# **POP-UP LEARNING**

#### POP-UP LEARNING 2020-1-LT01-KA226-SCH-094825

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## The Outdoor Education

The Outdoor Education was born in the second part of XX century in Northern European countries such as Norway, Germany and Finland.

The OE also draws its origins from authors such as John Dewey, Rousseau, Steiner or even Alexander Neil, in which experience, the external environment, the link with nature were considered key concepts of education.

Born as a response to the indoorization phenomena that, from the industrial revolution onwards, have been the expression of the changed relationships between man and the environment, OE is today a pedagogical proposal that also offers a response to the new lifestyles imposed by the recent pandemic.

# ONLINE COURSES ON YOUTUBE

OE does not prescribe activities and objectives to be achieved; these are defined according to the specificities of each educational context and teachers' choices.

The OE educational offer therefore includes a wide variety of didactic activities ranging from perceptual-sensory experiences (educational garden, visits to farms, museums, parks, etc.) to experiences based on socio-motor and exploratory activities typical of adventure education (orienteering, trekking, sailing, etc.)



#### YOUTUBE CHANNEL

5 virtual trainings delivered per partner and 3 international at EU level.

### Erasmus+ KA226 project "Pop-up learning"

https://youtu.be/TEmb0jf-xL0

Total 32 videos

# Reproduction of the solar system scale in the framework of outdoor activities training

The aim of the ERASMUS+ cooperation project is to develop different methods to complement the students' learning process through outdoor activities.

The developed methods can be very well combined with the existing competency learning approach within the School2030.

The methods developed in the project are based on students in the 4th grade studying a science subject.

The developed methodology is intended for 4th grade students who are studying the subject of natural sciences, studying the topic "Where in the Universe is the Earth?"

Aim: to make students go outside and model the parameters of the solar system in a reduced version in the presence of a teacher (simulation).

The learning process can also be combined with math and home economics subjects.





## **Mathematics**

#### Tasks

- Determine the physical parameters of each planet, as well as the orbital distances from the Sun!
- Calculate the physical parameters and orbital distances of the planets if the Sun were reduced to the size of a tennis ball (7 cm in diameter)!

Astronomical object	Diameter	Distance
Sun	7 cm	-
Earth	~0,6 mm	~7,5 m
Jupiter	~7 mm	~39 m
Neptune	~2 mm	~225 m



## **Design and technology**

### Tasks

- Pupils in groups (on average 6-7 people) create 8 trees on which to stick each "reduced" planet (they can also be flags, etc.).
- It would be desirable to build highquality trees with planets or flags, as they will have to be planted in the ground when measurements are taken in the field!
- <u>Note</u>: technically, each team can also make their own yardstick, which should be at least 225 meters long!



## **Natural sciences**

### Tasks

- Accompanied by the teacher, the students go to the school square or in the nearby forest to create a reduced scale of the solar system.
- Each team (5-7 people) takes measurements using scales, steps or digital tools to position the planet at the desired distance from the Sun.
- The teacher reviews the performance of the measurements and rewards the winners (a snack, etc.). During the block lesson, being outside, everyone can get together and say what they have learned - what came as a surprise, ask additional questions, etc.



## **Benefits and skills**

#### The outcome

- "Observe the Dimensions of the Planets and the Distances to the Sun in Modeling the Solar System" (Grades 1-6, p. 102)
- "Develops the habit of working diligently and arranging one's workplace by creating planetary modules for the solar system" (Grades 1-6, p. 102)
- Spend time outside learning to take measurements and work in a group, learning that the universe is much wider than it might seem at first.





## In the conclusion

The teacher may mention that if the Sun remained the size of a tennis ball (7 cm in diameter), the nearest star (Centaura Proksima) would be less than 2,000 km away, or where Dublin, the capital of Ireland, is!



https://spaceplace .nasa.gov/menu/pl ay/

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