

# **Kindergarten Goal 3**

## **Weather Around Us**

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**I. Grade Level/Unit Number:** Kindergarten/Unit 4

**II. Unit Title:** Weather Around Us

**III. Unit Length:** 7-8 weeks

**IV. Unit Goals:**

The learner will be able to:

- Observe weather
- Identify changes in weather
- Use tools to observe the weather
- Demonstrate use of unit of measure
- Collect and organize data
- Display data in graph

**V. Objectives Included:**

<b>Unit Title:</b> Weather Around Us		<b>Number of Weeks:</b> 7-8
<b>Number</b>	<b>Competency or Objective</b>	<b>RBT Tag</b>
2.02	Identify different weather features including precipitation, wind, temperature and cloud cover.	B1
2.03	Identify types of precipitation, changes in wind, force, direction and sky conditions.	B1
2.04	Observe and determine the effects of weather on human activities.	B4
2.05	Use common tools to measure weather	
4.05	Demonstrate that standard units of measure produce more consistent results than nonstandard units	B3
Math Goal 4	4.01 Collect and organize data as a group activity. 4.02 Display and describe data with concrete and pictorial graphs as a group activity.	

**VI. ELD/EC:** Suggestions are italicized within the unit.

## VII. Materials and Equipment:

- Book list: [www.carolhurst.com/subjects/curriculum.html](http://www.carolhurst.com/subjects/curriculum.html)
- Standard weather measurement tools (thermometer, rain gauge, wind sock, pinwheel)
- A graph of different types of weather
- A fan
- A bucket
- Real pictures of weather. ([www.weatherunderground.com](http://www.weatherunderground.com))
- Drawings of pictures of weather
- Clothing and shoes to match different seasons
- Instruments and other materials to make weather sounds
- Large sheets of paper to make maps and record information
- A dramatic play center
- Unifix cubes
- A variety of materials to make measuring tools (paper, cardboard, glue, scissors, toilet paper tubes, paper towel rolls)
- A kite
- Pictures of people at different times of the year
- Picture books and non-fiction books about weather (see resource list)
- Pictures of things that are not weather related
- A Venn Diagram poster or pocket chart
- 1 Observation Science notebook per child
- Water table/tub
- Containers for pouring and dripping
- Instant snow
- Water colors and/or other paint supplies
- *Thunder Cake* by Patricia Polacco
- Building Materials: cardboard tubes, rice, beans, tin foil, tin cans, crepe paper, construction paper
- White paint
- Bubbles (homemade or bought)
- Bubble wands (homemade or bought)
- Big sheets of blue construction paper
- Science Notebook (See directions below)
- Clothing that is a few sizes bigger that would be worn in different weather. (This can include short sleeve and long sleeve shirts, long pants, shorts, hats, winter coat, light coat, umbrella, raincoat, rain boots, scarves, mittens, toboggan, sweater)

*Note to Teacher:* Students in kindergarten use their five senses to observe weather in the world around them. This unit should provide an atmosphere where children are investigating, learning and exploring the concepts and objectives mentioned above as they apply to weather. Young children need opportunities to explore, observe, and manipulate the materials around them. The children will have a deeper understanding of the weather concepts taught if they are able to collect data and explore variations in the world where weather is concerned. Much of the unit we have developed is based on developmentally appropriate practices that will require a more informal assessment of concepts taught rather than traditional paper and pencil activities.

## **VIII. Big Ideas:** Change

## **IX. Unit Notes:**

The activities in this unit are based on the 5 E lesson plan format. First you will use Engage to draw the students in. This is the time to ask inquiry type questions. Next you will allow the students time for Explore. Then you will explain the concepts you want to cover for that lesson. Sometimes you will allow the students time to elaborate or extend the lesson independently or whole class and finally you will evaluate if your objective has been met. The lessons will overlap and support each other.

The unit we have developed is based on developmentally appropriate practices that will require more informal assessment of concepts taught rather than traditional paper and pencil activities. The biggest portion of this unit will occur in teacher directed activities, but also at centers and in small group. We hope that the children will develop a keen sense of the differences and similarities between the animal groups they will be learning about. They will be able to discuss how the animals feel, how they move, what their needs are and why people think they are important. This unit ties in with lots of practical real life experiences. For your ESL students you may need to take more time to develop prior knowledge. Pictures, videos, and the internet can all help with visuals for these experiences.

## **Assessment**

Assessment in kindergarten should be ongoing, embedded in everyday classroom experience, and should be connected to unit objectives. The teacher should consider what each objective is asking focusing on, and

anticipate specific behaviors or ideas to look/listen for when interacting with children.

*Many activities for this unit will take more than one day. They will overlap and support each other.*

**Weather Science Notebooks:** During the first week begin using weather science notebooks to record the day's weather. Find a consistent time in the day in which children can record their daily weather thinking for the duration of the unit. (For example, children could take them outside during recess or work as they come in the morning.) Model for children how to include the date, day of the week, or use a date and clock stamp and how to observe, draw and/or write about the day's weather. *Modeling this activity will support ESL children.* If you already use science notebooks, you could integrate this into that work.

Another option would be to create a single class weather science notebook, in which special helpers draw and/or write about the weather for the class each day.

Introduce the students to the new objects in the centers so that students will know what they are.

*Materials:* One notebook for each student should be made of pages with the template at the end of the unit or the information you want them to record on a daily basis. The notebook should have 15 pages with the children using front and back. You can use the template in the back of the unit to prepare the journal. For week one and two use blank pages that have only the date. For week three use the pages that give students the opportunity to record the wind. For week four use the page that records the wind and clouds. For week 5 use the page that records wind, clouds, temperature. For weeks 6, 7 and 8 use the pages that record all four, wind, clouds, temperature, and precipitation. The bottom half of the paper should be left blank for open ended observations. These can include writing or pictures about what was taught about weather that day. (See example in appendix.)

Make sure that you model for children how to use a Science Notebook to record observations made about the weather and how to respond to lessons taught in class.

## **Weather Center Suggestions**

*Introduction to materials/activities that support the Weather Unit (additional center information can be found at: The Basics of Center @*

*[www.teachervision.fen.com/teaching-methods-and-management/curriculum-planning/4455.html](http://www.teachervision.fen.com/teaching-methods-and-management/curriculum-planning/4455.html)*

**Dramatic Play:** Stock this center with items used for various types of weather. You may even label boxes or shelves for putting items away by category. For instance, all rainy day items would go on the shelf labeled “rainy.” You may want to include pictures of people using weather props to prompt play. *Time spent in pretend play allows ESL children to “play” around with language in a non-threatening environment.*

**Science Center:** For this unit your science center might include a water table (or tub) with watering cans (or other items for making “rain”), a fan with various light items (windsock, etc), instant snow (or real snow!), weather pictures and nonfiction books. For the first week, children will need time to explore and become familiar with the new materials. *Using real objects and pictures activates prior knowledge for all children, especially ESL children.*

**Art/Computer Center:** Include pictures of famous paintings related to weather. The BBC has a webpage in which you can view art by weather type. You or your students can also listen to audio excerpts about weather and art. Children can view the weather art as inspiration for their own art projects. (<http://www.bbc.co.uk/paintingtheweather/>) Provide water colors and/or other art materials for children to make their own weather art. If you maintain a class website, you may want to post kid’s weather art just like the BBC has posted that of famous artists!

**Game Center:** Have available a mixed set of pictures related and unrelated to weather. Set up either a chart, felt board or sorting hoops to help children visually sort pictures. *You might match ESL children with non-ESL students at this center, so that they can support one another.*

**Reading Center:** Include lots of weather related books for children to browse. See the resource list under lesson 6 and go to [www.carolhurst.com/subjects/curriculum.html](http://www.carolhurst.com/subjects/curriculum.html)

**Water Center:** This is an area where children can learn and explore the properties of water.

## **Week 1 Activity Set**

### **Lesson 1 - (Whole Class) – Introduction to A Weather Unit**

#### *Materials:*

- Rain coat, rain boots, rain gauge, umbrella, thermometer, winter clothes, gloves, boots, scarves, shorts, bathing suit, sun glasses, sandals, sweater, jeans, socks, wind sock, other items used at different times of year
- A box or plastic container

#### **Inquiry question(s):**

- What do we do with the different items in this box?
- Why do we need the different items?
- What would happen if we used/wore \_\_\_\_\_ in the \_\_\_\_\_?  
(ex. What would happen if we wore shorts in the winter?)

**Engage:** To introduce the unit, have students sit in a large circle with a box in the middle, invite children to help unpack the box. Have children physically take items out of the box and discuss how each might be used. At this time, do not offer lots of explanations. Instead, listen to the children and let them lead the discussion, revealing what they already know about weather.

**Explore:** Use the information to develop a KWL chart. K(What we know), W (What we want to know) and L (What we learned).

What can we say we know about weather from our discussion?

What would we like to know?

K What do we Know about weather?	W What would we Want to know about weather?	L What have we Learned about weather?
Sometimes it rains.	Why does it rain?	It rains when clouds get full (saturated) and the rain falls out of the clouds.



(You will use the L part of your chart to do an assessment at the end of the unit. **What did we learn about weather?**

This would be a great time to make written or audio recorded anecdotal notes as a pre-assessment.)

**Explain:** Have the children help you display all the items in the dramatic play center in the room. Having materials in a designated location will allow children to obtain materials on their own as needed for various activities. You can label items with word cards making this materials center a three dimensional vocabulary wall. *This activity supports ESL children by giving opportunity to interact with real objects.*

## **Lesson 2** - (Whole Class) – Observe and record daily weather

### *Materials:*

- Large blank calendar with space for recording. (Pictures for the calendar may be hand drawn, clip art, cut from a magazine, or stamped.)

**Engage:** The purpose of this lesson is to introduce the calendar chart that will be used to record weather observations that will be taken on a daily basis.

Use inquiry questioning to help students understand the purpose of the activity.

### **Explore:**

#### **Inquiry questions:**

- Can anyone remember what the weather was like 3 weeks ago?
- What could we do to help us to remember our daily weather observations?
- What information about weather do we think is important to observe and record?
- How often should we record the weather and why?

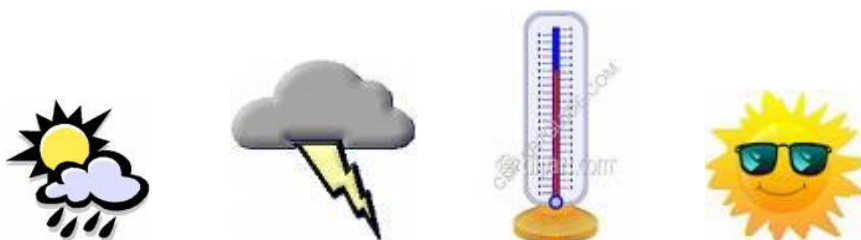
**Explain:** After you have discussed the purpose of recording the weather, present the blank calendar to the class, discuss the different parts and how you will record your observations.

Things that should be included on your calendar should be:

- Temperature
- Wind (light breeze, strong breeze, no breeze)
- Sky (sunny, partly cloudy, cloudy)
- Precipitation ( none, rain, snow, ice)

**Elaborate:** *Teacher Note:* This collected data will be used later in lessons on graphing and describing data. Students will use the processes of statistical investigation as a group activity to pose questions, organize/represent data .using concrete objects, pictures or pictorial graphs.; and evaluate how the data help answer the posed question.

## Sample representations:



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					






This will be the first time you observe and record the weather for this unit. Take the whole class outside to check the weather. Discuss how it looks, how it feels, look at the thermometer, look at the leaves, grass, flag moving, discuss using a wind sock. Go back into the classroom and record these observations on the calendar for today's date. From this point forward, collect the weather each day and at different times of day if the weather changes. Observations for the weather should include sunny, rainy, snowy, cloudy, partly cloudy, and foggy. Record the results on your whole class weather calendar.

### Lesson 3 - (Whole Class) – Describing Weather Using the 5 Senses

**Engage:** One way to collect data is by using your five senses. The senses are how we take in information. We use the 5 senses (see, hear, touch, smell, taste) to find out about objects and events, their characteristics, properties, differences, similarities, and changes. This type of data is qualitative data. Using descriptive words also develops communication.

**Explore:** As a class, list descriptive words about weather for each of the senses. Put your information on a class chart like the sample below. Encourage use of descriptive words that give specific information – avoid such words as good, bad, pretty, etc.

**Sample:**

<b>Sight</b> 	<b>Hearing</b> 	<b>Taste</b> 	<b>Touch</b> 	<b>Smell</b> 
windy	Sounds	Flavors	Textures	Scents
rainy	thunder	Sweet	hot	Sweet
snowy	rain on window/roof	Sour	cold	Sour
Bright	hail	fruity	Wet	burned
Sunny	windy	salty	Dry	
Cloudy			humid	
foggy				

Listen to weather sounds at:

<http://www.partnersinrhyme.com/soundfx/Weather.shtml> and  
[http://www.wildwildweather.com/wx\\_sounds.htm](http://www.wildwildweather.com/wx_sounds.htm)

## **Lesson 4** - (Whole Class) – Exploring Collected Weather Data: An integrated math and science lesson.

### *Materials:*

- Sample of a graph (An electricity bill is a good example.)
- Chart paper to make the bar graph

**Engage:** Weather often effects what people do. How has weather affected things you wanted to do? For example, What if you wanted to go outside to play and it was raining or storming? What would you wear if you wanted to go outside to play on a hot, sunny day? What would you wear if you wanted to go out to play in the snow? What would you do different at these two times? Why?

**Explore:** Introduce the concept of graphs by showing the graph that comes on an electricity bill. It shows how much electricity was used at certain times of the year. The different amounts of used electricity are affected by the weather. If it is hot in the summer, you use the air conditioner more which uses more electricity. If it is cool in the summer you wouldn't need the air conditioner as much, so you would use less electricity. The graph that shows the amounts of used electricity shows the effects of weather on the outcome of the electricity bill. Bring the students to an understanding that weather effects the way the graph changes.

**Explain:** Graphs help us to organize collected data so that we can look for patterns or changes. We can discuss/describe how weather has changed over time.

| Talk about other things you may have graphed this year (eye color, names, boy vs. girls, favorite fruit). How are these graphs the same? How are these graphs different? Have the children respond with drawings in their science notebooks.

**Elaborate:** Make a class graph of the week's weather as a sample to follow later.

## **Lesson 5** - (Whole Class) – What would you wear?

### *Materials:*

- Clothing that is a few sizes bigger that would be worn in different weather. This can include short sleeve and long sleeve shirts, long pants, shorts, hats, winter coat, light coat, umbrella, raincoat, rain boots, scarves, mittens, toboggan, sweater

**Engage:** Ask how weather plays a role in our decision when getting dressed and preparing to go outside.

**Explore:** Display the choices and let a few children come up and model. Let a different child dress each day for the rest of the unit based on the weather conditions.

**Explain:** After the children have modeled the clothes, you can have them sort the clothing as a class by seasons.

**Evaluate:** Finally have them draw their favorite season in their notebooks. You can repeat this activity with one child per day.

## **Lesson 6 - (Whole Class) – Sorting Weather Books: What types of weather books go together? Why or Why not?**

Classification (sorting or grouping) is a basic inquiry skill that students need to practice to learn to organize information. Grouping or ordering objects or events according to similarities or differences in properties. Lists, tables, or charts should be generated.

There are two types of classification keys:

- Serial Key – data is put into numerical order (either increasing or decreasing).
- Binary (or Dichotomous) Key – data is divided into two distinct groups. In a binary key, data is separated by one characteristic and not that characteristic (red and not red; triangle and not a triangle).

### *Materials:*

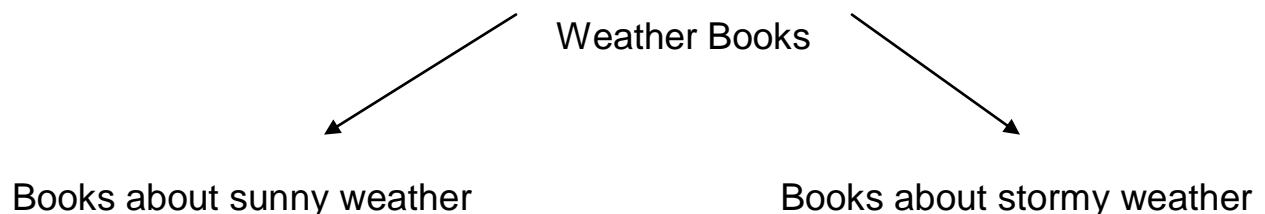
- Books about Weather – sample list below and more at [www.carolhurst.com/subjects/curriculum.html](http://www.carolhurst.com/subjects/curriculum.html)

### **Books**

- *What Will the Weather Be* by Lynda DeWitt
- *Weather Report* by Jane Yolen
- *Weather Forecasting* by Gail Gibbons
- *Weather Words and What They Mean* by Gail Gibbons
- *Albert* by Donna Jo Napoli
- *Hide and Seek Fog* by Alvin Tresselt
- *Bringing the Rain to Kapiti Plain* by Verna Aardema
- *Rain* by Manya Stojic
- *The Rain Came Down* by David Shannon
- *The Wind Blew* by Pat Hutchins
- *Gilberto and the Wind* by Mary Hall Ets
- *Wind* by Susan Canizares
- *It Looked Like Spilt Milk* by Charles Shaw
- *Little Cloud* by Eric Carle
- *Cloudy with a Chance of Meatballs* by Judi Barrett
- *Sun* by Susan Canizares
- *Rain Song* by Leslie Evans
- *Come On, Rain* by Karen Hess

- *The Rain* by Michael Laser
- *Come a Tide* by George Ella Lyon
- *Big Rain Coming* by Katrina Germein
- *A Drop of Water* by Walter Wick
- *Storms* by Susan Canizares
- *Thunder Cake* by Patricia Polacco
- *The Cloud Book* by Tomie dePaola
- *The Jacket I Wear in the Snow* by Shirly Neitzel
- *The Snowy Day* by Ezra Jack Keats
- *Snow* by Uri Shulevitz
- *Owl Moon* by Jane Yolen
- *It's snowing! It's snowing!* by Jack Prelutsky

Collect children's books from the library or another source that relate to the different types of weather (see resource list). Make sure that each child gets one book. Sit the class in a circle and explain that you want to organize the books but your not sure how. Ask the children to help you come up with some ways to do that. Once you have determined the rules for sorting, you will begin to sort the books. Each child will have to give a justification for placing the book in a particular category. This will help you see what level of understanding they have about the types of weather. An example: *The Snowy Day* by Jack Ezra Keats. If you have a category for snow, then the child might say, "This book is about a little boy playing in the snow; it belongs in the snow category." If your categories are broader like winter weather, then you might need further explanation. The child might say, "This book belongs in the winter weather group, because it is about snow and snow comes in winter." After all the books are organized, display them in the class and read as many as you can. Allow the children to look at the books to further their curiosity about types of weather. Be flexible with your groupings and change them as necessary.





## Lesson 7 - (Whole Class) – Assessment

The assessments for this week may continue next week. They should be observational and quick during the lessons or activities you have been teaching.

1. Whole group- Pose the following challenge: “On the way to work this morning I noticed preschoolers (or another group of children specific to your area) without their coats on. What should we tell them to help? Write the children’s dictated ideas in letter form and give it to a preschool class.
2. While children are in the Dramatic Play Center, interact with them. Watch as they make choices and talk about weather. Use questioning to see if they are understanding concepts taught. For example, “It looks like it’s raining here! What will we need?” or “The snow has just started! You have to go get milk for the baby from the store. What will you wear?”
3. **Dramatic Play Center:** If your dramatic play center is a weather center, then you might want to let the children play weather reporter and use the reports to talk to the (pretend) camera about the weather. You can also make maps of the state of North Carolina, The United States, and The World. These can be child centered and as detailed as you want. By place in Velcro on the maps and the pictures from the earlier activity, the children can place pictures and talk to the camera about weather around the world. This makes for wonderful informal assessment. Your dramatic play center might also include dress up clothes for the reporters, a pretend microphone, and a pretend helicopter (made from a cardboard box); pretend walkie talkies, and a globe. By simply watching a little bit of the weather channel or a pre recorded newscast of the weather with your children, you can brainstorm what your class will need and then have children sign up for committees to work on those things. Of course you will want to give your TV station a name, so you can vote on that as well. Preparing the dramatic play center for doing the weather takes anywhere from 2-4 days. Use rest time and center time to work on the many aspects of this center.

4. **Game Center:** Change this center to have a sorting space for pictures showing various weather types, including rainy, snowy, dry, windy, breezy, calm, cloudy and clear.

## Lesson 8 - (Whole Class) – Studying the Wind

### *Materials:*

- Windsack located outside on school grounds
- science notebook
- construction paper
- crepe paper streamers
- string/yarn

**Engage:** For this lesson encourage children to become more specific in their weather representations when working in their notebooks. Talk about small differences in weather.

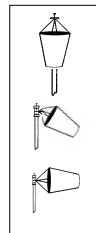
**Explore:** Observe how a windsack will blow in different directions and with differing strength on various days.

**Explain:** Introduce the words breeze, no breeze and strong breeze.

**Elaborate:** Return to the classroom and make small individual windsacks with the children out of construction paper and crepe paper. These can be used on a daily basis to check wind speed.

Date\_\_\_\_\_

Wind



Today's Lesson


## **Lesson 9 - (Whole Class) – How can/do we use wind?**

### *Materials:*

- Large chart paper

**Engage:** For this lesson you will brainstorm ways the students can see the wind. Questions for brainstorming-

- Today we are going to talk about the wind. How can we observe wind? (Record their answers on the paper)
- If the wind is moving an object like a flag or a tree, how can you tell if the wind is strong or weak?
- How can you protect yourself from the wind?
- How can you have fun in the wind?

## Lesson 10 - (Whole Class) –

### *Materials:*

- Make or buy bubbles (8 cups of water, ½ cup of liquid dish washing detergent, 3 teaspoon light corn syrup or glycerin)
- Make or buy wands (pipe cleaners, hangers)

In this lesson the children will be going out to blow bubbles in the wind. Before going outside make sure you have a wand for each child. You can make wands from pipe cleaners.

**Engage:** Ask the students what they think moving air is called. Have the students predict if the wind is blowing. Tell them they will be blowing bubbles outside. Ask if they think the wind will affect their bubbles.

**Explore:** Next take the students outside to explore with their bubbles. Have children blow bubbles from different heights, such as one lying on the ground and one standing on a bench or chair. Ask if they see a difference.

**Explain:** When you return to the room discuss the results and have the children record the lesson in their notebooks.

## **Lesson 11 - (Whole Class) –**

### *Materials:*

- Brainstorming chart from earlier lessons.
- Crayons/Paper

**Evaluate:** This lesson can be used for assessment. Check for understanding and re-teach in small groups when necessary. Use the information from the brainstorming chart to reorganize the information the children gave you concerning wind movement. Have the children go to their seats and draw a small picture of something blowing in the wind. Use the illustrations to help make the poster.

*Make sure the poster is simple and clear for your ESL students to use as a reference.*

## **Center Suggestions for Studying Clouds/Sky**

**Science Center:** Use a fan to feel the wind. Make sure the location of the fan is away from the water table. Also discuss SAFETY when around a fan, Have available different kinds of jackets for children to try on in front of the fan. You might want to add a chart for children to vote on the best windbreaker.

**Art/Music Center:** Have available a combination of the following materials: different sizes of cardboard tubes, rice, beans, aluminum foil, tin cans, paint, glue, tape, construction paper, markers. Children can use materials to make their own thunderstorm instruments.

**Dramatic Play/Writing Center:** This week help children continue the weather station pretend play. Encourage children to add their own signs, maps, cue cards, etc using writing center materials. To provide models, continue to watch, read or listen to weather reports each day.

**Computer/Listening Center:** Children can listen to and discuss thunderstorm sound recordings

## **Lesson 12** - (Whole Class) –

### *Materials:*

- Science Notebooks

**Explore:** Pick a special place on the school grounds to make weather observations daily. On this day focus on the sky observations. Have students describe what they are observing.

**Explain:** In order to enhance their recording of sky observations in their notebooks, discuss with the children the different drawings to illustrate sunny, partly cloudy, and cloudy.



## Lesson 13 - (Whole Class) –

### *Materials:*

- A large chart labeled with different weather types.

**Engage:** For this lesson you will want pictures to put up in the dramatic play center to show the different types of weather. First brainstorm with the children a list of all the possible types of weather.

**Explore:** This can be organized on chart paper in a graphic organizer. This way you are categorizing weather while coming up with your list. Next make another list on chart paper of where you can find those pictures. Children will probably suggest "In magazines, on the computer, we can draw them, or we can take our own pictures". All of these suggestions are good and should be considered. Finally have children sign up for the type of pictures they would like to contribute to the project and how they will provide the pictures. On your chart paper you will have categories with room for the children to sign up underneath.

## **Lesson 14 - (Whole Class) –**

### *Materials:*

- Chart from above activity
- Magazines
- Internet photos
- Hand drawn pictures

**Explain:** Using your chart from the previous lesson, call one group at a time, while other children are resting or engaged in independent centers. This group will find 5-10 pictures to contribute to the project. For instance, all the magazine people will work together. Then all the drawing people will work together. The computer group may have to wait until they can work on the computers or you might get your librarian or media specialist to help. In this way you get a variety of pictures and you are already doing informal assessment on the children's understanding of different kinds of weather.

## **Lesson 16** - (Whole Class) –

### *Materials:*

- White paint
- Blue Construction Paper
- Chalk
- A book or story about clouds or pictures of clouds

**Engage:** If possible go outside and look at the clouds and their shapes.

**Explore:** After reading to the children about clouds, have the children use a piece of chalk to draw a large picture of a cloud in a certain shape. Then give the children white paint to fill in their shape. When the children are done have them share their pictures.

## **Center Suggestions for Studying Temperature**

**Math Center:** Place small plastic bowls with numerals (0-30) written in the bottom. Cut out rain drops and have students count raindrops to equal the amount shown in the each bowl. Place students in pairs, having one complete the task and another to check the student's work. For extension students practice skip counting by 10's and 5's. Place large cut-outs of clouds, rain drops, umbrella's etc. with the numbers showing these different counting methods.

**Art Center:** Children can use marshmallows and white paint to paint a winter scene. Provide various materials, so that children can compare the effects of the different materials in the wind.

**Dramatic Play:** Allow time for children to explore standard and nonstandard tools developed during the investigations within their dramatic play. Include the measurement tools, real or constructed, (thermometer, windsock, rain gauge) in the center.

## Lesson 17 - (Whole Class) –

### *Materials:*

- Chart paper

**Engage:** Lead students in a discussion of what might influence the temperature. Show them a clipping of the weather from the newspaper.

**Explore:** Talk about why people check the weather everyday. Show how the temperature can vary across the state.

**Explain:** Discuss why the temperature might change from day to night or from the mountains to the ocean. Show the children how the colors across the top of the weather chart in the newspaper correlate with the temperature themselves. Ask them why they think the coldest temperatures are blue and the highest temperatures are red. Have them draw responses in their science notebook.

## **Lesson 18** - (Whole Class) –

### *Materials:*

- Container with hot water
- Container with cold water

**Explore:** Have available two different temperatures of water and have students determine the temperature based on touch. Students can use describing words, including warm or cold to describe the temperature.

**Explain:** Introduce and demonstrate the use of a thermometer in each water sample.

**Elaborate:** Have two copies of a blank thermometer, without markings, for each child to glue into science notebooks. Let them record their findings. Once they have finished gather together to share answers and discuss why it is important to measure temperature. Show the students a real thermometer.

## Lesson 19 –

### *Individual Assessment*

#### *Materials:*

- Pictures of thermometers
- Pictures of people dressed for a variety of weather.

**Evaluate:** Provide children with a variety of filled in thermometers. Ask them to match the thermometer with a picture of someone dress appropriately for the temperature. Use this time to record misconceptions and use the information to re-teach the next day.

### *Small groups Assessment*

#### *Materials:*

- Thermometer placed outside

**Evaluate:** Take a small group of students outside. (4-6)  
Provide a place where you can observe the outdoor temperature. Ask students what they would need to get an actual measurement of the temperature outside. Allow the students to use their knowledge about temperature to gather information of understanding. Then show them the outdoor thermometer and introduce the idea of it being a standard measure of study. Have the children work in their science notebooks.

### **Center Suggestions for Studying Precipitation**

**Weather Science notebook:** During the 6th week, have children reflect on the dramatic play experiences. Show them how to record precipitation in their notebook.

**Science Center:** Given materials (cylinders, bowls, cans, paper, makers, cardboard etc.) have students construct or draw a device to measure rain and temperature. Given materials (paper, card board, sticks, streamers, material, etc.) have students construct a tool to gauge the wind.



## Lesson 22 - (Whole Class) –

### *Materials:*

- Recording of a thunderstorm
- *Thunder Cake* by Patricia Polacco

**Engage:** Listen to an audio recording of a thunderstorm. (Check out The Free sound Project)

**Explore:** As they listen, have children illustrate their own experiences with thunderstorms. In the group have children bring their drawings to a circle discussion. Have children share their pictures and discuss how thunderstorms make them feel, what they do during a storm.

**Explain:** You can discuss the causes of a thunderstorm by making an analogy between the hot air fighting with the cold air as two fronts meet.

**Elaborate:** Remind children of their thunderstorm discussion. Read aloud *Thunder Cake* by Patricia Polacco. Have children dictate ideas for a class chart titled: What to do if you are scared of weather. (You can turn this chart into a class book, by typing children's words onto individual pages, having children illustrate and binding). *To support ESL children, use drama to act out emotions.*

\*If you can, on another day, make a thunder cake with your class according to the book's recipe!

## **Lesson 23** - (Whole Class) –

### *Materials:*

- Gloves and mittens
- Water table or tub
- Instant Snow or (Real snow if available)

**Engage:** Fill a tub or water table with instant snow or real snow if you can. Allow children time to investigate ice or instant snow with various mittens and gloves. Children can investigate how well the different materials keep out the cold and wet.

**Explore:** In a group discuss their experiences and why or why not the gloves they were wearing protected their hands.

**Explain:** Finally discuss why the snow melted. Have the children take out their Science Notebooks and record their findings.

## Lesson 24 - (Whole Class) –

### Materials:

- Large clear bowl
- Clear tall flower vase
- Straw
- Pencil
- Popsicle stick
- Watering can
- Black marker
- Water
- Commercial rain gauge

**Engage:** The objective of this lesson is to compare standard and non-standard tools. Ask students how rain water helps us? Formulate a list of student responses. Explain to students that it is necessary to determine the amount of rain we get from each rain event.

**Explore:** To simulate a rainfall amount, use a watering can to make sprinkles of rain into the large clear bowl. Ask students what we can do to see how much rain has fallen into the bowl? Tell students that rain is measured in inches. Using the straw, pencil and popsicle stick, have students come and mark with a marker each tool showing the water level in the bowl. Compare the marks on each item. Next, pour this same amount of water into the flower vase. Again have students to measure the amount of water in the vase with each tool. Compare the marks on each tool again. Discuss with the students why the marks changed but the amount of water was the same.

**Explain:** Ask what we have learned by using different containers to measure the rain amount. It should be pointed out that it is important that we use the same tools to determine rain amount. Show students a commercial rain gauge.

**Elaborate:** As a class, place the rain gauge outside for future observations, in their Science Notebooks, have students draw and write about what they have learned today. Make sure students observe the rain collected following the next rain fall. You can make a classroom chart to record the

information gathered. To support ESL children, teacher should model non-standard measurement technique.

## **Lesson 25 - (Whole Class) –**

### *Materials:*

- Paper
- Crayons

**Engage:** Culmination Activity- During this week you will want to start thinking about a culminating activity to share what your students have learned. Let the children help you plan what you might want to do for this activity. Invite parents, other classes, special area teachers, and office staff to come and see what the children have made. You can perform several poems and songs that you have learned. Have the children share their notebooks as well as all the art activities and dramatic play area. Having the children share their work will help them to feel proud of what they have learned and provide purpose for the activities. Use this lesson to make the invitations for your grand finale.

## **Lesson 26** - (Whole Class) –

### *Materials:*

- KWL chart (Made in week one)
- Poster board or chart paper

**Evaluate:** For this lesson fill in the part of KWL chart that you made at the beginning of the unit. At this point you will be assessing what the children learned. Fill in the chart by going back to the W or What we wanted to learn. Ask the students, if they learned those things. Then ask what else they have learned so far?

## **Lesson 27 - (Whole Class) – Assessments**

### *Individual Assessment*

#### *Materials:*

- Posters with the words Weather and Other

**Evaluate:** Make two charts, one that says **Weather** and one that says **Other**. Using the weather pictures you have gathered mixed with non weather related pictures. Individually have children sort the pictures and place them on the chart

### *Small group Assessment*

#### *Materials:*

- Books about weather
- Books on other subjects

**Evaluate:** While children view books in your reading area, ask them which book is about weather. Follow up by asking children, “How do you know this is a book about weather?” Record any misunderstandings. Use this time to write observations, not to teach. If there are several children who are unable to display understanding, set up a time to re-teach those children in a small group.

### **Center Suggestions for Culminating Activities**

**Science Notebook:** Use this week to allow the children to catch up on any pictures or recordings they might miss or that they would like to spend more time on.

**Art Center:** Make giant clouds, snowflakes, and suns to decorate the classroom.



## Lesson 29 - (Whole Class) –

Note this lesson will occur over the final week.

### *Materials:*

- Weather reports from the newspaper or TV
- Weather reports from the countries that are representative of your ESL students.
- Your class weather calendar
- Several Sheets of chart paper.
- Markers
- Small pictures or stamps to make the bar graph

**Engage:** Bring in the weather report from the local newspaper. Show the children some of the basic facts that the report shows. If possible watch a weather report on TV or record a report from home and bring it to school. Begin to introduce the idea that there are many different types of weather happening in different places in our country and our world.

**Explore:** Ask children to bring reports from home. Use a few minutes each morning to go over the reports. Talk about forecast and prediction. Talk about the pictures used to represent the weather. Discuss with the children "Why do people watch/listen to/read weather reports?" This should lead to a discussion on the "effects of weather on human activities." After you have shown the reports to the class, you can put them in the Science center. The children can make observations and study the charts. *You might watch or listen to a weather report in one or more of your ESL's student's home language.*

**Explain:** Data Collection- Use your calendar chart that you have been recording on every day. As a whole class compile your results.

**Elaborate:** Make a pictorial bar graph to show how many of each type of weather you recorded over the course of the unit. Add up each column. Ask questions about your data.

- Did we have more windy days or no wind days?
- Did we have more hot days or cold?
- Did it rain? Snow?

- Did we have a thunderstorm?
- What kinds of weather did we not experience during this unit?
- What kinds of weather might we experience during the rest of the year?

**Evaluate:** Practice your culminating event. Have children practice the poems and songs you will share. Have several children model how they will present their notebooks to someone else. Have several children model how they will show the dramatic play center to someone. Have several children model how to share the art projects and tools they have made. Explain that tomorrow they will be the experts and it will be their job to show off what they know. Tell them to be prepared to be asked questions and to stay with their special guest until the program is complete.

Culmination- This is the end of your unit. Sit back and enjoy watching your expert weather reporters show off what they have learned over the course of the unit. After the program praise your students for a job well done.

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## Unit Resources:

### Websites

[www.wxdude.com](http://www.wxdude.com)  
[www.weatherclassroom.com](http://www.weatherclassroom.com)  
[www.weatherwizkids.com](http://www.weatherwizkids.com)  
[eo.ucar.edu/webweather](http://eo.ucar.edu/webweather)  
[www.srh.noaa.gov](http://www.srh.noaa.gov)

### Books

- *What Will the Weather Be* by Lynda DeWitt
- *Weather Report* by Jane Yolen
- *Weather Forecasting* by Gail Gibbons
- *Weather Words and What They Mean* by Gail Gibbons
- *Albert* by Donna Jo Napoli
- *Hide and Seek Fog* by Alvin Tresselt
- *Bringing the Rain to Kapiti Plain* by Verna Aardema
- *Rain* by Manya Stojic
- *The Rain Came Down* by David Shannon
- *The Wind Blew* by Pat Hutchins
- *Gilberto and the Wind* by Mary Hall Ets
- *Wind* by Susan Canizares
- *It Looked Like Spilt Milk* by Charles Shaw
- *Little Cloud* by Eric Carle
- *Cloudy with a Chance of Meatballs* by Judi Barrett
- *Sun* by Susan Canizares
- *Rain Song* by Leslie Evans
- *Come On, Rain* by Karen Hess
- *The Rain* by Michael Laser
- *Come a Tide* by George Ella Lyon
- *Big Rain Coming* by Katrina Germein
- *A Drop of Water* by Walter Wick
- *Storms* by Susan Canizares
- *Thunder Cake* by Patricia Polacco
- *The Cloud Book* by Tomie dePaola
- *The Jacket I Wear in the Snow* by Shirly Neitzel
- *The Snowy Day* by Ezra Jack Keats
- *Snow* by Uri Shulevitz

- *Owl Moon* by Jane Yolen
- *It's snowing! It's snowing!* by Jack Prelutsky

## **Poetry and Songs**

### **The Weather Song**

(to the tune of "Bingo")

<http://www.mrsjonesroom.com/songs/weather.html>

### **When I Look Into the Sky**

(to the tune of "Twinkle, Twinkle, Little Star")

<http://www.dcrafts.com/weathersongs.htm>

### **You Are My Sunshine**

<http://www.dcrafts.com/weathersongs.htm>

### **The Mitten Song**

By: Marie Louise Allen

(to the tune of "Twinkle, Twinkle, Little Star")

<http://www.dcrafts.com/weathersongs.htm>

### **Noisy Wind**

(to the tune of "The Farmer In The Dell")

<http://www.dcrafts.com/weathersongs.htm>

### **Weather Song**

(to the tune of "Frere Jacques")

<http://www.dcrafts.com/weathersongs.htm>

### **Mr. Sun**

[www.dltk-teach.com/rhymes/mr-sun/song.htm](http://www.dltk-teach.com/rhymes/mr-sun/song.htm)

### **The Wind**

(to the tune of "The Muffin Man")

<http://www.dcrafts.com/weathersongs.htm>

**Ten Little Snowflakes**

(to the tune of “Ten Little Indians”)

<http://www.dcrafts.com/weathersongs.htm>

**Snowflakes**

(to the tune of “Mary Had A Little Lamb”)

<http://www.dcrafts.com/weathersongs.htm>

**If All the Raindrops**

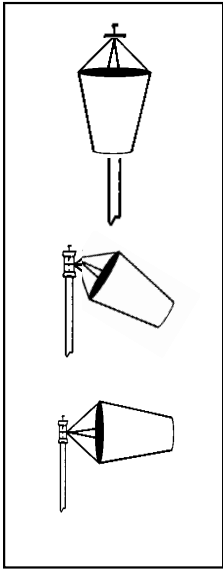
<http://kids.niehs.nih.gov/lyrics/raindrops.htm>

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Date \_\_\_\_\_

Wind



Today's Lesson

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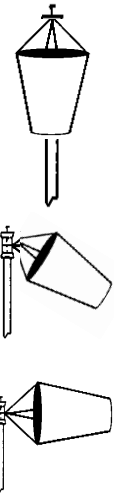
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Date\_\_\_\_\_

Wind



Clouds



Today's Lesson

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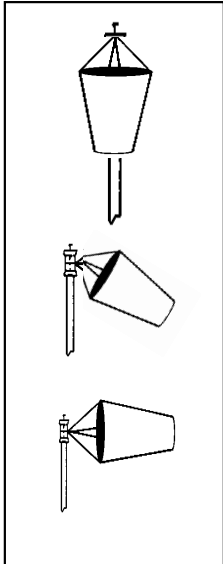
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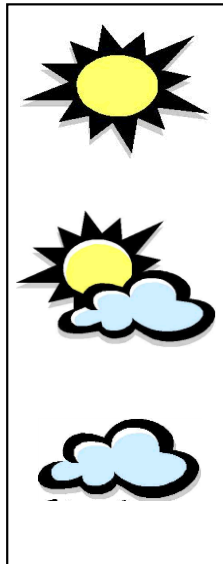


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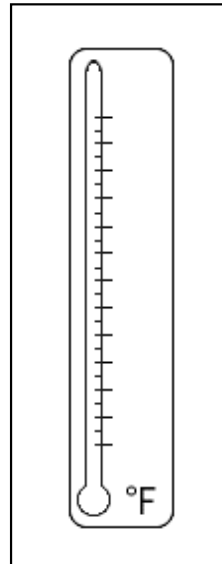
Wind



Clouds



Temperature



Today's Lesson

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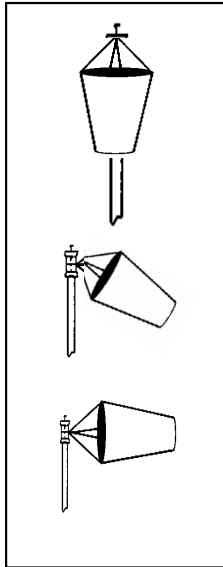
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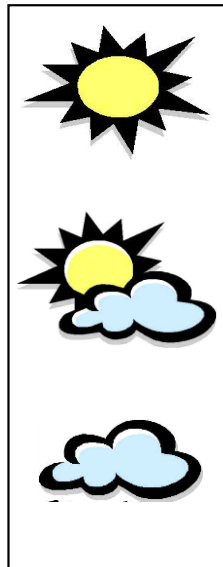
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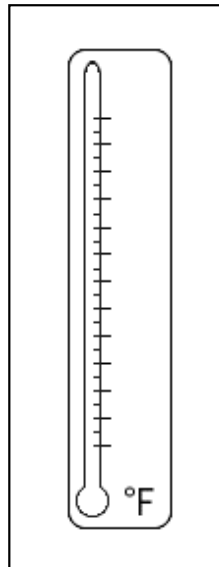
Wind



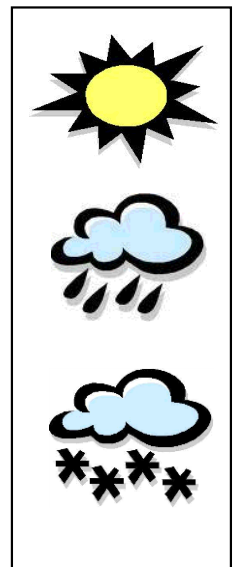
Clouds



Temperature



Precipitation



Today's Lesson

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