



Observing Cells

Compound Microscope

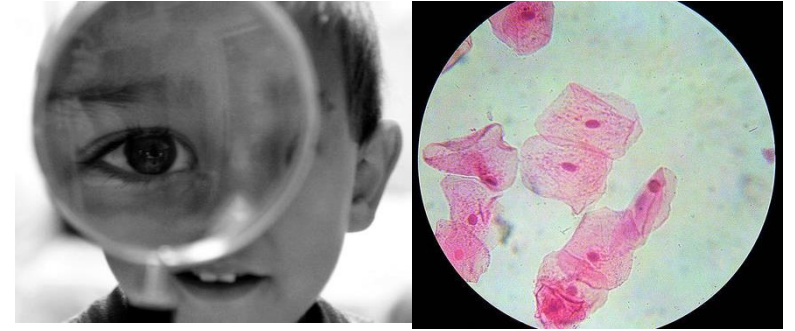
How can you see cells?

- Cells come in different sizes
- Most cells are so small that they are invisible to the naked eye
 - They can only be seen with a microscope



What is a microscope

- A microscope is an instrument used to magnify small things, or make them appear larger
 - Tiny structures that were not visible before can be seen through the microscope



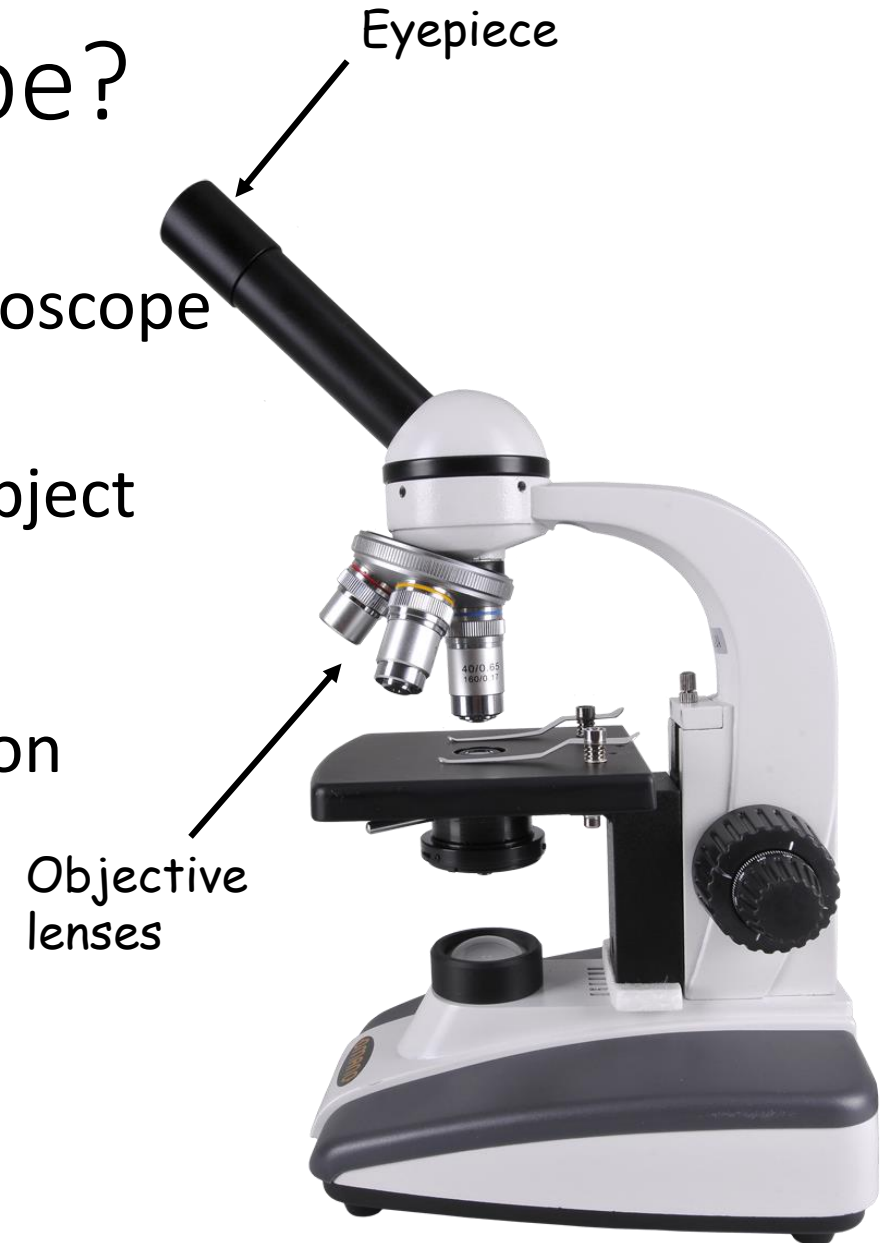
Our microscope

- At school, we will be using a **compound light microscope**
 - It is a compound microscope because it combines two lenses
 - It is a light microscope because it uses light to view and object
- Used to help us see tiny organisms/specimens/things by making them seem larger than they really are
 - This is called magnification power



How powerful is our microscope?

- The eyepiece (where we look into) of the microscope usually has a magnification of 10x
- Typically, 3 other lenses further magnify the object we are trying to see. These are called the objective lenses.
 - Each objective lens has its own magnification



How powerful is our microscope? Cont'd

- To find the total magnification of the lens combination (eyepiece + objective lens) we multiply

Power of objective lens	Power of eyepiece lens	Calculation (power of objective lens multiplied by power of eyepiece lens)	Total magnification of the lens combination
Low power 4x	10x	$4 \times 10 = 40$	40x
Medium power 10x	10x	$10 \times 10 = 100$	100x
High power 40x	10x	$40 \times 10 = 400$	400x

- Therefore, our compound light microscopes can magnify an object up to 400x its original size!

Are there stronger types of microscopes?

- An electron microscope is even stronger
 - A scanning electron microscope can magnify up to 200 000x

