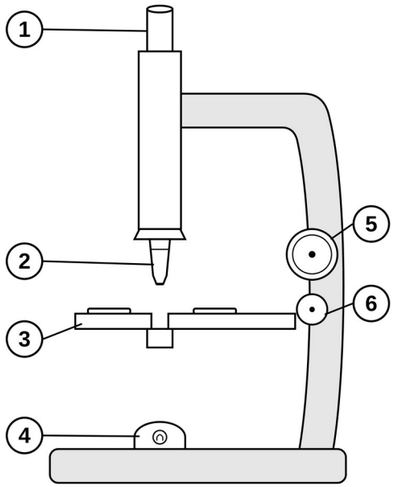
B1 L3 Mandatory worksheet: Using a microscope

Name: _____ Class: _____

A. Label the light microscope

Help: online screens 1 and 3 [6]



Name the parts labelled 1 to 6.

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

B. Total magnification

Help: online screen 4 [5]

(a) Use the equation to complete the table. The first row is done for you. [4]

total magnification = eyepiece lens magnification × objective lens magnification

Eyepiece lens	Objective lens	Total magnification
× 10	× 4	× 40
× 10	× 10	
× 10	× 40	
× 5	× 4	
× 15	× 40	

(b) Which total magnification in the table gives the smallest field of view? [1]

_____

C. Focus the microscope

Help: online screen 7 [4]

Put the steps in order. Step 1 has been done for you. Write the letters in the boxes.

P	Turn the fine focusing knob until the image is sharp.
Q	Clip the slide onto the stage.
R	Turn the nosepiece to the lowest-power objective lens.
S	Watching from the side, turn the coarse focusing knob to bring the lens close to the slide, without touching it.
T	Look through the eyepiece lens and turn the coarse focusing knob until the cells appear.

Step 1	**Q**
Step 2	
Step 3	
Step 4	
Step 5	

D. Preparing a slide

Help: online screen 6 [6]

1. Why must the layer of onion epidermis be thin? [1]

_____

2. Which stain is added to the onion cells? [1] _____

3. Give one reason for adding a stain. [1]

_____

4. Name the piece of equipment used to lower the coverslip. [1]

_____

5. Explain why the coverslip is lowered slowly, at an angle. [2]

_____

_____

B1 L3 Mandatory worksheet: Using a microscope

Name: _____ Class: _____

E. Light or electron microscope?

Help: online screens 11 and 12 [6]

(a) Tick (✓) one box in each row. [5]

Statement	Light microscope	Electron microscope
1. It uses a beam of electrons.		
2. It is used in school labs to look at onion cells.		
3. It can show ribosomes.		
4. It has a magnification of up to about × 1500.		
5. It has the higher resolution.		

(b) Complete the sentence. [1]

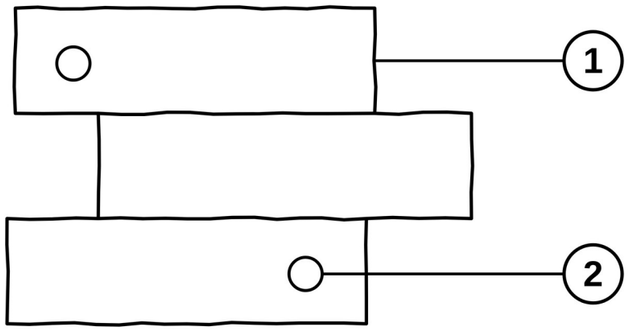
Resolution is the ability to see two points that are close together as _____ .

F. Drawing what you see

Help: online screens 4, 8 and 10 [6]

A student drew some onion cells she saw with a light microscope.

(a) Name the parts labelled 1 and 2. [2]



1 _____

2 _____

(b) Give three rules for making a good biological drawing. [3]

_____

_____

_____

(c) She used a × 10 eyepiece lens and a × 10 objective lens. What magnification should she write under her drawing? [1]

_____