In this application, you will choose one of two optical tools to make. When you have completed your assignment, submit it to the dropbox.

A periscope uses mirrors to see around things. Build a periscope out of household materials. For an example, visit the [Exploratorium](http://www.exploratorium.edu/science_explorer/periscope.html). Describe how you built it and explain how it works using a ray diagram. Create a presentation, wiki, or website to display your results. Refer to the Developmental Module for tips on creating effective presentations. Be sure to include photos of your periscope!

**or**

A kaleidoscope is made from a tube and two plane mirrors. Build a kaleidoscope. Research how kaleidoscopes work and explain how multiple images are created. For an example and directions on how to build a kaleidoscope, visit the [University of Arizona](http://www.optics.arizona.edu/academics/kaleidoscopehowtomakeakaleidoscope.htm). How does the angle between the mirrors affect the number of images you see? Use a ray diagram in your explanation. Create a presentation, wiki, or website to display your results. Refer to the Developmental Module for tips on creating effective presentations. Be sure to include photos of your periscope!

**Checklist:**

As you complete your assignment, please review the checklist below to ensure that you have included all needed items.

|  |  |
| --- | --- |
| ***Your assignment should include all of the criteria listed below to receive full credit.*** | |
| **Included?** | **Item** |
|  | 1. The periscope or kaleidoscope is functional. |
|  | 1. Includes enough descriptive information for someone to duplicate the construction process, including photos. |
|  | 1. Demonstrates use of the periscope or kaleidoscope. |
|  | 1. Applies knowledge of lenses and or mirrors to explain how the periscope or kaleidoscope works. Explanation includes a ray diagram. |
|  | 1. Presents information clearly to audience. |
| ***You may need to use resources outside of this course to complete this assignment. If so, please submit a Works Cited document. If you need assistance, visit the Developmental Module for information on citing any resources that you used.*** | |
| **Included?** | **Item** |
|  | For resources used outside of the course, a Works Cited document is submitted along with the assignment. |