Name _____ **Class** _____ **Date** _____

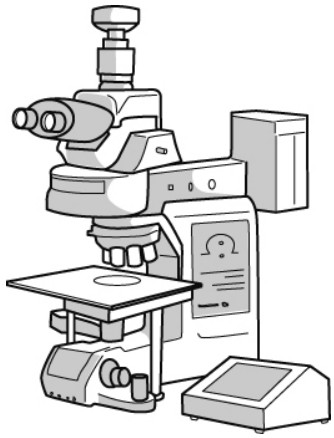
S1 Compare today's light microscopes with Hooke's.

1 Which of these is the best definition for '**resolution**'? Tick one:

- ☐ the smallest distance between two points that can still be seen as two points
- ☐ the longest object that can be observed using a microscope
- ☐ the amount that a microscope can magnify by

2 **a** Hooke's microscope is on the left and a modern light microscope is on the right. Draw lines from the boxes to show which features belong with which microscope. Some features belong to *both* microscopes.

- contains a barrel with two lenses
- uses light
- **magnification** up to ×30
- magnification up to ×1500
- resolution down to 0.0001 mm
- resolution down to 0.002 mm



b Complete the following sentences to compare today's light microscopes with Hooke's.

Hooke's and today's light _____ are similar because they both contain two _____. However, Hooke's microscope had a much lower _____ than today's. And Hooke's microscope did not have as good a _____ as today's microscopes, so he could not see things in as much detail.

3 A microscope with a ×10 **objective lens** and a ×3 **eyepiece lens** has a total magnification of 10 × 3 = ×30.

What would be the magnification if a ×20 objective lens were used instead? _____

4 **a** Name a type of microscope that does not use light to produce an image. _____

b How does this microscope's resolution compare with a light microscope? _____

_____

5 A piece of hair is 0.05 mm wide.

a What is the width of the hair in micrometres? _____

b The hair is magnified ×100. How wide is the magnified image in millimetres? _____