

Grade 7 Science  
Unit 3: Mixtures and Solutions  
CORE LAB 1



Name: \_\_\_\_\_

Partners:

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\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Materials:

3 test tubes  
magnifying glass  
milk

marking pen  
eye dropper  
orange juice

test tube rack  
Petri dish  
soda pop

Procedure:

1. Your teacher will give you a copy of the table of observations. Give your table a title.
2. Label the three test tubes M (for milk), O (for orange juice), and S (for soda water). Fill half of each test tube with the correct beverage, and place it in the test tube rack.
3. Using only your unaided eye, examine the beverage in each test tube. Can you see any bits that are different from the rest of the beverage? Record your observations for each beverage in your table.
4. Based only on what you see for yourself, infer whether each beverage is heterogeneous or homogeneous. Record your inference in the correct row of your table. Include the reasons for your inference in the last column.
5. Place a small amount of one of the beverages on a watch glass or Petri dish. Using the magnifying glass, examine the beverage again. Record your observations in your table. Repeat for the other two beverages.
6. Infer whether each beverage is heterogeneous or homogeneous. Remember to include your reasons.
7. Your teacher will set up three compound light microscopes for inspecting each of the beverages. Observe the beverages using the low power objective lens of the microscope.
8. What new observations might lead you to reconsider some of your previous inferences? Record your new observations in your table.
9. Next, observe what each beverage looks like under the microscope at high power. Note the sizes and shapes of any different materials that you see. Also note whether or not they are evenly spaced throughout the liquid.
10. Using the flashlight provided, shine the light through the liquid to determine if light scatters or not. Record your observations in your table.
11. Make your final inferences, based on the microscopic evidence. Record them in your table.
12. Clean up and put away the equipment you have used.

Observations:

Beverage	Method of Observation	Observations	Inference (homogeneous or heterogeneous)	Reasons
Milk	Unaided eye			
	Hand lens			
	Microscope			
	Flashlight			
Orange Juice	Unaided eye			
	Hand lens			
	Microscope			
	flashlight			
Soda Pop	Unaided eye			
	Hand lens			
	Microscope			
	Flashlight			

**Analysis:**

1. When you examined the beverages with your unaided eye, you looked for different types of matter with different properties.

(A) Which type of matter were big, small or microscopic?

\_\_\_\_\_

(B) Were the types of matter all the same shape?

\_\_\_\_\_

(C) Explain which types of matter were solids, liquids, or gases.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Describe what, if anything, you were able to see with the magnifying glass that you could not see with your unaided eye in the...

(A) milk \_\_\_\_\_

(B) orange juice \_\_\_\_\_

(C) soda pop \_\_\_\_\_

3. (A) Which beverage appeared to be homogeneous until you saw what it looked like under the microscope?

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(B) Describe the new evidence that you observed.

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(C) Under high power, you could see bits of different matter with different properties, but the bits were not all exactly the same size and shape. What reasons can you give to explain the differences?

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4. Summarize your findings. Write one or two sentences about each beverage. Be sure to state whether it is homogenous or heterogeneous. Give reasons for your answers.

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