# Investigating Shadows

**Introduction:**

In this lab, students will have the opportunity to explore and understand the concept of shadows. They will investigate how shadows are formed, observe the changing shapes and sizes of shadows, and learn about the relationship between the position of an object, the light source, and the shadow it casts.

**Materials:**

Flashlight

Various objects (e.g., toys, stationery items, cardboard shapes)

Chart papers

Markers or colored pencils

Ruler or measuring tape

**Safety Precautions:**

Ensure that students handle the flashlight responsibly and avoid shining it directly into their eyes.

Warn students not to touch the bulb of the flashlight when it is turned on, as it can get hot.

**Procedure:**

Begin by discussing shadows with the students. Ask them questions such as: What is a shadow? How is a shadow formed? What makes a shadow change shape or size?

Introduce the concept of a light source and explain that shadows are formed when an object blocks the path of light. Emphasize that shadows are always formed on the side opposite to the light source.

Set up a dark room or find a shaded area where the students can conduct their shadow experiments. Make sure to have plenty of open space for moving objects and observing shadows.

Hand out flashlights and objects to each group of students. Instruct them to choose an object and explore how its shadow changes when they move the flashlight around.

Encourage students to experiment with different positions of the object, light source, and their own bodies, and observe how the shadows change accordingly. Have them record their observations and any patterns they notice on their chart papers.

After conducting their own investigations, gather the students together for a class discussion. Ask them to share their findings, observations, and any questions they may have.

Distribute the worksheet and have students complete it individually or in pairs. This will serve as their reflection and assessment of their understanding of shadows.

**Reflection Questions:**

Explain how shadows are formed. What role does the object and the light source play?

Can you predict how a shadow will change if you move the light source closer or farther away? Why?