

Europeana Learning Scenario

Title

Gothic and Romanesque, in Plastic

Author(s)

Artur Coelho

Summary

This scenario aims to intertwine Europeana resources with 3D modeling and printing within an interdisciplinary framework. Using the Romanic theme from History class, students are challenged to use Europeana to gather visual reference material for 3d printing projects developed In Information and Communication Technology class.

Table of summary

Subject	History; ICT
Topic	History: Middle Ages, Romanic Style; ICT.
Age of students	12-14
Preparation time	2 hours
Teaching time	50 minutes - research phase; 150 minutes - 3D modeling phase. Requirements: at the start of this project, student must had acquired relevant knowledge from the curriculum of History (Romanic Period) and Information and Communication Technology (3D modeling).
Online teaching material	Tinkercad: https://www.tinkercad.com/ Sketchup Make/Free; Europeana
Offline teaching material	3D Printer PLA Filament
Europeana resources used	https://www.europeana.eu/portal/pt/record/2024907/photography_ProvidedCHO_Generalitat_de_Catalunya__Arxiu_Nacional_de_Catalunya_ANC_1_994_N_817.html?q=Estilo+g%C3%B3tico#dclid=1552997747718&p=1 https://www.europeana.eu/portal/pt/record/2022705/lod_oai_www_bibliotecavirtualmadrid_org_17164_ent1.html?q=rom%C3%A2nico#dclid=1552997712158&p=5 https://www.europeana.eu/portal/pt/record/2024907/photography_ProvidedCHO_Generalitat_de_Catalunya__Arxiu_Nacional_de_Catalunya_ANC_1_994_N_817.html?q=Estilo+g%C3%B3tico#dclid=1552997747718&p=1 https://www.europeana.eu/portal/pt/record/2022709/oai_fototeca_mcu_es_fototeca_RUIZ_20VERNACCI_VN_29222.html?q=Estilo+g%C3%B3tico#dclid=1552904128766&p=2 https://www.europeana.eu/portal/pt/record/2022419/cjcpctcluj_CF_018_AT_BL_jpg.html?q=arquitectura+ROMANICA#dclid=1552903596386&p=13



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Integration into the curriculum

Using this learning scenario integrates with the Portuguese national curriculum of ICT and History.

ICT: Search and investigation: Plan online search strategies; Communication and Collaboration: mobilize tools and strategies for collaboration; Create and Innovate: explore ideas and develop computational thinking, producing creative digital artifacts with suitable strategies and tools (specifically, 3D modeling).

History: Romanic Period.

Aim of the lesson

This activity aims to put 3D modeling and printing technologies into the hands of pupils, using Europeana graphical resources as visual references to create 3D models. Within this project, we also aim to foster a deeper knowledge of European heritage, challenging students to discover monuments and landmarks from other countries, integrated in an interdisciplinary project. This activity integrates contents from the curricula of ICT and History classes.

Trends

Problem-based learning; Addictive Manufacturing; Peer Learning; Visual Search & Learning; BYOD.

21st century skills

Learning and innovation skills: critical thinking and problem solving, communications and collaboration, creativity and innovation.

Digital literacy skills: information literacy, media literacy, Information and communication technologies (ICT) literacy.

Career and life skills: flexibility and adaptability, initiative and self-direction, social and cross-cultural interaction, productivity and accountability.

Activities

Name of activity	Procedure	Time
Activity 0a: Introduction (History)	In History class, students learn about the Romanic period in art, architecture and society (prior to start of the project).	As needed.
Activity 0b: Introduction (ICT)	In ICT class, students learn 3D modelling techniques using primitive modeling tools (3DC.io on mobile devices, or Tinkercad) or surface subdivision tools (Sketchup Free/Make) (prior to start of the project)..	100 minutes
Activity 1: Recreate Heritage I - Discover	Students search Europeana resources for images relevant to the theme. Each team of students must choose a monument, building or object relevant to	50 minutes

European Heritage (task 1)	the theme. Once chosen, grupos must send by email to the teacher a message with the following information: title of monument/object; small description; country of origin; Europeana references (origin, license); url of the resource; copy of the image. This step can also be done with a form, ou a document template that students must fill with information. Pointers: pictures must be detailed enough to give an accurate idea of the shapes to be recreated in 3D; chosen images must be pertinent to the theme of the project (romanic heritage).	
Activity 2: Recreate Heritage II - Recreate European Heritage (task 2)	Using the reference images from activity 1, groups use their preferred 3D modeling software to recreate in 3D their chosen monument, building or object. If the images or other resources available on Europeana are not sufficient to provide an accurate overview for 3D modeling purposes, groups can go online to find more information.	150 minutes
Activity 3: 3D Print It!	Students vote on the best models created by the groups, to select wich ones will be 3D printed. Timings: printing time can vary between one to several hours per model, hence the need to chose a small number of projects.	As needed

Assessment

Assessment by tasks:

Task 1: Search for relevant information on Europeana. Criteria: suitability to the theme; respecting search and presentation guidelines given for the task 1.

Task 2: Create a 3D model. Criteria: 3d specific (technical prowess, type of modelling, complexity of modelling, texturing).

***** AFTER IMPLEMENTATION *****

Student feedback

Student feedback is given informally, whilst working on modeling projects.

Teacher's remarks

This project allows for students to discover European heritage and work with additive manufacturing technologies, hence its proposal. However, the type of resources available in the Europeana website is not very well suited for 3d modelling projects. For a 3d reconstruction of a given object, building or monument to be faithful to the original, students must have at least three different images, from different viewpoints, of their chosen model. Europeana archives are not organized in this way, and photos tend to be of singular viewpoints. If students choose a simple monument to recreate, one photo can be enough. If they are more ambitious, Europeana resources are not enough, yet they can be a starting point for directed online searches.

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.