Europeana Learning Scenario

Title

Explorers of the past: dinosaurs

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Summary

With this learning scenario, we'll start from what the children know or think they know about dinosaurs and see how our knowledge of dinosaurs has been built and has evolved. The pupils will realise that nobody has ever seen a real dinosaur alive and all the scientific approach that's behind our mental image of a dinosaur. We'll talk about excavations, bones reconstruction, fossils and try to differentiate what's been proven from what's left to our imagination. We'll also make the difference between imaginary dinosaurs and reality.

Table of summary	
Subject	*Natural sciences, biology, history.*
Topic	*Dinosaurs*
Age of students	*4-6 years*
Preparation time	*2-3 hours total*
Teaching time	*It's a three weeks project mixed with other activities. The actual teaching time is difficult to estimate. The estimated time for each activity is indicated in the table below.*
Online teaching material	*Book creator Web application* *Skype for the interview with the palaeontologist*
Offline teaching material	*Set of dinosaurs' pictures on plastic sheets, to be used with the light cube to make the bones appear with the light ("What's inside dinosaurs" by Roylco)* *Dinosaurs figurines*
Europeana resources used	*The resources used are referenced under each activity* Triceratops • dinosaur from a manual of Geology • Triceratops flabellatus • Footprints of Dinosaurs from Portugal • The skull of a dinosaur found in Russia • Claws of Juravenator starki • Pterodactylus • dinosaurs from a handbook of physical geography • Fossil of an Allosaurus • Greenish dinosaur on 2 legs (toy) • Toy dinosaur • Two dinosaurs fighting • Press image for KNEX exhibition. Dinosaur

Licenses

Co-financed by the Connecting Europe Facility of the European Union

Integration into the curriculum

Early Education Curriculum, in the European Schools (syllabus).

Also, as included in the reference framework on the eight key competences[1]:

- Mathematical competence and basic competences in science and technology
- Digital competence

Specific competences: the child:

- is confident with new challenges and in new situations.
- expresses own thoughts clearly and correctly.
- takes ideas of others into account.
- asks questions
- uses a variety of media to investigate or communicate
- compares and makes generalisations
- integrates new ideas and explanations of the world.
- knows general or basic features of animal and vegetal life and makes connections to daily life (growth, nutrition, locomotion and reproduction).

Aim of the lesson

With this project, I want the children to question their representation of dinosaurs: "*What do I know?*", "*How do I know it?*", "*Has it been proven?*".

I want them to realise that knowledge is built on facts, discoveries, scientific researches and that it evolves with time and better technology.

I want them to make the difference between what is supported by facts and imaginary things.

Trends

- *Collaborative learning*
- *Stem learning*
- *Game based learning*

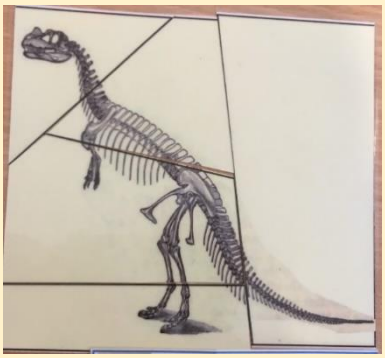
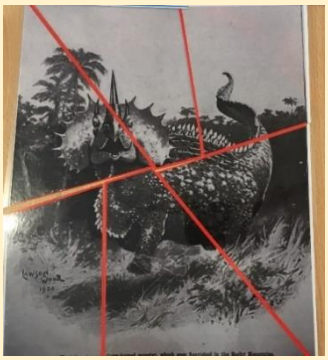
21st century skills

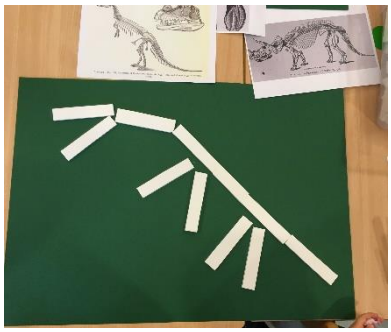
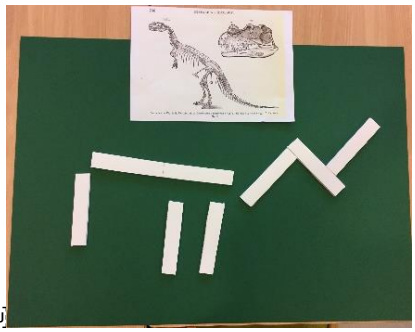
- Using creativity to solve a simple problem
- Using various types of reasoning (inductive, deductive, etc.) as appropriate to the situation
- Effectively analysing and evaluating evidence, arguments, claims, and beliefs
- Interpreting information and draws conclusions based on the best analysis
- Using communication for a range of purposes (e.g., to inform, instruct, motivate, persuade)
- Accessing information efficiently and effectively
- Applying information accurately and creatively to the issue or problem at hand

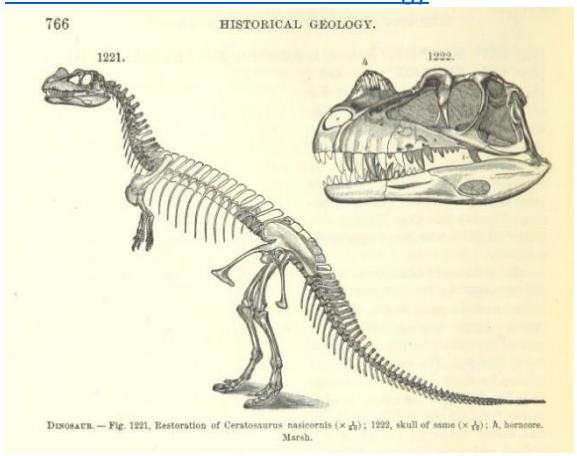
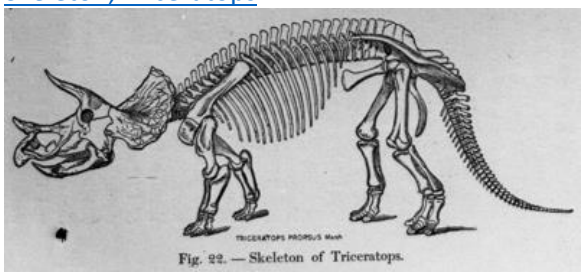
[1] See Council of the European Union, Recommendation on Key Competences for Lifelong Learning (2018).

Activities

Name of activity	Procedure	Time
1. Start of the project	The teacher makes the children a proposition: being explorers of the past. We will try and learn things about the dinosaurs and share the whole process with an online book. It will be like our explorers' journal. The first step will be to create the book, choose the layout and design the cover. For this project, the teacher explains that we will be helped and guided by an expert (at this stage, the teacher doesn't use the word "paleontologist", as the expert will explain what it is). Short introduction of the expert (picture and name) to make it more real to the pupils. Explorers of the past: our journal	10mn
2. What do we know about dinosaurs?	Brainstorming with the children about all they know or think they know about dinosaurs. The teacher collects all the comments and writes them in the explorers' journal. With the help of the teacher, some of the comments are also recorded (audio) in the journal by the children. All the comments are included: it will be the expert task to read them, confirm what is right and correct, what is wrong.	20mn
3. How I imagine a dinosaur at the beginning of the project	The children draw a dinosaur the way they imagine it before we start showing pictures and gathering information. Pictures of the drawings are inserted in the explorers' journal.   	10mn
4. Designing the questions for the expert	At this stage, an online call (Skype) with the expert has been arranged. The children are now designing the questions that they will ask. With the help of the teacher, they insert the questions in the explorers' journal.	2 sessions of 10mn
5. A paleontologist: what is it? Let's meet one.	We scheduled a video call with Christophe Hendrickx, a palaeontologist who lives in Argentina. Several questions are chosen and children who will ask each one of the questions have been selected. They receive a small image to remind them of their question. The video call is recorded and then watched again with the children to extract important information.	30mn
6. Discover some dinosaurs. What are their names?	The teacher will show the children some dinosaurs without telling them their names. We'll try and figure out how to find the dinosaurs' names. Here, a set of plastic dinosaurs' pictures is used ("What's inside dinosaurs"	20mn

	by Roylco). Those pictures are meant to be discovered with a light cube which allows the skeleton to appear when exposed to light (see picture). However, any pictures of dinosaurs can be used for this activity: dinosaurs' books, online image search, museum websites… In the end, we'll associate each of the 14 dinosaurs with a label of their names.	Another session of 20mn to continue searching for the names.
7. Games time	• Associate dinosaurs' cards and their skeleton (using the same set of pictures used with the light cube)  • Differentiate imaginary representations and real ones using Europeana pictures • Puzzles of dinosaurs based on Europeana pictures  	15mn per game
Europeana resources for activity 7:	Triceratops • dinosaur from a manual of Geology • Triceratops flabellatus • Footprints of Dinosaurs from Portugal • The skull of a dinosaur found in Russia • Claws of Juravenator starki • Pterodactylus • dinosaurs from a handbook of physical geography • Fossil of an Allosaurus • Greenish dinosaur on 2 legs (toy) • Toy dinosaur • Two dinosaurs fighting • Press image for KNEX exhibition. Dinosaur • Skeleton, Triceratops	
8. Fossils	What is a fossil? Let's dig fossils in the sandpit.	6 sessions of 15mn by groups of 4

	  Let's make our own fossils out of clay and paint it when it's dry.  	10mn to make the fossil 5mn to paint it
9. Steam challenge	Build a dinosaur skeleton with pieces of white wood based on Europeana pictures.  	15mn
10. Creative time	Draw a dinosaur skeleton with wax crayons based on Europeana pictures Paint the sheet with brown ink using a sponge 	10mn 10mn

	Create a dinosaur out of paper geometric shapes 	
Europeana resources for activity 9 and 10	Dinosaur from a manual of Geology  Dinosaur. — Fig. 1221, Restoration of Ceratosaurus nasicornis (× 1/20); 1222, skull of same (× 1/7); h, horncore. Marsh. Skeleton, Triceratops  Fig. 22. — Skeleton of Triceratops.	
11. Our new knowledge of dinosaurs: Slide show presentation using Europeana pictures	Using Europeana search engine, with the help of the treacher, the children will propose different key words to find pictures to illustrate the presentation. The teacher will teach them some basic notions of copyright and show them how to verify that the chosen image can be used. The children will look for images that can relate to the things learned about dinosaurs throughout the project. With the help of the teacher, they will insert the pictures in the presentation and redact a caption for each one of them.	

Assessment

Assessment will be carried out during the course of the project, in particular with regard to changes in pupils' vision when exposed to new information. At the end of the project, the “book” (created with Book Creator) will give the teacher an idea of what they have learned during the project, based on the 1rst activity and what they knew before starting.

The slideshow presentation that will be made at the end of the project is also a form of assessment.

There will be no individual assessment of the children.

Student feedback: the feedback and the assessment are the same activity here.

Teacher’s remarks

This was a great project that we could have taken further. There were areas we didn’t have time to explore, such as the history of the discovery of dinosaurs.

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