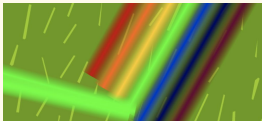
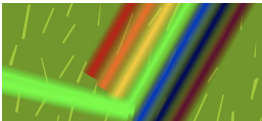
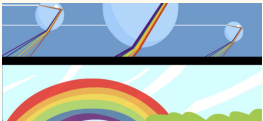
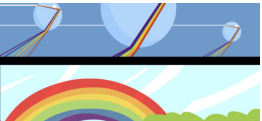












Pacing Guide: **Properties of Light**

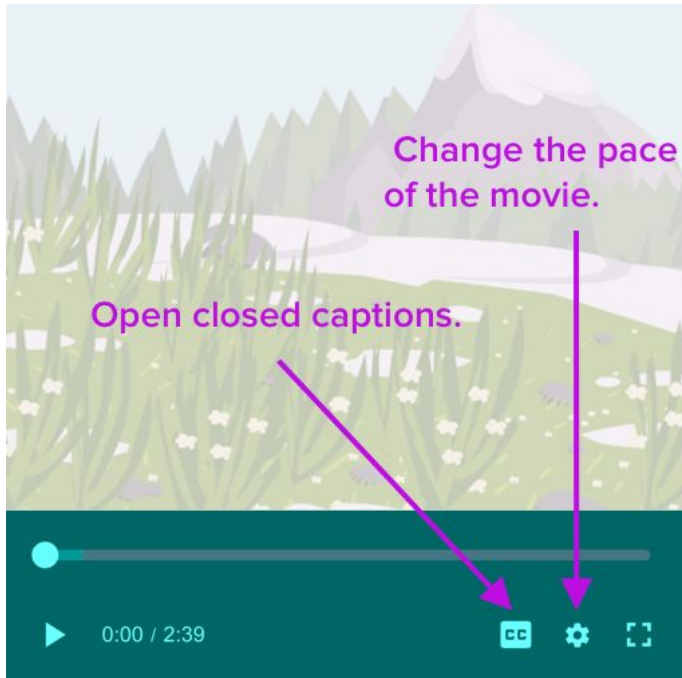
Grade Level: **Eighth Grade** | Duration: **1 week**

BrainPOP Topics: (1) **Color** (2) **Refraction and Diffraction**

	DAY 1 - 30 Min	DAY 2 - 40 min	DAY 3 - 30 min	DAY 4 - 40 min	Day 5 - 40 min
<p>Build Background</p> <p>Watch the movie, pausing to reflect on content.</p>	 <p>Watch Movie: Color</p>	 <p>Re-watch Movie: Color</p>	 <p>Watch Movie: Refraction and Diffraction</p>	 <p>Re-watch Movie: Refraction and Diffraction</p>	<p>Re-watch Movies (optional): Color Refraction and Diffraction</p>
<p>Think & Do</p> <p>Engage with a grade-level appropriate feature or tool.</p>	 <p>Vocabulary Development: Color</p>	 <p>Apply Knowledge: Light</p>  <p>Graphic Organizer</p>	 <p>Vocabulary Development: How are refraction and diffraction similar? How are they different? View rubric.</p>	 <p>Apply Knowledge: Bending Light Game: Intro Level What happens to the light wave when you change the material? Bending Light:</p>	 <p>Apply Knowledge: How does light refract to form a rainbow? View rubric.</p>

		<p>Apply Knowledge:</p> <p>Color</p>		<p>Prisms</p> <p>Make a rainbow, then use a SnapThought® to explain which objects you used and why.</p>	
<p>Assess</p> <p>Take a topic quiz and review your score.</p>		 <p>Test Yourself:</p> <p>Color</p>		 <p>Test Yourself:</p> <p>Refraction and Diffraction</p>	

Movie Viewing Tips



CCSS

Standard	Activity
<p>CCSS.ELA-LITERACY.RI.8.1 Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.</p>	<p>Build Background</p> <p>Watch and discuss movies: Color Refraction and Diffraction</p>
<p>CCSS.ELA-LITERACY.L.8.4 Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on <i>grade 8 reading and content</i>, choosing flexibly from a range of strategies.</p>	<p>Think & Do</p> <p>Vocabulary: Color Make-a-Map: Refraction and Diffraction</p>

<p>CCSS.ELA-LITERACY.RST.6-8.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 6-8 texts and topics</i>.</p>	
<p>CCSS.ELA-LITERACY.RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</p>	<p>Think & Do</p> <p>Simulation: Light Graphic Organizer: Color Game: Bending Light</p>
<p>CCSS.ELA-LITERACY.SL.8.2 Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.</p> <p>CCSS.ELA-LITERACY.SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.</p> <p>CCSS.ELA-LITERACY.W.8.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>Think & Do</p> <p>Make-a-Movie: Refraction and Diffraction</p>
<p>CCSS.ELA-LITERACY.RI.8.2 Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.</p>	<p>Assess</p> <p>Quiz: Color Quiz: Refraction and Diffraction</p>

NGSS

Science and Engineering Practices: 6-8

- **Developing and Using Models**
 - Develop or modify a model—based on evidence – to match what happens if a variable or component of a system is changed.
 - Develop and/or use a model to predict and/or describe phenomena.
- **Constructing Explanations**

- Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.
- Apply scientific ideas, principles, and/or evidence to construct, revise and/or use an explanation for real-world phenomena, examples, or events.
- **Obtaining, Evaluating, and Communicating Information**
 - Communicate scientific and/or technical information (e.g. about a proposed object, tool, process, system) in writing and/or through oral presentations.

Disciplinary Core Ideas

PS4.A: Wave Properties A simple wave has a repeating pattern with a specific wavelength, frequency, and amplitude.

PS4.B: Electromagnetic Radiation When light shines on an object, it is reflected, absorbed, or transmitted through the object, depending on the object's material and the frequency (color) of the light.

The path that light travels can be traced as straight lines, except at surfaces between different transparent materials (e.g., air and water, air and glass) where the light path bends. Lenses and prisms are applications of this effect.

A wave model of light is useful for explaining brightness, color, and the frequency-dependent bending of light at a surface between media (prisms).

Crosscutting Concepts: 6-8

- **Cause and Effect**
 - Cause and effect relationships may be used to predict phenomena in natural or designed systems.
- **Structure and Function**
 - Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used.