

COMPARING PLANT AND ANIMAL CELLS

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Purpose: To compare and differentiate between plant and animal cells.

Materials:	Microscope	Tweezers	Methylene Blue
	Slides and Cover Slips	Toothpick	Iodine
	Medicine Dropper	Onion	

PART A: Observing Human Cheek Cells

Procedure:

- 1) Place a drop of water onto a **clean** microscope slide.
- 2) Using the **blunt** end of the toothpick, gently scrape the inside of your cheek. Smear the cheek cell sample into the small drop of water on the slide.
- 3) Place **one** drop of methylene blue over the cheek cells.
- 4) Observe the specimen at low, medium and high power.
- 5) Draw a diagram (follow all previous instructions) of the field of view at the magnification that shows the clearest view with the most detail.

PART B: Observing Onion Skin Cells

Procedure:

- 1) Taking a layer of onion, bend it until it breaks. Using tweezers, remove the translucent skin that covers the concave surface of the onion layer.
- 2) Prepare a wet mount of the onion skin, making sure that it is flat, **not** folded or wrinkled.
- 3) Observe the specimen at low power.
- 4) Place a drop of iodine solution on the slide, at the edge of the cover slip. Place a paper towel at the opposite edge of the cover slip. The absorbent paper will draw the stain across the specimen.
- 5) Observe the specimen at low, medium and high power.
- 6) Draw a diagram (follow all previous instructions) of the field of view at the magnification that shows the clearest view with the most detail.

Questions: Answer the following.

1. Why was it necessary to stain the cheek cells and the onion cells?
2. Was every part of the cells stained equally? Explain.
3. What shape were the cheek cells that you observed? What shape were the onion cells?
4. List the cell structures that were visible in each type of cell.
5. Compare and contrast the appearance of plant and animal cells.

Hand in the following:

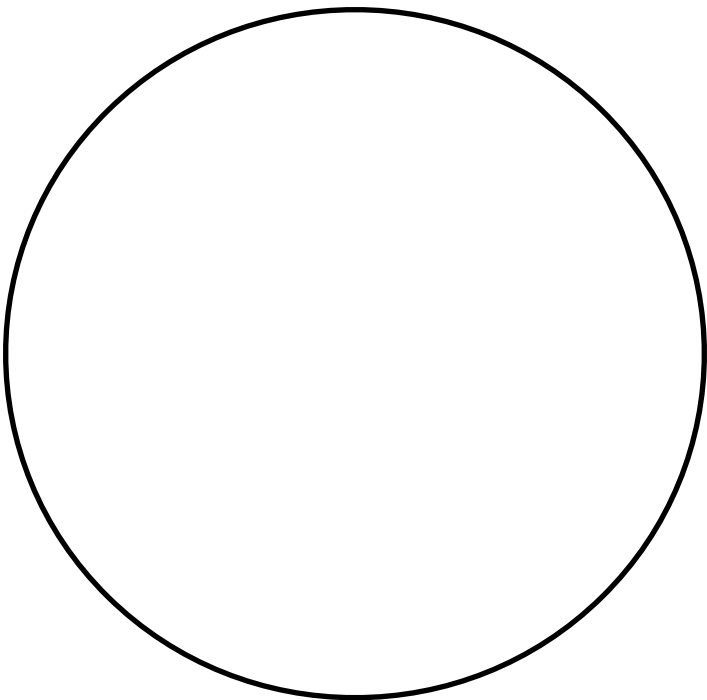
1. Your labelled diagrams of the cheek and onion cells (separate sheets of paper).
2. Your answers to the above questions.
3. The marking scheme.

Cheek Cells

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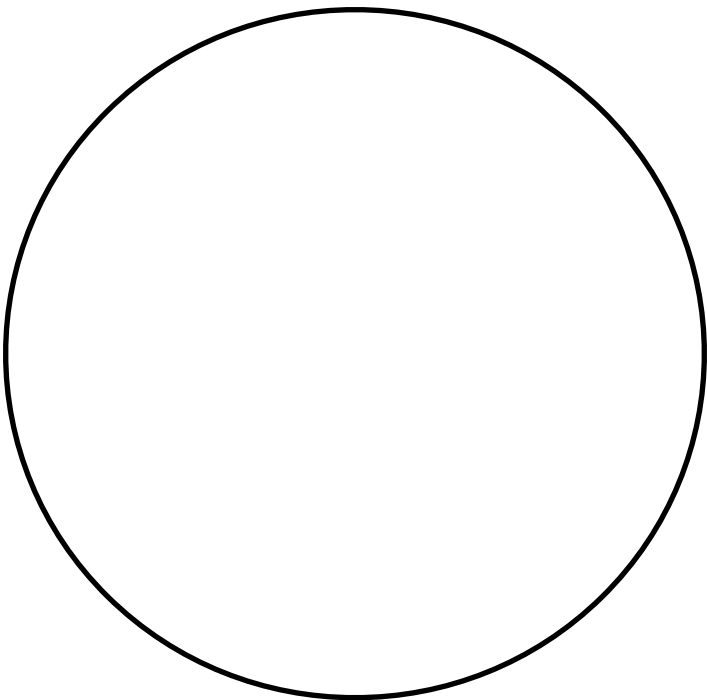
Power of Microscope	Actual Size	Magnification of Drawing
Magnification	objective =	drawing size =
= ocular x objective	diameter =	actual size =
=	estimate =	magnification
=	A.S. = $\frac{\text{diameter of field}}{\text{estimate}}$	= $\frac{\text{drawing size}}{\text{actual size}}$
	=	=
	=	=

Onion Cells

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Magnification	objective =	drawing size =
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=	A.S. = $\frac{\text{diameter of field}}{\text{estimate}}$	= $\frac{\text{drawing size}}{\text{actual size}}$
	=	=
	=	=

SNC2P Biological Drawing Marking Scheme

Name _____

Name/Date/Partner's name	0	1
Title	0	1
Drawing in pencil	0	1
Labels on right side of figure	0	1
Labels have straight lines	0	1
Drawing 3-4 cells (where possible)	0	1
Suitable size (@ 1/2 page)	0	1
Overall drawing quality	0	1

Table

Box 1: Power of microscope	0	1	2	
Box 2: Actual size	0	1	2	
Box 3: Magnification of drawing	0	1	2	Total ____
				15

Name/Date/Partner's name	0	1
Title	0	1
Drawing in pencil	0	1
Labels on right side of figure	0	1
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