Module 3: Cell Biology - Structure and Function

Topic 1 Content: The Compound Microscope Notes

Introduction

Parts of the Microscope. Click ***NEXT*** to begin.

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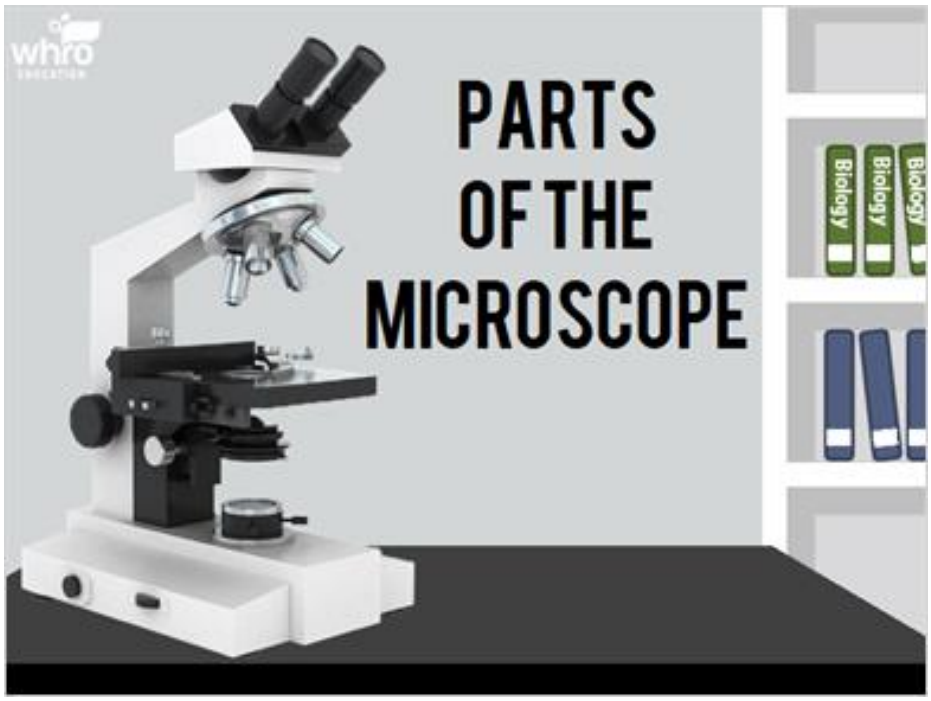
Topic 1 Content: The Compound Microscope Notes

Parts of the Microscope



The compound microscope is one of the most common types of microscope used in high school and university laboratories. In this interactivity, learn about the different parts of the compound microscope.

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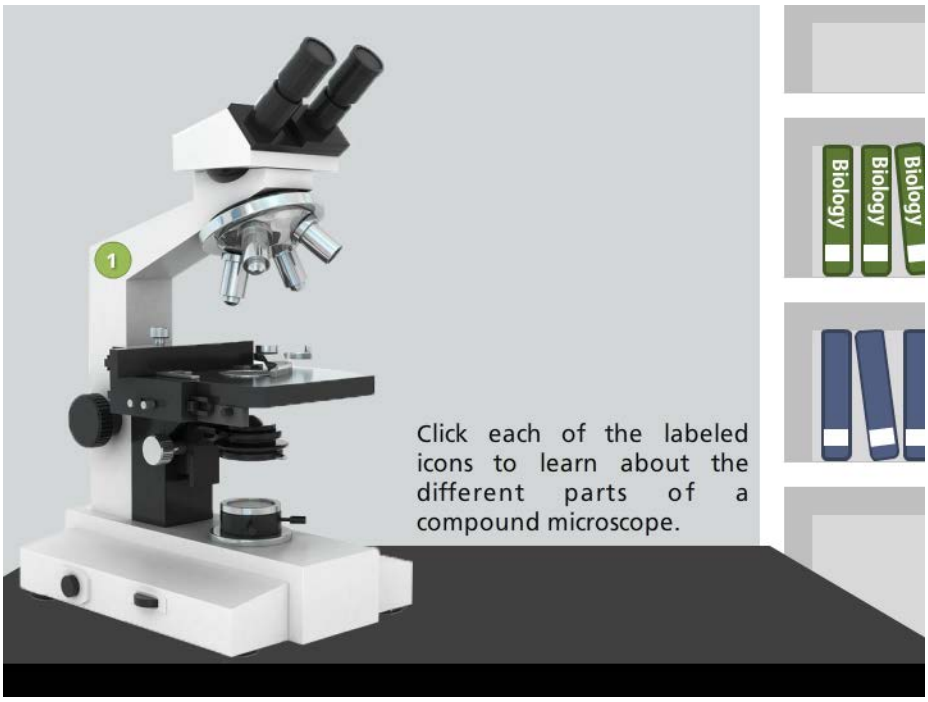
Parts of the Microscope



Click each of the labeled icons to learn about the different parts of a compound microscope.

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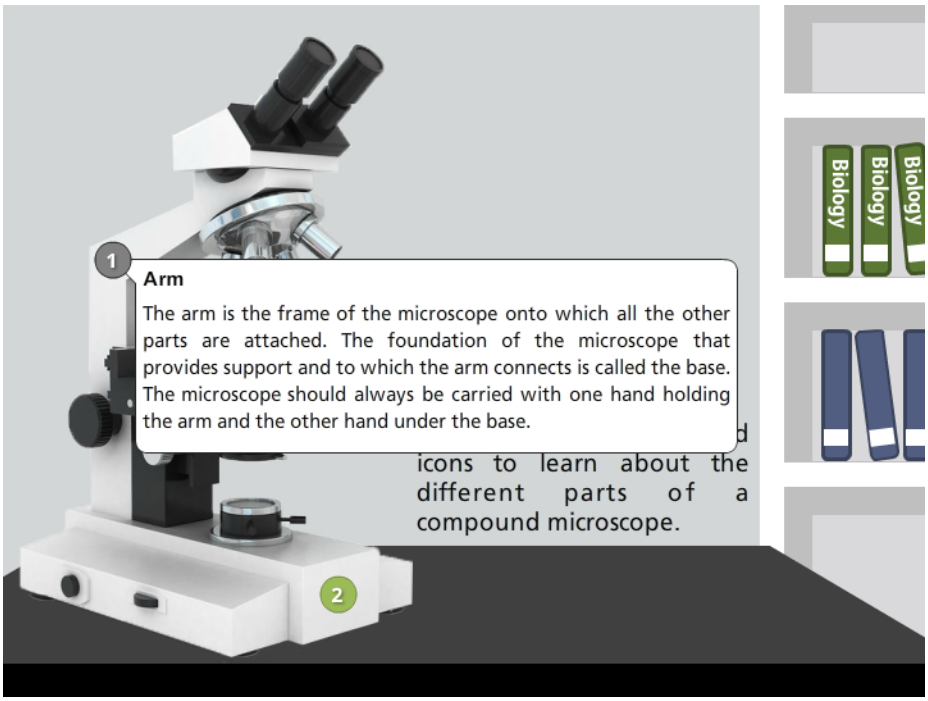
Arm



The arm is the frame of the microscope onto which all the other parts are attached. The foundation of the microscope that provides support and to which the arm connects is called the base. The microscope should always be carried with one hand holding the arm and the other hand under the base.

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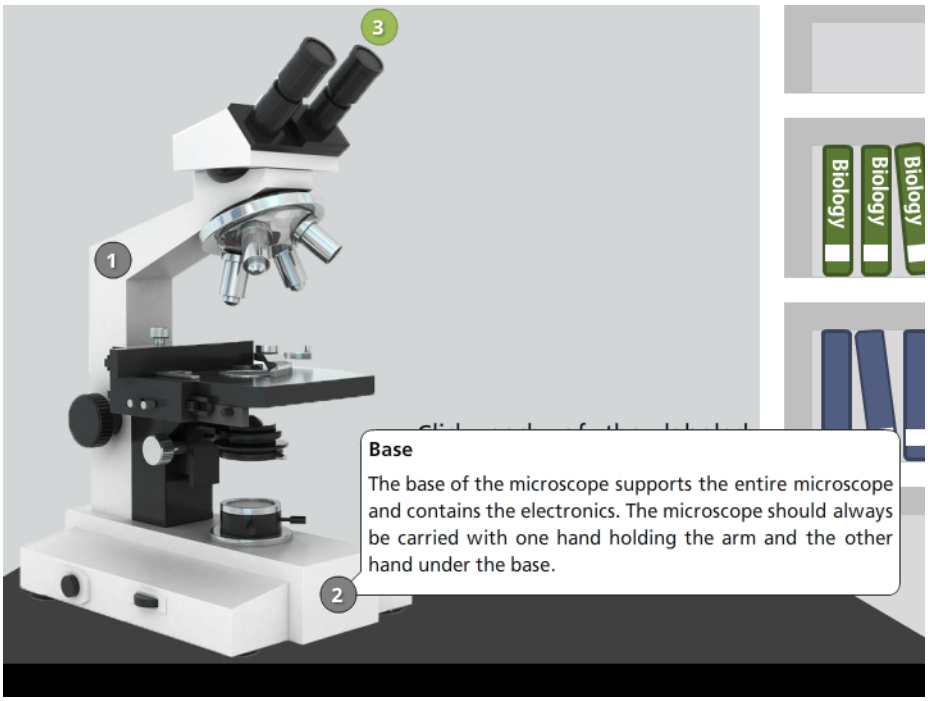
Base



The base of the microscope supports the entire microscope and contains the electronics. The microscope should always be carried with one hand holding the arm and the other hand under the base.

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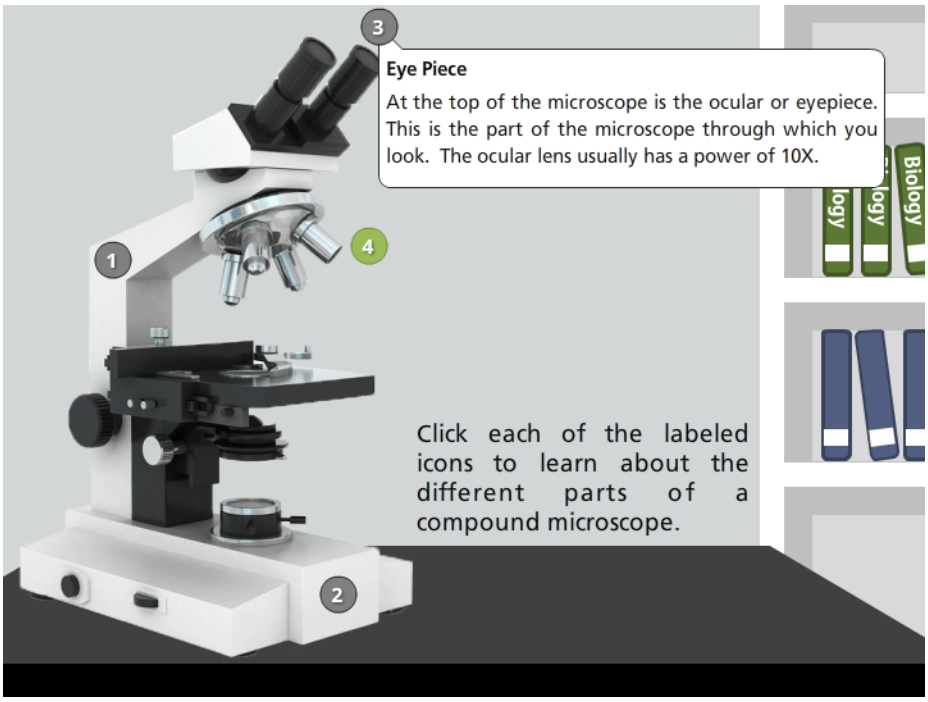
Eyepiece



At the top of the microscope is the ocular or eyepiece. This is the part of the microscope through which you look. The ocular lens usually has a power of 10X.

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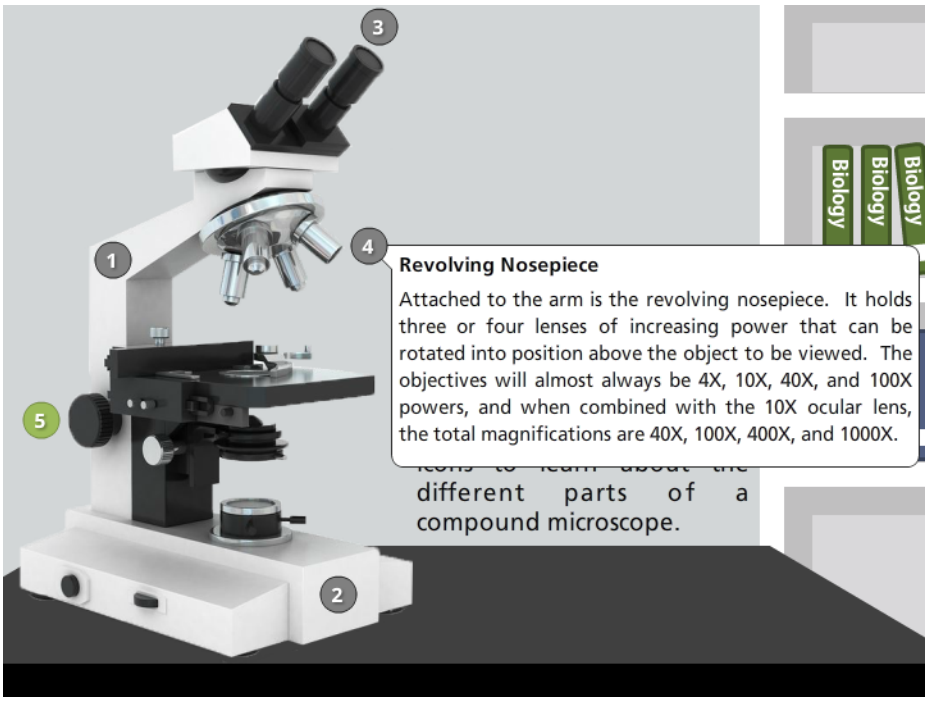
Revolving Nosepiece



Attached to the arm is the revolving nosepiece. It holds three or four lenses of increasing power that can be rotated into position above the object to be viewed. The objectives will almost always be 4X, 10X, 40X, and 100X powers, and when combined with the 10X ocular lens, the total magnifications are 40X, 100X, 400X, and 1000X.

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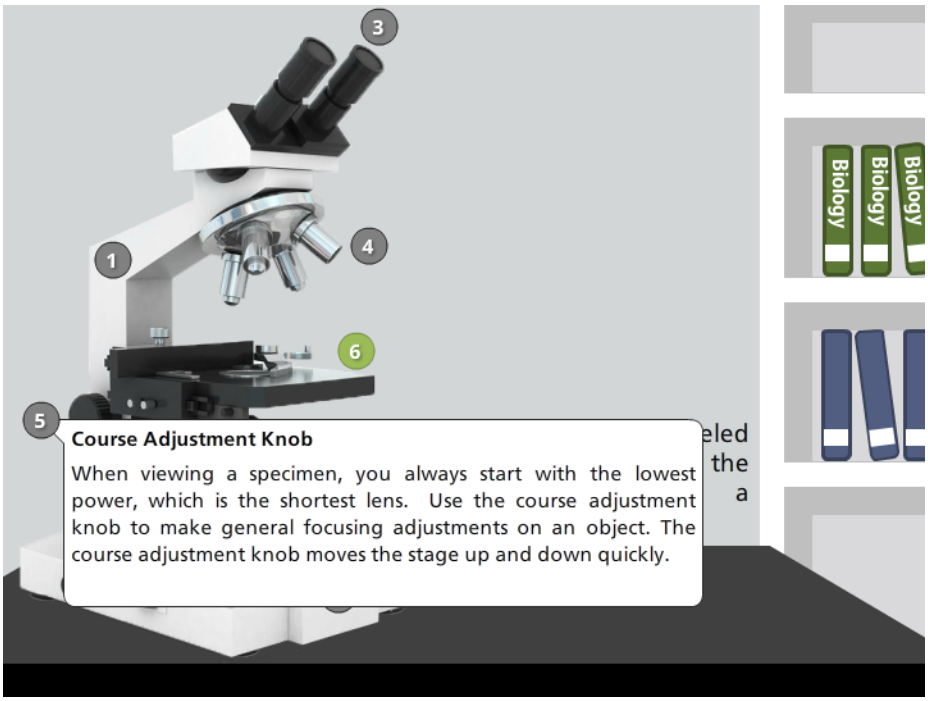
Course Adjustment Knob



When viewing a specimen, you always start with the lowest power, which is the shortest lens. Use the course adjustment knob to make general focusing adjustments on an object. The course adjustment knob moves the stage up and down quickly.

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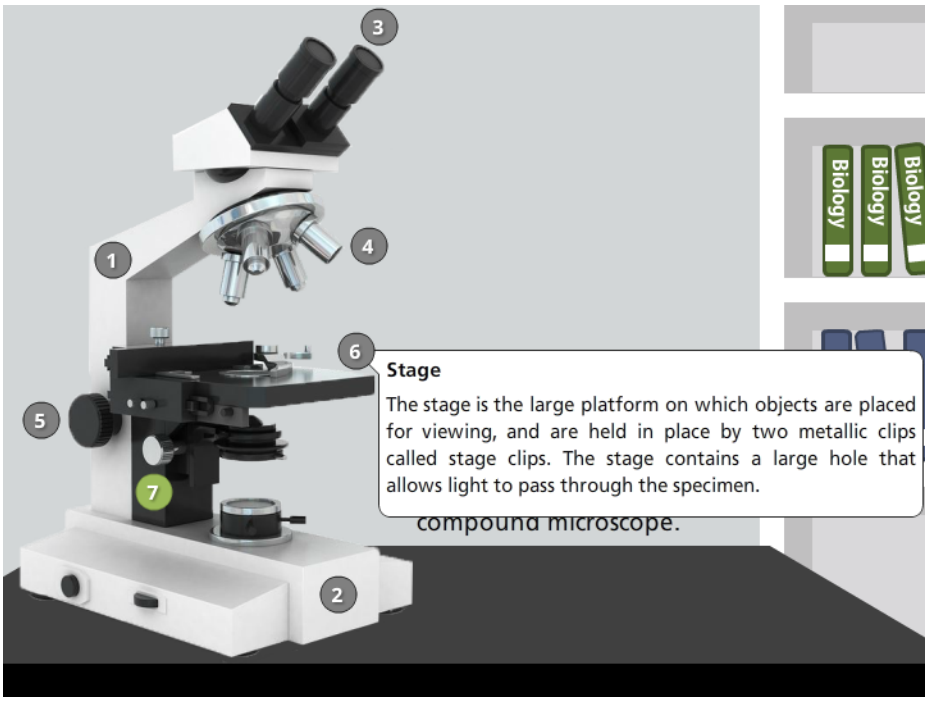
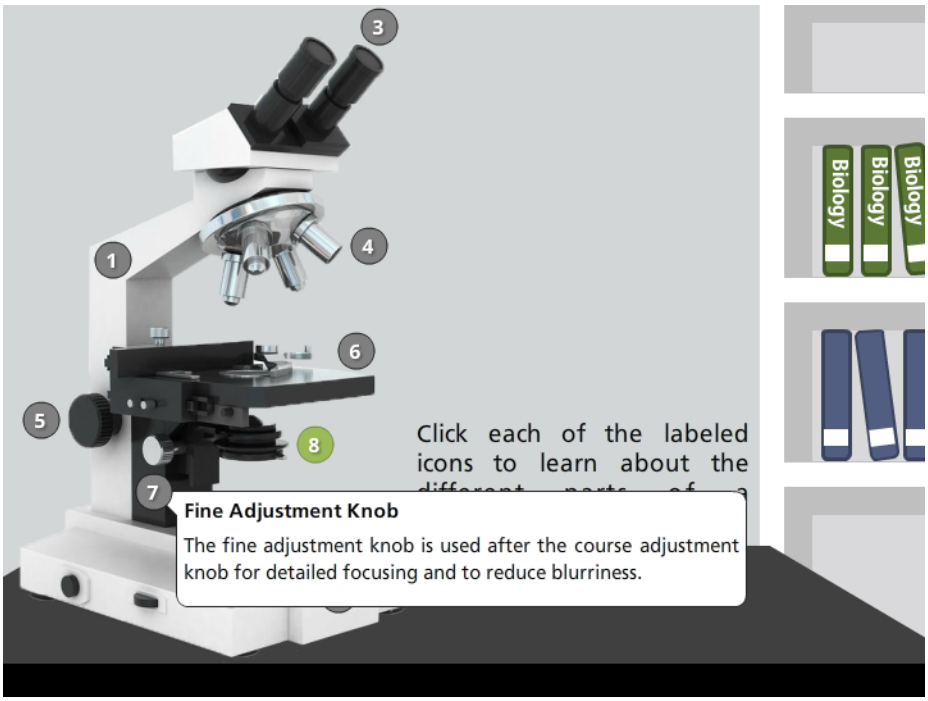
The Stage



The stage is the large platform on which objects are placed for viewing, and are held in place by two metallic clips called stage clips. The stage contains a large hole that allows light to pass through the specimen.

Fine Adjustment Knob



The fine adjustment knob is used after the course adjustment knob for detailed focusing and to reduce blurriness.

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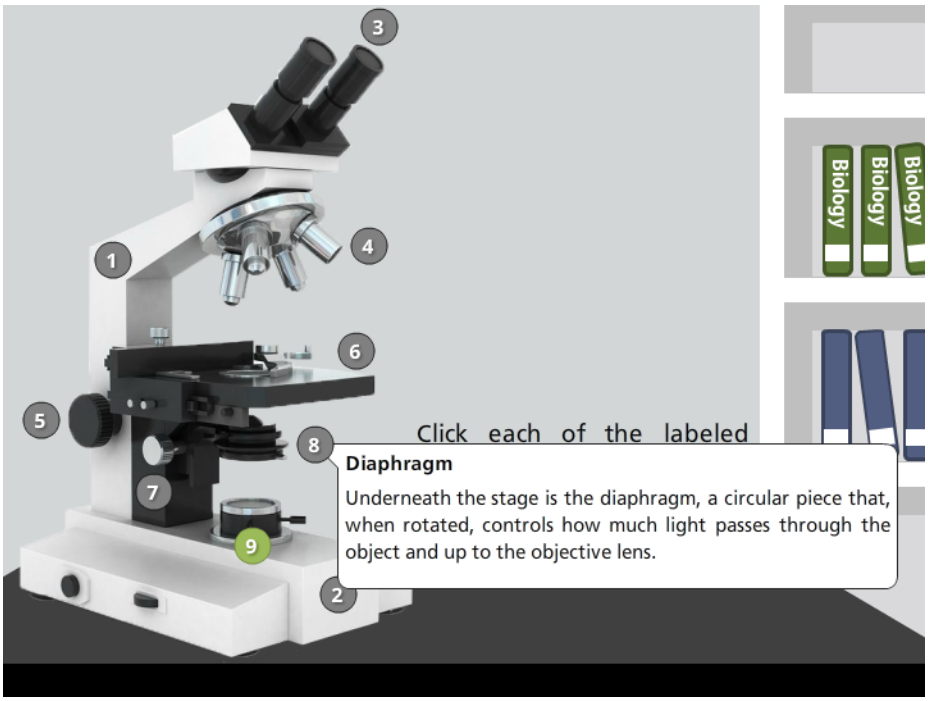
Diaphragm



Underneath the stage is the diaphragm, a circular piece that, when rotated, controls how much light passes through the object and up to the objective lens.

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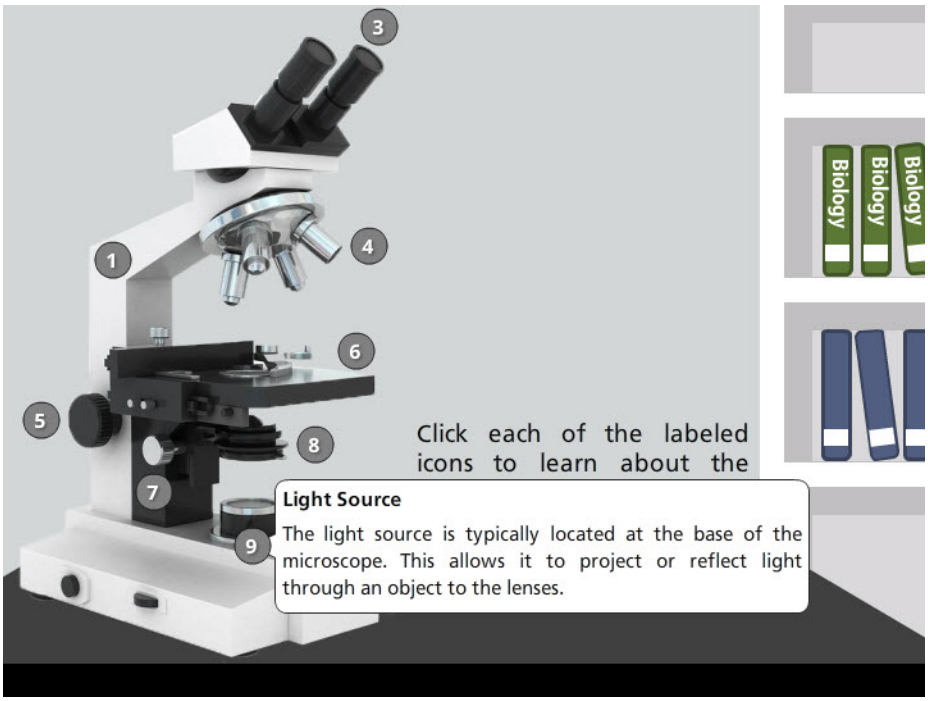
Light Source



The light source is typically located at the base of the microscope. This allows it to project or reflect light through an object to the lenses.

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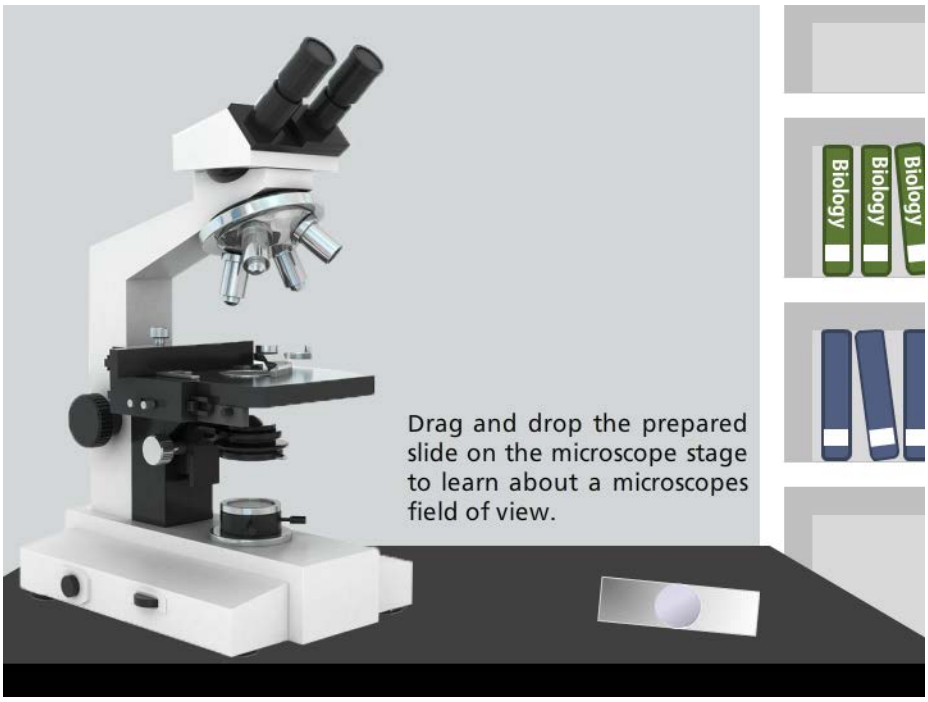
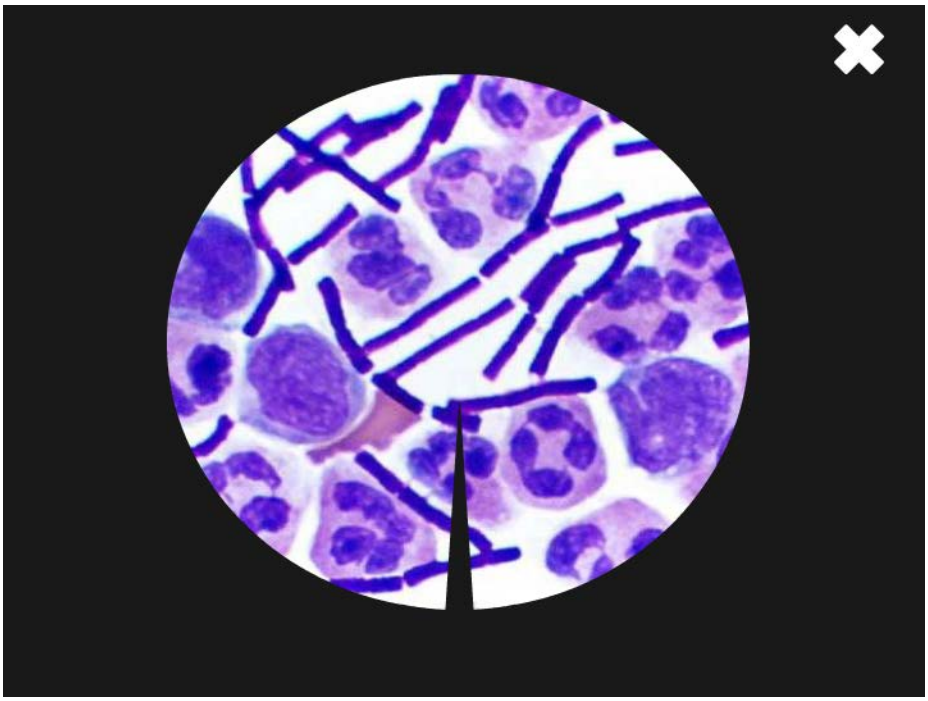
Field of View



The bright white circle of light that is visible when looking in the microscope is called the field of view. Viewing through lenses of higher power magnifies the image, but reduces the field of view diameter. The actual appearance of the object in view is different than the positioning on the slide. To observe the field of view, drag and drop the slide onto the microscope stage.

Field of View



When placed on the stage, an object is positioned upright, but when viewed through the microscope, it appears upside down. This inversion is due to the affect mirrors and lenses have on the passage of light through the microscope. When looking through some eyepieces, a pointer will show up in the field of view. The pointer is used to point to specific objects and it can help you reference parts of the slide. Click the **X** to close the field of view.