




Learning Scientific Skills Outside the Classroom

Scientific Skills

Observing	Identifying and Classifying Specific skill – comparing sand	Recording
Country of Origin	Suggested Age Range	Suggested Theme
 Sweden	3 – 6	Rocks
Location outside the classroom		Benefits of using this location
Forest		An area where many rocks (stones, pebbles, sand) can be found
Learning Objectives – Scientific Skills		Learning Objectives - Knowledge
To compare sand made from different rocks To observe sand using a digital microscope To record their findings using a drawing		To know that rocks can be broken down into smaller parts and these parts can be useful to us To know that stones and pebbles come from larger rocks To know sand is made from a rock
Key Vocabulary		
Scientific skills vocabulary – observe, compare, same, different, record, draw Knowledge vocabulary – rock, stone, pebble, sand, forest, sandpaper		
Resources / Equipment		
<ul style="list-style-type: none"> • Equipment to collect stones - buckets • Equipment to make sand – sandpaper, stones, trays • Equipment to observe sand – microscope (small handheld), computers 		
Teaching Activities		

Discuss – Where do the rocks (stones and pebbles) come from on the forest floor? Are they all the same – shape, size, colour, weight?

Explain – Stones are small pieces which have broken off a larger piece of rock because of the effect of the weather. A pebble is a small stone made smooth and round by the action of water or sand.

Discuss – Where do you find sand in the forest? What does it feel like? What does it look like? How can we make sand? Is all sand the same?

Explain – They are going to find out how sand is made by doing an investigation using a special abrasive paper called sandpaper. (*Sandpaper is a name used for a type of coated abrasive that consists of sheets of paper or cloth with abrasive material glued to one face. Sand is not now used in the manufacture of this product*). They are going to collect some stones from the forest floor and use these stones to make sand.



Demonstrate – Show children how to use the sandpaper safely and carefully to rub the edges of the rocks/stones/pebbles to produce smaller bits of rock – called sand.

Activity – Children feel different types of sandpaper and think about how they could use this to make sand. Children collect different examples of small rocks/stones/pebbles from the forest floor. They rub/sand them using the sandpaper and create a pile of sand on their tray. Children can experiment with different types of rocks/stone to see if the grains of sand they produce look the same or different.



Observe– Show children how to use a microscope to look carefully at the grains of sand they have produced from their rocks/stones/pebbles. Explain that a microscope enlarges the image so they can look at it more closely.

Record – Children record their findings in a drawing.

Compare – Children compare the sand produced by different rocks. What do the grains of sand look like when they are enlarged? Do the grains of sand all look the same or do they look different? Do they get different types of sand from the different stones?



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



The children had spent time before this activity visiting the forest and looking at different rocks and stones. They had also watched some films about rocks and stones. These activities meant that the children had some knowledge already and were very curious about different stones and sand.