

Europeana Learning Scenario

Title

Evolution of Robots

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Abstract

Students work on the evolution of robots from the past until now. They first see the vocabulary related to the robots. Then they make researches about the robots and they try to build their own robots in groups by using waste materials. Finally, they present their robots to the classroom and choose the best robot via an evaluation rubric.

Keywords

Robots, STEAM, STEM, English, Evolution, History

Table of summary

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Subject	English, History, Science, Art
Topic	Vocabulary about robots, History of robots
Age of participants	14-18
Suitable setting for implementation	This Learning Scenario is designed to be implemented both online and face to face classrooms
Activity time	Four sessions/180 minutes
Online educational material	http://www.cs.cmu.edu/~cga/RobotMuseum/mit-museum/ https://mm.tt/1875398351?t=MvvU2yzhq5 https://quizlet.com/tr/590265965/robotics-vocabulary-words-flash-cards/ https://www.youtube.com/watch?v=XvzNuW5VjBU https://www.youtube.com/watch?v=fn3KWM1kuAw https://www.youtube.com/watch?v=ICObEUV1oOg https://www.youtube.com/watch?v=fn3KWM1kuAw&t=80s Canva, Prezi, Genial.ly, Emaze, Artsteps, Scratch, Tinkercad, Sli.do



Offline educational material	Waste materials, paper, glue, etc.
Europeana resources used	https://www.europeana.eu/en/item/916118/S_TEK_photo_TEKA0079235 https://www.europeana.eu/en/item/916107/wws_object_3399

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Integration into the curriculum

This lesson could be used as an interdisciplinary project with English, ICT, Art, History.

- **English:** Students learn new words about robots, their past and present thus they see and use present simple and past simple tenses. Also they make presentations in English.
- **History:** Students will search about the history of robots which means industrial and technological developments.
- **Technology:** Students use technology to make research on the internet and they need to find the relevant information about the subject. They also use web 2.0 tools such as Canva, Genial.ly, Prezi to prepare a presentation. (If the students have enough skills, they can also use CAD programs to draw their robots.)
- **Art:** Students use waste materials and design a robot to become aware of the recycling. After that, they can paint if they want.

Aim of the educational activity

Students will get acquainted with the robots and vocabulary about them by working on flashcards. Then they will make researches and design robots with waste materials in groups. After designing, they present robots and evaluate each other via a rubric. At the end they will choose the best group in terms of design, robot and presentation.

Outcome of the educational activity

Students will create mind maps, robots and presentation.

21st century skills

- **Critical and creative thinking:** investigating the history of robots, students have to make inferences about its different types of development during centuries and different countries to create a robot;

- **Information literacy and media literacy:** students have to search digital information on internet and use them correctly;
- **Collaboration:** students have to collaborate in the projecting and building of the robots and presentations;
- **Communication:** students have to express their opinions about presentations, being effective and polite and respecting others' ideas and points of view.
- **Content knowledge and 21st-century themes:** This learning scenario focuses on English, ICT, Art and other subjects, to promote an understanding of interdisciplinary work.
- **Information, Media and Technology Skills:** In this project, students have to use ICT tools to research, organize, create and present their findings.
- **Life and Career Skills:** Students have to produce a product, respect deadlines, collaborate with a team and know how to explain their ideas. These activities are essential to developing thinking skills, content knowledge, and social and emotional competencies.
- **Environmental literacy and global awareness:** By using waste materials, students will be aware of recycling and environmental problems which is a global issue for humanity to protect nature.

Activities		
Name of activity	Procedure	Time
Inspiring and Brainstorming	A picture of robot Vanya (https://www.europeana.eu/en/item/916118/S_TEK_photo_TEKA0079235) is shown to the students. Students are asked to write their ideas about the robot to brainstorm on mindmeister.com (https://mm.tt/1875398351?t=MvvU2yzhq5)	10 min
Exploring	After collecting ideas, students are given the link https://www.europeana.eu/en/item/916107/www_object_3399 and asked what they know about the robots and their systems. To answer this question they are led to the page https://quizlet.com/_9rfq4t?x=1jqt&i=3ehnhf . When students get familiar with the vocabulary, they start researching on the net about robots their past and present forms along with the improvements. Possible links: https://www.youtube.com/watch?v=XvzNuw5VjBU https://www.youtube.com/watch?v=fn3KWM1kuAw https://www.youtube.com/watch?v=ICObEUV1oOq https://www.youtube.com/watch?v=fn3KWM1kuAw&t=80s http://www.cs.cmu.edu/~cqa/RobotMuseum/mit-museum/	30 min
Discussing and Creating robots	Then they will be asked to project the robots in groups of four by using the information gathered during the previous activity and discuss the	60 min

	evolution of robots by sharing their knowledge and researches. Later they will design robots with waste materials they get beforehand (if students ICT skills are appropriate, robots can be drawn on CAD programs or web 2.0 tools such as Scratch or Tinkercad) and prepare a presentation telling their robots' qualities via web 2.0 tools such as Canva, Prezi, Genial.ly etc.	
Presenting and Evaluating	When all robots are done, students will present their robots and procedure meanwhile other groups fill in the evaluation rubric. (Annex 1)	50 min
Disseminating	Students can exhibit their robots and presentations via a virtual museum in the web 2.0 tools (Emaze, Artsteps) or on social media.	30 min

Assessment

Students will be assessed for:

- understanding and using the new vocabulary about robots and using the language during presentation;
- collaborating in the process of creating a robot;
- robots as products and presentation by the help of a rubric in the way of peer assessment.

Participants' feedback

A final feedback can be given by students via Sli.do that includes a few questions about the lesson and what they have learnt during the lesson scenario.

Educator's remarks

This learning scenario can be implemented both online and face to face classrooms. In that case activities can be changed individually instead of groups. Besides younger students may need more time.

Students will learn new things and discover and produce new ideas and products while being included in different disciplines and cooperation.

About the Europeana DSI-4 project

[Europeana](#) is Europe's digital platform for cultural heritage, providing free online access to over 53 million digitised items drawn from Europe's museums, archives, libraries and galleries. The Europeana DSI-4 project continues the work of the previous three Europeana Digital Service Infrastructures (DSIs). It is the fourth iteration with a proven record of accomplishment in creating access, interoperability, visibility and use of European cultural heritage in the five target markets outlined: European Citizens, Education, Research, Creative Industries and Cultural Heritage Institutions.

[European Schoolnet](#) (EUN) is the network of 34 European Ministries of Education, based in Brussels. As a not-for-profit organisation, EUN aims to bring innovation in teaching and learning to its key stakeholders: Ministries of Education, schools, teachers, researchers, and industry partners. European Schoolnet's task in the Europeana DSI-4 project is to continue and expand the Europeana Education Community.

Annex

Rubric for peer assessment	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Use of Creativity				
Effort put into robots				
Use of language				
Organization				