

Lesson 1: Lenses

OPENER

- ❖ Have you used a hand lens before? What did you look at?
- ❖ Why is it helpful to magnify something? Give an example.

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Use the hand lens to look at words on the page. Share ideas with your group.

1. How large can you make the letters appear?
2. What happens as you lift the lens farther and farther from the page?
3. How can you make the letters appear even larger?
4. What distances (from the object to the lens, from the lens to your eye, etc.) make the letters appear the largest?

Now use two lenses.

5. How much can you magnify the letters using two lenses? (for example, twice as large? ten times as large?) How can you figure this out?
6. What are the optimal distances (the distances that magnify the letters the best)?
7. DRAW A DIAGRAM of the optimal distances and explain what you did. Label your diagram with all the important measurements.

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EXTENSION

❖ Are more lenses better? Why or why not?

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EXIT CARD

Turn in your diagram for Question 7.

HOMEWORK

- ❖ In the next lesson, you will design a device that makes the words appear as large as possible. Imagine how you might build this device and what features you would like it to have. List or draw some of these features.
- ❖ If you like, bring in materials to build the device. (Some materials will be provided. Your teacher will need to approve anything you bring in.)