



Co-funded by
the European Union

Creating a Human Evolution Timeline with Augmented Reality



BIOS4YOU
AR 2.0

BIO-INSPIRED STEM TOPICS FOR ENGAGING YOUNG GENERATIONS
THANKS TO THE USE OF AUGMENTED REALITY

Project Number: 2023-1-DE03-KA220-SCH-000126516

"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them."





Table of content

General Information	2
Pedagogical specifications	3
Technical specifications	4





General Information

Name of the exercise:	Creating a Human Evolution Timeline with Augmented Reality
Description of the exercises:	In this exercise, students create an interactive Human Evolution Timeline using the Delightex platform and Augmented Reality, and as resources 3D Model from the Sketchfab Museum Human Evolution Collection. Learners design a visual timeline that represents key evolutionary stages from early hominins to modern humans by combining 3D skull models, time periods, and short descriptions of major evolutionary changes. Through this creation-based activity, students explore human evolution as a bio-inspired adaptation process, linking anatomical changes to environmental pressures and survival strategies. Each student (or small group) is responsible for creating and explaining one or more stages of the timeline, which are then combined into a complete Human Evolution sequence.
Participants:	Secondary school students, guided by a biology or STEM teacher.
Participants' age range:	14–18 years
STEM subject and specific topic:	Biology – Evolutionary biology, human evolution, bio-inspired adaptation, digital learning.
Gamification process:	The exercise uses a progression-based gamification approach. Students advance through evolutionary stages as they complete each part of the timeline. Optional points and badges can be awarded for completing all stages, adding correct time labels, and including accurate evolutionary explanations.
Written or graphic description of Augmented info:	Students begin the exercise by creating a new project in Delightex using an Exhibitions or Virtual Museum template. They design a horizontal timeline that represents the progression of human evolution over millions of years. Each timeline stage includes:





	• a 3D skull model imported from the MUVHN Human Evolution collection, • a time label indicating the approximate age of the species, • a short text panel describing the main evolutionary change (e.g. bipedalism, tool use, fire, brain growth). Students place skull models along the timeline in correct chronological order and add interactive elements such as rotation, zoom, and clickable information panels. Simple interactions (e.g. clicking a marker to rotate a skull or display information) allow users to explore each evolutionary stage. The exercise also requires students to compare at least two evolutionary stages, highlighting visible anatomical differences and explaining how these changes supported survival and adaptation.
External (or extra) tools required	Computer, tablet, or smartphone Internet connection Delightex platform 3D skull models from the MUVHN Sketchfab collection
Links (video, images, text online and so on).	Human Evolution Collection (MUVHN – Sketchfab): https://sketchfab.com/MUVHN/collections/human-evolution-collection-from-the-muvhn-1a2243edab284e3a8296be2fb9851c66





Pedagogical specifications

Here we will collect information on how to use the exercise in the learning session and the results and benefits of using it, from a pedagogical perspective.

How can this augmented information be used to address a STEAM topic in a more interesting way for students?

By creating their own AR timeline, students actively construct knowledge rather than passively receiving information. The combination of 3D models, spatial organization, and interaction supports visual reasoning and inquiry-based learning, making abstract evolutionary processes easier to understand and more engaging.

Which pedagogical objectives are addressed through this scenario?

- Understanding human evolution as a gradual and adaptive process
- Developing chronological thinking and comparison skills
- Strengthening critical thinking through bio-inspired analysis
- Encouraging creativity and student-centered learning through AR creation

Which results are expected to be reached with its use?

Students are expected to gain a clearer understanding of the sequence and significance of human evolutionary stages. The creation-based AR activity supports deeper conceptual understanding, improves retention, and promotes a scientific mindset that is difficult to achieve through traditional lecture-based methods alone.

Which benefits are expected to be reached with its use?

- Improved understanding of long-term evolutionary change
- Increased engagement and motivation through creative digital work
- Enhanced spatial and visual reasoning skills
- Development of collaboration and communication skills





Technical specifications

In this part it is necessary to specify whether the exercise was designed to be implemented with AR technology. This part is fundamental for the translation process. Please include text, audio text and all the necessary materials.

AR INFORMATION	
Technology	https://edu.delightex.com/Studio/Spaces Augmented Reality using Delightex
If it's needed a marker, description of the marker	 https://edu.delightex.com/NEB-BUA Suggested structure: Horizontal Path / Cylinder (timeline, approx. 20 m)





	— Marker 1 (7 Ma): Sahelanthropus + “Early bipedalism” — Marker 2 (4 Ma): Australopithecus (Lucy) + “Brain ~450 cm³” — Marker 3 (2.8 Ma): Homo habilis + “First stone tools” — Marker 4 (1.9 Ma): Homo erectus + “Fire and migration” — Marker 5 (600 ka): Homo heidelbergensis + “Social behavior” — Marker 6: Homo neanderthalensis + “Cold climate adaptation” — Marker 7: Homo sapiens + “Symbolic thinking and language”
Hardware and software needed:	PC or laptop for project creation; smartphone or tablet with camera for AR visualization; internet connection.
Type of Augmented data	3D models, text panels, interactive hotspots, simple animations.
Written description of the AR data	Students create an AR-based human evolution timeline where each evolutionary stage is represented by a 3D skull model and a short explanatory text. Interactive elements allow users to rotate models, reveal information panels, and navigate along the timeline. The AR environment supports exploration, comparison, and reflection on evolutionary change. AR-Based Assessment. Students are assessed through their completed AR timelines. Assessment criteria include: • correct chronological order of evolutionary stages,





	• appropriate use of 3D skull models, • clarity and accuracy of time labels and explanations, • evidence of comparison and reasoning between stages, • quality of the final reflection on bio-inspired evolution.
If Image	-
If Text	-
If video	-
If audio	-
If 3D model	Human Evolution Collection from the MUVHN: https://sketchfab.com/MUVHN/collections/human-evolution-collection-from-the-muvhn-1a2243edab284e3a8296be2fb9851c66





Co-funded by
the European Union



BIOS4YOU AR 2.0

BIO-INSPIRED STEM TOPICS FOR ENGAGING YOUNG GENERATIONS
THANKS TO THE USE OF AUGMENTED REALITY

Project Number: 2023-1-DE03-KA220-SCH-00026516

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.