

GEAR (Global and Environmental Awareness and Responsibility) – a Toolkit for Inclusive Environmental Education

Project Element: Water

Osmosis for Buddy Lesson Grades 5 and 1 Travelling Water Experiment and Moving Ink Experiment

Objectives (Grade 5):

1. To guide the pupil to perceive and understand connections between things they have learned: to revise the diffusion of water (osmosis)
2. To guide the pupil to plan and carry out small-scale research projects and to make observations in versatile learning environments using different senses and research and measuring equipment: to set up an experiment to demonstrate clearly how water moves from areas of high density to low density
3. To offer the pupil opportunities to practice acting in a mixed-age group in different roles and interactive situations to inspire the pupils to express themselves and to listen to others as well as to support them in recognizing, expressing and regulating their emotions.
4. To work together with the younger learners to help them to predict what they think will happen (hypothesis setting)
5. To revise primary and secondary colours
6. To record what happened

Objectives (Grade 1):

1. To guide the pupils to understand simple models as representative of the environment: to become familiar with the property of the diffusion of water by experiencing it in a concrete experiment to form a basis for later learning of the concept of osmosis
2. To guide the pupil to make observations and conduct experiments at school using different senses and simple research tools and to present the results in different ways
3. To offer the pupils opportunities to practice acting in a mixed-age group and to guide them to practice team-work skills and emotional skills and to strengthen their self-respect
4. To work together with the older learners to predict what they think will happen (hypothesis setting)
5. To revise primary and secondary colours
6. To record what happened

Transversal Competences

T1 Thinking and Learning to Learn

Using different materials, pupils work together to investigate how water moves from areas of high density to areas of low density

T2 Cultural Competence, Interaction and Self-expression

Grade 5 and Grade 1 pupils are working together to learn about osmosis. The older pupils have the opportunity to teach the younger ones what they have already learned in a concrete situation that should be easy for the younger pupils to understand.

We also had five educators visiting from Austria and Hungary who were observing and interacting with the pupils in our lesson

Sources:

<https://www.youtube.com/watch?v=9EUfVIon6t8>

Travelling Water Experiment Materials:

Water, clear plastic cups, kitchen roll, food colouring

Travelling Water Experiment

What I think will happen. Draw and colour.



What I observed. Draw and colour.






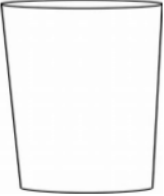
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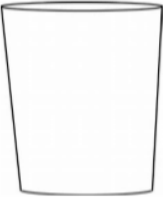
Moving Ink Experiment Materials:

Water, different types of felt pens, a jar, a paper towel, kitchen roll, a pencil

Osmosis
What I think will happen. Draw and colour.

What I observed. Draw and colour

Remarks:

The pupils tried the experiment with different types of pens. The experiment did not work when they tried a Stabilo pen, even when they switched the paper towel to kitchen roll, so then they decided to try out different kinds of pens that they could find in the classroom. They tried a permanent marker pen, but the experiment did not work. Then they tried a whiteboard pen, and that did not work either. Finally, they tried highlighter pens – this was successful.

