

Using a Microscope

In this investigation, you will learn about the different parts of a compound microscope and how to use them. Then you will look at some prepared microscope slides provided by your teacher. Practise drawing what you observe through the microscope. In this investigation, you will also find a way to estimate the size of microscopic objects. With these skills, you will later be able to study cells from plants and animals, and observe live microscopic organisms such as those first seen by Leeuwenhoek.

Part 1

The Compound Light Microscope

Problem

What are the parts of a microscope?

Procedure

- Study the photograph of the compound light microscope. Learn the names and functions of the different parts of the microscope.
- Before going on to Part 2, close your book, and draw and label as many parts of the microscope as you can.

A Eyepiece (or ocular lens)
The part you look through. It has a lens that magnifies the object, usually by 10 times (10 \times). The magnifying power is engraved on the side of the eyepiece.

B Tube
Holds the eyepiece and the objective lenses at the proper working distance from each other.

C Coarse-adjustment knob
Moves the tube or stage up or down to bring the object into focus. Use it only with the low-power objective lens.

D Fine-adjustment knob
Use with medium- and high-power magnification to bring the object into sharper focus.

E Arm
Connects the base and tube. Use this for carrying the microscope.

F Revolving nosepiece
Rotating disk holds two or more objective lenses. Turn it to change lenses. Each lens clicks into place.

G Objective lenses
Magnify the object. Each lens has a different power of magnification, such as 10 \times , 40 \times , and 100 \times . The magnifying power is engraved on the side of each objective lens. Be sure you can identify each lens. For example, the low-power objective lens is usually 10 \times .

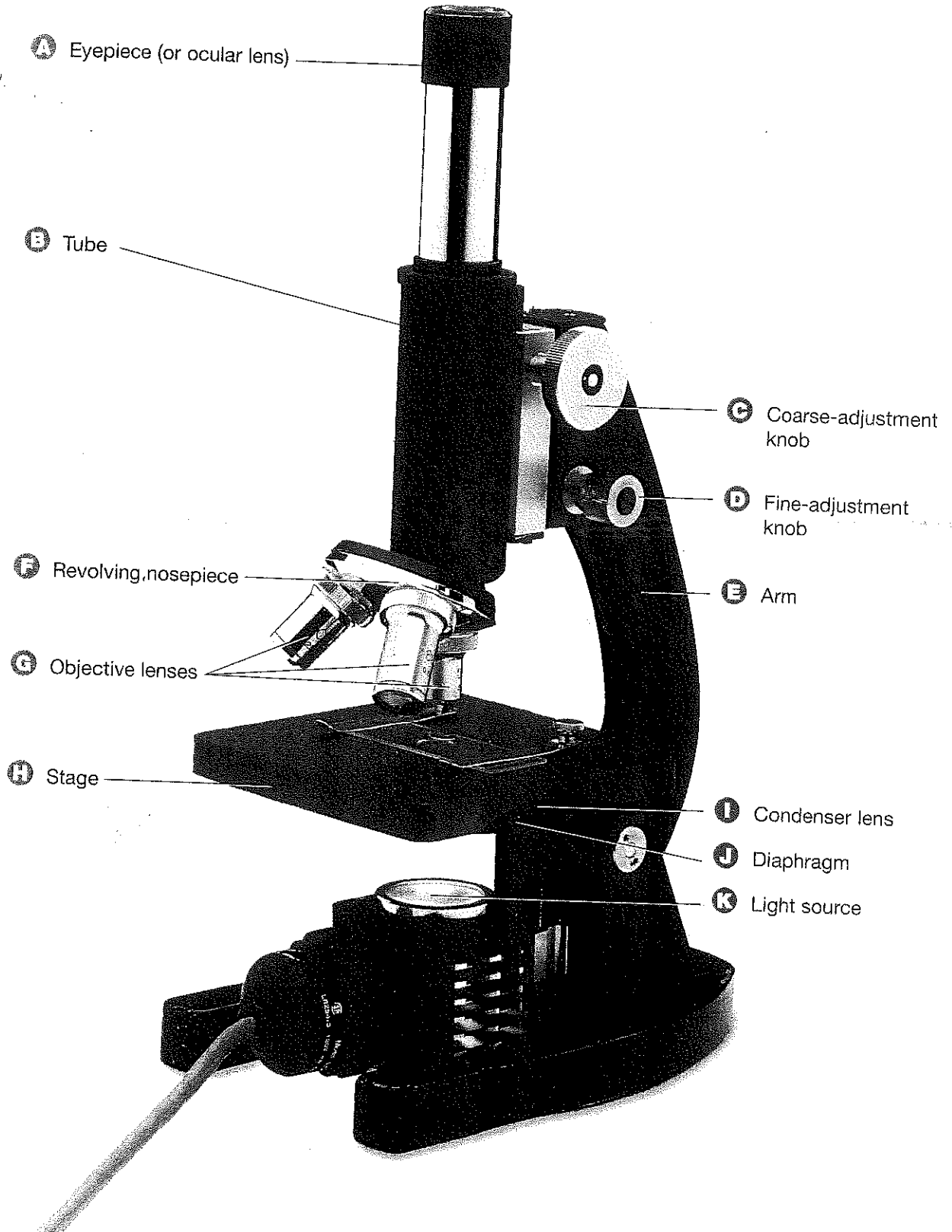
H Stage
Supports the microscope slide. Clips hold the slide in position. A hole in the centre of the stage allows the light from the light source to pass through the slide.

I Condenser lens
Directs light to the object being viewed.

J Diaphragm
Use this to control the amount of light reaching the object being viewed.

K Light source
Shining a light through the object being viewed makes it easier to see the details. (Your microscope might have a mirror instead of a light. If it does, you will adjust it to direct light through the lenses.)

Parts of a Compound Light Microscope



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