Cells: drawing record and model plan

Name: _____ Class: _____ Date: _____

Use this sheet with a school microscope or with the virtual microscope in the lesson. Page 1 is for drawing what you see, page 2 for comparing plant and animal cells, and page 3 for planning a model of a cell.

METHOD Make an onion skin slide

1. Peel a thin layer of skin, the epidermis, from the inside of a piece of onion with forceps.
2. Lay a small, flat piece of the skin on a glass slide and add a drop of iodine solution.
3. Lower a cover slip over it slowly with a mounted needle, starting at an angle, so that you don't trap air bubbles.
4. Blot off any extra stain.
5. Start with the lowest-power objective lens and focus with the coarse focus. Then change to a higher-power lens and use only the fine focus.

DRAWING What you see

Onion skin at × _____

Title: _____

Another cell: _____ at × _____

Title: _____

CHECK Check your drawings

- ☐ I drew only what I could see.
- ☐ The parts are in the right proportions.
- ☐ Each drawing has a title and the magnification.
- ☐ My lines are clear and unbroken, with no shading.
- ☐ My labels are on ruled lines that don't cross.

MEASURE Estimate the size of a cell

Width of the field of view: _____ mm

Number of cells that fit across it: _____

Length of one cell: _____ mm ÷ _____ = _____ mm = _____ µm

DIAGRAM Compare plant and animal cells

Make a diagram or a table that compares plant cells and animal cells. It must be true for onion skin cells, pondweed leaf cells and cheek cells.

Euglena has chloroplasts, but it swims and has no stiff cell wall. Does your diagram still work for Euglena? Change it so that it does, or explain why it can't.

PARTS What the parts do

Part	What it does	Can you see it at ×400?
Nucleus		
Cell membrane		
Cytoplasm		
Cell wall		
Large central vacuole		
Chloroplasts		
Mitochondria		

MODEL Plan a 3D model of a cell

My cell (circle one): leaf cell / cheek cell

Part	Material	Why it suits the part
Nucleus		
Cell membrane		
Cytoplasm		
Cell wall		
Large central vacuole		
Chloroplasts		
Mitochondria		

Sketch your model and label each part.

What my model shows well

What my model gets wrong