

GreenVETAfrica

Teachers training on Green Waste
Management
Module 2 - Digital Pedagogy
Date



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the European Union

2023-2024 GreenVETAfrica



GreenVETAfrica mission is to offer an innovative capacity building programme on Green Waste Management in Nigeria and Ghana

The main features, categories, and potential of educational technologies

Unit 1 – Lesson 2

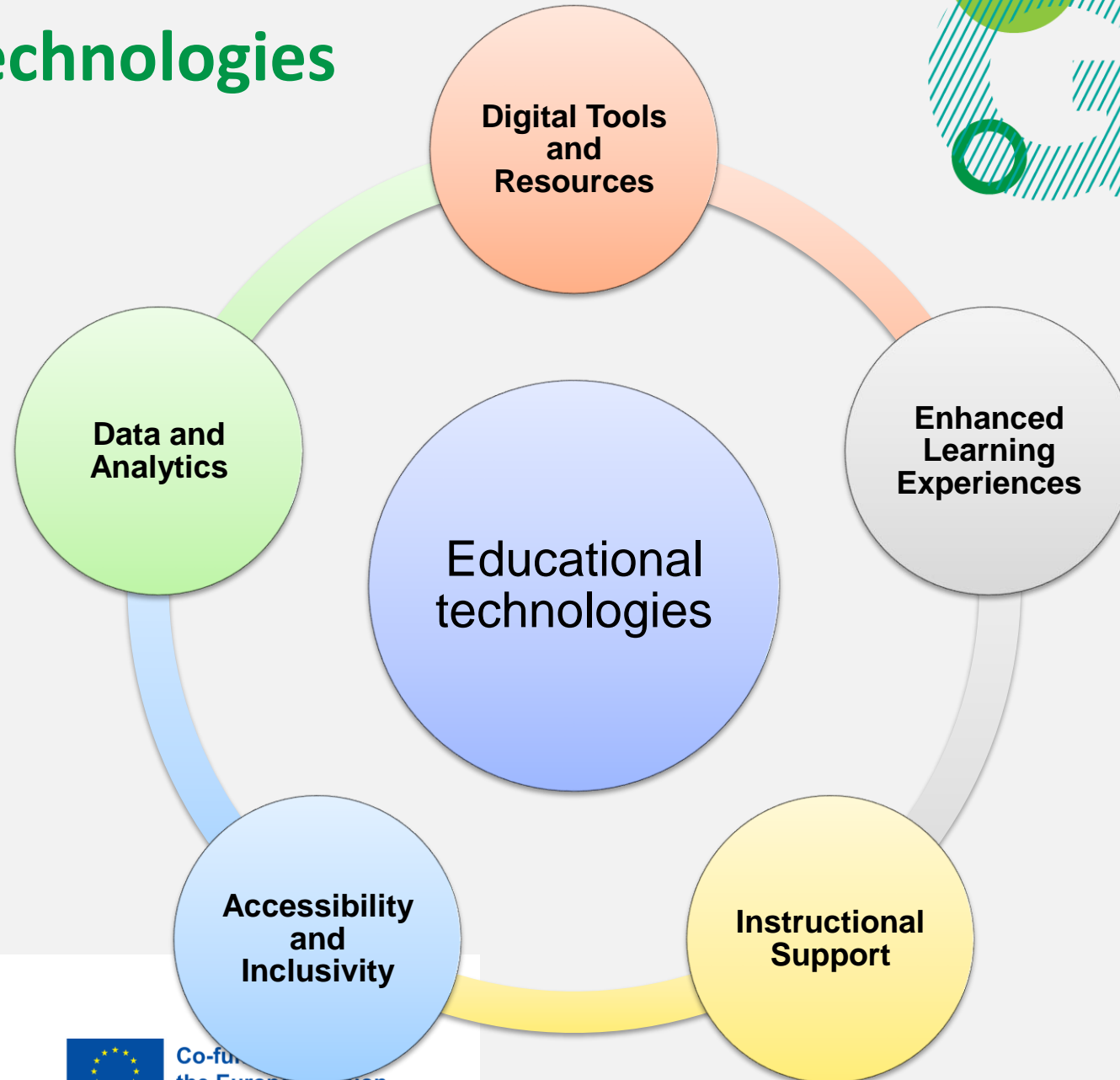
Unit objective: Identify and categorize various educational technologies (e.g., apps, platforms) and comprehend their key features and benefits

Knowledge domain: Teaching and pedagogical methods



Educational technologies

5 categories



Warning!!
this categorization is for training purposes only and makes no claim to exhaustiveness, and it is also not to be regarded as binding

Digital Tools and Resources



Educational technologies encompass a wide range of digital tools and resources, including **computers**, **software applications**, **online platforms**, and **multimedia content** designed to facilitate and enhance educational activities.



Enhanced Learning Experiences



These technologies aim to improve the overall learning experience for students by providing opportunities for interactive, engaging, and personalized learning. They can include **simulations**, **virtual labs**, **e-books**, and **multimedia presentations**.



Instructional Support

Educational technologies assist educators in delivering instruction more effectively and efficiently. **Learning management systems (LMS)**, for example, help teachers organize course materials, track student progress, and facilitate communication with students.

We will explore this topic in more detail in lesson 3

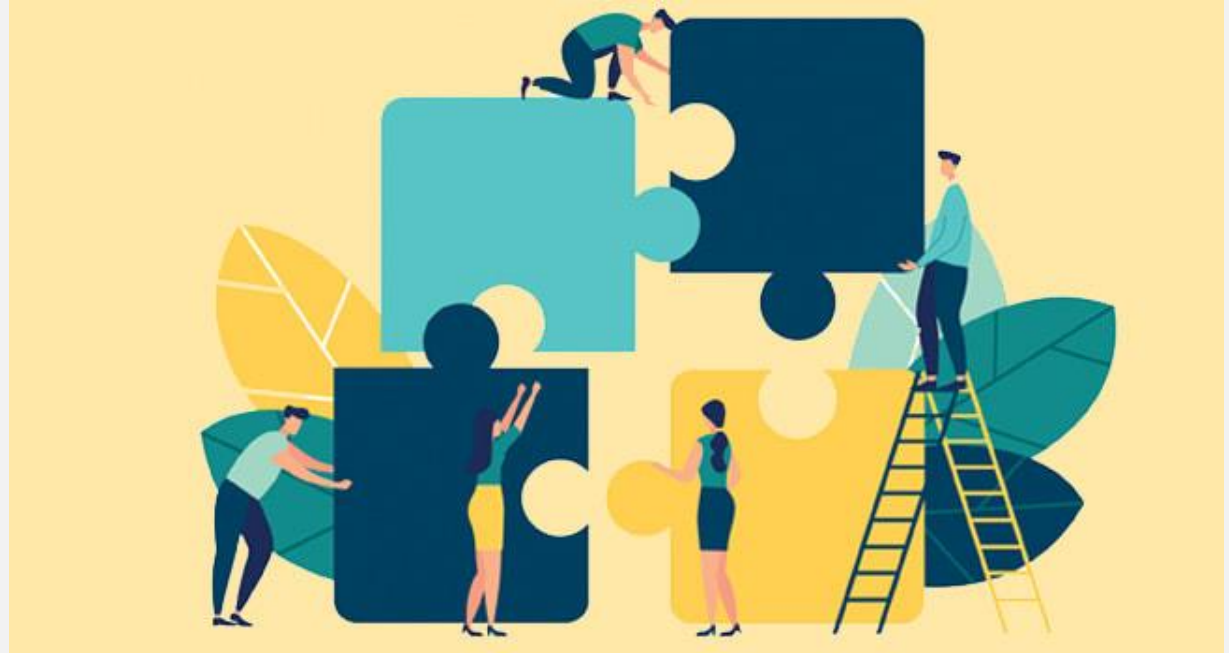


Accessibility and Inclusivity



They play a crucial role in making education more accessible to diverse learners, including those with disabilities or special needs. Technologies like **screen readers**, **closed captioning**, and **adaptive learning platforms** promote inclusivity.

We will explore this topic in more detail in lesson 5



Data and Analytics



Many educational technologies generate data and analytics that help educators assess student performance, identify areas for improvement, and make **data-driven decisions** to enhance teaching and learning strategies

We will explore this topic in more detail in lesson 10



Digital Tools and Resources

Educational technologies encompass a wide range of digital tools and resources designed to facilitate and enhance educational activities:

- Hardware
- Software applications



Digital Tools and Resources

Hardware

The hardware components are often combined with software applications and online platforms to create comprehensive educational technology solutions that cater to a wide range of learning needs and preferences.

- **Computers**, including desktops, laptops, and tablets, are essential for accessing and interacting with educational software, digital content, and online learning platforms.
- **Interactive Whiteboards:** Interactive whiteboards, such as SMART Boards, enable teachers to display digital content, write or draw on the board, and engage students in interactive lessons.



Digital Tools and Resources

Hardware

- **Tablets and e-readers** are portable devices used for reading e-books, accessing digital textbooks, and engaging with interactive educational apps.
- **Robotics and Maker Kits:** These kits include hardware components like microcontrollers, sensors, and actuators that enable students to build and program robots and other devices, fostering hands-on learning and STEM education
- **Virtual Reality (VR) and Augmented Reality (AR) Devices:** VR headsets and AR glasses provide immersive experiences that enhance learning in various subjects, from science to history, by creating interactive virtual environments.
- **Projectors** are used to display digital content, presentations, and multimedia materials on a large screen, making it visible to the entire class.
- **Document cameras**, also known as visualizers, capture and display physical documents, textbooks, or objects on a screen or whiteboard, allowing teachers to explain concepts visually.
- **Audio-Visual Equipment:** This category includes microphones, speakers, and headphones, which enhance audio clarity and facilitate multimedia learning experiences, such as online lectures and video tutorials.

Digital Tools and Resources

Software applications ... some examples

Software
explicitly
designed
for educational
purposes

Wordwall - <https://www.wordwall.net/>

Applicazione web-based che consente di creare esercizi e quiz di diverso tipo

LearningApps <http://learningapps.org>

Multilingual site with a lot of material, there are small apps with very simple and interesting exercises categorized by disciplines. You can also create your own.

Crossword Lab - <https://crosswordlabs.com/>

Web-based crossword puzzle creation tool

ESLVideo ...

ESLVideo

Link	http://www.eslvideo.com
In summary	Allows users to associate quizzes with videos found on Youtube. In addition to the ability to create custom quizzes, the site provides a wide range of English videos with related quizzes already prepared by other users. Once a student has completed a test, they can send the result to their teacher.
It could be useful for:	<ul style="list-style-type: none">• Create/provide formative tests with respect to comprehension of a foreign language and/or specific content in video format• Allow students to practice comprehension skills through self-study• Give assignments for students to do independently or in groups where, for example, they could be asked to construct a test on a video on Youtube pertaining to a particular topic for their classmates to do later• Chatbot dedicated to learning English



ESLVideo

Account:	Account required for quiz editing, Video quizzes created by other lecturers, which are already on the portal, and chatbots can be used by the lecturer without the need for students to create an account: the moment the lecturer creates his or her own profile on the portal, he or she is assigned an ID code that will be used by students to submit results each time they complete a quiz.
Technical characteristics:	- Web-based- "Video tests" created or already on the platform can be embedded within blogs, virtual classrooms etc. via embed code
Similar instruments	Edipuzzle - https://edpuzzle.com/



[? Quiz](#) [📄 Transcript](#)

Watch the Video and Answer the Questions!

1. What is in the front yard?

- a.) a flower garden
- b.) a vegetable garden
- c.) a fountain

2. What can you do in the dining room?

- a.) sleep
- b.) watch TV
- c.) eat

Digital Tools and Resources

Software applications ... some examples

Software
not designed
for educational
purposes

Canva - <https://www.canva.com/>

Piktochart - <https://piktochart.com/>

Allows you to create presentations with animated characters

Google maps ... My maps...

Google Maps

Link	www.google.it/maps
In summary	It is a Google service that allows users to view maps of much of the Earth. There are many functions available to the user, including: automatic calculation of routes and distances between places, satellite view, virtually walk the streets (street view), store places of interest, select geographic areas of interest etc. For the more experienced there are also many additional applications available that enhance its functions.
It could be useful for:	<ul style="list-style-type: none">• Reconstruct the routes taken by historical figures• Create maps showing particular places of interest related to the topic at hand• Facilitate students in reading maps• Propose it to students as a tool for group work, as it allows collaborative activities• Facilitate memorization of places etc.



Google Maps

Account:	Account is required only in case you want to save maps and locations. It is a Google service, so you can log in with the same account
Technical characteristics:	<ul style="list-style-type: none">- Web-basedAn app is also available for Android and ios that simplifies the use on mobile devicesMaps created can be embedded within external environments with embed code
Similar instruments	





Migliore 5 h 19 3 h 8 5 giorni 1 giorno

Roma, Città metropolitana di Roma Capit

Verona, Provincia di Verona

Aggiungi destinazione

Partenza adesso

Opzioni

Invia indicazioni stradali al tuo telefono

tramite E35 5 ore 19 min

Percorso più rapido in questo momento, in base alle condizioni del traffico 502 km

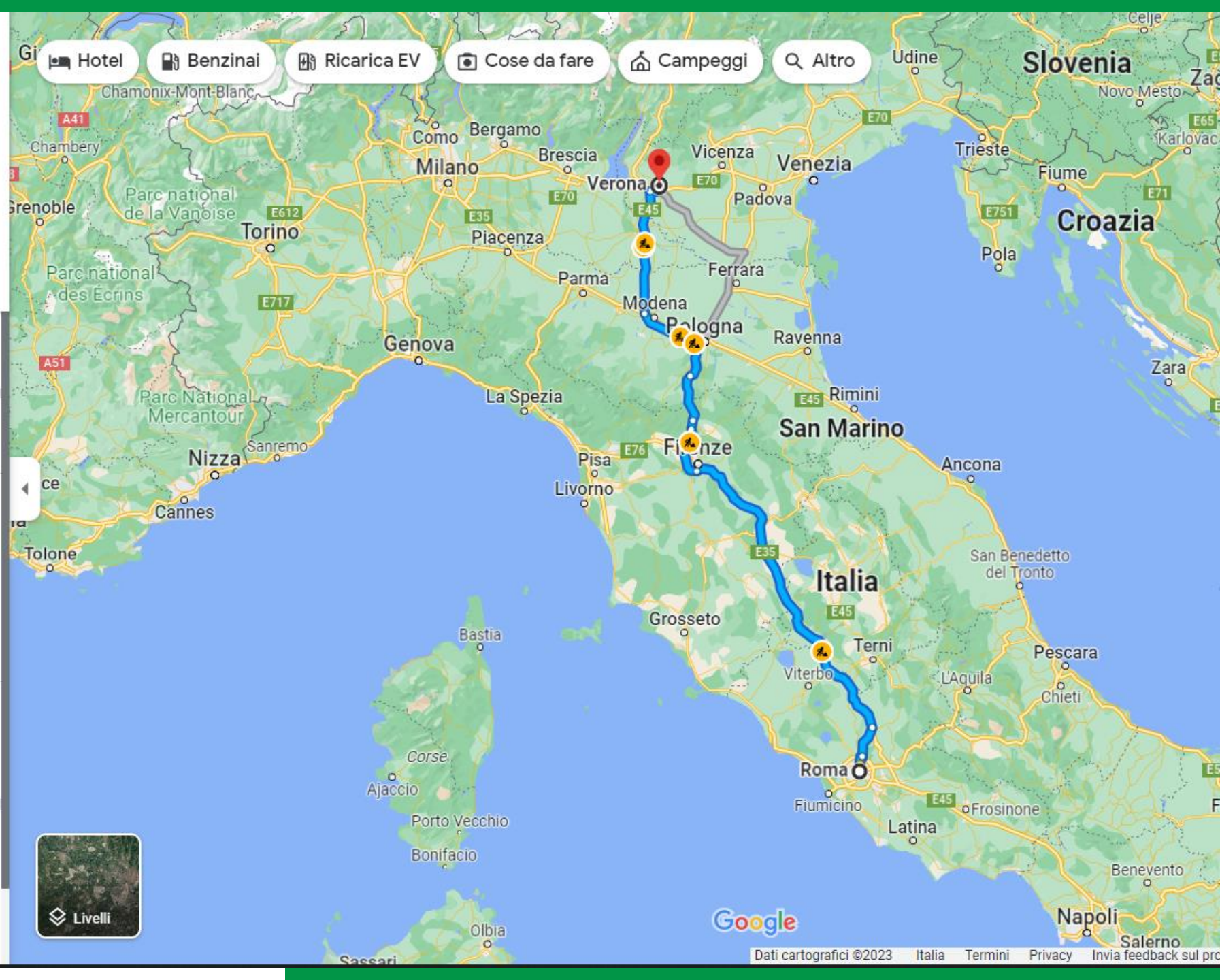
Il percorso prevede il pagamento di pedaggi.

Dettagli

tramite E35 e SS434 5 ore 38 min

521 km

Esplora Verona



My Maps

Link	https://www.google.com/intl/it/maps/about/mymaps/
In summary	It allows you to draw, enter text, plot routes on Google maps (see Google Maps).
It could be useful for:	<ul style="list-style-type: none">• Making presentations and lessons more effective• Sharing maps created with/among students
Account:	Google account is necessary
Technical characteristics:	<ul style="list-style-type: none">• Web-based• Maps saved on the portal can be embedded within blogs, virtual classrooms etc. via embed code
Similar instruments	<ul style="list-style-type: none">• MapsMania - http://Googlemapsmania.blogspot.it/ È un sito in lingua inglese che propone diversi spunti didattici su come utilizzare Google maps a fini didattici• OldMapsOnline - http://www.oldmapsonline.org/ Selezionando le aree di interesse sul planisfero di Google maps vengono visualizzate le pappe antiche che rappresentano il luogo desiderato



Enhanced Learning Experiences

These technologies aim to improve the overall learning experience for students by providing opportunities for interactive, engaging, and personalized learning. They can include **simulations**, **virtual labs**, **e-books**, and **multimedia presentations**.



Enhanced Learning Experiences

... some examples

Book Creator - <https://bookcreator.com/>

Web-based application that enables the construction of multimedia ebooks.

Archive - <https://archive.org/>

Archive containing books, movies, magazines, music, audio files, free software etc. Most materials are in English (first cycle secondary school and second cycle all).

Teachertube - www.teachertube.com

This is a portal that collects a wide range of materials (especially videos) in different languages that can be very useful for teaching purposes. Most of the content was/is developed and uploaded by teachers and/or students from all over the world (first and second cycles all).

Phet ...

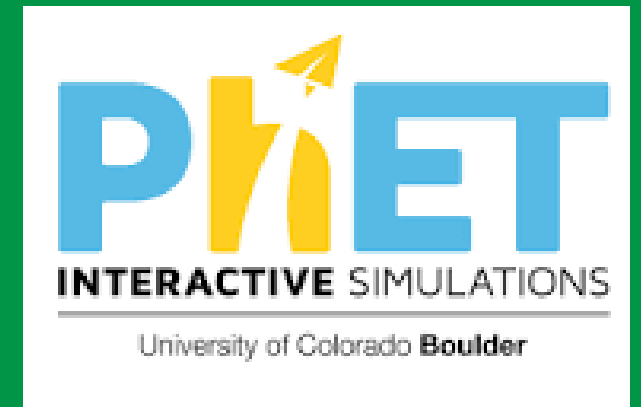
Scratch ...

Geogebra ...

...

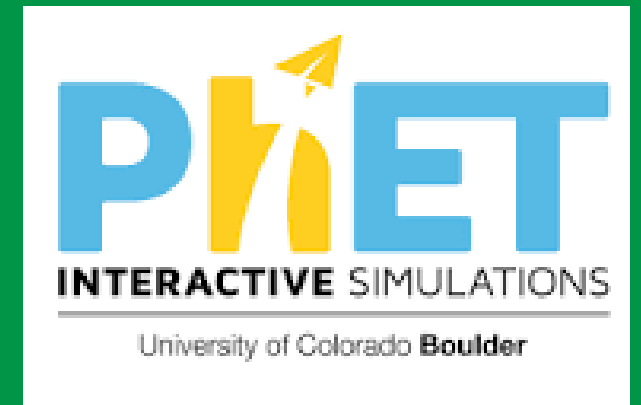
Phet

Link	https://phet.colorado.edu/it/
In summary	<p>This is a site that brings together a wide range of graphical simulations of mathematics, physics, biology, earth science, mechanics, and electronics that allow students and teachers interactive exploration through the use of the mouse and the ability to change parameters. The various applications are archived by topic and school level and cover a wide range of topics and levels. For each application, several in-depth materials are available (most in English) that propose various possibilities for using this tool for educational purposes</p>
It could be useful for:	<ul style="list-style-type: none">• Make in-person lectures more effective through virtual simulations of physical phenomena or to visually represent abstract concepts such as theorems or mathematical and physical laws etc.• Offer it to students as a tool to use independently to facilitate learning• Cope with the absence/shortage of instrumentation/laboratories with/where to do real experiments



Phet

Account:	Not required
Technical characteristics:	<ul style="list-style-type: none">• Web-Based• In order to use the various applications, installation of an up-to-date Java player and Flash player is required. Installation of the plugins is not particularly difficult• Simulations can be embedded within blogs, virtual classrooms etc. via embed code
Similar instruments	



Timetoast

Link	https://scratch.mit.edu
In summary	It is a programming language created specifically to introduce students to the basic concepts of programming and problem-solving through a playful-looking tool that allows students to practice logic and reasoning through the creation of simple software (animations, games, tests, etc.) using a visual algorithm editor.
It could be useful for:	<ul style="list-style-type: none">• - Make in-person lessons on basic programming concepts (algorithm processing) more effective through simulations and playful exercises• Propose it to students as a tool with which to independently create simple interactive software (e.g., interactive animations, tests, calculators etc.)• Propose problem-solving activities to students



Timetoast

Account:	Required
Technical characteristics:	<ul style="list-style-type: none">• Web-based• Software created or already on the platform can be embedded within blogs, virtual classrooms etc. via embed code
Similar instruments	Code Project - https://code.org/ : Provides web-based activities for learning coding (computer programming). It is aimed primarily at younger (first cycle) learners; Code Monkey - https://www.playcodemonkey.com/ Site for learning programming logic in a playful way.



Geogebra

Link	https://www.geogebra.org
In summary	It allows to construct and represent functions, vectors, lines etc. by changing parameters in real time. It is widely popular and used for teaching and studying geometry, algebra and analysis. Many teaching materials and models already built by other teachers are available on the official website that can be used and modified.
It could be useful for:	<ul style="list-style-type: none">• Dealing with new concepts during classroom lectures• Create interactive worksheets that allow students to independently visualize mathematical and geometric models• Offer it to students as a study support tool, as it can be used as a graphical simulator of functions• Have students work in groups on graphically reproducing a model or setting up a worksheet that allows them to solve a problem



Geogebra

Account:	Not required
Technical characteristics:	<ul style="list-style-type: none">• Software• To use GeoGebra, it is necessary to install the software that can be downloaded from the official website. The software is available for all operating systems, including mobile.
Similar instruments	GraphSketch - http://www.graphsketch.com/ This is a web-based application that allows you to generate graphs and mathematical functions. By writing the equation you can get the corresponding graph, save it and share it.



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Front Europe to Africa



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