

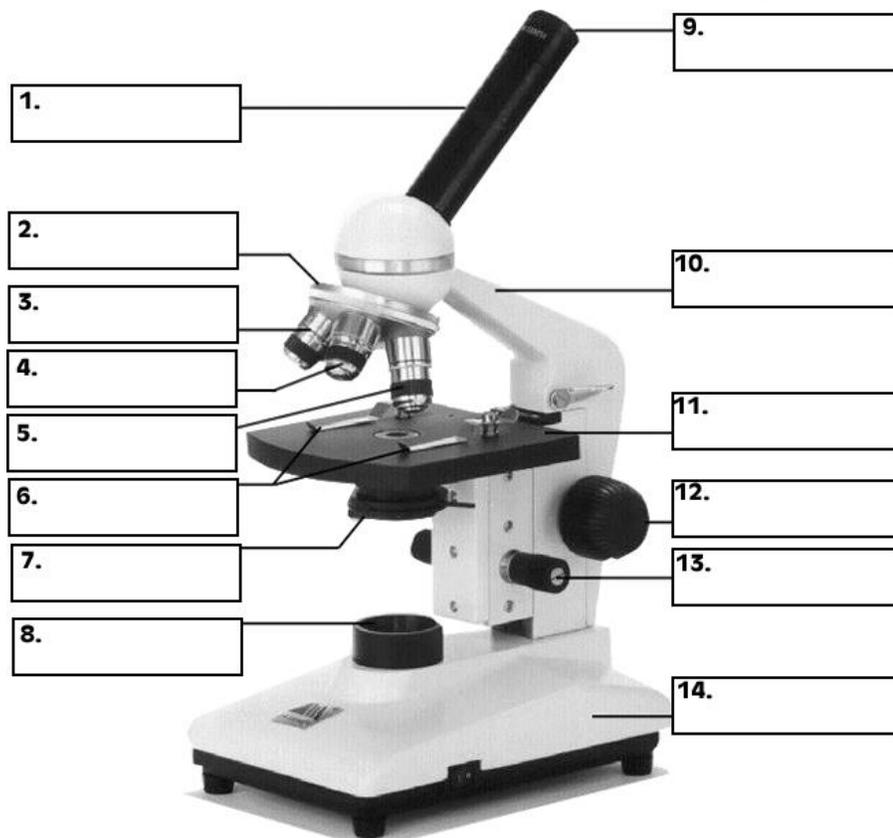
## Using the Microscope Lab

A compound microscope is an instrument with a series of lenses that greatly magnify objects too small to be seen with the unaided eye. When using the microscope use the following tips to keep your microscope working in good condition.

1. Always take out and put back your microscope at your designated station.
2. Always use TWO hands to carry a microscope. One hand to hold the arm, and the other hand to support the base
3. Do not allow the electrical cord to become a trip hazard while working with your microscope
4. Never touch the lens surfaces with your fingers
5. Do not adjust any of the focusing knobs until you are ready to use the microscope
6. Always begin with the low power objective lens in position and start with the coarse focus knob.
7. Always store the microscope with the low power objective in place. Cover the microscope when not in use.

### Pre-Lab

**Label** the parts of the microscope with their corresponding functions



**Function**

1.	8.
2.	9.
3.	10.
4.	11.
5.	12.
6.	13.
7.	14.

**Finding Total Magnification**

When looking through the microscope, you are actually looking through two lenses at once.

1. The eyepiece or ocular lens -magnifies 10x
2. The objective lenses (3 or 4 depending on microscope)- magnifies 4x, 10x, 40x and 100x

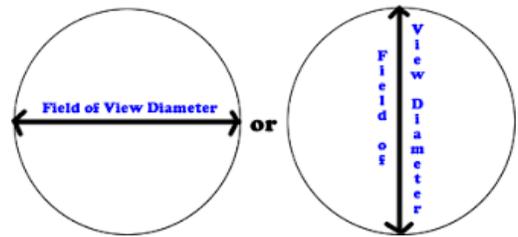
**Calculating Total Magnification**

Total Magnification = (eyepiece magnification) x (objective lens magnification)

Objective Lens	Magnification	Eyepiece Magnification	Total Magnification
Low Power	4X		
Medium Power	10X		
High Power	40X		

## Field of View

The field of view is the circular area you can see when you look through the microscope. The diameters of the field of view is different depending on which lens you are using.



After completing the practice below, answer the following question

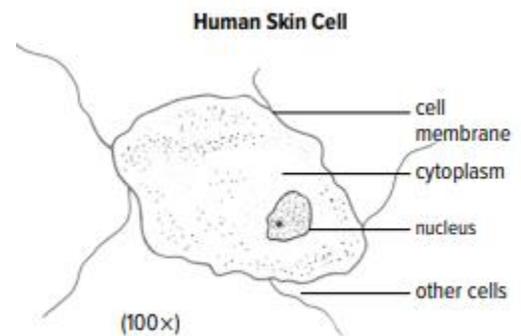
**What happens to FOV as magnification increases?**

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## Biological Drawings

Tips:

1. Use a pencil, never a pen
2. Use stippling (point like pencil marks) to show darker areas instead of sketch lines or shading
3. Give your drawing a title
4. If possible, place all labels on the right-hand side of the drawing, with straight lines extending from the area you are labelling.
5. Include the magnification used to view the specimen at the bottom of the drawing.



## Practice!

1. Head to your designated station.
2. Set up your microscope, following the tips described at the beginning of this package.

3. Make sure the low power objective lens is in position. If not, rotate the nosepiece until the low power objective lens clicks into place.
4. Look through the eyepiece and adjust the diaphragm until the view is as bright as possible.
5. Place a prepared slide on the stage and secure it in place using the stage clips. Make sure the object you want to view is centred over the opening in the stage.
6. Look through the eyepiece. Slowly turn the COARSE adjustment knob until the object is in focus.
7. Once the object is in focus using low power, carefully rotate the nosepiece to the medium power objective. Look at the objective from the side as you rotate the nosepiece to be sure that the lens does not strike the surface of the slide.
8. Adjust the focus using the FINE focus knob only! Do not use the coarse adjustment knob with the medium or high power objective lens.
9. To view under high power, follow the same process as medium power.
10. Draw a sketch below of what you are viewing. Record the total magnification. Refer to the tips below for biological drawings.
  
11. Once finished, carefully rotate the nosepiece back to the low power position. Remove the slide from the stage and return it to its proper container. Unplug the light source, cover the microscope and return it back to its proper station.