

Life Science Grade 6 Quiz

Teacher's Answer Key

1. Why do we use a wet mount slide? (Samples look better when you place a drop of water on the slide, because the water helps support the sample and fills in the spaces so light can pass easily through the slide. You can also view the sample live in its environment.)
2. If you are going to look at bacteria, what kind of slide would you prepare? (Heat fix with a stain.)
3. What two types of transport move substances into a cell? (Active and passive)
4. How does water get into celery when you place it in a cup of water? (osmosis)
5. What would happen to a surfer who spent all day in the ocean without drinking water? (The water in his cells would move out to the ocean, where the concentration of water is lower. Eventually, the surfer would dehydrate).
6. What are all living things made of? (Cells, which are mostly water)
7. What is the process by which water crosses membranes by itself, and in which direction does water move? (Osmosis, and water moves from highest to lowest concentration).
8. What are 3 types of worms, and what are the characteristics of each? (flat, round, segmented; flat worms have an incomplete digestive system and no body cavity; round worms have a body cavity and a complete digestive system; and segmented worms have a body cavity and repeating segments)
9. What are parts of the eco system, and give an example of each? (Water, producers, decomposers, consumers; water-precipitation from rain water; producers-fruit; decomposers-fruit flies; predators-insects like spiders).
10. What are three things plants and animals need to survive? (plants: water, soil, light; animals: food, water)
11. Do fruit flies eat fruit? (No, they eat the yeast that grows on fruit.)
12. What is a cell, and why is it so small? (A cell is a tiny structure that is the “building block” of life. It is the smallest object that can do all the things needed for life. It’s so small so it can get nutrients in and waste out efficiently. Otherwise they would starve or poison themselves.)
13. Why do we use microscopes? (To see into the tiny world of microorganisms)
14. What’s the highest power of magnification on your microscope? Lowest? (Answers vary. Make sure students calculate magnification power properly: multiply the objective lens by the eyepiece power)
15. Where are the two places you should NEVER touch on your microscope?(the glass part of the objective lens or the glass part of the eyepiece).
16. What’s the proper way to use the coarse adjustment knob so you don’t crack the objective lens? (Look at the stage as you raise it with the coarse adjustment knob, and don’t allow the stage to touch the objective lens.)
17. Briefly describe how to dry mount a slide. (Put the object on the slide. Tape it down on the sides if it curls up too much. Put a cover slip on it, if the object is not too bumpy or bulky).
18. How could you view a copper penny with your microscope? (Put the penny on a slide without a cover slip. Tape it down on the sides.)
19. What should you always clean your microscope lenses with? (Optical wipes. Do not use your fingers, toilet paper or paper towels.)
20. What is the name of a small piece of plastic that is used to hold objects to the microscope slide?(coverslip)
21. Name the chemical solution used to darken cells so that they are easier to see. (stain)

22. Why is there a hole in the middle of the stage? (to allow the light from the mirror or lamp below to shine through the iris)
23. What are the four things you need for a proper microscope drawing? (refer to answers below)
- Title
 - Boundary (circle drawn to represent the field of view)
 - Drawing of the Object
 - Power of magnification
24. Find the power of magnification for viewing with a 10X eyepiece and a 40X objective. ($40 \times 10 = 400$)
25. What is the correct order for the directions below on using a microscope? Place a number in the space next to the step so that they are in proper sequence:

2. Place the slide over the aperture on the stage

1. Use the coarse adjustment knob to lower the stage or raise the eyepiece all the way

4. Look into the eyepiece

3. Set the microscope on the lowest power

5. Use the coarse adjustment knob to bring the object into focus

26. When would you use a heat fix technique for making a slide?

For cells or organisms that move, it allows you to keep it in one place for easier viewing and staining.

27. What are the things you need to do in order to make a heat fix slide?

- Place the specimen on the slide.*
- Wave the slide over a candle to dry out the cells.*
- Add a drop of stain to the slide.*
- After ten seconds, rinse the slide with water by passing it gently through the stream once.*
- Place a drop of water on the slide and add a cover slip.*

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Student Worksheet

Name_____

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5. What would happen to a surfer who spent all day in the ocean without drinking water?
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9. What are parts of the eco system, and give an example of each?

10. What are three things plants and animals need to survive?
11. Do fruit flies eat fruit?
12. What is a cell, and why is it so small?
13. Why do we use microscopes?
14. What's the highest power of magnification on your microscope? Lowest?
15. Where are the two places you should NEVER touch on your microscope?
16. What's the proper way to use the coarse adjustment knob so you don't crack the objective lens?
17. Briefly describe how to dry mount a slide.
18. How could you view a copper penny with your microscope?
19. What should you always clean your microscope lenses with?
20. What is the name of a small piece of plastic that is used to hold objects to the microscope slide?
21. Name the chemical solution used to darken cells so that they are easier to see.

22. Why is there a hole in the middle of the stage?

23. What are the four things you need for a proper microscope drawing?

a.

b.

c.

d.

24. Find the power of magnification for viewing with a 10X eyepiece and a 40X objective.

25. What is the correct order for the directions below on using a microscope? Place a number in the space next to the step so that they are in proper sequence:

___ Place the slide over the aperture on the stage

___ Use the coarse adjustment knob to lower the stage or raise the eyepiece all the way

___ Look into the eyepiece

___ Set the microscope on the lowest power

___ Use the coarse adjustment knob to bring the object into focus

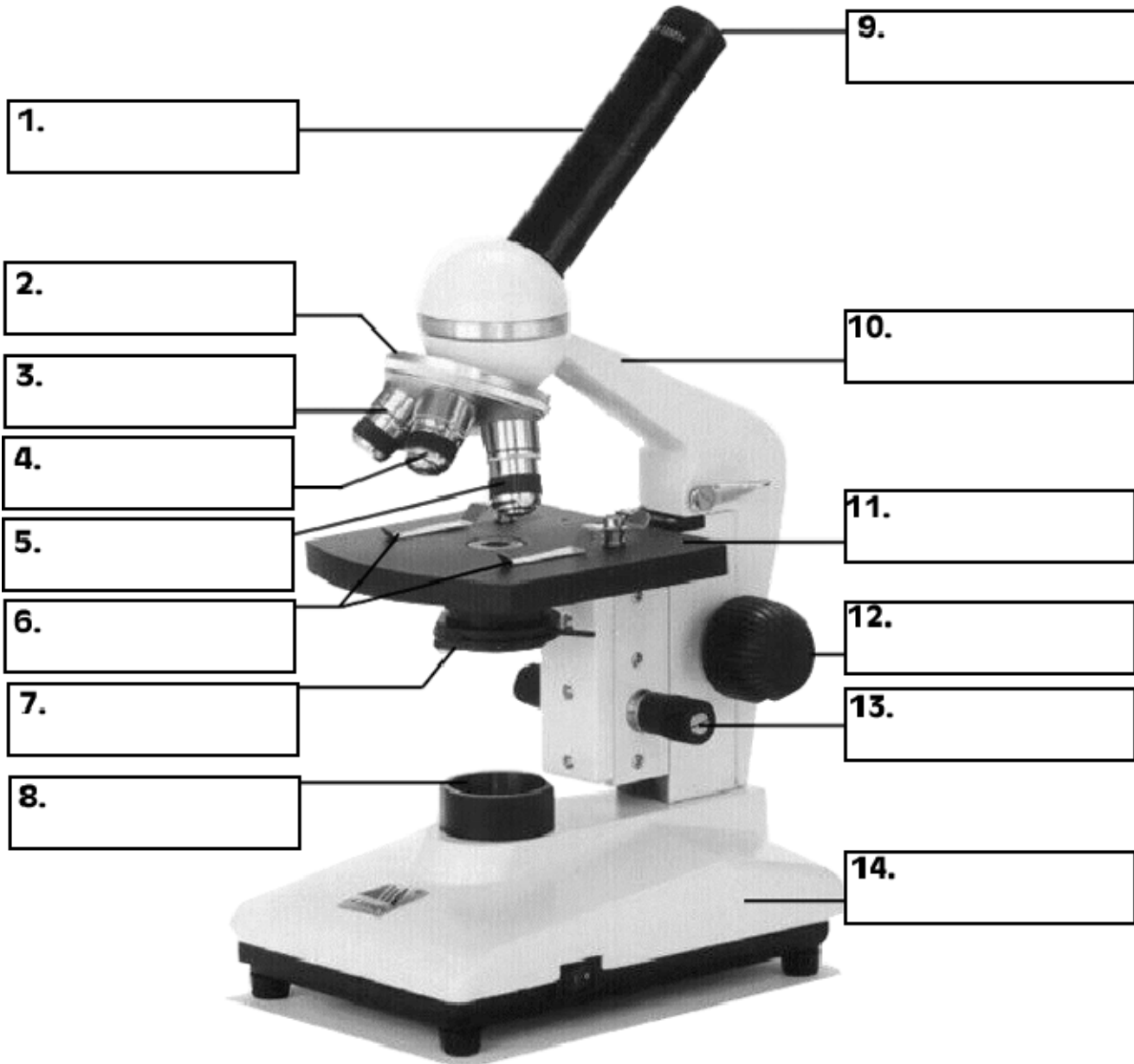
26. When would you use a heat fix technique for making a slide?

27. What are the things you need to do in order to make a heat fix slide?

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Student Quiz Sheet

1. Write the names for each part of the microscope in the image below:

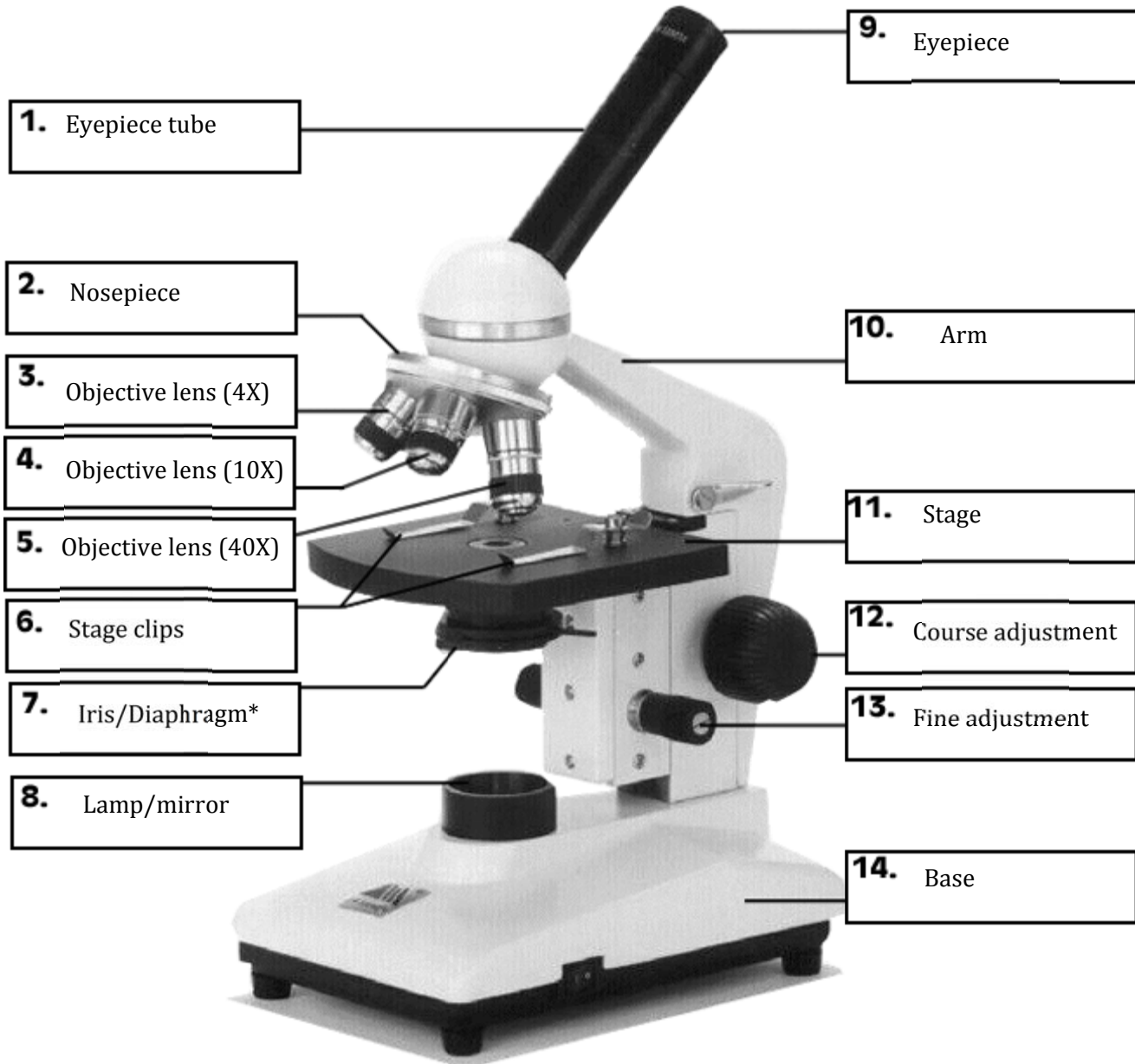


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Teacher's Answer Key

Note: If your student doesn't answer all of these correctly, don't worry! Consider it part of their learning experience and help them fill in the gaps.

1. Write the names for each part of the microscope in the image below:



*The hole in the middle of the stage is the *aperture* and the round disk under the stage with different sizes of holes is the *diaphragm*. The one shown in the image above is called an *iris* which is a different design but does the same thing as a diaphragm (changing the amount of light that passes through to the slide).