

The following instructional plan is part of a GaDOE collection of Unit Frameworks, Performance Tasks, examples of Student Work, and Teacher Commentary. Many more GaDOE approved instructional plans are available by using the Search Standards feature located on GeorgiaStandards.Org.

Georgia Performance Standards Framework

Unit One Organizer: (9weeks-Ideally taught during winter)

OVERVIEW: WINTER

In this unit students will:

- Identify basic patterns of winter weather.
- Use simple instruments to measure temperature, wind, and precipitation
- Create a weather journal
- Make observations about weather
- Determine that water in an open container disappears into the air over time.
- Identify forms of precipitation
- Recognizes the similarities and differences between ice, liquid water, and water vapor

STANDARDS ADDRESSED IN THIS UNIT

Focus Standards:

S1E1. Students will observe, measure, and communicate weather data to see patterns in weather and climate.

- Identify different types of weather and the characteristics of each type.
- Investigate weather by observing, measuring with simple weather instruments (thermometer, wind vane, rain gauge), and recording weather data (temperature, precipitation, sky conditions, and weather events) in a periodic journal or on a calendar seasonally.
- Correlate weather data (temperature, precipitation, sky conditions, and weather events) to seasonal changes.

S1E2. Students will observe and record changes in water as it relates to weather.

- Recognize changes in water when it freezes (ice) and when it melts (water).
- Identify forms of precipitation such as rain, snow, sleet, and hailstones as either solid(ice) or liquid (water).
- Determine that the weight of water before freezing, after freezing, and after melting stays the same.
- Determine that water in an open container disappears into the air over time, but water in a closed container does not.

STANDARDS ADDRESSED IN THIS UNIT

Supporting Standards:

ELA1SV1: The student uses oral and visual strategies to communicate.

ELA1LSV1d. Increases vocabulary to reflect a growing range of interests and knowledge.

LITERATURE SELECTIONS

Source of Recommendation	Title	Author	ISBN
Media Specialist	Splish, Splash: A Book About Rain	Josepha Sherman	1-4048-0095-6
NSTA Outstanding Trade Book	River of Life	Debbie S. Miller	0-395-96790-2
NSTA Outstanding Trade Book	Recess at 20 Below	Cindy Lou Aillaud	0-88240-604-3

ENDURING UNDERSTANDINGS

- Winter is a season of the year.
- Identify the weather conditions in winter.
- The forms of precipitation are rain, snow, sleet, and hailstones.
- Water in an open container evaporates, in a closed container it does not.
- The weight of water remains constant, whether it is frozen or in a liquid state.

ESSENTIAL QUESTIONS:	
<ul style="list-style-type: none"> • How can winter weather be described? • How do you measure winter weather? • How does winter weather affect the types of clothing I wear? • What happens to the weight of water before freezing, after freezing and after melting? • What happens to water left in an open container and a closed container? • What are the four types of precipitation and how are they different? 	
MISCONCEPTIONS	PROPER CONCEPTIONS
<ol style="list-style-type: none"> 1. It always snows in winter. 2. Weather does not change season to season. 	<ol style="list-style-type: none"> 1. In some areas of Georgia it does not always snow in winter. 2. There are changes during each season.

CONCEPTS:	KNOW AND DO	LANGUAGE	EVIDENCE OF LEARNING
<p>Winter is a season with unique weather patterns.</p>	<ul style="list-style-type: none"> ● Identify the types of weather present in the winter. 	<ul style="list-style-type: none"> ● winter ● snow ● snowflakes ● cold 	<ul style="list-style-type: none"> ● Venn Diagram ● Science Journal ● Winter word web ● Winter weather clothing poster
<p>Winter weather can be communicated to others through the process of observing, measuring and recording weather data.</p>	<ul style="list-style-type: none"> ● Observe weather using simple weather instruments (thermometer, wind vane, rain gauge). ● Record weather data (temperature, precipitation, sky conditions, and weather events) 	<ul style="list-style-type: none"> ● thermometer ● wind vane ● rain gauge ● temperature ● precipitation ● sky conditions ● weather events 	<ul style="list-style-type: none"> ● Class Journal ● Use simple weather instruments ● Graph weather conditions ● O-W-L Chart
<p>The forms of precipitation are rain, snow, sleet and hailstones as either solid (ice) or liquid (water).</p>	<ul style="list-style-type: none"> ● Identify forms of precipitation. 	<ul style="list-style-type: none"> ● rain ● snow ● sleet ● hailstones (or hail) ● solid ● liquid 	<ul style="list-style-type: none"> ● KWL Chart ● precipitation picture book
<p>The weight of water before freezing, after freezing and after melting stays the same.</p> <p>Water in an open container disappears over time but water in a closed container does not.</p>	<ul style="list-style-type: none"> ● Conduct an experiment to prove that the weight of water stays the same. ● Investigate an open and closed container of water. 	<ul style="list-style-type: none"> ● weight ● freezing ● melting ● evaporation 	<ul style="list-style-type: none"> ● Science Log

GRASP

Culminating Activity: GRASPS activity

GRASPS

Goal: 1st grade students will work in a group to deliver a presentation that demonstrates they understand winter weather and precipitation.

Role: Research Scientist

Audience: Classmates and teacher

Scenario: The 1st grade students are research scientists who have been invited to visit the students in Alaska during the winter months from the book: “Recess at 20 Below.” Before the trip takes place, the teacher needs evidence that the “research scientists” understand the weather conditions in winter and changes with water. The “research scientists” will be traveling to Alaska to teach the Alaskan students about changes with water. Students will work in cooperative groups to compile a list of clothing they will need for the winter weather and showcase an experiment. Each group will be given a [Research Scientist Card](#), which names one essential question the research scientist must help the Alaskan students understand. The research scientist will have to create their own experiment (or use the one taught during the unit). This card provides room for the students to create the winter clothing list and name the experiment they will present.

Product: Completed [Research Scientist Card](#) and presentation of experiment to class.

Rubric: [Winter GRASP Activity: Experiment](#)

General Timeline

Introduction to Winter	Recess at 20 Below	Splish, Splash: A Book About Rain	River of Life
1 Week	1-2 Weeks	1-2 Weeks	1-2 Weeks

TASKS

The following collection of tasks represents the level of depth, rigor and complexity expected of all students to demonstrate evidence of learning.

Lesson: Introduction to Winter

Description:

- A. Introduce Standards:
S1E1. Students will observe, measure, and communicate weather data to see patterns in weather and climate.
- B. Continue using “language” from the standards during the unit. Refer to posted standard as necessary throughout unit. Create a “Winter Word Wall” for the following (to be added once discussed in class): rain, snow, snow flakes, sleet, hailstones, solid, liquid, weight, freezing, melting, and evaporation.
- C. Activate prior student knowledge of the season winter. Have students lists words that help describe winter. Ask students what types of weather occurs in the winter, what types of clothing you wear, foods you eat, etc.
- D. Create a class [weather recording center](#). This should be an area that is updated daily to include: temperature, precipitation, sky conditions (sunny, cloudy, etc.) The weather can be graphed to help students understand that the weather changes day to day (Use the [Sky Conditions Graph](#)). Use a rain gauge to record precipitation. A “meteorologist job” can be created to help maintain and update the weather day to day. This [weather recording center](#) would work best to be done all year long for the students to see the changes. (The Class Weather Recording Center chart can be enlarged to a poster-size or can be used as a guide to set up a bulletin board in the class.)

Assessment:

Informal Assessment-Conferencing with class

Enrichment/

The following website has information about snowstorms that may be helpful when discussing the different weather events in the weather recording center.

Extension/

<http://www.nws.noaa.gov/om/reachout/winter.shtml>

Homework:

Place books about winter in the class reading center.

Use the following website to learn about animals and the winter months:

<http://www.ngfl-cymru.org.uk/vtc/seasons/eng/Introduction/MainSessionPart2.htm>

Literature Selection: *Recess at 20 Below: Winter Weather*

Description:

Days 1-5:

Essential Question:

How can winter weather be described?

How does winter weather affect the types of clothing I wear?

- A. The teacher could draw a stick figure on the board or chart paper. Explain to students that you need their help in order to figure out what that “student” should wear outside during recess in the winter months. Allow one student at a time to add one piece of winter clothing to the stick figure. Discuss the completed picture with the students. According to the region in which you live, results will vary.
- B. Read the book: “*Recess at 20 Below*”
- C. Complete a Venn Diagram comparing recess at our school and recess in Alaska. (Include types of weather, clothing, activities, etc.)
- D. Students can work with a partner to create a winter word web.
- E. Have students work with a partner. Define and illustrate winter words. This can be done in the form of a book, a poster, or PowerPoint presentation. Use the following winter words and add to “Winter Word Wall”:
 - a. winter
 - b. snow
 - c. snowflakes
 - d. cold
 - e. sleet
 - f. hail
 - g. freeze

Assessment:

Venn Diagram

Definitions and illustrations of winter words

**Enrichment/
Extension/
Homework:**

Encourage students to bring in family photos that were taken in winter. The teacher can lead a discussion about the activity the family was doing and the types of clothing worn.

Create a winter weather clothing poster. Students will illustrate the types of clothing needed during the season winter.

Literature Selection: *Recess at 20 Below: Winter Weather*

Description:

Days 6-10:

Essential Question:

How do you measure winter weather?

Teacher Instructions:

1. Show students the following simple weather instruments: thermometer, wind vane, and rain gauge. (Use photographs if real instruments are not available.)
2. Give students an O-W-L Chart to complete for each instrument. Complete “observe” and “wonder” part. Once the teacher discusses the instruments, the students can fill in the “learn” part of the chart.
3. In a science journal, have students record the daily weather conditions. Make sure the students illustrate the sky condition, record the temperature on the thermometer, and amount of rain in the rain gauge. (The log should last at least two weeks)

Assessment:

Science journal with daily weather conditions

**Enrichment/
Extension/
Homework:**

Allow students to use bubbles to explore wind strength and direction.

Have students make weather instruments.

Making a Rain Gauge

http://www.ecokids.ca/pub/eco_info/topics/climate/weather/page4.cfm

Making a Wind Vane

<http://sln.fi.edu/tfi/units/energy/vane.html>

Literature Selection:	<i>Splish, Splash: A Book About Rain</i>
Description:	<p>Days 1-5: Essential Questions: What are the four types of precipitation and how are they different?</p> <p>Teacher Instructions:</p> <ol style="list-style-type: none">1. Complete the “K” of a KWL chart about precipitation.2. Read “Splish, Splash: A Book About Rain” by Josepha Sherman3. Complete the “W” part of the KWL chart.4. The book mainly discusses rain, ask students what are the other forms of precipitation (snow, sleet, and hailstones).5. Create a precipitation picture book. Have students illustrate each form of precipitation and identify if it is a solid (ice) or liquid (water).6. Complete the “L” of the KWL chart about precipitation.
Assessment:	Informal Assessment: Teacher observation Venn Diagram comparing snow and rain
Enrichment/ Extension/ Homework:	Research winter storms Winter Storms http://teacher.scholastic.com/activities/wwatch/winter_storms/index.htm Create Rain: http://www.weatherwizkids.com/rain2.htm

Lesson:	<i>Splish, Splash: A Book About Rain</i>
Description:	Days 6-10: Essential Question: What happens to water left in an open container and a closed container? Teacher Instructions: 1. Perform the following experiment: <ul style="list-style-type: none">• Materials needed: 2 small jars for each group, measuring cup, water, and a lid or plastic wrap for each group• Put students in small cooperative groups• Have students measure one cup of water into each of the two jars. Have the group cover one jar with a lid or plastic wrap.• Observe and record observations in a daily science log. 2. Reread the book. 3. Refer back to page 11.
Assessment:	Daily science log
Enrichment/ Extension/ Homework:	Create an illustration of the water cycle. Make a connection between what happened in the jars to the water cycle. Use the following website to show students a visual of the water cycle: http://www.epa.gov/safewater/kids/flash/flash_watercycle.html

Literature Selection: <i>River of Life</i>	
Description:	<p>Days 1-3: Essential Questions: How can winter weather be described?</p> <p>Teacher Instructions:</p> <ol style="list-style-type: none">1. Read the book: "River of Life."2. Give the book to one student and have that student open the book to a page that represents winter. Have that student explain why they chose that page. Allow the other students a chance to share their ideas, whether they agree or disagree.3. Ask students questions about the seasons of the year. Can anyone name the seasons of the year? Why are there different seasons? How would you describe the weather in each season? How do animals behave in the winter months? What types of clothing do you wear and why?4. Use the book "River of Life" to go on a picture hunt. Hold up the book and turn the pages slowly. Tell students that they are going on a picture hunt and will be trying to find things in the book that remind them of winter. Allow the students to use a large sheet of chart paper with the title: Winter Picture Hunt. Once a student sees something that describes winter, have that student illustrate it and write the word on the chart paper.
Assessment:	Teacher Observation
Enrichment/ Extension/ Homework:	Have students observe winter weather conditions. Take a field trip to a wildlife/nature center in your area. If a field trip is not possible, take students for a walk in the school yard. If students take several school yard walks throughout the year, they can compare weather conditions and the effects on plants and animals (no leaves on certain trees in winter, usually not as many visible insects or birds).

Literature Selection: <i>River of Life</i>	
Description:	Days 4-10: Essential Question: What happens to the weight of water before freezing, after freezing and after melting? How can winter weather be described? <u>Teacher Instructions:</u> <ol style="list-style-type: none">1. Read "River of Life"2. Discuss the following questions: What happens to the mountains in the winter? What covers the river in winter? What causes the winter snow and ice to melt?3. Perform the following experiment:<ul style="list-style-type: none">• Materials needed: scale, ice cubes• Put students in small cooperative groups• Give each group 3 ice cubes. Have the students weigh the ice cubes using a scale and record weight.• Allow the ice cubes to melt throughout the day.• Have students weigh the melted ice cubes and record the weight.• Have students compare weight before melting and after. Have students write at least 3 sentences about the results.• Explain to students that scientists would perform experiments more than one time to get accurate results. If time allows, perform this experiment more than once.4. Refer back to the pages on winter in the "River of Life" book. Have students create an illustration depicting winter weather. Have students write three sentences about their picture.
Assessment:	Science log from the experiment
Enrichment/ Extension/ Homework	The following website has an interactive thermometer that shows students the different weather conditions: http://teacher.scholastic.com/activities/wwatch/sim/game.htm Play an on-line game. This science experiment allows students to use the oven and freezer to melt and freeze different types of matter. http://www.bbc.co.uk/schools/ks2bitesize/science/activities/changing_state.shtml

TEACHER RESOURCES

Additional Children's Literature

[Beginning to Learn About Winter](#) by Richard L. Allington, PH.D. and Kathleen Krull

[Dear Rebecca, Winter is Here](#) by: Jean Craighead George

[Rain](#) by: Manya Stojic

Web Resources:

Winter online puzzle:

<http://www.wildwildweather.com/jigsaw/index.html>

Precipitation:

<http://www.wxdude.com/page3.html>

Weather Recording Center

Season:

Today's Temperature:

Rain Gauge Measurement:

Staple the monthly sky conditions graph here.

Have students draw pictures that represent the season and put inside this box.

Paste the special weather event information here.
(Example: snowstorm)

Sky Conditions Graph

Month: _____



Research Scientist Cards

Group 1:

Clothing needed for winter weather:

Essential Question:

What happens to the weight of water before freezing, after freezing and after melting?

What experiment will your group use to help the Alaskan students understand the changes in water?

Group 2:

Clothing needed for winter weather:

Essential Question:

What happens to water left in an open container and a closed container?

What experiment will your group use to help the Alaskan students understand the changes in water?

Group 3:

Clothing needed for winter weather:

Essential Question:

What are the four types of precipitation? Are they a solid (ice) or Liquid (water)?

What experiment will your group use to help the Alaskan students understand the changes in water?

Group 4:

Clothing needed for winter weather:

Essential Question:

How do you measure winter weather?

What experiment will your group use to help the Alaskan students understand the changes in water?

Winter GRASP Activity: Experiment

Group Members:

CATEGORY	3	2	1	Points Earned
Content	Shows a full understanding of the experiment.	Shows a good understanding of the experiment.	Does not seem to understand the experiment very well.	
Effectiveness	The experiment will help the students in Alaska gain a full understanding of the essential question.	The experiment will help the students in Alaska have a good understanding of the essential question.	The experiment will not help the students in Alaska have an understanding of the essential question.	
Collaboration with Peers	Almost always listens to, shares with, and supports the efforts of others in the group. Tries to keep people working well together.	Usually listens to, shares with, and supports the efforts of others in the group. Does not cause "waves" in the group.	Rarely listens to, shares with, and supports the efforts of others in the group. Often is not a good team member.	
Teacher Comments:				