WORLD OF CELLS LAB

NAMES_____

PRELAB:

In this lab, you will be observing different types of cells. According to the Cell Theory, ALL living things are made of cells. We will be examining some living things to see how cell structure differs.

This lab involves stains and sharp objects so the utmost care must be taken!!!!!!! MAKE SURE YOUR DRAWINGS ARE DETAILED!

MATERIALS:

Microscopes
Glass Slides
Cover Slips
Razor Blade/Scalpel
Toothpicks
Methylene Blue Stain
Pipets
Water
Red Onion
Yogurt w/ live cultures
Cork
Prepared slides (bacteria and protists)
Paper Towels
Goggles
Aprons
Gloves (one per person)

PROCEDURE:

1.) You will be working in pairs for this lab. Obtain a microscope, but get materials as you need them from the lab table.

2.) You will be examining the following:

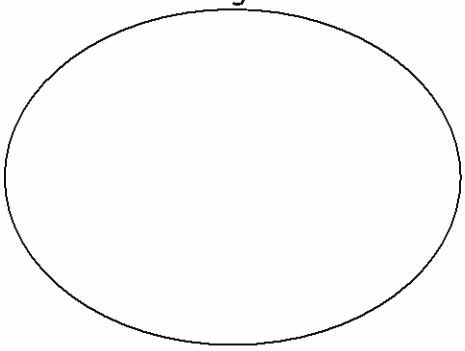
- -Human Cheek (*do last*…will be throwing away slide)
- -Onion
- -Bacteria
- -Amoeba (protist)
- -Filamentous Green Algae (protist)
- -Cork
- -Human Skin

CORK:

Zappp! You are transported back in time! You are the famous Robert Hooke!

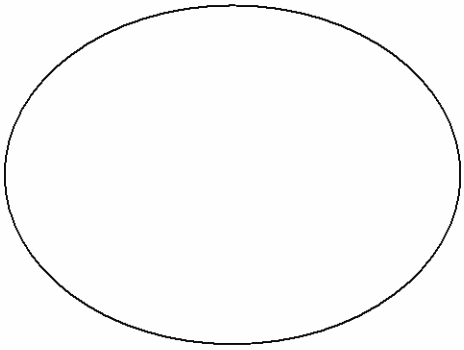
A. Using a razor blade, CAREFULLY! Slice off a THIN piece of cork and put it on a slide
B. Add a drop of water and a cover slip. Examine it under (100x). Draw what you see below
C. Throw away cover slip and piece of cork, rinse and dry the slide to reuse

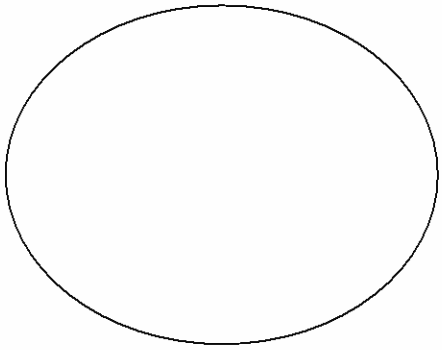
100X Magnification



RED ONION:

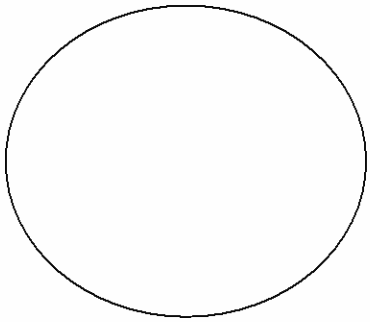
A. Using your fingers, peel a THIN piece of skin from the red onion
B. Prepare a wet mount slide of your red onion skin
C. Observe under lowest power and highest power. Draw what you see below. (40X on right, 400X on left)
D. Throw away piece of onion and cover slip. Dip slide in used slide beaker, wash, rinse, and dry to reuse.





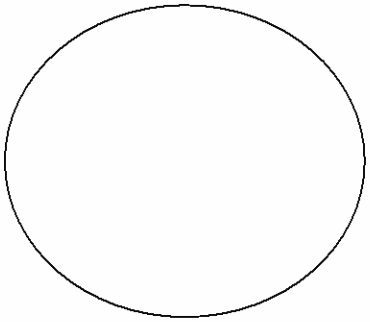
LIVE BACTERIA:

A. Make sure slide is free of dust and other particles, make sure slide is not too scratched
B. Put a very small amount of plain yogurt on the slide
C. Add a small drop of water
D. Put cover slip on top
E. Under lowest power, find a section where the yogurt is thin; this is where you will find the bacteria
F. Switch to highest power (400X) Observe what you see and draw below
G. Look carefully, there might be different kinds of bacteria
H. Throw away cover slip, wash, rinse and dry slide to reuse



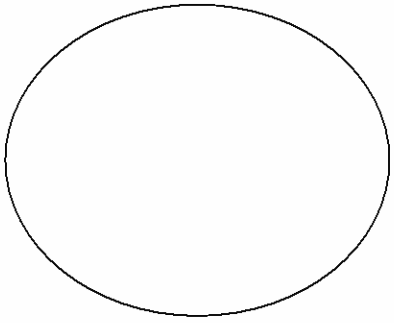
PREPARED BACTERIA:

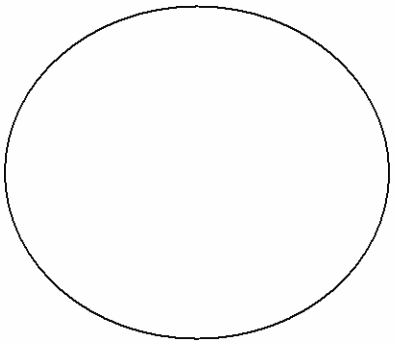
A. Get a PREPARED (meaning you don't have to do anything to it) bacteria slide.
B. Examine the little boogers under highest power. Draw what you see below
C. Note any differences, shapes etc
D. Put slide back in proper place



PREPARED PROTIST SLIDES:

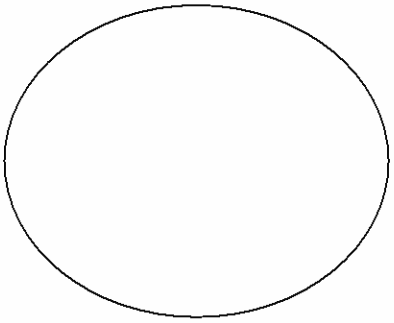
A. Obtain prepared slides of amoeba and filamentous green algae.
B. Examine under highest power
C. Draw below (amoeba/right & green algae/left)
D. Put slides back in proper place!





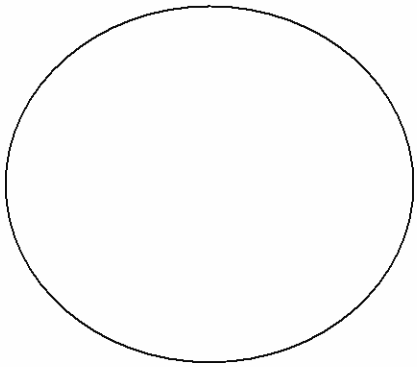
HUMAN SKIN:

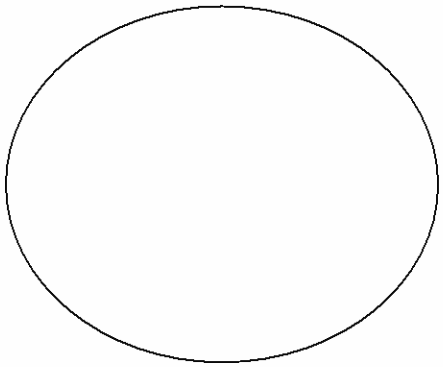
A. Take apiece of clear tape and stick it onto the inside of your wrist.
B. Rub the tape so it sticks onto your wrist and picks up some cells.
C. Tear off quickly and stick the tape onto the microscope slide.
D. Lift one corner of the sticky tape and place one tiny drop of methylene blue onto the microscope slide and just under the tape. BE CAREFUL!
E. The liquid will move across the slide under the tape.
F. Observe under 100X and 400X. If you see cells, draw below.
G. Take off tape; wash, rinse, and dry slide for last lab.



HUMAN CHEEK:

*Use extreme caution…working with biohazard!
A. Get a new slide and cover slip
B. Put a small drop of water on the slide
C. Obtain a toothpick
D. Using the end of the toothpick, GENTLY scrape the inside of your mouth
E. Gently roll the toothpick in the drop of water
F. THROW AWAY THE TOOTHPICK
G. Add a TINY drop of methylene blue stain (this stuff stains, **be careful!!!!!!**)
H. Put a cover slip on top (be sure to use proper technique)
I. Examine the cells under medium and high power. Draw what you see below. (100X on right, 400X on left)
J. Throw entire slide away





*BEFORE ANSWERING QUESTIONS, MAKE SURE YOUR AREA IS CLEAN AND EVERYTHING YOU USED IS IN THE PROPER PLACE!!!!!!!!!!

ANALYSIS QUESTIONS:

1.) How are the cheek cells different from the onion cells? (There are several differences)

2.) Amoebas are considered "animal-like" protists. Why is this a good assumption based on what you saw? Explain.

3.) What were the large, dark staining regions inside all the cells except bacteria?

4.) What was the purpose of methylene blue?

5.) What other foods, besides yogurt, might you find bacteria?

6.) "Algae" is the name for the "plant-like" protists. Does the name fit based on what you saw? Explain.

7.) Are the skin cells different from the cheek cells? If so, how?

8.) How are the bacteria different from the other types of cells?

9.) In a few sentences, discuss what you learned from this lab