

Group # \_\_\_\_\_

Name \_\_\_\_\_

Period \_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

## Ch 1 Lab • Developing Observation Skills

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Lab Partners: \_\_\_\_\_

### Observing and inferring

A chemist's ability to make careful and accurate observations is developed early. The observations given are used to make inferences. An inference is an explanation or interpretation of observations.

### Materials

Chemicals	Equipment
Whole Milk	Pipets
Nonfat Milk	Petri dish (top and bottom)
4 different food coloring	Toothpicks
DI water	Graduated cylinder
Vegetable Oil	Soap

### Procedures

1. Add water half way to the "top" part of Petri dish. Add 1mL (~10 drops) of vegetable oil. Draw/Color dish in data table of what you observe with oil and water.
2. Dip the **wider** end of a toothpick in liquid soap.
3. Touch the tip of the toothpick to the water at the center of the Petri dish. Hold it there for 30sec. Draw/Color dish in data table of what you observe with oil and water after adding soap.
4. Add whole milk to the "bottom" part of Petri dish (half way).
5. Place one drop each of four different food coloring in four different locations on the surface of the milk. Try not to touch the sides of dish with the food color and do not put a drop of food coloring in the center.
6. Draw/Color dish in data table of what you observe with milk and food coloring.
7. Repeat steps 2 and 3 to the WHOLE milk Petri dish. Draw/Color dish in data table of what you observe with milk and food coloring after adding soap.
8. Repeat steps 2 and 3 to the NONFAT milk Petri dish. Observe what you see and make a comparison to the WHOLE milk.

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### Disposal/Clean Up

- All liquids from petri dishes go down the sink and rinsed with water.
- Solids throw away in trash.
- Clean petri dishes with LAB Equipment soap & brushes (especially the oil/water)
- Dry dishes with paper towels.
- Clean Lab BENCH with small soap bottle and sponge.
- Dry lab bench with paper towels.
- Wash hands with hand soap.
- Let me know when you are ready. Do not get unprotected until dismissed.

### Data Table

DRAW observations in the following table

<b>Procedure</b>	<b>Observations (before soap)</b>	<b>Observations (after soap)</b>
<b>Oil/Water dish</b>		
<b>Procedure</b>	<b>Observations (before soap)</b>	<b>Observations (after soap)</b>
<b>Whole Milk/Coloring dish</b>		

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### **Analysis Questions**

1. What did you observe in step 3?
2. What did you observe in step 7 for the milk dish?
3. What did you notice about the results for the WHOLE milk vs NONFAT milk? Were the results the same? If not, explain how it was different.
4. Oil, the fat in milk, and grease belong to a class of chemicals called lipids. What can you conclude about the reaction between the detergent (soap) with the lipids in milk?