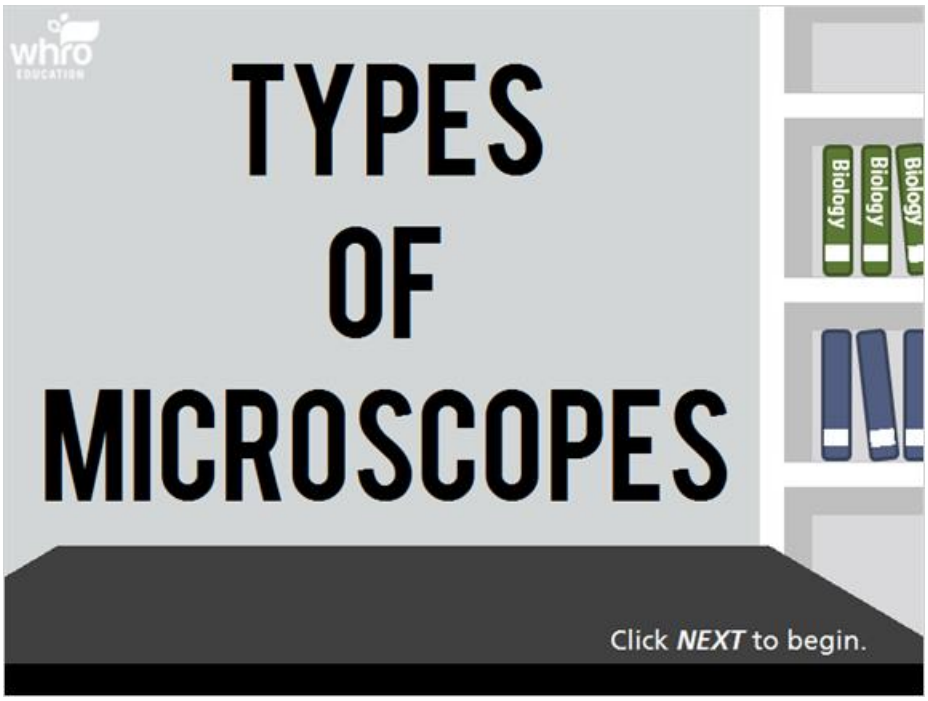
Module 3: Cell Biology - Structure and Function

Topic 1 Content: Types of Microscopes Notes

Introduction



Types of Microscopes. Click ***NEXT*** to begin.

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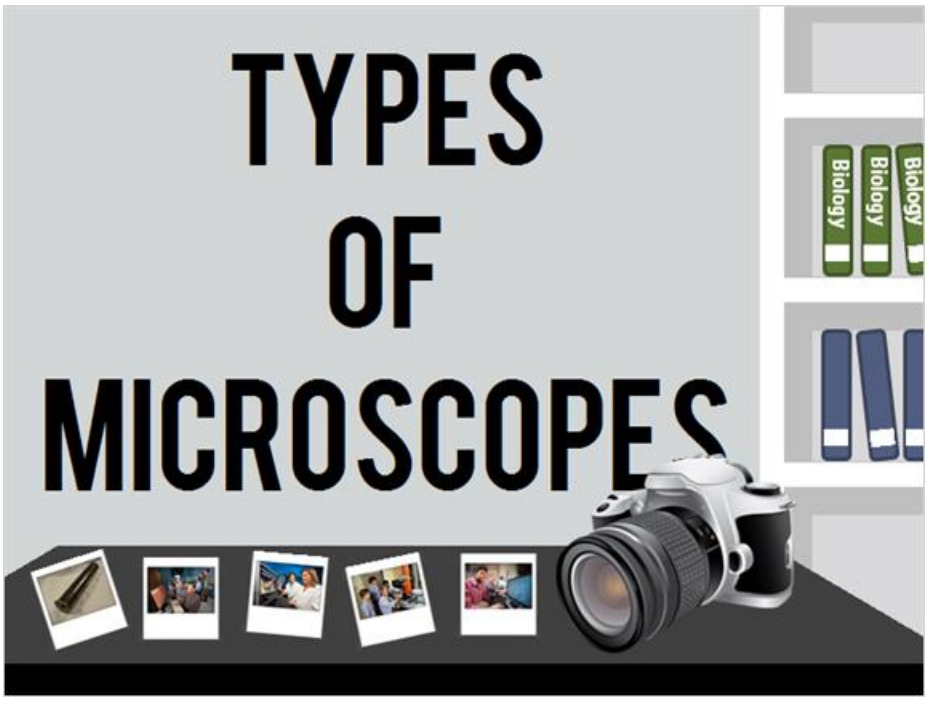
Types of Microscopes



Microscopes have come a long way since their invention. In today's professional laboratories, different microscopes are used for different purposes. Since transporting a large microscope is no easy task, scientists from different labs have sent a few photographs of these very important pieces of technology. In this interactivity, you will learn about the first microscope and the different microscopes that are used in biology.

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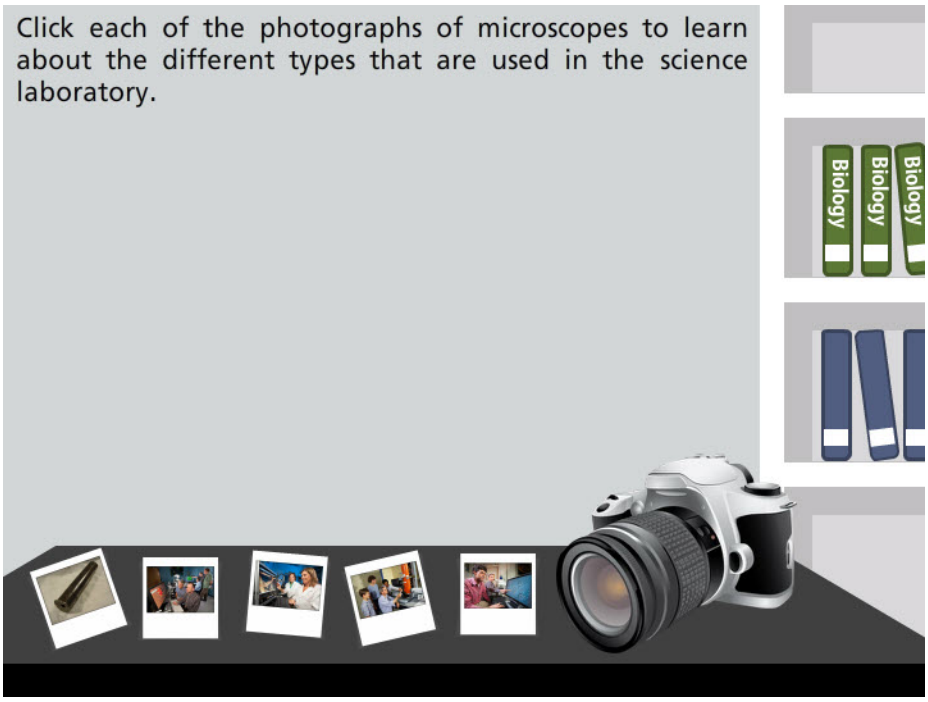
Instructions



Click each of the photographs of microscopes to learn about the different types that are used in the science laboratory. Make sure you visit each of the photos to learn about all of the microscopes before you close the interactivity.

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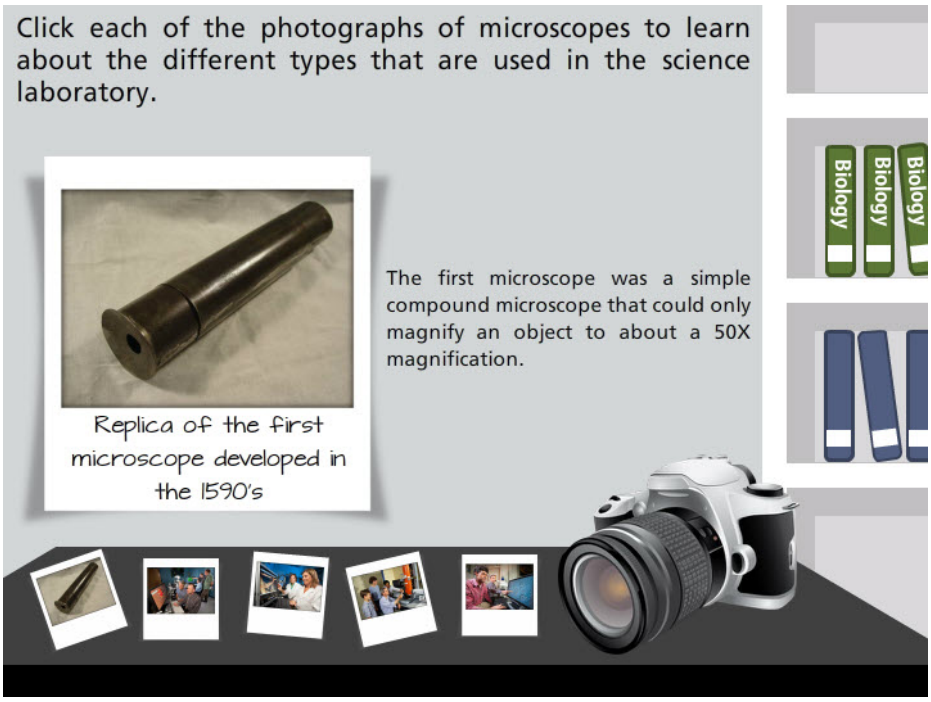
The First Microscope



The first microscope was a simple compound microscope that could only magnify an object to about a 50X magnification.

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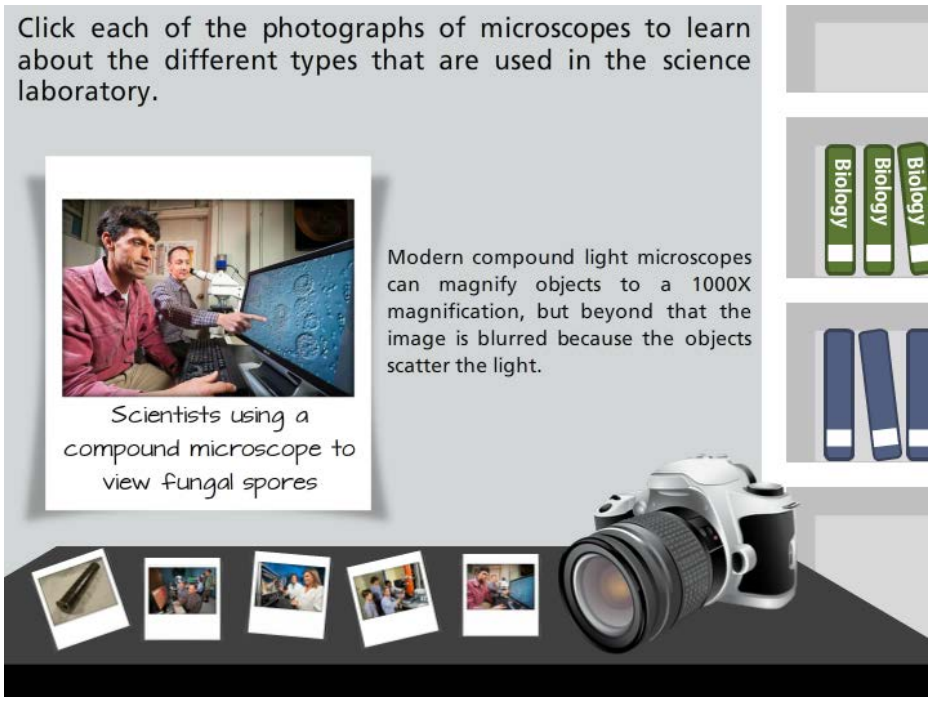
Compound Microscopes



Modern compound light microscopes can magnify objects to a 1000X magnification, but beyond that the image is blurred because the objects scatter the light.

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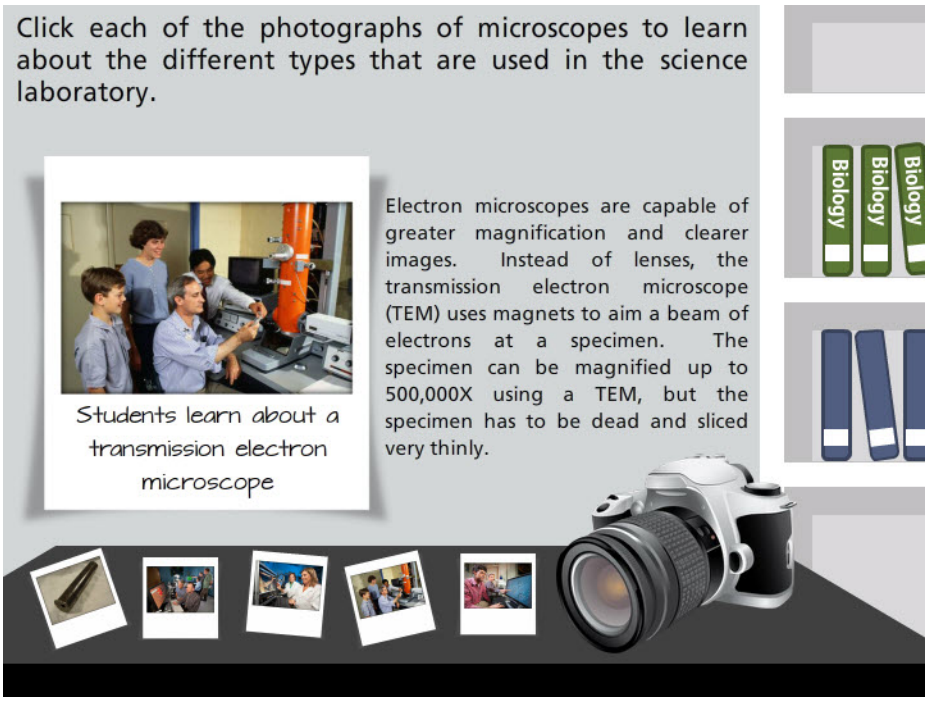
Transmission Electron Microscopes



Electron microscopes are capable of greater magnification and clearer images. Instead of lenses, the transmission electron microscope (TEM) uses magnets to aim a beam of electrons at a specimen. The specimen can be magnified up to 500,000X using a TEM, but the specimen has to be dead and sliced very thinly.

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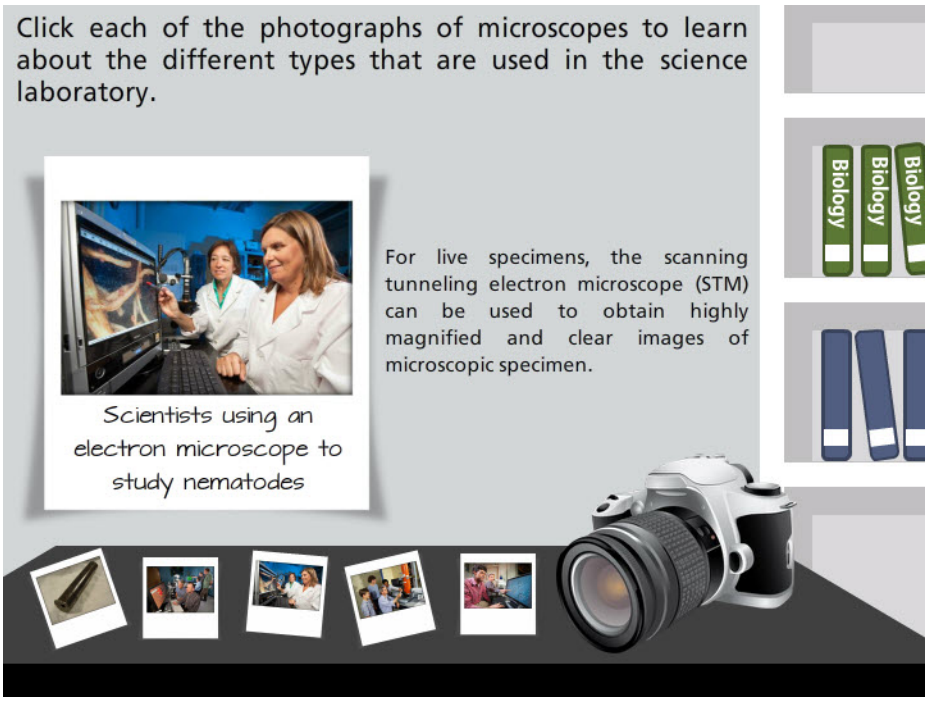
Scanning Tunneling Electron Microscopes



For live specimens, the scanning tunneling electron microscope (STM) can be used to obtain highly magnified and clear images of microscopic specimen.

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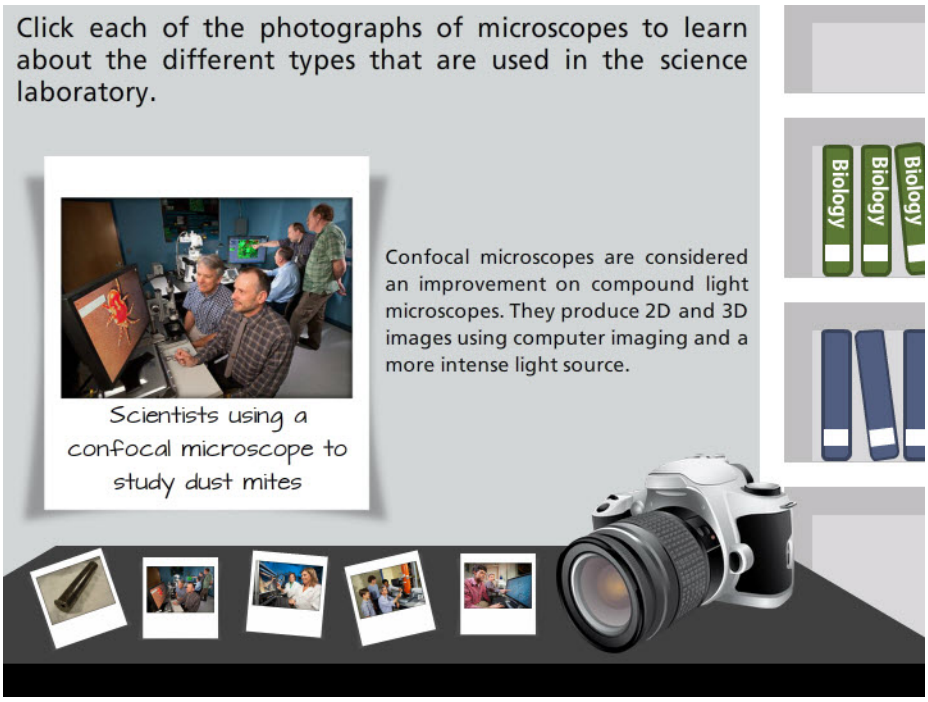
Confocal microscopes



Confocal microscopes are considered an improvement on compound light microscopes. They produce 2D and 3D images using computer imaging and a more intense light source.