

These are the terms for the entire unit.

Microscope Terms Defined

Eyepiece: The lens the viewer looks through to see the specimen. The eyepiece usually contains a 10X or 15X power lens.

Tube: The body tube connects the eyepiece to the objective lenses.

Arm: The arm connects the body tube to the base of the microscope.

Focus Control/Adjustment Knob (Coarse adjustment): Brings the specimen into general focus. This is the only knob on the microscopes we are using in class and the only one on the quiz.

Fine adjustment: Fine tunes the focus and increases the detail of the specimen.

Nosepiece: A rotating turret that houses the objective lenses. The viewer spins the nosepiece to select different objective lenses.

Objective lenses: One of the most important parts of a compound microscope, as they are the lenses closest to the specimen.

A standard microscope has three, four, or five objective lenses that range in power from 4X to 100X. When focusing the microscope, be careful that the objective lens doesn't touch the slide, as it could break the slide and destroy the specimen.

Specimen or slide: The specimen is the object being examined. Most specimens are mounted on slides, flat rectangles of thin glass.

The specimen is placed on the glass and a cover slip is placed over the specimen. This allows the slide to be easily inserted or removed from the microscope. It also allows the specimen to be labeled, transported, and stored without damage.

Stage: The flat platform where the slide is placed.

Stage clips: Metal clips that hold the slide in place.

Aperture: The hole in the middle of the stage that allows light from the light source to reach the specimen.

On/off switch: This switch on the base of the microscope turns the illuminator off and on.

Light Source/Mirrors: The light source for a microscope. Older microscopes used mirrors to reflect light from an external source up through the bottom of the stage; however, most microscopes now use a low-voltage bulb.

Base: The base supports the microscope and it's where illuminator is located.

Exploring Lenses

Investigation 1

Scientist's Glossary



Tool: Rehearsal

Rehearsal strategies include:

- saying the definition to yourself.
- being quizzed by someone else.
- drawing a diagram or picture from memory.
- looking for everyday examples of terms.
- using the terms to solve a problem.
- conducting experiments that use these terms.

1. **Brain:** The part of the body that controls all voluntary and involuntary functions and all sensory functions.
2. **Cornea:** The outer layer of the eye, which helps focus light.
3. **Eye:** The organ that contains all the structures needed for sight.
4. **Lens:** A curved piece of transparent material, usually glass or plastic that refracts light. A lens is also found in the human eye.
5. **Pupil:** An opening in the eye that allows light to enter and be detected.
6. **Retina:** The lining of cells at the back of the eye. The retina senses the light reflected from an object and sends nerve signals to the brain.
7. **Iris:** The muscular structure that opens and closes the pupil.
8. **Optic Nerve:** The nerve that carries information from the eye to the brain.
9. **Hand Lens:** A magnifying lens that aids in seeing small objects.
10. **Magnify:** When a lens refracts light and increases the size of an object's image.
11. **Reflection:** When light bounces off of an object.
12. **Refract:** When light passes through a transparent object and is bent or redirected in a different direction.
13. **Resolution:** The process that makes fine details more clearly visible.
14. **Field of View:** The portion of an object that is visible through a hand lens or other viewing device.

Refraction

Investigation 2

Scientist's Glossary



Tool: Rehearsal

Rehearsal strategies include:

- saying the definition to yourself.
- being quizzed by someone else.
- drawing a diagram or picture from memory.
- looking for everyday examples of terms.
- using the terms to solve a problem.
- conducting experiments that use these terms.

1. **Magnify:** When a lens refracts light and increases the size of an object's image.
2. **Refract:** When light passes through a transparent object and is bent or redirected in a different direction.
3. **Lens:** A transparent (see-through) solid object through which light can be refracted.
4. **Convex Lens:** A lens that is curved outward. It is wider in the middle than at either end.
5. **Concave Lens:** A lens that is curved inward. It is thinner in the middle than at either end.
6. **Field of View:** The portion of an object that is visible through a hand lens or other viewing device.

Learning About the Microscope

Investigation 3

Scientist's Glossary



Tool: Rehearsal

Rehearsal strategies include:

- saying the definition to yourself.
- being quizzed by someone else.
- drawing a diagram or picture from memory.
- looking for everyday examples of terms.
- using the terms to solve a problem.
- conducting experiments that use these terms.

1. **Refract:** When light passes through a transparent object and is bent or redirected in a different direction.
2. **Field of view:** The portion of an object that is visible through a hand lens or other viewing device.
3. **Microscope:** A scientific tool that is used to view very small objects that are too small to see using the naked eye or a hand lens.
4. **Microscopy:** The science of observing very small (microscopic) objects and small details.
5. **Objectives:** The three lenses of the microscope with different powers of magnification. The objectives rotate above the stage.
6. **Slide:** A piece of glass that holds a specimen.
7. **Specimen:** A small, thin sample that is observed through the microscope.
8. **Resolution:** The process that makes fine details more clearly visible.

Exploring Using the Microscope

Investigation 4

Scientist's Glossary



Tool: Rehearsal

Rehearsal strategies include:

- saying the definition to yourself.
- being quizzed by someone else.
- drawing a diagram or picture from memory.
- looking for everyday examples of terms.
- using the terms to solve a problem.
- conducting experiments that use these terms.

1. **Field of view:** The portion of an object that is visible through a hand lens or other viewing device.
2. **Image:** The picture of an object created by light from the object and viewed using a device such as a mirror or lens.
3. **Magnify:** To increase the apparent size of an object by viewing its larger image.
4. **Microscope:** A scientific tool that is used to view very small objects that are too small to see using the naked eye or a hand lens.
5. **Objectives:** The three lenses of the microscope with different powers of magnification. The objectives rotate above the stage.
6. **Eyepiece:** The part of the microscope that is used to view the image. The eyepiece contains one lens.
7. **Resolution:** The process that makes small details of an object more clearly visible.
8. **Power of magnification:** Calculated by dividing the image size by the object size.
9. **Total magnification of a microscope:** Calculated by multiplying the power of the microscope's eyepiece (10x) and the power of the objective used to view the specimen (either 4x, 10x, or 40x).

Understanding Microscopy

Investigation 5

Scientist's Glossary



Tool: Rehearsal

Rehearsal strategies include:

- saying the definition to yourself.
- being quizzed by someone else.
- drawing a diagram or picture from memory.
- looking for everyday examples of terms.
- using the terms to solve a problem.
- conducting experiments that use these terms.

1. **Field of view:** The portion of an object that is visible through a hand lens or other viewing device.
2. **Magnify:** When a lens refracts light and increases the size of an object's image.
3. **Microscope:** A scientific tool that is used to view very small objects that are too small to see using the naked eye or a hand lens.
4. **Refract:** When light passes through a transparent object and is bent or redirected in a different direction.
5. **Resolution:** The process that makes fine details more clearly visible.