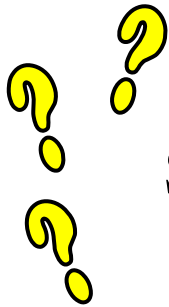


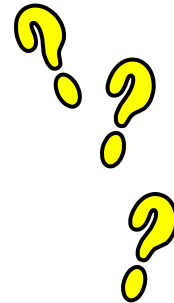


Station 1 Mystery Pictures



What is it?

Study the mystery photos and try to identify each one!



HINT: They are all common objects that might be found in your home or a classroom.

Write your guesses for the mystery items in the Station 1 section of your worksheet.

Do you have other objects that would make good mystery pictures? Bring them to class and have your teacher help you make a digital picture using the microscope camera.



Extra time? Work on your puzzles or study for your microscope quiz!



Station 2

Make It Simple

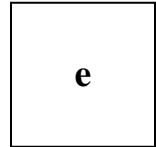
Write all your answers in the Station 2 section of your worksheet.

Directions:

(1) You will need one slide, an eyedropper, and a small cup of water to create a simple lens. You will also need a standard ruler and a hand lens.

(2) Place one drop of water in the middle of the slide and hold over the letter “e” in the box at right.

- ▶ Move the slide up and down until you get the letter in focus. Measure the distance between the slide and table.



(3) Place another drop of water in the middle of the slide and hold over the letter “e” again.

- ▶ Move the slide up and down until you get the words in focus. Measure the distance between the slide and table.

(4) Place another drop of water in the middle of the slide and hold over the letter “e” again.

- ▶ Move the slide up and down until you get the words in focus. Measure the distance between the slide and table.
- ▶ How does the view of the “e” change as you add more drops of water?

(5) Use the hand lenses provided to view the letter “e”.

- ▶ Move the hand lens up and down until you get the words in focus. Measure the distance between the slide and table.
- ▶ How does the view of the “e” with the hand lens compare to the water lens?



Extra time? Work on your puzzles or study for your microscope quiz!



Station 3 Select-A-Slide

Let's learn how to view a slide ...

- (1) Select a slide and set it on the **STAGE** making sure the specimen is centered over the **OPENING** in the stage. Carefully anchor it in place using the **STAGE CLIPS**.
- (2) Rotate the **NOSEPIECE** to center the **LOWEST** power **OBJECTIVE** lens (shortest objective) over your specimen.
- (3) While looking through the eyepiece, rotate the large **COARSE** adjustment knob to get your specimen in view. Use the small **FINE** adjustment knob to **SHARPEN** the image and make it clear.
- (4) To increase magnification, rotate the **NOSEPIECE** to center the next largest **OBJECTIVE LENS** (middle-sized objective) over your specimen. You may need to use the **FINE** adjustment knob to sharpen the image.
- (5) To view your specimen under the highest magnification, rotate the nosepiece to center the **LARGEST** objective lens (longest objective) over your specimen. You may need to use the fine adjustment knob to sharpen the image.

WARNING: Be careful using the **COARSE** adjustment knob with the **HIGHEST** power objective! Always watch the stage from the **SIDE** to make sure the slide doesn't touch the objective **LENS**.

Choose one specimen and draw it as it appears in three different powers of magnification. Answer all of the questions in the Station 3 area of your worksheet.

Done? Be sure to clean up your area and put away your materials!



Extra time? Work on your puzzles or study for your microscope quiz!



Station 4 Pond Water Critters

Let's learn how to make a wet mount slide ...

- (1) Place ONE drop of pond water in the middle of a clean slide.
- (2) Place a COVER SLIP on one side of the drop of water and slowly lower it over the drop of water.
- (3) Place the SLIDE on the STAGE making sure the specimen is centered over the OPENING in the stage. For pond water samples, you do not need to anchor the slide with a stage clip. This will allow you to move the slide around for viewing.
- (4) Rotate the NOSEPIECE to center the LOWEST power OBJECTIVE lens (shortest objective) over your specimen.
- (5) While looking through the eyepiece, rotate the large COARSE adjustment knob to get your specimen in view. Use the small FINE adjustment knob to SHARPEN the image and make it clear.
- (6) To increase magnification, rotate the NOSEPIECE to center the next largest OBJECTIVE LENS (medium-sized objective) over your specimen. You may need to use the FINE adjustment knob to sharpen the image.
- (7) To view your specimen under the highest magnification, rotate the nosepiece to center the LARGEST objective lens (longest objective) over your specimen. You may need to use the fine adjustment knob to sharpen the image.

WARNING: Be careful using the **COARSE** adjustment knob with the **HIGHEST** power objective! Always watch the stage from the **SIDE** to make sure the slide doesn't touch the objective **LENS**.

Use the pond water guides to help you identify the organisms you see in your samples. Answer all of the questions in the Station 4 section of your worksheet.

Done? Be sure to clean up your area and put away your materials!



Extra time? Work on your puzzles or study for your microscope quiz!



Station 5 Scope Basics

Activity 1: Vocab Challenge

Challenge the other students in your group to correctly match all the cards in the shortest amount of time.

Vocab Challenge Rules:

- (1) You may lay out one half of the cards (such as all the terms). The other half (such as all the definitions) should be shuffled and placed in one pile on the table in front of you.
- (2) Have another student time you and check your answers when you are done. All the cards must be correct to count your time!

Activity 2: Parts & Pieces

Place the labels in the correct location on the microscope diagram to test your knowledge of the parts of the microscope. How fast can you match the parts correctly?

Rate your efforts on these two activities. Record your rating in the chart in the Station 5 section of your worksheet.

Done? Put away the materials so they are ready for the next group.



Extra time? Work on your puzzles or study for your microscope quiz!



Station 6

Microscopes Online

Directions:

- (1) Open your internet browser and go to <http://sciencespot.net/>**
- (2) Click the Kid Zone graphic in the upper right-hand corner.**
- (3) Click “Cells & Microscopes” to find the links you need.**
- (4) Visit the sites listed below and rate your efforts. Record your rating in the chart in the Station 6 section of your worksheet.**

Site #1 – What in the world? - Mystery Photos

Try several challenges. How many did you do?

HINT: Click the “More” link to see all the challenges.

Site #2 - Microscope Parts Quiz

Try the quiz and click the “Check” button.

Correct the questions you missed.

Site#3 - Quia - Microscope Mania Game

Try the game several times and see if you can match the cards correctly. How did you do?



Extra time? Work on your puzzles or study for your microscope quiz!