

# WEATHER ROCKS!

## STUDY GUIDE



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## A Note From the Education Director

Dear Educator,

Welcome to the Center for Puppetry Arts and our production of *Weather Rocks!*  
 The Center has been a cherished educational and cultural resource in Atlanta since 1978.  
 We value your patronage and look forward to serving you during the 2002-2003 school year.

This study guide was designed to enhance student learning before and after your visit to the Center for Puppetry Arts. *Weather Rocks!* is a thoroughly educational and action-packed puppet play, and the perfect accompaniment to a thematic unit on Weather or Earth Science.

All three areas of programming here at the Center for Puppetry Arts (Performance, Puppet Making Workshops and Museum) meet Georgia Quality Core Curriculum Standards (GA QCCs). Listed below are sample GA QCCs for Grade 4 (as an example) in Science, Language Arts, Character Education, Social Studies and Fine Arts for all three programming areas. Access a complete list of GA QCC Standards at: <http://www.glc.k12.ga.us/>.

**I. Performance:** Here are some of the Grade 4 GA QCC Standards met when your students attend a 50-minute performance of *Weather Rocks!*:

Subject: Science

Strand: Earth/Space Science

#27 – Topic: Earth Processes: Weather and Climate

Standard: Investigates how the sun's rays striking the Earth causes the seasons.  
Explores how the tilt of the Earth changes the angle of the sun's rays and causes the seasons.

Subject: Language Arts

Strand: Oral Communication

#2 – Topic: Listening/Speaking

Standard: Listens to a variety of literary forms.

#4 – Topic: Listening/Speaking

Standard: Recalls, interprets, and summarizes information presented orally.

Subject: Character Education

Strand: Respect for Others

#11 – Topic: Respect for Others

Standard: Altruism: concern for and motivation to act for the welfare of others.

11.3 – Courtesy and Cooperation: recognition of mutual interdependence with others resulting in polite treatment and respect for them (as related to audience etiquette).

Subject: Character Education

Strand: Citizenship

#9 – Topic: Citizenship

Standard: Respect for the Natural Environment: care for and conservation of land, trees, clean air and pure water and of all living inhabitants of the earth.

9.1 – Conservation: avoiding waste and pollution of natural resources.

Subject: Fine Arts

Strand: Theatre Arts

#21 – Topic: Connections

Standard: Recognizes and describes how the arts play an important role in the everyday life of the community.

#22 – Topic: Connections

Standard: Uses other disciplines such as social studies, language arts, foreign languages, physical education, and science content for ideas for drama.

#29 – Topic: Critical Analysis and Aesthetic Understanding

Standard: Describes and demonstrates the role and responsibility of the audience.

#30 – Topic: Critical Analysis and Aesthetic Understanding

Standard: Demonstrates awareness of and uses school, community and professional resources for theatre experiences.

**II. Puppet-Making Workshops:** Here are some of the Grade 4 GA QCC Standards in Character Education and Fine Arts introduced when your students participate in a one-hour Create-A-Puppet Workshop where they will construct

their very own *Shining Sun Hand and Rod Puppet* and experience a mini-lesson that explains how the tilt of the Earth's axis causes the four seasons:

Subject: **Character Education**

Strand: Respect for Self

#15 – Topic: Respect for Self

Standard: Work Ethic: belief that work is good and that everyone who can, should work.

15.2 – Accomplishment: appreciation for completing a task.

15.6 – Pride: dignity; self-respect; doing one's best.

#11 – Topic: Respect for Others

Standard: Altruism: concern for and motivation to act for the welfare of others.

11.1 – Civility and cheerfulness: courtesy and politeness in action of speech.

11.3 – Courtesy and cooperation: recognition of mutual interdependence with others resulting in polite treatment and respect for them.

Subject: **Fine Arts**

Strand: Visual Arts

#6 – Topic: Artistic Skills and Knowledge: Creating, Performing, Producing

Standard: Produces artworks in a variety of subject matter and in the areas of drawing, painting, sculpture, printmaking, pottery, fiber arts, and mixed media.

#8 – Topic: Artistic Skills and Knowledge: Creating, Performing, Producing

Standard: Demonstrates proper care and safe use of art materials and tools.

**III. Museum:** Here are some of the Grade 4 QCC Standards met when your students tour our Special Exhibit Gallery and Global Puppetry Museum featuring the Center's permanent collection: *Puppets: The Power of Wonder:*

Subject: **Character Education**

Strand: Citizenship

#7 – Topic: Citizenship

Standard: Tolerance: the allowable deviation from a standard. Indulgence for beliefs or practices differing from or conflicting with one's own.

Subject: **Social Studies**

Strand: History

#18 – Topic: Culture

Standard: Recognizes that different cultural groups have different characteristics.

Subject: **Social Studies**

Strand: Civics

#2 – Topic: People

Standard: States ways in which people are alike and different.

Subject: **Fine Arts**

Strand: Visual Arts

#20 – Topic: Historical and Cultural Context

Standard: Matches a description of a culture with an artwork representative of the same culture.

#21 – Topic: Historical and Cultural Context

Standard: Generates accurate statements about the functions (purposes) of particular artworks and the culture that produced them.

#22 – Topic: Historical and Cultural Context

Standard: Explains how art reflects the relationship between artists and their culture (e.g., geographic, political, religious, and economic).

Subject: Fine Arts

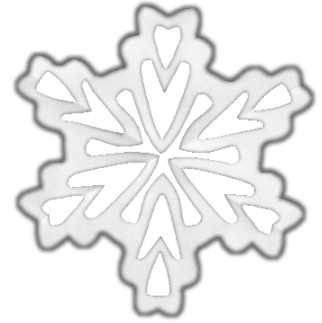
Strand: Theatre Arts

#32 – Topic: Historical and Cultural Context

Standard: Demonstrates an awareness that drama comes from all cultures throughout time.

#33 – Topic: Historical and Cultural Context

Standard: Compares and contrasts cultures through drama activities.



Thank you for choosing the Center for Puppetry Arts for your study trip. We hope that your students' experience here will live on in their memories for many years to come.

Sincerely,  
Alan Louis  
Education Director

## Synopsis

Welcome to *Weather Rocks!* - an educational spectacle full of music, puppetry and special effects. *Weather Rocks!* was created especially for the puppet stage by Jon Ludwig, Associate Artistic Director at the Center for Puppetry Arts. Our show begins in a TV weather newsroom in the clouds where four energetic meteorologists, the Weather People, are eager to share their knowledge of how atmospheric conditions rock the planet each day. Throughout the show, lots of different characters stop by to explain different weather phenomena. In each segment, not only do we learn more about the weather and our Earth, but we also experience a wide variety of different musical styles as well. The Weather People present informative musical acts that explain such important phenomena such as how the sun sets the weather in motion, what causes hurricanes, what causes twisters to form and why thunder and lightning occur. This multi-sensory experience will entertain children and adults alike as the fog is lifted on the mysteries of the weather.

## Style of Puppetry

*Weather Rocks!* is performed by five skilled puppeteers using a variety of puppetry styles. Rod puppets are one type of puppet used in the show. Rod puppets are built on a main control rod that extends up through the puppet's body and into its head. By coordinating the movements of one main control rod and two hand rods, a puppeteer brings a rod puppet to life. Another type of puppet used in our show is a hand and rod puppet. Puppeteers operate hand and rod puppets by placing one hand inside the head of the puppet to turn the puppet's head and open and close its mouth. The puppeteer's other hand operates the control rods attached to the puppet's hands. You will also notice shadow puppets in our show. Shadow puppets are flat figures performed on an overhead projector. The audience never really sees the puppet itself, but its silhouette image on the shadow screen. Some of the largest puppets in our show are body puppets. Body puppets are like large costumes that the puppeteers wear, or stand inside of, in order to bring the character to life. Our show also features giant string puppets rigged from the ceiling controlled by ropes running through a series of pullies. A puppet of this kind may take two or three people working together to animate. Character voices are all performed live by the cast. Each puppeteer wears a cordless microphone to amplify her/his voice. Dramatic special effects like fog and strobe lights help tell the story by simulating actual weather conditions and by creating certain moods on stage.

## Selected Bibliography

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Formby, Caroline. *Wild Weather Soup*. Child's Play International, 1995.

Iverson, Diane. *Discover the Seasons*. Dawn Publishers, 1996.

Lampton, Christopher. *Hurricane*. The Millbrook Press, 1991.

Rosado, Maria. *The Weather Channel Presents: Blizzards! And Ice Storms*. Simon Spotlight books, 1999.

Tangborn, Wendell V. *Glaciers*. Thomas Y. Crowell Junior Books, 1988.

Vancleave, Janice Pratt. *Weather: Mind-Boggling Experiments You Can Turn Into Science Fair Projects*. John Wiley & Sons, 1995.

## Recommended Websites

<http://www.weatherschool.com/>

The Weatherschool Project offers free lesson plans (by grade level), posters, student worksheets, software and programming information that coordinates with a local television station affiliate. Register your school today!

<http://www3.ns.sympatico.ca/dstredulinsky/home.html>

Download free hexagonal patterns to make your own beautiful paper snowflakes.

<http://www.snowcrystals.net>

See amazing photographs of actual snow crystals at this comprehensive site.

<http://www.weather.com/>

See what's new under the sun at The Weather Channel's website.

<http://www.nws.noaa.gov/>

Visit the National Weather Service website for the world's largest archive of climate data at your fingertips.

<http://www.wildwildweather.com/>

These "Wild Weather" web pages were put together especially for kids by TV meteorologist Dan Satterfield in Huntsville, Alabama.

<http://www.planetpals.com/weather.html>

Elementary school students will enjoy this very colorful and engaging weather website.

[http://www.snowfes.com/english/index\\_e.html](http://www.snowfes.com/english/index_e.html)

You won't believe the amazing sculptures that people create from snow at the Annual Sapporo Snow Festival, Sapporo, Japan.

# Learning Activities

## Mixed Media Snow Scenes

Preschool and Kindergarten: GA OCC Standards covered: Kindergarten, Science, Inquiry (Reference Skills): 2; Earth/Space Science, (Earth Materials): 17; Language Arts, Oral Communication (Listening/Speaking): 2, 3; Fine Arts, Visual Arts (Connections): 5; (Artistic Skills & Knowledge: Creating, Performing, Producing): 3.

Objective: Students will create snow pictures to reinforce science content from *Snow is Falling* by Franklyn M. Branley.

Materials: A copy of *Snow is Falling* by Franklyn M. Branley, cotton balls, crayons or markers, glue, 8 & 1/2" x 12" blue & brown construction paper.

Procedure:

1. Before the lesson, Teacher should prepare 12" x 3" strips of brown construction paper using a paper cutter.
2. Read the book *Snow is Falling* by Franklyn M. Branley.
3. Distribute 8 & 1/2" by 12" sheets of blue construction paper (sky), strips of brown construction paper (soil), and cotton balls (snow).
4. Ask students to first glue the brown strip at the bottom of their page to represent the soil. With crayons or markers, have students draw trees above ground and animals burrowing below. Next, have students glue cotton balls on top of the soil to represent a blanket of snow.
5. Have each student tell about her/his picture. Display in classroom.

## Create a Cloud in a Jar

First and Second Grade: GA OCC Standards covered: First Grade, Science, Inquiry (Activities/Tools): 4; Language Arts, Written Communication (Writing): 34, 38; Social Studies, Core Social Studies Skills (Information Processing): 23, 25.

Second Grade, Science, Inquiry (Activities/Tools): 4; Language Arts, Written Communication (Writing): 38, 40; Social Studies, Core Social Studies Skills (Information Processing): 14, 18.

Objective: Students will conduct an experiment causing air and water vapor to condense into water droplets creating a "cloud." Students will also write at least three sentences describing each step of the experiment in order.

Materials: A large clear plastic jar, a small metal tray, ice cubes, hot water, paper, pencils.

Procedure:

1. Fill the plastic jar about 1/2 full of hot water. Place some ice cubes on the metal tray, and place the tray on top of the jar. Ask students to describe what is happening in the jar.
2. A "cloud" should form in the jar directly underneath the tray. Ask students to explain what caused the "cloud" to form. (When the air and water vapor in the jar rises up to the tray and is cooled by the ice, it condenses into water droplets).
3. Ask students to compare this experiment to how real clouds form. (In the atmosphere, air rises, cools, and water vapor present in the air condenses into clouds).
4. Have students write at least three sentences describing the experiment from start to finish.

## Create a *Weather Rocks!* Word Search Puzzle

Third and Fourth Grade: GA OCC Standards covered: Third Grade, Language Arts, Oral Communication (Listening/Speaking): 7; Written Communication (Reading): 14, 16, 22; (Reference/Study): 56, 59; Social Studies, Core Social Studies Skills (Information Processing): 24. Fourth Grade, Language Arts, Oral Communication (Listening/Speaking): 7; Written Communication (Reading): 13, 15, 21; (Grammar and Usage): 65; (Reference/Study): 59, 62; Social Studies, Core Social Studies Skills (Information Processing): 29.

Objective: Students will use the Internet to create a word search puzzle using vocabulary from *Weather Rocks!*

Materials: Computers with Internet access, printers, *Weather Rocks!* vocabulary list (below), pencils.

Procedure:

1. Give each student a list of the following *Weather Rocks!* vocabulary words: (Students may use some or all of the words)

atmosphere	hurricane	heat	wind	air
ozone	front	fog	snow	rain
precipitation	climate	equator	thunder	clouds
moisture	flood	troposphere	sun	blizzard
humidity	thermometer	lightning	hemisphere	vapor

2. Have students go to [www.puzzlemaker.com](http://www.puzzlemaker.com)

- Click on "Create Puzzles Online"
- Go to the "Try Other Puzzles!" pull-down menu
- Select and click on "Word Search"
- Follow the step-by-step instructions

3. Print finished puzzles and exchange with classmates to solve!

## Here Comes The Sun

Fifth and Sixth Grade: GA OCC Standards covered: Fifth Grade, Social Studies, Core Social Studies Skills (Information Processing): 28, 30, 33; (Civic Participation): 45, 48; (Time and Chronology): 54; Language Arts, Written Communication (Reading): 16, 19; (Writing): 42, 43, 44, 45, 46; (Reference/Study): 59, 60, 62, 64. Sixth Grade, Social Studies, Geography and World Cultures (Information Processing): 20; (Civic Participation): 32, 36; (Time and Chronology): 40; Language Arts (Reference and Study Skills): 53, 54, 55, (Writing): 60, 69, 70, 71, 72.

Objective: Students will work in groups to conduct research in order to give a report about one culture's mythology as it relates to the sun. (This website may be especially helpful: <http://solar-center.stanford.edu/folklore/folklore.html>)

Materials: Pencils, paper, resource materials: books, periodicals, websites, etc.

Procedure:

1. Every culture has its own ancient stories that attempt to explain the sun.  
Ask your students to choose a culture to explore its mythology surrounding the sun.
2. Groups should use a variety of resource materials, selecting pertinent information to include in their report.
3. Groups should use a writing process that involves prewriting, drafting, revising, editing (including peer editing), proofreading and publishing.
4. After all groups have shared their findings with the class, conduct a class discussion about similarities and differences between the myths. What might account for similarities between stories from nations that were historically isolated from each other?

## Center for Puppetry Arts

1404 Spring St. NW • Atlanta, GA USA 30309-2820

Ticket Sales: 404.873.3391 • Fax: 404.873.9907

Email: [puppet@mindspring.com](mailto:puppet@mindspring.com) • Website: [www.puppet.org](http://www.puppet.org)

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