

# CURRICULUM

## CURRICULUM CONNECTIONS

This section is for educators who want more specific information regarding the grade 8 science curriculum (Unit C: Light and Optical Systems) connections for each activity in the Get Focused crate.

### Grade 8: Table of Knowledge Outcomes - Unit C: Light and Optical Systems

Activity	Major Concepts	Outcomes for Science, Technology and Society (STS) and Knowledge
Activity 1 <b>Pinholes and Pupils</b>	<p>1. Investigate the nature of light and vision; and describe the role of invention, explanation and inquiry in developing our current knowledge.</p> <p>3. Investigate and explain the science of image formation and vision, and interpret related technologies.</p>	<p>Investigate light beams and optical devices, and identify phenomena that provide evidence of the nature of light.</p> <p>Explain how objects are seen by the eye, and compare eyes with cameras.</p>
Activity 2 <b>Dr. Dan's Digs</b>	<p>2. Investigate the transmission of light, and describe its behaviour using a geometric ray model.</p>	<p>Measure and predict angles of reflection.</p>
Activity 3 <b>Looking at Lenses</b>	<p>2. Investigate the transmission of light, and describe its behaviour using a geometric ray model.</p> <p>3. Investigate and explain the science of image formation and vision, and interpret related technologies.</p>	<p>Investigate materials used in optical technologies; and predict the effects of changed in their design, alignment or composition.</p> <p>Demonstrate the formation of real images, using a double convex lens, and predict the effects of changes in the lens position on the size and location of images.</p>
Activity 4 <b>Can't Judge a Lens by its Looks</b>	<p>2. Investigate the transmission of light, and describe its behaviour using a geometric ray model.</p>	<p>Investigate how light is reflected, transmitted and absorbed by different materials; and describe differences in the optical properties of various materials.</p> <p>Investigate, measure and describe the refraction of light through different materials.</p> <p>Investigate materials used in optical technologies; and predict the effects of changed in their design, alignment or composition.</p>
Activity 5 <b>Through the Looking Glasses</b>	<p>2. Investigate the transmission of light, and describe its behaviour using a geometric ray model.</p> <p>3. Investigate and explain the science of image formation and vision, and interpret related technologies.</p>	<p>Investigate materials used in optical technologies; and predict the effects of changed in their design, alignment or composition.</p> <p>Demonstrate and explain the use of microscopes; and describe, in general terms, the function of eyeglasses, binoculars and telescopes.</p>

Activity	Major Concepts	Outcomes for Science, Technology and Society (STS) and Knowledge
Activity 6 <b>Eye Spy</b>	3. Investigate and explain the science of image formation and vision, and interpret related technologies.	Explain how objects are seen by the eye, and compare eyes with cameras.
Activity 7 <b>Have a Look and See</b>	3. Investigate and explain the science of image formation and vision, and interpret related technologies.	Demonstrate and explain the use of microscopes; and describe, in general terms, the function of eyeglasses, binoculars and telescopes.
Digital Activity 8 <b>Light Pipes and Mirages</b>	2. Investigate the transmission of light, and describe its behaviour using a geometric ray model.	Investigate, measure and describe the refraction of light through different materials.

## SCIENCE INQUIRY SKILLS

The science skills that the participants are introduced to in the Light and Optics activities include:

Skill	Description
Initiating and Planning	Questioning, identifying problems and develop preliminary ideas and plans.
Performing and Recording	Plan of action that involved gathering evidence by observation and manipulating materials and equipment.
Analyzing and Interpreting	Examine information and evidence and processing and presenting data so in can be interpreted and applied.
Communication and Teamwork	Ideas are developed, tested, interpreted, debated and agreed upon as a team.