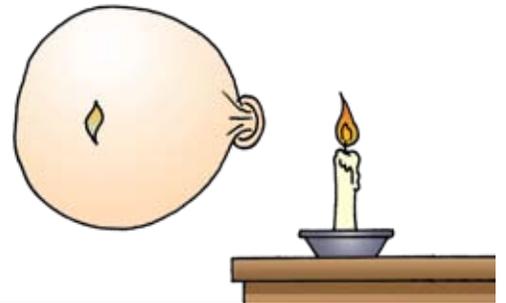


BALLOON EYE**FOCUS** Eye Structure**OBJECTIVE** To explore how an image is created in your eye**OVERVIEW** The ability to see is very important. We use our eyes constantly. How do our eyes actually work? This activity will help you understand the process better.**WHAT TO DO****STEP 1**

Inflate the balloon about 3/4 full and **pinch** the neck to keep the air in. Now have a team member **slip** the lens into the opening. (Be careful! It's easy to cut the balloon with the lens.) When the lens is installed correctly, you should be able to see into the balloon through the lens. **Record** the results.

STEP 2

Light the candle and **point** the lens toward the light. You should see an image of the candle on the back of the balloon. Slowly **move** the balloon backward or forward until the image is well focused. Make notes about what you see. **Keep** the balloon in this exact focused position for Step 3.

STEP 3

Have a research team member gently **squeeze** the front and back of the balloon to shorten the "eye." **Watch** what happens to the image. Now **squeeze** the top and bottom of the balloon to lengthen the "eye." Again, **watch** what happens to the image. Don't forget to make notes in your journal about what you observe.

STEP 4

Make sure everyone on your team has a chance to work with your Balloon Eye. Continue to **observe** and **discuss** what you see. Now **review** your notes from Steps 2 and 3. **Share** and **compare** observations with your research team.

WHAT JUST HAPPENED?

The lens you put in the neck of the balloon simulates the **lens** of your **eye** (front of your eye). It helps **focus** (or concentrate) light onto the **retina** (back of your eye). The retina is where the **image** (whatever you're looking at) is reproduced. The shapes you gave the balloon simulate different vision problems that optometrists can usually fix with glasses or contacts.

Notice the image in the balloon was upside down. That's exactly how images are projected in our eyes! So why don't we "see" everything upside-down? When we're born, our miraculous brain begins learning how to adjust. Ever notice how tiny babies often reach in the wrong place for something they're trying to grab? They're still learning to coordinate their eyes with their brain.

WHAT WE LEARNED



**What did the lens represent in Step 1?
What did the back of the balloon represent?**



**In Step 2, what was unusual about the image in the balloon?
How does this reflect what happens in your eye?**



Describe what happened to the image when you modified the shape of the balloon in Step 3.



Based on what you observed in this lesson, how do contact lenses or glasses help correct vision problems?



Name three devices (other than glasses or contacts) that use lenses.
