

Physical Science for 3rd Grade Students  
Changes in Matter: “Up, Up and Away”

**Question/Problem:** Do all liquids evaporate at the same rate?

Standards: 3.2.4 A: Identify and use the nature of scientific and technological knowledge: Provide clear explanations that account for observations and results.

3.2.4 C: Recognize and use the elements of scientific inquiry to solve problems: Generate questions about objects, organisms and/or events that can be answered through scientific investigations.: Conduct an experiment. : State a conclusion that is consistent with the information.

3.4.4 A: Recognize basic concepts about the structure and properties of matter.: Describe properties of matter.: Know different material characteristics.

Content Objective: Students will be able to determine the rate of evaporation of different liquids.

Process Objectives: Students will make good observations and compare the evaporating liquids.

Students will record their observations of the liquids evaporating.

**Background Knowledge/Content:** Solids and liquids have observable properties that can be described and compared. Some properties of liquids are color, texture, fluidity. These properties can be used to sort the liquids studied in the classroom and to investigate new materials. Physical science concepts studied include evaporation as it relates to liquids.

Students will have read chapter 5 in science text which discusses physical and chemical changes and changing states of water. The students will be familiar with appropriate vocabulary.

Evaporation occurs in everyday life, such as puddles, water in plants, oil in a car engine, boiling water, etc.

**Materials:** Wax paper, water, alcohol, baby oil, dropper, clock.

**Set induction:** Several days before lab, display different colored ice cubes in shallow bowls around the room. Allow students to take note of what happens to the ice cubes.

Before lab work, students will fill out the “What I Know About the Colored Ice” and “What I Want to Know About the Colored Ice” sections of the KWL worksheets, with teacher direction and class discussion.

**Procedures:**

Review safety procedures:

Keep fingers out of your mouth.

Use dropper properly.

Wipe up spills.

Wash hands when finished.

Lab:

1. Draw three circles on a piece of wax paper.
2. Label the circles A, B, and C.
3. Place a drop of water in circle A, a drop of alcohol in circle B, and a drop of baby oil in circle C.
4. Use a q-tip to explore the different liquids.
5. Teacher will circulate and pose questions and use checklist.
6. Discuss what the properties of the liquids.
7. Pose the question, “Will all the liquids evaporate the same? Why or why not?” Make a prediction.
8. Check the size of the spots every 30 minutes for two hours. Draw a picture of your observations in your Evaporation Book.
9. In small groups, students will discuss and report answers to questions such as, “does the temperature affect evaporation, or, will the amount of liquid alter our findings, or, would milk evaporate faster or slower than the other liquids?”
9. Fill in the “What Did I Learn About Evaporation” section of the KWL. Discuss.

**Worksheets:**

KWL

Evaporation Book

Assessment

**Assessment/Post Lab:**

1. Teacher checklist

- \_\_\_\_\_ using equipment properly
- \_\_\_\_\_ labeling samples correctly
- \_\_\_\_\_ observing liquid evaporating
- \_\_\_\_\_ entering data in book
- \_\_\_\_\_ clean up
- \_\_\_\_\_ states a conclusion with a clear explanation

2. Booklet

3. Lab experiment

4- Written assessment

- Questions:
1. What differences do you see in your pictures?
  2. Which liquid evaporated the fastest? The slowest?
  3. Based on your observations, how long did it take for each liquid to evaporate?
  4. Would changing the amounts of the liquids change the results?
  5. Where in school or at home do you find liquids evaporating?

**Rubric:**

Booklet: (1 pt. Correct titles, 2 pts. For observation pictures, 2 pts. Conclusion)	5 point
Lab experiment: (1 pt. For each teacher observation)	5 points
Written Assessment	10 points

**Resources:**

National Science Resources Center, STC Meets the Standards, Washington. 1998. Pg. 27-30.

Addison-Wesley Science, Second Edition, Grade 3

Science and Technology for Children - Weather Teacher's Guide

<http://www.ajkids.com>

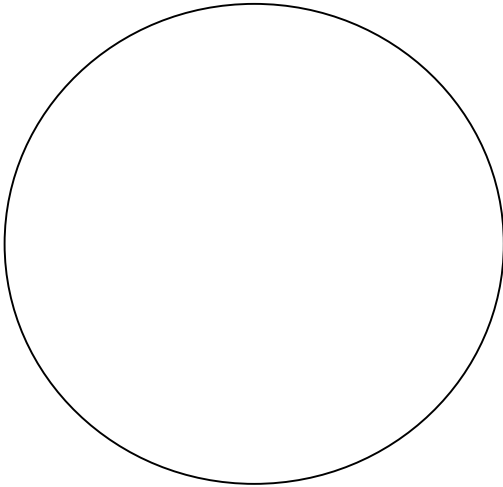
## Physical Science Narrative Summary on States of Matter

In this unit, students investigate the similarities and differences in solids and liquids. First, they observe, describe, and compare different solids, focusing on such properties as color, shape, texture, and hardness. They also perform tests to determine whether objects float or sink. Investigations of liquids center on how various liquids look and feel and their rate of evaporation. Finally, students compare the properties of solids and liquids and identify how they are similar and different.

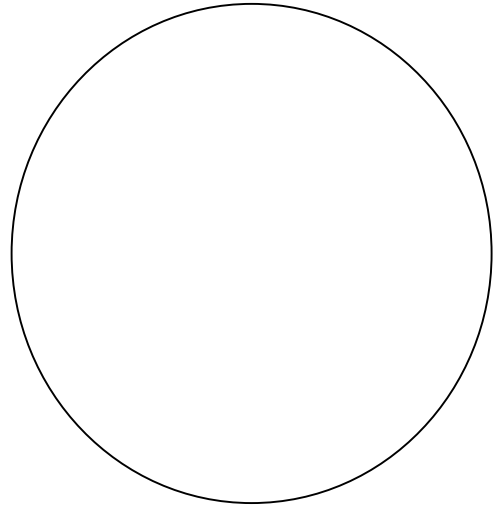


My Evaporation Book  
Name \_\_\_\_\_

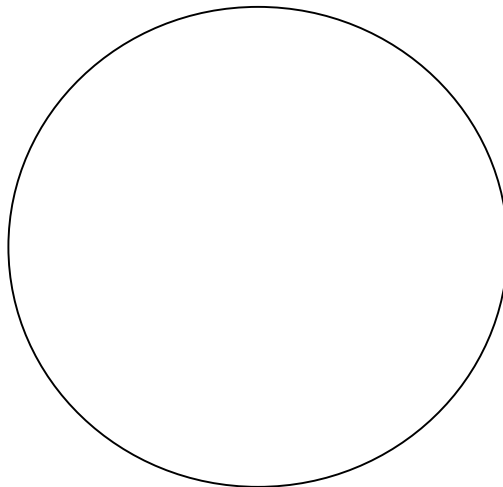
Please record your observations every 1/2 hour. Write the time and draw your observation.  
Time: \_\_\_\_\_



CIRCLE A - WATER



CIRCLE B - ALCOHOL



CIRCLE C - BABY OIL

Where did the liquids go?

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# TEACHER CHECKLIST

\_\_\_\_\_ Using equipment correctly

\_\_\_\_\_ Labeling samples correctly

\_\_\_\_\_ Observing liquid evaporating

\_\_\_\_\_ Entries in Evaporation Book

Name \_\_\_\_\_

Answer the following questions.

What differences do you see in your pictures? \_\_\_\_\_

\_\_\_\_\_

Which liquid evaporated the fastest? The slowest? \_\_\_\_\_

Why did they evaporate at different rates? \_\_\_\_\_

Would changing the amounts of the liquids change the results and why or why not? \_\_\_\_\_

\_\_\_\_\_

Where in school or at home do you find liquids evaporating? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

MY KWL CHART GOES HERE. I SENT  
IT SEPERATLY.



# ***KWL EVAPORATION***

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