

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Hey, You Are Not Looking So Good Eye Dissection!

### Learner Outcomes:

- Explain how objects are seen by the eye, and compare eyes with cameras
- Compare the function and design of the mammalian eye with that of other vertebrates and invertebrates

### Key Terms:

Cornea	Retina	Shutter
Iris	Optic nerve	Photoreceptors
Pupil	Blood vessels	Rods
Lens	Aperature	Cones
Ciliary muscls	Diaphragm	Vitreous humour

**Background Information:** The mammalian eye is the result of millions of years of evolution and is one of the most complex organs in the body. It combines a number of specialized tissues and structures that allow organisms to gather detailed information about their environment.

**Research Question:** How do the structures of the eye support its function?

### Materials:

Sheep Eye	Dissecting tray
Scalpel	Dissecting Probes

### Procedure / Observations:

1. Obtain dissecting equipment and 1 sheep eye ball.
2. CAREFULLY remove the excess tissue from around the eye.

Explain why the eye has so much muscle surrounding it.

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3. CAREFULLY cut around the **iris** (the colored part of the eye) and remove. You are also removing the **cornea**. Be careful not to squeeze the eye too hard because the **vitreous humor** will squirt all over you!! (Not funny for you!)

4. Lay the **iris** to the side and examine it.

What colour is it? \_\_\_\_\_

What is its function? \_\_\_\_\_

How does the shape of the iris in the sheep's eye compare to that of a human eye? \_\_\_\_\_

\_\_\_\_\_

5. CAREFULLY scoop out with your finger the **vitreous humor**.

Describe the **vitreous humor**. \_\_\_\_\_

\_\_\_\_\_

What do you think the function of the vitreous humor is? Why?

\_\_\_\_\_

6. Find the lens in the **vitreous humor**.

Describe it. \_\_\_\_\_

Cut the **lens** in half and describe it.

\_\_\_\_\_

How does the structure of the lens contribute to its function? \_\_\_\_\_

\_\_\_\_\_

This investigation / activity has been adapted from:

Mah K, Martha J, McClelland L, et al. *Science in Action 9*. Toronto, ON: Addison Wesley.

7. Cut the eye in half. The brown thin layer is the **retina**. Carefully peel away the **retina**.

What is the **retina** attached to at the back of the eye?

\_\_\_\_\_

What is the function of the **retina**?

\_\_\_\_\_

8. Feel the white part of the eye.

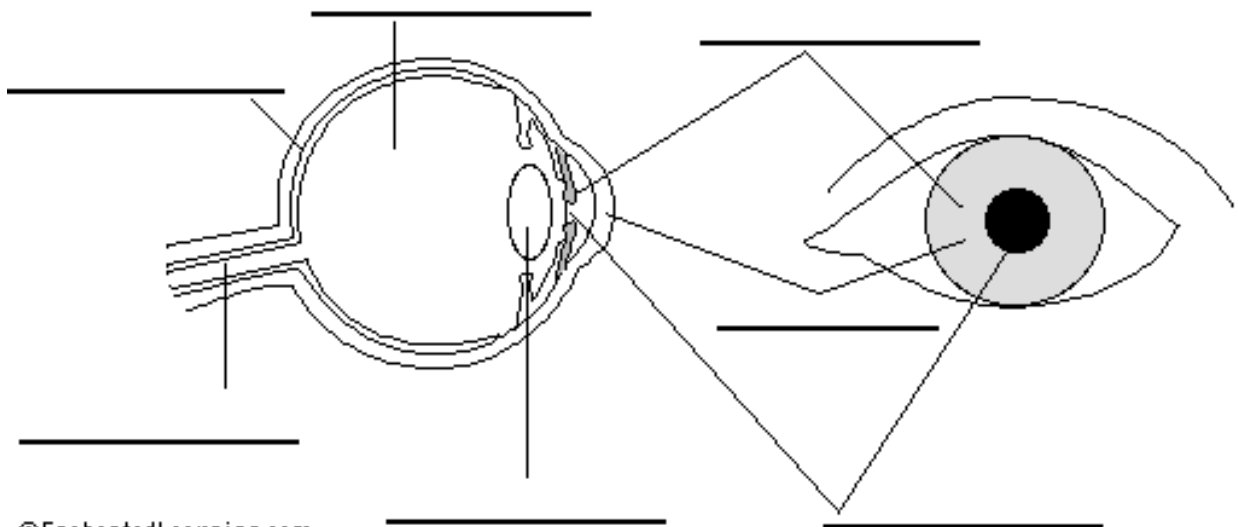
Describe it. \_\_\_\_\_

Suggest a reason for this. \_\_\_\_\_

9. Describe the back side of the eye.

What colour is it? \_\_\_\_\_

10. Label the eye diagram.



**Conclusion:** What functions does the eye need to perform to allow you to see clearly? What structures specifically perform these functions?

**Extension:**

1. Research the eye structures of one other vertebrate and one invertebrate. Explain how the structures of these other two eyes differ from our own and what functions they perform.
2. Compare the human eye and a camera in terms of how they create an image. Identify the structures that have a similar function and describe how the eye and the camera differ.