

Geometric Optics (Lenses) PhET Simulation

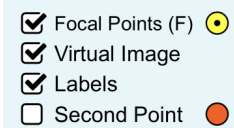
Worksheet adapted from *Optics Online Worksheet* by Scott McCurdy

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Retrieved 2025-06-17 from <https://phet.colorado.edu/en/activities/3231>

Go to Schoology to find the link to the Geometric Optics PhET Simulation. Alternatively, you can go to <http://phet.colorado.edu/en/simulation/geometric-optics>.

- Click the “Play” icon for the application.
- Select the **Lens** option from the menu.
- In the bottom right corner, make sure that “*focal points*”, “*virtual image*”, and “*labels*” are checked.



1. Move the pencil on the left and observe what happens to the image.
 - (a) What happens to the image as the object moves closer to the lens, but before reaching the focal point (the yellow dot)?
 - (b) What happens to the image when the object is moved in front of the focal point?
2. Adjust the curvature radius and observe what happens. (Lower radius of curvature leads to a thicker lens.)
 - (a) As the lens gets thicker, what happens to the focal point?
 - (b) What happens to the image?

Name: _____

Date: _____

Period: _____

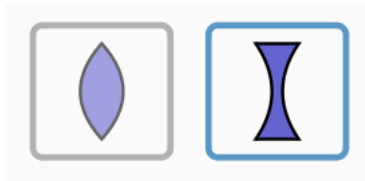
3. Select “*second point*” at the bottom-right of the options bar. You should see an orange dot on the pencil and a new set of orange rays going through the lens.

(a) Slide the dot up and down. What happens to the rays?

(b) Place the orange dot at the center of the pencil. Where do the rays intersect?

(c) Place the dot on the eraser. Where do the rays intersect?

4. Deselect “*second point*” and change the lens type to the *diverging lens* near the top-middle of the screen.



(a) What happens to the image as the object moves closer to the lens?

(b) Can a diverging lens make a real image? Why or why not?