Europeana Learning Scenario

Title	
The Golden Mean	

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Summary	

Table of summary	
Subject	Math, History, ICT
Topic	Topic; Special numbers "Golden Ratio" "Number phi" for 9th grade
Age of students	14-16 Years
Preparation time	2 hours
Teaching time	160 minutes (4 lesson, 40 min. each)
Online teaching material	https://youtu.be/6en6lYE8fT8 https://www.europeana.eu/portal/en/record/08535/local__default__46199.html?q=parthenon https://www.europeana.eu/portal/en/record/2021618/internetserver_Details_kunst_34475.html?q=Michelangelo https://www.europeana.eu/portal/en/record/9200579/vngzfy4d.html?q=pyramides https://www.europeana.eu/portal/en/record/9200207/BibliographicResource_3000005872746.html?q=keops https://www.sutori.com/ https://kahoot.it/ https://www.canva.com/
Offline teaching material	**Smartboard, paper, pencil**
Europeana resources used	https://www.europeana.eu/portal/en/record/08535/local__default__46199.html?q=parthenon https://www.europeana.eu/portal/en/record/2021618/internetserver_Details_kunst_34475.html?q=Michelangelo https://www.europeana.eu/portal/en/record/9200579/vngzfy4d.html?q=pyramides https://www.europeana.eu/portal/en/record/9200207/BibliographicResource_30000058727 46.html?q=keops

Integration into the curriculum

This topic is in the Numbers Unit: Rational numbers-irrational numbers part of our 9th grade curriculum,
Also part of History of Math lesson,
Web 2.0 tools section of ICT lesson.

Aim of the lesson

First aim of this lesson is to learn what is golden ratio and Fibonacci series? We search the history of this number after that try to learn where can we see and use this ratio by using europeana resources.

Trends

Project based learning; students get fact-based tasks, problems to solve and they work in groups.

Mobile Learning: Students get access to the knowledge with their smartphones, tablets.

Collaborative Learning: They must focus to study with their groups and complete their missions.

Visual search and learning: They must search europeana collection and web,

STEM Learning:This is an interdisciplinary learning scenario so they learn Math, ICT , History and develop 21st century skills.

Open Educational Resources: the use of open educational resources increases, exploiting interoperability of educational content and services whatever the device used.

BYOD: Students must bring their devices.

21st century skills

Critical thinking: In using the right materials from europeana collection, İn managing the group work, in making the tasks

Problem solving: For finding out how to use web tools, for choosing materials..

Creativity: In preparing their stories, in gathering the materials

Collaboration: They must strongly focused on group collaboration if they want to finish their tasks on time.

Communication: They will present their tasks to the classmates, so they need communication skill.

Digital competences: usage of new tools for learning: Kahoot, Sutori, Canva

Activities

Name of activity	Procedure	Time

Introducing	Teacher will give some information about irrational numbers and fibonacci series then want them to watch the video from youtube named;"Fibonacci and the Golden mean" After video,
	   Discuss in groups
	   1. Who is Fibonacci?
	   2. Where is Phatenon?
	   3. Who build the pathenon?
	   4. How can they find the phi number in a sequence?
	   5. Who used this ratio in history?
		15 mins

Dividing the students	After giving the information below, Teacher will divide the students into groups. Each group has 4 students at least. Then teacher want them to choose the leader, searcher, writer and ICT member of their groups.	5 mins.

Introducing Europeana collections	Teacher introduce the https://www.europeana.eu web site to the students, talk about establishment purpose of this site. "It is gather all source in european museums and make them usable by all the world. Europeana website has got 58,207,016 artworks, artefacts, books, films and music from European museums, galleries, libraries and archives, also you can find collections about;
	   1. 1914-1918
	   2. Archaeology
	   3. Art
	   4. Fashion
	   5. Manuscripts
	   6. Maps and Geoography
	   7. Migration
	   8. Music
	   9. Natural History
		20 mins.

	10. Newspapers 11. Photography 12. Sport Then explains how they can use the website. And teach the importance of the licenses of the sources and which license make the source usable, and explain how to use it. Especially give information about the copy right section, and when they want to use one of the resources first of all they must check the licenses part. Then want them to choose one of the link, she/he prepare for the lesson.	
Searching and Preparation	Students begin to search the link they choose and search the web why this source connected the topic: The golden ratio. Collect the knowledge about the paint work and find another art work which related Golden Ratio. After gathering the materials, they will find a collection part about they find in web. When they find they will check the license and if they could download the item, otherwise just using the europeana link. They will create a presentation with all the information they find about art work and why is it related with golden mean by using https://www.sutori.com/	50 mins
Presentation	Every group will present their sutori to classmates and explain the importance of golden mean in history.	30 mins

Assessment

After presentations, they will assess the groups with this rubric. At the end of the lesson teacher assess them all with this Kahoot.

Student feedback

1. They all liked working in groups.
2. Searching Europeana website was very interesting and exciting,
3. Using web 2.0 tools were instructive,
4. Making a presentation to classmates was hard but exciting at the same time.
5. Kahoot assessment was very very funny.

Teacher's remarks

I implemented this scenario in my 9th grade classroom, in Numbers unit: Irrational numbers: Special Numbers, Golden Mean section. The students loved it to much. They enjoyed the topic,

and learned well about a STEM lesson. Europeana resources were very interesting and exciting for them. They said, they explored well new and interesting website. They liked dealing with interesting things. They also enjoyed using web 2.0. tools. Sutori was very easy and useful for them. They were very serious while they were using Rubric to evaulate the other groups. Finally Kahoot was very enjoyable and funny for them.

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.