An earthquake in action

1 Overall aims:

Cognitive (C)

- To discover the tectonic plates and the earth's crust
- To understand the shaking of the ground
- To learn about natural phenomena
- To discover that the Earth has its own dynamics that affect man and nature

Affective (A)

- To know natural disasters' consequences
- To understand the natural world we live in

Psychomotor (P)

- To develop fine motor skills and creativity

2 Vocabulary - keywords

Mathematical: waves, frequencies, volumes, three dimensional figures

Science: shaking of the ground, tectonic plates, earth's crust, fissures, avalanches, landslides, gel, mixture

Sustainability: destruction of ecosystems, natural disasters, destruction of homes, economic losses

Art: build, assemble, color

3 Sustainable abilities developed

- Self-awareness competence (If there is an earthquake, what shall I do? How can I protect myself and others?)
- Anticipatory competency (what happens if there is an earthquake?)
- System thinking competency (distinction of the different attributes of a natural phenomenon)

4 Pillars of sustainability included

Environmental:

- Know and understand natural phenomena such as earthquakes and their environmental impacts: changes in soil fertility, water pollution, loss of biodiversity…

Social:

- Discover the social impact caused: destruction of homes, destruction of factories, roads, cars…

Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Economic:

- Analyze the economic impact of all the previous material losses, of the lack of communication, of the loss of connectivity…

5 STEAM domains

Science skills (understand, know, and/or reproduce natural phenomena, layers of the Earth, Earth dynamics, ground shake)
Artistic skills (build an earthquake model)
Mathematical skills (understand what a wave and its frequency are, figures with volume)
Engineering skills (build a three-dimensional figure)

6 Teaching methodologies/activity outline

STEPS

1. Watch the video file about what an earthquake is and how the ground shake
   The teacher shows video files (4 minutes). All the group.
2. Build an earthquake model and reproduce the movement of the earth's crust.
   The teacher and the support teacher help the children to make a model and reproduce the earthquake movement. One session of 45' in small groups (3-4 children)

7 Expected learning outcomes

The child will be able to:

- recognize a natural phenomenon
- know what the earthquake is
- know the Earth's crust and the movement of the tectonic plates
- build a model and reproduce the earthquake movement

8 Assessment

(C)

✓ What happens if the crust breaks? What are the tectonic plates?
✓ What happens when the ground shakes? What happens to the plants and animals around it?

(A)

✓ What is a natural phenomenon? What would happen to houses, factories, roads, cars…when the ground shakes? How would it impact men's life?

(P)

✓ How can you design an earthquake model? How can you simulate an earthquake? What happens?

Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

9	**Equipment and materials to be used in the learning unit (tools, ingredients etc.)** 1. Digital whiteboard or computer and projector 2. Materials: Toothpicks, mini marshmallows, baking pan, jelly
10	**Kind of setting - lab, kitchen, outdoor etc.** Classroom
11	**References - source:** What is an earthquake? (4466) What Is An Earthquake? | The Dr. Binocs Show | Educational Videos For Kids - YouTube Earthquake model: (4466) Earthquake in the Classroom - YouTube

Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.