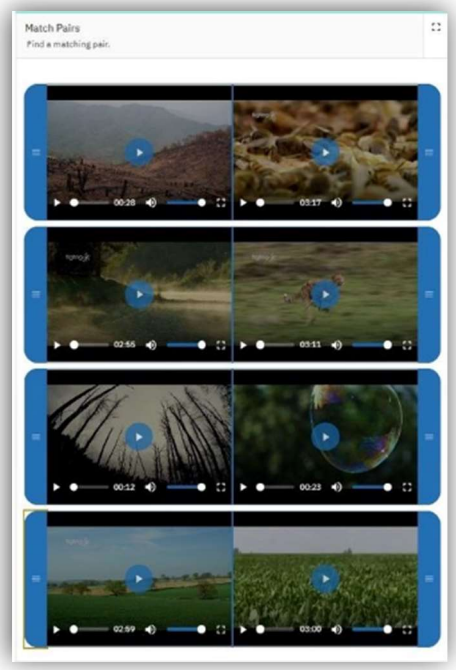
Example 3: Audio as a part of other element

Video

Video can be displayed using custom made IZZI video player as a standalone block, or to add video files to other blocks. Besides you can add YouTube videos. To make it accessible to hard-of-hearing or deaf students/educators video has subtitles that can be turned on and off. Also to make use in the classroom more convenient in cases when more than one student plays the video, without headphones, following it by using subtitles for narration.



Example 1: Video player



Example 2: Video as a part of other element

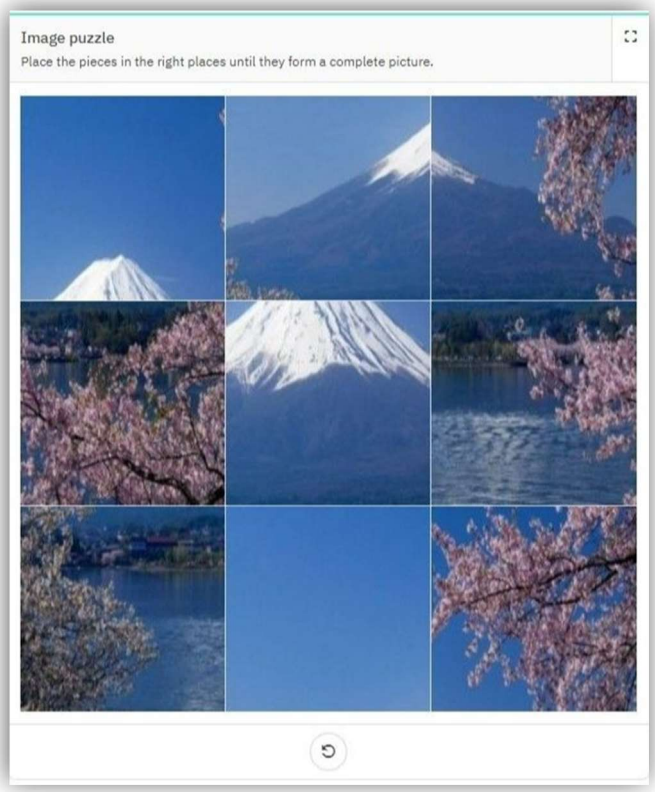
Interactive Elements

Interactive elements play a crucial role in fostering active learning and student engagement. They are designed to actively engage users by allowing them to interact with the content in some way. These elements enable users to manipulate, control, or respond to the content, fostering a more immersive and participatory experience. Interactive elements can include buttons, forms, quizzes, simulations, games, drag-and-drop interfaces, and calculators. Users can click, drag, type, or make selections to navigate through the content, provide input, or trigger specific actions.

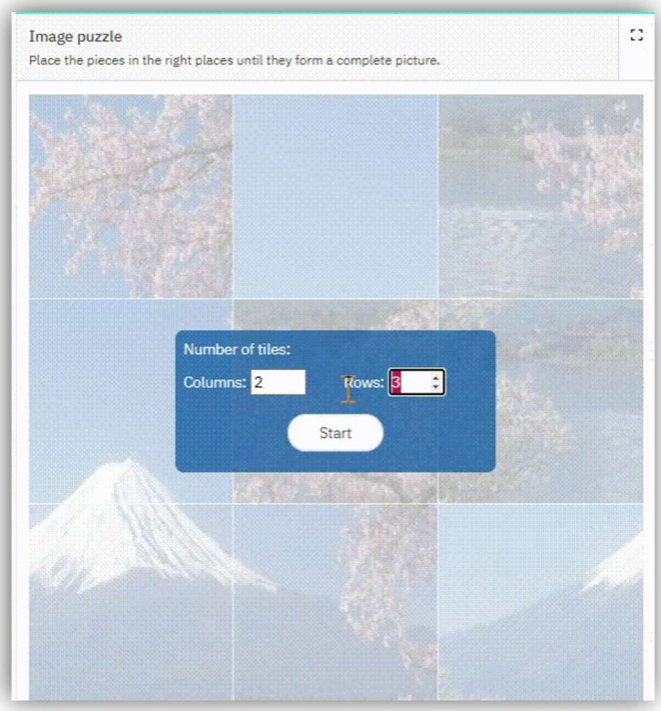
IZZI platform offers a variety of interactive features such as clickable buttons, drag-and-drop interfaces, interactive quizzes, simulations, and games. These interactive elements enable students to actively participate in the learning process, providing them with opportunities to explore, experiment, and apply their knowledge in real-world scenarios. Some features include validation options, enabling students to check if their answers are correct or to retry if necessary. Moreover, certain validation elements offer a hint feature to assist students in solving problems or understanding concepts.

Simple didactic games

- **Image puzzle** is an interactive object where student has to drag and drop the pieces in the right places until they form a complete picture. The image can be personalized, and the number of rows and columns can also be adjusted.

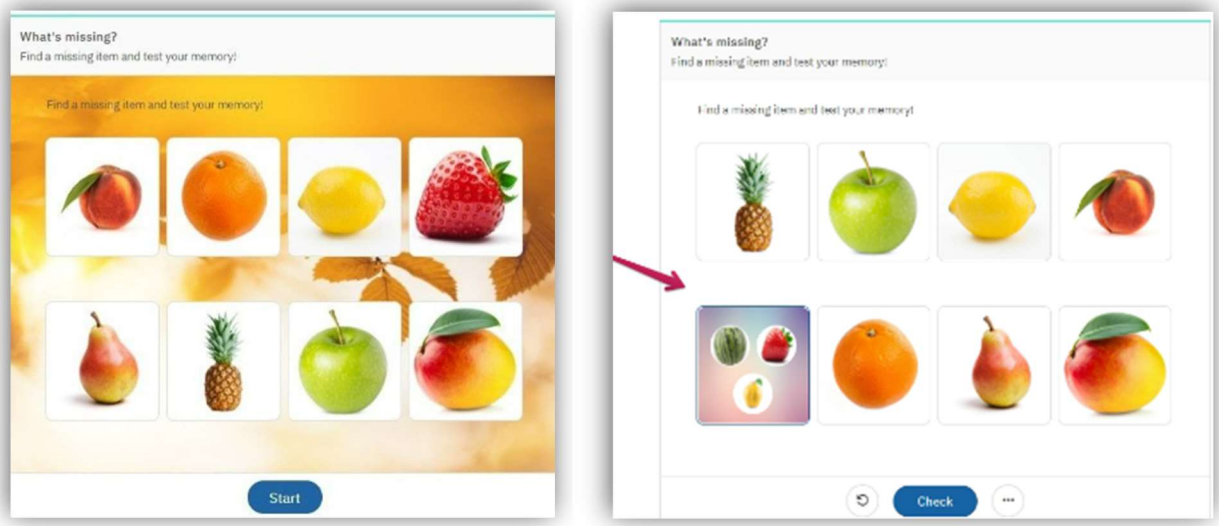


Example 1: Image puzzle

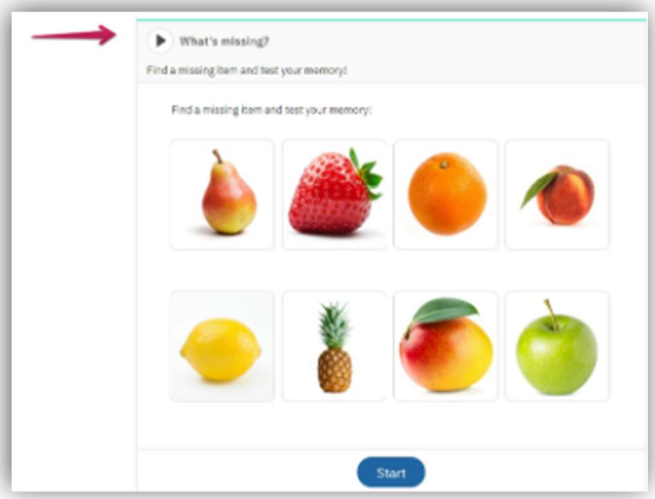


Example 2: Columns and rows selection

- **What is missing?** block allows you to create a fun game for your end users, where they first see a set of images, and then after one image disappears, they need to guess which one just went missing. It is a fun way, especially for young learners, to repeat some key terms or visuals related to content. As with all blocks, it is possible to add an inclusive/alternative version of What's missing? or add audio if there's a need.

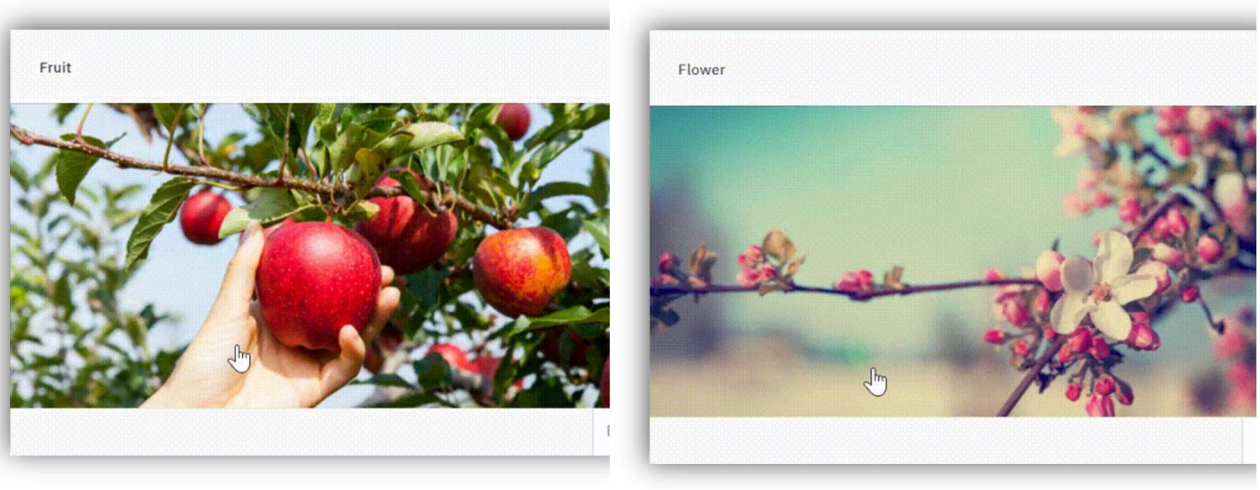


Example 1: What's missing?

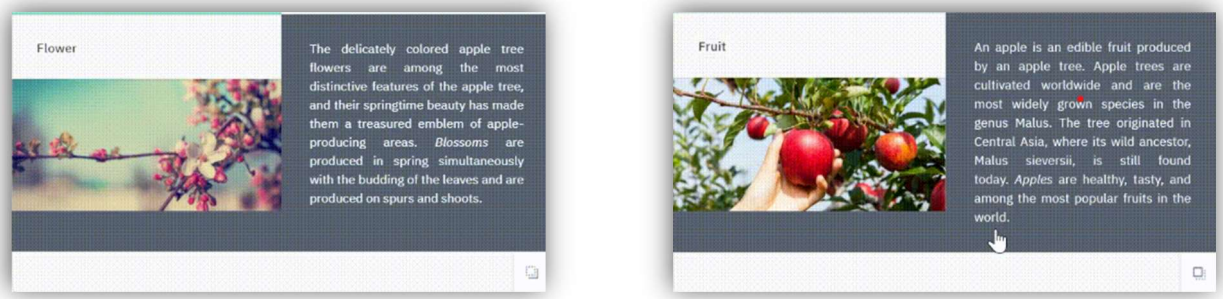


Example 2: Added audio element

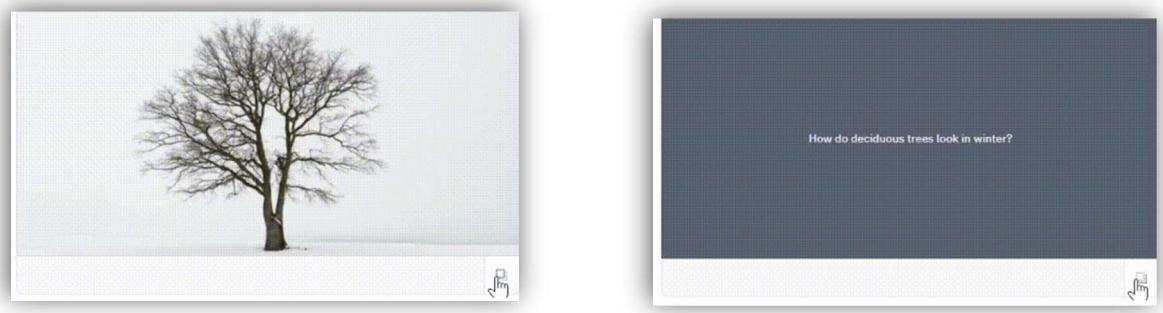
- **Flipcards** are virtual flashcards of content that students can turn by tapping to reveal content on their reverse side. They can be created as single flipcard or as a stack of flipcards (multiple flipcards). Layout can be horizontal or vertical. Pictures and background colour on each side can be adjusted.



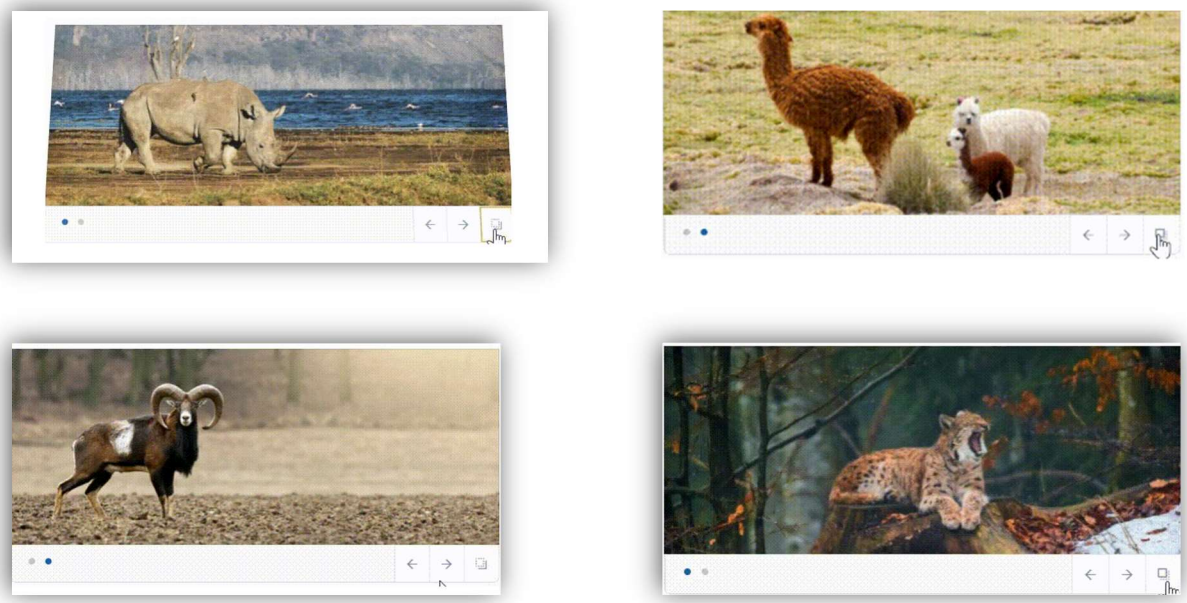
Example 1: Flipcard with images on both sides



Example 2: Flipcard with image on one side and text on the other

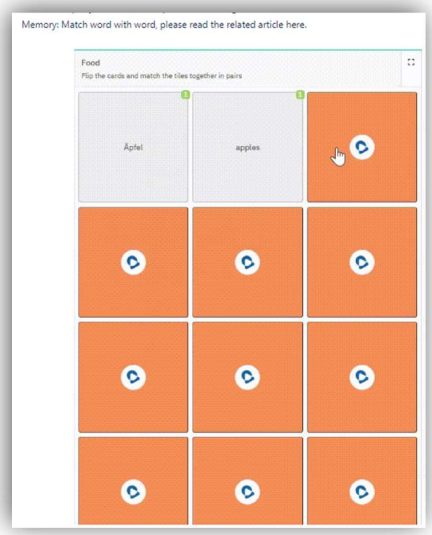


Example 3: Flipcard with image and text on one side and on the other side

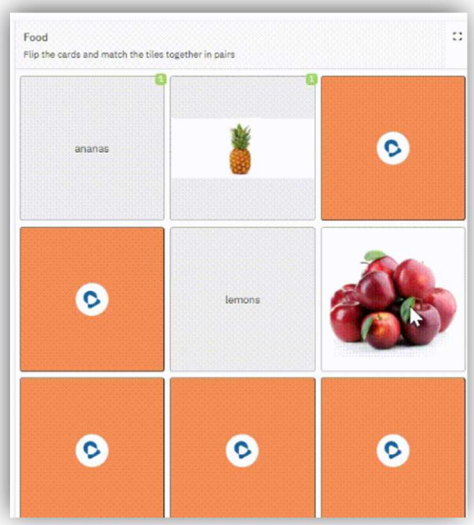


Example 4. Flipcard stack

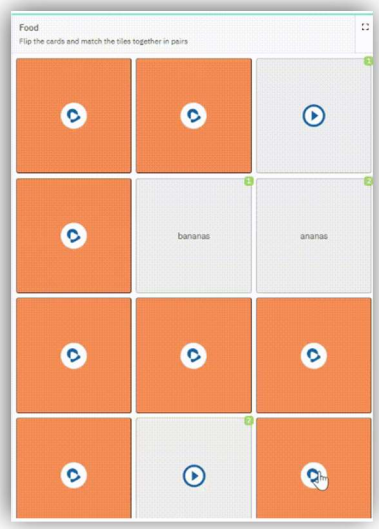
- **Memory** consists of flip cards that need to be matched in pairs. It can be utilized to match various combinations such as word-word, word-image, word-sound, and more. This feature serves as a validation element.



Example 1: Memory: Match word with word

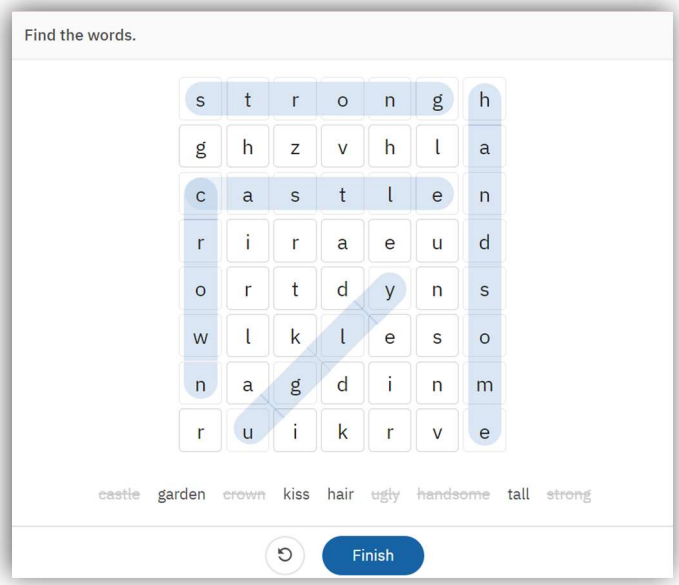


Example 2: Memory: Match word with image



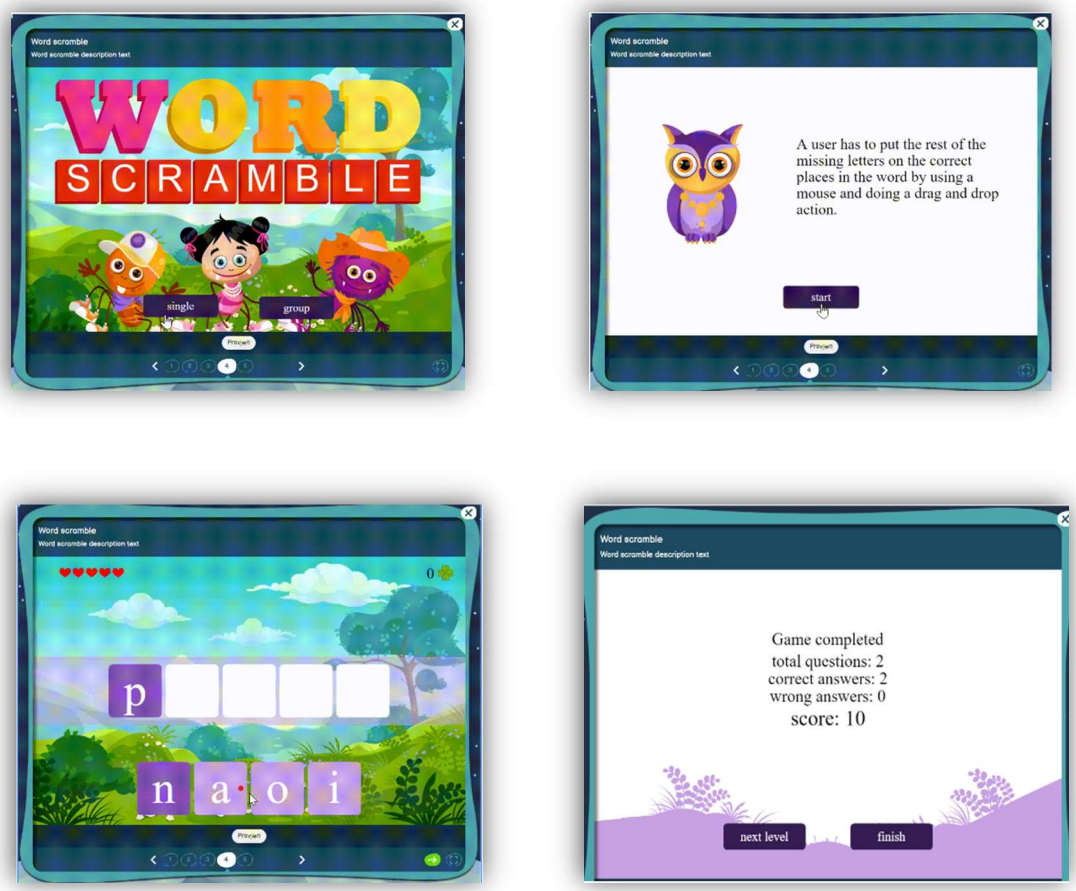
Example 3: Memory: Match word with sound

- **Word finder** is a word game that consists of the letters of words placed in a grid. The goal for the student is to find and mark all the words hidden inside the box. To make it usable for all levels of language learning and/or age, it is possible to control which letters will appear in the Wordfinder and which directions of finding words will be available - all 8, or fewer of them to make it easier for younger students.

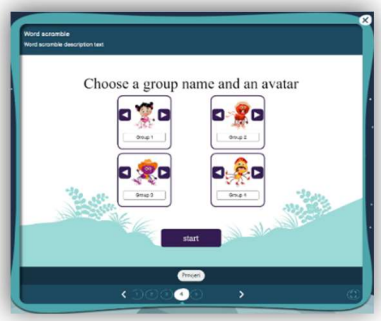


Example 1: Wordfinder

- **Word scramble** is an interactive exercise where the user needs to put the rest of the missing letters in the correct places in the word by using a mouse and doing a drag and drop action.

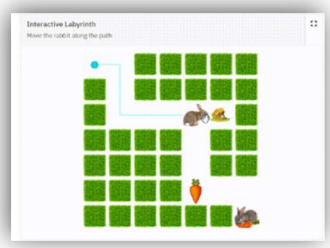


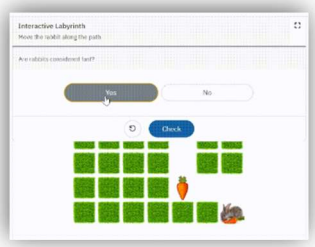
Example 1: Word scramble single use



Example 2: Word scramble group use

- **Labyrinth** is an educational game requiring students to navigate a maze from start to finish by finding the correct path with or without obstacles and moving alongside the borders.
  Interactive labyrinth 1 block allows you to create an interactive labyrinth with various items and obstacles that the end-user needs to solve to find a way from start to finish while moving along the path.



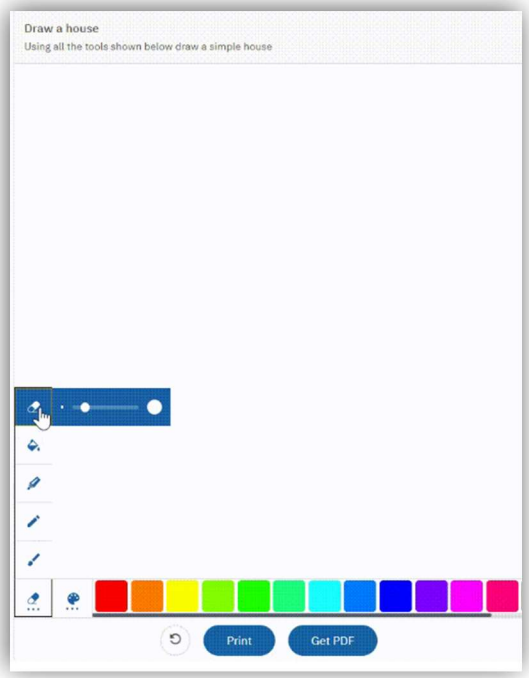


Example 1: Labyrinth

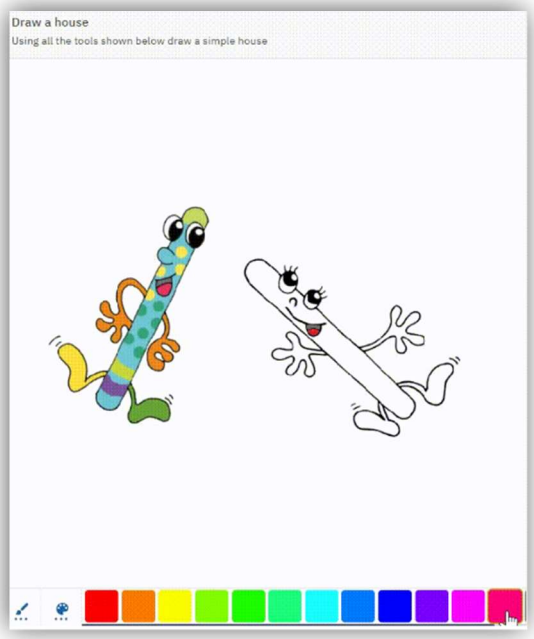
Interactive labyrinth 2 is an interactive labyrinth with various items and obstacles that the end-user needs to solve to find a way from start to finish while moving alongside the borders.

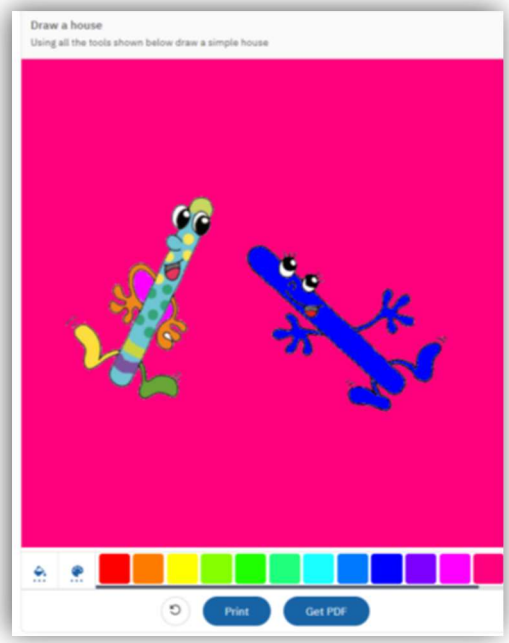
Example 2: Labyrinth 2

- **Colouring book and draw** enables students to draw or colour freely - without validation and print their drawing.



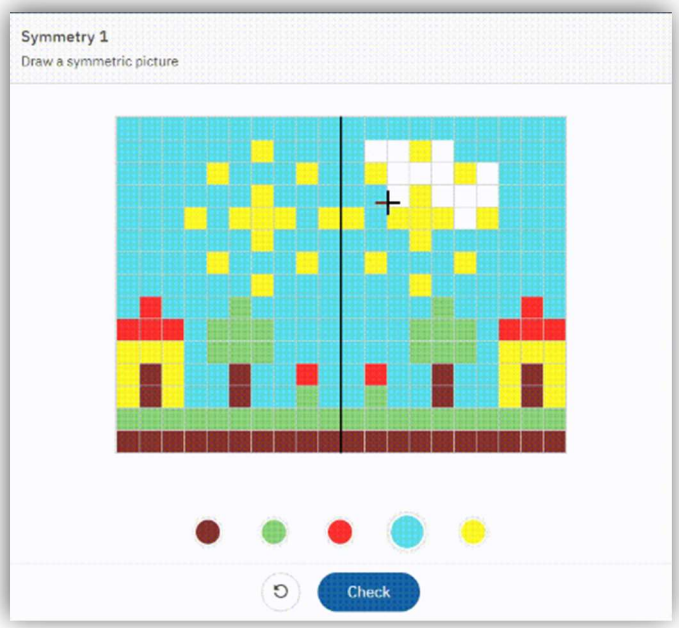
Example 1: Draw



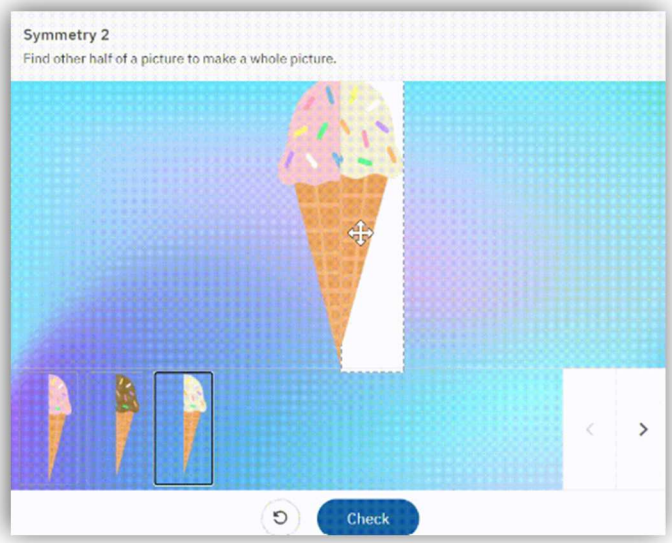


Example 2: Colouring

- **Symmetry** enables students to draw a symmetric picture or to find another half of a picture to make a whole picture. This feature serves as a validation element.

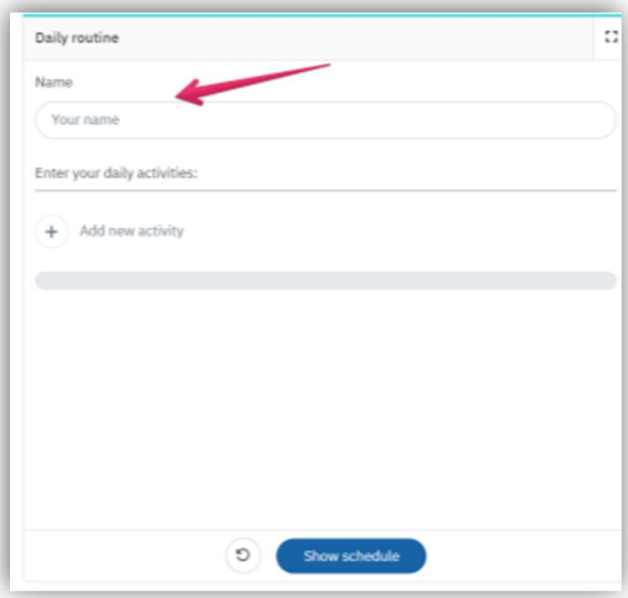


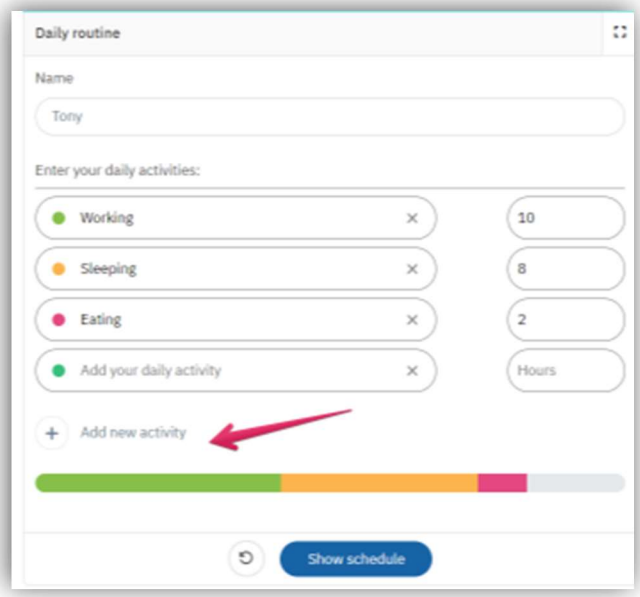
Example 1: Symmetry

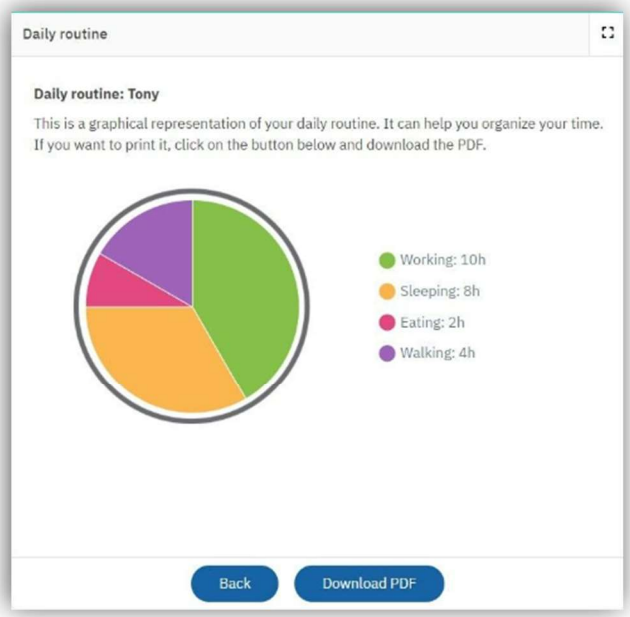


Example 2: Symmetry

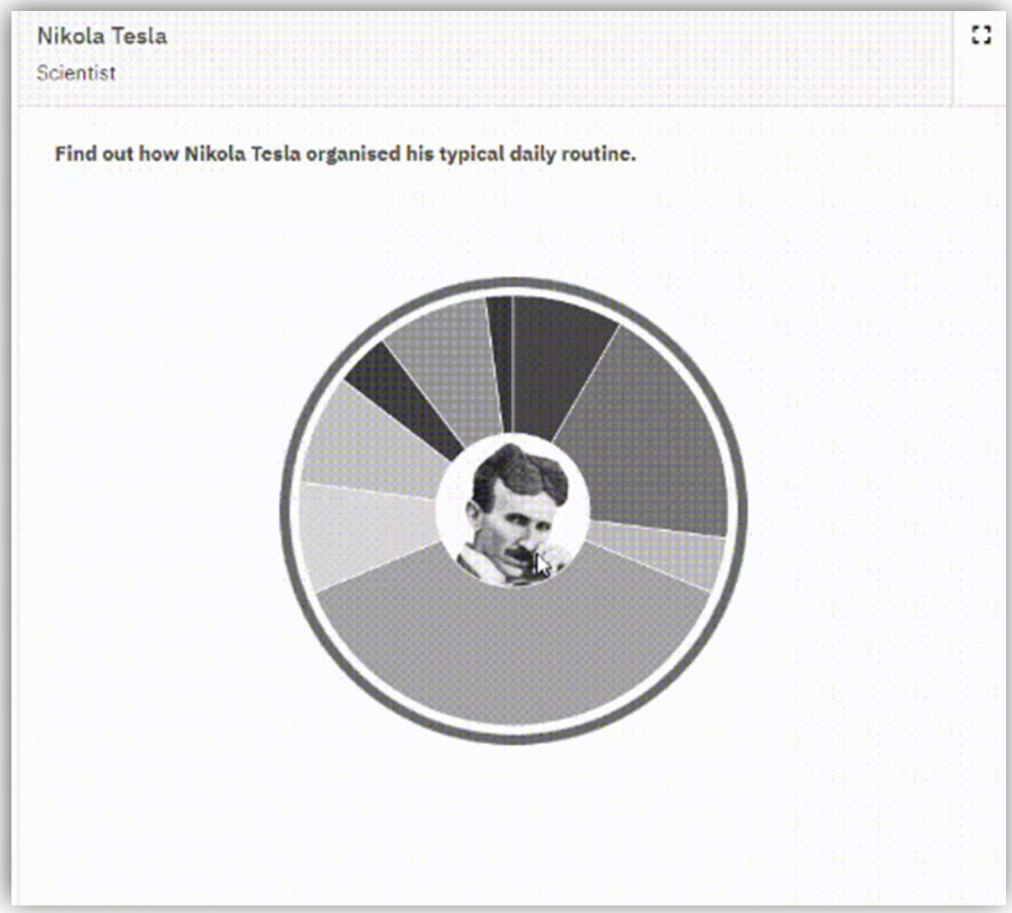
- **Daily Routine** graphically represents daily routine activities of a user or predefined activities of some famous person. Student can add activities to the daily routine and get a graphical representation of daily routine which he can print or save as pdf.





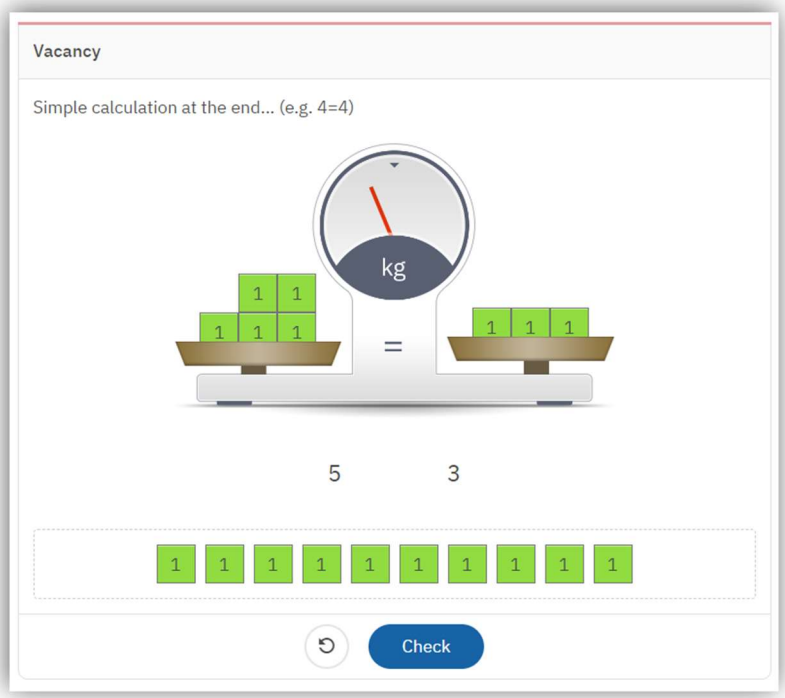


Example 1: Daily routine – student add the daily routine activities from the preview and get a graphical representation of his daily routine



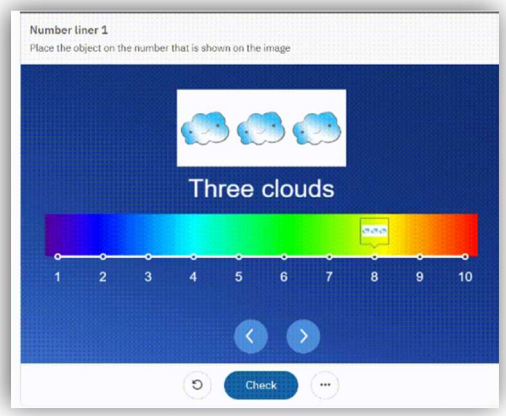
Example 2: Daily Routine: Prefilled by Content Creator

- **Scale Balancing** component is a visual representation tool on the platform designed to engage students in understanding the concept of balance and equality. Their task is to drag and drop cubes onto one side of the scale to ensure both sides balance equally. This feature serves as a validation element.

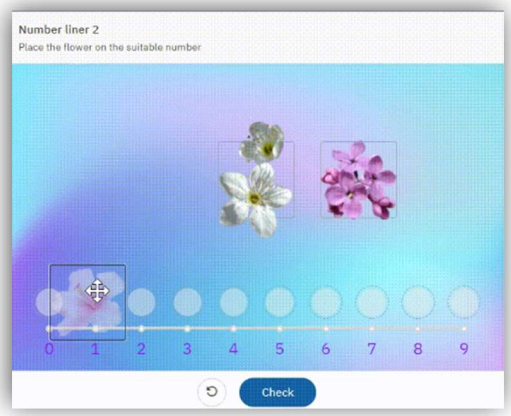


Example 1: Scale

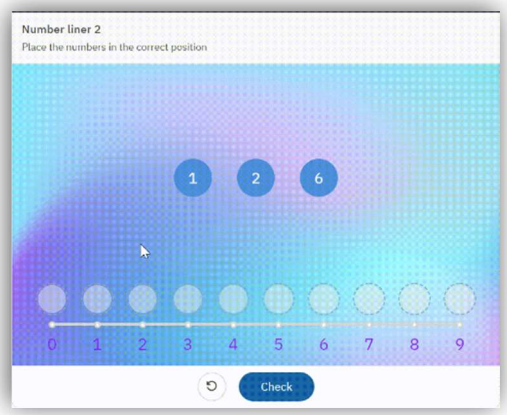
- **Number liner** allows student to place an object on the number that is shown on the image presenting sequenced numbers in a line. This feature serves as a validation element.



Example 1: Number liner 1



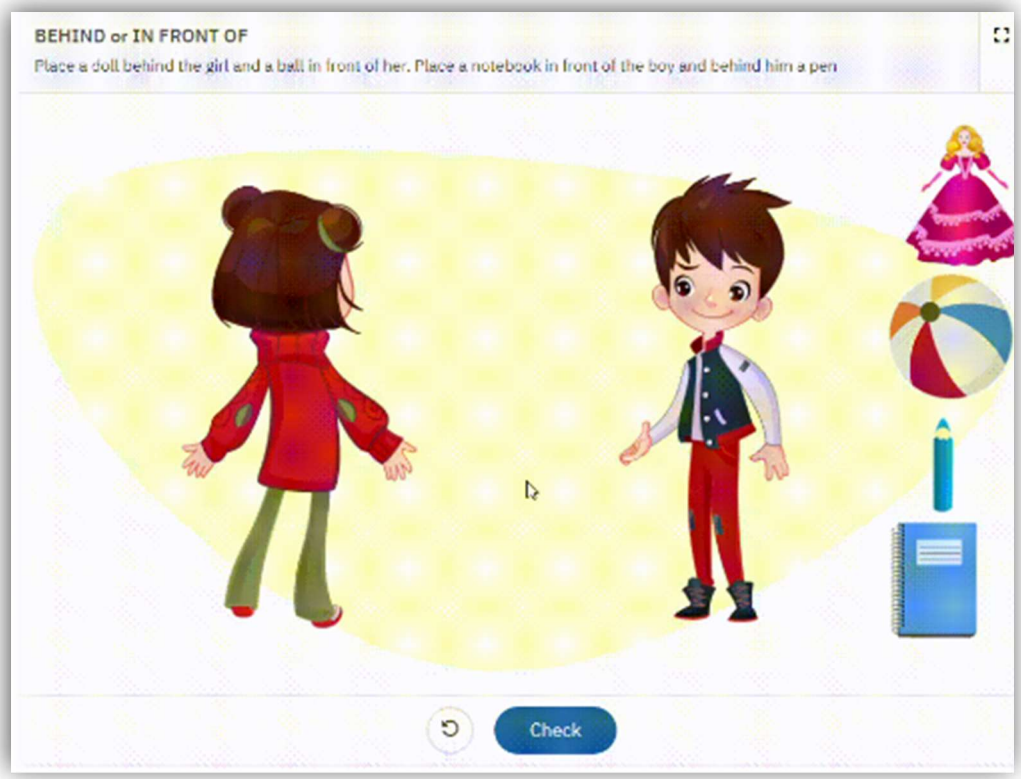
Example 2: Number liner 2 with images



Example 3: Number liner 2 with numbers

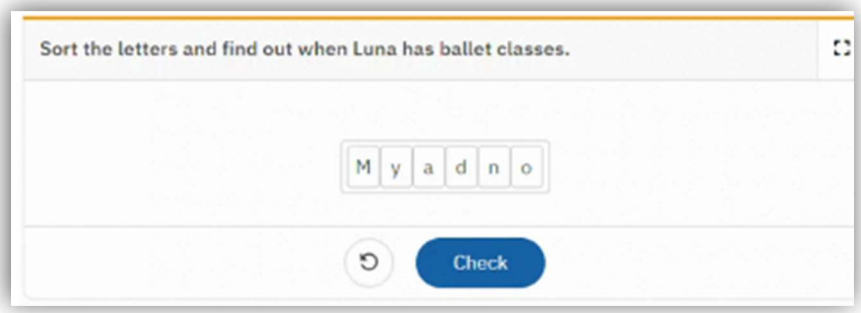
Drag and drop elements

- **Drag and drop, Dragonator, Drag and drop order, Drop fill** enables to drag and drop items (images, text or audio) to targets on a background image. There are plenty of ways of using Drag & Drop content type. You may add one item to one target, or several items to one target or clone items that can belong to several different targets, etc.

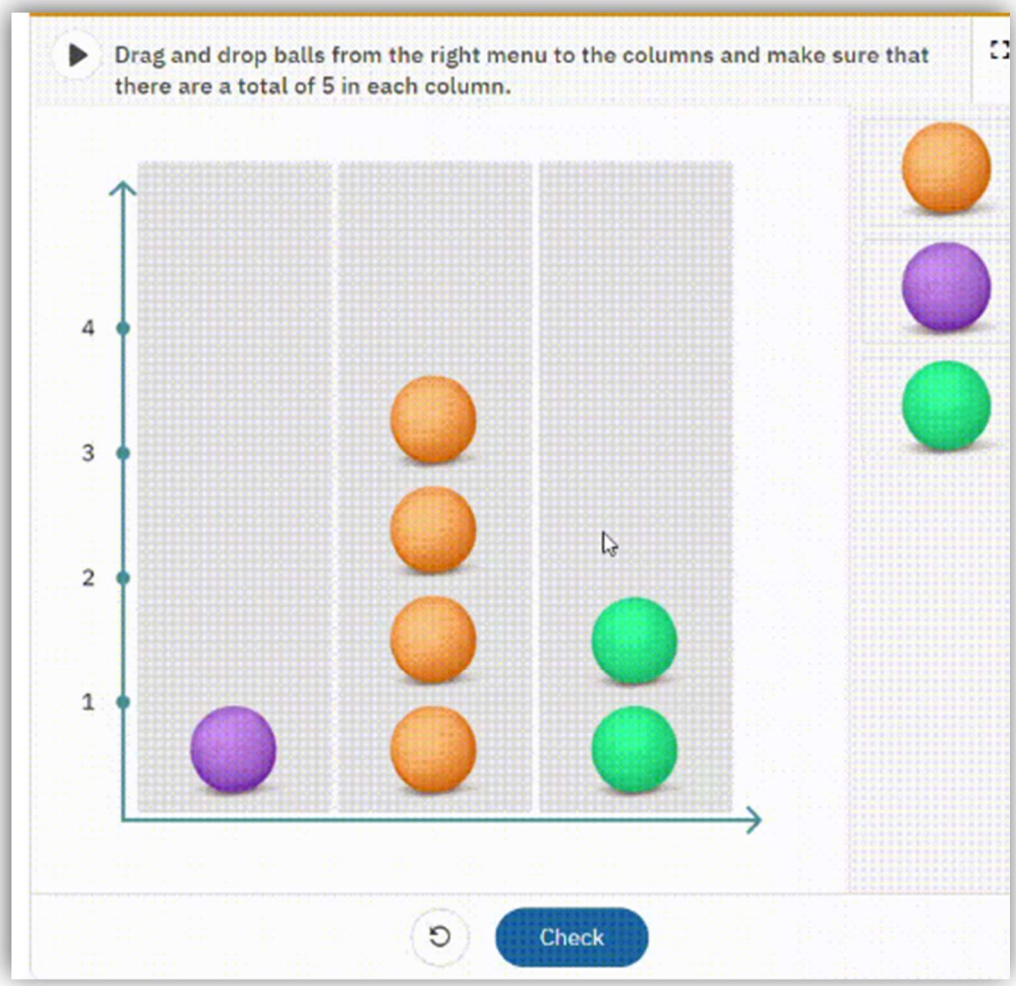


Example 1: Dragonator (Behind and In front of)

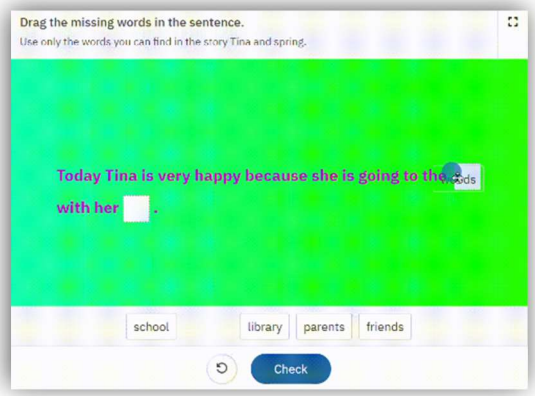
Example 2: Drag & Drop Order: Words with labels



Example 3: Drag & Drop Order: PartsCreating the Drag & Drop: Parts



Example 4: Drag & Drop: Clone items

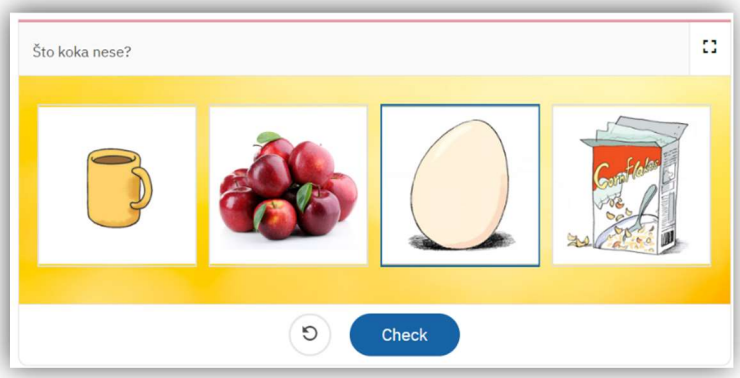


Example 5: Drop Fill-in

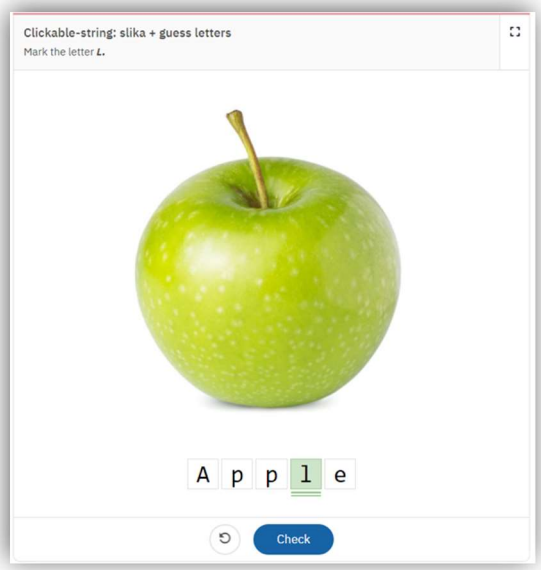
Example 6: Drag & Drop: Addition mode

Selection elements

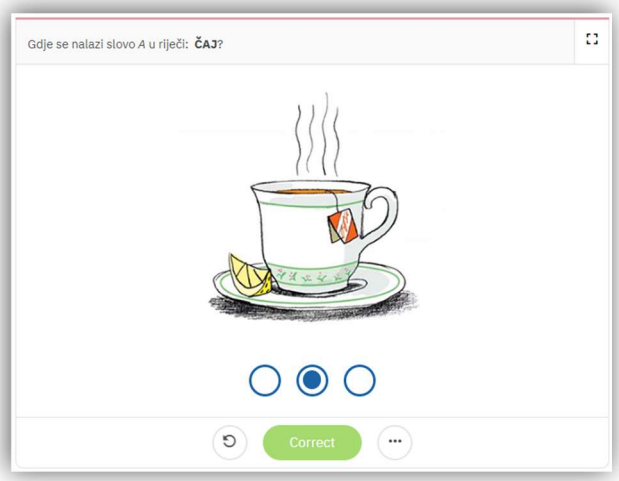
- **Clickable, Clickable string, Word position, Clickable words, Balloons** enable students to click on clickable items (text, images or audio) placed on a background image to choose the right answer. It can be used for Odd One Out (also called Odd Man Out) or Choose the right answer games. Also, it can be used for games with words, to underline or mark words inside the text. This feature serves as a validation element.



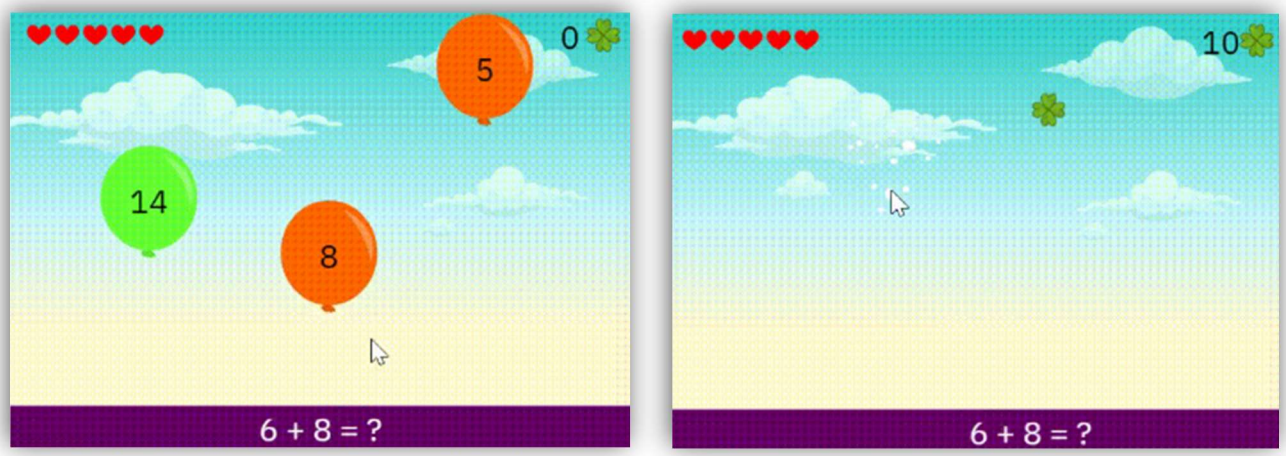
Example 1: Clickable



Example 2: Clickable string



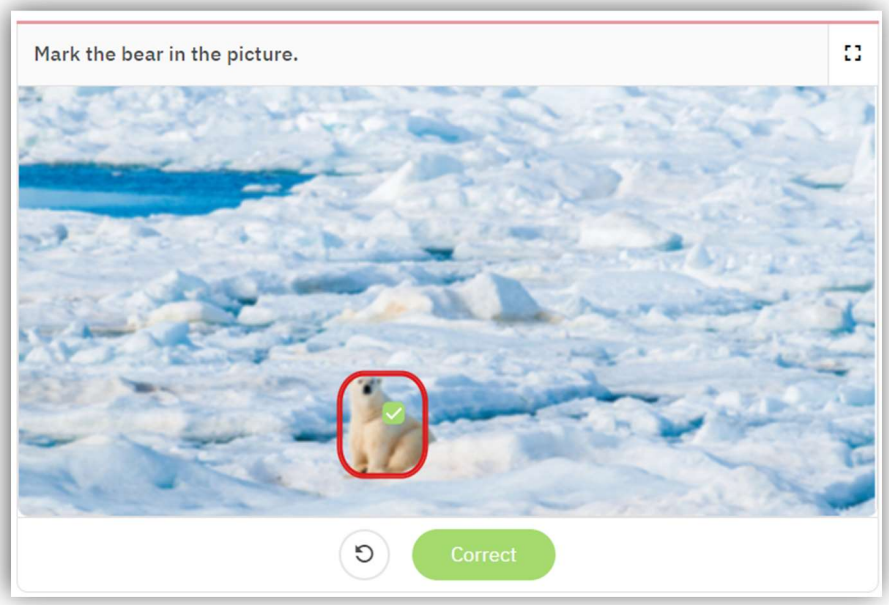
Example 3: Word position



Example 4: Ballons

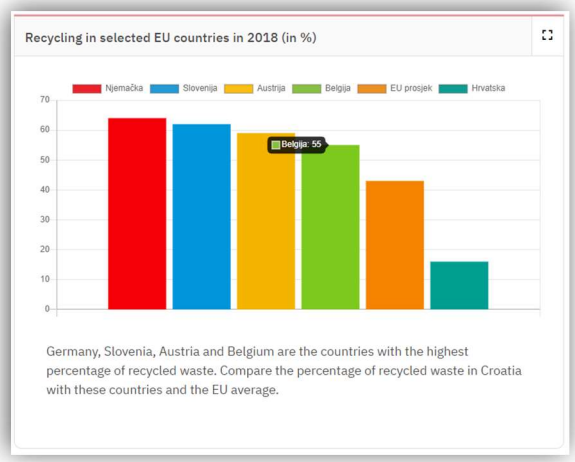
- **Hotspot** enables an interactive image that has added content inside it. Interactive image can be enriched with points of interest and in-depth information about the details depicted. Students need to click on to the points on the image to identify objects on the image and solve the exercise correctly. This feature serves as a validation element.

Example 1: Hotspot

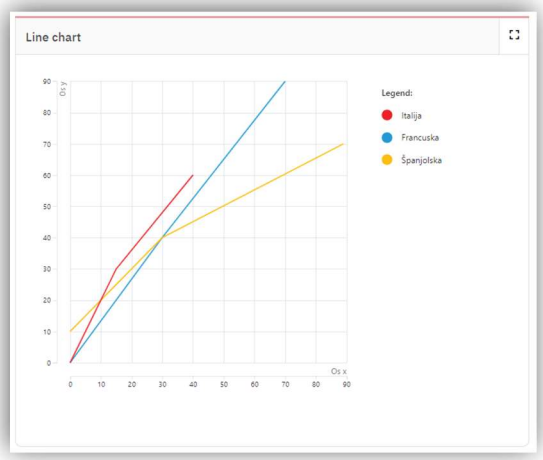


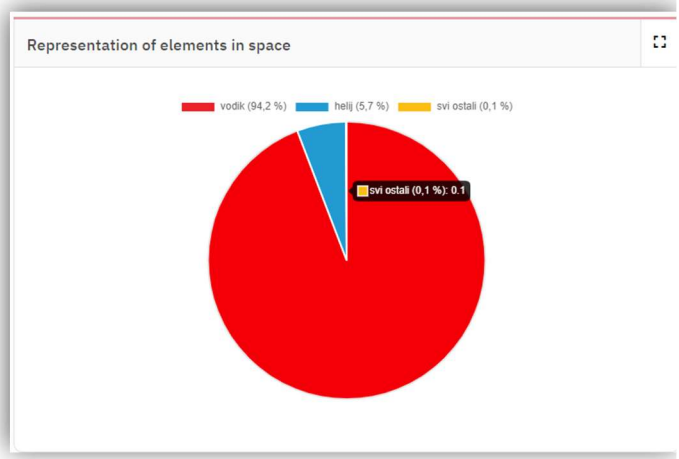
Example 2: Hotspot validation

- **Chart** represents three different types of charts: bar chart, pie chart and line chart.
  Line chart is an interactive chart where student can choose to see all the data or highlight just one part of it. When the mouse is positioned on certain points of the line chart the end user can get immediately more detailed information about the point, he is interested in without the necessity to compare the data on the axis.
  Bar chart is an interactive chart where student can choose if he wants to see all the data or select just few of them, he wants to compare.
  Pie chart is an interactive chart that visually represents the distribution or proportion of various categories or components within a data set.



Example 1: Bar chart

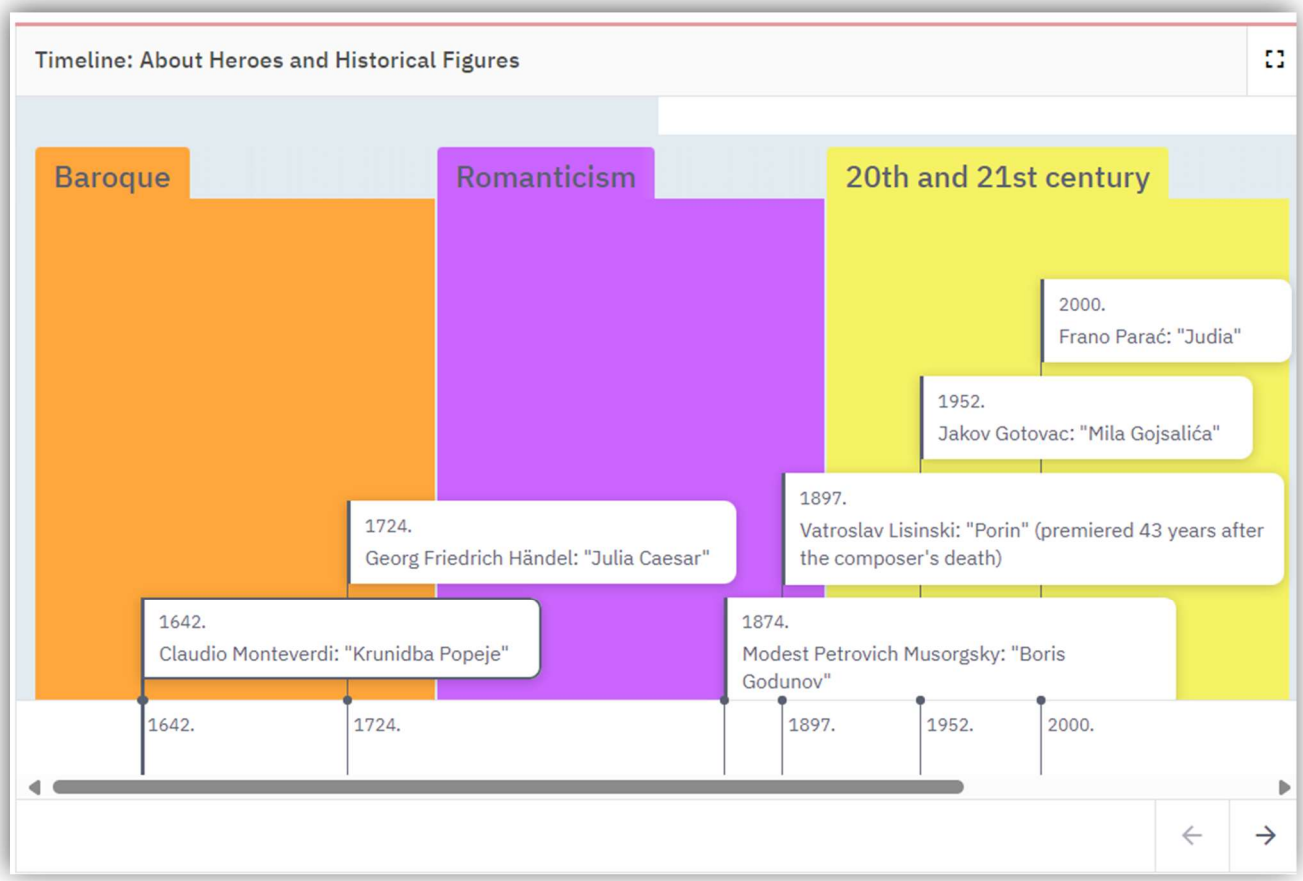




Example 2: Line chart

Example 3: Pie chart

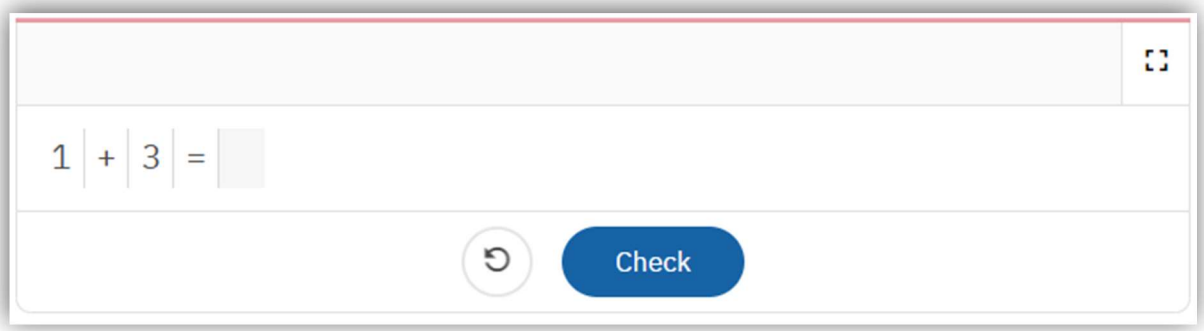
- **Timeline** presents a list of important events arranged in the order in which they happened.



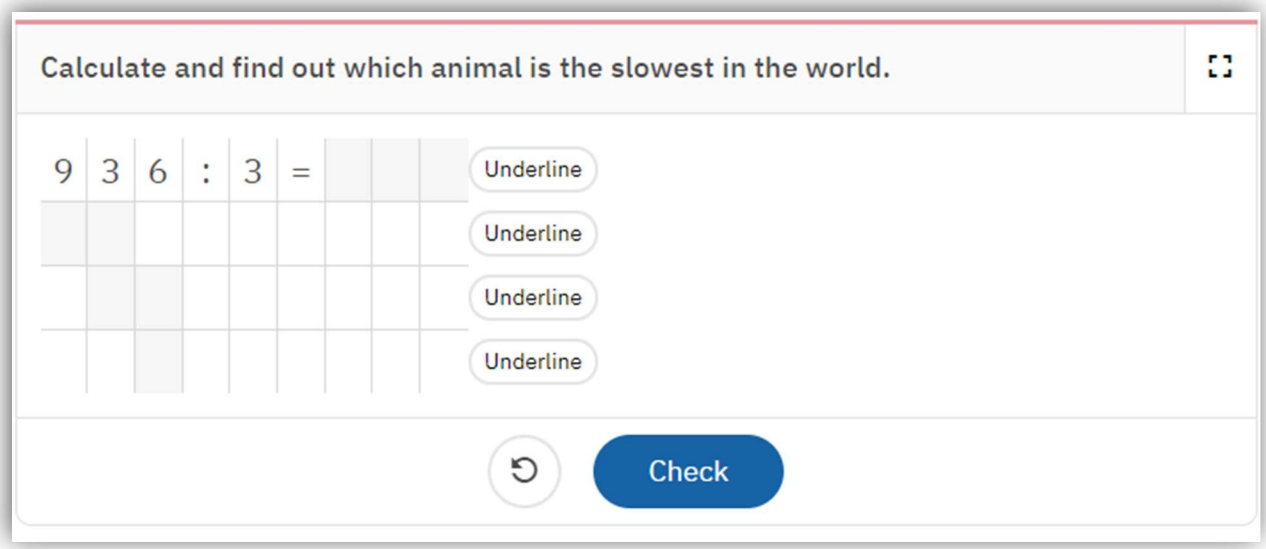
Example 1: Timeline

Math tools

- **Math problem solver** component is a versatile tool on the platform designed to facilitate plain or easy mathematical operations for students. With this interactive feature, students can practice fundamental arithmetic operations such as addition, subtraction, multiplication, and division. Each problem prompts the student to input one of the numbers required for the correct calculation. This feature serves as a validation element.

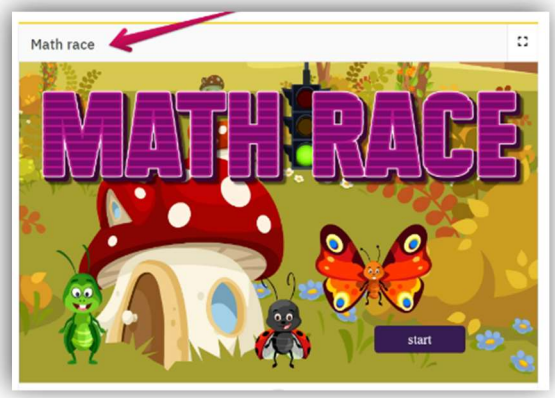


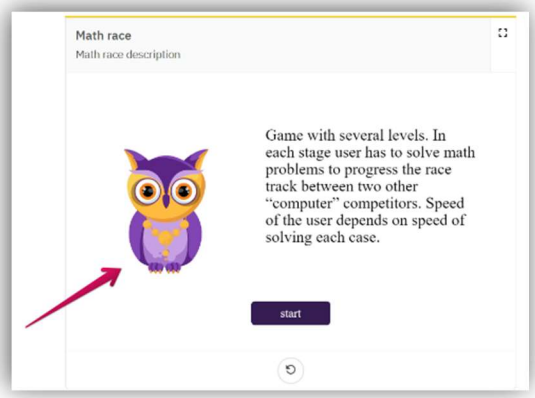
Example 1: Math problem solver

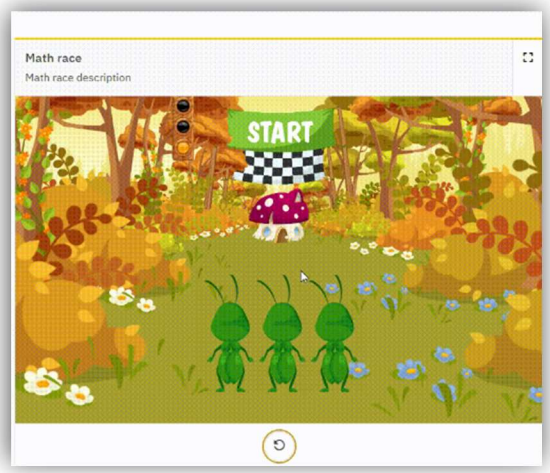


Example 2: Math problem solver

- **Math race** enables students to choose the correct answers (to solve given math problems) by clicking one of the options. This feature serves as a validation element.

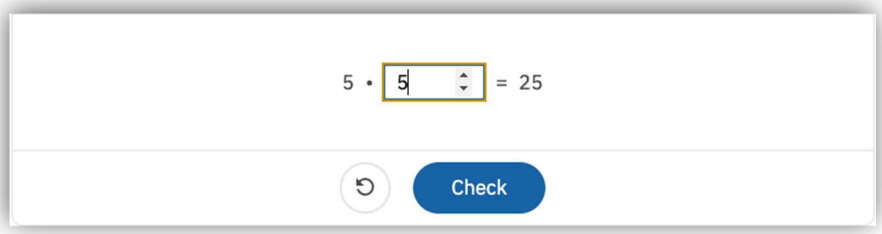




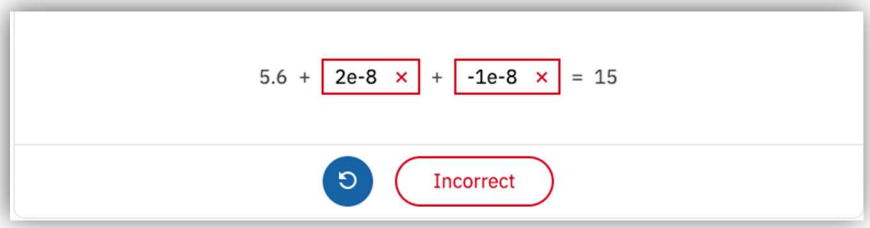


Example 1: Math race

- **Calculated** component is another valuable tool on the platform for practicing fundamental arithmetic operations. Difference between this component and Math problem solver is that students must choose the correct number from provided list. This feature serves as a validation element

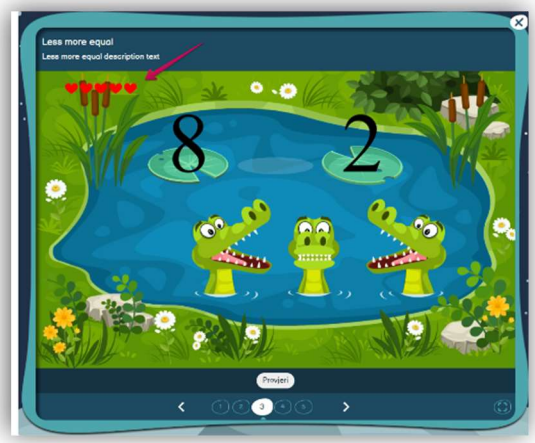


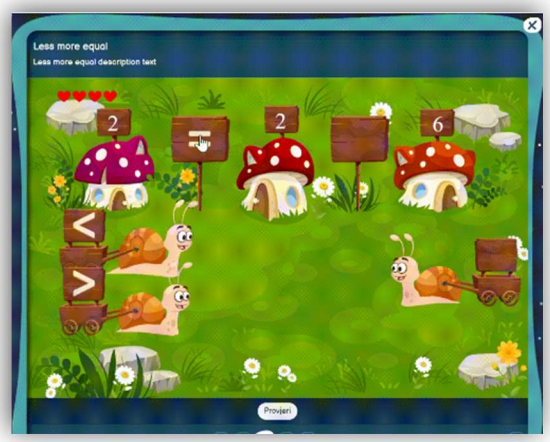
Example 1: Multiplication in Calculated

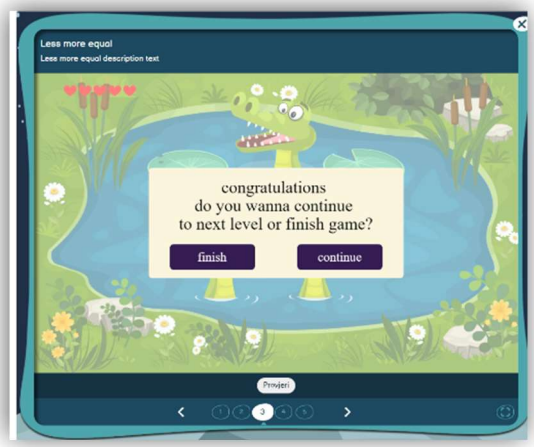


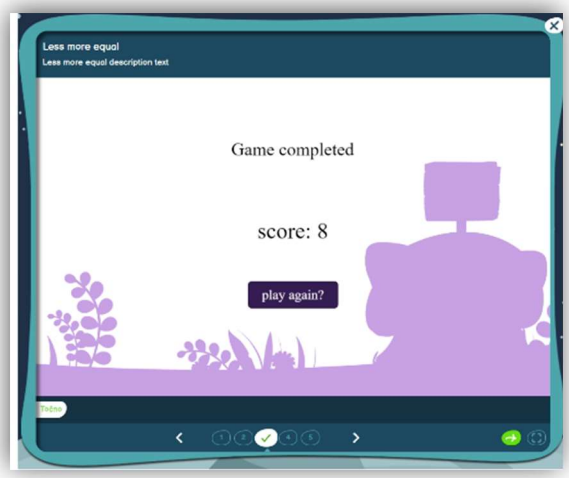
Example 2: Addition with decimal numbers in Calculated

- **Less more equal** is an interactive exercise where student needs to choose two or three numbers and use the greater than, equal, and less than signs to compare.



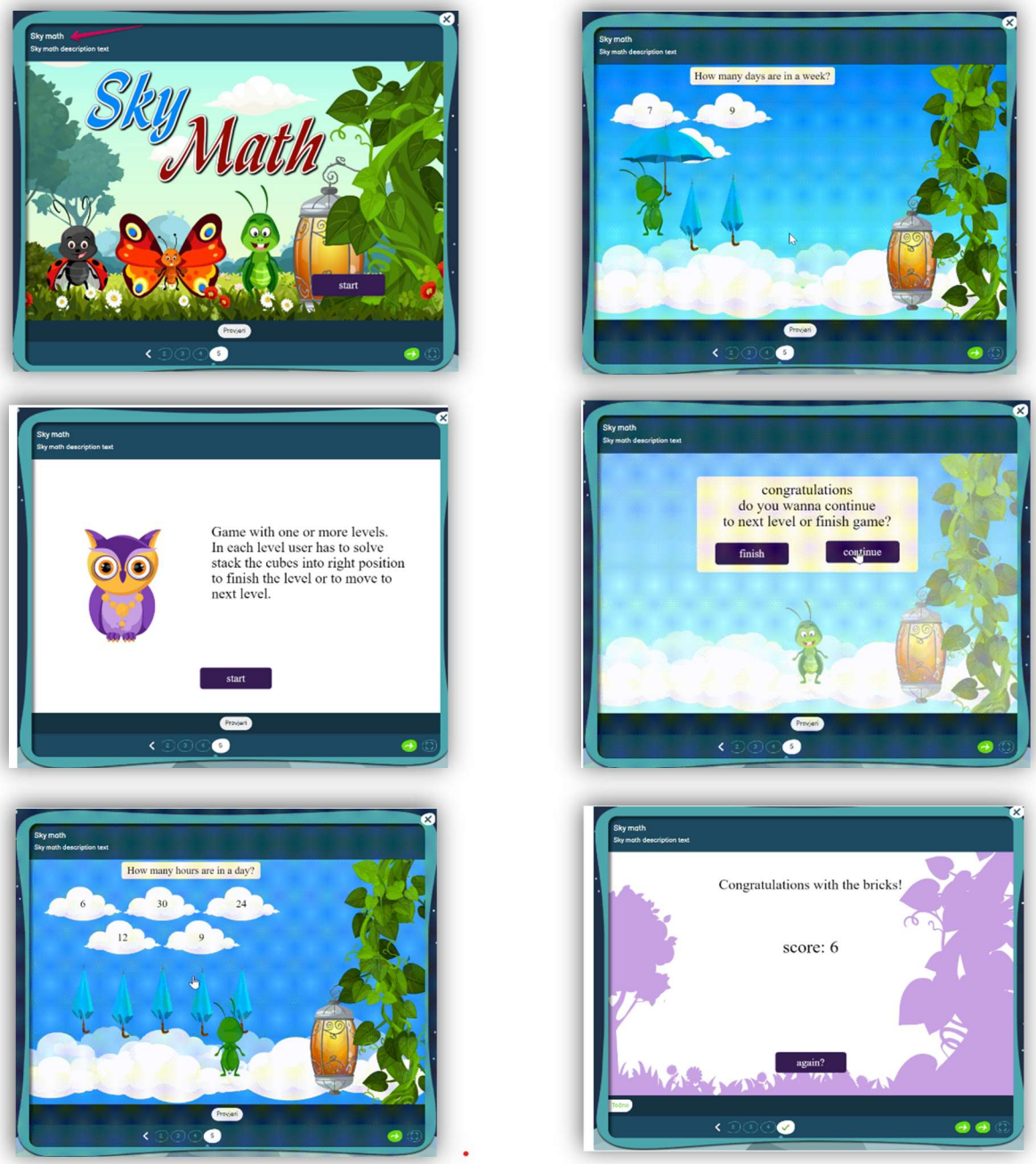






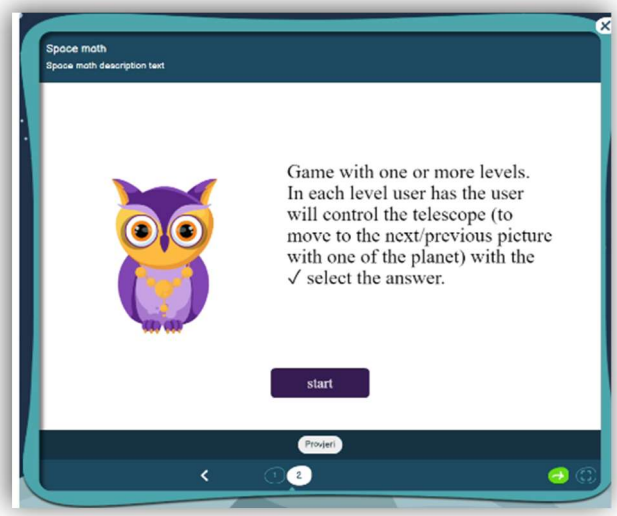
Example 1: Less, more, equal

- **Sky math** is an interactive exercise where student needs to choose answers by clicking on the umbrella below a cloud with the correct answer to finish the level or to move to the next level.



Example 1: Sky math

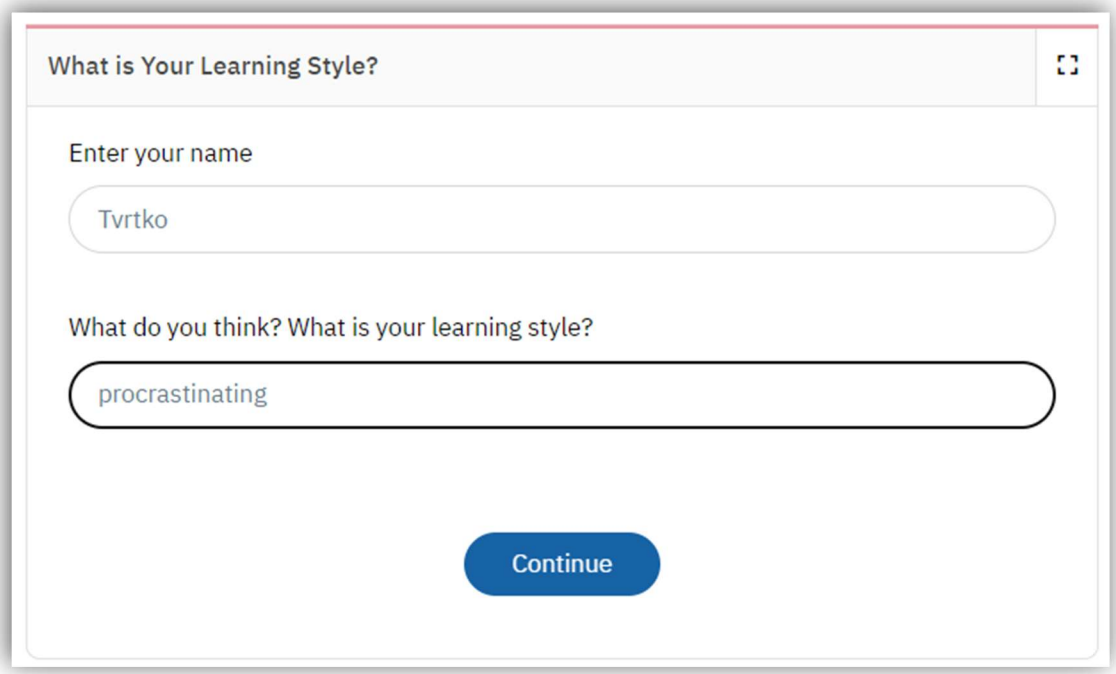
- **Space math** is an interactive exercise where student needs to choose answers by moving the telescope with arrows and clicking on the checkmark below a planet with the correct answer to finish the level or to move to the next level**.**



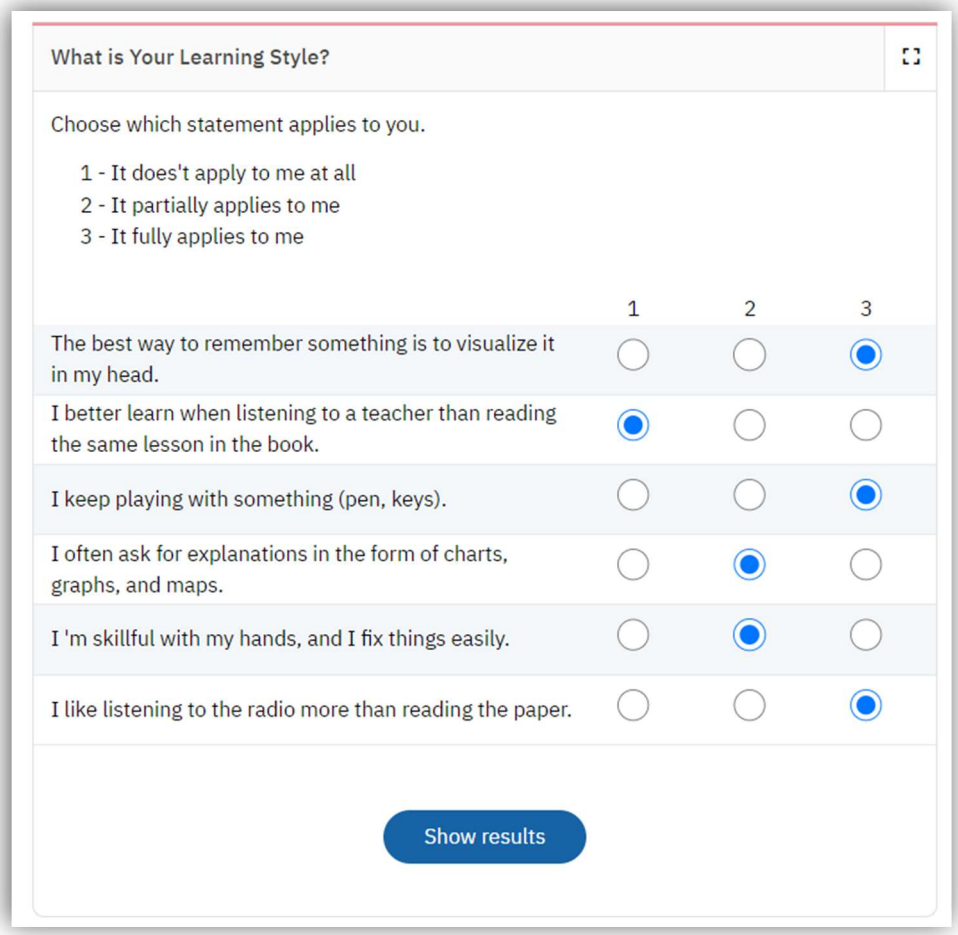
Example 1: Space math

Assessment tools

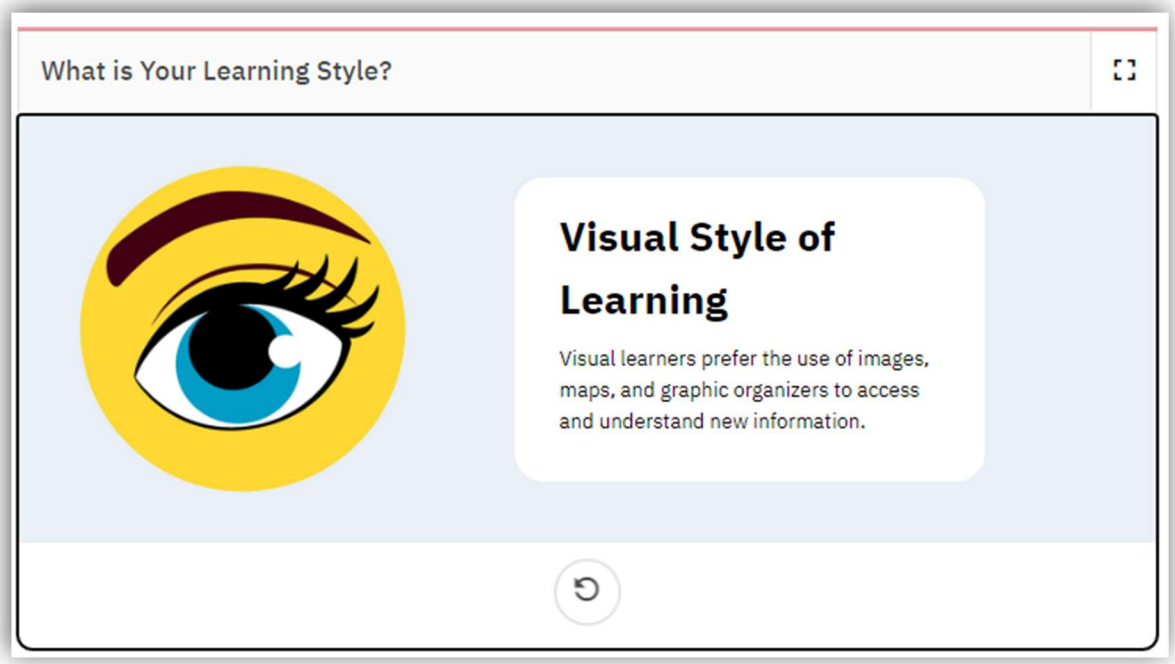
- **Questionnaire** is a structured set of questions designed to gather specific information from students. It allows for customization of questions and may include various question types such as multiple-choice, open-ended, or Likert scale questions.



Example 1: Open ended question in Questionnaire



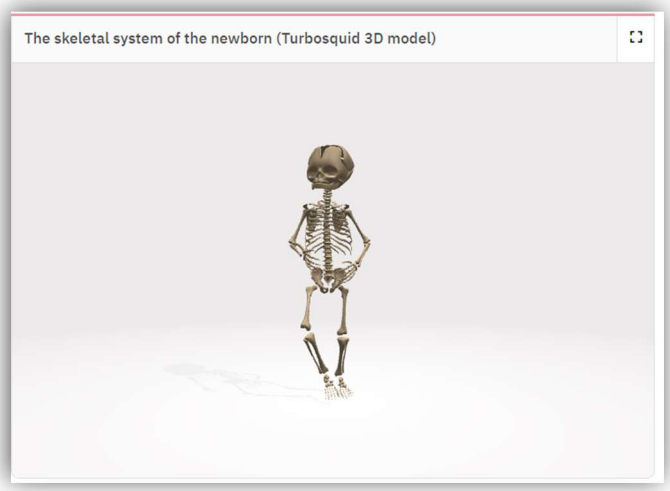
Example 2: Lickert scale question in Questionnaire



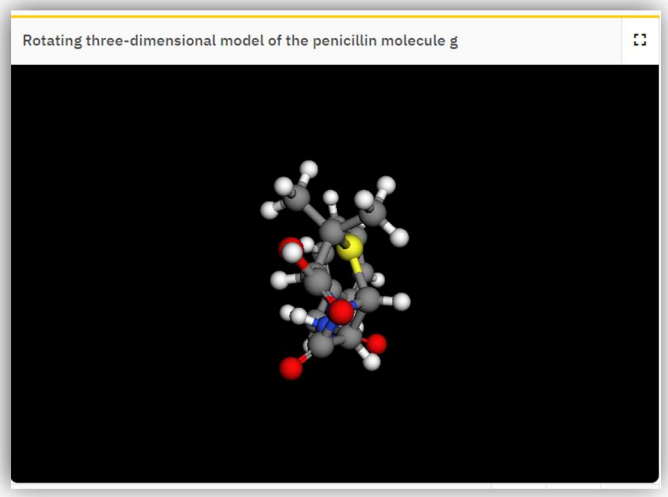
Example 3: Final feedback in Questionnaire

3D viewer

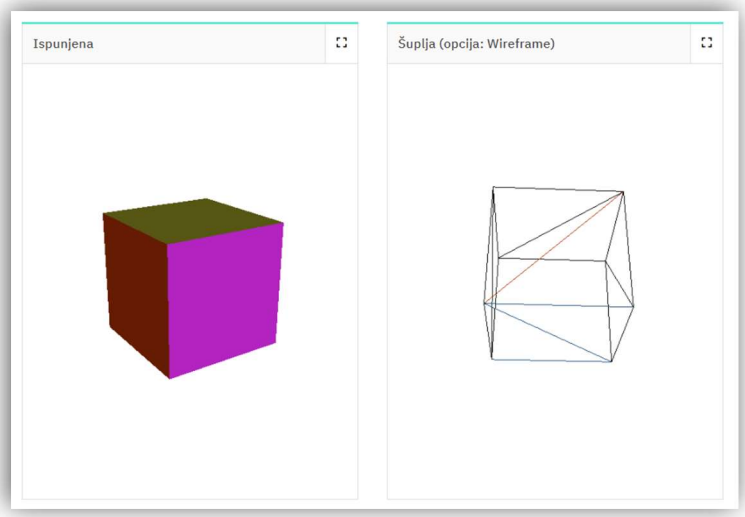
- **3D models, 3D molecule models, 3D geometric models** enable to demonstrate different types of 3D models. Students can manipulate with models and rotate the model 360º.

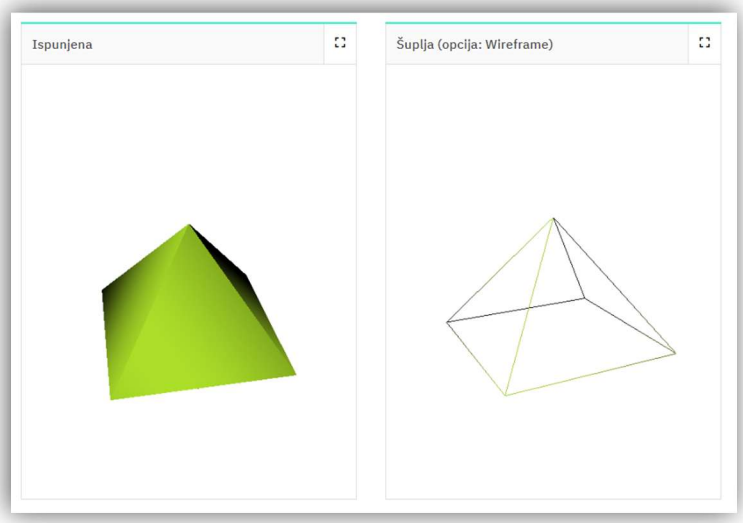


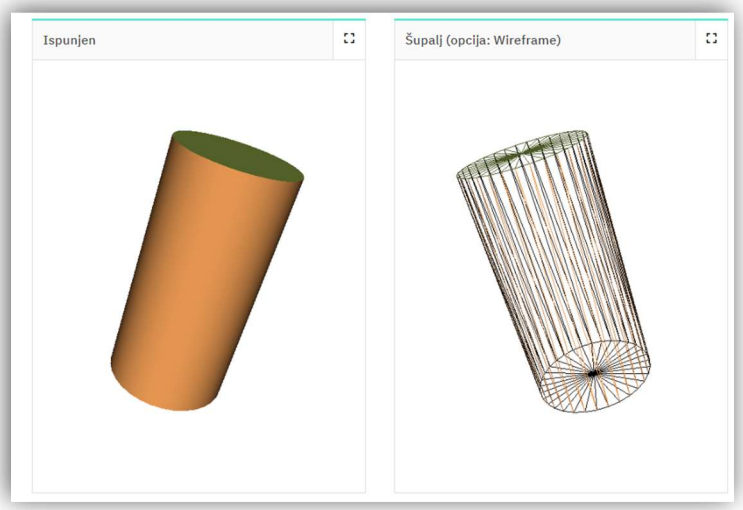
Example 1: 3D Model



Example 2: 3D model molecula



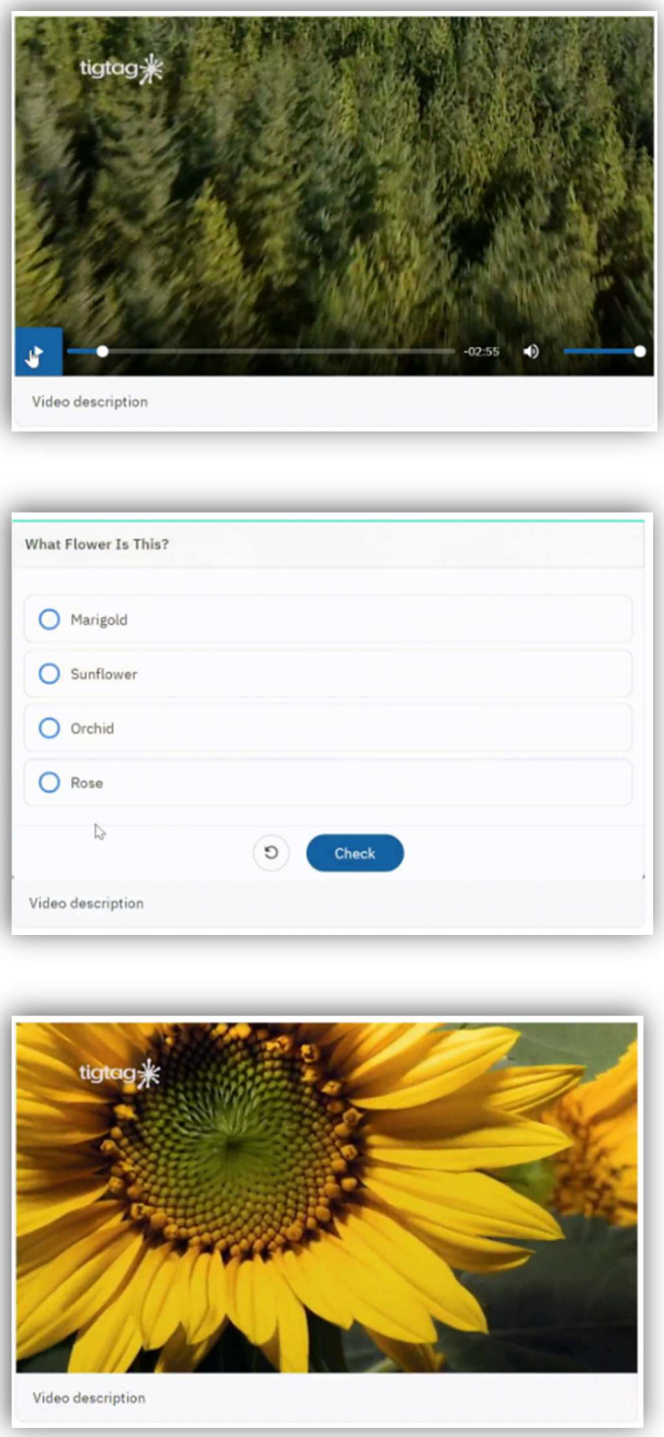




Example 3: 3D geometric model

Interactive video

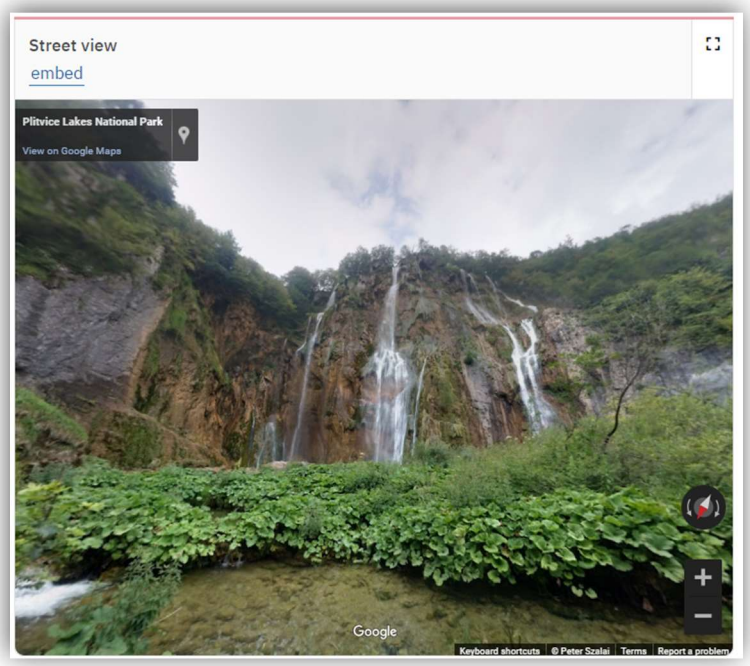
- **Interactive video** incorporates interactive questions or include supplementary text or images directly within the video content. This keeps students engaged during video playback, prompting them to ensure they grasp key information. Moreover, you have the option to insert additional text or images to provide further clarification or highlight important topics.



Example: Interactive video

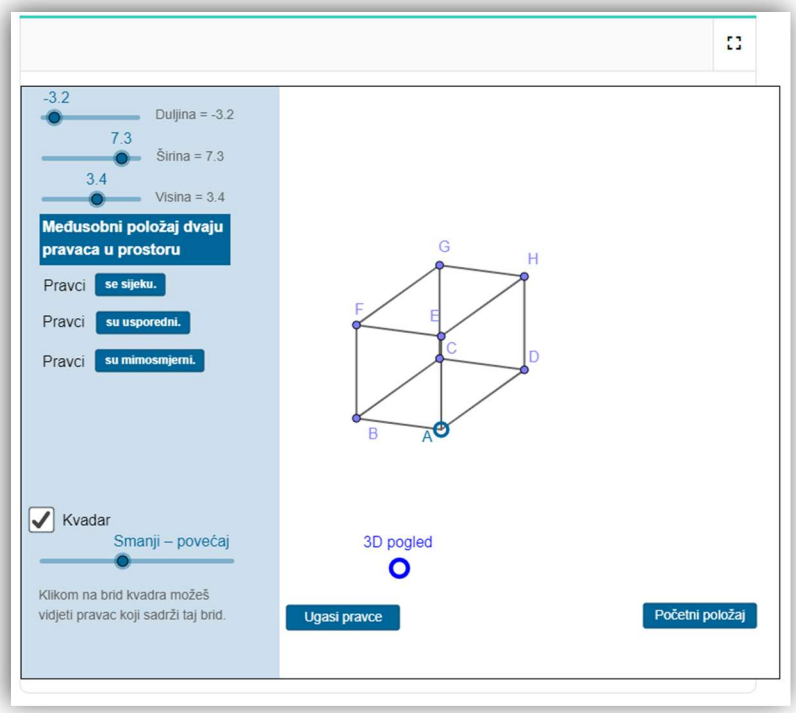
Integration tools

- **Embedder** is a tool or feature within a platform that allows to incorporate external content or elements seamlessly into their own work. It facilitates the integration of various media types, such as videos, images, or documents, into educational content. Its purpose is to enhance the richness and functionality of digital materials by enabling the inclusion of relevant external resources or multimedia elements.



Example: Embedder

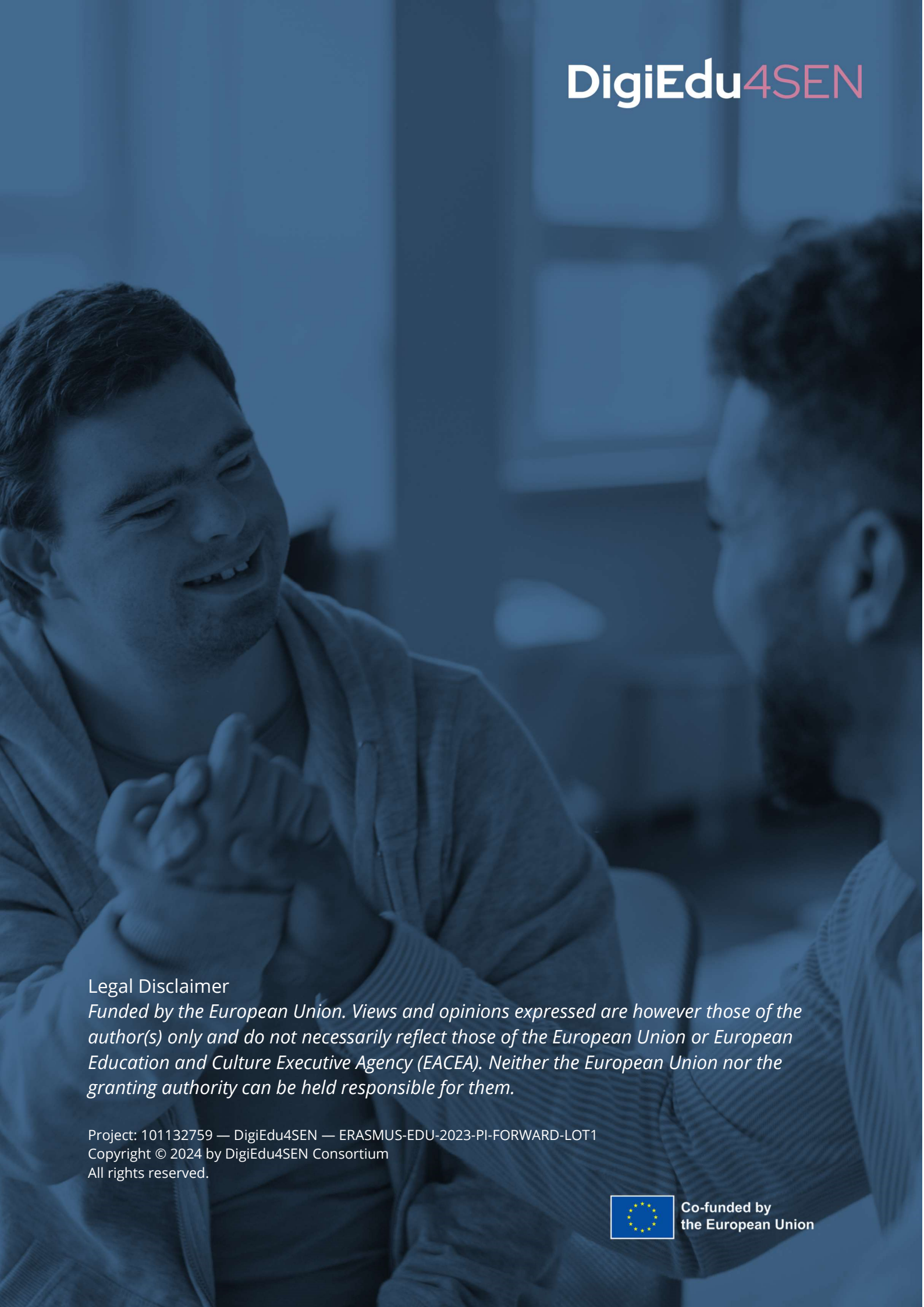
- **GeoGebra** is a dynamic mathematics software that integrates geometry, algebra, calculus, and other mathematical concepts. It's commonly used for educational purposes, allowing users to create interactive diagrams, graphs, and mathematical models. GeoGebra enables users to explore mathematical relationships, visualize concepts, and solve problems in a dynamic and interactive way. This feature enables to embed GeoGebra concepts on IZZI platform as a external content.



Example: GeoGebra

Anex 1.

Presentation delivered during the workshop in EN with the overview of digital editable templates that can be used in digital education materials.



DigiEdu4SEN

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Project: 101132759 — DigiEdu4SEN — ERASMUS-EDU-2023-PI-FORWARD-LOT1

Co-funded by
the European Union

DigiEdu4SEN

Building a Digital Education Environment for Learners with **Special Education Needs**

ANNEX 1

DigiEdu4SEN

Building a Digital Education Environment for Learners with **Special Education Needs**

Overview of types of digital editable templates that can be used in digital education materials (IZZI, PYP)

Tvrtko **Pleić**

Zvonimir **Stanić**

Antonija **Lipovac Tolić** (on-line)

Danijela **Urban** (on-line)

Agenda

- Overview of IZZI
- Overview of interactive elements in IZZI
- Overview of PYP
- Overview of interactive elements in PYP

IZZI IN NUMBERS

2018.
Birth of IZZI

1

More than 1.000.000
users in Europe

2

12
countries

3

More than 100 activity types

4

5

More than 2000 DEC created

Works in different learning environments

- kindergartens, day-care centers
- preschools
- primary schools
- secondary schools
- language schools
- universities & higher education
- lifelong learning
- corporate inhouse learning

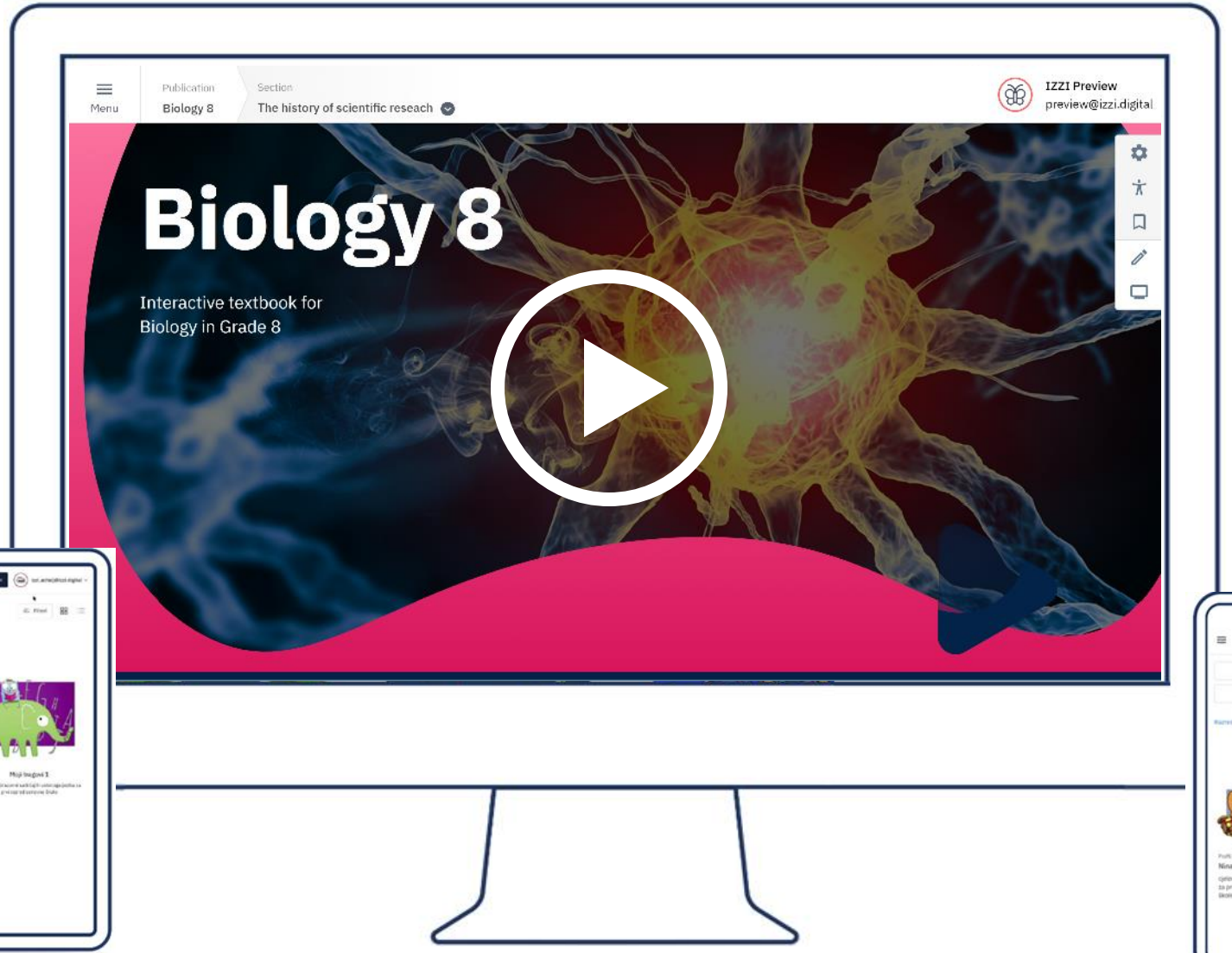
DigiEdu4SEN

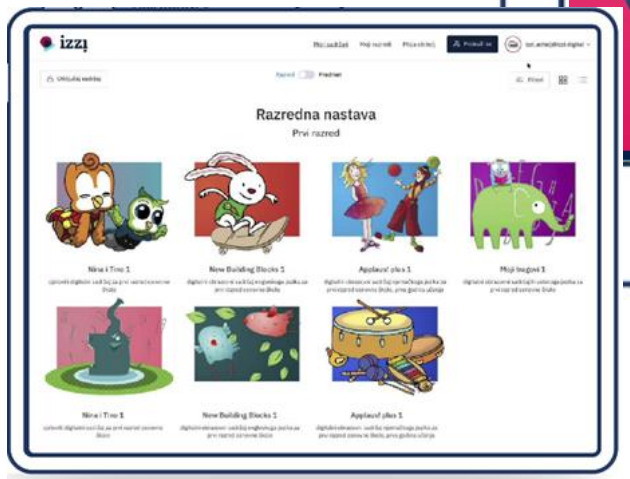
WORKS EVERYWHERE, AT ALL TIMES

Desktop

Tablet

Mobile





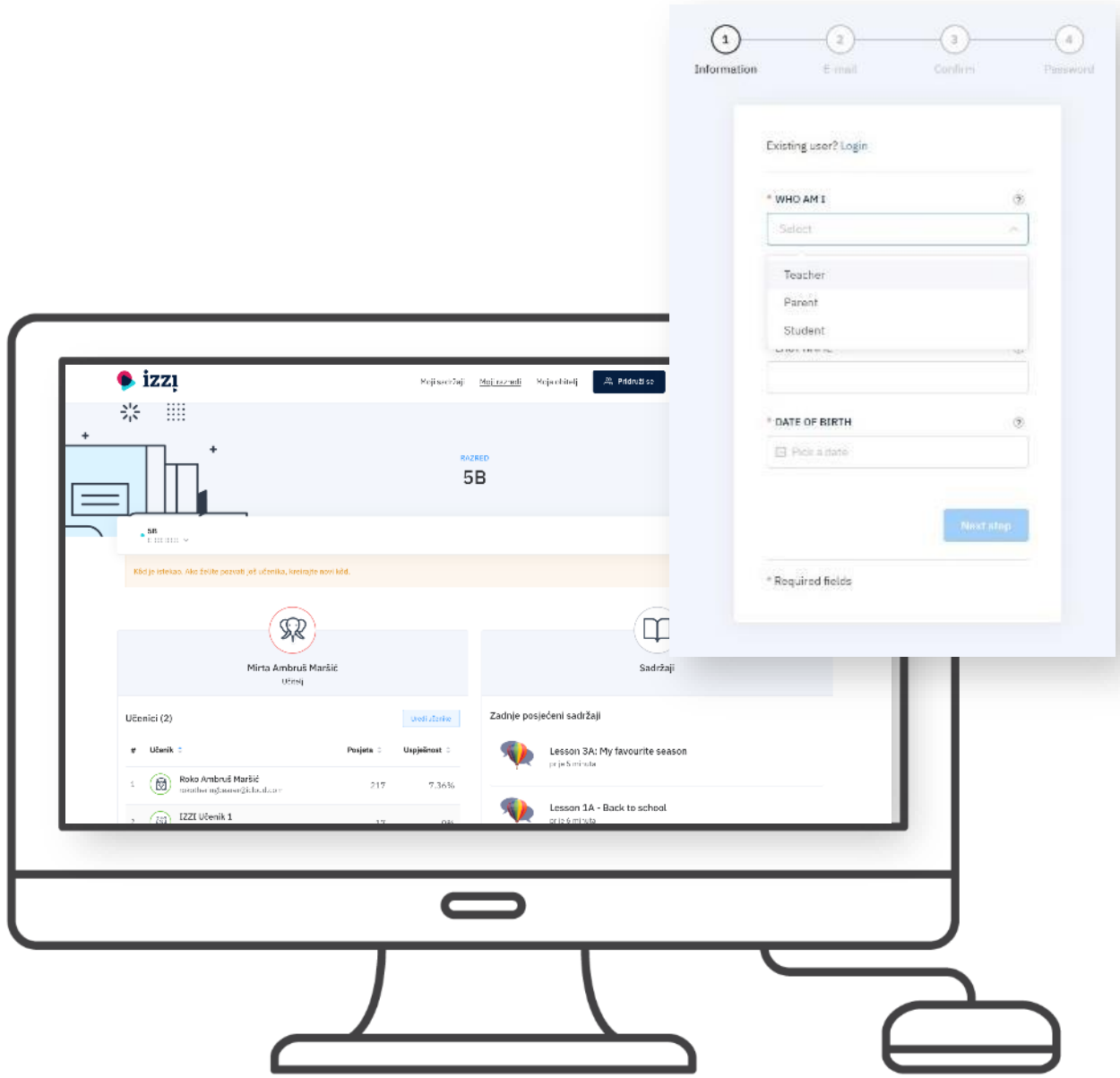
Web browsers

Applications

android

IZZI offers a complete system for distribution of content to teachers and students:

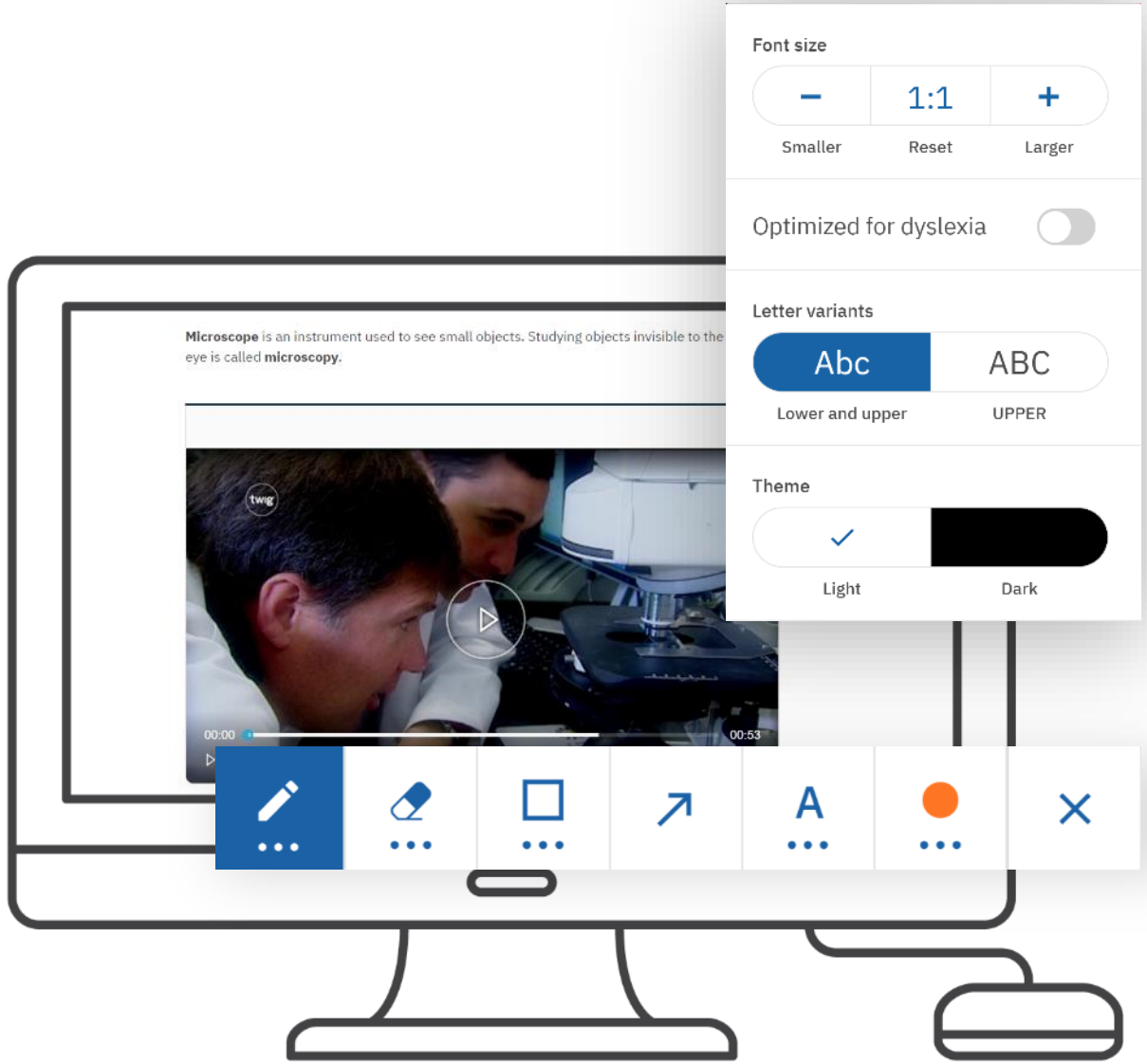
- Online bookshelf for digital editions
- **digital rights management and licensing system** that can be integrated with any currently used CRM/UM or instead of it
- related applications for best performance **online and offline**
- For teachers: **Virtual classes, Teacher`s corner, Clicktest, Presentations**



Special options and features

Special features for efficient and inclusive teaching and learning

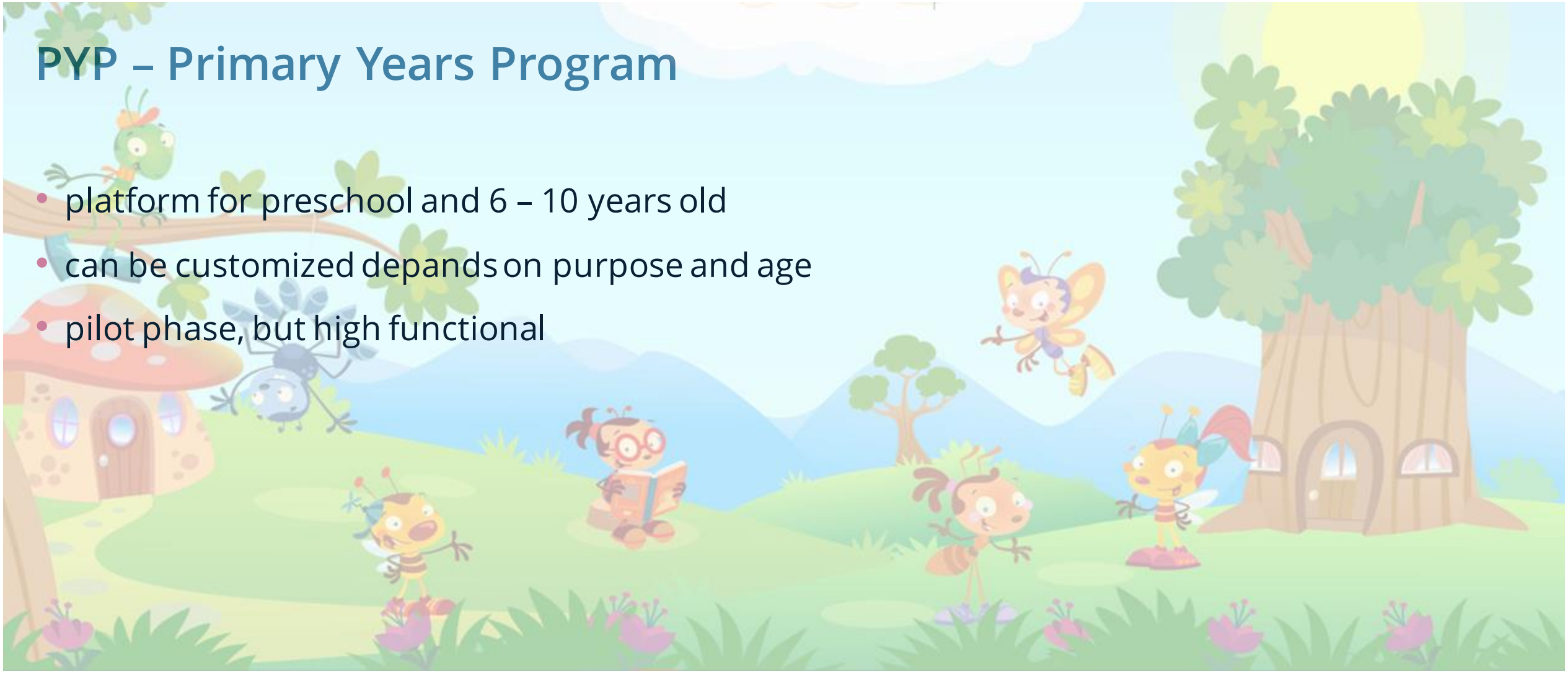
- ✓ **Alternative versions of the same content (e.g. regular and shortened versions of text)**
- ✓ **Audio recordings of all longer texts**
- ✓ **Toolbars with several options:**
  - bookmarks, notes and comments,
  - highlights, drawings, stresses…,
  - change of font size or case,
  - light and dark theme,
  - optimization for students with dyslexia,
  - blank whiteboard for drawings, schemes…
  - and more!



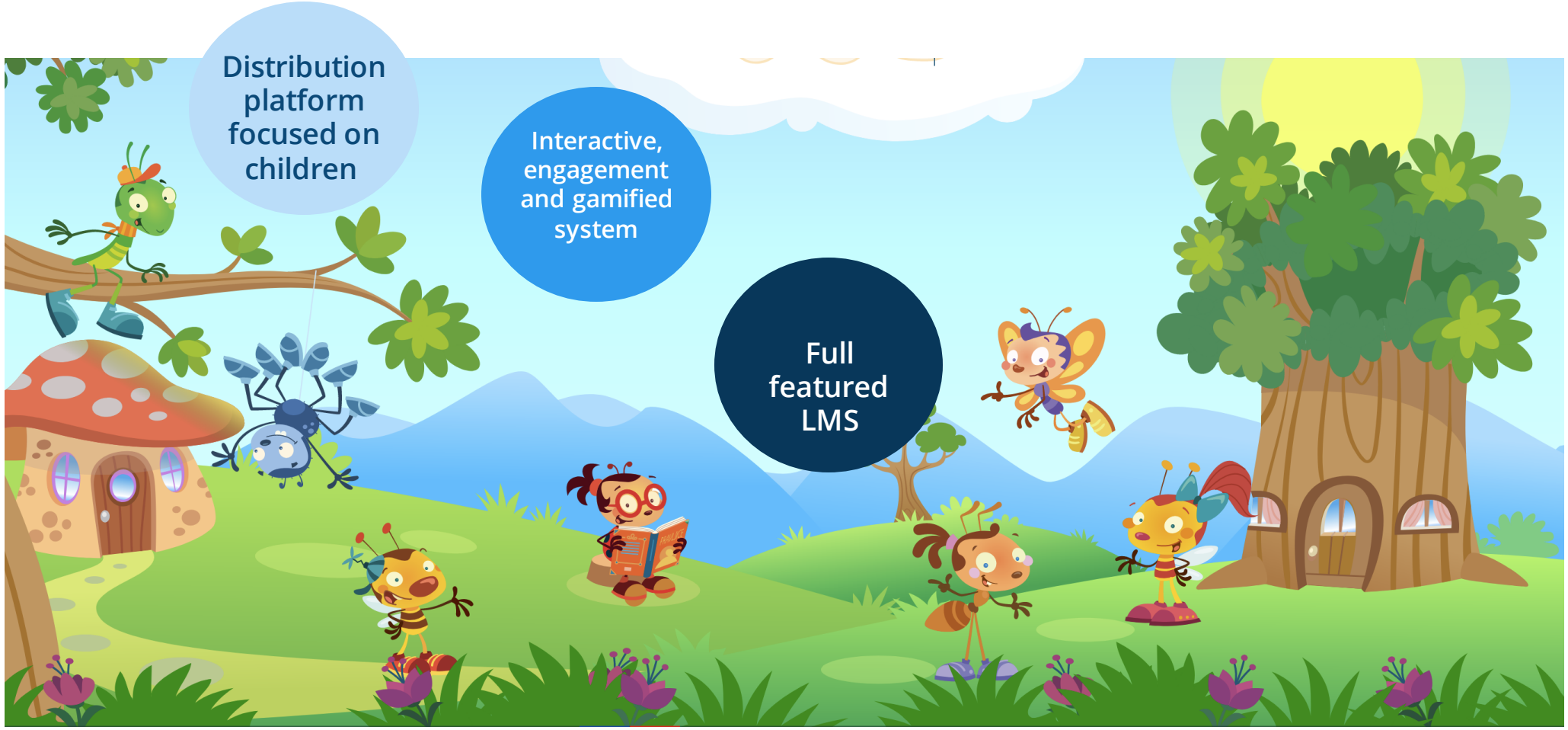
Examples

- https://bett.izzi.digital/DOS/497623/518588.html
- https://bett.izzi.digital/DOS/497623/513631.html

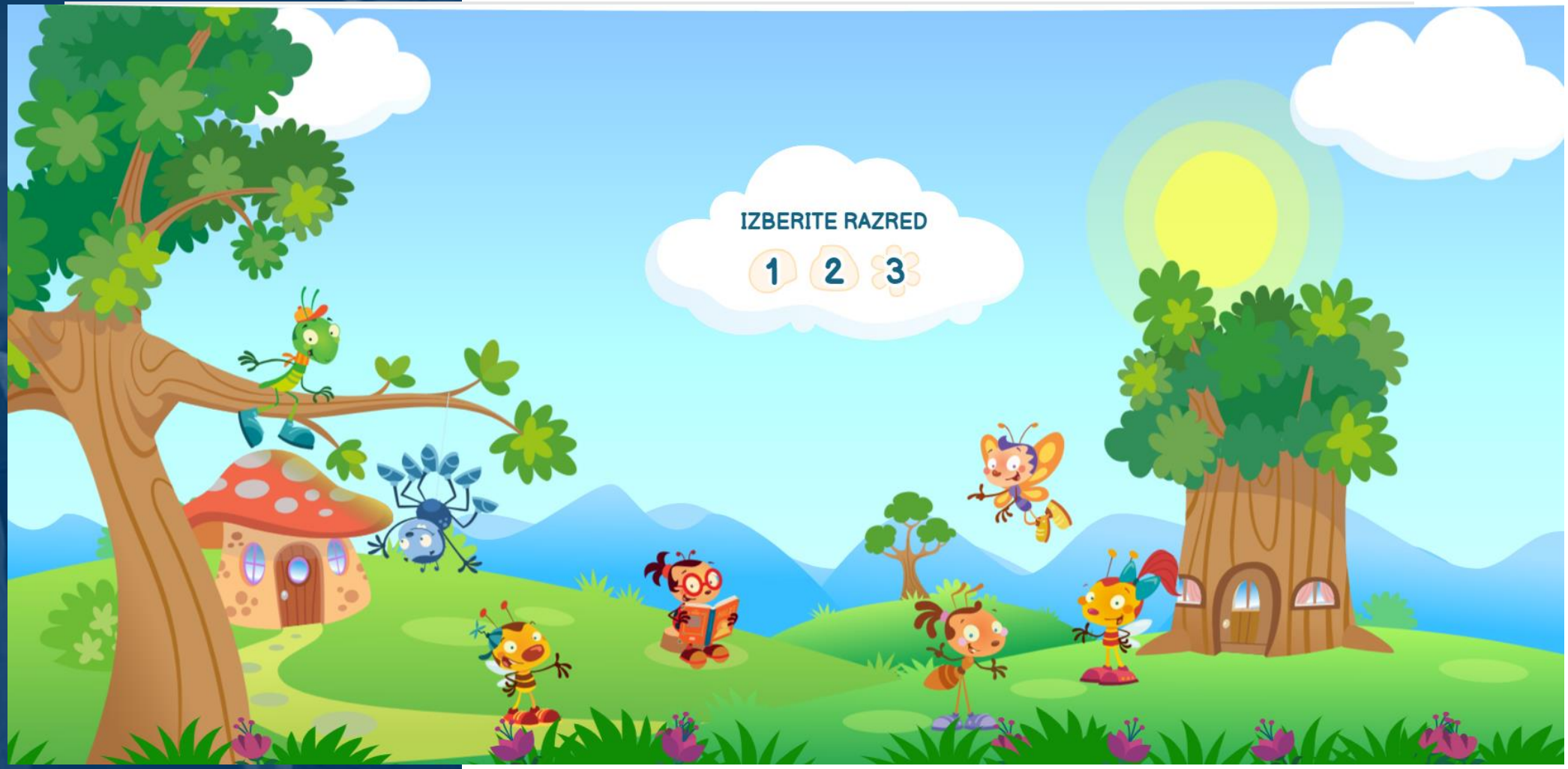
PYP – Primary Years Program



- platform for preschool and 6 – 10 years old
- can be customized depands on purpose and age
- pilot phase, but high functional

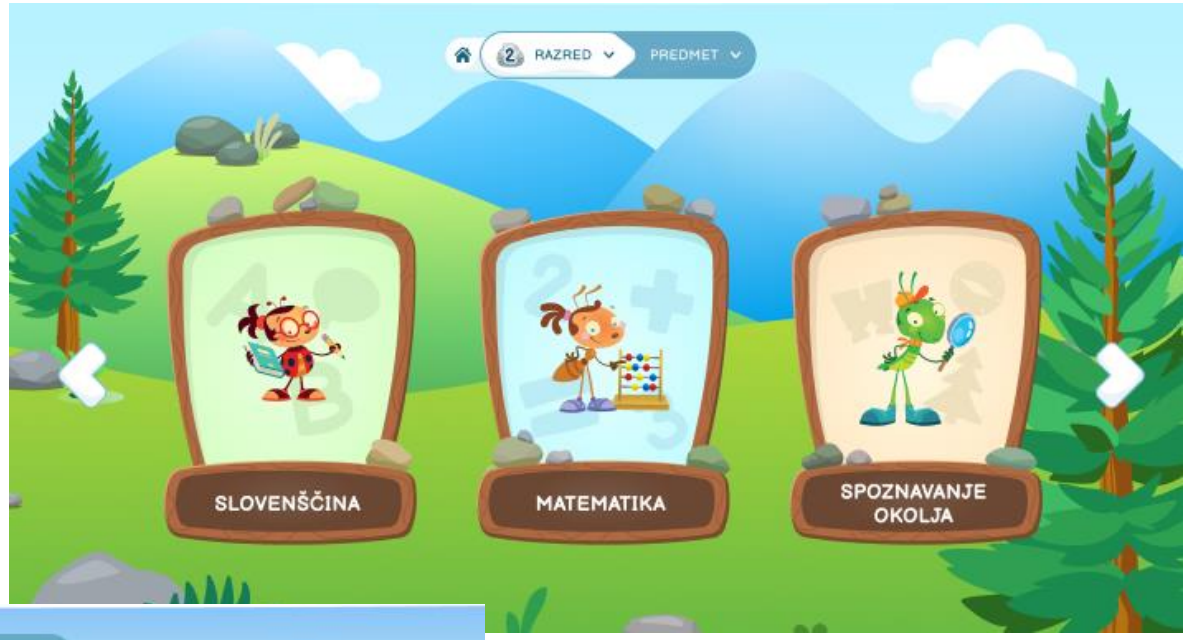

Distribution platform focused on children
Interactive, engagement and gamified system
Full featured LMS

What can be customized?



Playground

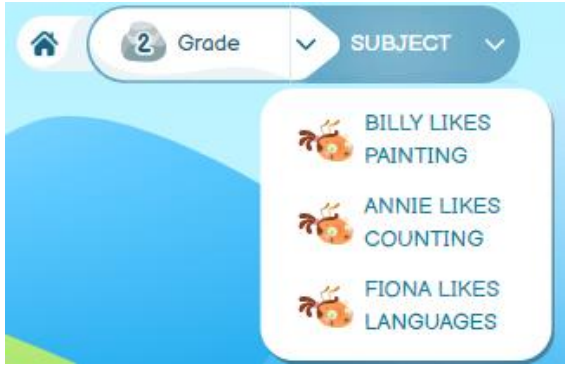
What can be customized?



What can be customized?

Grade & Subject Background

What can be customized?



Grade filters

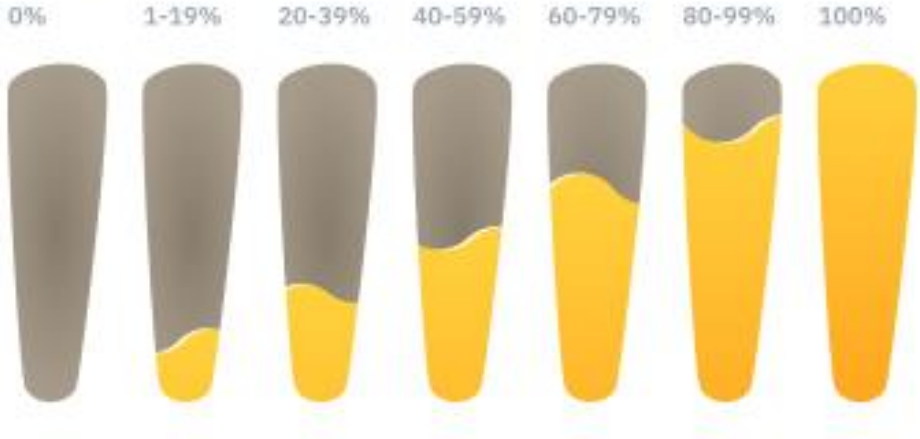
What can be customized?

Characters

What can be customized?

Progress Bar

Progress Bar %



Score progress bar

Interactive elements

- Familiar with IZZI components
- Content is formatted as sliders – not scrolling
  - Think about better solution for children with SEN

SLIDE FOR DEMO VERSION – WAITING FOR SLOVENIANS

DigiEdu4SEN

Building a Digital Education Environment for Learners with **Special Education Needs**

Thank you