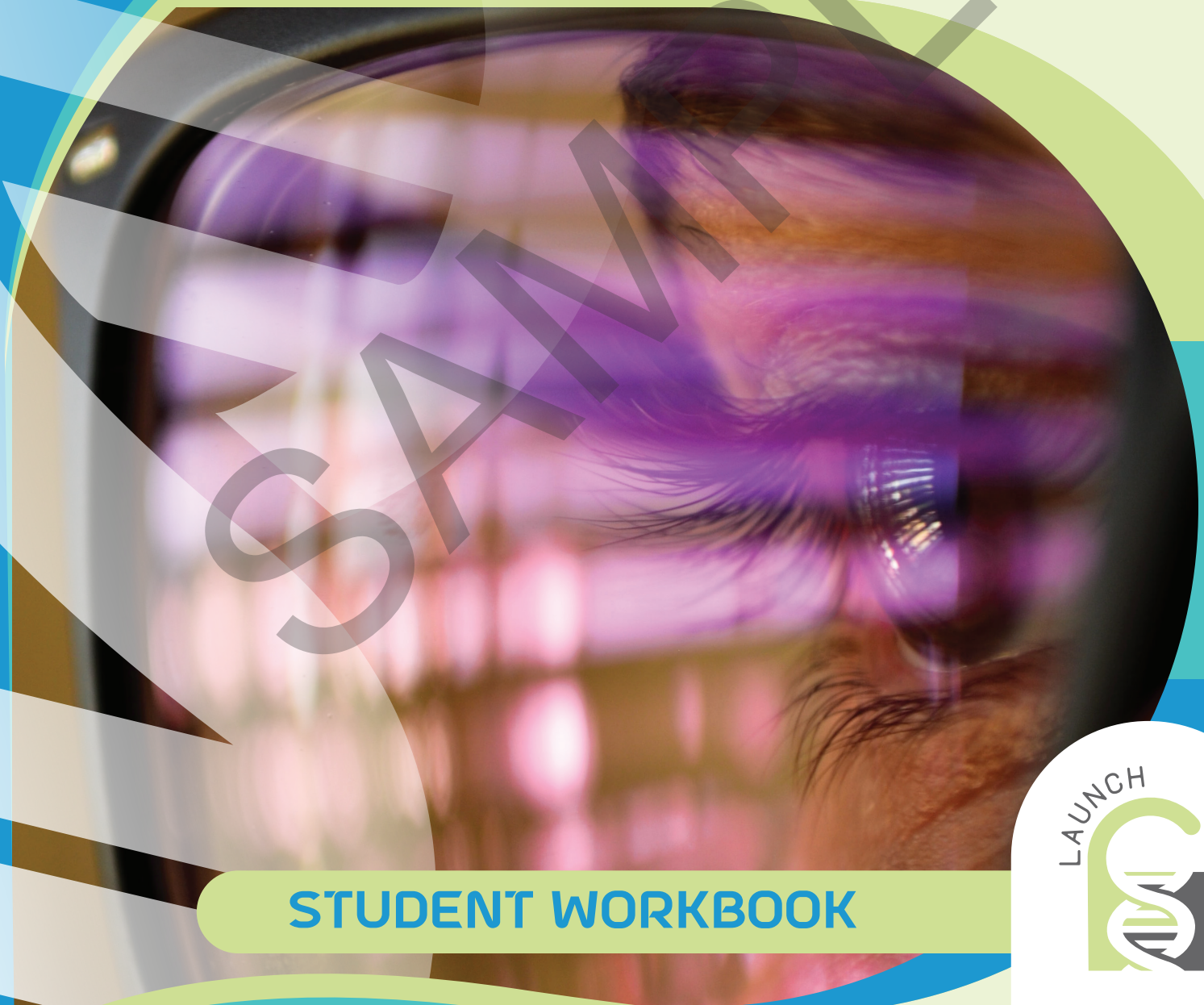
TRICK OF THE LIGHT



STUDENT WORKBOOK

LAUNCH

ACTIVITY 1

WINDOW WONDER

Have you ever been "tricked" by an optical illusion? Chances are, you have! Films and television shows often make use of optical illusions to "trick" viewers, making people appear as tiny hobbits or making a hallway look longer than it really is. In this kit, you will see some of the ways this is done. First, you will make a classic optical illusion with just some paper and a straw!

1 THE AMES WINDOW

Seeing is believing. In this activity, what you see will defy logic!

WHAT YOU NEED:

FROM THE KIT:

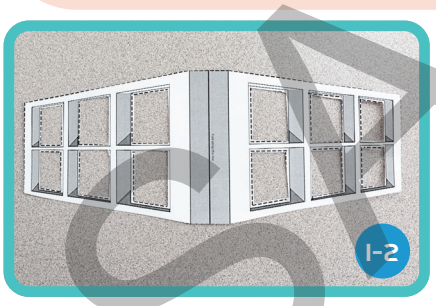
- ☐ Ames window template
- ☐ Box the kit came in
- ☐ Invisible tape
- ☐ Scalpel
- ☐ Straw

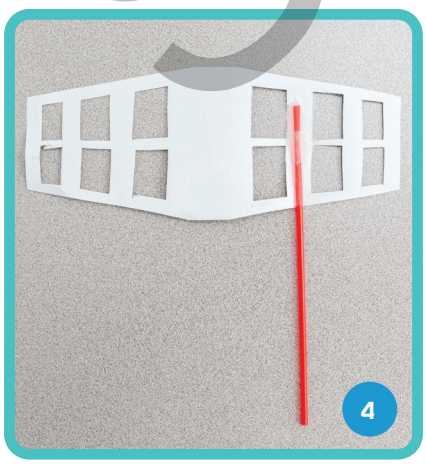
OTHER ITEMS:

- ☐ Scissors

SAFETY!

WARNING! Sharp objects can cause injury.
Don't cut or poke yourself. Always cut away from your body!





WHAT TO DO:

1. Cut a short flap off the box the kit came in.

2. Use scissors to cut out the Ames window shape along the dotted lines.

3. Place the box flap underneath your template to prevent scratching your work surface. Use the scalpel to cut out the inside parts of the window panes along the dotted lines.

4. Turn the template over so the blank side is showing. Tape the straw in the middle to make a long handle.

THINK ABOUT IT!

1. How does a concave lens affect the light going through it?

2. What are some examples of ways you have used concave lenses in daily life?

3. Summarize how your observations support Snell's Law.

CONVEX LENSES

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A **convex lens** is a lens with at least one side that curves outwards. Convex shapes look like they have a rounded bulge on one or both sides.

A drop of water has a convex outer surface.

Microscopes

Magnifying glasses

Car headlights

Telescopes

Projectors

Solar cells

Convex Lens Observations Table	
Studying the lens without the laser pointer (Step 1)	
Laser on without lens (Step 3)	
Laser on with lens half-way between the laser and the wall (Step 4)	
Changing position of the lens (Step 5)	

THINK ABOUT IT!

1. How does a convex lens affect the light going through it?

2. What are some examples of ways you have used convex lenses in daily life?

3. Summarize how your observations support Snell's Law.

LAUNCH

SCIENCE UNLOCKED

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Kit	SU-TRIKLT
Instructions	IN-TRIKLTS
Revision Date	3/2022