PHYSICS IN MOTION
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Unit 6L
Spherical Mirrors
Exploring Spherical Mirrors Lab

Name:

Date:

In this activity, you will compare the images formed by concave and convex mirrors relative to the location of an object.

Materials:

- small convex mirror
- small concave mirror
- mirror holder
- candle
- meter stick
- screen holder
- index card

Part One: Concave Mirror

a. Place the candle at least twice the focal length away from the mirror.

b. Use the index card as a screen and adjust its location until an image is projected onto it.
Note: The image should be that of the candle flame, not just a reflection of light.

1. At what distance from the mirror does the clearest image form?

_____

2. How does the size of the projected image compare to the actual size of the flame?

_____

c. Place the candle at exactly twice the focal length away from the mirror.

d. Adjust the location of the index card until an image is projected onto it.

3. At what distance from the mirror does the clearest image form?

_____

4. How does the size of the projected image compare to the actual size of the flame?

_____

e. Move the candle closer to the mirror but still outside the focal length.

f. Adjust the location of the index card until an image is projected onto it.

5. At what distance from the mirror does the clearest image form?

_____

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6. How does the size of the projected image compare to the actual size of the flame?

g. Place the candle at a distance from the mirror that is equal to the focal length.

7. Look into the mirror. Describe the image of the flame.

h. Adjust the location of the index card until an image is projected onto it.

8. At what distance from the mirror does the clearest image form?

i. Place the candle at a distance from the mirror that is less than the focal length.

9. Look into the mirror. Describe the image of the flame.

j. Adjust the location of the index card until an image is projected onto it.

10. At what distance from the mirror does the clearest image form?

Part One: Conclusions

1. If an object is placed outside the focal length, what kind of image forms? Justify your answer with evidence from your findings.

2. Does an image form when an object is placed at the focal length? Justify your answer with evidence from your findings.

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Part One: Conclusions

3. If an object is placed inside the focal length, what kind of image forms? Justify your answer with evidence from your findings.

Part Two: Convex Mirror

a. Place the candle at some distance from the convex mirror.

1. Look into the mirror. Describe the image of the flame.

b. Move the candle farther away from the mirror.

2. Does the image of the flame change when the distance increases?

c. Move the candle closer to the mirror than it was in the first situation.

3. Does the image of the flame change when the distance decreases?

Part Two: Conclusions

1. What kind of image do convex mirrors form? Justify your answer with evidence from your findings.

2. How does the distance between the object and the mirror affect the size of the image?