

**The plan of educational classes conducted
in the presence of the participants of the Erasmus +
First short-term joint staff training on 4th of December 2019
“4 elements – STEAM in elementary education”**

Setting: kindergarten's classroom

Number of children: 25

Age: 5

Teacher: Marlena Szelaq

Topic: “The universe is my home”

General objectives:

- understanding the process of the universe and Earth's formation
- getting children familiarized with science
- introducing STEAM method

Specific objectives. Child:

- listens and comprehends the story told by the teacher
- observes experiments
- imitates planets and galaxies' movement
- improvises volcano's eruption and water life on Earth with movement
- names animals and plants
- makes statements about Earth and the universe's formation

Methods of work:

- STEAM method
- observation, display
- the method of managing a child's own activity, active methods
- storytelling, discussion, instruction

Forms of work:

- collective
- groups
- individual

Accessories: CD with music, a balloon, confetti, a needle, Solar System poster, Milky Way poster, ribbons, cards with the sun and planet's names, a chair, a ribbon of time, illustration of Volcanic Era, a volcano model, baking soda, coloured water, vinegar, colorful tissue paper, a kettle, a vessel, painting foil, animals' illustrations

The course of the classes:

1. Greeting.
2. **A story of the Universe.** The teacher reads out the story . She holds a balloon and slowly blows the balloon as the story goes on. At the end of the story she punctures the balloon.

Milliards of years ago, the whole universe and everything in it used to be smaller than the needle's head. The universe started to expand more and more and at some point it burst forming small pieces. The pieces are still moving away from each other.

3. **A game involving movement "Particles of matter"**

Children pretend to be small particles of matter in the universe. The dance to the electronic music.

4. The teacher continues the story, she presents corresponding illustrations.
The particles of matter formed millions of galaxies. We live in one of them.

Our galaxy is named "Milky Way" There are lots of solar systems in this galaxy. Among them this one (a picture). This is our Solar System which was formed out of spinning gas, dust and rocks.

5. **A game "Solar System"**

The teacher chooses one child to be the Sun. The child holds 7/8 ribbons. Other children hold one ribbon each and pretend to be planets. While the music is on, children spin imitating the Solar System.

6. **Visualization of time.** Children sit on the floor and expand the colourful ribbon. The ribbon represents the time from the beginning of the universe to the point the human appeared on Earth.

7. **Experiment "Volcanic Era"**

The teacher continues the story

Our planet consists of different layers. Humans live on the crust. The inside of the planet is hot and liquid, high pressure makes gas and liquid move and sometimes it causes eruptions. In the past, there was much volcanic activity on Earth. This time is called "Volcanic Era"

The teacher conducts the experiment with a volcano model. Children imitate the eruption with ribbons.

8. **Condensation and appearance of water.** The teacher continues the story.

The volcanic era was hot and stuffy. The heat produced by volcanoes created water vapor. It began to condense and this is the way water appeared on Earth – oceans and seas.

The teacher presents the experiment on condensation. Children dance with crumpled foil imitating water movement (relaxing music)

9. **The appearance of life on Earth.** The teacher finishes the story.

Together with water, life appeared on our planet. First, life in water began. Fish and amphibians looked differently than they do now. The life in oceans moved to land. Insects, reptiles and also new plants appeared. And then dinosaurs ruled on Earth. After they disappeared mammals, monkeys, apes, early humans appeared.

<http://www.pml63lodz.wikom.pl/?url=erasmus/cztery-zywioly-steam/1063,a,iiib-historia-ziemi-c1.html>



