

Name: _____ Period: _____ Date: _____

Life Science Microscope Lab

Students are to go to each of the described stations. A maximum of three groups (six students) may be at any one station at a time. **Follow the directions** for each station, make the required microscopic observations as required and complete the necessary color drawings. All drawings must be labeled w/ proper information. All Drawings need to be completed on the specimen diagram sheets and in color using your colored pencils.

Station #1: Cheek cell wet mount and stain

What to do:

1. Use the rounded end (not pointed end!) of a new clean wooden tooth pick to gently scrape the inside of both cheeks.
2. Smear the rounded tip of the toothpick onto the center of a clean slide. Allow it to air dry.
3. Add a small drop of Methyl Blue to the sample. Use your tooth pick to mix up the sample w/ the stain.
4. **DO NOT PUT THE TOOTH PICK BACK INTO YOUR MOUTH.** Throw it away.
5. Place the edge of a cover slip on the edge of your sample.
6. Gently drop the cover slip onto the sample, trying to avoid trapping air bubbles.
7. Place the edge of a strip of paper towel at the edge of the cover slip to absorb excess stain.
8. Start by observing your sample under low power (using the dissecting scope provided).
9. **DRAW AND LABEL** what you see. This is **drawing #1.**
10. Move your specimen to the compound scope & under medium or high power,
11. **DRAW AND LABEL** what you see. This is **drawing #2.** Label the cell membrane, nucleus and cytoplasm

Onion Cell wet mount and stain

What to do:

1. Take a small piece of a single layer of onion. Remove the thin skin layer from the inner, concave, side of the onion.
2. Then place the onion skin onto the center of the slide. Try not to allow the sample to fold over itself. Add a drop or two of water to the middle of the slide. Place a cover slip onto the sample.
3. Start by observing your sample under low power (using the dissecting scope provided).
4. **DRAW AND LABEL** what you see. This is **drawing #3.**
5. Remove the slide. Add a drop of Methyl Blue solution to the edge of the cover slip, place a strip of paper towel on the other side of the cover slip, this will draw the stain across the sample.
6. Place the slide back onto the stage, find it under low power, **DRAW AND LABEL** what you see. This is **drawing #4.** Label the cell wall, cytoplasm, nucleus and vacuole if visible.
7. Move your specimen to the compound scope & under medium or high power, **DRAW AND LABEL** what you see. This is **drawing #5.** Label the wall, nucleus and cytoplasm

Station #2: Comparing Protists using Prepared Slides

What to do: Dissecting Scope

1. Observe prepared slides of Ameba, Paramecium, Euglena. Observe each specimen under the dissecting Microscope.
2. Draw Ameba and label these **drawings # 6,** Paramecium drawings are **#7,** Euglena drawings will be **#8,** Be sure to label as many structures and organelles as you are able to see.
3. **Paramecium** label: pellicle, cilia, nucleus, cytoplasm
4. **Ameba** label: pseudopods, cell membrane, cytoplasm and nucleus
5. **Euglena** label: nucleus, chloroplast, pellicle cytoplasm

What to do: Compound Scope

6. Observe prepared slides of Ameba, Paramecium, Euglena. Find each specimen under low power the switch to medium and/or high power.
7. Under medium/high power, Draw Ameba and label these **drawings # 9,** Paramecium drawings are **#10,** Euglena drawings will be **#11,** Be sure to label as many structures and organelles as you are able to see.
8. **Paramecium** label: pellicle, nucleus, cytoplasm
9. **Ameba** label: pseudopods, cell membrane, cytoplasm and nucleus
10. **Euglena** label: nucleus, chloroplast, pellicle cytoplasm

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Station #3 - Lettuce Stomata – a stained wet mount

What to do:

1. Place a couple of drops of water in the middle of a clean slide.
2. Select a crisp piece of a lettuce leaf.
3. Snap the leaf and gently peel back the top layer of the back of the leaf. This causes a single layer of epidermal tissue to be exposed (similar to the tissue from the onion).
4. Place the tissue onto the water drop without folding it over on itself.
5. Gently place a cover slip over the sample.
6. Pull an iodine stain and stain the lettuce sample
7. Under low power, bring the sample into focus. Try to identify different types of cells. Try to locate Stomata: DRAW AND LABEL what you see. This is **Drawing #12**.
8. Change to medium or high power DRAW AND LABEL what you see. This is **Drawing #13**.

Elodea Leaf – a living wet mount

What to do:

12. Use scissors to cut a single leaf from the Elodea plant supplied.
13. Make a wet mount using water from the sample the plant was stored in..
14. Place a plastic cover slip over the sample and GENTLY flatten the leaf under the cover slip..
15. Start by observing your sample under low power. DRAW AND LABEL what you see. This is **Drawing #14**.
16. Switch to medium or high power. You should be able to see individual cells and even a few individual chloroplasts inside these cells! You may even be able to see the chloroplasts moving as the cellular cytoplasm is streaming inside the cell. DRAW AND LABEL what you see. This is **drawing #15**.

Tulipa – Leaf epidermis w/ stomata – a prepared mount

What to do:

17. Use a prepare slide labeled “Tulipa” and hand labeled D15-1, D15-2 or D15-3
18. Observe under the dissecting scope. Draw and label this **drawing #16**
19. Place the slide under the compound scope. Find it under low power then observe under medium and high power.
20. Draw and label this **drawing #17**
21. Label Cell Wall, epidermis, Guard cells, Stomata, Nucleus and cytoplasm

Station #4 - Macro Organisms – Mealworms and Fruit Flies

What to do:

1. Place a couple of living mealworms into a petrie dish.
2. Leave the petrie dish uncovered
3. Under the dissecting scope, bring the sample into focus. Try to identify different parts of the mealworm. DRAW AND LABEL what you see. This is **Drawing #18**.
4. Place a COVERED petrie dish with a sample of living Fruit Flies under the dissecting microscope.
5. Bring the sample into focus. Try to identify different parts of the flies. DRAW AND LABEL what you see. This is **Drawing #19**.

What to do:

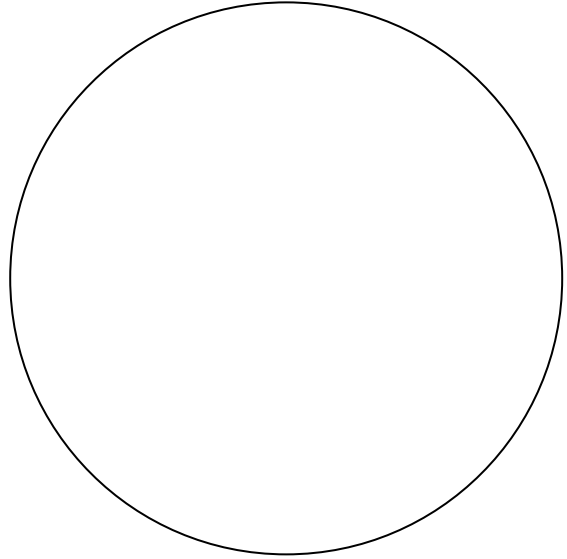
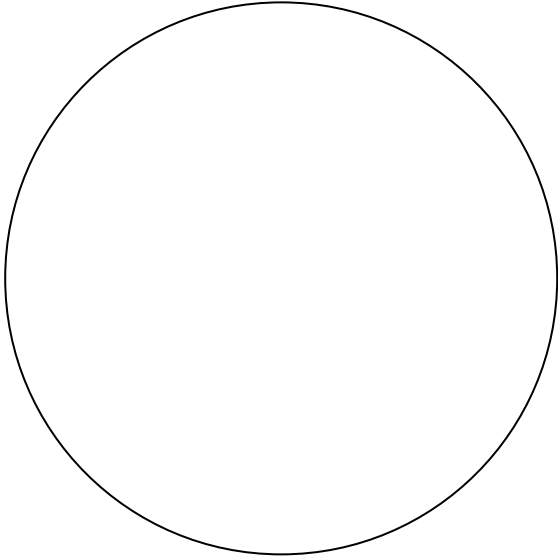
1. Draw your best “Happy Face” and label it **Drawing #20!!**.

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Specimen Diagrams

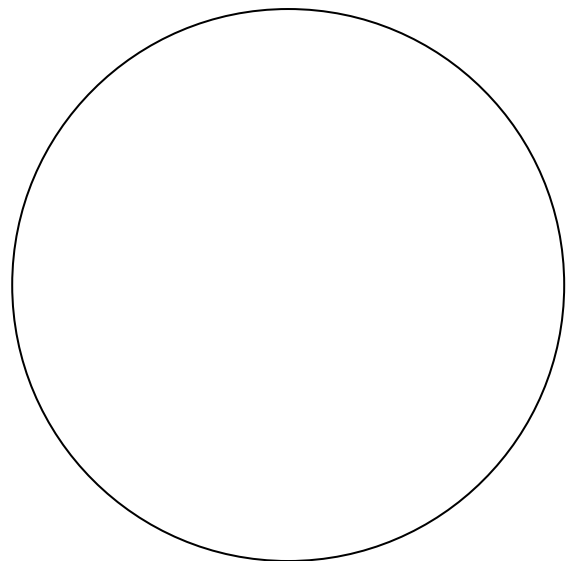
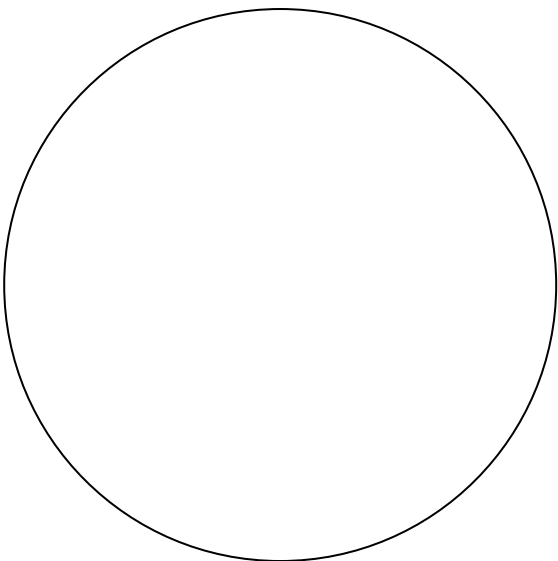
Specimen #1 _____ Specimen #2 _____

Magnification: _____ Magnification: _____



Specimen #3 _____ Specimen #4 _____

Magnification: _____ Magnification: _____

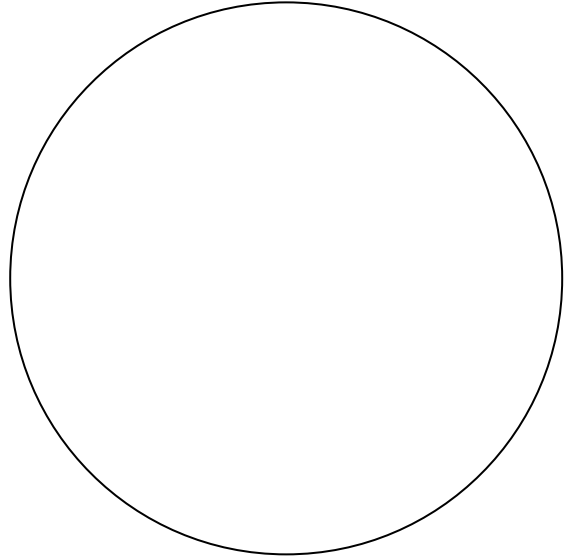
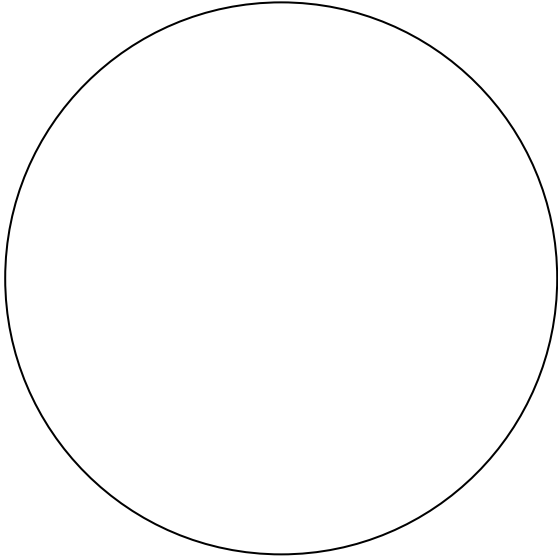


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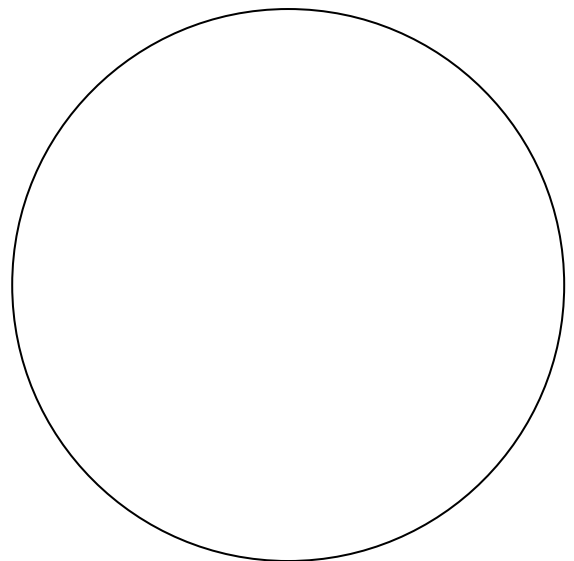
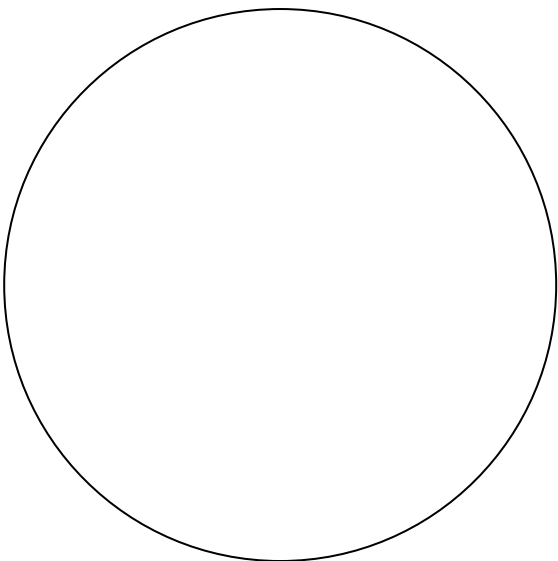
Specimen #5 _____ Specimen #6 _____

Magnification: _____ Magnification: _____



Specimen #7 _____ Specimen #8 _____

Magnification: _____ Magnification: _____

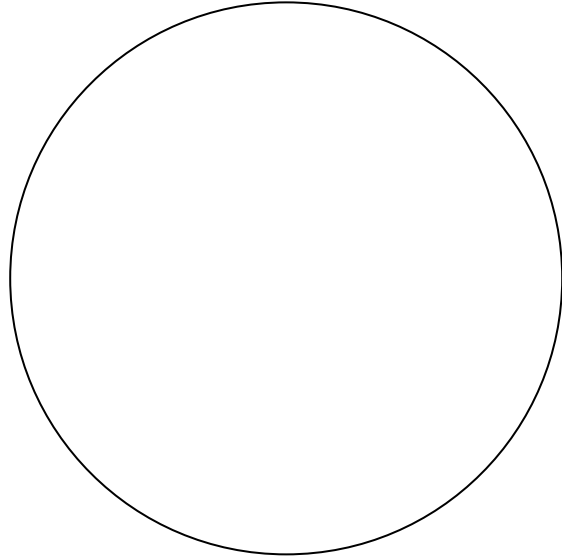
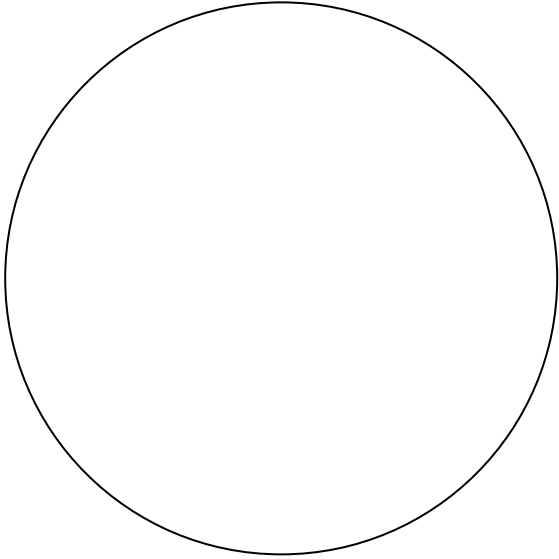


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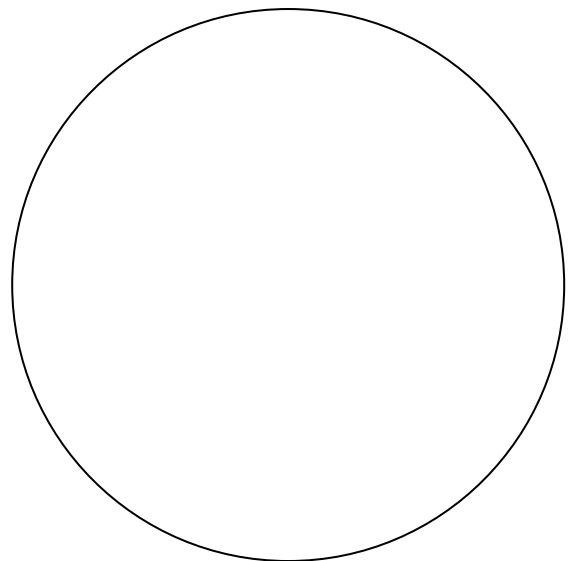
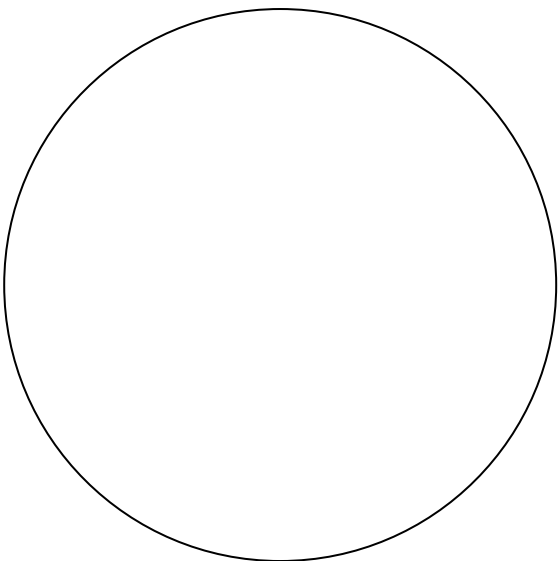
Specimen #9 _____ Specimen #10 _____

Magnification: _____ Magnification: _____



Specimen #11 _____ Specimen #12 _____

Magnification: _____ Magnification: _____

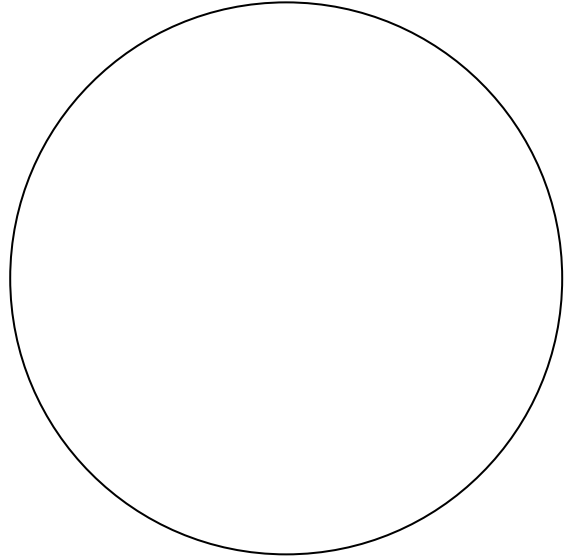
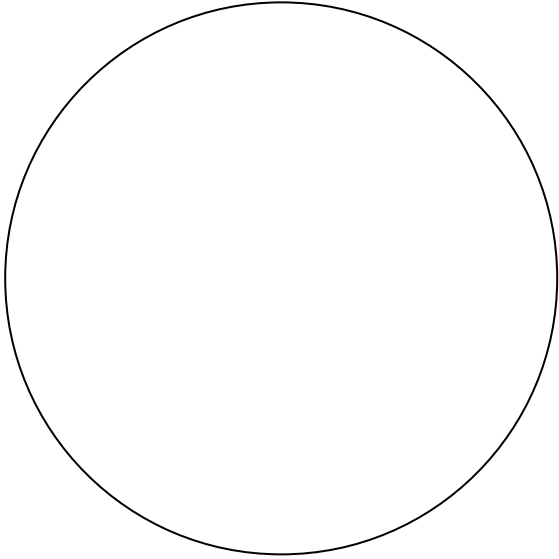


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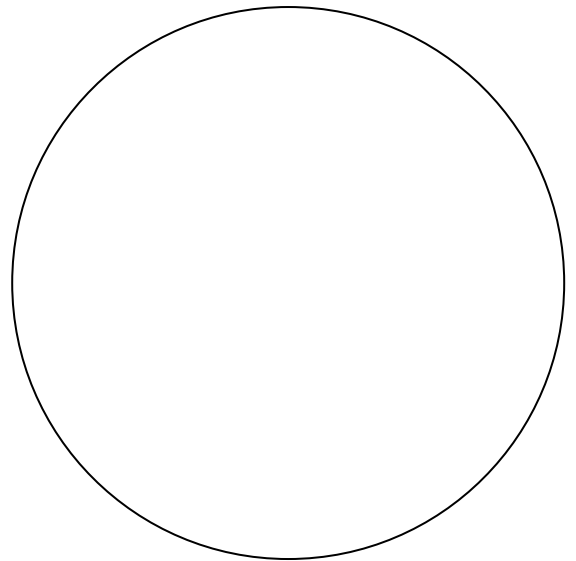
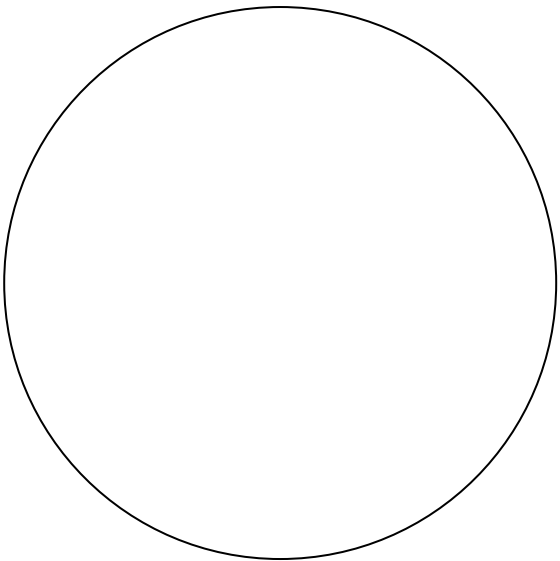
Specimen #13 _____ Specimen #14 _____

Magnification: _____ Magnification: _____



Specimen #15 _____ Specimen #16 _____

Magnification: _____ Magnification: _____



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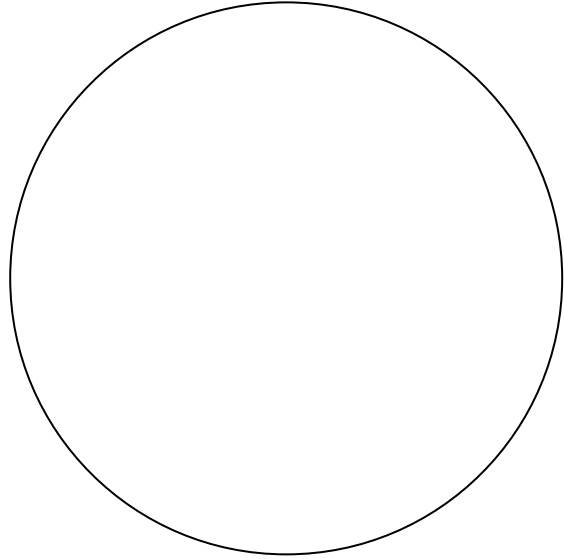
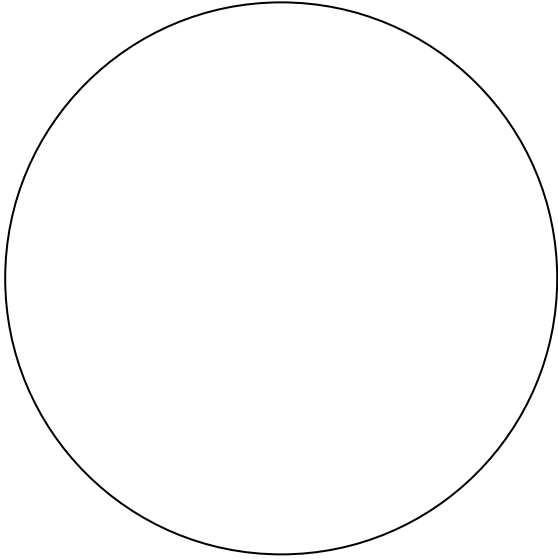
Specimen Diagrams

Specimen #17 _____

Specimen #18 _____

Magnification: _____

Magnification: _____



Specimen #19 _____

Specimen #20 _____

Magnification: _____

Magnification: _____

