Science 8 Optics and Vision Unit

Big Idea: How do we see?

Outcome:

OP8.2 Explore properties and applications of optics-related technologies, including concave and convex mirrors and lenses.

Understandings:

* Light interacts with transparent, translucent and opaque materials.
* Light interacts with concave and convex mirrors.
* Ray diagrams can illustrate how light travels within optical devices.
* Optics related technologies have enables scientific research.

Essential questions:

1. How does light interact with transparent, translucent and opaque materials?
2. How does light interact with concave and convex mirrors?
3. How can ray diagrams illustrate how light travels within optical devices?
4. How have optics related technologies enabled scientific research?

Students need to know:

Vocabulary and concepts: property, application, optics, concave, convex, lens, transparent, translucent, opaque, real image, virtual image, geometric ray diagram, prototype

 - how light interacts with transparent, translucent and opaque materials

 - how light interacts with concave and convex mirrors

 - how to draw ray diagrams

 - how to use the technological problem solving process

 - how optics related technologies have enabled scientific research

 -various optic technologies

 -optics careers

And be able to: (essential questions they are related to are in brackets)

* Investigate how light interacts with transparent, translucent and opaque materials (1)
* Investigate how light interacts with concave and convex mirrors (2)
* Draw light ray diagrams (3)
* Use the technological problem solving process (4)
* Provide examples of how optics related technologies have enabled scientific research (4)