

Name: _____ Period: _____ Date: _____

Exploring Cells with a Microscope

LAB ACTIVITY

7-3 SCIENCE, MR. ANDREACCI

Part B

Purpose

To compare cells from plants (plant type cells) and humans (animal type cells)

Materials (per pair of students)

| | |
|---------------------|----------------------|
| compound microscope | water |
| 2 slides | forceps, scalpel |
| 2 coverslips | toothpick |
| piece of onion | iodine solution |
| 2 medicine droppers | methylene blue stain |

Procedure (Part B)

Onion Slide

1. Clean a slide and cover slip with a tissue and water, if needed.
2. Place a drop of water in the center of a microscope slide with a dropper.
3. Using a clean dropper, place a drop of iodine solution in the water.

CAUTION: *Iodine is poisonous and can stain your skin and clothing.*

4. Using forceps, carefully peel the thin inner “skin” from a layer of onion.
5. Place a small section of the onion “skin” in the drop of water on the slide. Make sure the “skin” has no folds.
6. Hold the coverslip at a 45° angle to the slide. Slowly lower it onto the water. You may use a pencil to help you. If a large air bubble forms, make a new wet mount.
7. Make sure the microscope is set on the low power objective. **Note:** *Remember to use the proper procedures for switching objectives and avoid touching the slide with the objective.*
8. Place the slide under the stage clips on the stage carefully. Turn on the light source.
9. Watch the microscope from the side. Use the coarse focus adjustment to raise the stage slowly until the objective is close to the slide. Look through the eyepiece with both eyes open. Lower the stage slowly using the coarse adjustment until you can see the image of the onion cells. Examine the slide under low power.

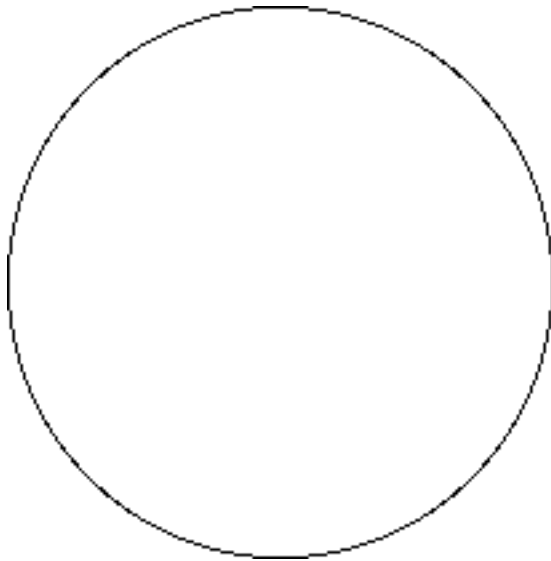
10. Focus with the fine adjustment. Draw what you see in the *observations* section. Draw several onion cells and show how the cells fit together. Label the parts you can see.

11. Lower the stage. Turn to the high power objective. View onion cells using high power.

Human Cells

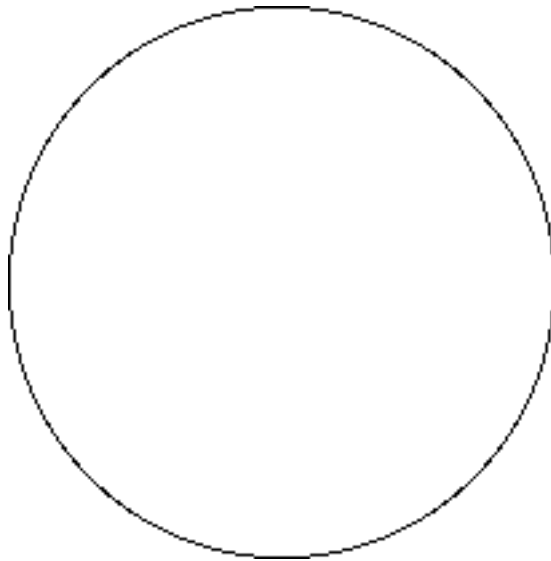
1. Place one drop of methylene blue solution on the center of a clean slide.
2. Use a toothpick to gently rub the inside of your cheek, within your mouth. You will not see anything on the toothpick.
3. Tap the toothpick in the methylene blue solution to rinse the cheek cells from the toothpick.
4. Add the coverslip properly. Follow teacher directions to remove stain.
5. Focus on the cells under low power and then under high power. Draw the cells in the *observations* section. Show several cells, and label any cell parts you can see.

Observations



_____ Power
Onion cells

magnification: _____ times



_____ Power
Human cheek cells

magnification: _____ times

Conclusion (Part B)

1. Which organelles could you see in the onion cells?

2. Which organelles could you see in the cheek cells?

3. How did the shape of the two different kinds of cells differ?

4. Why were you **unable** to see certain organelles?
