Science 9

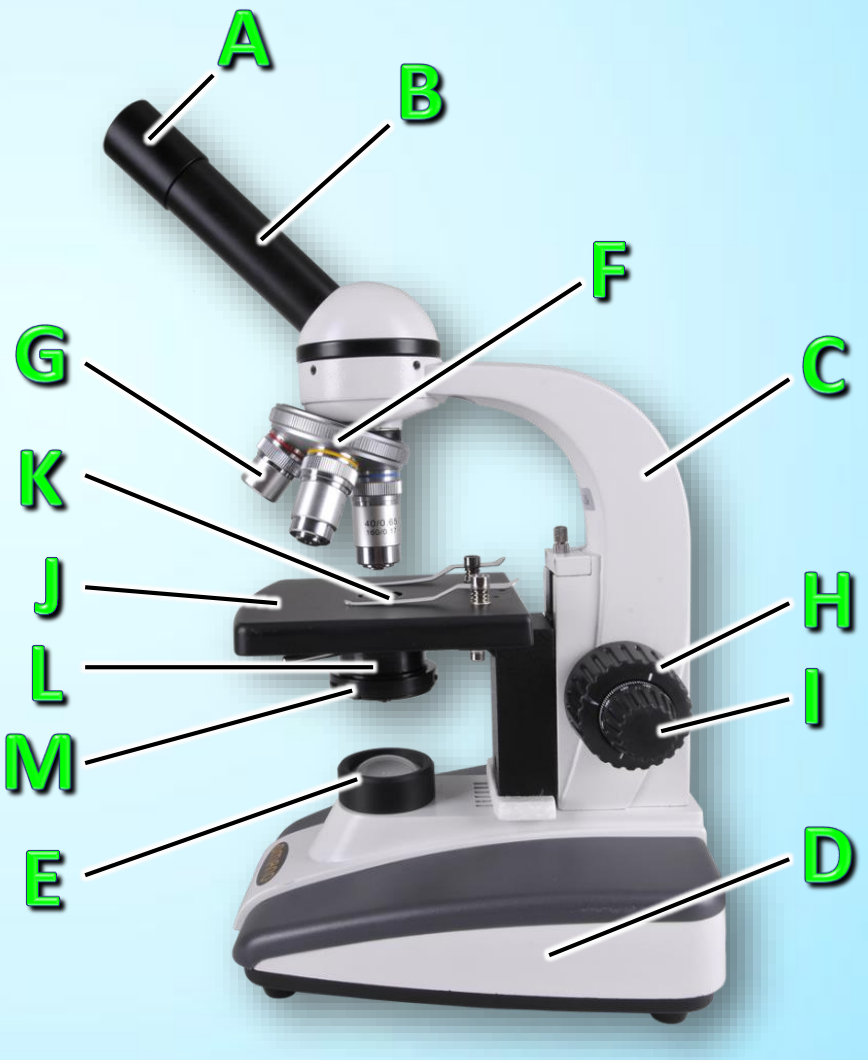
Compound Light Microscope

PARTS OF THE COMPOUND LIGHT MICROSCOPE

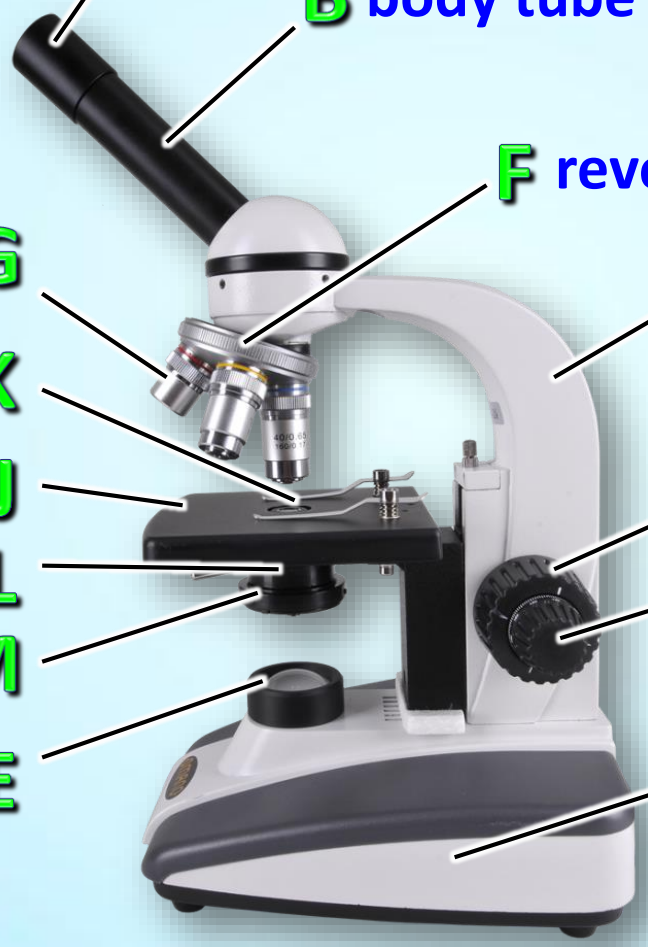
Do you know some of these parts?

Label as many parts as you can using the terms provided.

revolving nosepiece
arm
diaphragm
ocular lens / eyepiece
condenser
objective lenses
stage clips
body tube
base
light source / illuminator
coarse adjustment knob
stage
fine adjustment knob



PARTS OF THE COMPOUND LIGHT MICROSCOPE



A ocular lens/eyepiece

B body tube

F revolving/rotating nosepiece

objective lenses G

C arm

stage clips K

stage J

H coarse adjustment knob

condenser L

I fine adjustment knob

diaphragm M

light source/ illuminator E

D base

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Ocular Lens / Eyepiece

- Contains a lens to magnify the image of the specimen.
- The usual magnification is 10 X.

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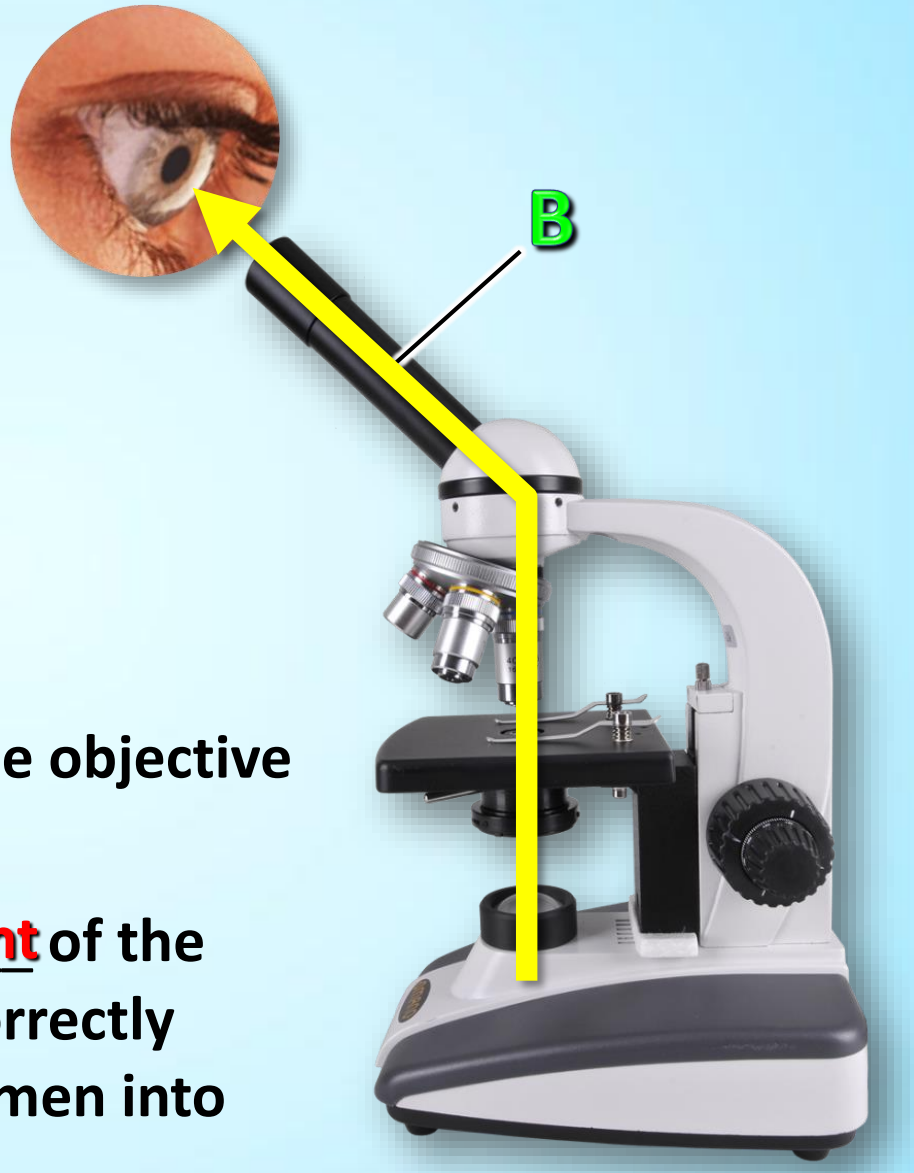
Ocular Lens / Eyepiece

- Contains a lens to **magnify** the image of the specimen.
- The usual magnification is **10** X.
- Some microscopes have **two** ocular lenses.

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Body Tube



- It **connects** the eyepiece to the objective lenses.
- It ensures the correct **alignment** of the microscope components to correctly **direct** the light from the specimen into the viewer's eye.

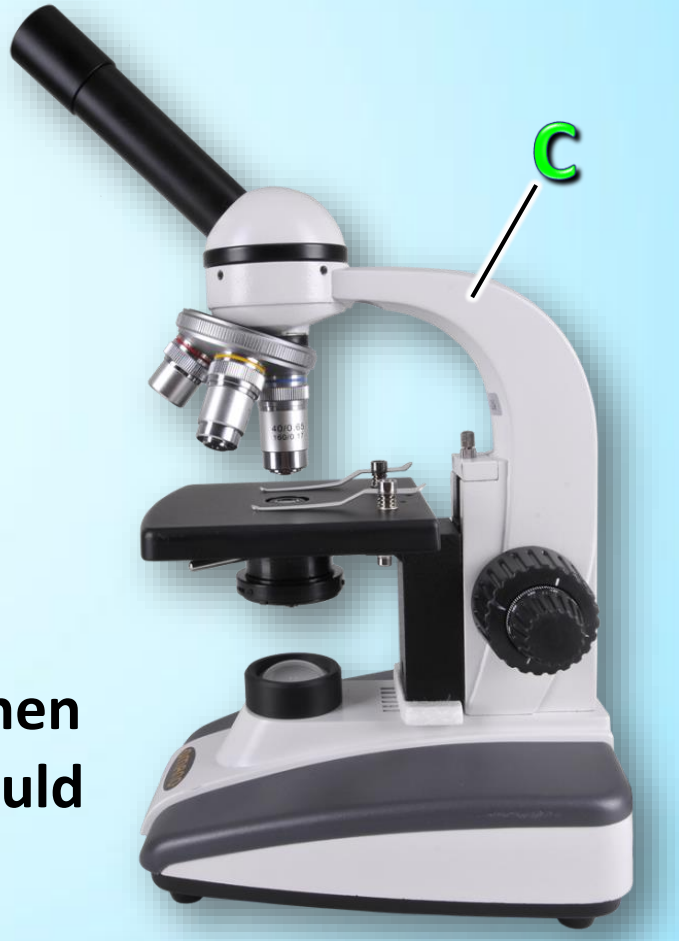
PARTS OF THE COMPOUND LIGHT MICROSCOPE

Arm

- It **connects** the body tube to the base.
- One **hand** should be around the arm when **carrying** the microscope (the other should be under the **base**).

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Arm



- It **connects** the body tube to the base.
- One **hand** should be around the arm when **carrying** the microscope (the other should be under the **base**).

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Base

- It **supports** the weight of the microscope.
- It contains the **electronics** and **light source**.
- One hand should be **under** the base while **carrying** the microscope (the other hand should be holding the arm).

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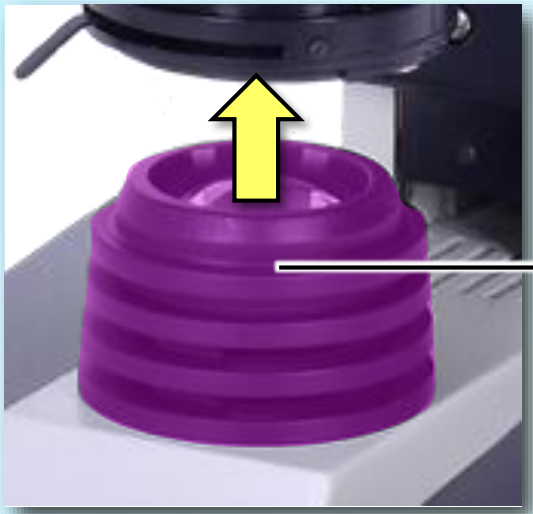
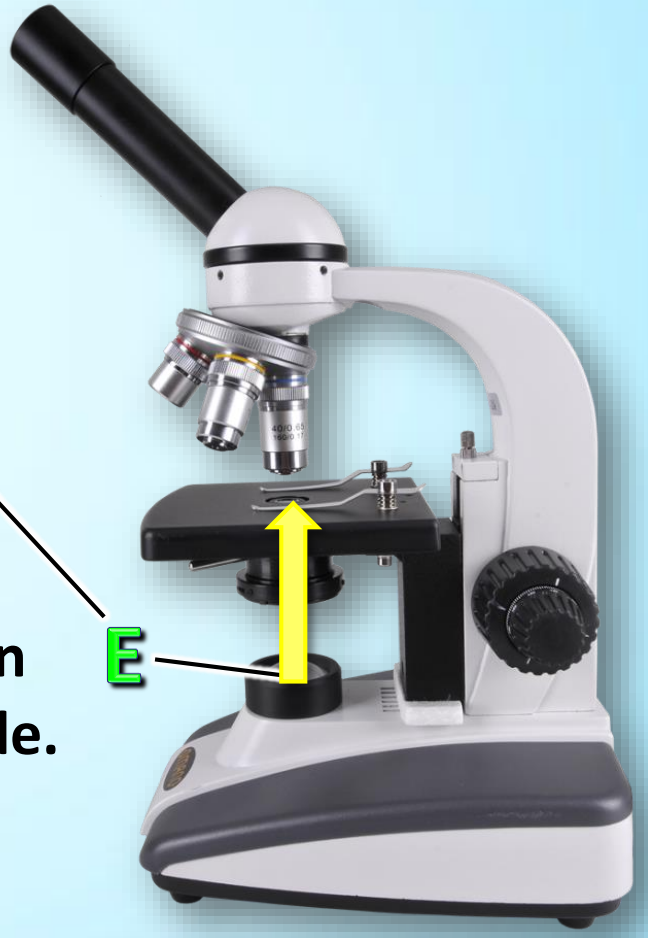
PARTS OF THE COMPOUND LIGHT MICROSCOPE

Light Source / Illuminator





- It sends light upwards through the condenser lens and through the hole in the stage onto the specimen on the slide.

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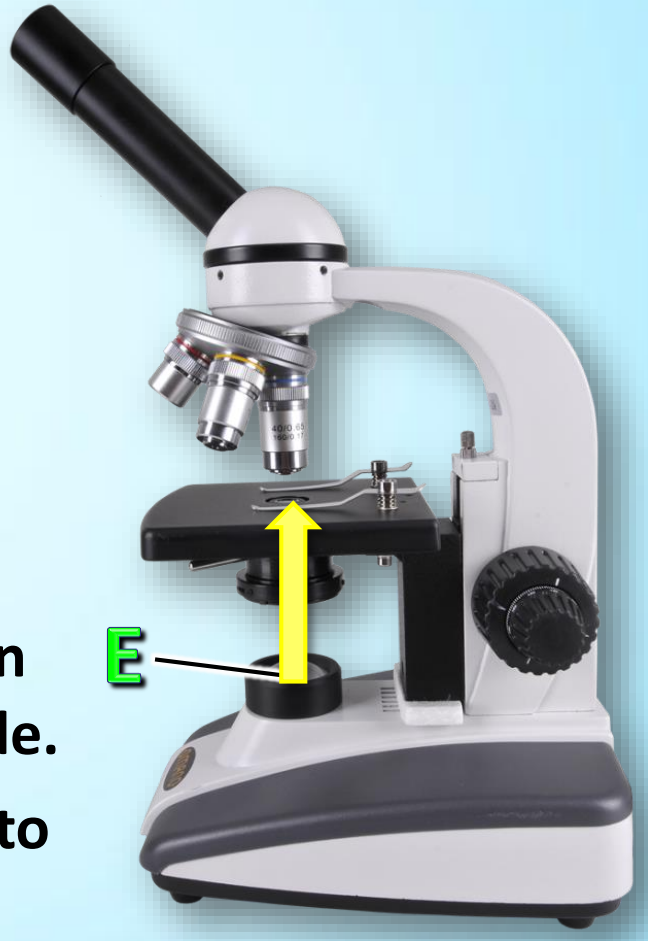
Light Source / Illuminator



- It sends light **upwards** through the **condenser lens** and through the **hole** in the stage onto the **specimen** on the slide.
- Older microscopes used to use **mirrors** to **reflect** the ambient light upwards.

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Revolving/Rotating Nose Piece

- The **objective lenses** are attached to it.
- **Rotating** the nose piece allows you to **switch** between the different lenses.

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Objective Lenses

- These lenses further **magnify** the image of the specimen.
- The magnifications are usually **4 X** , **10 X** and **40 X** .
- There are usually **3** lenses

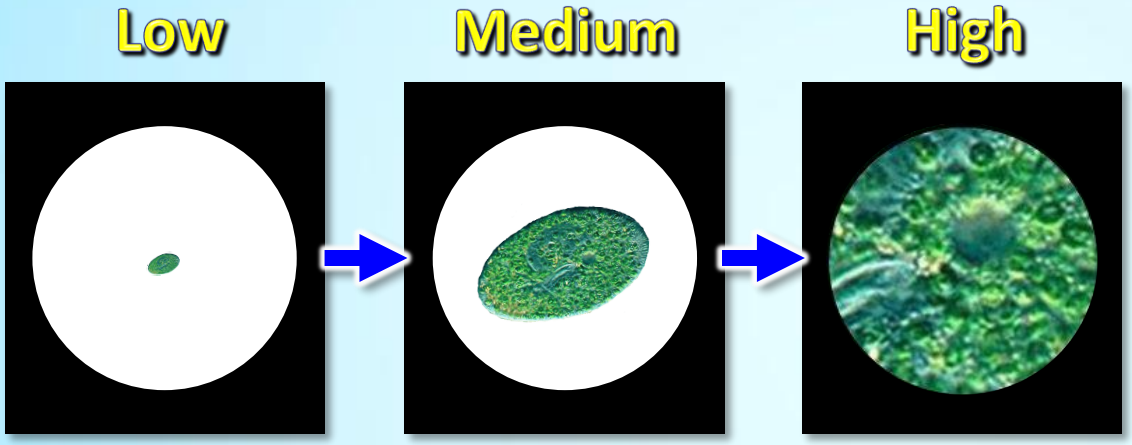
PARTS OF THE COMPOUND LIGHT MICROSCOPE

Objective Lenses

- These lenses further **magnify** the image of the specimen.
- The magnifications are usually **4** X , **10** X and **40** X .
- There are usually **3** lenses but some have **4** lenses.

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Objective Lenses



- As the power increases, the magnification becomes larger , but the field of view (visible area) becomes smaller .

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Coarse Adjustment Knob

- The first knob you should use, and always under low power. Never use it in high power.

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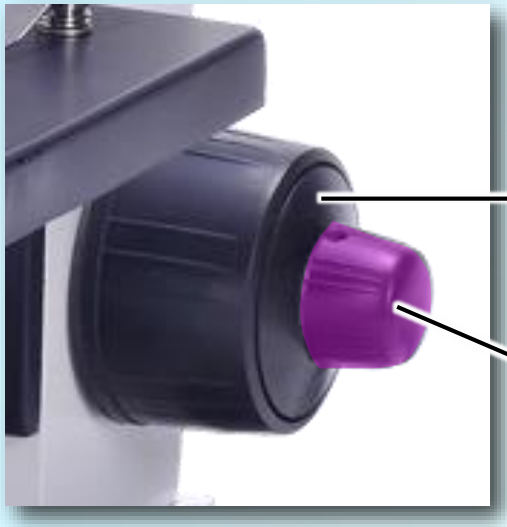
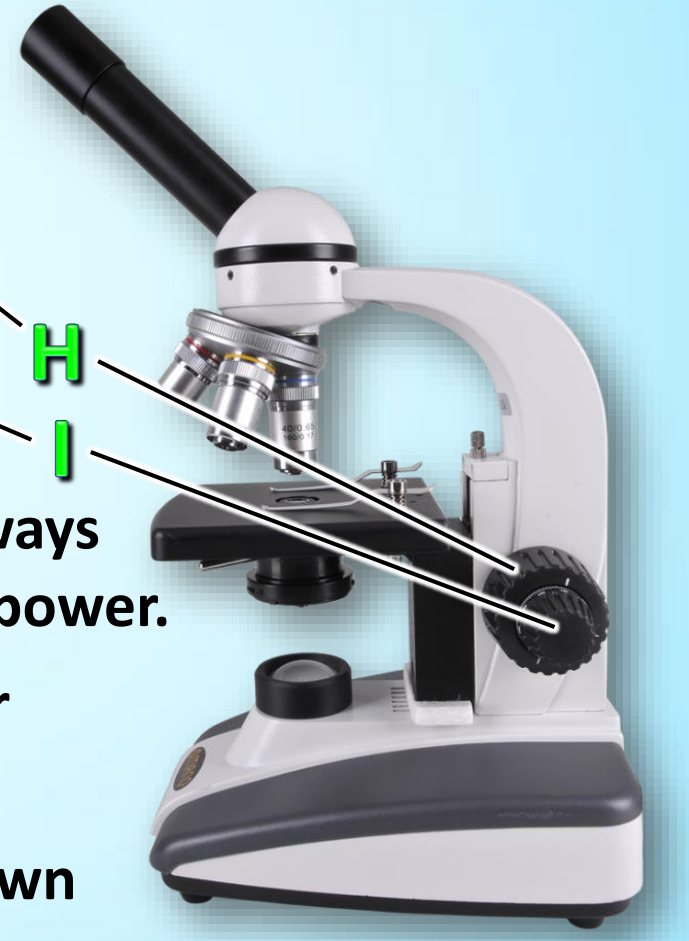
Fine Adjustment Knob





- The first knob you should use, and always under low power. Never use it in high power.
- The second knob you should use under higher power for exact focusing.
- Both knobs move the stage up and down to help put the specimen in focus.

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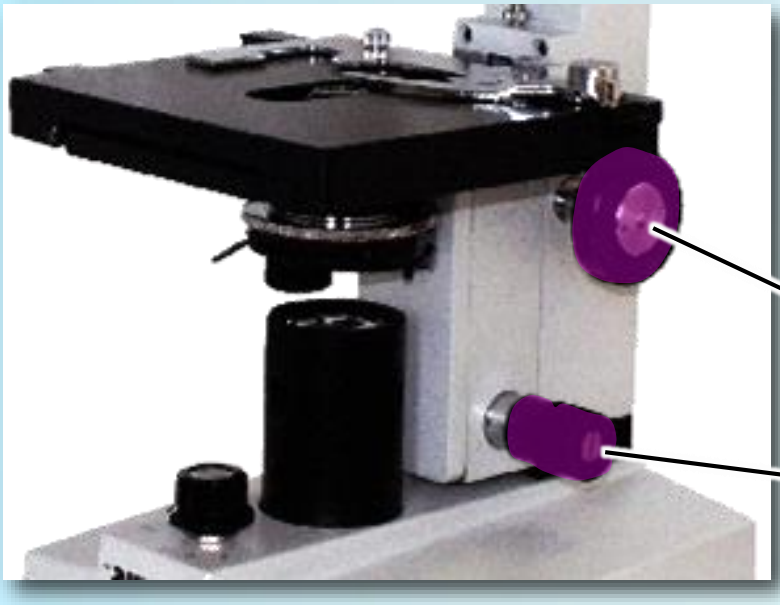
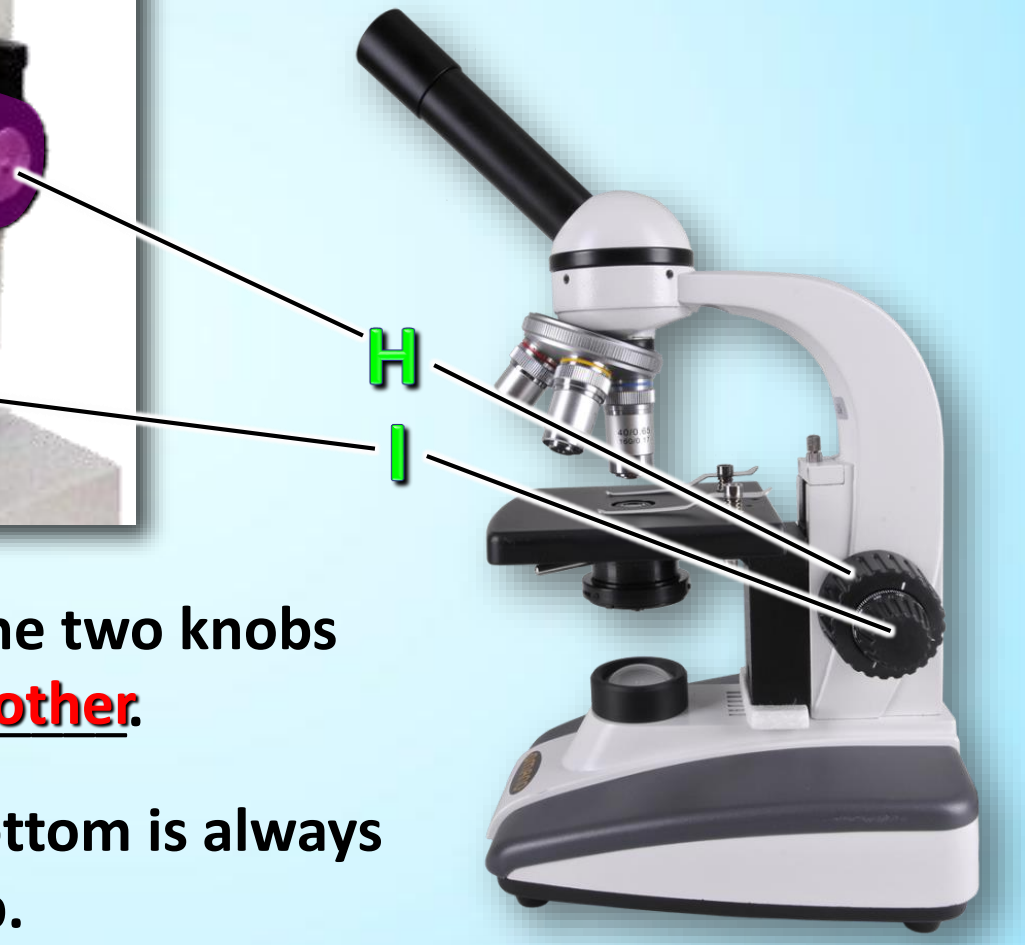
Fine Adjustment Knob





- Some microscopes have the two knobs located **one on top of the other**.
- The smaller one on the bottom is always the **fine** adjustment knob.

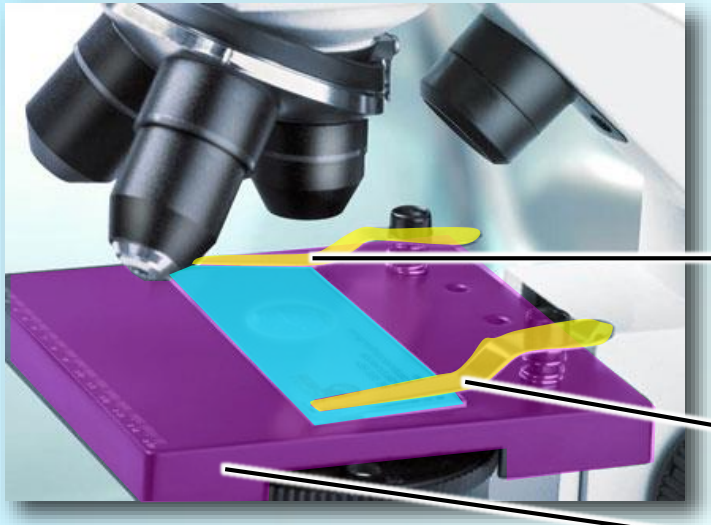
PARTS OF THE COMPOUND LIGHT MICROSCOPE

Stage

- The stage is where you place the **slide** which contains the **specimen**.
- It contains a **hole** that allows **light** to pass through the stage and onto the specimen.

PARTS OF THE COMPOUND LIGHT MICROSCOPE

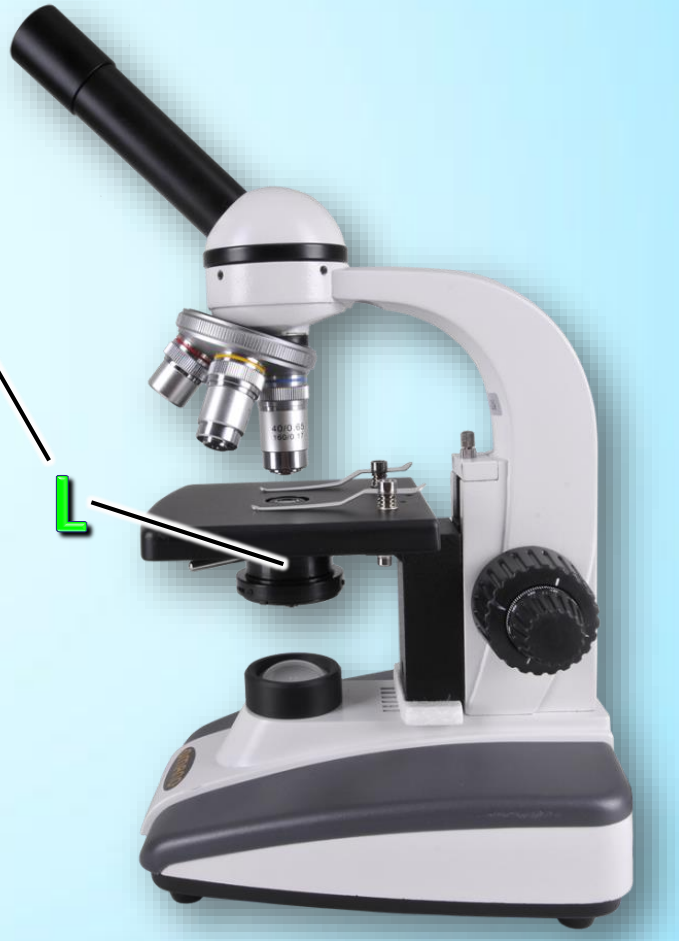
Stage Clips



- The stage is where you place the **slide** which contains the **specimen**.
- It contains a **hole** that allows **light** to pass through the stage and onto the specimen.
- The stage clips **secure** the slide on the stage.

PARTS OF THE COMPOUND LIGHT MICROSCOPE

Condenser Lens



- The lens under the stage that **focuses light** from the illuminator through to the **hole** in the stage.

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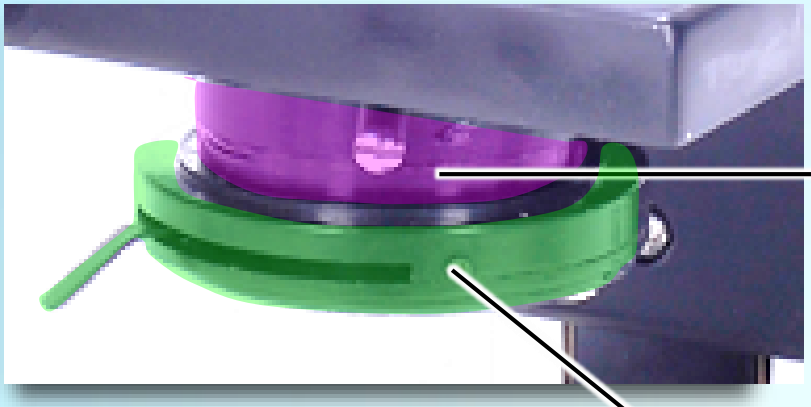
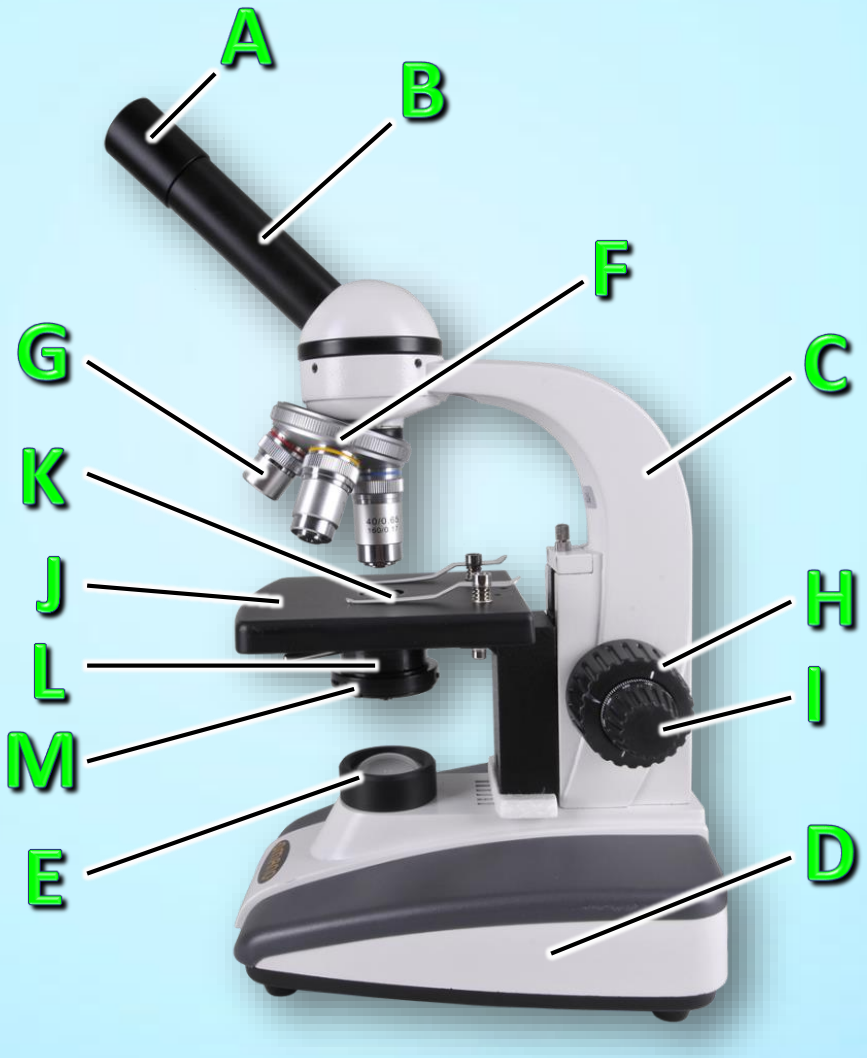
Diaphragm



- The lens under the stage that **focuses light** from the illuminator through to the **hole** in the stage.
- It contains a dial that rotates to **adjust** the **amount of light** that reaches the specimen.

White Board Review



Warm-Up!