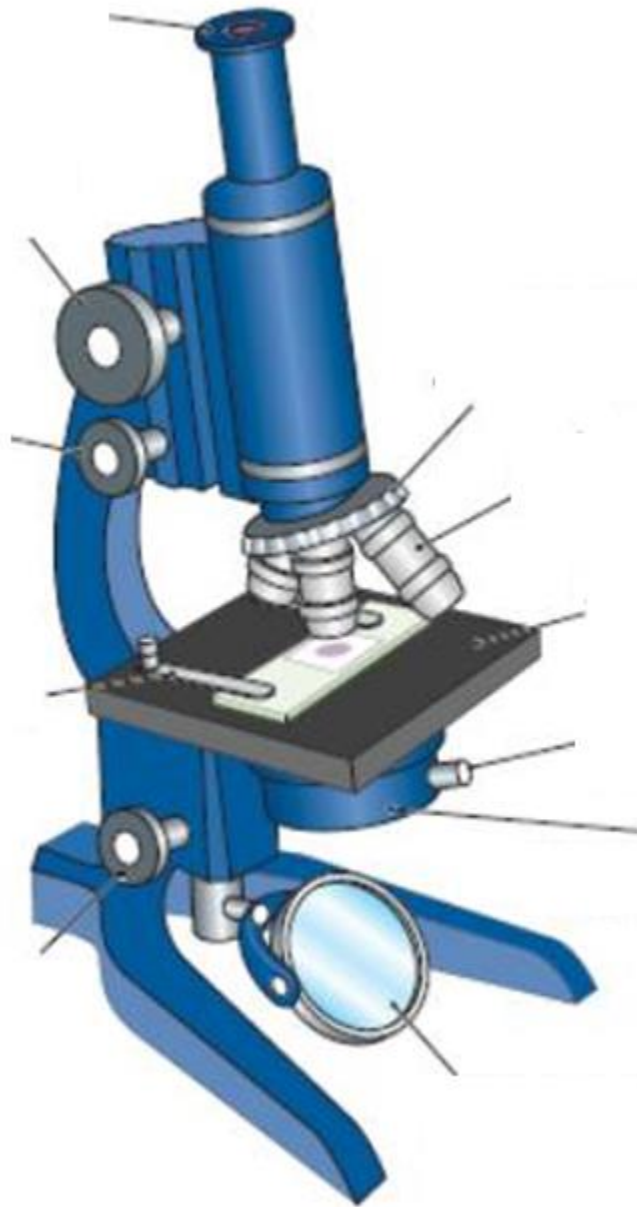


2.5 - Parts of the light microscope



Field of view calculations

1. Calculate total magnification

Ocular lens	Objective lens	Total magnification
10x	4x	
10x	10x	
10x	40x	

2. What are the possible total magnifications for a microscope with ocular lens marked 10x and objective lenses marked 5x, 15x, and 30x?

3. Estimating cell size. (Divide the field of view by the number of cells that occupy the diameter).

a. If the field of view is 2.5mm and the cell takes up 1/5 of the FOV. (i.e., 5 cells fit across)

b. 50 plant cells fit across the FOV and there are 70 rows of cells in the FOV. If the FOV is 3.5mm, calculate the length and width of the cells.

4. If the FOV on low power (10x ocular and 4x objective) is measured to be 4.5mm, determine the field of view for medium (10x ocular, 10x objective) and high power (10x ocular, 40x objective).

5. An organism fills $\frac{1}{4}$ of a FOV that is 5mm. If I draw the organism to a size of 100mm, determine the magnification of the drawing. (i.e., drawing/actual size)