

# COMENIUS PROJECT 2010 - 2012 SCIENTIFIC MIND IN EUROPE



## LESSON PLAN BOOKLET



# OUR PROJECT GROUP



This project has been realised as part of SOCRATES Comenius 1- School Partnership framework and is being supported by European Union Education and Youth Development Programmes Center (National Agency).

The content and the outcomes of the project never represent European Union and National Agency's views and project owners assume all the responsibility for their projects and the outcomes.

## FOREWORD

This volume gives examples of the science-related work carried out by the different members of the Comenius Project entitled, 'Scientific Mind in Europe', which began in October 2010 and ended in May 2012.

10 partner schools from 9 different countries, viz. Bulgaria, Italy, England, Finland, Latvia, Romania, Spain, Sweden, and Turkey, worked together, under the coordination of the member from Italy.

Planning and evaluation meetings were held in each of the countries during the course of the project. At the planning meeting in England a decision was taken for partnership members to work on the general topic of 'Plants and Animals' during the first year of the project, and for individual initiatives in each of the member countries to be carried out using the scientific method.

The first evaluation meeting was held in Turkey, at which all the partners from the 9 countries presented their educational system, their approach to science instruction, and their science projects related to 'Plants and Animals'.

The second evaluation meeting took place in Finland, where the four classical elements, viz. 'Fire, Air, Earth, and Water', were chosen as the topic for the second year of the project. At the same meeting it was also decided that the final product should be a booklet with lesson plans illustrating the work carried out on the project, which would be of use to other non-participating members. It was further decided to include with the final booklet a DVD offering a range of science activities from lessons based on the plans produced as part of the project.

The final evaluation meeting was hosted by Italy, at which the final products of each partner were presented and discussed, after which the final report was written.

The document you are now holding is the fruit of the work of the project over two years. This booklet contains plans for science lessons, all of which are in English, contributed by the 10 associated schools in the 9 participating countries. The science curricula of the partnership schools, science activities, and all other relevant materials, have been saved onto the DVD accompanying this booklet.

We would very much like to express our sincere thanks to one and all for the creation of this valuable document and for their participation in this project.

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**ITALY**

Circolo Did. Di Maniago





**Name of the School / Country** : "Vittorino da Feltre" Primary School, Vajont - Maniago Primary School - Italy  
**Subject** : From The Fruit To The Seed – Plant Cell And Dna  
**Grade Level** : Year 4 and 5 Age: 9/10 – 10/11  
**Aims of the lesson** : 1- Observe the fruits externally 2- Manipulate and dissect the fruits 3- describe and classify the different seeds 4- compare the various seeds 5 – discover the parts of the plant cell

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
<b>Introduction</b> •Introduction to the topic of the lessons.	<b>30'</b>	•Make targeted questions in order to help the starting of a conversation about various seasonal fruits observation.	• Answer to teacher's questions, integrating the dialogue with personal comments..	• Teacher-student • Student-student	• Pen and paper • Drawing paper
<b>Activity*</b> 1. observe the fruit from the outside	<b>60'</b>	• Choose 3-4 fruits from different seasons and invite the children to observe them. • Take photos.	• Observe the fruits externally using the different sensory channels.	• Teacher-student • Student-student	• Camera • Drawing paper
2. observe the fruit inside: the pulp with the seeds	<b>15'</b>	• Guide the students to dissect the fruits and help them with specific questions, to observe and tell. • Take photos.	• Dissect the fruits, touch and find the seeds. • Draw what they see.	• Teacher-student • Student-student	• Notebook.
3. describe	<b>20'</b>	• Guide with specific questions, to observe and record the made descriptions. • Take photos.	• Observe and describe the characteristics of different seeds according to the quantity, the size, the position and make classification. • Draw the experience.	• Teacher-student • Student-student	• Drawing paper • Recording data.

4. classify	20'  60'	<ul style="list-style-type: none"> <li>• Help the students to choose the parameters to make unacclassificazione seeds.</li> <li>• Take photos.</li> <li>• After observing from time to time various fruits, the teacher suggests to compare all the fruits and seeds observed.</li> </ul>	<ul style="list-style-type: none"> <li>• Considering the parameters, make a comparison between the different seeds.</li> <li>• Considering the parameters, make a comparison between all the different fruits and seeds.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	<ul style="list-style-type: none"> <li>• Table for the registration.</li> <li>• Table for the registration.</li> </ul>
Discover the parts of the cell plant	4/5 lessons  60'	<ul style="list-style-type: none"> <li>• Give instructions in order to find information about the plant cell</li> <li>• Ask to draw a spidergram about their knowledge</li> <li>• Prepare materials in order to build a plant cell model</li> <li>• Focus on the cell nucleus and DNA</li> <li>• prepare materials to do the experiment</li> </ul>	<ul style="list-style-type: none"> <li>• search information about plant cell using internet, books, documentaries</li> <li>• draw a spidergram about their knowledge</li> <li>• build a plant cell model</li> <li>• extract DNA from a kiwi following the instructions</li> </ul>	Teacher-student Student-student Small groups	Different materials such as: buttons, ropes, beans, jelly, boxes ... Computer, books washing-up liquid, salt, distilled water,
<b>Evaluation</b>  Share results		<ul style="list-style-type: none"> <li>• Ask information about plant cell model</li> <li>• Ask to draw the sequences of the experiment (DNA extraction) and explain it (oral and/or written) using a scientific language</li> </ul>	<ul style="list-style-type: none"> <li>• Answer questions about cell models</li> <li>• Draw and explain the experiment about DNA extraction</li> </ul>	Teacher – student Student –student	kiwi, ethanol (pure alcohol /drinking alcohol), Funnel, hand blender, paper filter, beaker, test tube, loop tool, knife

\* the activity is repeated several times: for autumn fruits (pomegranate, Kaco, quince), for winter-citrus fruits (tangerine, orange, grapefruit, lemon), for fresh fruits (apple, pear, kiwi), for dried fruits (peanut, walnut, hazelnut, dried fig).

**Name of the School / Country** : Maniago Primary School  
**Subject** : The Combustion  
**Grade Level / Age** : Year 4 / 9-10 years  
**Aims of the lesson** : To discover the role oxygen plays in combustion;  
to discover that carbon dioxide is produced by combustion

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<p><b>Introduction</b></p> <p>Recap the experiences about combustion in order to give a definition of the combustion phenomenon</p> <p>Ask this question: Does combustion need air?</p>	<b>120'</b>	<ul style="list-style-type: none"> <li>• Help the pupils to remember the experiences gained about combustion</li> <li>• To guide the pupils to find a common definition of the combustion phenomenon using scientific language</li> <li>• Ask questions like this: what happens if we limit air around the combustion?</li> <li>• Write on a poster the pupils' hypothesis</li> <li>• Prepare materials for the first experiment</li> <li>• Give directions to search information about air composition</li> </ul>	<ul style="list-style-type: none"> <li>• Complete a summary table with their knowledge about combustion</li> <li>• Write a shared definition about the phenomenon</li> <li>• Make hypothesis, do the experiment (remember...) and register observations</li> <li>• Give instructions in order to repeat the experiment focusing on the duration of the fire and the capacity of the glass vases</li> <li>• Compare duration and capacity in order to discover relation and differences</li> <li>• Search information on internet/books and draw an aerogramme about air composition</li> <li>• Draw a spidergram with their knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-pupils</li> <li>• Pupils-pupils</li> </ul>	<p>Poster, table, internet, books</p> <p>2 glass vases : 1 bigger and 1 smaller , matches 3 candles, 1 chronometer,</p>

<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Experiment to understand the role oxygen and carbon dioxide play in combustion</li> <li>• Experiment that the carbon dioxide is a product of combustion</li> </ul>	<p><b>120'</b></p>	<ul style="list-style-type: none"> <li>• Focus on oxygen and carbon dioxide</li> <li>• Ask this question: what gas (between oxygen and carbon dioxide) has stopped the combustion in the first experiment?</li> <li>• Prepare the materials for the experiments</li> <li>• Give instructions to do the experiments and register data</li> <li>• Ask this question: is oxygen to help combustion?</li> <li>• Ask to give a definition of the combustion phenomenon</li> </ul>	<ul style="list-style-type: none"> <li>• Make hypothesis</li> <li>• Test with the first (vinegar and baking soda) and second experiments (bromothymol blue solution)</li> <li>• Register data</li> <li>• Make observations</li> <li>• Do the third experiment (elodea)</li> <li>• Give a shared definition of combustion</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-pupils</li> <li>• Pupils-pupils</li> </ul>	<p>1 large candle , 1 beaker, vinegar, baking soda,1 tea spoon,1 paper tube</p> <p>bromothymol blue solution water , funnel, glass funnel, test tube, flexible tube</p> <p>1 glass vase, a closed funnel, elodea, matches</p>
<p><b>Evaluation</b></p> <p>Creation of a spidergram about combustion, its features</p>		<ul style="list-style-type: none"> <li>• Give instruction in order to complete a spidergram about their knowledge on combustion</li> </ul>	<ul style="list-style-type: none"> <li>• Draw a spidergram about the combustion phenomenon using specific software</li> </ul>	<p>Teacher – pupils</p> <p>Individual</p>	<p>Software</p>

**Name of the School / Country** : Maniago Primary School - Maniago Primary School  
**Subject** : Glucose and Oxygen as Products of Photosynthesis  
**Grade Level / Age** : Year 4 / 9 – 10 years  
**Aims of the lesson** : To understand the process of photosynthesis; to observe the production of oxygen using the elodea plant

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> Observe a diagram about plant nutrition and create a game about this	90'	<ul style="list-style-type: none"> <li>Ask to do a model of the nutrition tree structure using small gym equipment</li> <li>Prepare small plastic bags, balloons, coloured salt, green paper caps, spotlight.</li> <li>Give instructions to choose equipment in order to represent water particles, air particles and mineral salts and put them in the model.</li> <li>Give roles to the pupils and discuss about the specific actions to do</li> <li>Give suggestions during the game and ask pupils to discuss their experience</li> </ul>	<ul style="list-style-type: none"> <li>Collaborate with classmates in order to choose equipment and build the model for the game</li> <li>Complete the game doing the actions of their own role</li> <li>Tell their own actions and those of their classmates</li> <li>Discuss their experience in order to understand the process</li> </ul>	Teacher – pupils Pupils – pupils	books, internet, gym equipment (ropes, balls, hoops ...), small plastic bags, balloons, coloured salt, green paper caps, spotlight.
<b>Activities</b> Find information about the chemical formulas of: water, oxygen, carbon dioxide, glucose and cell structure of the plants.	60'	<ul style="list-style-type: none"> <li>Give directions in order to search information on internet or in books</li> </ul>	<ul style="list-style-type: none"> <li>Search information, using science books or internet, about the leaf cell and the photosynthesis</li> <li>Try to draw a diagram of a leaf cell and the photosynthesis process</li> </ul>	Teacher – pupils Pupils-pupils	Science books, internet

Create a dance in order to understand the glucose molecular production	<b>60'</b>	<ul style="list-style-type: none"> <li>Organise the materials to do the glucose dance and select music</li> <li>Organise the space in the gymnasium</li> <li>Form groups and give roles: children-water; carbon dioxide; chloroplasts; child-sun</li> <li>Give instructions in order to do the dance in the correct way</li> </ul>	<ul style="list-style-type: none"> <li>Do the dance following the instructions and the assigned roles</li> <li>Collaborate to select music for the dance</li> </ul>	Teacher – pupils Pupils-pupils	6 blue paper caps, 12 white, 12 red, 1 orange-yellow, some green, 1 spotlight, some green hoops, 2 ropes and 2 blocks, CD player, music
Observe the oxygen production using the elodea plant	<b>60'</b>	<ul style="list-style-type: none"> <li>Organise the materials in order to do the experiment</li> <li>Organise the work groups</li> <li>Observe, give directions and stimulate to make a hypothesis</li> </ul>	<ul style="list-style-type: none"> <li>Organise materials to do the experiment in groups</li> <li>Write and compare hypothesis and observations</li> </ul>	Teacher – pupils Pupils-pupils Small groups	Small branches of elodea, test tubes, still and sparkling water
<b>Evaluation</b>	<b>60'</b>	<ul style="list-style-type: none"> <li>Prepare a sheet with the photos of the glucose dance</li> <li>Ask to put them in order</li> <li>Ask to explain the dance using the photos</li> </ul>	<ul style="list-style-type: none"> <li>Explain the glucose dance</li> <li>Put the photos of the dance in order and write captions</li> </ul>	Individual	Photos

**Name of the School**

: “Dante Alighieri” Primary School” – Maniago / Italy

**Subject**

: The Four Elements - “Elements And Colours Of The Vegetable World”

**Grade Level / Age**

: Year 2 - 7/8 years old

**Aims of the lesson**

: 1- To use water and alcohol for extracting substances from seeds (starch) 2- To use extracted substances for preparing a recipe

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
Introduction <b>Activity 1</b> Experiment: “To test extraction of substances from sweetcorn”	15 min	Teachers prepare the necessary materials and tools and explain their characteristics.	They listen to the teacher and make a question.	Teacher - Student	Beakers Alcohol for food Water Sweetcorn Plastic film
To carry out the experiment	30 min	Teachers make questions and guide children on reflections (in connection with phases of proceeding, hypothesis, characteristics of materials). They take photos.	They follow the teacher’s instructions and carry out the experiment.  They answer the teacher’s questions.	Teacher - Student  Student - Teacher	Camera Materials and tools
To make a board for the experiment registration	30 min	Teachers make questions to help children to find the aim of the experiment and to remember the hypothesis they made before.	They write the aim and the hypothesis related to the experiment.	Teacher - Student	Paper Pencil/pen
To fill in the board (experiment registration)	30 min  (some days later)	Teachers make questions for helping children to observe the results and to give prominence to the differences.	They illustrate the results of the experiment. They write observation connected with the final results. They write the results after they verify the hypothesis. They come to a conclusion that gives them the opportunity to deepen their knowledge and to start a new experiment (to research starch in the food and discover the characteristics of the starch).	Teacher - Student  Student - Teacher	Paper Pencil Pen Colours



<p>Introduction</p> <p><b>Activity 2</b></p> <p>Experiment: “Our mint jelly beans”</p>	15 min	Teachers prepare the necessary materials and tools and explain their characteristics.	They listen to the teacher and make a question.	Teacher - Student	Saucepan Water, Cornstarch Mint syrup Ladle, mixer, tray, baking paper, stencils
To carry out the experiment	30 min	Teachers make questions and guide children on reflections (in connection with phases of proceeding, hypothesis, characteristics of materials).	They follow the teacher’s instructions and carry out the experiment. They answer the teacher’s questions. They take photos. They taste the final product (sweets).	Teacher - Student	Camera Material and tools: see above
To make a board for the experiment registration		Teachers help pupils - to reconstruct what has happened - to fix the new knowledge - to use new specific terms (ex: liquid, mixture, boil, steam, gelatine, gelatinous, colourless, odourless, dye...) - to choose photos they need for reconstructing the experience.	They collaborate in preparing the poster:  - to verbalize the experience - to write each step - to stick the photos	Teacher - Student	Cardboard Paper and pen Photos
<p><b>Evaluation</b></p> <p><b>Activity 1</b></p> <p>To verify the new knowledge through conversation</p>	30 min	Teachers record the conversation and write down the dialogue.	Circle time (conversation): while they are talking together, they answer the teacher’s questions and give their own opinion about the experience.	Teacher - Student  Student – Student	Individual evaluation (oral activity)
<p><b>Activity 2</b></p> <p>To write a text (experiment registration)</p>	40 min	Teachers (expressing themselves verbally): - explain the task children have to do - remember the most significant steps - provide a copy of the photos	By the help of poster and photos, they individually complete the text. They point out - aim of the experiment - materials and tools - procedure	Teacher - Student	Individual and autonomous written work

**Name of the School / Country** : Maniago Primary School - Italy  
**Subject** : Monocot & Dicot Plants  
**Grade Level** : Age. Year 3 / 8-9  
**Aim of the lesson** : To discover the main differences between monocot and dicot plants

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> Conversation in order to discover the students' knowledge about seeds	60 min.	<ul style="list-style-type: none"> <li>ask students to fill a graphic organiser and give instructions</li> <li>ask questions about their written information</li> <li>write, on the board, the information given</li> <li>focus on: what I want to know, how I can find out</li> </ul>	<ul style="list-style-type: none"> <li>fill the different columns of the graphic organiser</li> <li>answer questions on their written information</li> <li>discuss and answer questions of the teacher</li> <li>decide what they want to learn and suggest how they can find out (through investigation/ research ...)</li> </ul>	Teacher – students Student-student Class - group	graphic organiser: a sheet divided into 3 columns (what I know, what I want to find out, how I can find out)
<b>Activities</b> observation and classification of different types of seeds based on the shape, the colours the sizes ... basic differences	90 min.	<ul style="list-style-type: none"> <li>form groups</li> <li>give different types of seeds to every group</li> <li>explain what they have to do</li> <li>ask groups to share observations about their own seeds</li> <li>stimulate discussion and conclusions</li> </ul>	<ul style="list-style-type: none"> <li>observe and share with the group the observations</li> <li>write observations on a worksheet/table</li> <li>share observations with the other groups</li> <li>make conclusions</li> </ul>	Teacher – students Student-student Small groups	Different types of seeds (wheat, corn, courgette, beans, peas, oat, broad beans ...) Worksheet/ table for observations
Observation of the inner part of the seeds and classification in	90 min.	<ul style="list-style-type: none"> <li>help students to remove the seed coat (if it's necessary put the seeds in water the day before)</li> <li>teach how to use magnifying</li> </ul>	<ul style="list-style-type: none"> <li>observe the inner part of the seeds using tools</li> <li>draw the parts of the seeds and write the scientific name</li> <li>classify the seeds in mono &amp;</li> </ul>	Teacher – students Student-student Small groups	Magnifying glasses, stereo microscopes

monocots and dicots		<ul style="list-style-type: none"> <li>glass and stereo microscope</li> <li>give instructions to observe and teach the scientific names of every part</li> <li>tell students to classify seeds in mono &amp; dicots</li> </ul>	<ul style="list-style-type: none"> <li>dicots</li> <li>describe seeds using the scientific names of the parts</li> </ul>		
Mono & dicot germination: preparation and predictions	60 min.	<ul style="list-style-type: none"> <li>prepare materials</li> <li>give instructions to prepare a worksheet for observation, predictions and inferences</li> </ul>	<ul style="list-style-type: none"> <li>organise materials for the germination</li> <li>prepare the worksheet to write observations, predictions, inferences</li> <li>write predictions about the germination</li> </ul>	Teacher-students Student-student Small groups	Plastic transparent glasses, tissues
Observation of the steps of seed germination: compare observations with previous predictions	it depends on the plants	<ul style="list-style-type: none"> <li>introduce the specific lexicon</li> </ul>	<ul style="list-style-type: none"> <li>observe, every day, the development of the plants and write it on the worksheet</li> <li>compare their predictions with the results of daily observations</li> <li>make other predictions and inferences</li> </ul>	Teacher – students Student-student Small groups	Sheets for observations and predictions
Organisation of a summary table on the main differences between mono & dicot plants	60 min.	<ul style="list-style-type: none"> <li>give instructions on how to prepare a summary table</li> <li>give instructions how to use books or internet to learn more about the features of the mono and dicot plants</li> </ul>	<ul style="list-style-type: none"> <li>write on the summary table the differences between mono and dicot plants ( leaves, roots, flowers, vascular bundles)</li> </ul>	Teacher – students Student – student Small groups	summary tables Books internet
<b>Evaluation</b> observation and classification of plants in monocot & dicot	30 min.	<ul style="list-style-type: none"> <li>give to every student a plant</li> <li>ask to classify it as a mono or dicot plants</li> <li>ask pupils to explain why</li> </ul>	<ul style="list-style-type: none"> <li>observe the plant, draw the plant pointing out its features</li> <li>write the explanations</li> </ul>	Individual	Plants, sheets



			<b>Then water + alcohol, water + oil; water + lemon juice</b>		
<ul style="list-style-type: none"> <li>2nd experiment (liquid + solid) use of the magnet</li> </ul>	<b>60 min.</b>	<ul style="list-style-type: none"> <li>Give the materials the pupils need</li> <li>Tell the steps of the new experiment</li> <li>Ask questions in order to help the formulation of hypothesis</li> <li>Focus on necessity to separate the two substances and suggest some tools (magnet)</li> </ul>	<ul style="list-style-type: none"> <li>Take a soup plate (in pairs). fill it with water, put in the iron filing</li> <li>First separate using filter then using magnet (put between magnet and plate a sheet of paper)</li> <li>Answer questions and integrate them with their observations</li> <li>Fill in the observation table</li> </ul>	pupil - pupil	Soup plates, water, iron filing, magnet, sheets of paper
<ul style="list-style-type: none"> <li>Collective reworking</li> <li>Drawing of spidergrams</li> </ul>	<b>120 min.</b>	<ul style="list-style-type: none"> <li>ask questions to discover the aim of the experiments, the hypothesis, verification of hypothesis with the emerged differences</li> <li>drawing of spidergram to summarize</li> </ul>	<ul style="list-style-type: none"> <li>talk about the experiences, re-read information and draw spidergrams in order to define <b>mixtures and solutions</b></li> </ul>	Teacher - pupil	Exercise books, pencils ...
<ul style="list-style-type: none"> <li>Evaluation conversation</li> </ul>	<b>60 min.</b>	<ul style="list-style-type: none"> <li>record the conversation</li> </ul>	<ul style="list-style-type: none"> <li>answer questions, integrating with their knowledge</li> </ul>	Teacher - pupil	Oral test
<ul style="list-style-type: none"> <li>fill in charts about:</li> <li>water and dust</li> <li>separation of substances</li> </ul>	<b>60 min.</b>	<ul style="list-style-type: none"> <li>give charts to fill in</li> <li>give instructions</li> </ul>	<ul style="list-style-type: none"> <li>Fill in the chart colouring the right space: mixture/solution</li> <li>Answer simple questions about separation of substances and tools to use for doing this</li> </ul>	Teacher - pupil	Written test

**E N G L A N D**

Brighton Avenue  
Primary School





**Name of the School / Country** : Brighton Avenue Primary School/ United Kingdom  
**Subject** : Habitats  
**Grade Level** : Year 4 (8 and 9 Year Olds)  
**Aims of the lesson** : To identify habitats in the school's environment

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
<b>Introduction</b> <b>To identify habitats</b>	<b>20'</b>	Discuss habitats on Interactive Whiteboard and what it means. Children to share knowledge of what they already know about habitats. List the 5 things animals need in a habitat (Food, Water, Shelter, Warmth, Air)	Children to label a picture identifying animals' habitats. They can then describe why they think it is a good habitat for each animal. Does it have the 5 things habitats need to have?	Children to work in ability groups. Teacher with LA TA with MA	Picture of woodland for children to identify habitats in  Interactive Whiteboard
<b>Main Activity</b> <b>To find habitats in the school's environment.</b>	<b>40'</b>	Display the route we will follow around the school. Explain that the children need to take photographs of the habitats that they see and any animals within them. They then have to mark on a map where and what they have seen there.	Children to go around school to find habitats in small groups with an adult supervising each group.	All groups (6/7 children) with an adult	Clipboards  Digital Cameras
<b>Plenary</b> <b>To share what we have found</b>	<b>15'</b>	Ask children to hand in their cameras and connect them to the computer. Share the pictures that the children have taken and ask them what they have seen. Why are they good habitats for each animal, does it have the 5 things habitats need?	Children to share what they have found during the habitat hunt and discuss using correct terminology throughout. Assess against purpose of lesson.	Whole Class	Interactive Whiteboard  Digital Cameras

**Name of the School / Country** : Brighton Avenue Primary School  
**Subject** : Science Living and Growing  
**Grade Level** : 1 ( 5-6 years.)  
**Aims of the Lesson** : Investiagation to find out what plants need to grow.

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
<p>Level 2: to test from observations.</p> <p>To observe evidence to answer a question.</p>	<b>2 hours</b>	<p>Lesson 1:</p> <p>Ask the children what plants need to grow. Disagree with them and challenge them to prove their theory!</p> <p>Working in small ability groups ask the children how we can find out, how could we use the equipment we have to find this out. Record what the children come up with each time. Discuss changing only 1 variable each time and why we need to do this.            What are we going to change?            What will stay the same?            What will we measure? Record this on designing experiments sheet. Scribe for children.</p> <p>Lesson 2:            Talk about the word evidence and what it means. Last week we designed an investiagation to find out what plants need to grow. We planted some seeds. Now we need to think about what the evidence tells us.</p>	<p>Lesson 1: Plant seeds as per each groups ideas reminding ch that we only change one variable each time. Each group should also plant a control sample that has compost, water and light. Discuss why we need to do this.</p> <p>Lesson 2:            Level 2 children :            in groups to look at each sample.</p> <p>In books ask ch to answer the questions:            What happened to the seeds with no water?            What happened to the seeds with no light?            What happened to the seeds with no compost?            Which plants are the healthiest?</p>		<p>Resources:            Quick growing seeds. seeds, soil and pots. Stickers to label.            Designing experiments sheets and camera.</p>

<p>Level 1: To find an answer with help.</p> <p>To identify evidence used by others with help.</p> <p>Pre level 1: To communicates simple planning for investigations and constructions and makes simple records and evaluations of her/his work</p> <p>To Interact with others in a variety of contexts, negotiating plans and activities and taking turns in conversation</p>			<p>Level 1 children: Provide with a chart with the following categories: Water. Light and compso. (sic) No water. No light. No compost. Provide the children with photographs of each sample and ask them to stick them in the correct place on their chart.</p> <ol style="list-style-type: none"> <li>1. Put the photographs in the correct places on your chart.</li> <li>2. Talk to your partner about which plant you think is the healthiest?</li> <li>3. Think about what this plant had.</li> <li>4. Why do you think this plant was the healthiest?</li> </ol> <p>Pre level 1: As above. Ask for each photograph is this plant healthy? How do you know? Which plant do you think is the healthiest? What did the healthiest plant have that the others didn't? Scribe for these children.</p>		
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<p><b>Discussion and Assessment</b></p>	<p><b>15'</b></p>	<p>prompted to justify using prior scientific understanding) Key vocabulary to discuss: <b>Soluble</b> <b>Insoluble</b></p> <p>Prompt class discussion into feedback. Watch BBC clip and introduce term <b>solution</b> and <b>solvent</b>. Were any solutions formed? How can you tell?</p>	<p>Groups to feedback findings, other groups to compare/contrast to their own observations.</p>	<p>Group feedback. Pupils peer assessing findings according to other group observations and findings from BBC clip</p>	<p>BBC clip: <a href="http://www.bbc.co.uk/learningzone/clips/soluble-and-insoluble-materials/2287.htm">www.bbc.co.uk/learningzone/clips/soluble-and-insoluble-materials/2287.htm</a></p>
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**Name of the School/Country** : Brighton Avenue Primary School – UK  
**Subject** : Rocks  
**Grade Level** : Year 3 (7/8 year olds)  
**Aims of the Lesson** : To show and compare rocks

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
To recognise where rocks are used in everyday life	5'	Teacher recaps with the children the different places that rocks can be used in our everyday life.	Children will discuss with their partners the different places that rocks can be seen in everyday life.	Student-parents	Selection of everyday items which have rocks. Photograph of objects
To know and compare rocks	45'-60'	Teacher to introduce the types of rocks you can get. Igneous – formed from cooling of hot molten rock Sedimentary – layers of rocks are laid down as sediments Metamorphic – sedimentary or igneous changed by pressure or heat. Teacher to go over what the children will be looking for when they observe and compare the rocks	Children to use a magnifying glass to look closely at the rocks. They can use a few drops of water to wet the rock and then look at the rock more closely. They will then try and identify the rocks using the key	Teacher – Student Student-Student	Selection of rocks. May include Basalt Breccia Chalk Coal Conglomerate Dolerite Gneiss Granite Limestone Marble Mudstone Obsidian

					Sandstone Schist Shale slate
To share information	10'	Go through the names of the rocks and identify how we know the names.	Children to share what they have found out about the rocks	Student-student Teacher-student	





**E N G L A N D**

Caedmon Primary School



**Name of the School / Country** : Caedmon Primary School/ United Kingdom  
**Subject** : Insulation  
**Grade Level /Age** : Year 4 / 9/10 years  
**Aims of the Lesson** : Investigation of insulator materials

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
To predict and measure the different temperatures of water	<b>1 hour</b>	Present the class with 3 beakers one of water from hot tap, water from the cold tap and some icy water	Children predict the temperature of each beaker and then use a thermometer to measure	Teacher-student Student-teacher	Beakers and thermometers
To predict and test which are the best materials for insulating water	<b>1 hour</b>	Explain that kettle has boiled and allowed to cool till temperature is 50 degrees celsius. This is the temperature of the hot drink. How can we keep the drink hot? Give children a selection of materials.	Children have to predict which will be the best material to keep the water warm. Attach water around different beakers and then measure after 10 mins, 20 mins etc. Which material has acted as the best insulator?	Student-student Teacher-student	Beakers and thermometers
To predict and test which are the best materials for insulating water		It is the summer and we want to keep our drink cool. How can we keep the drink cool? Give children a selection of materials	Children have to predict which will be the best material to keep the water cool. Attach water around different beakers and then measure after 10 mins, 20 mins etc. Which material has acted as the best insulator?	What is the difference between their prediction and the insulator that was the most effective? Is it the same for keeping water hot and cold?	Beakers and thermometers

**Name of the School / Country** : Caedmon Primary School/ United Kingdom  
**Subject** : Science - Gases  
**Grade Level** : Year 5 / 10-11 years  
**Aims of the Lesson** : Introduction to properties of gases

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
Air has weight and is all around us	<b>2 hours</b>	1 What do you know about gases? Children offer initial ideas about gases and ask questions about gases 2 Spot the gases. Children highlight gases in a picture and name any that they know 3 explain that children have to prove that air exists – model one of the activities. What does this show ? 4 provide children with examples of phrases which could be used for their letter e.g. our evidence shows that... We can prove that... There are several reasons why...after considering the evidence we think that...as a result we think that...	1 Children carry out a number of activities which provide evidence that air exists : A walk fast holding a large piece of card B squeeze a sponge under water C pour water onto a glass full of beads D Put a full balloon and an empty balloon on a digital balance E put a piece of crunched up paper in the bottom of a glass or beaker. Put the glass, bottom up in a bowl of water 2 write a letter and construct an argument to persuade someone that air is real	Student-student	Sponge, water, bowl, large piece of card, paper, beads in jar, full balloon, empty balloon, digital balance measuring 0.1g

<p>Solid materials have air in the gaps</p>	<p><b>1 hour</b></p>	<p>Teacher models experiment with different amount of gravel. Shows children how to use calibrated scale and how to subtract water used from original amount to give a reading of how much air is in the gravel.</p> <p>Go over results at end of lesson</p>	<p>Children pour water on to gravel to find out how much air is replaced They consider how others in the group have different results and why they should take repeat readings ( 3 times )</p> <p>Children to produce graph to show results</p>	<p>Student-student</p>	<p>Fine gravel, 100cm<sup>3</sup> or 100ml measuring cylinders, water</p>
<p>Soils have air trapped in them</p>	<p><b>1 hour</b></p>	<p>Teacher to remind children about previous experiment with gravel.</p> <p>Go over results at the end of the lesson . Compare results with other groups. Why do you think there are different results ? Discuss why people would want to know how much air is in different soils and why this information might be important to them ?</p>	<p>Children use different soils to discover if there is any difference in the amounts of air in them</p> <p>Children to produce graph to show results</p>	<p>Student-student</p>	<p>Soil, compost, clay based soil, sand. 100 cm<sup>3</sup> or 100ml measuring cylinders</p>

**Name of the School / Country** : Caedmon Primary School/ United Kingdom  
**Subject** : Gases  
**Grade Level** : Year 5 / 10-11 years  
**Aims of the Lesson** : Introduction to properties of gases

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
There are many gases and many of these are important to us	<b>2 hours</b>	Show children where to find information  Class discussion on what information has been found	A Use research skills / internet to find out how many gases there are in air Construct a chart or graph to show what types of gases are in air : oxygen, nitrogen, carbon dioxide, argon  B carry out research using reference books / internet to find information about different gases and how we use them in everyday life. Ie Gases for balloons , gases for fire extinguishers, gases in light bulbs, gases used for anaesthetics etc.  C children make an interactive question board for display ( lift the flap to find correct answer etc. )	Student student Group work	Internet / reference books
Gases have weight	<b>1 hour</b>	A Learning intention is that children understand that a can of “flat” drink weighs less than an unopened can because gases have weight.  Collect results from groups - discuss	A Children discuss what might happen when they compare the weight of an unopened can of “fizzy” drink and an opened can that has gone “flat”  Children produce chart or graph to show how much weight has been lost from each group’s results.	Student student Group work	A Cans of “fizzy” drink, digital scales

		<p>B How much gas is in a bottle of “fizzy” drink ? Children see how much gas comes from a bottle of “fizzy” drink. They set up a fair test and identify possible causes of inaccuracies in their results. They decide how much to trust their results.</p> <p>Collect results from groups - discuss</p>	<p>B Children carry out experiment B and pose questions to answer :Do we think all the gas got out? Did any of the gas escape? Do different types of pop contain different amounts of gas? Do we get more gas if we shake the bottle first? Do we get twice as much gas from a bottle twice the size?</p>		<p>B rubber plug or bung, tube, screw clip, 3 or 4 litre measuring cylinder filled with water, large plastic bowl</p>
<p>Gases do not keep their shape or volume. Gases flow easily</p>	<p><b>1 hour</b></p>	<p>Class discussion about the properties of gases, liquids and solids to finish the topic</p>	<p>Children to complete a table and fill in the missing bits.</p> <p>Children drawing pictures to explain their reasoning</p> <p>Completion of science log assessment</p>	<p>Student -parents</p>	





**FINLAND**

Kasurilan Koulu

Kasurila Primary School



**Name of the School / Country** : Kasurila School / Finland  
**Subject** : Study of Water  
**Grade Level / Age** : 1st Grade / 7-8 Years Old  
**Aims of the lesson** : To study the properties of water and flotation of objects.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>preparing the study</li> </ul>	10'	<ul style="list-style-type: none"> <li>Teacher explains that the aim of the class is to study properties of water with different experiments. Every student will get an individual research paper, but the experiments will be conducted in pairs. The class will be teacher-directed: before every experiment each student will make a prediction of the result, and then the experiment is conducted according to teacher's instructions.</li> <li>Teacher asks the students to fetch the research equipment and research paper.</li> </ul>	<ul style="list-style-type: none"> <li>Students listen to teacher's instructions.</li> <li>Students fetch the necessary equipment according to the teacher's instructions.</li> </ul>	Teacher-Student	<ul style="list-style-type: none"> <li>research paper</li> <li>pencil</li> <li>plastic cup</li> <li>glass</li> <li>paper clip</li> <li>piece of paper</li> <li>a pebble</li> <li>needle</li> <li>match</li> <li>play dough</li> <li>pieces of woollen thread</li> <li>ice cube</li> <li>snowball</li> <li>snow</li> <li>water</li> <li>dishwashing liquid</li> </ul>
<b>Activity</b>	45-60'	<ul style="list-style-type: none"> <li>Teacher instructs the students before every experiment.</li> <li>1) Put water in a glass. What does it look like? How does it smell, taste and feel?</li> <li>2) Fill a glass with snow. Make a mark to the glass to a point where you think the water</li> </ul>	<ul style="list-style-type: none"> <li>Student will make a prediction of the experiments result and then conduct one experiment at a time according to teacher's instructions. Experiments</li> </ul>	Teacher-student Student-student	

		<p>level will settle, after the snow has melted. Check the result after the snow has melted.</p> <p>3) Take a snowball and an ice cube of the same size. Make a prediction, which will melt faster? Write down the result soon as possible.</p> <p>4) Put some water in a cup and take a piece of play dough. What do you think, will a ball made of play dough float in the water? Conduct the experiment. Try to find a shape that will float.</p> <p>5) Put some water in a cup and take a paperclip, piece of paper, a pebble, a needle and a match. Make a prediction, which of these items will float. Conduct the experiment.</p>	<p>are carried out in pairs.</p> <ul style="list-style-type: none"> <li>• Every student will write down the result of every experiment.</li> <li>• Student will state if his/hers prediction was correct or not, and discusses the result of the experiment with his/hers pair.</li> <li>• End of the class, students will clear all the equipment to the places they belong.</li> </ul>		
<b>Evaluation</b>	<b>10'</b>	<p>6) Put some water in a cup and take a few pieces of woollen thread. What do you think will happen to the pieces of thread, when they are put in to the water? Conduct the experiment. Add some dishwashing liquid to the water and some dry pieces of woollen thread. What do you think will happen now? Conduct the experiment.</p> <p>Teacher will check that every student has written down a prediction and the result of the experiment.</p> <ul style="list-style-type: none"> <li>• Discussion with class about the results of the experiments and what may have caused them.</li> </ul>	<ul style="list-style-type: none"> <li>• Student discusses with his/hers pair and participates in the discussion with the class.</li> </ul>	<p>Teacher-student</p> <p>Student-student</p>	

**Name of the School / Country** : Kasurila School / Finland  
**Subject** : The Glacier Melts Down  
**Grade Level / Age** : 2nd Grade/ 8 Years Old  
**Aims of the lesson** : 1- to explore how the glacier melts down 2- to make hypothesis and observations 3- to understand what happens when the glacier melts down

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>Setting the reseach problem</li> </ul>	10'	<ul style="list-style-type: none"> <li>Discuss how the glacier is formed and how it melts down with pupils (water, light, temperature )</li> <li>Tell the pupils about the experiment: they are going to build up the experience and see how the glacier melting happens</li> </ul>	<ul style="list-style-type: none"> <li>Discuss about the preconceptions: how long time does it take that the glacier melts down</li> <li>Listen teacher during her explanations about the research problem.</li> <li>make the hypothesis</li> </ul>	Teacher-Student	a cup water sand a nail a board a rubber band a big stone or a brick a hammer a clock
<b>Activity</b> <ul style="list-style-type: none"> <li>Preparing the reserch plan</li> <li>Starting the experiment</li> </ul>	45-60' <b>on the hour we measure the thicknes s of the ice</b>	<ul style="list-style-type: none"> <li>Start planning the experiment with pupils (in small groups): How would they accomplish an experiment about the given issue?</li> <li>Introduce the materials</li> <li>Set questions about the validity of the reaserch and make pupils think about the possible problems during the experiment.</li> <li>Check the reserch plans and summarize them in general.</li> </ul>	<ul style="list-style-type: none"> <li>Make the reseach plan in small groups .</li> <li>Prepare also the form for hypthothesis and observed data (optionally, the form could be prepared by the teacher in advance).</li> </ul>	Teacher-student Student-student	

		<p><i>The pupils will get good results, if their reseach plan follows this schedule:</i></p> <ol style="list-style-type: none"> <li><i>1) measure some sand to the cup, add some water and put the cup to the freezer</i></li> <li><i>2) write down the measures</i></li> <li><i>3) take the cup from the freezer and add some sand and water on the ice and put it back to the freezer</i></li> <li><i>4) build up the research frame</i></li> <li><i>5) Check on the hour the thickness of the ice. See what happens to the sand and ice.</i></li> </ol>	<ul style="list-style-type: none"> <li>• After the permission from the teacher, start carrying out the first step of the experiment.</li> <li>• Continue the research and make notes.</li> </ul>		
<b>Evaluation</b>		<ul style="list-style-type: none"> <li>• Discuss about glacier melting. The fastness of melting depends from the weather, but even in the cold melting starts immediately.</li> <li>• The parts of the sand will break down as parts.</li> <li>• One part of the sand slops from the board.</li> <li>• A biggest part of the sand builds up a layer of sand in other words ridge.</li> </ul>	<p>Discuss together with teacher and other pupils. Try to explain what happened and why it happened.</p>	<p>Teacher-student Student-student</p>	<p>Computer Camera A clock</p>

**Name of the School / Country**

: Kasurila School / Finland

**Subject**

: Ice Cube Melting Times

**Grade Level / Age**

: 4th Grade/ 10 years old

**Aims of lessons 1-4**

: 1- to examine if the shape of an ice cube affects its melting time 2- to learn how to calculate surface area. 3- to learn how to draw a bar graph.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<p>Start Finding out pupils' preconceptions</p> <p>Presenting the research problem</p> <p>Teaching basic knowledge: how to calculate surface area.</p>	<p><b>Lesson 1</b></p> <p><b>End of lesson 1</b></p>	<ul style="list-style-type: none"> <li>• mple form with the problem and two answers to choose from: <i>Two ice cubes have the same volume but are different in shape. Does the shape affect the time in which the ice cubes melt?</i></li> <li>A)The shape does not affect the melting time: the same amount of ice melts in the same time.</li> <li>B)The shape of the ice cube affects the melting time.</li> <li>• Tell the pupils about the experiment: they are going to carry out an experiment to find out if the shape of an ice cube affects its melting time.</li> <li>• Teach what surface area means (it's a new subject).</li> <li>• How to calculate the surface area of a quadrangle.</li> <li>• How to calculate the surface area of a rectangular prism. (Additional lesson if necessary...)</li> </ul>	<ul style="list-style-type: none"> <li>• Think about the question by themselves and answer it by ticking the answer they think is correct.</li> <li>• Listen to the teacher during his/her explanation of the research problem.</li> <li>• Practise calculating with a training paper</li> <li>• Practise calculating with a cardboard model etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-Student</li> <li>• Student- student</li> </ul>	<ul style="list-style-type: none"> <li>• Simple question paper</li> </ul> <p>Whiteboard or Smart Board, training paper, pencils, rulers erasers.</p> <p>Cardboard models (that can be spread open)</p>





**Name of the School / Country** : Kasurila School / Finland  
**Subject** : Magnetism  
**Grade Level / Age** : 5th Grade/ 11 years old  
**Aims of the lesson** : 1 Discuss about the magnetism, do the table about hypothesis and results 2 Do the hypothesis and magnetismtests 3 Add to results to the table, discuss about the results and observation and write the observations in own words

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>Setting the reseach problem and discussing about the item</li> </ul>	10'	<ul style="list-style-type: none"> <li>Discuss about the magnetism (history, the materials)</li> <li>Introduce the tests.</li> </ul>	<ul style="list-style-type: none"> <li>Share their experiences about the magnetism.</li> <li>Listen teacher during her explanations about the research problem.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-Student</li> <li>Student-Student</li> </ul>	<ul style="list-style-type: none"> <li>Magnets, compass</li> </ul>
<b>Activity</b> <ul style="list-style-type: none"> <li>Preparing the reserch plan</li> <li>Doing the magnetism tests</li> </ul>	45-60'	<ul style="list-style-type: none"> <li>Start planning the experiment with pupils: How would they accomplish an experiment about the given issue?</li> <li>Introduce the materials</li> <li>Set questions about the validity of the reaserch and make pupils think about the possible problems during the experiment.</li> </ul>	TEST 1 <ul style="list-style-type: none"> <li>Discuss about the preconceptions: Which materials are magnetic and which materials are nonmagnetic?</li> <li>How can we do the fair tests?</li> <li>Prepare also to add hypothesis to the table 1.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-student</li> <li>Student-student (with pairs or in small groups)</li> </ul>	<ul style="list-style-type: none"> <li>Tables for the hypothesis and results</li> <li>Pencil</li> <li>Different magnets</li> </ul>

		<ul style="list-style-type: none"> <li>• Check the reserch plans and summarize them in general.</li> </ul> <p><i>The pupils will get good results, if their reseach plan follows this schedule:</i></p> <ol style="list-style-type: none"> <li>1) <i>Use different magnets and compare the results.</i></li> <li>2) <i>Be sure about the materials.</i></li> <li>3) <i>Write the observations down to the table.</i></li> </ol>	<ul style="list-style-type: none"> <li>• After the permission from the teacher, start carrying out the test of magnetic materials.</li> <li>• Do the notes to the table 1.</li> </ul> <p>TEST 2</p> <ul style="list-style-type: none"> <li>• Discuss about the preconceptions: Is there diffrence between the strength of magnets?</li> <li>• How can we do the fair tests?</li> <li>• Add hypothesis to the table.</li> <li>• After the permission from the teacher, start carrying out the test about strength of magnets.</li> <li>• Do the notes to the table 2.</li> </ul>		<ul style="list-style-type: none"> <li>• Different metals (steel, iron, aluminium)</li> <li>• Paper clips</li> <li>• Nails</li> <li>• Cork</li> <li>• Wood</li> <li>• Paper</li> <li>• Plastic</li> <li>• Glass</li> </ul>
<b>Evaluation</b>		<ul style="list-style-type: none"> <li>• Summarize the data from the tables in general.</li> </ul>	<ul style="list-style-type: none"> <li>• Compare the data from the tables between the groups or pairs.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Paper</li> <li>• Pencil</li> </ul>

**Name of the School / Country** : Kasurila School / Finland  
**Subject** : Growth Of Birch Leaves Under Different Conditions  
**Grade Level / Age** : 6 TH GRADE / 12 years old  
**Aims of the lesson** : 1- to explore how different conditions affect the growth of birch leaves 2- learning to make observations  
3- learning to draw a line plot/line diagram

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
<b>Introduction</b> <ul style="list-style-type: none"> <li>Setting the reseach problem</li> </ul>	<b>10'</b>	<ul style="list-style-type: none"> <li>Discuss with pupils the basic prerequisites for growth (water, light, temperature, nutrients...)</li> <li>Tell the pupils about the experiment: they are going to vary the conditions and see how they can affect the growth of birch leaves.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss preconceptions: what conditions are needed for growth?</li> <li>Listen to the teacher when he /she explains the research problem.</li> </ul>	<ul style="list-style-type: none"> <li>Student-Student</li> <li>Teacher-Student</li> </ul>	
<b>Activity</b> <ul style="list-style-type: none"> <li>Preparing the reserch plan</li> <li>Starting the experiment</li> </ul>	<b>45-60'</b> <b>continues daily during one week</b>	<ul style="list-style-type: none"> <li>Start planning the experiment with pupils (in small groups): How would they carry out an experiment on the chosen topic?</li> <li>Introduce the materials</li> <li>Set questions regarding the validity of the research and make pupils think about the possible problems during the experiment.</li> </ul>	<ul style="list-style-type: none"> <li>Make the reseach plan in small groups .</li> <li>Prepare the form for hypothesis and observed data (optionally, the form could be prepared by the teacher in advance).</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-student</li> <li>Student-student</li> </ul>	<ul style="list-style-type: none"> <li>birch twigs ( in spring, without the leaves)</li> <li>1 liter jars (3-4 pcs)</li> <li>sugar, salt, water, fertilizer, soap?</li> </ul>

		<ul style="list-style-type: none"> <li>• Check the research plans and summarize them in general.</li> </ul> <p><i>The pupils will get good results if their reseach plan follows this schedule:</i></p> <ol style="list-style-type: none"> <li>1) <i>Plan different liquids using water, salt, sugar, soap...(use also pure water in one jar)</i></li> <li>2) <i>Write the ingredients of the liquids onto the jars and mix the liquids</i></li> <li>3) <i>Place twigs in three or four jars</i></li> <li>4) <i>Place the jars in different lightning conditions (light, shadow)</i></li> <li>5) <i>Measure the growth of the leaves daily and write the observations down into the table</i></li> </ol>	<ul style="list-style-type: none"> <li>• After permission from the teacher, start carrying out the first step of the experiment.</li> <li>• Continue the research every day during one/two week(s) = measure the growth and make notes.</li> </ul>		
<b>Evaluation</b>		<ul style="list-style-type: none"> <li>• Teach pupils how to draw a line diagram</li> </ul>	<ul style="list-style-type: none"> <li>• Collect the data into a line diagram.</li> <li>• Compare the diagrams between the groups</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Paper, rulers...</li> </ul>

**Name of the School / Country** : Kasurila School / Finland  
**Subject** : Floating Egg  
**Grade Level / Age** : 6th Grade / 12 years old  
**Aims of the Lesson** : 1- to understand the relation between the density of a liquid and its bouyant force  
 2- learning to make observations

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b>	10'	<ul style="list-style-type: none"> <li>Discuss the diversity of water with pupils (differencies between seawater and water in lakes or swimming pools).</li> <li>Tell the pupils about the experiment: what the idea is, what the conditions are and what the methods are.</li> </ul>	<ul style="list-style-type: none"> <li>Participate in the discussion by sharing their own thoughts on the topic.</li> <li>Listen to the teacher when he/she explains the research problem.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-Student</li> </ul>	
<b>Activity</b> <ul style="list-style-type: none"> <li>Preparing the research plan</li> <li>Starting the experiment</li> </ul>	20-30'	<ul style="list-style-type: none"> <li>Start planning the experiment with pupils (in small groups)</li> <li>Introduce the materials</li> <li>Check the research plans and summarize them in general</li> <li>Monitor the experiment and give assistance if needed.</li> </ul>	<ul style="list-style-type: none"> <li>Make their reseach plans in small groups .</li> <li>Prepare a form for their hyphothesis and observed data.</li> <li>After permission from the teacher, start carrying out the experiment.               <ol style="list-style-type: none"> <li>Fill half of one glass with water.</li> <li>Put an egg into the glass.</li> <li>Observe the egg.</li> <li>Add three tablespoons of salt and mix carefully.</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Teacher-student</li> <li>Student-student</li> </ul>	<ul style="list-style-type: none"> <li>eggs</li> <li>2 glasses</li> <li>water</li> <li>salt</li> <li>a table spoon</li> <li>a pencil</li> <li>sheets of paper</li> </ul>

			<ol style="list-style-type: none"> <li>5. Observe.</li> <li>6. Fill half of the other glass with water.</li> <li>7. Add 10 tablespoons of salt and mix.</li> <li>8. Carefully fill the glass with clear water. Do not mix the liquids.</li> <li>9. Carefully put an egg into the glass.</li> <li>10. Observe.</li> </ol> <ul style="list-style-type: none"> <li>• After the experiment, write down the results and check their hypothesis.</li> </ul>		
<b>Evaluation</b>		<ul style="list-style-type: none"> <li>• Discuss the results with pupils. Teach the theory.</li> </ul>	<ul style="list-style-type: none"> <li>• Listen and learn about the theory of this experiment.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> </ul>	

**LATVIA**

Ventspils Centra Pamatskola





**Name of the School / Country** : Ventspils Centre Primary School - Latvia

**Subject** : Water

**Grade Level** : Year 2

**Aims of the lesson** : to discover the role of water in humans life, learn about circulation of water in the nature, how temperature influences water and to learn about states of aggregation of water.

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
<p><b>Introduction</b> Find out in the surroundings where water is Prove, with the help of experiment, that water is in each living organism</p>	40 min.	<ul style="list-style-type: none"> <li>talk about associations with the word “water”</li> <li>ask students what they know about water</li> <li>describe, compare, use, analyse, convince and make associations with water</li> <li>set a hypothesis – water is in each living being</li> <li>ask students to form groups</li> <li>give instructions about work safety using a grader</li> <li>help and advise students</li> <li>ask a question – who needs water</li> </ul>	<ul style="list-style-type: none"> <li>name the associations with water</li> <li>make a story from students` answers</li> <li>share duties – treasurer, organiser, secretary, 2 demonstrators</li> <li>grade potato, apple, carrot then squeeze juice</li> <li>state that water is everywhere, even if we can` t see it, for e.g. in fruit and vegetable</li> <li>listen to the recommendations and follow other group presentations</li> <li>indicate who/what needs water</li> </ul>	<p>Questions-answers Discussion. Story telling. Group work. Comparing results. Individual work.</p>	<p>Board, cube (Bloom's Taxonomy method), apple, potato, carrot, graders, gauze, measuring cup, worksheets.</p>
<p><b>Activities</b> Develop skills to work with thermometer, measuring the temperature of water.</p>	40 min.	<ul style="list-style-type: none"> <li>review how to use thermometer, observing safety.</li> <li>do some tests – measure and tell the temperature</li> <li>mix up cold and warm temperature and ask students to guess the temperature</li> <li>form groups of five</li> </ul>	<ul style="list-style-type: none"> <li>do a test following teacher`s directions</li> <li>form groups and share responsibilities (treasurer, organiser, secretary, demonstrators)</li> <li>measure temperature in containers with cold and warm water, fill in the results in the worksheet</li> <li>measure temperature in the container</li> </ul>	<p>Pair work. Questions-answers. Laboratory work.. Drawing diagrams. Teacher – student.</p>	<p>Thermometers, containers, cold and warm water, worksheets.</p>

		<ul style="list-style-type: none"> <li>• help to pour warm(45<sup>0</sup> C) water</li> <li>• review how to draw a diagram according to the results</li> </ul>	<ul style="list-style-type: none"> <li>• with cold + warm water</li> <li>• draw a diagram on the worksheet</li> <li>• compare their predictions with the results</li> </ul>		
Water transformation – states aggregation	40 min. +40 min.	<ul style="list-style-type: none"> <li>• activity “corners”.</li> <li>• change conditions in order students can change groups</li> <li>• ask to make conclusions about water transformation and influence</li> <li>• share worksheets for individual work</li> <li>• to prove the hypothesis demonstrate how temperature transform water into different states of aggregation</li> <li>• ask to say the conclusions</li> </ul>	<ul style="list-style-type: none"> <li>• according to the instructions students form 3 groups – liquid, solid and gaseous</li> <li>• move according to the change of conditions</li> <li>• conclude that the change of temperature transforms water into different states of aggregation - hypothesis</li> <li>• try to identify which group described state of water belongs to</li> <li>• compare results</li> <li>• register results in a table on the worksheet</li> <li>• make conclusions</li> </ul>	Team work. Demonstration. Teacher-student	Posters, cards with different kinds of water: dew, hail, ice-flower, fog, worksheets, fire-resistant dish, ice, candle, stand, plate.
<b>Evaluation</b> Strengthen comprehension that water circulation in the nature is continuous	40 min.	<ul style="list-style-type: none"> <li>• a week before this lesson put a glass beaker with water in a visible place in the classroom</li> <li>• ask question – where is water?</li> <li>• share worksheets with pictures of water circulation</li> <li>• ask to order the pictures in a correct sequence</li> <li>• explain task with a text</li> <li>• ask to observe the changes of water levels</li> </ul>	<ul style="list-style-type: none"> <li>• observe how water level changes</li> <li>• register observations about week`s experiment and conclude</li> <li>• receive worksheet and work in pairs</li> <li>• put pictures in order how water circulates in the nature</li> <li>• compare results</li> <li>• make a conclusion that water in the beaker is vaporised</li> <li>• work with text</li> </ul>	Questions-answers. Pair work. Ordering pictures. Teacher-student	Beaker with water, sheet with, measurements, worksheet.

**Name of the School / Country** : Ventspils Centre Primary School - Latvia  
**Subject** : Animal in Spring  
**Grade Level** : Year 4  
**Aims of the lesson** : To learn about and explain the changes in animals' life in spring

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<p><b>Introduction</b>            Conversation with students in order to discover what changes students have noticed in the nature in spring</p>	20 min	<ul style="list-style-type: none"> <li>ask to tell about changes in animal life what they have observed in spring</li> <li>talk about the connection between animal food and appearance</li> <li>talk about places for living for animals</li> </ul>	<ul style="list-style-type: none"> <li>tell about observed changes in spring in nature and in animal life</li> <li>tell about food and places where animals stay during winter</li> <li>tell about changes in animal appearance</li> </ul>	Individual work. Teacher-student	Information in books, on internet
<p><b>Activities</b>            Work with materials in books and other materials, pictures</p>	20 min	<ul style="list-style-type: none"> <li>discuss with students how to behave in forest</li> <li>give instructions about safety in forest and in nature</li> <li>explain what to do in different situations ( when meet a snake, find bird's nest)</li> <li>introduce students with the spring mushrooms</li> <li>instruct how to behave if meet forest animals</li> </ul>	<ul style="list-style-type: none"> <li>read the text in the book</li> <li>discuss what to do when find bird's nest, anthill etc.</li> <li>make a list of spring mushrooms</li> <li>talk about local animals in the forest</li> </ul>	Questions-answers Individual work. Teacher-student	Text book, work books. pictures, posters

<p><b>Activities</b> Research work</p>	<p>40 min</p>	<ul style="list-style-type: none"> <li>• ask students to read text about spring hiking</li> <li>• give instructions what to investigate what phenomenon can be find in nature in spring</li> </ul>	<ul style="list-style-type: none"> <li>• compare their own experience and observations with the description in book</li> <li>• make presentation</li> </ul>	<p>Individual work. Teacher- student</p>	<p>Text book, paper, scissors, glue, materials</p>
<p><b>Evaluation</b> Students present prepared presentations</p>	<p>40 min</p>	<ul style="list-style-type: none"> <li>• ask additional question</li> <li>• give additional information</li> </ul>	<ul style="list-style-type: none"> <li>• present presentations</li> <li>• follow other student's presentations</li> <li>• ask questions</li> <li>• make conclusion – summary what new information they have learned</li> </ul>	<p>Individual work. Presentation.</p>	<p>Presentations.</p>

**Name of the School / Country** : Ventspils Centre Primary School - Latvia  
**Subject** : Air Composition And Combustion  
**Grade Level** : Year 5  
**Aims of the lesson** : To improve knowledge about air composition, to create the concept of combustion as a chemical transformation

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> Obtain the knowledge that air consists of mixed gases and it remains unchangeable due to constant movement	40 min.	<ul style="list-style-type: none"> <li>ask questions what is emptiness and what is atmosphere</li> <li>ask students to read text in the text book</li> <li>form pairs for preparing answers about the importance of air components</li> <li>demonstrate video “ Ozijs”</li> <li>discuss the importance of ozone</li> <li>repeat what is circle diagram and what accessories are needed</li> <li>ask students to make a diagram of air composition using a pattern</li> <li>watch, support and praise students for accuracy</li> </ul>	<ul style="list-style-type: none"> <li>common discussion about the air importance in basic life support</li> <li>talk about the air importance in maintaining existence</li> <li>read text about air components</li> <li>work in pairs, find out the answers in the text about each air component</li> <li>watch the video, talk about the importance of ozone on the Earth</li> <li>name the divider and other tools necessary for making a diagram</li> <li>make a diagram using paper of different colours</li> <li>make a gallery of applications</li> </ul>	Questions-answers. Discussion Pair work. Work with the text. Practical work. Teacher-student.	Coloured paper, glue, divider, ruler, pencil, scissors, sheet of paper, video “ Ozijs”.
<b>Activities</b> Investigat how oxygen influences the combustion process, what are identifying	40 min.	<ul style="list-style-type: none"> <li>ask students to express the ideas for the investigation of the problem</li> <li>ask students to define the hypothesis</li> <li>remind about the safety when</li> </ul>	<ul style="list-style-type: none"> <li>express the ideas if only organic matters cause combustion, if oxygen is limited around combustion it stops burning, which gas puts out fire?</li> <li>agree about the common hypothesis – the combustion is stopped if oxygen from air</li> </ul>	Questions – answers. Laboratory work. Pair work. Teacher-student.	Candle, matches, beaker, petri plate, iodine liquid or ink, lamp, sparkling

features of combustion		<p>working with fire</p> <ul style="list-style-type: none"> <li>ask to read the order in which laboratory work has to be done</li> <li>ask to do the 1<sup>st</sup> step, and do the observation</li> <li>ask to do the 2<sup>nd</sup> step, and do the observation</li> <li>ask to do the 4<sup>th</sup> step, do the observation</li> <li>stimulate to answer questions on data of analyses</li> <li>ask about hypothesis</li> </ul>	<p>is used up during the combustion process, and carbon dioxide puts out the fire.</p> <ul style="list-style-type: none"> <li>read about the order how work should be done</li> <li>1<sup>st</sup> step – light the candle, cover it with a beaker and put down the observations on the worksheet</li> <li>2<sup>nd</sup> step – pour water in the petri plate, drop in ink, light the candle in petri plate, cover it with a beaker and put down observations</li> <li>4<sup>th</sup> step – observe sparkling lights, light the candle and light the sparkling lights with the candle, put down observations on the worksheet</li> <li>answer questions, write conclusions about hypothesis, establish the fact, that non-organic matters burn as well</li> </ul>		lights, worksheets.
<p><b>Evaluation</b> Obtaining skills how to put out fire and how to call the fire station service</p>	40 min.	<ul style="list-style-type: none"> <li>make a list of ways how to put out fire, write the list on the board</li> <li>ask if we can make a fire extinguisher ourselves</li> <li>ask to do 3<sup>rd</sup> step on the worksheet</li> <li>make common conclusions</li> <li>check if students are could be able to act safely in fire</li> </ul>	<ul style="list-style-type: none"> <li>talk about basic ways how to put out fire</li> <li>make a fire extinguisher (3<sup>rd</sup> step) – light the candle, pour 5 spoons of vinegar into the beaker, add a half spoon of soda then bring nearer the candle and write the observations on worksheet</li> <li>conclude, how the heat from combustion can be used, why it is important to be careful with carbon dioxide gas when do stoking</li> </ul>	<p>Questions-answers Experiment. Pair work. Teacher-student</p>	Worksheet – combustion – chemical transformation, vinegar, soda, beaker, candle, dropper, matches, spoon.

**Name of the School / Country** : Ventspils Centre Primary School - Latvia  
**Subject** : Basic Processes to Plant Growth  
**Grade Level** : Year 5  
**Aims of the lesson** : Comprehension about basic processes to plant growth, to improve skills in carrying out investigative and team work.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<p><b>Introduction</b>            1<sup>st</sup> experiment day:  <i>“ The importance of respiration and photosynthesis ”</i></p> <p>Improving the knowledge about the converting the substances in the leaves, increasing comprehension about plant role in the cycle of oxygen and carbon dioxide</p>	40 min.	<ul style="list-style-type: none"> <li>• prepare material for long-term experiments, for four groups</li> <li>• update the previous experience offering to develop situation concerning plant growth processes</li> <li>• draw students attention to work safety and to putting in order the place of work after the experiment</li> <li>• introduce the worksheets</li> <li>• ask students to share the duties within the group and to make photos at the start and end of the experiment</li> <li>• ask to prepare the experiments within the groups</li> <li>• watch, advise and correct the activity</li> </ul>	<ul style="list-style-type: none"> <li>• express point of view</li> <li>• form four investigative groups</li> <li>• listen to the formative criteria of evaluation ( the use of lab dishes, preparing for the experiment, the observation of work safety, get measurements)</li> <li>• get worksheet and get acquainted with the tasks, the order of the work, the order of the recording results</li> <li>• share responsibilities within the group</li> <li>• prepare the experiment according to the work order within the group</li> <li>• do initial measurements and put them down on the worksheet tables</li> </ul>	Work in groups. Experimental work. Teacher-student.	<p><b>Substance movement:</b>            heat resistant glasses (3), plants with light colour blossoms (3), 15 cm long tree branches (3), food colouring, ink, grinded coal, glass sticks, scalpel, dropper, measuring cylinder.</p> <p><b>Plant mineral nutrition:</b>            test glasses (6), peas sprouts (6), a napkin, a stand, destiled water, marker, ruler, plant fertiliser.</p> <p><b>Formation of starch in leaves:</b> indoor plant, paper clips, scissors, black paper.</p> <p><b>Water transpiration from leaves:</b> test glasses (4), the same length plant branch with equal number of leaves (4), water, oil, marker, dropper, ruler, cameras.</p>



<p><b>Activities</b> 2<sup>nd</sup> experiment day(after a week) <i>“The importance of plant respiration and photosynthesis”</i> Improving knowledge about formation of substance in plant leaves, increase comprehension about plant role in the cycle of oxygen and carbon dioxide</p>	<p>40 min.</p>	<ul style="list-style-type: none"> <li>• set plant groups – formation of starch in plant leaves, plants are kept in a bright light for 2 hours beforehand</li> <li>• put the cut leaf in a glass with boiling water</li> <li>• ask students to do the observation</li> <li>• watch the recording of changes and data</li> <li>• help groups to compare observed changes</li> <li>• ask directed questions for conclusion formulation</li> </ul>	<ul style="list-style-type: none"> <li>• do observations</li> <li>• observe work safety during the experiment</li> <li>• do the recording of data and analyzing</li> <li>• answer questions, put down conclusions</li> </ul>	<p>Work in groups. Laboratory work. Teacher-student Questions-answers.</p>	<p><b>Substance movement:</b> heat resistant glasses (3), plants with light colour blossoms (3), 15 cm long tree branches (3), food colouring, ink, grinded coal, glass sticks, scalpel, dropper, measuring cylinder. <b>Plant mineral nutrition:</b> test glasses (6), peas sprouts (6), a napkin, a stand, distilled water, marker, ruler, plant fertiliser. <b>Formation of starch in leaves:</b> indoor plant, paper clips, scissors, black paper. <b>Water transpiration from leaves:</b> test glasses (4), the same length plant branch with equal number of leaves (4), water, oil, marker, dropper, ruler, cameras.</p>
<p>Substance movement, mineral nutrition, ormination of starch in leaves, water transpiration from leaves, formation of groups and making presentations</p>	<p>40 min.</p>	<ul style="list-style-type: none"> <li>• instruct to observe safety, when working with computer, introduce main criteria of how to make a presentation</li> <li>• direct and watch students work- making presentations</li> </ul>	<ul style="list-style-type: none"> <li>• observe rules of safety work with computer</li> <li>• in groups prepare presentations</li> </ul>	<p>Work in groups, Teacher-student. Preparing presentations.</p>	<p>Computers, cameras, sources of information (text books, internet)</p>

<p><b>Evaluation</b> The summary of group work – presentations (substance movement, mineral nutrition, formation of starch in leaves, water transpiration from leaves)</p>	<p>40 min.</p>	<ul style="list-style-type: none"> <li>• tell about the criteria of evaluation of presentation</li> <li>• ask to follow other students presentations, to fill in the table</li> <li>• watch, support presentations</li> <li>• evaluate the results obtained in the experiments</li> </ul>	<ul style="list-style-type: none"> <li>• listen to the criteria of evaluation</li> <li>• read about the tasks on the worksheet</li> <li>• follow other students presentations, register in the table on the worksheet in common made conclusions</li> </ul>	<p>Work in groups, Teacher – student.</p>	<p>Work sheets (table) – experiments about basic processes to plant growth, group presentations, computer</p>
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**Name of the School / Country** : Ventspils Centre Primary School - Latvia

**Subject** : Flying and Wind

**Grade Level** : Year 5

**Aims of the lesson** : To improve experimental skills, stimulating to make different aircraft models, to learn about wind and assure oneself about the necessity of safety in everyday life.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<p><b>Introduction</b> Learn about aircraft models and about basic principles of their operation</p>	<p>40 min.</p>	<ul style="list-style-type: none"> <li>• review about the importance of observation, hypothesis and experiment in obtaining knowledge about processes in nature</li> <li>• ask to name aircraft models, make a list on the board</li> <li>• find out how human being can operate the aircraft and makes it fly</li> <li>• ask to make an examples of flying process in the nature (what can fly?)</li> <li>• do an experiment about – what kind plane it should be to fly far and quickly</li> <li>• do an experiment – where the pilot should be, to be a successful flight</li> <li>• ask to read a text</li> <li>• ask question – why human being can't fly like a bird?</li> <li>• Ask to make a conclusions (make a model at home, using internet web page Google, Paper Model planes)</li> </ul>	<ul style="list-style-type: none"> <li>• talk about experiences, when they have used some activities from the experiment</li> <li>• list aircrafts - airplanes, helicopters, space vehicles, air balloons, etc.</li> <li>• find out answers about flying possibilities of different organisms in the nature ( write in the worksheet)</li> <li>• read the list – bat, dragonfly, pappus, hummingbird, eagle, leaf in the wind, etc.</li> <li>• make paper models of plane using a pattern, then compare them flying</li> <li>• make model of a pilot (in a kind of small modelling clay ball) and put it in different places in the paper plane – in front, in the middle, at the end of the plane and check how it flies.</li> <li>• read the text about aircraft wings</li> <li>• discuss how human being is built – it weights much, bad muscles, heavy bones, etc.</li> <li>• make conclusion – flying is possible if aircraft is light, it has streamline form, it has wings, it has to run up, it has to have an engine</li> </ul>	<p>Answers-questions. Discussion. Pair work. Individual work. Experiment. Teacher-student.</p>	<p>Paper sheet (A4), tape, ruler, scissors, modelling clay, text book.</p>

<p><b>Activities</b> Learn about gravitation and staying in the air. Learn about Earth's gravity force, find out what is necessary to stay in air for a longer period</p>	<p>40 min.</p>	<ul style="list-style-type: none"> <li>• demonstrate the flight of creeping thistle, pine or fir-tree seeds</li> <li>• ask question -which of these seeds fly for a longer time, which seed model flies for a longer time?</li> <li>• ask to prepare 3 different seed spreading models, in order to verify the set hypothesis</li> <li>• ask to verify own set hypothesis</li> <li>• ask questions about hypothesis and compare the results</li> <li>• ask read text in a book</li> <li>• ask questions, where students can use the obtained knowledge in this lesson in everyday life</li> </ul>	<ul style="list-style-type: none"> <li>• observe the seeds flight</li> <li>• give the answers – the flight of creeping thistle seed is longer than pine seed's, because the seed is smaller and lighter, and has more and bigger hair</li> <li>• read a text and make 3 different paper seed models with different wings length</li> <li>• drop all 3 seed models in turn from the same height in order to verify the hypothesis</li> <li>• make a conclusion, that the seed model with the longest wings stays in the air for the longest period of time</li> <li>• read text about gravity and friction</li> <li>• give the answers – the duration of the body falling is slower if its surface square is larger, friction is stronger and it makes movement slower</li> </ul>	<p>Questions – answers. Demonstrations. Experiment. Work with text. Teacher-student.</p>	<p>Seeds (creeping thistle, pine, fir-tree), paper sheet (A4), 3 paper clips, scissors, ruler, pencil, text – book.</p>
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<p><b>Evaluation</b> Wind and lifting force-answer the question – what causes the wind, why it can be dangerous?</p>	<p>40 min.</p>	<ul style="list-style-type: none"> <li>• instruct about safe the outdoor activity for flying a paper kite</li> <li>• ask question why kite couldn't fly?</li> <li>• tell about wind</li> <li>• ask students to compare the strength of wind in Ventpils</li> <li>• ask students to tell at least 10 terms which should be observed during strong wind</li> </ul>	<ul style="list-style-type: none"> <li>• know that kite can't be flown close to trees, street, wires and each other</li> <li>• try to fly paper kite, but it doesn't fly well</li> <li>• explain that it is due to windless weather and it can't go up</li> <li>• listen to the information about the causes for wind, about measuring wind, directions and strength</li> <li>• understand and know how to read the strength of wind in Ventpils from the Beaufort wind force scale (that relates wind speed to observed conditions at sea or on land)</li> <li>• write on the board what one should observe during strong wind – wear warm clothes, don't ride a bike and don't stay close to big trees</li> </ul>	<p>Outdoor activity. Questions-answers. Teacher-student.</p>	<p>Paper kite, The Beaufort Scale of wind strength</p>
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**Name of the School / Country** : Ventspils Centre Primary School - Latvia

**Subject** : Investigation of a Plant Cell

**Grade Level** : Year 5

**Aims of the lesson** : Build up awareness about the structure of the plant cell by developing students` approach to investigations in a scientific way by working with the microscope and making a drawing.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<p><b>Introduction</b> Conversation about the investigation process and the magnifying devices and how to use microscope properly.</p>	40 min.	<ul style="list-style-type: none"> <li>ask questions if it is possible to see everything necessary for making a plant investigation without the use of magnifying devices</li> <li>repeat together with the students the parts of microscope using the picture</li> <li>ask students to make pairs for work with the microscope, to adjust the light and image sharpness by replacing lenses</li> <li>ask students to calculate the microscope magnification</li> <li>observe and advise</li> </ul>	<ul style="list-style-type: none"> <li>answer questions and discuss about the necessity of magnifying devices - loupe, stereomicroscope and light microscope</li> <li>recognize the parts of microscope in the picture</li> <li>work in pairs with the microscope</li> <li>calculate magnification (40x, 100x un 400x)</li> <li>take teacher`s advise and examine the micro-preparation, observe work safety</li> </ul>	<p>Pair work Teacher- student Questions - answers Discussion Practical work Calculation</p>	Light microscopes, micro-preparations, worksheets.
<p><b>Activities</b> Investigation of a plant cell, making the preparation of a red onion cuticle, examining it and making a drawing</p>	40 min.	<ul style="list-style-type: none"> <li>form pairs for the work with the microscope</li> <li>make preparations</li> <li>observe the magnifications at 40x then at 100x of the preparation</li> <li>help students to make a drawing according to the observation</li> </ul>	<ul style="list-style-type: none"> <li>prepare the microscope for pair work</li> <li>prepare the preparation of red onion cuticle, observe work safety (watch the presentation)</li> <li>examine the prepared preparation in the microscope</li> <li>make a drawing according to the observation by using the pattern</li> </ul>	<p>Pair work. Questions– answers Laboratory work Making drawing Teacher-student</p>	A red onion, a light microscope, a microscope slide, a cover-slip, a preparation needle, a knife, tweezers, water,

		<ul style="list-style-type: none"> <li>stimulate students to make conclusions and to evaluate their work</li> </ul>	<ul style="list-style-type: none"> <li>put down conclusions, express point of view about how to improve the research</li> </ul>		a dropper, napkins, onion cuticle cell.
Discovering the main components of the plant and their functions, recognizing these components in the preparation of the moss	40 min.	<ul style="list-style-type: none"> <li>ask students what other plant components can be examined and write them on the board</li> <li>teach how to make a preparation of a moss</li> <li>remind about safety using of lab appliances</li> <li>ask students to make drawings</li> <li>ask students to make conclusions, following the information in the text-book about cell components and their importance</li> <li>discuss the significance of the concepts, their scientific use</li> </ul>	<ul style="list-style-type: none"> <li>name parts of the plant, choose the leaf for investigation</li> <li>make preparation of the leaf</li> <li>recognize the cell of the preparation (cell wall, cytoplasm, nucleus, chloroplast)</li> <li>draw a structure of the cell and mark the components in the drawing</li> <li>state that the specific concepts are very important in scientific investigations</li> </ul>	Questions– answers Pair work Laboratory work Teacher -student	A moss cell, a light microscope, a microscope slide, a cover-slip, a preparation needle, a knife, tweezers, water, a dropper, a napkin, worksheets, plant leaf.
<b>Evaluation</b> Recognition of cells and main components of different plants (in pictures, charts) in the connection with their functions	40 min.	<ul style="list-style-type: none"> <li>prepare individual tasks for students in the worksheets</li> <li>give instructions to do the task</li> <li>watch and support students` in their work</li> </ul>	<ul style="list-style-type: none"> <li>receive worksheets with cell pictures and charts</li> <li>read the tasks</li> <li>write the answers</li> </ul>	Individual work	Worksheets – summary of plant cell

**R O M A N I A**

**Gradinata Cu Program**

**Prelungit Nr.36**





**Name of the School / Country** : Kindergarden No. 36, Brăila, Romania  
**Subject** : From the Grain of Wheat to Hot Bread  
**Grade Level / Age** : Middle Group, Pre-School/ 4-5 years old  
**Aims of the lesson** : 1. To explore and describe the transformations of the grains of wheat on the basis of direct observations. 2. To analyze reactions of the grains of wheat under the influence of environmental factors: moisture, heat, and light. 3. To discover the components of bread: flour, yeast, water, salt. 4. To observe the preparation of bread and bakery products. 5. To carry out simple experiments: modeling dough, preparation, baking, and check the result of such experiments.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
ACTIVITY INTRODUCTION	10'	<p>-A baker will come in front of the kids, dressed in a proper rig having a basket with some bakery products in it.</p> <ul style="list-style-type: none"> <li>Who is this person?</li> <li>What is the baker's occupation?</li> </ul> <p>The baker will tell a riddle:            "Which is the loosened muffin            We get it every day            Being served in every house            And we wait it on at dinner?"</p>	<p>-Children will detect the basket where they can find a bread, some ears of wheat and some grains of wheat. The children are going to smell the bread.</p>	Child - teacher	Basket with bakery products
ACTIVITY DEVELOPMENT  -To analyze reactions of the grains of wheat under the influence of environmental factors: moisture, heat, and light	25'	<ul style="list-style-type: none"> <li>How does the bread smell like?</li> <li>What do you feel when you touch it?</li> <li>What is the bread covered with?</li> <li>How does the breadcrumb look like?</li> </ul> <p>-I will ask again which are the</p>	<ul style="list-style-type: none"> <li>The children answer the questions</li> </ul>	Child - child Child – teacher	Basket with ears and grains of wheat.

		<p>speciality of bread making reference to the sorts of bread, color, taste and smell.</p> <ul style="list-style-type: none"> <li>Do you know from what is bread made of?</li> </ul>	<ul style="list-style-type: none"> <li>The bread is made from: flour, yeast, salt, water</li> </ul>		
<p>-To discover the components of bread: flour, yeast, water, salt</p> <p>-To carry out simple experiments: modeling dough, preparation, baking, and check the result of such experiments</p>		<p>-I will show them the ears and grains of wheat, I'll belabor some grains in front of them and I'll tell them that what is resulting represents the flour from which the bread is made of.</p> <p>-Bread is made from flour, yeast and salt.</p> <p>Where is the bread made?</p> <ul style="list-style-type: none"> <li>I will give children the flour, yeast, water and salt and each of them</li> </ul>	<p>-Children have visited one day before a bread factory, where they saw with their own eyes, how to prepare bread and huge ovens so they knew how to answer the questions very easy.</p> <ul style="list-style-type: none"> <li>They will prepare a little bread to put it in the oven in the kindergarten's kitchen.</li> </ul>	<p>Teacher-child Child-child</p>	
<p>ACTIVITY CONCLUSION</p>	<p>5'</p>	<p>-I will give children their bread to taste it.</p>	<p>-In the end, the children will taste the bread that they have made and they will sing the song: "The mill grinds flour"</p>	<p>Teacher-child Child-child</p>	<p>Bread made by children</p>

**Name of the School / Country** : Kindergarden No 36, Brăila, Romania  
**Subject** : Botanical Garden Trip  
**Grade Level / Age** : Pre-Primary Group, Pre-School / 6-7 years old  
**Aims of the lesson** : 1. To identify different species of flowers; 2. To describe a flower; 3. To communicate ideas, impressions about the things they observe; 4. To become conscious of the fact that flowers need certain conditions to develop correctly;

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
ACTIVITY INTRODUCTION	10'	<p>-The teacher organizes the students in a semi circle and begins a short discussion. She asks:</p> <ul style="list-style-type: none"> <li>• Which are the spring flowers?</li> <li>• Which other flowers do you know?</li> <li>• There are many species of flowers that you do not know;</li> </ul> <p>-Today we are going to visit the Botanical Garden in Galati where you will have the chance to see many flowers</p>	<p>-The children answer the teacher's questions:</p> <ul style="list-style-type: none"> <li>- The snowdrop, the tulip, the hyacinth, the daffodil;</li> <li>- The rose, the carnation, the peony;</li> </ul>	Child - teacher	flowers
ACTIVITY DEVELOPMENT  a) Achieving performance  -To identify different species of flowers  -To describe a flower	40'	<p>The teacher addresses some questions, to help children to remember what they have learned at the science lesson about plants.</p> <ul style="list-style-type: none"> <li>• Which are the basic component parts of a flower?</li> <li>• Where is the root?</li> <li>• What color are the leafs and the body?</li> <li>• What colours are the flowers?</li> <li>• What do these plants need in order to grow?</li> </ul>	<p>At the Botanical Garden, students notice that the flowers are organized in rows with paved alleys between them;</p> <ul style="list-style-type: none"> <li>• The root, the body, the leafs, the flowers</li> <li>• In the ground</li> <li>• They are green</li> <li>• Red, yellow, white, purple</li> <li>• They need light, water, heat, food</li> </ul>	Child - child Child - teacher	Different kind of flowers

<p>-To communicate ideas, impressions about the things they observe</p> <p>b) Evaluation of the activity</p> <p>-To become conscious of the fact that flowers need certain conditions to develop correctly</p>		<p>-We also visit the glass-house where there were many cactuses of different sizes and forms.</p> <p>-The visit at the Botanical Garden in Galati, where the students' field of observation was large and varied, was exploited through long discussions after the return at the kindergarten.</p> <ul style="list-style-type: none"> <li>• Why are the flowers colored?</li> <li>• Why do flowers die when they ran out of water?</li> <li>• Why do some flowers have spikes?</li> <li>• Why do the leaves fall?</li> <li>• Why are the leafs of a fir tree always green?</li> </ul>	<p>-The students carefully observed the cactuses</p> <p>-To attract the insects, to receive according to their needs the warmth of the sun, some colors attract the heat, others reject it;</p> <p>-Water is highly necessary to the plant, it keeps it firm and green. If it fades, it is a sign that it did not have enough water;</p> <p>-In order to protect it from the animals;</p> <p>-It is a way of defense against the cold;</p> <p>-The leafs of a fir are always green because they are little and waxy and that prevents them from freezing. They also need very little water. These leafs change every 7 years;</p>	<p>Teacher-child Child-child</p>	
<p>ACTIVITY CONCLUSION</p>	<p>15'</p>	<ul style="list-style-type: none"> <li>• What did you love most at the Botanical Garden?</li> <li>• Draw your favorite flower!</li> </ul>	<ul style="list-style-type: none"> <li>• Each student will draw his favorite flower.</li> </ul>	<p>Child-teacher</p>	<p>-pencils -paper -markers</p>



<p>pollutants and their effects.</p> <p>-To understand why water treatment is necessary</p> <p>-To understand their responsibility to keep the water clean.</p>		<ul style="list-style-type: none"> <li>➤ At <b>Science Center</b> child task will be to analyze samples of water, using the microscope.</li> <li>➤ At the <b>Art</b> sector - children will have the task to make masks that express the happy and sad drops of water to be used in the role play from pieces of colored cardboard, pencils, watercolors, brushes, wire wool .</li> <li>➤ On the <b>Construction</b> sector: children will be in charge of making the superior part of the fountain/well.</li> </ul>	<p>water polluted by means of laboratory analyzes and record the results using signs noting stuck on the test tubes.</p> <ul style="list-style-type: none"> <li>• Children will paint the water drop masks with happy or sad mimicry, they will form-cut them, and use them as accessory in the end of the activity..</li> <li>• Children will create a miniature fountain made of agricultural waste and bottles for "clean" water storage obtained by the Science sector researchers..</li> </ul>	<p>Child-child</p> <p>Teacher-child</p> <p>Child-child</p> <p>Teacher-child</p>	<p>Water samples, test tubes, microscopes, Glass slides, tubes</p> <p>Cardboard, watercolors, brushes, pens, wool yarn</p> <p>-Agricultural waste, plastic bottles</p>
<p>III. Activity conclusion</p>		<ul style="list-style-type: none"> <li>• In the end of the activity, the Polution character will reappear and will challenge the children with nasty remarks "Hi-hi-hi, you've worked hard! But acomplished nothing, I'm still the winner, they call me Polution!"</li> <li>• Meanwhile music notes will be heard in waltz "Danube Waves", children will put on masks and will start to waltz in pairs and the Polution character will leave the classroom screaming and threatening.</li> </ul>	<ul style="list-style-type: none"> <li>• Children will make an exhibition with their work products arguing successful activity: (masks, clean water wells, the poster with "Like this yes", "Not like this").</li> <li>• Water droplets will dance around "POLLUTION" suffocating her and chasing her from the classroom.</li> </ul>	<p>Child-child</p>	<p>Masks, clean water fountain, Poster</p> <p>Costume character</p> <p>Pollution</p>

**Name of the School / Country** : Kindergarden No. 36, Brăila, Romania  
**Subject** : The Forest, Green Lung of the Earth  
**Grade Level / Age** : Preparatory Group, Pre-School/ 6-7 years old  
**Aims of the lesson** : 1. Naming animals and birds living in the forests of our country; 2. Naming activities dealing with forest maintenance and protection; 3. Listing the main benefits brought by forests

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
ACTIVITY INTRODUCTION	10'	<ul style="list-style-type: none"> <li>The introduction for the activity is done through the PowerPoint presentation "The Forest, Green Lung of the Earth".</li> <li>The teacher names the theme and the objectives for the activity</li> </ul>	<ul style="list-style-type: none"> <li>The children carefully watch the presentation</li> </ul>	Child - teacher	<ul style="list-style-type: none"> <li>- video projector</li> <li>- laptop</li> <li>- CD with the PowerPoint presentation</li> </ul>
ACTIVITY DEVELOPMENT - Naming animals and birds living in the forests of our country - Naming activities dealing with forest maintenance and protection - Listing the main benefits brought by forests	30'	<ul style="list-style-type: none"> <li>The teacher places a photo of a forest in the middle of the flipchart and asks the children to tell everything they know about forests.</li> <li>The teacher organizes the clusters in a logical manner by grouping the information in relation to 4 criteria: forest composition, benefits, life, protection needs</li> <li>A message or ecological request regarding forests is demanded from the children</li> </ul>	<ul style="list-style-type: none"> <li>The children select photos and labels with information about forests and place them around the main photo; After this, they circle them out and draw lines between them and the main photo.</li> <li>Each group of children creates drawings, posters with messages, ecological request regarding forests.</li> </ul>	Child - child Child - teacher	<ul style="list-style-type: none"> <li>-flipchart</li> <li>-photos</li> <li>-markers</li> <li>-drawing paper</li> <li>-board</li> </ul>
ACTIVITY CONCLUSION	5'	<ul style="list-style-type: none"> <li>Gauging the development of the activity</li> <li>Awarding incentives: diplomas</li> </ul>	<ul style="list-style-type: none"> <li>The children receive diplomas labelled "Little Ecologist"</li> </ul>	Child - teacher	-diplomas



**Name of the School / Country** : Kindergarden No. 36, Brăila, Romania  
**Subject** : The Rainbow. Colour Luminaires  
**Grade Level / Age** : Pre-primary group/ 6-7 years old  
**Aims of the lesson** : 1. to describe the phenomenon of the rainbow; 2. to highlight the colors of light in decomposing, as a result of experiments; 3. to perform simple experiments, following the given steps; 4. to discover the role of color in everyday; 5. to work on groups, showing relationships.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>ACTIVITY INTRODUCTION</b> - to describe the phenomenon of the rainbow;	5'	<ul style="list-style-type: none"> <li>Tells the rainbow story.</li> <li>Notice that the students will learn about the decomposition of the white light and about the formation of the rainbow, by making a few experiments, and then we will use the information obtained to work the few requirements.</li> </ul>	<ul style="list-style-type: none"> <li>The children listen to the rainbow story.</li> </ul>	Child - teacher	- video projector - laptop
<b>ACTIVITY DEVELOPMENT</b> - to highlight the colors of light in decomposing, as a result of experiments; - to perform simple experiments, following the given steps	30'	<ul style="list-style-type: none"> <li>Explains and demonstrates to the students the decomposition of white light when passing through an optical prism, this theory underpinned the formation of the rainbow.</li> <li>Coordinates the development of two experiments, by asking different questions to help children.</li> </ul>	<ul style="list-style-type: none"> <li>The students will make, with the help of my indications, some experiments. The experiments conclusions are:  <i>1. The light is considered to be white. It is made up of seven colors: red, orange, yellow, green, blue, indigo, violet.</i>   <i>2. The rainbow is a natural phenomenon, which is formed by decomposition of white light from the sun as it passes through rain drops.</i></li> </ul>	Child - child Child - teacher	Optical prism, Light source, Colored disc, Lanterns, water bowls, mirrors, white cardboard

<p style="text-align: center;">ACTIVITY CONCLUSION</p> <p>- to work on groups, showing relationships</p>	<p><b>15'</b></p>	<ul style="list-style-type: none"> <li>• The teacher shows children different materials ( as a surprise) and they can choose the group where they want to work.</li>   <li>• In the end of the activity, every child will receive a medals in the form of a rainbow.</li> </ul>	<ul style="list-style-type: none"> <li>• Divide into groups based on multiple intelligences (verbal-linguistic, visual-spatial, musical-rhythmic), children will solve several requirements:  1 – will form a quintet with the theme <b>Rainbow</b> or <b>Sun</b>, at choice;  2 – will draw a rainbow;  3 – will make a collage "Magic Rainbow";  4 – sing stanzas of songs they know about rain, rainbow, sun;</li> </ul>	<p>Child - Child</p>	<p>Worksheets</p> <p>Colors</p> <p>Glance paper</p>
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**Name of the School / Country** : Kindergarden No. 36, Brăila, Romania  
**Subject** : The Soil And Its Importance for the Nature  
**Grade Level / Age** : Preparatory Group, Pre-School/ 6-7 years old  
**Aims of the lesson** : 1. to observe and to express the characteristics of bodies in the near environment such as: shape, color, size, condition of aggregation; 2. to identify the characteristics of soil: colour, permeability, the presence of air and water; 3. to perform simple experiments to highlight the characteristics of the soil

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
ACTIVITY INTRODUCTION	10'	<ul style="list-style-type: none"> <li>You are given to realize a tree combining the numbers in ascending order with the arrows.</li> <li>➤ What image you obtain?</li> <li>➤ Where does the tree put it's roots?</li> </ul>	<ul style="list-style-type: none"> <li>They are conjugating the numbers in ascending order</li> <li>➤ <i>a tree;</i></li> <li>➤ <i>in the soil;</i></li> </ul>	Child - teacher	
ACTIVITY DEVELOPMENT  - to observe and to express the characteristics of bodies in the near environment such as: shape, color, size, condition of aggregation	40'	<ul style="list-style-type: none"> <li>Today, at the sciences of nature we are going to learn about the soil; what is the soil and which are its properties.</li> <li>Introduce the Panel material in PowerPoint format.</li> <li>I'll do three experiments and then I will demonstrate it:               <ol style="list-style-type: none"> <li>soil types;</li> <li>soil permeability;</li> <li>the presence of water in soil.</li> </ol> </li> </ul> <p><b><u>Experiment no. 1:</u></b></p> <ul style="list-style-type: none"> <li>➤ What are we testing?</li> </ul>	<ul style="list-style-type: none"> <li>They are paying attention;</li> <li>They receive the sheet experiences.</li> <li>Observe carefully and deduct.</li> <li>They are noting the conclusions.</li> <li>Each student will receive the card in which he will write comments (with the assistant help) and conclusions of the experiments;</li> </ul> <p><b><u>Experiment no. 1:</u></b></p> <ul style="list-style-type: none"> <li>➤ Soil-solid body;</li> <li>➤ Types of soil: calcareous, sandy, loamy.</li> <li>➤ The presence of air in the soil;</li> </ul>	Child - child Child - teacher	- water - soil - glass -transparent gauze - funnel -tube -card experiences

<p>- to perform simple experiments to highlight the characteristics of the soil;</p> <p>- to perform simple experiments to highlight the characteristics of the soil;</p>		<ul style="list-style-type: none"> <li>➤ What materials do we use ?</li> <li>➤ How do we work ?</li>   <li>➤ What have we discovered?</li>   <li><b><u>Experiment no. 2:</u></b> <ul style="list-style-type: none"> <li>➤ What are we testing?</li> <li>➤ What materials do we use?</li> <li>➤ How do we work?</li> <li>➤ What have we discovered?</li> </ul> </li> <li>• The third experiment is performed as the first two.</li> </ul>	<ul style="list-style-type: none"> <li>➤ a transparent glass, water, the soil.</li> <li>➤ Put the soil in glass;</li> <li>➤ Note the black color of the soil.</li> <li>➤ Fill the water over the soil.</li> <li>➤ The soil is a solid body.</li> <li>➤ Soil may be black, sandy, calcareous, loamy;</li> <li>➤ After you fill the air in the water above, the ground shall be raised to the surface in the form of bubbles.</li>   <li><b><u>Experiment no. 2:</u></b> <ul style="list-style-type: none"> <li>➤ soil permeability;</li>   <li>➤ soil from the garden, glass, glass funnel, water;</li> <li>➤ Put the soil from the garden in a glass and put some water;</li> <li>➤ Water passes through the soil of the garden;</li> <li>➤ the garden soil is permeable;</li> </ul> </li> </ul>	<p>Teacher-child Child-child</p>	<ul style="list-style-type: none"> <li>- water</li> <li>- soil</li> <li>- glass</li> <li>-transparent gauze</li> <li>- funnel</li> <li>-tube</li> <li>-card experiences</li> </ul>
<p>ACTIVITY CONCLUSION</p>	<p>5'</p>	<ul style="list-style-type: none"> <li>• Asks the children to make a poster to encourage people to protect the soil.</li> </ul>	<ul style="list-style-type: none"> <li>• The children make a big poster to encourage the people to protect the soil.</li> </ul>	<p>Child - teacher</p>	<ul style="list-style-type: none"> <li>-paper sheet</li> <li>- markers</li> <li>- crayons</li> </ul>



**S P A I N**

Colegio Virgen De La Rosa



**Name of the School / Country** : Virgen De La Rosa / Spain  
**Subject** : Four Elements: The Earth.  
**Grade Level / Age** : 1<sup>st</sup> Grade / 6 years old  
**Aims of the lesson** : Identify various natural landscapes (seaside, mountain...) and appreciate the differences between them.

LESSON STAGE AND AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTIVE PATTERN	MATERIALS/ AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>• Introduction of the lesson: information related to it</li> <li>• Observation of different landscapes on photos, internet...</li> </ul>	20'	<ul style="list-style-type: none"> <li>• Organize the students for the observation.</li> <li>• Ask questions about the different landscapes.</li> <li>• Answer questions from the students.</li> </ul>	<ul style="list-style-type: none"> <li>• Observation of the different landscapes.</li> <li>• Ask their own questions.</li> <li>• Listen to the teacher during his/her explanations</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student.</li> <li>• Student-teacher.</li> </ul>	<ul style="list-style-type: none"> <li>• Photos about different landscapes.</li> </ul>
<b>Activity</b> <ul style="list-style-type: none"> <li>• Taking pictures.</li> <li>• Exhibition.</li> <li>• Writings.</li> </ul>	40'	<ul style="list-style-type: none"> <li>• Prepare some digital cameras to take pictures from the place where the students live.</li> </ul>	<ul style="list-style-type: none"> <li>• Take pictures from the different landscapes and prepare and exhibition.</li> <li>• Get some pictures from internet and compare them with their own pictures.</li> <li>• Write down an essay about the different landscapes.</li> </ul>	<ul style="list-style-type: none"> <li>• Student-Student.</li> <li>• Student-Teacher.</li> <li>• Teacher-student.</li> </ul>	<ul style="list-style-type: none"> <li>• Digital camera, computers and internet connection.</li> </ul>
<b>Evaluation</b> Exhibition. Reading of the students' essays. Listening of the students' conclusions.	20'	<ul style="list-style-type: none"> <li>• Evaluation the exhibition.</li> <li>• Read and evaluate the students' essays.</li> </ul>	<ul style="list-style-type: none"> <li>• Share their opinions with the whole classroom.</li> <li>• Show their writings about this subject.</li> <li>• Listen to the teacher and the students.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student.</li> <li>• Student-teacher.</li> </ul>	<ul style="list-style-type: none"> <li>• Photos selected or taken by the students</li> <li>• Essays.</li> </ul>



**Name of the School / Country** : Virgen De La Rosa / Spain

**Subject** : Reptiles

**Grade Level / Age** : 2nd Grade / 7 years old

**Aims of the lesson** : 1- Understand that reptiles move, feed, grow, use their senses and reproduce. 2-Recognise the main parts of reptiles' body.

LESSON STAGE AND AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTIVE PATTERN	MATERIALS/AIDS
<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Introduction of the lesson: information related to it</li> <li>• Observation of different reptiles: a tortoise, crocodile, lizard and snake.</li> </ul>	30'	<ul style="list-style-type: none"> <li>• Organize the students for observation of different reptiles.</li> <li>• Explanation about their physical appearance, about their feeding, reproduction...</li> <li>• Answer questions from the students.</li> </ul>	<ul style="list-style-type: none"> <li>• Observation of these animals.</li> <li>• Investigation about reptiles. .</li> <li>• Ask their own questions.</li> <li>• Listen to the teacher during his/her explanations</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student.</li> </ul>	<ul style="list-style-type: none"> <li>• Reptiles.</li> <li>• Books.</li> <li>• Internet.</li> </ul>
<p><b>Activity</b></p> <ul style="list-style-type: none"> <li>• Sharing information about reptiles.</li> <li>• Sharing the results of the experiments.</li> </ul>	30'		<ul style="list-style-type: none"> <li>• Organize all the information about these animals.</li> <li>• Share their conclusions with the rest of the students.</li> <li>• Write down the conclusions.</li> </ul>	<ul style="list-style-type: none"> <li>• Student-Student.</li> <li>• Student-Teacher.</li> <li>• Teacher-student.</li> </ul>	<ul style="list-style-type: none"> <li>• Notebooks.</li> </ul>
<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Exhibition of photos.</li> <li>• Exhibition of writings.</li> </ul>	20'	<ul style="list-style-type: none"> <li>• Prepare an exhibition with all the photos obtained during the observation.</li> <li>• Prepare an exhibition with all the writings made by the students about these animals.</li> </ul>	<ul style="list-style-type: none"> <li>• Share their conclusions with the whole classroom.</li> <li>• Listen to the teacher and the students.</li> <li>• Show their writings about this subject.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student.</li> <li>• Student-teacher</li> </ul>	

**Name of the School / Country** : Virgen De La Rosa / Spain

**Subject** : Plants

**Grade Level / Age** : 3rd Grade / 8 years old

**Aims of the Lesson** : 1-Recognise the main parts of a flowering plant. 2-Understand the importance of soil, sunlight and water for plants.

<b>LESSON STAGE AND AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTIVE PATTERN</b>	<b>MATERIALS/ AIDS</b>
<b>Introduction</b> <ul style="list-style-type: none"><li>• Introduction of the lesson: information related to it</li><li>• Observation of different plants.</li></ul>	30'	<ul style="list-style-type: none"><li>• Organize the students for observation of different kinds of plants.</li><li>• Prepare experiments with plants, sunlight and water.</li><li>• Answer questions from the students.</li></ul>	<ul style="list-style-type: none"><li>• Observation of the parts of the plants.</li><li>• Plant some beans in flowerpots .</li><li>• Ask their own questions.</li><li>• Listen to the teacher during his/her explanations</li></ul>	<ul style="list-style-type: none"><li>• Teacher-student.</li></ul>	<ul style="list-style-type: none"><li>• Plants.</li><li>• Flowerpots, beans, sunlight, soil and water.</li></ul>
<b>Activity</b> <ul style="list-style-type: none"><li>• Sharing information about the parts of a plant.</li><li>• Sharing the results of the experiments.</li></ul>	30'		<ul style="list-style-type: none"><li>• Organize obtained data about the parts of a plant and about the importance of water and sunlight for them, after their observations and after the experiments.</li><li>• Share their conclusions with the rest of the students.</li><li>• Write down the conclusions.</li></ul>	<ul style="list-style-type: none"><li>• Student-Student.</li><li>• Student-Teacher.</li><li>• Teacher-student.</li></ul>	<ul style="list-style-type: none"><li>• Flowerpots with beans.</li></ul>

<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Exhibition of the experiments with flowerpots.</li> <li>• Evaluate obtained data about the parts of a plant and about the experiments.</li> </ul>	<p><b>20'</b></p>	<ul style="list-style-type: none"> <li>• Prepare an exhibition with all the flowerplants in order to share this experience with the rest of the students in the school.</li> <li>• Give summary information.</li> </ul>	<ul style="list-style-type: none"> <li>• Share their conclusions with the whole classroom.</li> <li>• Listen to the teacher and the students.</li> <li>• Show their writings about this subject.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student.</li> <li>• Student-teacher.</li> </ul>	
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**Name of the School / Country** : Virgen De La Rosa / Spain  
**Subject** : The Four Elements : Water.  
**Grade Level / Age** : 3rd Grade (8 years old)  
**Aims of the Lesson** : 1. Understand the water cycle and the processes involved in it.  
 2. Learn about the importance of the water cycle.

LESSON STAGE AND AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTIVE PATTERN	MATERIALS/ AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>• Introduction to the topic of the unit: “The water cycle”.</li> <li>• Observation of a presentation about the water-cycle.</li> </ul>	30’	<ul style="list-style-type: none"> <li>• Introduce the topic to the students showing pictures and diagrams.</li> <li>• Prepare materials and experiments which lead to direct observation of the processes involved in the water cycle and the different states of the element.</li> <li>• Answer questions from the students.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the parts of the cycle of water.</li> <li>• Learn about the physical processes involved in the water cycle.</li> <li>• Ask their questions.</li> <li>• Listen to the teacher during his/her explanations</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student.</li> <li>• Student-teacher.</li> </ul>	<ul style="list-style-type: none"> <li>• Power point intro.</li> <li>• Diagrams and pictures.</li> </ul>
<b>Activity</b> <ul style="list-style-type: none"> <li>• Experiment about the processes which cause the water cycle: Evaporation, condensation, fusion and solidification.</li> </ul>	30’	<ul style="list-style-type: none"> <li>• Prepare experiments to show the physical changes water experiments separately, as individual processes which make the water cycle to happen.</li> </ul>	<ul style="list-style-type: none"> <li>• Carry on different experiments with water.</li> <li>• Organize obtained data about the characteristics of water, after the experiments.</li> <li>• Share their conclusions with the rest of the class.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-Student.</li> <li>• Student-Teacher.</li> <li>• Student-student.</li> </ul>	<ul style="list-style-type: none"> <li>• Water, glasses, fridge, heating system.</li> </ul>

<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Exhibition of the results.</li> <li>• Evaluate obtained data from the simple experiments realised with water.</li> </ul>	<p>20'</p>	<ul style="list-style-type: none"> <li>• Collect data from the experiments' observation made by the students.</li> <li>• Correct possible mistakes caused by a misinterpretation of the experiments.</li> </ul>	<ul style="list-style-type: none"> <li>• Share their observations and their data to the rest of the class.</li> <li>• Listen to the teacher and the students.</li> </ul>	<ul style="list-style-type: none"> <li>• Student-teacher</li> <li>• Teacher-student.</li> </ul>	
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**Name of the School / Country** : Virgen De La Rosa / Spain  
**Subject** : The Four Elements: Water  
**Grade Level / Age** : 3rd Grade (8 years old)  
**Aims of the Lesson** : 1. Realize the importance of water for our way of life. 2. Experiment with the water cycle.  
3. Appreciate the importance of water in our lives.

LESSON STAGE AND AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTIVE PATTERN	MATERIALS/AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>Remembering about the previous session, quickly showing the diagrams, the theory and the result of previous class experiments.</li> </ul>	15'	<ul style="list-style-type: none"> <li>Prepare the experiment putting the students into context.</li> <li>Notice the importance of water as a limited resource on Earth and give recommendation about things we can do to do not waste water.</li> </ul>	<ul style="list-style-type: none"> <li>Ask their questions.</li> <li>Listen to the teacher during his/her explanations</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-student.</li> <li>Student- teacher.</li> </ul>	<ul style="list-style-type: none"> <li>Diagrams and pictures.</li> </ul>
<b>Activity</b> <ul style="list-style-type: none"> <li>The whole class elaborates a poster about tips which help us to save water.</li> </ul>	30'	<ul style="list-style-type: none"> <li>Give instructions for the elaboration of a poster which illustrates the tips for saving water.</li> </ul>	<ul style="list-style-type: none"> <li>Think about ways of saving water.</li> <li>Write down the observations and collect photos and drawings which illustrate the poster.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-Student.</li> <li>Student-Teacher.</li> <li>Student-student.</li> </ul>	<ul style="list-style-type: none"> <li>Pictures, magazines, scissors, pencils and glue.</li> </ul>

<p><b>Activity</b></p> <ul style="list-style-type: none"> <li>• Elaboration of models in which we can observe the water cycle directly.</li> <li>• Recreate the water cycle using GCompris.</li> </ul>	<p><b>20'</b></p> <p><b>15'</b></p>	<ul style="list-style-type: none"> <li>• Give instructions for the students to carry on the experiment. Results will be observed and evaluated in the forthcoming days.</li> <li>• Use Linux and GCompris to interact with process of the water cycle</li> </ul>	<ul style="list-style-type: none"> <li>• Elaborate a model within a glass jar in which they can observe the water cycle.</li> <li>• Collect and share data from the experiment.</li> <li>• Experiment and observe the water cycle using computers.</li> </ul>	<ul style="list-style-type: none"> <li>• Student-teacher</li> <li>• Teacher-student.</li> <li>• Student – Student.</li> <li>• Teacher- Student-Student – Computer.</li> </ul>	<ul style="list-style-type: none"> <li>• Glass Jar, soil, rocks, seeds, some water, a small recipient.</li> <li>• The Sun.</li> <li>• A computer running Linux and GCompris installed into it.</li> </ul>

**Name of the School / Country** : Virgen De La Rosa / Spain  
**Subject** : Materials  
**Grade Level / Age** : 4nd Grade / 9 years old  
**Aims of the lesson** : 1-Recognise common types of materials: metal, plastic, wood, paper, rock. 2-Recognise that some materials are found naturally.

LESSON STAGE AND AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTIVE PATTERN	MATERIALS/ AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>• Introduction of the lesson: information related to materials.</li> <li>• Recognise the difference between a natural material and artificial one.</li> </ul>	30'	<ul style="list-style-type: none"> <li>• Organize the students for the investigation of materials such as metal, plastic, wood, paper, rock.</li> <li>• Answer questions from the students.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigation.</li> <li>• Students have to find some of these materials and share them with the rest of the students in class to be observed.</li> <li>• Ask their own questions.</li> <li>• Listen to the teacher during his/her explanations</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student.</li> </ul>	<ul style="list-style-type: none"> <li>• Materials, such as metal, plastic, wood, paper, rocks.</li> <li>• Books.</li> <li>• Internet.</li> </ul>
<b>Activity</b> <ul style="list-style-type: none"> <li>• Sharing information about material.</li> <li>• Sharing the results in a chart.</li> </ul>	30'		<ul style="list-style-type: none"> <li>• Organize all the information about these materials.</li> <li>• Share their conclusions with the rest of the students.</li> <li>• Write down the conclusions.</li> </ul>	<ul style="list-style-type: none"> <li>• Student-Student.</li> <li>• Student-Teacher.</li> <li>• Teacher-student.</li> </ul>	<ul style="list-style-type: none"> <li>• Notebooks.</li> </ul>
<b>Evaluation</b> <ul style="list-style-type: none"> <li>• Exhibition of these materials.</li> <li>• Exhibition of the chart.</li> </ul>	20'	<ul style="list-style-type: none"> <li>• Prepare an exhibition with all the materials.</li> <li>• Prepare an exhibition with all the writings made by the students about these materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Share their conclusions with the whole classroom.</li> <li>• Listen to the teacher and the students.</li> <li>• Show their writings about this subject.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student.</li> <li>• Student-teacher.</li> </ul>	





**S W E D E N**

Jurslaskolan



**Name of the School/Country**

: Jurslaskolan Sweden

**Subject**

: PE/Mathematics/Food Cooking

**Grade Level**

: Year 4-5

**Aims of the Lesson**

: The pupils will develop their ability to handle the outdoor surroundings during the different seasons. They will develop their ability to orient in the surroundings nature with help of maps. The pupils will learn how to play and do other physical exercises in various environments out-door.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS/AIDS
*Orienteering	20 min	Hand out the maps.	<b>Read this loud to the group!</b> Hello! You are going to work in this group until lunchtime. Your group number is _____. Walk to the marked spot on the map. You will find a pouch with the same number as your group. The pouch is the center of your camp-site. <b>Don't move it!!! Read the instructions you find in the pouch.</b>	The pupils work in groups.	*A map and instructions *Ingredients for the bread. *Firewood and matches *An axe, a saw and rope.
*Mathematics: Estimate and measure the camp.	20 min	Mark where the camps are supposed to be.			
*Make a fire	30 min	Hand out firewood and matches.			
*Mix a dough for the bread (pinnbröd) and bake it over the fire. *Begin to build a windshield.	30 min	Hand out ingredients and bowls.			
*Name the group and write a song.	40 min	Hand out tools and rope.	*The bag is the centre of your camp-site. Measure ten metres from the bag in every direction. Mark the borders of your camp-site with branches, rocks or other suitable materials. Now you can move the pouch. *Name your group. *Find a suitable place for making a fire in your camp-site. *Light a fire and make a dough for the bread (pinnbröd). The recipe can be found below. Carve sticks, put the dough around them and bake them over the fire.		
	20 min				

		<p>If you walk to the teachers camp-site you will get butter for your bread.</p> <p>*Build a windshield in your camp-site. Try to make it as cosy as possible. <b>Do not break branches from trees!</b></p> <p>*Write a song or rhyme about your group.</p> <p><b>Recipe "Pinnbröd"</b></p> <p>5 dl wheat flour</p> <p>2 tsk <u>baking powder</u></p> <p>1 tsk <u>salt</u></p> <p>2 dl water, cold</p> <p>12 st Sticks, about 50 cm long</p> <ol style="list-style-type: none"> <li>1. Mix flour, baking powder and salt in a bowl.</li> <li>2. Stir down the water and mix until you have a dough.</li> <li>3. Divide the dough into 10 parts at the fireplace. Roll the dough between your hands to long sausages and put the dough around the sticks.</li> <li>4. Bake the bread over the fire in about 15 minutes.</li> </ol> <p>When the bread easily comes off the stick it is finished. Eat the bread with some butter.</p>		
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**Name of the School / Country** : Jurslaskolan, Sweden

**Subject** : Chemistry - Air

**Grade Level** : 5

**Aims of the lesson** : The pupils will develop their ability to do systematic studies in chemistry.  
The pupils will develop their ability to use concepts, models and theories of chemistry to describe and explain connections of chemistry in society, nature and human. The composition and characteristics of air.

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
Introduction.	<b>20 min</b>	Discussion with the class. How do we know that air exists? What does air consist of? How can we “see” air?	Questions and ideas. Discussion	thewhole class	paper, pencils
<ul style="list-style-type: none"><li>You will learn to do a hypothesis, do an experiment, and draw a conclusion. You will also connect your conclusions to science</li><li>Experiment 1. Air pressure – How do we know that air exist?</li><li>2-4. air pressure</li></ul>	<b>60 min</b>	Prepare four stations where the students can make the activities.  Prepare the bottles in experiment 4, make holes in the bottom of one of the plastic bottles.	Experiment 1. A plastic bottle with a balloon stitched to the top. How can you inflate the balloon with air without taking it off? 2. Fill a glass with water. Place a bit of paper over the glass. Hold your hand against the paper and turn the glass upside down. What happens when you remove you hand? 3. Fill a plastic bag/balloon with water. Hold the bag/balloon in the air and stitch a sharp pencil straight through the bag. What happens? why? 4. Use a plastic bottle with a balloon over the top. Try to inflate the balloon with air, in the bottle. Two different bottles. Write down a hypothesis, thoughts, and conclusion.	work together in pairs	balloons, plastic bags, sharp pencil, plastic bottle, Plastic bottle with hole in bottom. paper and pencil
Daily use of air in machines	<b>30 min</b>	Give the students materials.	read about how to use air with in machines, compressed air, aircrafts	alone	paper, pencil

Summary of experiments	<b>20 min</b>	Discussion in class. What did you experienced? What happened at the experiments? How did you do? Talk how things happens and why.	Tell about their experiences, hypothesis, conclusions.	the whole class	

**Name of the School / Country** : Jurslaskolan Sweden  
**Subject** : Nature science - Water  
**Grade Level** : 3  
**Aims of the Lesson** : The pupils will develop their ability to do systematic studies in chemistry.  
The pupils will develop their ability to use concepts, models and theories of chemistry to describe and explain connections of chemistry in society, nature and human.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<ul style="list-style-type: none"> <li>You will learn the different shapes of water.</li> <li>You will learn to do a hypothesis, do an experiment, and draw a conclusion. You will also connect your conclusions to science</li> </ul>		<p>Before the lesson fill a balloon with water and put in the freezer. Next day take it out and cut of the balloon. Now it looks like a big frozen egg.</p> <p>Take the “egg” to the pupils and ask them what it is. What does it smell like? Which colour is it? How does it feel? What does it taste like?</p>	<p>Let the pupils make a hypotheses of what they think is going to happen when you leave the “ ice egg” in the classroom. What will happen after it melts down? Will the water still be there after a month?</p> <p>Look at the ice egg after a day, a week and a month. What has happened. Write down the results and talk about why the ice melts and why i evaporates.</p>	The whole class	Balloon Water Freezer
		<p>1. Ask the pupils how they get ice. What will happen if you fill a cup with water and put it in the freezer? Will the surface be the same? Will it be lower or higher?</p> <p>2. Tell the pupils about what happens with the molecules then you freeze water. Draw conclusions from the experiment and link to science.</p>	<p>Each group fills a cup with water and draws a line on the cup where the surface is now. Let the pupils write hypotheses about what they think will happen.</p> <p>Put the cups in the freezer and look at them the next day. What happened with the surface? Did the cup break?</p>	Groups with 3 or 4 pupils	Cups Water Freezer



		<p>Ask the pupils how they get steam.</p> <p>What happens with water when you heat it? Tell the pupils about the molecules when you steam water.</p> <p>Draw conclusions of the experiment and link them to science. Let the pupils draw and write about the lesson.</p>	<p>Let the pupils write a hypothesis. If possible let them try their hypotheses on their own or do it together with the pupils. Did their hypotheses worked? The pupils have to write down their results.</p>	<p>The whole class Individual or small groups.</p>	<p>Water Stove Kettle Pot Other things the pupils need</p>
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**Name of the School/Country** : Jurslaskolan Sweden  
**Subject** : From Seed to Seed  
**Grade Level** : Age 9-11  
**Aims of the lesson** : Implement systematic observations in biology. Use concepts of biology, models and theories to describe and explain biological relations in nature.

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS/AIDS</b>
See how a flower is built.	60 minutes	Explain for the pupils what to do. Help them.	Follow the instructions.	Teacher-Pupil	Papers in different colours, scissors, staples, glue, tape, paperbinders, models (on the teachers CD).

**Name of the School/Country** : Jurslaskolan Sweden  
**Subject** : Changes in Nature  
**Grade Level** : Age 7-9  
**Aims of the lesson** : Implement systematic observations in biology. Use concepts of biology, models and theories to describe and explain biological relations in the human body, nature and society.

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
What happens in nature during the different seasons? Aim: The pupil describes the changes in nature and gives examples of lifecycles of some animals and plants. The pupils describes and gives examples of simple relations in nature through experiences and observations of the local environment.	10 minutes	Set the problems for the pupils. Show the aim of the lesson.	Listen carefully. Ask questions.	Teacher-Pupil	
Excursion: Mark an area with a tree on it.	40 minutes	The teacher encourages the pupils to explore the area.	Explore the area in groups. Write down your observations.	Pupil-Pupil	Magnifier, pencil, paper, flora.
Make a mindmap about the observations Theory.	20 minutes	The teacher makes a mindmap on the whiteboard. Teaches about theory for example why the leaves falls from the trees.	The pupils shares their discoveries.	Pupil-Teacher	
Documentation	30 minutes	The teacher supports the pupils. The teacher collect the sheets.	Make a sheet with facts about their observations.	Individual work.	Drawing paper, colour pencils

Conclusions		The teacher leads the discussion about changes in nature during the different seasons.	When the students have observed the different seasons they compare their documentation sheets and discuss similarities and differences.		
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**Name of the School/Country** : Jurslaskolan Sweden  
**Subject** : Introduction to Photosynthesis  
**Grade Level** : Grade 5 and 6

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS/AIDS</b>
Get to know what the students know about the photosynthesis on their own.(next page)	15 min	Give instructions on what to do. - Write down how the seed has become a tree. - - What does the seed need?	Writing their thoughts and maybe draw a picture of it.	individual	Picture of a tree. Paper Pencil
Discussion about what is written.	15 min	-	in pairs compare what they have written. Explain to each other.	pupil - pupil	-
Discussion in class	15 min	Talk with pupils about their thoughts and writing.	Tells what they have written, listen to their friends.	teacher – pupil pupil – teacher pupil - pupil	-
Conclusions and summary with pictures.	15 min	Summery of photosynthesis and show detailed pictures of a leaf.	Listen and take notes. Compare with their notes.	teacher - pupil	ppt – pictures

**TURKEY**

İDV Özel Bilkent  
Primary School



**Name of the School / Country** : İDV Özel Bilkent Primary School / Turkey  
**Subject** : Zoo Trip  
**Grade Level / Age** : 6<sup>th</sup> Grade / 12 years old  
**Aims of the Lesson** : **1-** To observe habitats and behaviors of animals **2-** To categorize animals according to their reproduction, feeding and caring of their offspring **3-** To improve thinking and working as a group.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>Chapter on reproduction types of animals are read from textbook and evaluated through questions.</li> <li>Pages 23-24 of student workbook are to be solved in class.</li> <li>Teacher gives brief information about field trip.</li> </ul>	10'	Teacher, <ul style="list-style-type: none"> <li>Gives necessary information about field trip beforehand.</li> <li>Asks students whether they have any questions regarding field trip and answers them.</li> <li>Gives information about their task cards.</li> <li>Announces the groups determined beforehand and distributes task cards.</li> </ul>	Students, <ul style="list-style-type: none"> <li>Listen to the rules and ask clarification questions.</li> <li>Get together with friends in the same group and act in unity during the trip.</li> <li>Wear task cards on them during the trip.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-Student</li> <li>Student-student</li> </ul>	Text book Work book Task cards
<b>Activity</b> <ul style="list-style-type: none"> <li>Visit the zoo acting as individual professionals assigned to them</li> <li>Document information together with</li> </ul>	60'		<ul style="list-style-type: none"> <li>Follow the route planned by teacher and observe animals.</li> <li>Find clues about animals' habitats, feeding and reproduction types and take notes.</li> <li>Share observations with group members and ask their opinions.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-student</li> <li>Student-student</li> </ul>	Zoo Paper-pencil



groupmates.					
<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Create new zoo plans with their group</li> <li>• Characteristics of animals activity</li> <li>• Group works</li> </ul>	40'	<p>(There is a picnic area in the zoo in Ankara. After the trip, evaluation part is done in this area.)</p> <ul style="list-style-type: none"> <li>• Get students together and explain the procedures they need to follow during evaluation process.</li> <li>• Directs each group to locate at assigned tables.</li> <li>• Distributes prepared activity sheets and colored pencils to the tables.</li> <li>• Directs students initially to fill individual activity.</li> <li>• Directs students to start group activity after 20 minutes.</li> <li>• Gives brief information about the procedures of group activity.</li> <li>• Observes students during the activity and help them as necessary and answer their questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Locate the tables as a group.</li> <li>• Settle down on the tables.</li> <li>• Fill the activity sheet, answer the questions.</li> <li>• Create a zoo plan as a group and include their solutions to the problems they observed.</li> <li>• Share their solutions and finish activity together with friends.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	<p>Activity sheet</p> <p>Suitable area for group work</p>

**Name of the School / Country** : İDV Bilkent Primary School / Turkey  
**Subject** : Animal & Plant Cell  
**Grade Level / Age** : 6th Grade / 12 years old  
**Aims of the Lesson** : 1- Explain basic structures of animal and plant cell and their functions by using models 2- Compare animal cell and plant cell according to their similarities and differences 3- Improve thinking together skills (sharing ideas / making peer evaluation)

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Introduction of activity and giving instruction related to it.</li> <li>• Checking research is made by students as an homework about animal and plant cell (<i>This part of a plan could be made in the class by using many kinds of resources but time should be replanned as needed</i>)</li> </ul>	<p>10'</p>	<ul style="list-style-type: none"> <li>• Introduce the cell model activity with aims and steps of the process to the students.</li> <li>• Give directions to the students how they organize their gathering data about cells before sharing them with classmates.</li> <li>• Organize class phsical environment for individual cell modelling work by giving directions and some essential materials (colored paper, scicors, glues and paints etc.).</li> <li>• Answer questions which is coming from students about activity / cell structures and functions, if there is.</li> </ul>	<ul style="list-style-type: none"> <li>• Listen to the teacher during her explanations about cell modelling activity</li> <li>• Organize obtained data about animal and plant cell before sharing them with classmates</li> <li>• Choose their materials for making cell model and organize them activity time</li> <li>• Ask their own questions about activity / cell structure and function, if there is.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-Student</li> </ul>	<ul style="list-style-type: none"> <li>• Instruction ppt of cell modelling activity</li> </ul>

<p><b>Activity</b></p> <ul style="list-style-type: none"> <li>• Sharing gathered information of animal and plant cell</li> <li>• Preparing cell models with their organelles by using simple materials</li> </ul>	<p><b>30'</b></p>	<ul style="list-style-type: none"> <li>• Prepare a suitable environment (computer for power point presentations etc.) for sharing informations about cells among students</li> <li>• Give a needed time for students to make their own cell model by using simple materials</li> </ul>	<ul style="list-style-type: none"> <li>• Share their own finding about cell types and their structures with classmates voluntarily in a 2 minutes.</li> <li>• Listen students who make presentation about cells</li> <li>• Make their own cell model by using simple materials in 20 minutes.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Simple materials (Button, rope pasta, beans, jelly, box, plastic containers etc.)</li> </ul>
<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Exhibition of cell models</li> <li>• Observing other cell models in the hall</li> <li>• Comparing animal and plant cells through models</li> <li>• Evaluate cell models by using peer assessment paper</li> </ul>	<p><b>40'</b></p>	<ul style="list-style-type: none"> <li>• Give directions for visiting classmates desk and evaluate their cell model</li> <li>• Monitor all class during evaluation models</li> <li>• Separate the students in to small groups</li> <li>• Ask conclusions of peer assessment and give summary information about cell models and evaluations.</li> </ul>	<ul style="list-style-type: none"> <li>• Choose 3 classmate for observing cell model and making evaluation by using prepared forms.</li> <li>• Ask questions to classmates about their cell models and compare their models with his / her own modelling.</li> <li>• Share ideas about peer assessment of cell models</li> <li>• Listen teacher, students and give their own ideas.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	<ul style="list-style-type: none"> <li>• Peer evaluation form</li> </ul>

**Name of the School / Country** : İDV Özel Bilkent Primary School / Turkey

**Subject** : Growth and Development in Animals and Plants

**Grade Level / Age** : 6th Grade / 12 years old

**Aims of the Lesson** : **1-**To explain that animals and plants have a life cycle using examples. **2-**To associate importance of air, soil and water in the life cycles of animals and plants.

<b>LESSON STAGE &amp; AIM</b>	<b>TIME</b>	<b>TEACHER ACTIVITIES</b>	<b>STUDENT ACTIVITIES</b>	<b>INTERACTION PATTERN</b>	<b>MATERIALS / AIDS</b>
<b>Introduction</b> <ul style="list-style-type: none"><li>• Students are introduced to the task</li><li>• Students are informed that they can choose what they need to prepare such as essay, poster, magazine, puzzle etc.</li></ul>	20'	Teacher, <ul style="list-style-type: none"><li>• Explains the objectives of the task</li><li>• Gives some examples regarding to the tasks</li><li>• Summarizes the life cycles while asking questions</li><li>• Directs the students to choose a subject and make a research about it.</li></ul>	Students, <ul style="list-style-type: none"><li>• Ask clarification questions</li><li>• Take notes</li><li>• Choose what they want to prepare</li><li>• Answer the questions</li><li>• Start the research and choose a subject</li></ul>	<ul style="list-style-type: none"><li>• Teacher-Student</li><li>• Student-student</li></ul>	<ul style="list-style-type: none"><li>• Task introduction sheet</li></ul>
<b>Activity</b> <ul style="list-style-type: none"><li>• Plan schedule for the next two lesson period.</li><li>• Students are informed about the rubric</li></ul>	20'	<ul style="list-style-type: none"><li>• Takes students to library</li><li>• Gives advises about their works</li><li>• Directs students to use libraries materials and make deeper research</li></ul>	<ul style="list-style-type: none"><li>• Make research in the library</li><li>• Ask questions about the rubric</li><li>• Prepare a plan according to the length of the work.</li></ul>	<ul style="list-style-type: none"><li>• Teacher-student</li></ul>	<ul style="list-style-type: none"><li>• Task introduction sheet</li><li>• Students' researches</li><li>• Rubric</li></ul>

<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Tasks are prepared and handed to the teacher.</li> <li>• Students prepare a presentation to share their tasks.</li> <li>• The tasks are presented in class.</li> </ul>	<p>40'</p>	<ul style="list-style-type: none"> <li>• Collects the tasks and evaluates them according to the below criteria: <ul style="list-style-type: none"> <li>▪ Cover( Name of the task, name of the student, class, number )</li> <li>▪ Contents</li> <li>▪ Inquiry process</li> <li>▪ Cause-result relation</li> <li>▪ Product</li> </ul> </li> <li>• Leads the students to present their work and modifies the classroom environment accordingly.</li> <li>• Gives feedbacks to students.</li> </ul>	<ul style="list-style-type: none"> <li>• Hand in the experiment report to the teacher.</li> <li>• According to teacher's feedback make necessary corrections.</li> <li>• Make preparations for presentation.</li> <li>• Share the experiment with classmates.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	<ul style="list-style-type: none"> <li>• Necessary equipments for the presentation</li> </ul>
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**Name of the School / Country** : İDV Özel Bilkent Primary School / Turkey

**Subject** : Germination

**Grade Level / Age** : 6th Grade / 12 years old

**Aims of the Lesson** : 1- To learn the necessary conditions for germination of seed. 2- Observe one of the factors that affect the germination of seed or development of the plant by experiment. 3- To polish presenting up their work.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> <ul style="list-style-type: none"><li>Chapter on germination in the textbook is read.</li><li>Instructions about the worksheet are given.</li></ul>	20'	<p>Teacher,</p> <ul style="list-style-type: none"><li>Directs students to open germination chapter in their textbook.</li><li>Asks questions regarding the required conditions for germination (takes notes on the board).</li><li>Creates a discussion environment about the germination conditions.</li><li>Distributes experiment worksheets to the students and gives instructions.</li><li>Asks students to plan an experiment for the following week.</li></ul>	<p>Students,</p> <ul style="list-style-type: none"><li>Follow the related chapter in the textbook while listening.</li><li>Take notes from the board.</li><li>Answer the teachers' questions.</li><li>Examine the experiment sheets and ask questions.</li></ul>	<ul style="list-style-type: none"><li>Teacher-Student</li><li>Student-student</li></ul>	<ul style="list-style-type: none"><li>Text book</li><li>Worksheet</li></ul>
<b>Activity</b> <ul style="list-style-type: none"><li>Plan the schedule for the three weeks experiment period.</li></ul>	20'	<ul style="list-style-type: none"><li>Analyzes the students' experiment plans in the next week.</li><li>Gives advises to students who lack in their experiment plans.</li></ul>	<ul style="list-style-type: none"><li>Revise the plan for germination experiment.</li><li>Ask help from teacher if needed.</li><li>Prepare a plan according to the length of the work.</li></ul>	<ul style="list-style-type: none"><li>Teacher-student</li></ul>	Paper-pencil

<ul style="list-style-type: none"> <li>• Students learn when and where to be careful during the experiment period.</li> </ul>		<ul style="list-style-type: none"> <li>• Reminds students that experiment period is the following three weeks.</li> <li>• Writes the content of the report which they have to prepare after completing the experiment.</li> </ul>	<ul style="list-style-type: none"> <li>• Take notes on what to prepare for experiment report.</li> </ul>		
<p style="text-align: center;"><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Experiment report is prepared and handed to the teacher.</li> <li>• Students prepare a presentation to share their experiment results with their classmates.</li> </ul>	40'	<ul style="list-style-type: none"> <li>• Collects experiment reports and evaluates them according to the below criteria: <ul style="list-style-type: none"> <li>▪ Cover (Name of the experiment, name of the student, class, number)</li> <li>▪ Contents</li> <li>▪ Hypothesis</li> <li>▪ Materials</li> <li>▪ Procedures of experiment</li> <li>▪ Observations and evidences of them (photograph etc.)</li> <li>▪ Result and evaluation (tables and graphs)</li> </ul> </li> <li>• Leads the students to present their work and modify the classroom environment accordingly.</li> <li>• Give feedbacks to students.</li> </ul>	<ul style="list-style-type: none"> <li>• Hand in the experiment report to the teacher.</li> <li>• Make necessary corrections according to teacher's feedback.</li> <li>• Make preparations for presentation.</li> <li>• Share the experiment results with classmates.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	<ul style="list-style-type: none"> <li>• Necessary equipments for the presentation</li> </ul>

**Name of the School / Country** : İDV Özel Bilkent Primary School / Turkey  
**Subject** : Instructions to Use Flip Flash Page Program  
**Grade Level / Age** : 6th Grade / 12 years old  
**Aims of the lesson** : **1-** To be knowledgeable about the usage of Flip Flash Page program **2-** To be able to use previous knowledge about visual design principles in order to prepare an e-book **3-** Create a product to associate the technical knowledge that they learned from ICT lesson with knowledge from Science and Technology lesson.

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
Create awareness about the subject before starting the lesson	10'	Teacher, <ul style="list-style-type: none"> <li>Shows good and poor examples by using Flip Flash Page</li> <li>Asks students which examples they like better and directs the students to explain the reasons</li> <li>Shows some good example pages</li> </ul>	Students, <ul style="list-style-type: none"> <li>Watch presented visuals and comment on them</li> <li>Start to form an e-book they will prepare</li> </ul>	Teacher – Student  Student - Student	Smart board  Projection  Computer
Equip students with skills to use Flip Flash Page Program for preparing an e-book.	30'	<ul style="list-style-type: none"> <li>Gives opportunity to students to discover the Flip Flash Page Program as pairs.</li> <li>After determining students' needs, teaches subject accordingly.</li> <li>Creates discussion with students about the types of e-books that can be prepared on the science subject “Plants and Animals”</li> </ul>	<ul style="list-style-type: none"> <li>Understand the key functions of Flip Flash Page Program</li> <li>Start to use e-book creation techniques.</li> <li>Make connections with science lesson.</li> <li>According to the discussion results, students start to work on their e-books.</li> </ul>	Teacher – Student  Student - Student	Smart board  Projection  Computer



<p><b>Evaluation</b></p> <p>Students share their e-books which they prepared according to the principles text usage, visual hierarchy, color, balance, unity, text type etc and evaluate each other</p>	<p>40'</p>	<ul style="list-style-type: none"> <li>• Distributes a form includes learning objectives and make them evaluate each other.</li> <li>• Reminds students that they will continue on their e-book preparation next lesson.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate their learning in this lesson.</li> <li>• Organize contents of e-books.</li> </ul>	<p>Teacher – Student</p> <p>Student – Student</p>	<p>Smart board</p> <p>Projection</p> <p>Computer</p>
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**Name of the School / Country** : İDV Bilkent Primary School / Turkey  
**Subject** : Earth Layers  
**Grade Level / Age** : 7 Th Grade / 13 years old  
**Aims of the lesson** : 1- Explain earth layers 2- Make model of earth layers  
 3- Compare models according to their similarities and differences

LESSON STAGE & AIM	TIME	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS / AIDS
<b>Introduction</b> <ul style="list-style-type: none"> <li>Introduction of activity and giving instructions.</li> </ul>	10'	Teacher, <ul style="list-style-type: none"> <li>Introduces students to the earth layers activity with aims and steps of the process.</li> <li>Gives directions to the students on how to organize data gathering about layers before sharing them with classmates.</li> </ul>	Students, <ul style="list-style-type: none"> <li>Listen to the teacher during the explanations about earth layers modeling activity</li> <li>Organize gathered data about layers before sharing them with classmates</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-Student</li> </ul>	<ul style="list-style-type: none"> <li>Ppt</li> </ul>
<b>Activity</b> <ul style="list-style-type: none"> <li>Sharing of gathered information of earth layers</li> <li>Preparing layers models by using simple materials</li> </ul>	30'	<ul style="list-style-type: none"> <li>Shows a video about layers and gives some questions for the students to answer.</li> <li>Takes the students to the library for researching and answering some questions.</li> <li>Answers students' questions about activity /earth layers and functions, if there is.</li> <li>Prepares a suitable environment (computer for power point presentations etc.) for information sharing about layers.</li> </ul>	<ul style="list-style-type: none"> <li>Share their own findings about earth layers and their structures with classmates voluntarily in 2 minutes.</li> <li>Listen classmates who make presentation about earth layers</li> <li>Make their own model by using simple materials in 20 minutes.</li> </ul>	<ul style="list-style-type: none"> <li>Teacher-student</li> <li>Student-student</li> </ul>	<ul style="list-style-type: none"> <li>Computer</li> <li>Simple materials (such as play dough, button, rope, colored cartons, beans, jelly, box, plastic containers etc.)</li> </ul>

		<ul style="list-style-type: none"> <li>• Allows adequate time to students to make their own earth layers model by using simple materials</li> </ul>			
<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Exhibition of models</li> <li>• Observing other models</li> <li>• Comparing models</li> </ul>	40'	<ul style="list-style-type: none"> <li>• Divides the students into small groups</li> <li>• Gives directions for visiting classmates desk and peer-evaluate their models</li> <li>• Monitors all of the class during model evaluations</li> </ul>	<ul style="list-style-type: none"> <li>• Choose 3 classmate for observing models and making evaluations</li> <li>• Ask questions to classmates about their models and compare their models with their own models.</li> <li>• Listen to the teacher, classmates and share their own ideas.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-student</li> <li>• Student-student</li> </ul>	

**B U L G A R I A**

Panayot Volov

Primary School



**Name of School and Country** : Panayot Volov Primary School, Madara, Bulgaria  
**Subject** : Man and Nature  
**Grade Level** : 5 (11 year old)

LESSON STAGES AND AIMS	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INTERACTION PATTERN	MATERIALS/AIDS
1. Conditions for chemical reactions	1. T lights a spirit lamp. In a test tube T. pours a solution of Potassium permanganate.	S. close the test tube with a cork top, through which there is a glass tube. S. heat the test tube and the result is oxygen. T. brings a matchstick that has just been blown out and it starts to burn again. This is a proof that oxygen is generated in this chemical reaction. Conclusion: In order to generate a chemical reaction, heating is necessary.	T. controls and guides; S. observe and make conclusions.	A spirit lamp, Potassium permanganate in powder, a test tube and a matchstick
		2. In a watch glass S. drop some water and then T. lights the spirit lamp and heats the glass until the water is evaporated. On the bottom S. see a white lime spot. Conclusion 1: There is lime in the water. Conclusion 2: In order to generate a chemical reaction, heating is necessary.		A watch glass, water, a spirit lamp, a matchstick
		3. S. place sulphur in a metal spoon. T. heats the spoon on a spirit lamp. The sulphur melts and then burns. Conclusion: In order to generate a chemical reaction, heating is necessary. All experiments prove the importance of fire for generating chemical reactions.		Sulphur, a metal spoon, a matchstick.

**Lesson Plan** : Diversity In The Animal World  
**Name of School and Country** : Panayot Volov primary school, Madara, Bulgaria  
**Subject** : Man and Nature  
**Grade Level** : 3 (9 year old)

LESSON STAGES AND AIMS	TEACHER ACTIVITIES	STUDENT ACTIVITIES	MATERIALS/ AIDS
<p>Lesson goals:</p> <ol style="list-style-type: none"> <li>To revise and summarise the pupils' knowledge on diversity of the animal world.</li> <li>To raise awareness and encourage love towards animals and their preservation.</li> </ol> <p>Lesson Stages:</p> <p>Stage 1.            Psychological preparing.            greeting the class            concentrating the attention of the pupils to the lesson</p>	<p>T. gives a riddle:            He runs in the field and likes cabbage and carrots.            (the hare)            He lives in the forest and the forest is on his head.            (the deer)            With a basket in her claw            She runs in the forest.            She goes home late            After collecting nuts.            This is her food,            Because winter is coming.            In the warm hollow            She will eat her nuts in peace.            (the squirrel)            T. asks S what kinds of animals they know            a) according to the food they eat            b) according to the environment they live in.            T. asks S. : What do we call animals that eat grass?            T. gives a new riddle: "This animal does not have mercy on hares, rabbits and chickens. They call her the Sly..." (fox)            T.: "What do you call an animal which eats meat?"            T. gives a new riddle: "He sleeps all winter in the cave and in the summer            He looks for honey in the woods." (the bear)</p>	<p>S. listen carefully, think and answer the riddles.</p> <p>S. have to match in a poster animals with the food they eat:            Squirrel – nuts            Chicken – grain            Deer – grass            Wolf – meat            S. answer – Herbivores and give examples.            S. listen carefully, reason and answer.</p>	

<p>Stage 2. Announcing the topic – Revision on the Animals unit.</p> <p>Stage 3.</p> <p>4. End of lesson.</p>	<p>What does the bear eat?          What kind of animal is the bear?          3. T. gives a crossword to solve.          Question: How many types of environment are there?          T. reminds S. that they have been studying about animals in the Black sea and quizzes them: What animals live there? Which of them are the best swimmers?          What are the life adaptations of animals which live in water?          Which is the most common fish in our rivers?          Where do animals live?          Which animals live there?          4. T. gives S. a puzzle          T. asks: “What will happen if a given species of animals disappears?”          “Why do some animals get extinct?”          T. shows the album “Animals around us”, which includes drawing, made by the students themselves and gives them assessment of their work during the lesson.</p>	<p>S. answer – Carnivorous. They give examples.          S. listen and answer.          S. answer – berries, honey, fish.          S. answer – omnivorous. They give more examples.          When finished, S. get the word “Water”.          S. answer – water and land          S. answer – fish          S. answer – fins, scales, gills.]          S. answer – carp.          S. answer – in the soil; in the field; in the mountain          S. give examples          S. work in groups          When finished, the puzzle gives the picture of a food chain.          S. answer – the food chain will be disturbed and there will be imbalance in nature          S. answer – because of illegal deforesting; illegal hunting; industrial pollution          After that they read curious facts from a poster, prepared by the T.</p>	
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