

# Proficient Sample Body of Evidence

## Science

**Grade 5 – First Reporting Period**

**FOSS California Water Planet  
Earth Science/Investigation & Experimentation**

This sample is intended to demonstrate the essential elements of a body of evidence. The evidence includes:

- Student responses to Grade Level Prompts (Science Notebook Sheets) identified in the Recommended Body of Evidence
- Work from in-class investigations
- Teacher Selected FOSS Posttest items
- FOSS Teacher Answer Sheets with Expected Student Responses

*Important Note:*

*For the first two grading periods, students are evaluated based upon their progress toward end-of-year standards. Students who receive a mark of “proficient” for the first and second grading periods are making consistent and adequate progress toward achieving end-of-year expectations. In the final reporting period, the report card marks reflect a student’s actual achievement of the cumulated skills, strategies, and concepts identified in the California frameworks and content standards (SBRC, 2007).*

Fall 2008

**Standards Based Report Card  
Science Marking Worksheet  
Fifth Grade**

**Student:** SAMPLE Body of Evidence

Strand	Evidence	Notes on Quality	Report Card Mark
<p><b>EARTH SCIENCE</b> Water on Earth moves between the oceans and land through the processes of evaporation and condensation. Energy from the Sun heats Earth unevenly, causing air movements that result in changing weather patterns. The solar system consists of planets and other bodies that orbit the Sun in predictable paths.</p>	<p><i>Prompt #3</i> No. 7 Science Notebook Wet Paper Towels</p> <p><i>Prompt #4</i> No. 8 Science Notebook Evaporation Location Charts</p> <p><i>Prompt #5</i> No. 12 Science Notebook Response Sheet – Water Vapor</p> <p><i>Prompt #6</i> No. 13 Science Notebook Condensation Observations</p> <p><i>Prompt #11</i> Quickwrite/Self-Assessment</p> <p><i>Water Planet Posttest</i> wp1, 3, 4, 5, 6, 14</p> <p><i>Prompt #1</i> No. 1 Science Notebook Solar System Data</p> <p><i>In-class Investigation</i> No. 3 Science Notebook Planets and the Solar System</p> <p><i>Prompt #7</i> No. 14 Science Notebook</p> <p><i>Prompt#8</i> No. 15 Science Notebook</p> <p><i>I-Check 1</i> wp23 – wp28</p>	<p><u>Academic Language</u> Atmosphere, variable, controlled experiment, pendulum, evaporated, convection, molecules, condensation</p> <p><u>Scientific Concept</u> "water cycle is how water moves around the environment" "rotation is the action of a planet spinning on its axis" "inner planets are solid" "the open cup could let the evaporated water from the paper towel" "The Sun has a massive amount of gravity witch pulls the planets tward it" "circular flow caused by uneven heating is a convection current"</p>	<p>Advanced</p> <p>Proficient</p> <p>Basic</p> <p>Below Basic</p> <p>Not Assessed</p>
<p><b>INVESTIGATION &amp; EXPERIMENTATION</b> Scientific progress is made by asking meaningful questions and conducting careful investigations.</p>	<p><i>Prompt #2</i> No. 5 Science Notebook Response Sheet – Swingers</p> <p><i>Prompt #8</i> No. 16 Science Notebook Graph of Earth Materials – Temperatures</p> <p><i>Water Planet Posttest</i> wp22</p>	<p><u>Data Collection</u> "a controlled experiment is when one variable changes"</p> <p>"I would change cup 2...I would make the sugar and the water add up to be the same grams...as cup 1"</p> <p>data table is accurate</p> <p><u>Use of Data</u> Correctly graph data and labels graphs</p>	<p>Advanced</p> <p>Proficient</p> <p>Basic</p> <p>Below Basic</p> <p>Not Assessed</p>

San Diego Unified School District  
**Body of Evidence Rubric**  
**Science**

<b>Indicators</b>	<b>Advanced</b>	<b>Proficient</b>	<b>Basic</b>	<b>Below Basic</b>
<b>Academic Language</b>	Student uses precise vocabulary and extends to new contexts. <i>Sometimes</i>	Student correctly uses vocabulary related to the content and learning experiences.	Student can use some of the specific vocabulary they have been learning.	Student does not yet use specific vocabulary they have been learning.
<b>Scientific Concept</b>	Student is able to extend and apply what they have learned to new contexts by building explanations and stating claims supported by evidence. Student raises new questions and/or applies learning to new contexts.	Student shows understanding of content. <u>Student can make simple claims and provide evidence to support the content.</u> Connections are made between relevant pieces of information.	Student shows some understanding of the content and/or misconceptions. May be able to state a fact, or identify a simple procedure to be performed.	Student work shows limited understanding. Student presents an incorrect explanation of the science content.
<b>Use of Data/Communication</b>	Student uses data from multiple sources to make connections and cites evidence to support scientific concepts	<u>Student uses data as evidence to support scientific claims and conclusions.</u>	Student gives relevant information and responses correlate with the concept, but explanation is limited or incorrect.	Student uses data incorrectly and/or does not support claims with evidence.
<b>Data Collection/Use of Tools</b>	Accurately uses appropriate grade level appropriate tools to gather, display, and analyze.	<u>Data is accurate and appropriately displayed and labeled.</u>	Data collected is accurate but not displayed appropriately OR Data collected is incorrect and displayed appropriately.	Errors in data interfere with ability to use the data collected.

This rubric is intended for the analysis of the science portion of a student's Body of Evidence. Each individual piece of student work may not include all four categories, however a complete body of evidence should. A student must show proficiency in all four categories to earn a Proficient mark on the report card.

**SOLAR-SYSTEM DATA**

Sun	
Mars	Phobos
Earth	Moon
Venus	
Jupiter	IO
Saturn	Tethys
Uranus	Miranda
Neptune	Triton
Pluto	
Halley's comet	
Asteroid	

asteroid

- Record the planets and other solar-system objects in order, starting with the Sun. Use the table on the left side of this sheet. If a planet has a moon, write its name in the space below the planet.
- Use a colored pencil to lightly shade the planets that are made of gas. Use another color to shade the planets that are made of rock.
- How big are the planets? Write the names of the planets in order from largest diameter to smallest diameter. (Use the first two letters of the planet's name.)

JU Sa UR Ne Ea Ve Ma Me P

- How long does it take for a planet to orbit the Sun? Write the names of the planets in order from shortest to longest orbit time.

Me Ve Ea Ma Ju Sa UR Ne

- How far are the planets from the Sun? Write the names of the planets in order from closest to farthest from the Sun.

Ma Ve Ea Ma Ju Sa UR Ne P

- What is the surface temperature of the planets? Write the names of the planets in order from highest to lowest surface temperature.

~~Ma~~ ~~Ve~~ ~~Ea~~ Ma Ju Sa UR Ne  
~~Ve~~ ~~Ma~~ Ea

Sun mercury Venus Earth Mars asteroid Jupiter  
 moon Phobos IO

Saturn Uranus Neptune Pluto Halley's comet  
 Tethys Miranda Triton

# What is the Solar System?

- where all the planets are.
- An Area that has a source of light (sun)
- Sol means "Sun".
- System - things working together.

We started sorting the cards

- shape
- size
- color
- stripes
- texture

**PLANETS AND THE SOLAR SYSTEM**

1. Why is the system of Sun and planets called the solar system?

Sol means Sun. So, it was called a Solar System.

2. Which planets are the inner planets?

Mercury, Mars, Earth, and Venus.

3. Which planets are the outer planets?

Jupiter, Saturn, Uranus, Neptune, and Pluto.

4. How are the inner and outer planets different?

all the inner planets are solid. all the outer planets (except for Pluto) are made of gas.

5. Which planet is closest to the Sun? Why isn't it the hottest planet?

Mercury. Its atmosphere won't trap in all the heat.

6. What is meant by the rotation and revolution of a planet?

the rotation is the action of a planet spinning on its axis. a revolution is one trip around the sun.

7. What other planets, besides Earth, might support life?

Mars

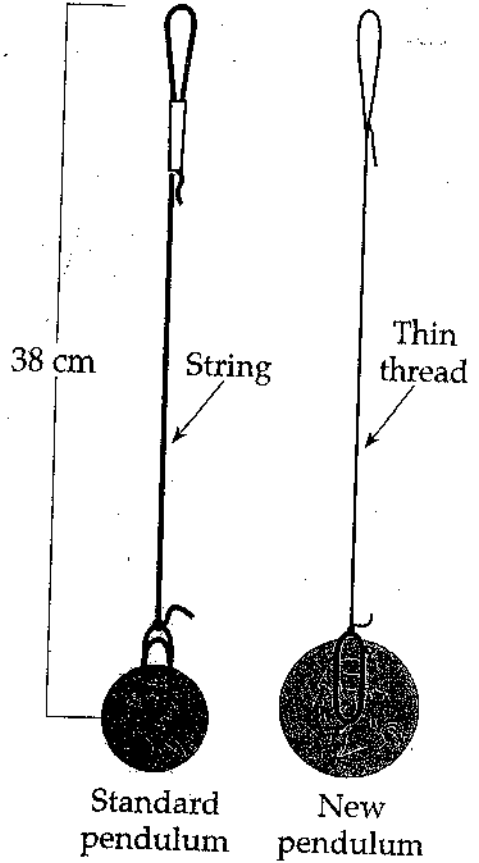
# RESPONSE SHEET — SWINGERS

Peter wanted to know what would happen in the swinger experiment if he changed the way he made the pendulum.

- Instead of using string, he used thin thread.
- Instead of using a penny, he used a quarter.

He made the new swinger 38 cm long from top of the loop to bottom of the paper clip, just like the standard pendulum.

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Before Peter started his experiment, a friend asked,

Are you sure you are controlling all the variables you need to?

What do you think Peter's response should be? Why do you think that? I think he should say no, because the variables are ~~not~~ changed, 2 of the

Describe what a controlled experiment is.

a controlled experiment is when only one variable changes.

# Swinger Results

1 =  
2 =  
3 =  
4 =  
5 =  
6 =  
7 =  
8 =  
9 =  
10 =  
11 =  
12 =

12 swings  
13 swings  
11 swings  
10 swings  
10 swings  
10½ swings  
11 swings  
11 swings  
11 swings

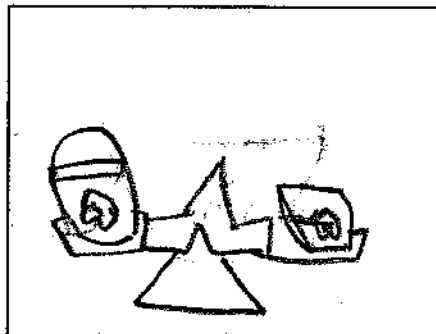
## Content Ideas

- which variables made no difference in the # of swings? the mass and angle released.
- which variable made a difference? the length of string.
- what is the relationship between the length of the pendulum, and the # of swings as the pendulum increased in length, the number of swings decreased.

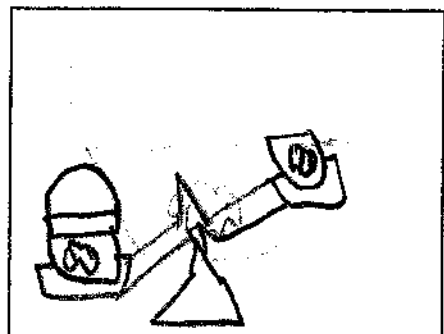
SAMPLE BODY OF EVIDENCE  
Grade 5 Earth Science  
Prompt #3

**WET PAPER TOWELS** .....

1. Use pictures and labels to show the balance at the start and end of the demonstration.



Start of demonstration



End of demonstration

2. Describe what happened to the balance, the paper towels, and the water.

in the closed cup, the water couldn't go any where, it stayed in the cup while the open cup could let the evaporated water from the paper towel. while the open cup's towel dried, the closed cup's towel stayed wet and heavy.

# Evaporation Experiment

materials: H<sub>2</sub>O, cups, sticks, es, syringe, tray, thermometer

## EVAPORATION LOCATION CHARTS

What tools will you use to measure the water? Syringe  
What units will you use to report the amount of water? mL

Chart 1

Record the amount of evaporation and the average temperature in the four evaporation locations.

Letter of location	Amount of water remaining	Amount of water evaporated	Average temperature of location
A	24mL	26mL	25°C
B	13mL	37mL	27°C
C	29mL	21mL	26°C
D	37mL	13mL	24°C

Chart 2

Put the locations in order from most to least evaporation.

Letter of location	Amount of water evaporated
B	Most evaporation
A	Second most
C	Third most
D	Least evaporation

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### Results and Inferences

- At which location did the greatest amount of water evaporate? B East windows
- At which location did the smallest amount of water evaporate? Cubboard by sink
- Which location was warmest? B East windows
- Describe the relationship between temperature and evaporation.

The higher the temperature, the greater the evaporation.

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# Evaporation Experiment

## Procedure

1. decide where to put cups (4 places)
2. put equal amounts of  $H_2O$  in 4 cups
3. Label A, B, C, D
4. place on trays in like groups  
- A tray, B tray, C tray, D tray
5. put trays in spots where we decided.
6. take daily temp readings 4 days.
7. measure  $H_2O$  on Monday.

## Purpose

- to try and find out which locations will cause  $H_2O$  to evaporate more quickly.

## Hypothesis

- I think the cups will evaporate the fastest in this order: B cups (B is East windows), A cups (A is west windows), C cups (shelf under white board), D cups (cubbord by sink).

SAMPLE BODY OF EVIDENCE  
Grade 5 Earth Science  
In-class investigation

## SURFACE-AREA CHART

Data

Evaporation and Surface Area				
	Cylinder	Beaker	Dome lid	Flat lid
Ranking (4 = largest surface area; 1 = smallest surface area)	1	2	3	4
Amount of water at the start	50ml	50ml	50ml	50ml
Amount of water at the end	46ml	35ml	17ml	0ml
Amount of water evaporated	4ml	15ml	33ml	50ml
Ranking (4 = most evaporated; 1 = least evaporated)	1	2	3	4

### Results and Inferences

1. In which container did the most water evaporate?

the flat lid

2. Explain why the most water evaporated in this container.

Because the water in the flat lid is the most exposed.

**RESPONSE SHEET—WATER VAPOR** .....

Rita said,

I wear a T-shirt when I swim so I won't get sunburned. When I come out of the water, I keep the shirt on. After awhile it is dry. I wonder how the wet shirt gets dry.

What would you tell Rita to help her understand how the shirt gets dry?

Liquid water changes to gas and goes into the air. This is called evaporation. In time, all the water on the shirt will evaporate, and the shirt will be dry.

What would you suggest Rita do to get the shirt dry as fast as possible?

Take it off, spread it out as large as possible (like hanging it on a line), put it in the warmest place (in the sunshine), perhaps in a breeze.

Explain why your suggestion would make the shirt dry quickly.

Evaporation dries the shirt. Increasing the temperature and surface area (and movement of the air) increases the rate of evaporation.

**CONDENSATION OBSERVATIONS**

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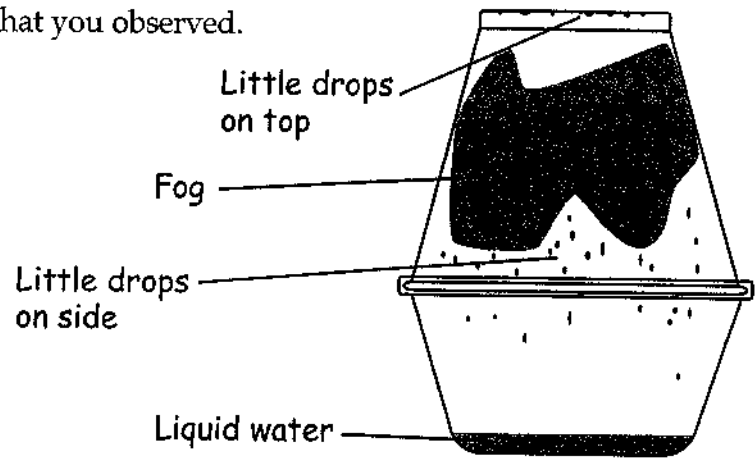
1. Write a sentence to describe any changes you observed in the condensation chamber the day after you set it up.

Sample answers: Fog on the sides of the cup; drops on the top of the cup;

drops running down the sides of the cup.

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2. Draw and label a picture of what you observed.



3. Where did the water on the sides of the cup come from?

The drops or dew on the inside and top of the chamber came from the liquid  
water in the bottom of the chamber that evaporated.

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4. How did the water get on the sides of the cup?

Heat from the Sun (or room) warmed the liquid water and it evaporated. When  
the top of the chamber cooled, the vapor in the container condensed (changed  
from gas to liquid) on the inside of the chamber.

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5. What causes frost?

If condensation gets below the freezing point of water, it will freeze. Frozen  
dew is frost.

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# HEATING EARTH MATERIALS A

Plan an experiment to find out what happens to earth materials when they are put in the sun and then put in the shade.

## Question

**Question.** Students should write a question that clearly and precisely describes what they expect to find out by doing their experiment.

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## Materials

**Materials.** A complete list of the items and quantities of items they will need to conduct their experiment.

**NOTE:** Check to see that students select their materials as part of their required materials.

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Answers will vary.

## Procedure

**Procedure.** This is the most important section. Ask students to suggest elements of a procedure. Write them on the board as they are proposed. Strive for a coherent procedure using a group process. The procedure that emerges should have these elements:

- Use equal volumes of the two materials in 1/4-liter containers (100 ml is good).
- Record starting temperature.
- Place the two containers in the sun. Record temperatures at regular intervals (every 3 minutes) for a period of time (15 minutes).
- Move the containers to the shade. Continue recording temperatures at the same intervals for an equal period of time.

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# HEATING EARTH MATERIALS B

Data table

Data table. Students should set up a T-table with three columns, time (the independent variable), water temperature (dependent variable 1), and soil temperature (dependent variable 2). The values for the independent variable can be entered in advance.

Give students 15 minutes to discuss and write their experimental procedure and to set up their data table.

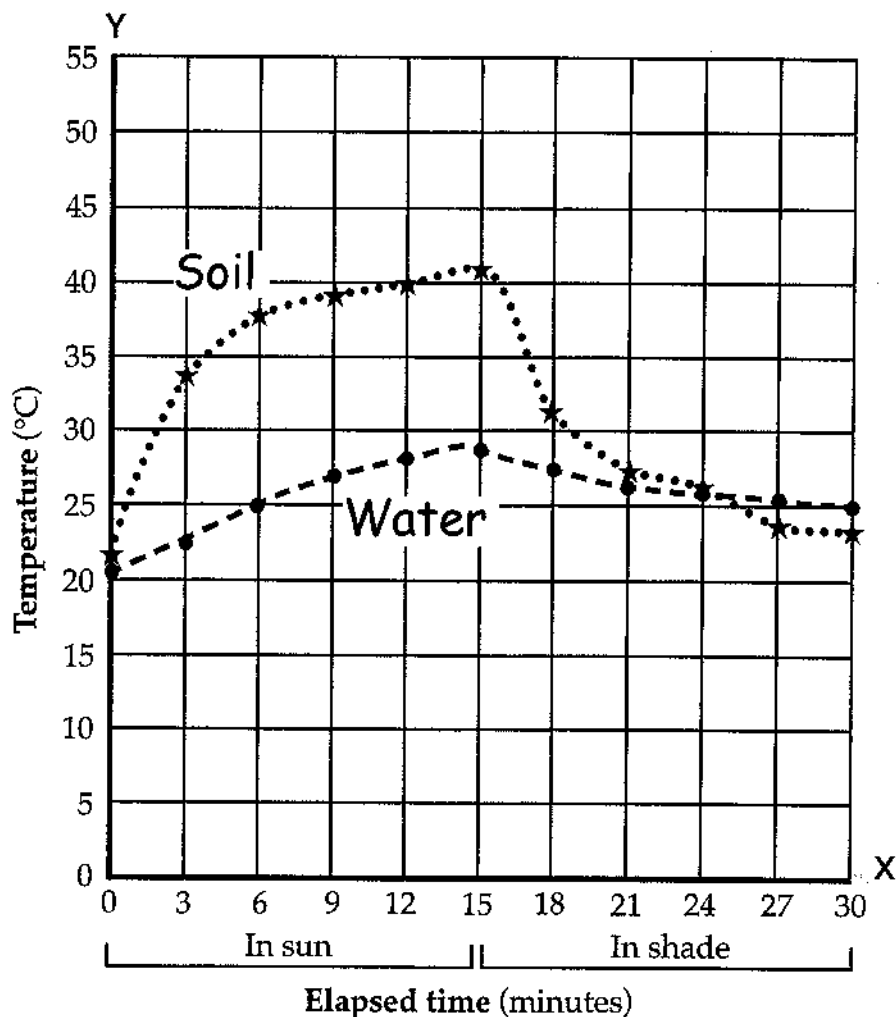
TE page 163

Answers will vary.

Time	Water temp.	Soil temp.
0		
3		
6		
9		
12		
15		
18		
21		
24		
27		
30		

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# GRAPH OF EARTH-MATERIALS TEMPERATURES



1. What was the dependent variable in this experiment?

temperature

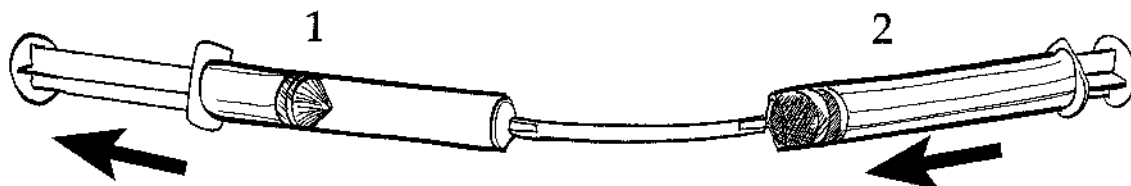
2. What variables did you control in this experiment?

size of container, lids, kind of thermometer, kind of material, volume of material,  
intensity of light, surface temperature



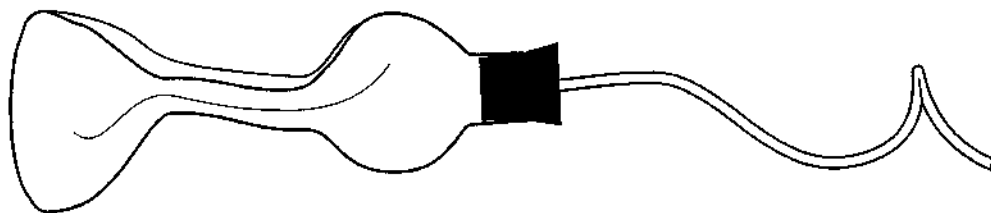
**ATMOSPHERIC PRESSURE AT WORK**

1. Explain why pulling the plunger out on syringe 1 makes the plunger in syringe 2 go in.



Pulling out on the plunger increases the volume of the space occupied by the air molecules inside. The result is less pressure inside the syringe. Air pressure outside the syringe is then greater than the pressure inside. Air pressure outside pushes plunger 2 into the barrel, reducing the volume. Plunger 2 goes into the barrel until the pressure inside is the same as outside.

2. Explain why the water bottle collapsed.

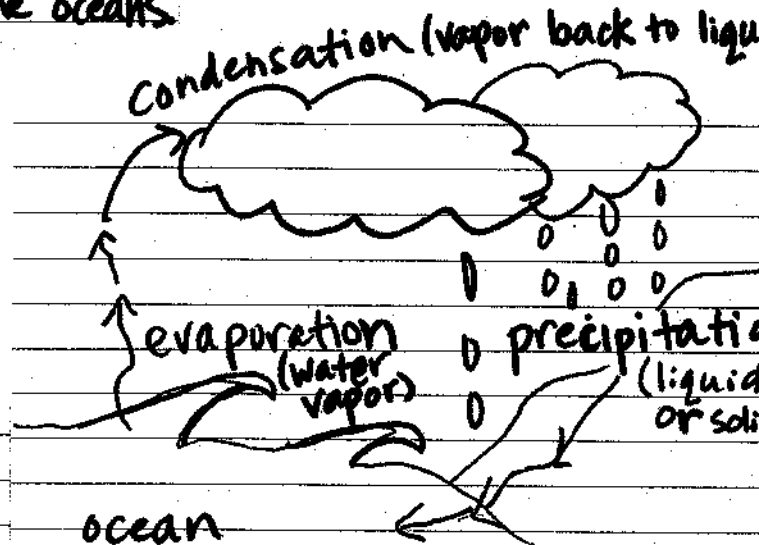


Air molecules were removed from inside the bottle. The pressure dropped inside. Outside pressure pushed on the sides of the bottle until the pressure inside and outside were the same again.

Quickwrite: What is the water cycle?

## Possible Answers:

The water cycle is how water moves around the environment. Water evaporates from the oceans. The water vapor goes into the atmosphere and condenses into clouds of water droplets. Water then falls back to earth as precipitation. Precipitation flows back to the oceans.



Water is always moving. It evaporates from oceans and condenses in the clouds. When it condenses it turns back from vapor to a liquid or a solid and then falls back to as precipitation.

Students should include evaporation, condensation, and precipitation.

### Assess Progress: Self-Assessment

Review your original response above. Circle and number the ideas or sentences you wish to comment on or revise. Add new information and illustrations to enhance your explanation on the water cycle.

## SEVERE WEATHER QUESTIONS

1. What causes tornadoes?

The Sun heats the ocean and the air over it. This moist air moves over land, where it is heated more. When this mass of warm, moist air meets a mass of cold, dense air, the dense air lifts the warm air high into the atmosphere. The cool air rushing into the warm air starts to spin. As more water vapor condenses, the column of rising air spins faster and faster.

2. What causes hurricanes?

The Sun heats the ocean in the mid-Atlantic. Moist air over the ocean begins to rise and condense. An area of low pressure develops in the center of the rising air. Air rushing into the low-pressure area begins to spin. The faster the column of air spins, the more water vapor it takes in. If the process continues, the system can grow into a hurricane.

3. How does the water cycle affect weather in California?

The water cycle redistributes water from one place to another on Earth's surface. The main processes in the water cycle are evaporation, condensation, and precipitation. These processes create California's winter rainstorms along the coast and in the valleys and winter snowstorms and blizzards in the mountains.

4. How does the ocean influence the weather in California?

The ocean is the source of much of the water vapor that falls on California as rain and snow. Because the ocean does not change temperature much, it maintains a moderate temperature along the coast year-round. The land near the ocean gets hotter than the ocean during the day and colder during the night. This sets up convection currents that create offshore and onshore breezes.

**WEATHER MAPS QUESTIONS**

1. What weather variables do meteorologists measure when they are preparing to make a weather forecast?

atmospheric pressure, temperature, moisture, and wind speed and direction

2. Describe three kinds of fronts and the weather they produce.

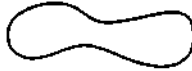
Cold fronts produce thunderstorms and heavy rain for a short time. Warm fronts produce clouds and steady rain for an extended time. Stationary fronts produce weather similar to cold fronts.

3. What causes wind?

Pressure difference. Air flows from a high-pressure center to a low-pressure center. The flow of air is wind.

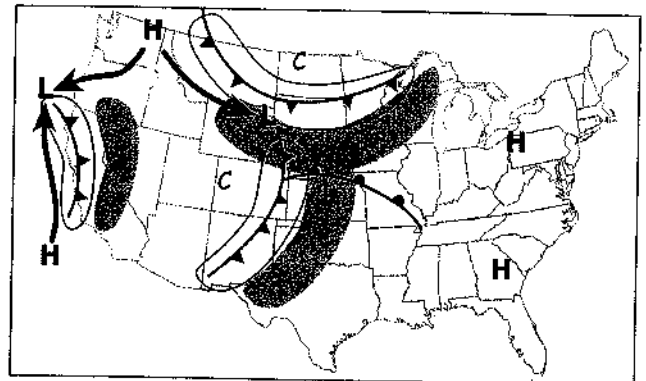
4. Look at the sample weather map.  
Where do you think it is raining?

(Circle the rainy areas.)



Where will it be raining tomorrow?

(Shade tomorrow's rainy areas.)



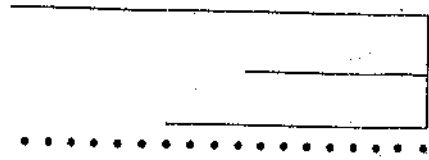
5. Look at the high- and low-pressure centers.

Where do you think the wind is blowing?  
What direction?

(Draw arrows to show wind.)

6. Where is it likely to be cold and dry?

(Write the letter C in the cold places.)



wp23. Brian is twirling a ball on a string over his head. The string represents a pull on the ball.

a. What is the name of the path of the ball around Brian's hand when he is twirling the string?

(Circle the one best answer.)

A. gravity

B. orbit

C. revolution

D. rotation

b. What is another name for the pull on the ball?

(Circle the one best answer.)

A. gravity

B. orbit

C. revolution

D. rotation

c. Describe the path the ball will take when Brian lets go of the string.

Because the pull on the plane makes it go around, when the pull does not pull anymore, the ball is f and goes a straight

wp24 a. How are asteroids and comets similar?

They both orbit the Sun.

Asteroids are big chunks of rock and dust. Comets are also composed of r

b. How are asteroids and comets different?

Asteroids are solid chunks of rock and

While Asteroids are

Comets are composed of ice.


wp25. What two elements are the main components of the Sun?  
(Mark the two correct answers.)

- argon
- carbon
- helium
- hydrogen
- oxygen

wp26. What is the star closest to Earth?

the Sun

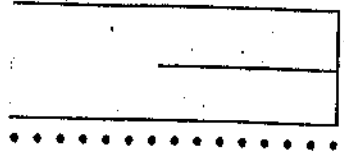
wp27. Which of the following characteristics do Jupiter, Saturn, Uranus, and Neptune share?

(Mark all the correct answers.)

- bigger than terrestrial planets
- made of rock
- small size
- beyond the asteroid belt
- composed of gases
- no solid surface to land on

wp28. Gravity prevents Earth from  
(Circle the one best answer.)

- A. orbiting around the Moon.
- B. flying away from the Sun.
- C. flying into the Sun.
- D. tilting away from the Sun.



wp1. Joanna went into the bathroom after her sister finished her shower. Joanna's glasses fogged up and she could not see.

Explain why her glasses fogged up.

When you take a shower, the water starts to evaporate. But when Joanna walked in the water vapor settled on her glasses, which are cold. When warm water vapor hits something cold, fogs up, like a car window.

wp4. You have a balance, clock, ruler, syringe, and thermometer. Which tool would you use to collect the following data?

the volume of water Syringe

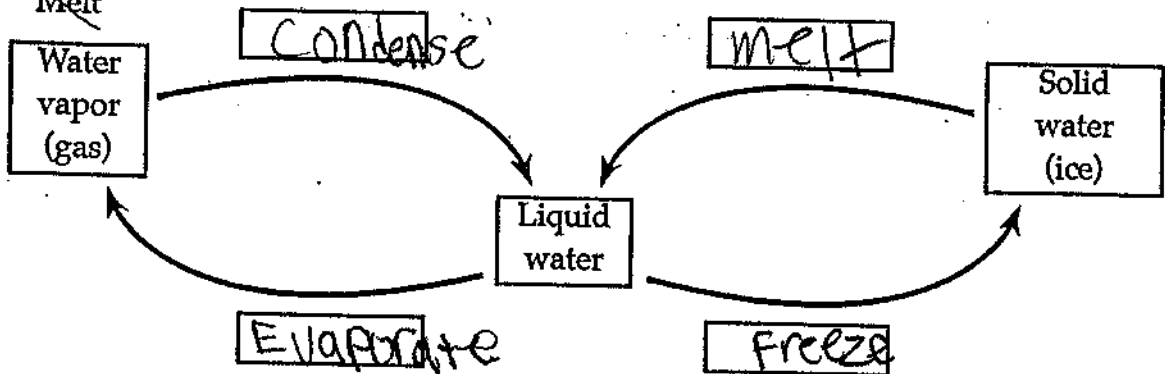
how hot the water is thermometer

how long it takes for the water to cool ~~thermometer~~ clock

wp5. When water changes from one state to another, each process has a name.

Write the name of the process in the box near the arrow for each change of state shown below.

- Condense
- Evaporate
- Freeze
- Melt



wp6. Katie was watering plants in front of her house. She splashed water on the sidewalk. A half hour later, she noticed that the sidewalk was dry.

a. What happened to the water on the sidewalk?

The sun's heat evaporated the water.

b. Where is the water now?

In the clouds. When a cloud gets too much water, it rains.

wp3. How does the Pacific Ocean affect the weather along the California coast?  
(Mark all the correct answers.)

- creates mild temperatures along the coast
- forms hot, dry winds
- source of water for rain and snow
- prevents rainfall in the desert
- coastal breezes due to uneven heating

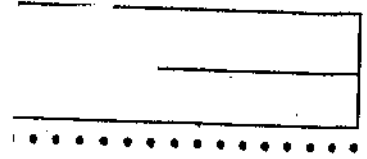
wp14. a. What is weather?

(Circle the one best answer.)

- A. the changes that occur in clouds from day to day
- B. the amount of rain or snow that falls in a day
- C. earthquakes, tornadoes, and other disasters
- D. the condition of the atmosphere at a given time and place

b. What are the three most important variables used to describe weather?

Hurricanes, earthquakes, tornadoes and other natural disasters.



wp19. The Moon is an example of  
(Circle the one correct answer.)

- A. a sun.
- B. a satellite.
- C. a planet.
- D. a star.

wp8. List the following planets in order from the shortest year to longest year.

Earth, Jupiter, Mercury, Venus

Shortest year \_\_\_\_\_ ?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Longest year \_\_\_\_\_ ?

wp17. What is in the center of our solar system?

(Circle the one correct answer.)

- A. a black hole
- B. Earth
- C. the Moon
- D. the Sun

wp13. Why does Earth stay in orbit around the Sun?

The sun has a massive amount of gravity, which pulls the planets toward it. But Earth has a certain amount of gravity that pulls away from the sun.

SAMPLE BODY OF EVIDENCE  
Grade 5 Earth Science  
Teacher Selected Posttest Items

wp15. How much of Earth's surface is covered by water?

(Circle the one correct answer.)

- A. 3%
- B. 10%
- C. 26%
- D. 71%

wp7. How much of Earth's water is fresh water?

(Circle the one correct answer.)

- A. 3%
- B. 10%
- C. 26%
- D. 71%

wp22. Julio wants to know if sugar water freezes faster than plain water. He set up an experiment as follows.

Cup 1	Cup 2
plastic cup 25 ml water	paper cup 50 ml water 10 g sugar

Julio put both cups into a freezer at the same time. The next morning both cups were frozen.

a. Did Julio design a controlled experiment? ?

b. Describe any changes you would make in the experiment.

I would change cup 2 because I would make the sugar and the water add up to be the same grams as the water in cup 1.