



## Physics Geometric Optics Project Children's Book

**Objective:** You will create a children's book that thoroughly describe at least one use of geometric optics in everyday life.

### Project Information

The purpose of this project is to demonstrate your understanding of a concept related to light and geometric optics. One of the best ways for you to demonstrate your understanding of a topic is to be able to create a children's book that will teach young children about your topic. The book must use language and terminology covered in this course, but be worded so that it is appropriate for a 10 year old child.

Your book must contain the following

- An interesting cover
- A creative title
- A brief 'About the Author' section. This paragraph should briefly describe yourself.
- At least **five (5)** illustrations or pictures that demonstrate your topic.
- The type of lens/mirror your topic would use.
- At least one ray diagram illustrating your topic. This ray diagram does not count as an illustration.
- Both general and specific information that explains your topic.
- A brief history of how your topic was developed/discovered.
- The technology used to develop your topic.
- At least one instance of how your topic is used in everyday life.
- At least **three (3)** outside sources

Remember the main point of this project is to demonstrate your thorough understanding of the topic. Don't lose sight of the importance of including scientific information in your book, but be sure to use analogies and illustrations to fully explain it. As the author you must demonstrate that you understand the material.

## Topics

- How do anti-glare night vision glasses help people who have difficulty driving at night.
- How do eyeglasses with colour filters help people with dyslexia read?
- How do vision sensors help the CFIA improve food safety?
- How are photonics used in the early diagnosis of diseases such as cancer?
- How have optical fibers enhanced our ability to communicate?
- What is laser eye surgery and what are the risks of having the procedure done?
- What is endoscopy?
- What is laparoscopy?
- What are X-rays and how are they used to produce an image?
- How does a kaleidoscope work?
- What is the Hubble Space Telescope and how does it work?
- How does a microscope work?
- What is a solar cooker and how does it work?
- How do eyeglasses work for either far sighted or near sighted individuals?
- What is myopia and how does it impair and how is it treated?
- What is astigmatism and how is it treated?
- How does a camera and it's zoom function work using lenses?

## Rubric

Cover Page/Title	/3
About the Author	/3
Five Illustrations that Outline Your Topic	/5
Explanation of How Your Topic Works in Simplified Terms	/10
Specific Type of Lens/Mirror Used By Your Topic	/3
Use of Geometric Optics Vocabulary	/5
Use of at Least One Ray Diagram	/4
Brief History of How Your Topic Was Discovered	/5
Technology Used to Discover the Topic	/5
One Instance of How Your Topic is Used in Everyday Life	/3
Three Outside Sources	/3
<b>Total</b>	<b>/55</b>

SNC 2D