WeatherREADY plan for it.

WeatherREADY Resource Guide
Introduction, Overview, and Weather Patterns

A Resource Guide to help students plan, prepare, and protect themselves during severe weather emergencies and natural hazards

The Weather Channel℠
Bringing weather to life

To the Teacher

Introduction

WeatherREADY, an initiative of The Weather Channel, was developed to help the public plan and prepare for severe weather emergencies and natural hazards. Now, you can help your students be safe during severe weather by integrating preparedness across the curriculum.

The WeatherREADY materials include activities and resources that address social studies, science, mathematics, and language arts concepts. Select the activities and classroom set-up that works best for you. Choose the severe weather activities that impact your region and use the "Extreme Weather Map" in this Guide to compare your region with other regions across the U.S.

This Resource Guide includes an overall look at weather patterns. It serves as a good starting point before using other WeatherREADY activities that deal more specifically with certain types of severe weather events.

Teaching Note: *To insure that Internet Resources used with this guide are accurate, safe and up-to-date, we have eliminated from print all sources except the homepages of The Weather Channel, the American Red Cross, the National Weather Service (NWS),and the Federal Emergency Management Agency (FEMA).We will continue to monitor other excellent sites that support this guide and will post the links at http://www.weatherclassroom.com Just look for the Internet icon throughout this guide.*

The Objectives and Standards listed below apply to the activities within this Guide as well as the individual WeatherREADY severe weather activities available at www.weatherclassroom.com.

Overall Objectives

Students will use the WeatherREADY activities to:

- Research to determine weather patterns and natural hazards most likely to affect their region
- Relate the geography of their region to meteorological patterns and natural phenomena
- Research and disseminate weather safety information pertinent to their region
- Present and compare weather data within and across regions and note geographic differences
- Demonstrate preparedness strategies during severe weather simulations

Classroom Connections

The WeatherREADY materials introduce and/or reinforce the following concepts from national standards:

National Science Education Standards

- Earth and Space Science: Structure of the Earth System
- Science and Technology: Understandings About Science and Technology
- Science in Personal and Social Perspectives:
  Population, resources, and environments
  Natural hazards
  Risks and benefits
  Science and technology in society

Social Studies Standards from the NCSS

- **People, Places and Environments:** Use maps to locate, interpret, and describe data
- **Individuals, Groups, & Institutions:** Describe the various forms institutions take and the interactions of people with institutions
- **Civic Ideals & Practices:** Practice civic discussion and participation; identify and explain roles

Geography Standards from the National Geographic Society

- **Physical Systems:** The physical processes that shape the patterns of Earth 's surface
- **Human Systems:** The processes, patterns, and functions of human settlement
- **Environment and Society:** How physical systems affect human systems
- **Uses of Geography:** How to apply geography to interpret the present and plan for the future

Resource Guide Activities

Weather Patterns

To introduce students to local weather patterns and the meteorological and geographical reasons for severe weather and natural hazard patterns

Be Prepared

To guide students to identify common actions to take to be prepared for natural hazards and to lessen the danger and loss from these occurrences

Presenting WeatherREADY

To guide students to share their research and present and compare weather data

Community Plans: A Classroom Simulation

To guide students to apply the information they have learned about local weather patterns and disaster preparation as they take on the roles of a mock emergency management team and participate in a disaster simulation

WeatherREADY

Weather Patterns

Teaching Note: *For the most effective collaborations, divide students into groups and assign each group one of Activities 1a - 1c. Activity 1d is better suited for all students to complete in groups. Have groups share their information to decide the most important emergency situations to explore in Severe Weather and the most effective means of presenting their data in Presenting WeatherREADY.*

Spend some time going over the vocabulary below to help familiarize your students with weather terminology before beginning the activities.

Vocabulary

weather	meteorology	temperature	atmosphere
atmosphere	air pressure	humidity	dew point
precipitation	visibility	cloud	mesocyclone
severe weather	climate	wind	supercell
wind chill	ceiling	cooling degree days	heating degree days
average minimum temperature		average temperature	average precipitation
average maximum temperature			

Check The Weather Channel Education online glossary (http://www.weatherclassroom.com) for the meanings of these weather terms.

Activity 1a: Today's Weather

Purpose: To have students measure and record weather conditions for their area

1. Depending on classroom access, determine the best way to guide students to fill in the "Daily Weather Data Chart" Student Handout. Possible sources of data include:
    - Weather instruments (thermometer, barometer, wind vane, rain gauge, etc.)
    - The Weather Channel (local forecasts)
    - Local news and weather reports on television or radio
    - Local newspaper weather reports
    - the Internet:
      The Weather Channel http://www.weather.com
      The National Weather Service http://www.nws.noaa.gov

Weather Note:
Microclimates are important to remember when gathering weather data. Meteorologists often give official high and low temperatures from a central location in a large city. Temperatures in surrounding suburban areas can be slightly different.

2. Have groups fill in the complete "Daily Weather Data Chart" each day. Or assign specific measurements to different teams and have them post their data on a "community chart" for the entire class to use.

3. After students have gathered data for a sufficient number of days, have them average and summarize their data. This data will be used for comparison with "normal" weather patterns of the area and to illustrate geographical effects on local weather.

Weather Note:
Remember, for meteorologists, the "normal" monthly value of temperature or precipitation is computed by taking an average of the data over the previous 30 years. The values students find today are based on data from 1961-1990; these values are updated every decade. To avoid confusion, meteorologists often use the term "thirty-year average" when talking about "normal" temperature or precipitation.

Activity 1b: Weather Pattern History

Purpose: To have students determine historical weather and natural hazard patterns in their area

1. Have student teams find sources to complete the "Weather Pattern History" Student Handout. Possible sources of data include:
   - local newspaper archives
   - the Internet 

2. Have students graph their data to make it easy to compare data across regions and within monthly sets.

Weather Note:
Ocean currents move cold water away from the poles and warm water away from the equator. Land near an ocean is generally more moist and temperate than areas away from an ocean. Large bodies of water tend to smooth out temperature extremes -coastal areas are typically cooler in summer and warmer in winter than inland areas.

Activity 1c: Geography and Weather

Purpose: To have students determine geographical features that affect weather patterns and natural hazards in their area

1. Have student teams use maps, atlases, texts, and local resources to complete the "Regional Map Survey" Student Handout.

2. Have groups illustrate their information on a large map of your area.

Weather Note:
Differences in height can make a difference in climate and weather. Visitors at the top of the Empire State Building can see snow, while only rain falls on the street below.

Mathematics Extension:
Seven percent of Earth has a temperate climate. One-half of the world's population lives in these regions. Calculate the population density in temperate areas and in non-temperate areas. 

Weather Extremes Vocabulary

blizzard	wind chill	hurricanes	thunderstorms
frigid temperatures	heat index	flash floods	lightning
extreme heat	tornadoes	flooding	earthquakes

Check The Weather Channel Education online glossary (http://www.weatherclassroom.com) for the meanings of these weather terms.

Activity 1d: Weather Pattern Analysis

Purpose: To have students:

- Illustrate the types of severe weather and natural hazards that are prevalent in your area
- Relate the geography of your region to meteorological patterns and natural phenomena
- Present and compare weather data within and across regions and note geographic differences

1. Have student teams use maps, atlases, texts, and local resources to complete the "Regional Map Survey" Student Handout. Based on the data collected in the three activities above, have the class write a brief summary of their region's "normal" weather, the most likely severe weather events to occur within their area, and the geography that influences local weather.

2. Use the "Weather Extremes Map Student Handout 1d" (page 1) to illustrate and compare weather patterns across regions in the U.S. Having determined severe weather that impacts your area, students should then use the appropriate symbols to indicate weather possibilities. Ask them to devise systems to indicate:
   a. comparative severity
   b. frequency
   c. geographic determining factors

3. Have students prepare to explain their maps to the class through their own interactive page on the Internet, a video production, a newsletter/bulletin board, or a "live" report.
   (See **Presenting WeatherREADY**.)

Resources

- National news and weather reports on television or radio
- National and local newspapers
- the Internet:
  The Weather Channel http://www.weather.com
  The National Weather Service http://www.nws.noaa.gov

Going Further

As a class, or in small groups, ask students to go further as they work with the "Weather Extremes Map" pages 1 and 2 and their new understanding of local Weather Patterns.

- Based on your own region, its location, and geographic factors, what other regions might experience similar severe weather extremes? Have groups of students use the weather symbols to indicate regions they believe would have similar conditions. Have them explain their selections and test their hypotheses by using the enclosed completed "Weather Extremes Map" (page 2), or have them research to discover if they have pinpointed regions with similar conditions.

- Play "Pin the Weather Symbol on the Map." Have one team of students place a weather symbol on any region. Have the opposing team explain whether or not the symbol is in an appropriate location. Develop a point system for correct answers or winning "bluffs."

- Using the completed "Weather Extremes Map," (page 2) have students formulate questions about severe weather and natural phenomena across the U.S. and challenge others to find the answers. For example:
    - What types of extreme weather are you most likely to encounter in your region?
    - Where are you least likely to encounter severe weather or natural hazards in the U.S.?
    - Where are you most likely to encounter tornadoes?

- Play "Twenty Questions." One student selects a city/state. By asking weather-related questions that can be answered only "yes" or "no," other students in the class should try to guess the name of the city/state.

- Have students use the map to pinpoint weather in the news, tracking severe weather across their own region or the nation. Students should include the date of each weather event as it occurs. What patterns do they discover? Are there any surprises? Based on their ongoing weather tracking, is the completed "Weather Extremes Map" accurate? Explain.

Teaching Note: *Having completed* ***Weather Patterns****, your students are now aware of the most likely severe weather events or natural hazards that might affect their area. Based on this information, choose one or more of the following additional WeatherREADY severe weather activities found on wwww.weatherclassroom.com to help students understand severe weather events and their consequences, and to know how to stay safe during events most likely to strike locally:*

- *Thunderstorms and Lightning*
- *Tornadoes*
- *Hurricanes*
- *Floods and Flash Floods*
- *Severe Winter Weather*
- *Extreme Heat*
- *Wind and Wildfire*

Daily Weather Chart

Purpose: Use the chart below to record daily weather data.
Note: Your teacher will tell you which columns you should complete.

Day/Date	Cloud Type	Cloud Cover	Precip.	30-yr Avg. Precip.	Temp.	30-yr Avg. Temp.	Dew Point	Relative Humidity	Wind Speed	Wind Direction	Atmospheric Pressure
Major Weather Events for the Week:					**When:**			**Notes:**			

Based on your chart and research into weather archives, can you determine whether this week's weather fits the "normal" weather pattern for this time of year in your area? Explain.

If the weather is not "normal," what might be the cause of the difference? Explain.

Weather Pattern History

City: _____ **State:** _____

Data Chart

Month	Average Temperature	Average Precipitation
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

Climate description of our location:

Historic, severe weather or natural hazards in our area: (Indicate dates and provide a brief description of the nature of each event.)

Challenge

Create graphs of the average precipitation and average temperatures for your area. Then, use weather archives for the year along with current data to determine if this year's temperatures and precipitation amounts fall around the norm. Explain your conclusion.

Regional Map Survey

Purpose: Complete the survey to record geographic data for your area.

City: _____ **State:** _____

Latitude and Longitude Coordinates: _____

Average elevation: _____

Unusual elevations: _____

Are you on a flood plain?: _____

General description of the land (do not include buildings or houses):

Major bodies of water:

Population size: _____

Describe any structures that affect water movement, wind or rain runoff (dams, canals, skyscrapers, etc.)

Other features:

Challenge

Illustrate this information on a local map.

Analysis

What of the above information affects the local weather patterns? Explain.

Weather Extremes

Thunderstorms

Tornadoes

Hurricanes

Flooding

Winter Storms

Extreme Heat

Earthquakes

*Although the majority of wildfires occur in the western U.S., all states have the potential for wildfires, especially during droughts.

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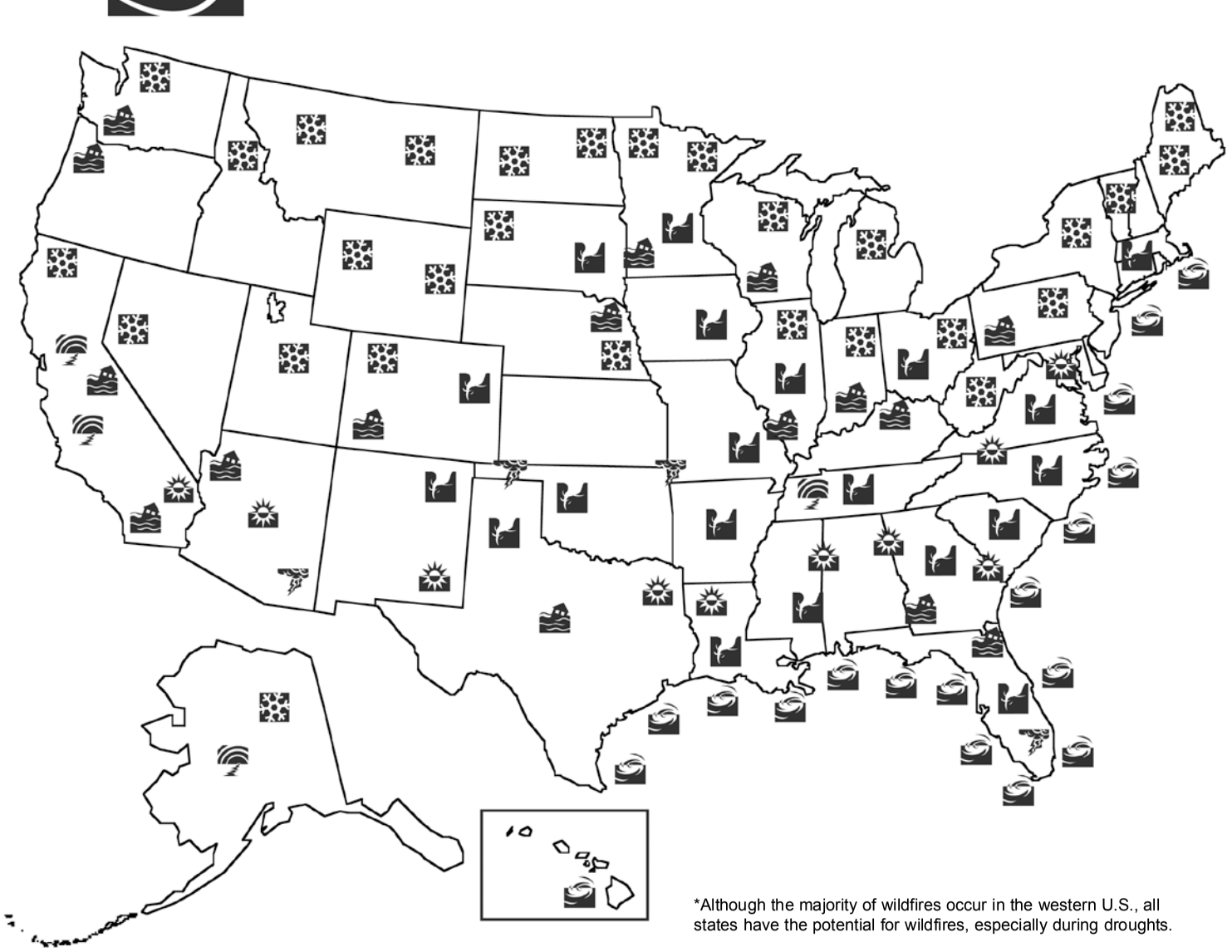
Weather Extremes



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WeatherREADY

Be Prepared

Teaching Note: Be Prepared *is general information about preparedness and mitigation for severe weather and natural hazards. Information and activities on safety and special preparations for specific weather and hazards are included in the additional WeatherREADY activities available at www.weatherclassroom.com.*

Vocabulary

Mitigation	first aid	severe weather watch	natural hazard
emergency plan	special needs	severe weather warning	preparedness
family contact	evacuation	hazard hunt	Family Safety Supplies Kit

Check The Weather Channel Education online glossary (http://www.weatherclassroom.com) for the meanings of these weather terms.

Activity 2a: Family Safety Supplies Kit

Purpose: To guide students to work with their families to gather and store needed supplies in case of a severe weather emergency

Teaching Note: *Throughout this activity, use the "Family Safety Supplies Kit" Student Handouts as a reference, if needed.*

Weather Note:
A normally active person needs to drink at least two quarts of water each day, more if the weather is hot or during intense physical activity. Children, nursing mothers, and people who are sick will also need more. Store one gallon of water per person per day, two quarts for drinking and two quarts for food preparation and sanitation.

1. Write the term "Family Safety Supplies Kit" in the center of the chalkboard and begin a class brainstorm to create a web of needed items. Include everything students say.
2. After the brainstorm, ask students how they might classify the items within their web. Possible categories include water and food items, first aid supplies, bedding and personal supplies, tools, emergency supplies, and special items for special needs.
3. Divide the class into groups and assign each a category. Have groups organize the items from the brainstorm and decide which items in their list are needs, which are wants and which cannot be included. Have groups share and explain their final lists. For example: Students might exclude food items that take too much water to prepare, supplies that are not battery-powered, or bedding that is too bulky to store easily.
4. Distribute the "Family Safety Supplies Kit" Student Handouts and discuss possible additions or changes to the groups' lists. Were there areas students didn't consider?
5. Have students take home the "Family Safety Supplies Kit" Student Handouts to use as a checklist for their own safety kit.

Weather Note:
Candles are NOT recommended for emergency supplies. Four times as many people have been killed by fires caused by using candles after a disaster than from the disaster itself.

Activity 2b: Emergency Contacts

Purpose: To guide students to work with their families to set up emergency contacts and meeting places

Weather Note:
Remember, food and medications have expiration dates. Check your supplies kit every six months and remove and replace items as they become outdated.

1. Tell the class the time and then ask them to tell you where they might find family members at that moment: siblings might be at other schools; parents or guardians might be at work downtown or across town; other family members might be at meetings or running errands.
2. Using a local map, have students try to pinpoint where family members are located. Consider these questions:
    - How many people are close to the school? Who is farthest away?
    - Could family members be in places students might not know? Explain.
    - If it were necessary, could students get in touch with any or all of their family? Why or why not?
    - In case of severe weather, would it be possible for family members to gather at the school? Explain.
    - If the family had to evacuate, where would they go?
    - If some local phone lines are down, who could they contact to find other family members?
3. Based on their discussion, have students describe the importance of having a family emergency plan, including places to meet in and outside of their homes and names and numbers of emergency contacts. Distribute the "Emergency Contact" Student Handout for students to complete with their families.

Weather Note:
Because of the possibility of downed utility wires during any natural hazard, it's important that a family contact be someone out of town. As family members call in, the contact can let each person know where others are located and that they're safe. (When a storm is approaching, be sure to recharge cell phones for emergency use.)

Language Arts Extension:
Sometimes, students may have difficulty giving and getting information over the phone during an emergency. Have students write scripts for emergency contact calls and then practice dialing long distance numbers, calling collect, and communicating needed information. Remember, scripts should include the caller's name, location, phone number, and condition and a question about whether the contact has heard from other family members.
Going Further: Have students simulate emergency contact calls at home with younger siblings.

Activity 2c: Emergency Planning

Purpose: To guide students to work with their families to follow emergency plans for severe weather hazards

1. Write the words "Watch" and "Warning" on the chalkboard. Have students discuss the difference between a Severe Weather Watch and a Severe Weather Warning.
    - Severe Weather Watch --There is a possibility of dangerous weather conditions in your area. Stay tuned for more information.
    - Severe Weather Warning --Severe weather conditions are in your area, seek shelter immediately.

Activity 2c: Emergency Planning cont.

2. How are watches and warnings usually reported in your area? (Watches and warnings are reported by county and quadrant. For example: "There is a severe weather warning for northeast Cobb county.") Using local maps, have students pinpoint the locations of the school, their homes, and other places around the area where they spend time -- parks, malls, recreation centers, homes of friends and family, etc. Are all of these locations in the same county? The same area of the county? Have students designate the different locations.
3. Conduct a drill:
    a) Tell students there is a Severe Weather Watch in their area and they are _____ (at school, at home, at the mall, at soccer practice, etc.). What will they do?
    b) Next, announce a Severe Weather Warning and tell students they are _____ (at school, at home, at the mall, at soccer practice, etc.). What will they do?
4. Distribute the "Emergency Planning" Student Handouts and have students suggest additions or changes to the actions they discussed. Have students take the handouts home to share with their families.

Geography Extension:
Sometimes it's a challenge to read the severe weather maps that outline counties in your state. Guide students to become familiar with the shapes and locations of your state's counties.

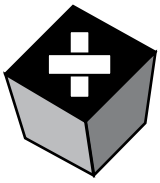
Without looking at a map, have students draw the outline of their state. Next, challenge them to locate and draw the outline of their county within the state. Now, have them name and draw outlines of surrounding counties. Use a local map to have students check and correct their work.

Create a bulletin-board-sized map for the hall or media center. Have students cut out county shapes to scale for the entire state in different colors of construction paper. Put these together like a jigsaw puzzle within a large state outline. Challenge students to research and add statistical data to their county pieces: area, population, major industry, weather data, etc.

Going Further: Check http://www.weather.com for local weather radar maps. Using these maps and the class state/county map, challenge students to describe the weather in counties across the state.

Resources

Sources of information on preparedness and updates on severe weather situations include:
- NOAA Weather Radio
- The Weather Channel or local broadcast stations
- Local am/fm radio stations
- the Internet:
  The Weather Channel http://www.weather.com
  The National Weather Service http://www.nws.noaa.gov
  The American Red Cross http://www.crossnet.org
  Federal Emergency Management Agency http://www.fema.gov



Family Safety Supplies Kit

A Family Safety Supplies Kit is a good way to be prepared before any type of severe weather or natural hazard strikes. Check the basics:

❏ **Water**
Store water in plastic containers (gallon milk jugs or soft drink bottles), at least one gallon per person, per day. Remember, you'll need water for drinking as well as food preparation and sanitation. **Note:** Don't use containers that might decompose or break, such as cardboard milk cartons or glass bottles.

❏ **Food**
Remember, food supplies should require no refrigeration, no cooking, and little or no water.
Note: Don't forget a manual can opener and/or utility knife.
Ready-to-eat canned meats, fruits, and vegetables
Canned juices and milk (if powdered, store extra water)
Staples--sugar, salt, pepper
High-energy foods--peanut butter, jelly, crackers, granola bars, trail mix
Vitamins
Special foods for infants or people with special diet restrictions
Comfort/stress foods--cookies, hard candy, sweetened cereals, lollipops, instant coffee, and tea bags

❏ **General First Aid Kit**
A supply of each of the following, plus other items important for your family:
Assorted sterile, adhesive bandages
Soap and antiseptic cleansers
Moist towelettes
Sunscreen
Gauze pads and rolled bandages
Scissors, tweezers, safety pins, and needle
Antiseptic cream and lubricant
Thermometer
Non-prescription drugs
Pain relievers
Anti-diarrhea medication and antacids; laxatives
Cold and/or allergy medications
Other _____

❏ **Special Needs**
Each member of your family may have special needs to address. Check and update this special supplies area at least every six months.
Supplies for infants
- Formula
- Diapers
- Bottles
- Powdered milk
- Child's strength medications and medicine dropper

❑ **Prescriptions and other supplies**

Essential drugs, such as heart, blood pressure, or diabetes medications
- Prescriptions
- Denture needs
- Contact lens supplies and extra eyeglasses

Pet Supplies
- Food and water
- Litter/bedding
- Special medication
- Pet carrier (pillow cases can also work for small animals) or leash

❑ **Tools and Emergency Supplies**

NOAA Weather Radio and/or battery-operated am/fm radio or television (extra batteries)
Flashlights or camping lanterns (extra batteries)
Camping mess kits or paper or plastic cups, plates and utensils
Manual can opener, utility knife, and tools
Matches in a waterproof container
Signal flares
Local maps with evacuation routes clearly marked
Fire extinguisher

❑ **Bedding and Personal Supplies**

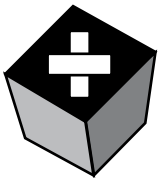
Blankets and portable shelter, such as a tent
Games and books (remember extra batteries, if necessary)
Paper and pencils
Toilet paper, paper towels, and personal hygiene supplies
Soap and detergent
Plastic garbage bags
Disinfectant and household bleach

Weather Note:

NOAA Weather Radio is a nationwide network of radio stations broadcasting continuous weather information direct from a nearby National Weather Service office. NOAA Weather Radio broadcasts National Weather Service warnings, watches, forecasts, and other hazard information 24 hours a day.

Working with the Federal Communications Commission's new Emergency Alert System, NOAA Weather Radio is an "all hazards " radio network, making it the single source for the most comprehensive weather and emergency information available to the public. NOAA Weather Radio also broadcasts warning and post-event information for all types of hazards, both natural (such as earthquakes and volcano activity) and industrial (such as chemical releases or oil spills).

Check The National Weather Service Online at http://www.nws.noaa.gov/nwr/ to find out how and where to get your own NOAA Weather Radio, or check with your local electronics store.



Emergency Contacts

In case of an emergency, it's important to know where to go and who to call.

Determine two family meeting places.

1. In case you have to get out of your home quickly, where should your family meet outside?
   (For example: By a tree at the far end of your lot; under the streetlight on the corner; next to your neighbor's gate)

2. Where should your family meet in case you can't get back home when a disaster happens?
   (For example: At your grandparents' house; in front of the school; at a local store)

Place _____ Telephone Number _____

Address _____

Designate an out-of-town contact

In an emergency, it is often easier to make long distance calls than local calls. Be sure your out-of-town friend or relative is aware of this assignment.

Name _____

Daytime Phone # _____ Evening Phone # _____

Designate an in-town contact

Sometimes a local contact can relay messages among family members if you 're separated during an emergency.

Name _____

Daytime Phone # _____ Evening Phone # _____

List family members' daytime numbers

Even numbers you call often might be forgotten in an emergency situation.

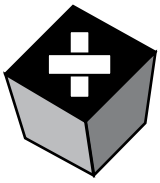
Name: _____ Number: _____

Name: _____ Number: _____

Name: _____ Number: _____

Note: Don't forget to include cell phone numbers when applicable.

No matter what the emergency situation, your family can be ready. Be sure everyone has an official job to perform.



Emergency Planning

GENERAL PREPAREDNESS

Before the Storm

- Be patient and listen for updated severe weather information. Know the difference between a Watch and a Warning:

  Severe Weather Watch --There is a possibility of dangerous weather conditions in your area. Stay tuned for more information.

  Severe Weather Warning --Severe weather conditions are in your area, seek shelter immediately.
- Know your area evacuation routes and closest community shelters.
- Set up your Family Safety Supplies Kit and have a smaller version packed for the car in case of evacuation.
- Bring all pets indoors. Have a plan for pet safety (see below) if evacuation is necessary.
- Bring in toys or outdoor furniture that could become dangerous if thrown around in a storm.
- Have cash available and keep a record of credit card and bank account numbers, as well as insurance records and policies.
- Let a family contact know your evacuation destination.

During the Storm

- Take shelter in your family's designated "safe area" away from windows, skylights, and glass doors.
- Continue to listen to updated severe weather information.
- Use the telephone only for emergencies.
- Stay clear of a disaster area to allow emergency workers to get there more easily.
- Check in with your Family Contact to make sure that all family members are accounted for and to let the contact know you're safe.

After the Storm

- Continue to listen to updated severe weather information. Follow the advice given by local authorities.
- Help any injured or trapped persons. Call for help (see below.)
- Check your home for damage but use caution. Wear sturdy shoes and protective clothing; use a flashlight.
- Beware of snakes, insects, and animals driven out of their usual habitat by the storm.

PET SAFETY

Before the Storm

- If you must evacuate, remember that most shelters do not allow pets. You must make other arrangements with local animal shelters or veterinarians, commercial accommodations, or friends and family.
- Have a pet carrier, leash, or pillowcase available to secure your pet, if necessary.
- Find a safe location in your home for your pet and, when gathering emergency supplies, be sure to include pet needs.
- Be sure license, tags, and shots are current and records available.

During the Storm

- Bring pets inside early to insure they don't run away because they're afraid.
- If you have to evacuate and must leave your pet, prepare a safe location with a three-day supply of water and food.
- Separate dogs, cats, and other pets, even if they usually get along.
- If you take your pets with you during an evacuation, be sure to take records and supplies.

After the Storm

- Keep your pets close and leashed after a disaster to protect them from dangerous animals that might have come close during the storm, downed power lines, or other hazards.
- Be aware: Altered scents and landmarks may confuse pets and their behavior may change after a disaster.

Call for Help

Keep these important phone numbers handy.

Out-of-State Contact

Name: _____ Daytime Phone #: _____

Nighttime Phone #: _____

In-Town Contact

Name: _____ Daytime Phone #: _____

Nighttime Phone #: _____

Local Emergency Numbers: ALWAYS REMEMBER 911!

Fire: _____

Police: _____

Hospital: _____

Family Medical Care

Name: _____ Phone #: _____

Local Red Cross Chapter Phone #: _____

County/City Emergency Service

Name: _____ Phone #: _____

Emergency Utility Services Numbers:

Phone Company: _____

Gas Company: _____

Electric Company: _____

Presenting WeatherREADY

Purpose

To guide students to collaborate in coordinating, analyzing, and presenting data they have found on the science, frequency, and safety of weather events and natural hazards most likely to affect their area

It is important that students coordinate and analyze their research and data to put together a cohesive presentation -whether in the classroom, the school, the district or across the country.

If possible, it is best to have students share data across regions to compare the types of weather events and natural hazards that affect different geographic areas.

Teaching Note: *You may wish to complete this activity with your classes after going through several of the individual WeatherREADY activities.*

Internet

Teaching Note: *Web publishing software available today makes creating inviting, informative, exciting Web pages simple.*

Student data is of interest to others and can become an integral part of a school or classroom Web site. Check with your school or district Web server administrator for technical information concerning your site - disk space available, URL, file transfer protocols and file-naming conventions.

Work with students and community volunteers to set up the site. Your "home page" will welcome visitors, introduce the class project, and guide visitors to the information your students have discovered - maps, hands-on experiments, predictions, and safety precautions. Use interactive forms to have visitors share pertinent information about weather and natural hazards in their own area.

Teaching Note: *Check online to link with potential participating schools in Internet classroom projects.*

Video Production

Video is an excellent means of capturing scientific demonstrations and motivating students to enhance and animate visual reports. Check with your media specialist or technology lab coordinator to make production equipment and facilities available to students.
To make the video most meaningful and motivating, try this:

- Contact schools in other areas to set up Video Swaps for delivering and comparing data across regions.
- Present the video at the next PTA/PTSA or school board meeting.
- Call your local cable provider to discover how your production can become part of an educational or community outreach cablecast.
- Talk to local stations to have brief segments of your production become weather safety public service announcements (PSAs).

Video Conference

If you and other schools in your area or district have video conference capabilities, consider setting up a video link. You may want to invite a local meteorologist to participate in your hook-up.

Help your students get ready to communicate:

- Establish parameters for types of data to be shared.
- Develop computer skills necessary for communication.
- Prepare introductions (student and school).
- Rehearse reports - including visual content (maps, scientific demonstrations, posters, etc.)

Publish

The information your students have compiled is important to your community. Guide students to publish their information in:

- Newsletters that can be printed and shared within the school and local community.
- Bulletin boards that can provide easily-updated weather information and safety tips throughout the school.
- Posters that can be posted throughout the school and the community.

Live Reports

Your class and others can become the audience for live "at-the-scene" reports, skits, PSAs, and songs or choral readings that convey the scientific, geographic, and safety information your students have found. Be sure that presentations include good visual information - posters, overhead transparencies, demonstrations, plus audience participation in safety demonstrations and strategy development.

Community Planning

Teaching Note: *How you use this simulation depends on your time frame, your students' abilities and your access to experts in emergency management planning. For example: Use 4 to 6 full class periods to prepare for, enact, and evaluate the simulation and invite experts to work with you to introduce concepts in class. Let students work in teams outside of class to complete assignments, then have them work with your experts to complete and evaluate the simulation.- or - Work with other classes to set aside a "Preparedness Day" and invite experts to work with students throughout the day and present their evaluation during an evening parents' participation session or an upcoming PTA/PTSA meeting.*

The project can accommodate outside speakers from municipal agencies or disaster recovery organizations. With an additional time commitment, students may benefit from field trips to local emergency management headquarters or other appropriate locations.

Vocabulary

emergency management system	disaster recovery organizations	simulation
disaster planning	response and recovery	search and rescue
communication	coordination	mass care
preparedness/mitigation	evacuation	damage assessment

Check The Weather Channel Education online glossary (http://www.weatherclassroom.com) for the meanings of these weather terms.

Goals

- Recognize and discuss the importance of advance community emergency planning
- Identify the roles of municipal and community organizations involved in community planning
- Cooperate to complete, present, and evaluate the community preparedness simulation

Resources

- Sample Community Disaster Plan provided by Miami-Dade County (to receive, call 800-471-5544)
- Community maps

Sources of information on preparedness and updates on severe weather situations include:

- WeatherREADY activities and resources featured in this guide and online at www.weatherclassroom.com
- NOAA Weather Radio
- The Weather Channel or local broadcast stations
- Local am/fm radio stations
- the Internet:
  The Weather Channel http://www.weather.com
  The National Weather Service http://www.nws.noaa.gov
  The American Red Cross http://www.crossnet.org
  Federal Emergency Management Agency (FEMA) http://www.fema.gov

Simulation: Set Up (1-2 class periods)

Purpose: To introduce and discuss the community planning project and its goals
To determine the emergency situation for the project
To review WeatherREADY information for the emergency situation
To present and review resources
To elect/assign student representatives to municipal positions and other help organizations

Teaching Note: *Depending on your students' abilities, time frame and classroom goals, you may select the community emergency that will be the basis for this simulation, or have students decide. Assign community emergency management roles or have students run for office, including making speeches to explain the job and their reasons for seeking office. Have students work individually or in teams to fill each position.*

1. Based on their participation in prior WeatherREADY activities, have students discuss the types of emergencies that their community might face: hurricanes, tornadoes, floods or flash floods, severe winter weather, extreme heat, thunderstorms and lightning, and wildfires.

2. Explain that the class will set up and implement an emergency management simulation in which they take on the roles of community leaders who must:
    - develop an outline for emergency management in the event of a community emergency, defining clearly who does what, when, where, and in what order to deal with the community crisis.
    - meet to manage the effects of a community emergency to preserve life, minimize damage, provide necessary assistance, and establish a recovery system to return the municipality to normal as quickly as possible.

3. As a class, determine the type of emergency the community leaders will simulate.
   If a _____ (severe weather event or natural hazard) occurred, discuss:
    - What could happen in their community in terms of loss of life and property damage?
    - How would the community respond?
    - Who would be in charge of managing immediate rescue and recovery?
    - Who would be responsible for long-term recovery?

4. (optional) Divide the class into groups and distribute a copy of "Sample Community Disaster Plan" (listed in the Resource section) to each group. Have groups further refine the answers to the questions above based on this plan developed by Miami-Dade County.

5. Assist the class in forming its own government -- the municipality of _____ (name of school). Select, or have them elect, a mayor, city manager, council members, public information officer, fire, and police chief.

Teaching Note: *This is an excellent time to invite government/agency representatives to discuss their roles before, during, and after an emergency. For expediency, we will only focus on the ten Emergency Support Functions (ESF) shown in bold on the Student Handout - transportation, communications, fire fighting, planning/information, mass care, health and medical, food and water, energy, public information, and law enforcement. Each ESF has an agency director who is responsible for preparing for and resolving the specific problem should it occur. Students who are the elected officials of the municipal government - mayor, council members and city manager - will be responsible for selecting other students to represent these functions.*

6. Besides the municipal government, there are numerous agencies and organizations that will assist the community in the preparation, rescue, and recovery process for emergency situations. Select other students to take on leadership roles for the following essential agencies and organizations:
    - Federal Emergency Management Administration
    - County Government
    - Public Schools
    - Public Utilities
    - State and National Guard
    - American Red Cross
    - Salvation Army
    - Local Hospitals

7. Assign the rest of the students to act as reporters who communicate the plans and actions of the government and other organizations, and ask government officials what will be done to address specific community problems.

8. Have students use the sample simulation roles to prepare their own job descriptions for each position and identify individual responsibilities during an emergency.

9. As a class, create an organizational chart of the classroom government and the various recovery agencies/organizations on the chalkboard. List and describe each student's key role and responsibility.

Simulation: The Plan (1-2 class periods)

Purpose: To create organizational charts and maps to begin setting up a community preparedness plan
To consider three planning stages - before, during, and after - in the event of an emergency
To develop a written emergency preparedness plan

1. Help the classroom government and agencies create a community response and recovery plan in case of _____ (severe weather event or natural hazard). The document should include:
    - The organizational chart created above, including the names of your "government" officials and their respective responsibilities.
    - Listing of outside agencies and organizations, including officials' names and responsibilities.

Teaching Note: *You may use local maps that the class developed during earlier activities or local emergency management maps may be available to you through the representatives you have invited to the class. If not, it is a good time to bring in representatives to work with the class to develop the maps.*

- *Maps of municipality: Divide the class according to their jobs and responsibilities and have them use and/or develop:*
    - *Map of municipality showing locations of city government, command center, local hospital, and shelters for evacuees.*
    - *Map of municipality identifying significant problem areas such as evacuation zones, roads, and highways for evacuating people.*

2. Discuss and set up roles and responsibilities for the three primary emergency planning stages for a _____(severe weather event or natural hazard):
    - Before a _____: Preparations to be made before a _____strikes (supplies, rescue agencies at the ready, lines of communication to the general population, mitigation efforts).
    - During a _____: Strategies for emergency response during the _____ (lines of communication are particularly critical during this stage.)
    - After a _____: Recovery plans for returning the community to conditions as normal as possible after the _____(rescue and recovery, power, telephone, clearing streets and testing bridges, food, and water supplies, etc.)

3. Use the "In Case of Emergency" Student Handout to help students develop their written community emergency plan.

Simulation: Command Center (1-2 class periods)

Purpose: To set up a "command center" in the classroom to coordinate the simulation
To simulate a _____disaster and immediate recovery

Teaching Note:

- *Select a past _____emergency that has hit or threatened your community and use collected data to setup a realistic situation. For example: If using a hurricane, find specific tracking data online at The National Weather Service (http://www.nhc.noaa.gov) to create ongoing hurricane watches, warnings, and forecasts.*
- *You may also want to customize specific scenarios (oil tanker blown aground, damaged bridges prevent offshore island evacuation, etc.) to add an element of uncertainty to the simulation and to pull in all of the people/resources set up for the simulation.*
- *If possible, invite community emergency management representatives to participate in the simulation with your students.*

1. Begin the simulation by announcing the existing emergency. For most severe weather disasters, there is some time before the emergency hits for making specific arrangements. In the case of an earthquake, emergency meetings begin after the quake. Remind students:
    - There are no right answers.
    - When you make decisions, you have to base them on the facts.
    - You will prioritize things using the facts that you have.
    - You cannot solve every problem.
    - There are no "magic" solutions to anything.
    - The plan must always be flexible.

2. Have students:
    - Act out their responsibilities as municipal officials and coordinate efforts with the respective external governments, agencies and services.
    - Set up the emergency command center and be sure each Emergency Support Function (ESF) is represented.
    - Communicate preparedness measures to the community through the Public Information Officer and the external service organizations.
    - Identify areas most likely to be severely hit and coordinate emergency warnings. (This depends on the emergency situation you are simulating.)
    - Decide on possible evacuations to area schools, hospitals and government centers, if appropriate. (This depends on the emergency situation you are simulating.)
    - Continue to monitor and communicate conditions.

Teaching Note: *If possible, simulate emergency conditions to make the experience more real for students. For example, provide wind noise over the PA system and turn out lights. Possible problems for students to react to during the simulation include:*

- *911 is getting too many calls for basic first aid incidents.*
- *There is a kitchen fire at one evacuation center, just as the storm is approaching. You will need to evacuate 200 people to another shelter.*
- *The state wants to fly in the governor and his damage assessment team by helicopter.*
- *The airport director just got hold of the ESF1 Director: The airport is closed because of debris on the runway.*
- *There are people in wheelchairs at one Evacuation Center that does not have wheelchair access bathrooms.*
- *People are dumping their trash and debris around the streets blocking the passage of emergency vehicles.*
- *One nursing home has just lost power and some of its patients have to have electricity for their medical equipment.*
- *Traffic lights are out and the police chief has to get people to direct traffic.*
- *With the electricity out to parts of the city, people don't have information about where they can get help. Information centers must be set up for people to get help.*
- *There has been a car accident on a bridge during the evacuation and it is blocking traffic.*

3. After the storm has passed, have students:
   - Assess potential loss of life, serious injuries and functioning of area hospitals and health care facilities.
   - Assess severity of damage to the buildings, homes, streets, causeways, utilities, etc.
   - Determine, with area utility companies, the needs and timetable for restoration of power, phone service, and safe drinking water supplies.
   - Determine humanitarian needs from private organizations (American Red Cross, Salvation Army, etc.)
   - Meet with external agencies, such as FEMA or the National Guard, to obtain their assistance in the recovery process.
   - Discuss the long-term effects of the disaster on the community (potential loss of homes, loss of jobs, difficulty in obtaining insurance, psychological and emotional trauma among survivors) and decide what the community will need to recover.

Simulation: Evaluation (1-2 class periods)

Purpose: To evaluate the preparedness plan and the actual experience
To begin preparation of a class essay describing the planning, disaster and recovery scenarios
To determine preparedness/mitigation efforts that would support your community before, during, and after the storm

1. As a class, evaluate your plan. Discuss the questions below and others that are appropriate to your emergency plan. Have several students take notes in preparation for a written class evaluation.
   - How well did the preparedness plan actually work? Cite specific examples from the simulation to illustrate each response.
   - In what areas was the plan most effective? Why?
   - In what areas was the plan least effective? Why?
   - What was the impact of unforeseen circumstances on the plan? Cite specific examples.
   - Did you feel the plan was realistic? Explain.
   - Was the plan comprehensive? If so, describe ways in which the plan supported the whole community and all aspects of the emergency. If not, describe ways in which the plan failed.
   - Did the municipality have enough resources to implement the plan? Explain. If not, how might you obtain additional resources?
   - How should the plan be improved to handle future emergencies? Include specific recommendations.
   - What preparedness/mitigation efforts would support your community before, during and after such an emergency situation?

2. As a class, put the answers to these and other questions into a written evaluation of your simulation.

In Case of Emergency...

Directions: An effective Emergency Preparedness Plan must answer the questions below. Include what support or response functions are involved, what agency is responsible and why.

1. How and why do we get ready for a _____? *(Severe weather or natural hazard)*

2. Who is in charge and makes the decisions?

3. What sources of information will we use to make our decisions?

4. Who will gather that information?

5. How do we warn people and give them instructions in advance for their protection?

6. If necessary, how are we going to get people to evacuation centers or help them reach safety?

7. What plans will we make to find shelter for people who cannot evacuate by themselves? What kind of people will need this help?

8. What parts of the county should people evacuate from and why?

9. When do we evacuate people and how?

10. What county facilities will we work out of and what capabilities should they have?

11. How do we make streets passable and why? Which streets should we close?

12. How are we going to get what we need after the emergency passes?

13. Where are people going to live after the emergency?

14. The county will need help from the State and Federal government. How are we going to work with them?

15. What do we do with people who are in town, but do not live here?

16. If people want to volunteer to help, how can we utilize the goods and services they are offering?

17. What are the priorities once the emergency has passed? What will people need first?

18. How will we keep the streets safe?