




## Learning Scientific Skills Outside the Classroom

### Scientific Skills

Observing	Identifying and Classifying	Recording
Country of Origin	Suggested Age Range	Suggested Theme
 UK	9 - 11	Rocks
Location outside the classroom		Benefits of using this location
School grounds		There are a wide variety of rocks for the children to find and it provides a wide-open space for classification.
Learning Objectives – Scientific Skills		Learning Objectives – Knowledge
To identify different rock types To make careful observations of rocks To identify features of igneous, metamorphic and sedimentary rocks To classify rock types using a classification fact file To record their findings		To know some common features of igneous, metamorphic and sedimentary rocks To know how igneous, metamorphic and sedimentary rocks are formed
Key Vocabulary		
Scientific skills vocabulary – observe, see, identify, classify, classification, features, record Knowledge vocabulary – igneous, metamorphic, sedimentary, granite, basalt, pumice, obsidian, andesite, limestone, chalk, coal, flint, marble, slate, anthracite		
Resources / Equipment		
<ul style="list-style-type: none"> <li>Resources required for rock observation – examples of igneous, metamorphic and sedimentary rock types, magnifying glasses</li> <li>Equipment required for identification of rocks – classification fact files, hoops and labels for sorting</li> <li>Equipment required for recording – paper and pencils</li> </ul>		
Teaching Activities		
<p><b>Discuss</b> – There are lots of different rocks on Earth - what different types of rock types can they think of? (e.g., granite, marble, pumice, sandstone). Rocks can be classified/grouped together according to how they are made/formed and what they look like and what they do – these are called their features. What groups of rocks do they know? Igneous, metamorphic or sedimentary rock.</p> <p><b>Activity 1: Features of Rocks</b></p> <p><b>Observe</b> - Provide samples of all three rock types for children to observe, using magnifying glasses for closer observation. Children will observe features (colour, hardness, grain size, contain fossils) of these three rock types.</p> <p><b>Discuss</b> – What features are common to all igneous / metamorphic / sedimentary rocks. What similarities did you find? What differences did you find? Which is the easiest type of rock to identify? Why? Which is the hardest?</p> <p><b>Explain</b> – They are going to use the features they have observed and a rock classification fact file to help them identify and classify rocks within the school grounds.</p> <p><b>Activity 2: Identification of Rocks</b></p> <p><b>Activity</b> – Children search the school grounds for different rocks and make close observations of the rocks they find using magnifying glasses.</p> <p><b>Classify</b> – Children use the classification fact files provided to help them classify the rocks as either igneous, metamorphic or sedimentary and place them in hoops on the playground. During the activity, adults can pose questions as the children place</p>		



the rocks in the hoops. Are all the white rocks chalk? Do all sedimentary rocks have layers? Is one type of rock dominant in the school grounds? Why might this be?

*It may be advisable to place some examples of the three types of rock around the school grounds, so they have an opportunity to identify all three types of rock.*

**Record** – Children chose rocks of their choice, one from each of the three rock types. Draw a picture of the rocks and label it with the observable features they used to classify it as igneous, metamorphic or sedimentary.

**Discuss** – Children choose a rock to present to the class, explaining their findings using the correct scientific terms and vocabulary. Encourage the other children to ask questions in order to deepen their own learning and understanding.



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



*The practical aspect of this lesson was useful for children to observe the differences and similarities between rock types.*