

Reflection & Refraction

Lesson Plan for Grade 5, Science

Prepared by Ms. Hall

EDUCATION STANDARDS

Force, Motion, and Energy

5.3 The student will investigate and understand basic characteristics of visible light and

how it behaves. Key concepts include

- a) transverse waves;
- b) the visible spectrum;
- c) opaque, transparent, and translucent;
- d) reflection of light from reflective surfaces; and
- e) refraction of light through water and prisms.

OBJECTIVES

1. The students will be able to explore manipulatives that are given to find out if they make a reflection or refraction to their best ability.
2. The students will be able to define reflection and refraction on a worksheet that is give to the best of their ability.

ACTIVITY

Safety:

This experiment involves water and we will have paper towels close by if anything were to spill, the objects should only be used to examine whether they refract or reflect.

a. Introduction

- In fifth grade students have already started learning about light and reflection, the students have learned have been introduced to how light works and the components of light.
- Now, we are going to explore reflection and refraction to see what reflects and what refracts.

ENGAGEMENT: to get the students interested in reflection and refraction I want to show a short example of how water refracts by showing students a glass with an arrow on a sheet of paper behind it, then filling the glass up to show that the arrows direction changes because of the water.

- I will also show an example of reflection by using a mirror and an led light to show that the light bounces off of the mirror.

a. Development

- I will have materials that reflect or refract light in boxes and for each group in the classroom (4) and they will explore these things and write down on a worksheet what they think and why.
- The students will take out the different materials (spoon, mirror, lenses, magnifying glass, penny, foil, straws, pencil, cd, cup and water)
 - a. The students will write down their guesses and what they think and may discuss as a group.
- For students that need more help with this assignment, I will be walking around the room to guide groups in the right direction and explain directions again.
- **EXPLORATION:** the students will use skills to explore materials to their best knowledge to understand what reflection and refraction are and how light works with them.
- After the exploration portion of the lesson the students and I will go over what reflection & refraction mean. The students then can write down the definitions in their worksheets and ask questions about the two words.

- As a class we will go over the different materials and if they are classified as reflecting light or refracting light.
- **EXPLANATION:** this discussion will serve as our explanation because we will go over exactly which object is which and why it is categorized a certain way.

c. Summary

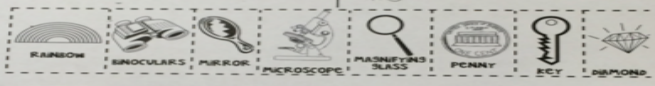
- Once the class has come to a conclusion of what refraction and reflection is we will try and think of more examples of what these things could be.
- I will bring additional materials that work to show as examples and we will end by discussing reflection and refraction.

EXPANSION: this discussion will add on to the already known and discuss materials that are categorized as either reflecting or refracting light.

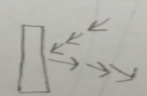
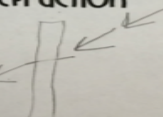
MATERIALS NEEDED

- Worksheet (2)
- Elmo – projection
- Different manipulatives that reflect and refract for students to experiment with (spoon, mirror, lenses, magnifying glass, penny, foil, straws, pencil, cd, cup and water)
- Arrow, glass, water
- LED laser pointer
- Hand Held Mirror
- Pencil to write answers

NAME Damonita Siqueira 10-4-20-15 DATE _____

REFLECTION	REFRACTION
<ul style="list-style-type: none"> ✓ CD ✓ Mirror ✓ foil ✓ Spoon 	<ul style="list-style-type: none"> ✓ straw ✓ Spoon ✓ Penny ✓ Pencil magnifying glass lens
	

What is REFLECTION and REFRACTION?

REFLECTION	REFRACTION
	
Bouncing of light off a surface	Bending of light rays as they pass one material to another
Ex: top of water in a cd	Ex: magnifying glass

