

**Lesson Title: Visible Light, Reflection**

**Course: Grade 4**

**Designer: Jerome Schmeiser**

### **Learning Outcomes/ Measurable Objectives**

#### **LI4.1**

**Investigate the characteristics and physical properties of natural and artificial sources of light in the environment.**

#### **LI4.2**

**Analyze how light interacts with different objects and materials to create phenomena such as shadows, reflection, refraction, and dispersion.**

#### **Measurable Objectives:**

**Students will be able to identify what is an emitter versus what is a reflector**

**Students will construct a laser maze using mirrors and laser pointer**

### **Assessment Evidence**

#### **Formative Assessments (Assessment for Learning):**

**Students will verbally identify the difference between an emitter and a reflector**

**Students will understand the concept of reflection**

## Materials

Laser pointers, mirrors, laptop connected to projector, whiteboard

## Learning Plan

### Learning Experiences & Instruction:

**Engage:** Hey students, last week we talked about the properties of light and we explored how we can affect light. Does anyone remember what the term we learned last time? (Refraction). I mentioned another term last time that sounds a lot like Refraction, does anyone remember? (Reflection) We are going to be learning about Reflection today!

**Explain:** When a ray of light approaches a smooth polished surface and the light ray bounces back, it is called the reflection of light. Reflective surfaces don't produce their own light, just reflect the light that comes from an emitter. [Use this google doc](#) to review emitters and reflection Ask if the students can name any reflective sources in the classroom, any emitters? Do [google slides presentation](#) to see if they can determine if something is reflecting or emitting.

**Elaborate:** Have students working in table groups. Each group will receive one laser pointer and 2 small mirrors. Stress the importance of working safely with these items and laser pointers can damage eyes and mirrors can break! Have one student shine the laser at one of the mirrors held on the table by another group member. Have them find where the reflected laser ended up, and try to reflect it again using the second mirror. If they can do 2 mirrors, offer more and see how complex their maze can get. Bring a sprit bottle with water to each table and spray the water over the laser maze to reveal the path of the laser.

## Questions

What is an emitter?

What is a reflector?

