

MAKING A MODEL OF THE EYE AND TESTING DEPTH PERCEPTION



Homeschool Science Experiment

Name: _____

Date: _____

TOPIC

How our eyes work together to create depth perception.

GOAL

Build a simple model of the eye and test how using two eyes helps you judge depth and distance.

MATERIALS

- 2 clear plastic cups
- 2 small convex lenses (magnifying lenses work well)
- Tape
- Marker
- Clay or playdough
- Small object (e.g., bead or toy figure)
- Ruler or measuring tape
- Cardboard
- Scissors
- String (optional)



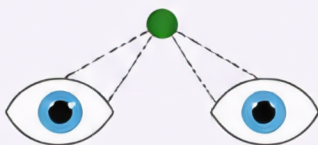
BUILD YOUR EYE MODEL

1. Tape one convex lens inside the bottom of each plastic cup. The lens should sit where the "pupil" would be.
2. Use clay or playdough to secure the lens in place.
3. Decorate each cup to look like an eye if you want!
4. Hold the cups up to your face like goggles. These are your "eyes."



THE SCIENCE BEHIND IT

Each eye sees the world from a slightly different angle. Your brain compares the two images to create a sense of depth. This helps you judge how far away things are and how to move safely in your environment.



Because each eye sees from a different angle, your brain can tell how far away things are.

★ CHALLENGE

Try walking around a safe area wearing an eye patch over one eye. How does it feel compared to using both eyes? What is harder?

PART 1: TESTING DEPTH PERCEPTION

Find a clear space with a wall as the background.

1. Place a small object (like a bead or toy) on a table.
2. Put on your eye model (the cup goggles).
3. Hold one hand up with your index finger.
4. Close one eye (or cover one cup) and line up your finger with the object. Notice how it looks.
5. Now open both eyes (use both cups) and line up your finger with the object. Notice how much easier it is to line it up!
6. Move the object closer and farther away. Each time, try lining it up with your finger using:
 - One eye
 - Both eyes
7. Record your observations below.

WHAT DO YOU OBSERVE?

One eye: _____

Both eyes: _____

Using both eyes makes it: _____

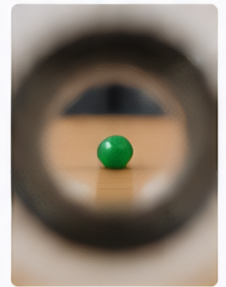
ONE EYE
(cover one eye)



BOTH EYES
(use both cups)



**VIEW THROUGH
THE EYE MODEL**



THINK AND APPLY

1. Why do you think using two eyes helps your brain judge depth?

2. What are some activities that require good depth perception?

3. How might depth perception help you in everyday life?



EXTEND YOUR LEARNING

Research how the brain processes the different images from each eye. Can you find examples of animals with eyes that work differently?