




## Learning Scientific Skills Outside the Classroom

### Scientific Skills

Predicting	Observing	Identifying and Classifying Specific skill – comparing growth
Country of Origin	Suggested Age Range	Suggested Theme
 Sweden	3 – 6	Plants
Location outside the classroom		Benefits of using this location
Flower Bed		They need an area outside that can be used for planting seeds or plants.
Learning Objectives – Scientific Skills		Learning Objectives – Knowledge
To predict what will happen to a seed To observe changes in a seed To observe changes in plant growth over time To compare seeds		To know that plants can grow from seeds To know that plants need the right amount of light and water in order to grow and stay healthy
Key Vocabulary		
Scientific skills vocabulary – predict, predicting, observe, look, compare, same, different Knowledge vocabulary – seed, shoot, plant, water, warmth, air, vegetation, greenery, flora, life cycle, growth		
Resources / Equipment		
<ul style="list-style-type: none"> <li>• Equipment to grow seeds in plastic pockets – seeds (examples could include pea, bean, lettuce and radish seeds), plastic pockets, water, watering can, kitchen roll</li> <li>• Equipment to grow seeds in pots - seeds (examples could include pea, bean, lettuce and radish seeds), small plant pots, soil, water, watering can</li> <li>• Equipment to grow plants outside – soil, plant boxes, water, watering can, plants grown from seed</li> </ul>		
Teaching Activities		
<p><i>This activity involves planting seeds and looking at how they develop and grow into plants. Children will need to look at the plants over a period of 2-4 weeks to observe changes over time.</i></p> <p><b>Discuss</b> – What do you know about plants? Where do plants come from? What is a seed?</p> <p><b>Explain</b> – A seed is the fruit of a plant and can grow into a new plant if it has the right conditions to grow. Today they are going to plant some seeds in small pots and in plastic pockets to observe how they grow over time. They are going to find out what plants need to be able to grow and stay healthy.</p> <p><b>Discuss</b> – What do plants need to be able to grow? What would happen if we excluded some factors such as water or sunlight? What if the plants were exposed to too much water?</p> <p><b>Explain</b> – The seeds that they grow are going to be put in different places to see if they all grow in the same way. They will need to have a control seed which has everything it needs to grow into a plant and will have some other seeds which are either given too much water or no water. They will also put some seeds in the dark to see whether they can grow without light. Children will look at the seeds and the developing plants over a prolonged period of time and will observe how the plants grow and develop from the seed.</p>		
<p><b>Activity 1: Plastic Pockets</b> Children plant seeds in closable plastic pockets.</p> <ol style="list-style-type: none"> <li>1 - Some of the plastic pockets are placed in the preschool window in direct sunlight and are given some water.</li> <li>2 - Some of the plastic pockets are placed in the preschool window in direct sunlight and are not given any water.</li> <li>3 - Some of the plastic pockets are placed in the preschool window in direct sunlight and are given lots of water.</li> </ol>		





### Activity 2: Pots

Children plant seeds in small plastic pots.

1 - Some of the pots are watered and placed in an area of preschool where there is sunlight.

2 - Some of the pots are watered and placed in an area of preschool where there is no sunlight

N.B. a common misconception is that seeds need light to germinate. This is not true. The plant, once germinated, requires light to grow into a healthy plant.

**Predict** – What do they think will happen to the seeds they have planted? Do they think some of the seeds won't grow, if so, which ones and why?

**Observe** – Children will look at the plastic pockets and pots daily and observe what has happened. They will observe how the seeds they have planted change and develop over time and will also observe changes in the plants that grow from the seed. Using the plastic pockets will enable them to observe changes in the seed really clearly. They could document these changes through drawings or they could take photographs using a camera or an iPad.

**Discuss** – What did you find out? What do seeds need to be able to grow and develop into a plant? What do plants need to grow and stay healthy? What happened if the seeds or plants have too much water?

**Compare** – What differences in growth did they observe between the seeds grown in different conditions? Which plant is that largest? Which plant is the tallest? Are the plants the same colour?



### Activity 3: Planting outside

The small plants which they have grown are planted outside in planting boxes. Children can watch the plants grow and develop into adult plants and can harvest any crops they produce. As an extension activity, children could also plant some seeds outside and compare their growth to the seeds they have planted inside.

**Explain** – Collect the seeds from the crops they have harvested and explain the life cycle of plants.

Examples of children's work and teacher comments from country of origin



*It is important you have the time to implement this activity effectively as it requires children to follow the seed's growth for a prolonged period of time. When the plants are finished, the children should harvest in the plants and the crops. Then they can examine and taste the crops. This allows children to understand the life cycle of a plant from seed to plant and back to seed again.*