

Microscope Vocabulary (for teacher reference)

This list can be modified for use with students, based on developmental readiness. Some suggestions are made for appropriate target grades.

Microscope parts:

eyepiece – this is the cylindrical piece with lenses that you actually look through.

objective – the objective lenses are the ones at the bottom of the microscope tube, closest to your specimen.

stage – this is the flat surface on top of which you place your slide or specimen.

power of magnification – the ‘power’ of magnification is the factor which you are optically enlarging your specimen. You can figure your ‘power’ by multiplying the objective magnification by the eyepiece magnification.

light source – good light shining through your specimen or over it will make seeing cool things much easier. Light can come from a mirror, fiber optic rod, or electric lamp. The amount of light is adjusted with a **diaphragm**.

diaphragm – an iris or series of small holes between the light source and specimen used to regulate how much light shines through what you are trying to see.

base – The base is the sturdy part of the microscope which keeps it from falling over.

arm – the arm connects the objective tube to the base.

slide – a slide keeps wet specimens and fragile objects from falling into the light source. Slides can be glass, plastic, or made from clear tape and cardstock.

Microscope types:

stereo microscope – this microscope has two objectives to give depth to larger specimens. Stereomicroscopes usually have two light sources, one from the top and one for illuminating from the bottom. This is a great microscope for grades 4-college.

monocular – this usually refers to one objective tube and using one eye to view specimens.

binocular - this usually refers to two objective tubes and using both eyes to view specimens.

electron microscope – instead of using visible light illuminate samples. The EM uses electrons bouncing off the specimen to get an image at very high levels of magnification. This is exclusively a research tool, but the images are worth sharing with upper elementary students as well as adults.

multiple objective – usually found in monocular microscopes, this features a rotating set of three or four objective lenses in differing ranges of magnification. This is usually for demonstration purposes and for grades 9 through college.

‘video’ microscope – relatively inexpensive video cameras with attachments for eyepieces can be attached to a monitor or TV to share images with an entire class. It also gives a good factor of magnification.