

STEAM Lesson Plan: “Catching the Light – Pollyanna & Prism Suncatchers” Age 8–12

Objectives

- Understand how light refracts through prisms to create rainbows.
 - Build a functional suncatcher using crystal prisms and basic craft materials.
-

Materials Needed

- Real glass or acrylic prisms, CDs, or glasses of water
- Flashlights or access to sunlight
- White paper (to catch the rainbow)

Materials For Suncatcher Craft (one per student):

- Clear string or fishing line
 - Crystal pendants or beads
 - Suction cup hooks or metal rings for hanging
 - Optional: Spacer beads, small charms
-

Read & Reflect (10 minutes)

Activity: Reading and Discussion

1. **Read Aloud** an excerpt from *Pollyanna* – specifically the scene where she discovers the prism and rainbows in the window.
 2. **Discussion Questions:**
 - Why was the prism special to Pollyanna?
 - How did seeing the rainbows make her feel?
-

Science Exploration – What is a Prism? (15 minutes)

Activity: Light Refraction Experiment

1. **Mini-Lesson** (5 min):

- Introduce the concept of **refraction**—light bending as it moves through materials like glass or water.
- Explain how prisms split white light into rainbows (ROYGBIV).

2. **Hands-On Exploration** (10–12 min):

- Students use prisms (or CDs, glasses of water, etc.) to create rainbows on white paper or a wall. You can use flashlights if sunlight isn't available.

3. **Group Discussion** (3–5 min):

- What colors do you see?
 - How did the position of the light change the rainbow?
-

Engineering Activity – Make Your Own Crystal Suncatcher (30 minutes)

Activity: Design & Build

1. **Introduce the Craft:**

- Show an example if possible.

2. **Step-by-Step Instructions:**

- Cut a length of clear string (~12 inches).
- Tie one end securely to a crystal or faceted bead.
- Add optional spacer beads or charms.
- Tie the other end to a suction cup hook or ring for hanging.

3. **Building:**

- Students design and build their suncatchers.
-

Sharing & Reflection (10 minutes)

1. **Reflection Journals:** Make a “be the light” list based on Pollyanna’s quote about “being a sunbeam in someone’s life.” Make a list of ways we can brighten other people’s lives (help a senior citizen, donate toys, help with chores, write a kind note, etc.).