

Microscope Lab 3: Diaphragm Use, Depth of Field

Diaphragm:

A diaphragm is a rotating wheel on the underside of the stage. This structure allows the user to adjust the amount of light that passes through the specimen. All objects viewed under a microscope require some adjustment of the diaphragm. As a general rule, the lowest intensity of light that allows you to resolve the structure of the object you are viewing should be used.

1. Prepare a wet mount slide of cotton fibers.
2. While looking through the microscope, on low power, adjust the diaphragm setting and change the amount of light entering the microscope. Under which setting are the cotton fibers sharpest? (Maximum, Minimum, Medium) _____
3. Move to high power. Again readjust the amount of light entering the microscope. Under which setting are the cotton fibers sharpest now? (Maximum, Minimum, Medium)

Depth of Field:



1. Prepare a wet mount slide of ~1 cm of each of 2 different colored threads. Cross the two threads to form an "X" as pictured.
2. Center the slide so that when viewing the strings, you are viewing the point where the strands cross.
3. Viewing the specimen under low power, observe the strings where they cross and make a sketch of your specimen. You will make a "good microscope" drawing of this specimen for homework. Label each colored string and a fiber.
4. Viewing the specimen under high power, observe the strings where they cross.
5. Can both strings be observed clearly at the same time? _____
6. Explain your answer to the previous question.

7. Again while looking at your specimen under high power, turn the fine focus adjustment wheel back and forth ~1/4 of a turn. You should be able to view a 3-D view of the specimen.
8. Depth of Field challenge:

Slide Number: _____

Determine the color of thread on the:

top = _____ middle = _____ bottom = _____

*At some point, we will be using something called a depression slide which is a slide that has a "well" ground out of it. Live specimen then have the ability to have a "pond" that they can swim in without being crushed when a depression slide is used.