

# microscope anatomy

## student worksheets

name \_\_\_\_\_

### lesson number two

If you are going to have a meaningful conversation with your microscope, you will need to know the names of its different parts. After all, can you imagine sitting down with your microscope and putting the glass jobber on the flat thinger place so that you can attach the shiny whatchamahickers to the dohickey? Then it gets worse. When you turn the round knobber you can't see anything because the hole dealy is twisted. The bottom line amigos, is that we need a vocabulary here so that we can communicate with each other.



### what to learn

You need to learn the following things so when your teacher gives you the test you'll be stylin' with the big score.

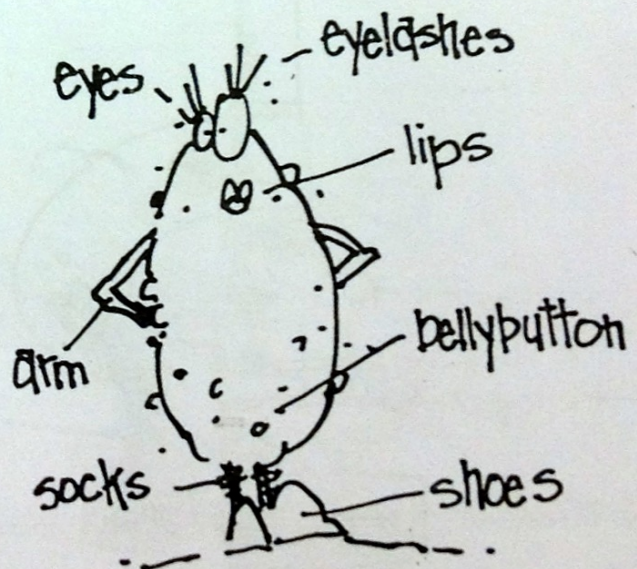
1. Learn the names of the different parts of the microscope. Your test will be to look at a picture of a microscope and correctly match that picture with a list of names at the bottom of the page.
2. Learn how each part of the microscope is used and what it does. Your test will be to correctly match a list of the microscope parts with definitions for each part. Very easy if you study.

### your equipment

- 1 microscope
- 1 pencil, preferably with a sharp point
- 1 instructor

### lab time

Read the names and descriptions of the different parts of the microscope and check the illustrations on the next two pages to see where everything is located. We're gonna start at the top and work our way down to the toes of the microscope.



### 1. Eyepiece or Ocular.

Easy enough. This is where you look into the microscope to see the image of the thing that you are looking for. Translation: it is the piece of the microscope where you put your eye.

### 2. Body Tube.

This is the long, skinny tube that holds the eyepiece up above the microscope. It allows the light of the image to travel up from the objective lenses to the eyepiece.

### 3. Nosepiece.

No, this is not the part of the microscope where you put your nose. The nosepiece holds the two or three objective lenses. The nosepiece rotates around in a circle, allowing you to choose which objective lens you want to use. It is the Lazy Susan of the microscope.

### 4. Objective Lenses: High, Medium, and Low.

Your microscope may have two or three lenses. These are attached to the nosepiece and vary in size. The shortest lens is the least powerful and the longest lens is the most powerful. Often times the people who make microscopes put different colored bands to identify the different powers.

### 5. Arm.

Who knows how they came up with this name. The arm holds the upper portion of the microscope above the stage. This is also where you grab the microscope anytime you decide to take it for a walk.

### 6. Coarse Adjustment Knob

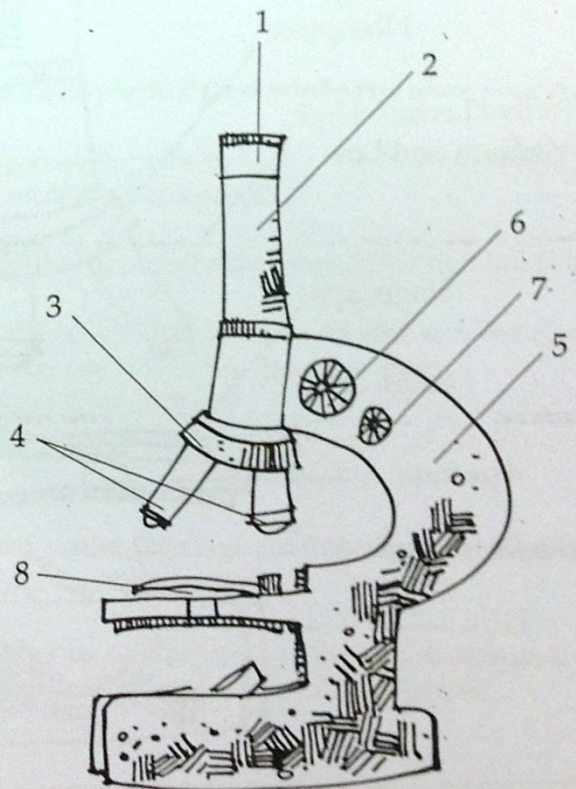
If you look near the top of the arm, there is a big round knob. This knob allows you to move the upper portion of the microscope (eyepiece, body tube, nosepiece, and objective lenses) up and down so that you can focus on the slide.

### 7. Fine Adjustment Knob

Your microscope may not have this little knob just under the coarse adjustment knob. Don't sweat it. It is just there so that you can fine tune the image. With a little practice you can do the same thing with just one knob if you don't have this one.

### 8. Slide

The thin piece of glass that you place directly over the opening in the stage and is held in place with stage clips. This is where all of your specimens are mounted so that you can look at them.



### 9. Stage

Showtime. This is where the goodies you want to look at are placed. It is the large flat area directly under the objective lenses that has a hole in the middle of it. So named because this is where everyone looks to see what is going on, just like a real stage.

### 10. Stageclips

These are the shiny clips that are on top of the stage. There should be one on either side of the hole in the middle of the stage. They hold the microscope slide in place.

### 11. Aperture (app • ur • chure)

The hole in the middle of the stage. This allows light to come up from behind whatever it is that you are looking at so that it is easier to see. Clever people, these scientists who build microscopes.

### 12. Diaphragm (die • a • fram)

Check under the stage and you will find a round disk that has several different size holes in it. This is called the diaphragm, and allows you to change the amount of light that comes up through the aperture. If you experiment with the size of the opening, you will find that some objects are easier to see with less light and some need more.

### 13. Mirror or Lamp

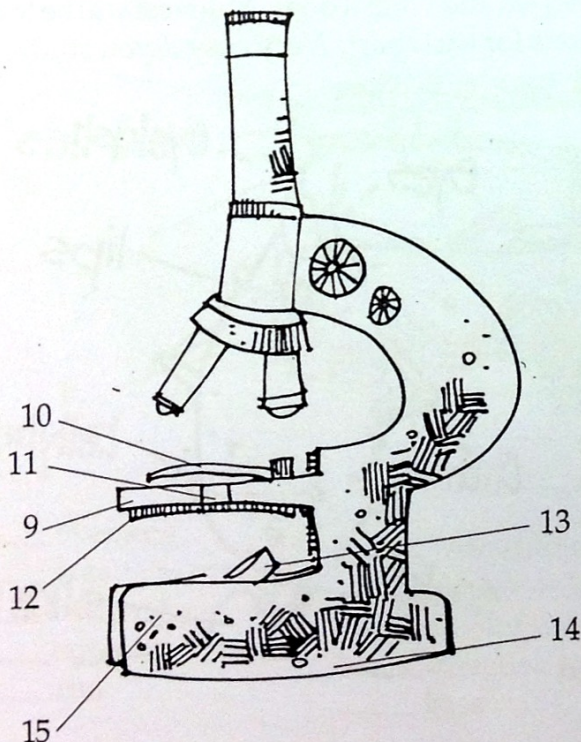
One or the other of these is located between the legs of the base directly under the aperture. The lamp shines light up through the aperture and the mirror reflects light into the same space. Makes it easier to see the object on the slide.

### 14. Base

This holds the whole microscope up. It is usually two legs that are attached to the bottom of the arm.

### 15. Legs

Actually, they should be called feet, but these are the two things that hold the microscope in place. Separately they are called legs and together they are called the base. Don't ask me; scientists are weird.



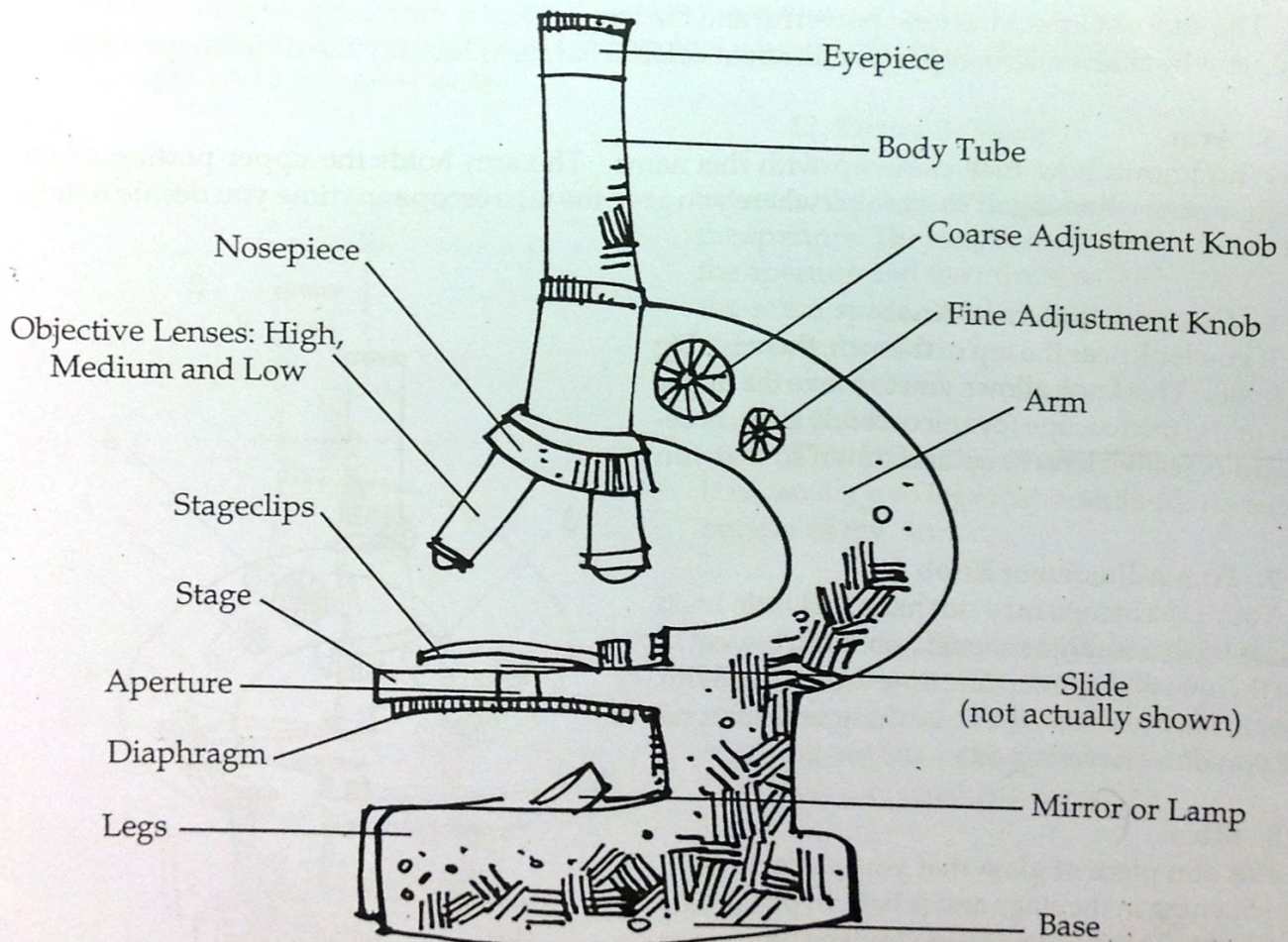
Nab a partner and quiz each other using the illustration below. When you are sure that you know the names of all the different parts, switch partners and do it all over again. When you are done, get after the homework because now you get to learn what all the different parts do.



## homework

**You are going to have two tests tomorrow. Each will be worth 30 points so study up!**

1. The first one is going to be a picture of a microscope exactly like the one that is pictured below. You will be asked to match the name of the parts of the microscope by memory with a list at the bottom of the page.
2. The second test will be a complete list of the parts of the microscope and all of the functions. You will be asked to match those parts with the functions by memory.



# — microscope function quiz —

name \_\_\_\_\_

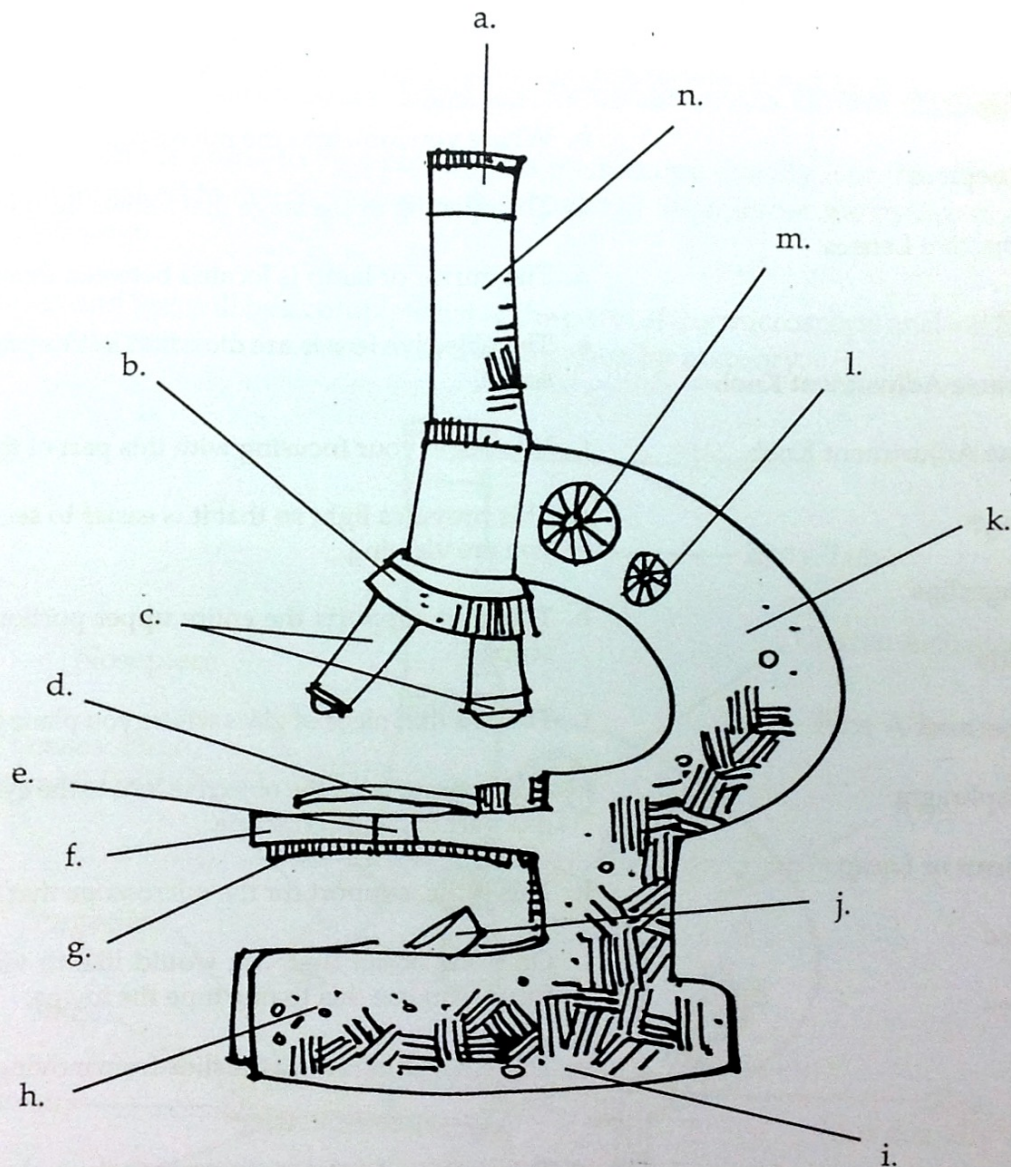
Match the parts of the microscope with their proper description by writing the letter of the description next to the name of the part.

- |                            |   |
|----------------------------|---|
| ___ Eyepiece               | a. The flat place under the objective lenses where you place the slide for viewing.                   |
| ___ Body Tube              | b. Where you look into the microscope.  |
| ___ Nosepiece              | c. The opening in the stage that allows light through.  |
| ___ Objective Lenses       | d. The mirror or lamp is located between these two things.  |
| ___ Arm                    | e. The objective lenses are mounted in this part of the microscope.                                   |
| ___ Coarse Adjustment Knob | f. You begin your focusing with this part of the microscope.  |
| ___ Fine Adjustment Knob   | g. This provides light so that it is easier to see the object that you are viewing.                   |
| ___ Stage                  | h. This part supports the entire upper portion of the microscope.                                     |
| ___ Stageclips             | i. This is a thin piece of glass where you place your specimen.                                       |
| ___ Slide                  | j. Light passes from the objective lens to the eyepiece through this part of the microscope.          |
| ___ Aperture               | k. This is the support for the microscope that holds it up.   |
| ___ Diaphragm              | l. Once the object that you would like to view comes into focus, you use this to fine tune the image. |
| ___ Mirror or Lamp         | m. These two things keep the slide from moving around on the stage.                                   |
| ___ Base                   | n. This disk under the stage controls the amount of light that passes through the aperture.           |
| ___ Legs                   | o. There may be two or three of these mounted on the nosepiece. Each one magnifies a different power. |

# — microscope anatomy quiz —

name \_\_\_\_\_

Identify the parts of the microscope by writing the letter of the part in the space next to the correct name. One space will remain blank when you are all done.



- |                 |                              |                  |
|-----------------|------------------------------|------------------|
| _____ eyepiece  | _____ coarse adjustment knob | _____ diaphragm  |
| _____ legs      | _____ mirror or lamp         | _____ stage      |
| _____ body tube | _____ fine adjustment knob   | _____ stageclips |
| _____ nosepiece | _____ objective lenses       | _____ aperture   |
| _____ arm       | _____ base                   | _____ slide      |