





## Learning Scientific Skills Outside the Classroom

### Scientific Skills

Observing		Concluding Specific skill – communicating what they have found out using simple scientific language	
Country of Origin	Suggested Age Range	Suggested Theme	
 Croatia	5 – 6	Light	
Location outside the classroom		Benefits of using this location	
Open space outside		The children need the light from the sun to make clearly visible shadows on the ground	
Learning Objectives – Scientific Skills		Learning Objectives – Knowledge	
To make careful observations of shadows To say what they have found out using simple scientific language		To know what a shadow is To know that shadows can be different in size and colour	
Key Vocabulary			
Scientific skills vocabulary – observe, see, conclude, communicate, tell, find out Knowledge vocabulary – shadow, light, block, see-through, transparent, colours, larger, smaller			
Resources / Equipment			
<ul style="list-style-type: none"> <li>Equipment to create shadow drawings – transparent plastic, coloured pens</li> </ul>			
Teaching Activities			
<p><b>Discuss</b> – What are shadows? Why do they occur? Do all objects create a shadow? How big are shadows? Where do they occur?</p> <p><b>Activity: Exploring Shadows</b></p> <p>On a sunny day, children time spend time outside to explore any shadows they can find or make. Encourage them to think about what object has made the shadow and their responses to the initial discussion. Move their bodies around and observe what happens to their shadow? What happens to their shadow when they move? Why?</p>			
<p><b>Explain</b> – Shadows outside are formed when the light from a light source, the Sun, is blocked fully or partly by an object. Their bodies have created a shadow because they are blocking the light from the Sun.</p> <p><b>Activity: Shadow Drawing</b></p> <p>Children draw on a piece of transparent plastic using different coloured pens. They can choose freely what to draw but should be encouraged to draw in block colours. Children hold their drawings up to the Sun (carefully) and observe the drawing which is on the ground created by light passing through the transparent plastic or affected by the colours.</p> <p>Children explore whether their shadow drawing changes when the surface of the ground changes e.g., exploring grass, concrete, gravel and shaded surfaces.</p>			



**Observe** – Children observe what happens if they change the distance of their drawing from the ground. Look at the size of the drawing, the sharpness of the edges and the intensity of the colours. They can record their observations by taking photographs or measurements.

**Conclude** – Children say and write what they have found out using simple scientific language, encourage them to talk about the shape, size and colour of their image on the ground.

**Discuss** – What did they find out? Did their shadow change when the surface of the ground changed?



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



*Children showed great interest in this activity. It is very important to include this kind of activity when planning science to encourage active learning outdoors.*