

Europeana Learning Scenario

(Teachers)

Title

The Most Important Inventions and Discoveries

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Abstract

In this scenario students learn about the most important inventors or human achievements in fields of history, science and art. This LS develops all students' language skills (reading, listening, writing and speaking). The students aged 13-14 build up vocabulary related to inventions and inventors and make progress in using Passive Voice. They also use digital tools and connect the information with everyday life – they research famous people, make comparisons, think of the famous people from their homeland as a part of native cultural heritage and a part of cultural heritage of Europe. They also develop their critical thinking skills, problem solving skills by learning about Europeana/Historiana and the concept of copyrights. Assessment and validation of competence development are implemented into LS.

Keywords

Inventors, inventions, discoveries, EFL, Passive Voice

Table of summary

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Subject	English (as a foreign language), History
Topic	The most important inventions and discoveries
Age of students	13-14
Preparation time	1h
Teaching time	135min
Online teaching material	<ul style="list-style-type: none"> ✓ https://www.menti.com/albr26t9z6ai ✓ https://list25.com/25-roman-inventions-that-are-still-used-today/ ✓ https://www.toptenz.net/top-10-greatest-inventors-in-history.php ✓ https://create.kahoot.it/share/inventors-and-inventions/92f232e1-91c9-4b58-aa72-c65de8e4280d ✓ https://www.britannica.com/ ✓ https://pixabay.com/vectors/atom-marie-curie-nobel-physics-2022632/ ✓ https://www.liveworksheets.com/worksheets/en/English as a Second Language (ESL)/Passive voice/Inventions_jz1852092sh

Offline teaching material	Students' books and workbook, laptops/mobile phones Texts-worksheets on inventors and inventions – Passive Voice
Europeana resources used	<p> https://www.europeana.eu/en/blog/are-these-the-greatest-inventions-since-sliced-bread https://historiana.eu/historical-content/source-collections/industrial-inventions https://www.europeana.eu/hr/item/2020801/dmglib_handler_biogr_19056004 </p> <p>Other resources from Europeana/Historiana will be used by students' individually or as a group work.</p> <p><i>Disclaimer:</i> Europeana Galleries may content objects in copyright, please remember that to creative reuse these specific items (like download it to paste it in any format, physically display it or transform it in any way for a project) out of the schools' premises will need permission of the authors or the providing institution."</p>

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Integration into the curriculum

This lesson can be used in English teaching as a foreign language for students aged 13-14 years old for seventh/eighth grade students - (OŠ EJ A.7.1., A.7.2., A.7.4., B.7.1., B.7.2., B.7.3.C.7.1., C.7.2., C.7.3., C.7.6.) and (OŠ EJ A.8.1., A.8.2., A.8.4., B.8.1., B.8.2., B.8.3.C.8.1., C.8.2., C.8.3., C.8.6.). The outcome of the curriculum is language competence in reading, writing, listening and speaking. The important part of the curriculum is also the development of ICT skills, civic education and intercultural topics. Students look for information on the Internet, select relevant information, prepare questions for the quiz – self-assessment, listen for specific information related to famous inventions and their inventors, make digital posters, infographics or presentations. The lesson is connected to Croatian language and History, it can be used as reading comprehension of literary text, writing a biography, writing about advantages/disadvantages of the chosen invention, speaking about famous discoveries/inventors, comparing the achievements in Croatia/England/Europe.

Aim of the lesson

Students present the biography of famous European inventors in written form and orally. They use Europeana/Historiana collections to search for information related to this topic and create posters/infographics/presentations as a final outcome of the lesson. Students understand the importance of collaborative work, self and peer assessment and apply the basic principles of copyright. They develop Croatian and English language skills (reading, writing, speaking, listening) as well as their ICT skills.

Students talk and write about inventions and inventors, they practice the past simple passive and build up vocabulary related to inventions and inventors.

Outcome of the lesson

Students make a digital poster/infographic/presentation on famous English or Croatian inventor and improve public speaking skills.

Trends

Project-Based Learning – students get fact-based tasks, problems to solve

Content and Language Integrated Learning (History, Physics and English as a foreign language)

Collaborative learning – a group work

Mobile learning – an access to information and knowledge by using smartphones and tablets

Peer learning – students learn from peers and give each other feedback (peer assessment)

Learning materials – a shift from textbooks to web resources/open source books

Gamification – to empower motivation and students’ engagement, interaction and self-expression

Key competences

Multilingual competence, Critical thinking, Creativity, Collaboration, Communication, Information literacy, Media literacy, Technology literacy, Productivity, Cultural awareness, Personal, social and learning to learn competences

Activities Name of activity	Procedure	Time
<p>Introduction/ Brainstorming</p>	<p>Write the word ‘INVENTIONS’ up on the board. Ask students to define it and then elicit the words/expressions/ideas/comments students relate to the word by using digital tool: https://www.menti.com/albr26t9z6ai</p> <p>Talk to your students about the greatest inventions of the 20th /21st c. Immerse the ideas to the Renaissance or Roman Times e.g. surgical tools, heating, roads... https://list25.com/25-roman-inventions-that-are-still-used-today/</p> <p>Draw the following table on the board: I see I hear I smell I feel Dictate the following words: helicopter steam light bulb dynamite penicillin telephone radium the Nobel prize Ancient Greece chemistry explosive inventor scientist engineer DNA alternating current Students write them under the headings according to how they perceive them. Students discuss and compare how they sorted the words out.</p>	<p>15’</p>

Activities Name of activity	Procedure	Time
Teams creation	<p>Teacher creates teams of 3 - 4 students.</p> <p>Teacher explains that the outcome of the lesson will be a digital poster/infographic/presentation about the inventor they got and each group has a speaker who presents the work orally. Others will also present the same works, during next lessons and each student will be summative assessed. Rubrics are shown and explained.</p> <p>Evaluation/assessment rubrics (Annex 1, Annex 2).</p>	5'
Topic selection	<p>Each group gets the worksheet about different inventors e.g. A. Nobel, L. Da Vinci, A. Fleming, I. Sikorsky, N. Tesla, T. Edison, A. Einstein...and their inventions. Task is to match the author with the product/invention and explain the product/invention – Past Passive is used. It was discussed before which inventors are preferred.</p>	7'
Research (collaborative work, critical thinking)	<p>The teacher presents the Europeana portal (explains how to search for information and gives some basic information about copyright). The text from blog is given to students.</p> <p>https://www.europeana.eu/en/blog/are-these-the-greatest-inventions-since-sliced-bread</p> <p>Discussion on different inventions – the wheel, the lightbulb, the steam engine, communications technology... Students do research on the Europeana/Historiana, Britannica and English dictionary. The task is to collect information about one famous inventor on Britannica firstly and then to find examples/completion using Europeana/Historiana.</p> <p>Students are given the handouts – a short biography should be written, the most important inventions mentioned as well as contribution to the world – why is the specific invention interesting? Students search Europeana for some of the best inventions in human history, work in group, divide responsibilities in order to accomplish the given task on time.</p>	25'
Digital poster development	<p>Teacher presents students more pictures from Europeana collection.</p> <p>Annex 3</p> <p>https://www.europeana.eu/hr/item/2020801/dmglib_handler_biogr_19056004</p> <p>Students search through the given information and try to make their own poster/presentation about the chosen topic. Teacher explains what kind of information to use and how to use it in order to enrich the content of the presentation and bring the task to end.</p>	25'

Activities Name of activity	Procedure	Time
Preparing questions for the quiz	After finalizing the presentation/poster, students prepare questions about their person/inventor.	13'
Poster presentation	Each team presents their poster to the whole class – each group has a spokesman. During the presentation the peers will evaluate the other teams' work by using a rubric (Annex 1). The teacher will present the results of the evaluation of all groups. Summative assessment can be provided both for the final group work and the individual oral presentation – speaking and presenting skills.	30'
Self-assessment	Kahoot-quiz e.g. The steam engine was invented by... The first car was invented by..... Who helicopter invented helicopter? Leonardo Da Vinci was called.... Fleming was of _____ origin etc.	15'

Assessment

Assessment rubric (Annex 1) – students do peer assessment of the presentations/infographics/posters and the teacher does summative assessment of speaking/presenting (Annex 2). Students will be also assessed with a Kahoot quiz.

Student feedback

Students will answer the questions in Google forms: How did you feel after this lesson? What is the most interesting fact that you learnt today? Name 3 most important inventions!

Teacher's remarks

I have taught this lesson partly, not as a unit. I wanted to highlight the group work and collaboration, that is why I combined two classes that are different – one is silent and the other one loud. I must admit that students had positive reactions, even the most silent students were involved during the lesson. They all prepared their presentations and reported orally. They gave feedback to each person speaking – the students have already been familiar with rubrics (for all skills). This lesson can be done in 2 hours without students' presentations, but I merged it into 5 lessons. It was worth because learning objectives were fulfilled and the students were highly motivated because we did something new – just to run away from course/school book. I also conducted summative assessment – speaking.

About the Europeana DS project

[Europeana](#) is Europe's digital platform for cultural heritage, providing free online access to over millions of digitised items drawn from Europe's museums, archives, libraries, and galleries. The Deployment of a common European data space (DS) for cultural heritage project builds on and expands the existing functionalities and services of the Europeana Digital Service Infrastructure (Europeana DSI). This initiative works towards the development and operation of the data space infrastructure, the integration and of high-quality data in the data space, the capacity building of professionals, the reuse of existing resources and the improvement of the digital services for the public. .

[European Schoolnet](#) (EUN) is the network of more than 30 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 DS project is to facilitate the reuse of high-quality data and expand the community of users of Europeana for education.

Annex

SPEAKING: EVALUATION RUBRIC

Annex 1

GROUP:	<p>1 FLUENCY PRONUNCIATION/ (Did the student speak fluently or was he/she stuttering? Did the talking sound natural? Did the student pronounce the words right?)/</p> <p>SPELLING (Did the group use spelling rules correctly?)</p>	<p>2 VOCABULARY (Did the group use all the right words on all the right places? Was the vocabulary rich? Did the teacher need to help with the vocabulary?)</p>	<p>3 GRAMMAR (Did the group use grammatically correct sentences? Did the group use Passive voice-correctly? How many mistakes did the group make? What kind of mistakes?)</p>	<p>4 CONTENT (Did the student talk about the assigned topic, or did he/she talk about something else? Did the student have a clear line of thought, or did he/she jump from one thing to another?)</p>	<p>5 COMPREHENSION OF THE TOPIC and COMPREHENSIBILITY (Did the student need additional help from the teacher? Did the student understand teacher's questions? Was the student able to relate the topic to him/herself? Could the teacher and the other students understand him/her?)</p>
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Annex 2

RUBRIC – SUMMATIVE ASSESSMENT

	EXCELLENT (3 POINTS)	GOOD (2 POINTS)	NOT VERY GOOD (1 POINT)
CONTENT/ORGANIZATION	Information presented was accurate. Ideas were presented in a logical order. The transition between ideas was smooth. All required information was included in the presentation.	Information was mostly stated clearly. Some information was irrelevant, although accurate. Ideas were mostly presented in a logical order. The transition between ideas was sometimes sudden and unrelated. Too many details.	Information wasn't clear, it was not relevant and not accurate Ideas were presented without much logical order. The transition between ideas was sudden and the presentation lacked most of the required information.

GRAMMAR/SPELLING	Presentation is without grammatical mistakes, or there are 1-2 spelling mistakes. Passive Voice is used many times correctly.	There are 3-4 grammatical or spelling mistakes. Passive Voice is used a few times correctly.	There are more than 5 grammatical mistakes. Passive Voice is not used or is used incorrectly.
VOCABULARY	Presentation contains enough details, at least 4 words connected to technology or inventors. the sentences are complex.	Presentation contains a few words and expressions connected to technology or inventors, mostly common and easy expressions are used.	Presentation does not contain words and expressions connected to technology or inventors. The sentences are repeated. Very simple words.
SPEAKING SKILLS	The presenter spoke loud enough. The presenter made eye contact with the audience. The presenter answered all the questions the audience asked.	The presenter sometimes didn't speak loud enough and sometimes he turned his back to the audience. He answered most of the audience's questions.	The presenter didn't speak loud enough and mostly didn't make eye contact. The presenter couldn't answer audience's questions.
DIGITAL POSTER	Poster/presentation was well organized, had all the important information and was visually attractive.	Poster/presentation was well organized, some information was incomplete and it was visually good looking.	Poster/presentation wasn't well organized, there wasn't enough information and it was visually not attractive.

Annex 3

https://www.europeana.eu/en/item/2024905/photography_ProvidedCHO_NALIS_Foundation_F139947_40672224