**Eye Dissection**

**Purpose**: To identify and examine the various parts of a mammalian eye.

**Materials**: gloves scissors scalpel forceps cutting mat newspaper eye

**Procedure**:

**Part A**: **External features of the eye**

1. There is some **fat** around the eye. What colour it the fat?
2. What is the purpose of the fat around the eye?
3. What is the job of the **muscles** on the outside of the eye?

1. Cut the fat and muscles off the eyeball so that you can see the sclera.
2. What colour is the **sclera**? \_\_\_\_\_\_\_\_ **iris**? \_\_\_\_\_\_\_\_ **pupil**? \_\_\_\_\_\_\_\_
3. The **cornea** is the tough, clear covering over the iris and pupil. It is normally clear and colourless; however in the eye you are dissecting, it may be cloudy. Why do you think it may have become cloudy?
4. The optic nerve carries information from the retina to the brain. Identify the optic nerve on the back of the eye. Describe what it looks like.

**Part B**: **Internal features of the eye**

1. Carefully use the scalpel to make a small cut near the centre of the eye. With the scissors, cut around the entire eye so that you have two equal hemispheres.
2. What colour is the **sclera**?
3. What did you notice about the texture of the sclera? Why is this important?
4. The jelly inside the eye is the **vitreous humour**. Gloop your vitreous humour onto the parts identification worksheet.
5. What is the job of the vitreous humour?
6. Pick up the back of the sclera, which contains the optic nerve. The **retina** is a thin layer on the inside of the sclera. Gently peel off the retina with the forceps and place it on the parts identification sheet.
7. What is the purpose of the retina?
8. You may have found it difficult to remove the retina because it was attached to the optic nerve. This area is called the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_.
9. They black, shiny layer under the retina is the **choroid coat**. It contains blood vessels that provide nutrients for the eye. Why is the choroid coat dark?
10. Use the forceps to carefully peel the choroid coat from the sclera and place it on the parts identification sheet.
11. You have now removed everything from the back half of the **sclera**. Place it on the parts identification sheet.
12. Pick up the front half of the sclera that contains the cornea, iris and lens. Remove the lens with the forceps.
13. When you remove the lens, you should notice a watery fluid between the lens and the cornea. This is the **aqueous humour**. What is its function?
14. Look at the **lens**. Is it concave or convex?
15. Gently squeeze the lens. Why is it important that the lens is flexible?
16. Place the lens on the newspaper. What do you notice about the writing?
17. Place the lens on the parts identification sheet.
18. Use your fingers to carefully remove the **iris**. When you look at the iris closely, you should be able to see thin lines. These are the muscles that cause the iris to contract or dilate. Draw the iris in the space below.
19. What is the purpose of the iris?
20. What is the hole in the iris called?
21. Is the iris transparent, translucent or opaque?
22. Place the iris on the parts identification sheet.
23. Cut the **cornea** out of the sclera. What is the purpose of the cornea?
24. With your scalpel, cut through part of the cornea. You should feel and hear it crunch. The cornea is made of multiple layers to make it thick and strong. Why must the cornea be tough, especially in grazing animals such as cows or sheep?
25. Place the cornea on the parts identifications sheet.