

## Focusing on Focusing and Drawing

Method:

### Part A

1. Set up the microscope safely.
2. Peel back a layer of onion cells from a piece of onion. You want the THINNEST film you can get.
3. Place ONE drop of water directly over the layer of onion cells, do not use too much or your cells will float and be hard to draw.
4. Place the coverslip at a 45 degree angle (approximately) with one edge touching the water drop and then gently let go. Performed correctly the coverslip will perfectly fall over the specimen.
5. Place the slide under the scanning objective and focus.
6. **Draw** what you see in your field of view
7. Move to low power and high power and **draw** what you see in the field of view
8. **Label** your drawings. You should be able to see the cell wall, and the nucleus

### Part B

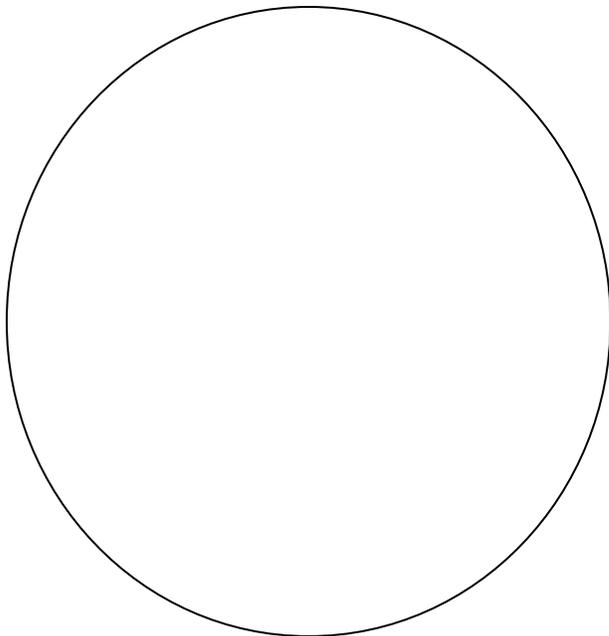
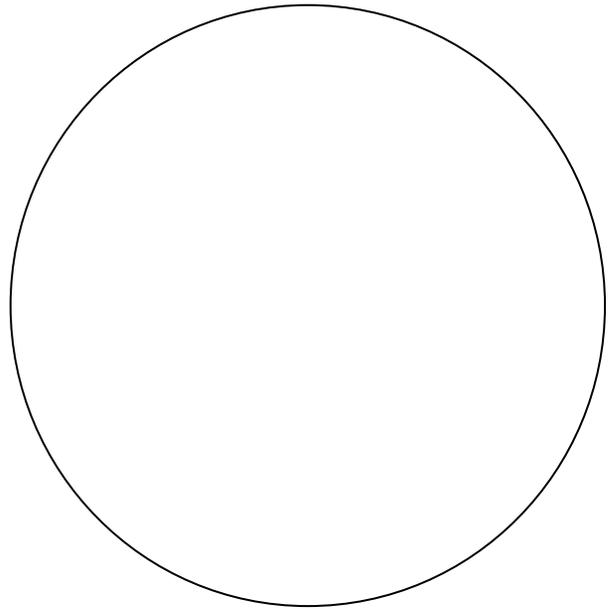
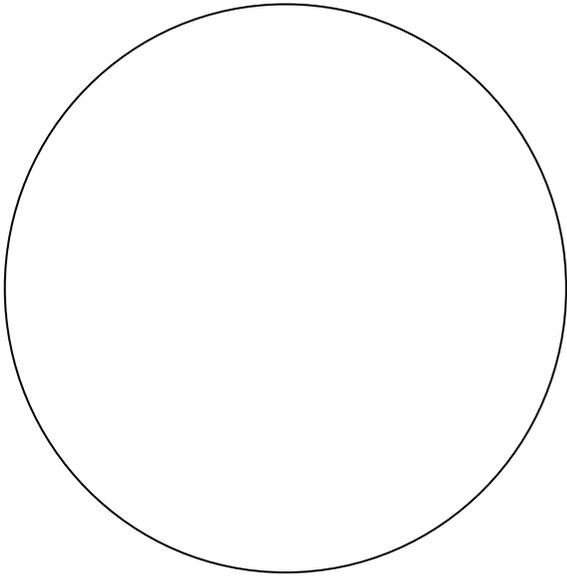
1. Get the teacher to stain your specimen
2. Place the slide under the scanning objective and focus
3. **Draw** what you see in your field of view
4. Move to low power and then high power, and **draw** what you see in the field of view
5. Label your drawings. You should be able to see the cell wall and the nucleus

### Part C

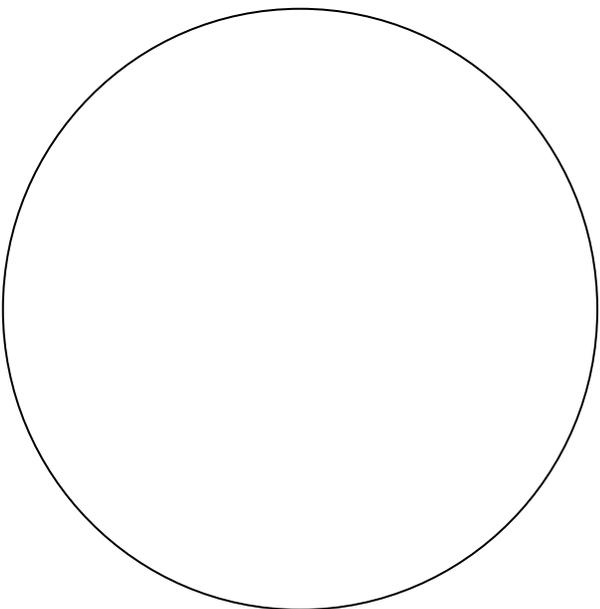
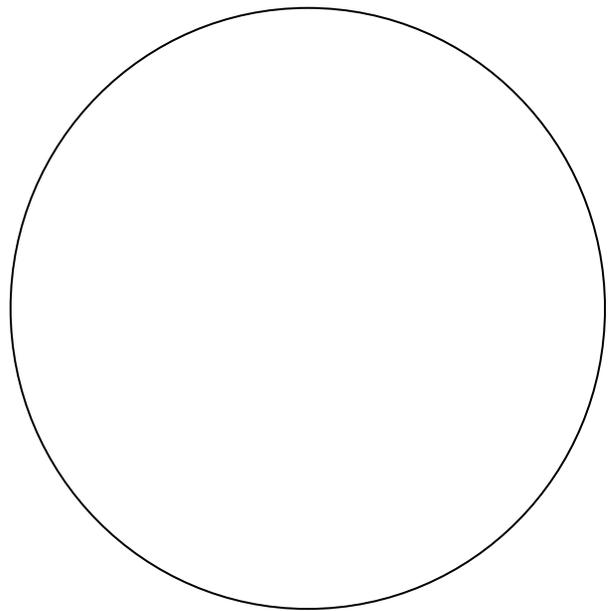
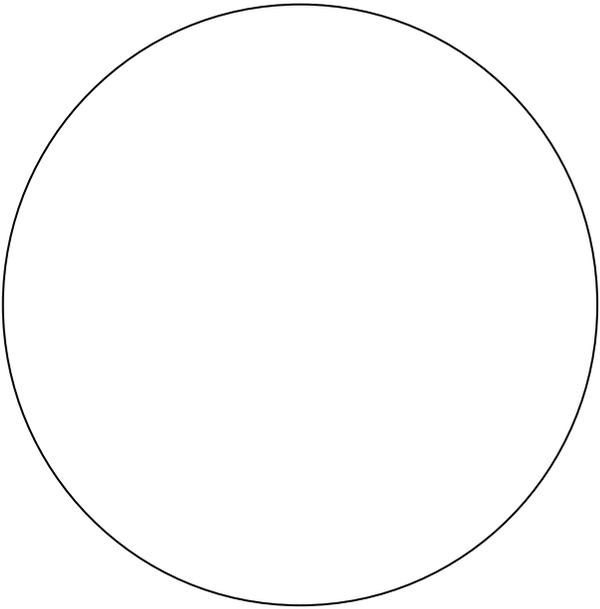
Using a pipette, put a small amount of pond water onto a concave slide and place under the microscope. Draw what you see. You might need to move the stage around to see something in the eyepiece, as pond water organisms are living and often wriggle under the hot lamps.

Results (12 marks):

Stained and Unstained Onion cells (label scanning, low and high)



Pond water



Discussion:

1. What does the stain do? (2 marks)

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2. What does field of view mean? (1 mark)

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3. Describe in your own words what happens to the field of view of a microscope when the power of the lenses increases (An increase in magnification) (3 marks)

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4. Using the information from last practical lesson what is the size of your field of view for each magnification? (3 marks)

5. Estimate the size of the cells in one of your drawings in  $\mu\text{m}$  (micrometres). Write down what magnification it is, whether the cell is stained or unstained. Include your calculations in the answer. (5 marks)