




Learning Scientific Skills Outside the Classroom

Scientific Skills

Observing		Identifying and Classifying Specific skill - comparing rocks	
Country of Origin	Suggested Age Range	Suggested Theme	
 Croatia	3 – 4	Rocks	
Location outside the classroom		Benefits of using this location	
School Playground		The artificial rocks need to be placed in a sunny location to dry. Rocks from around the school grounds are used.	
Learning Objectives – Scientific Skills		Learning Objectives - Knowledge	
To compare the properties of artificial rocks and natural rocks To make careful observations of artificial rocks		To know the difference between artificial and natural rocks. To know the simple properties of rocks including colour, shape, size and hardness	
Key Vocabulary			
Scientific skills vocabulary – see, observe, compare, same, different Knowledge vocabulary – rock, stone, pebble, sand, water, sun, artificial, natural, hard, wet, dry			
Resources / Equipment			
<ul style="list-style-type: none"> Equipment to make artificial rocks – sand, water, baking soda, plastic containers, cookie moulds Equipment for comparing rocks – natural rocks (igneous – e.g., granite, basalt, pumice), magnifying lenses, hammers, mallets, scales, something to scratch the rock on 			
Teaching Activities			
<p>Discuss – Ask the children where they can find rocks? Are they all the same size? Do they all look the same? Where do they think rocks come from? What are they used for? (If appropriate, recap on previous learning from books, photographs and posters about rocks and their different colour and sizes). Use and define the words, rock, pebble and stone.</p> <p>Explain – The centre of the Earth is a very hot liquid. When this liquid cools down and becomes a solid it can make a type of hard rock (Igneous). It can take a very long time for rocks to be formed. These rocks can be different colours, sizes and hardness. Explain they are going to make an artificial rock and compare it with a real rock.</p> <p>Activity 1: Making Artificial Rocks</p> <p>Demonstrate – Show the children how to mix together sand, warm water and baking soda in a plastic container. With help, the children mix and pour their mixture into a mould and put it in a sunny place for a few days to dry and become solid.</p> <p>Observation over time – Children look at the artificial rocks over the next few days as they dry out and observe the changes. Ask the children questions about the appearance of the rocks in the mould. What do they notice? What colour is it? How hard is it? Does it look different today? How? Why?</p> <p>Activity 2: Comparing Artificial Rocks with Real Rocks</p> <p>Demonstrate – Remove the hardened artificial rocks from the moulds. Show children how they could compare the different rocks e.g., comparing colour, size, the smoothness or the surface, hardness, how heavy it weighs.</p>			





Activity – Children look at the differences and similarities between artificial rocks and natural rocks. They can use magnifying lenses and scales to make careful observations. They could use a hammer or small mallet to try and break the rocks.

Discuss – What did they find out? Compare the features of the artificial and real rocks? Could they break the rocks? Which rocks were hardest – artificial or natural? What happened to the rocks when they were hit with the hammer or mallet?

Explain – It is much more difficult to break down natural rock because they are much harder because the Earth is much hotter than the warm water.

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



They observed closely and patiently how artificial rocks dry by checking them and looking for changes every day. They used the rocks they made to build a little wall and also made houses using real rocks, stones and pebbles in the school outdoor area.

They could try using different types of sand – texture, colour – to make artificial rocks.