***What Makes Weather?***

***October 21, 2013***

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***Grade Level: 2 Subject: Science***

***Goal /Objective: Students will be able to identify the four elements that cause weather.***

 ***Students will be able to tell if a temperature is hot or cold with 80% accuracy.***

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**Materials:**

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| 1. Yellow ball2. gray clouds made with gray paper3.spraybottle with water4.fan | 5.lighted candle?6.vocabulary flashcard7.8. | 9.10.11.12. |

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**Intro:** *Today in Science we are going to talk about weather! Do you know what makes different weather?* (student suggestions)

*We are going to make some different weather in our classroom.*

Have students help make different weather while the class guesses what weather it is:

* Hold up yellow ball and paper cloud (sunny with some clouds)
* Hold up yellow ball and paper cloud with fan blowing on students (sunny with clouds and wind)
* Hold up clouds and mist students with spray bottle (cloudy and rainy)

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**Lesson:**

*What makes weather? Can you think of the things we used to make weather?* (sun, land, water, wind)

*Let me tell you how it works.*

*Start with sun. It makes??* (heat)

*So, the sun warms up land and water.*

*What happens as these warm up? What else warms up?* (warm air)

*Warm air then moves. Do you know which direction it moves?*

 Demonstrate with candle.

* Have students put their hand at different places around the candle.
* Where do they feel the warm air? On top, beside it, beneath it?

*So, the sun is heating the land and water. The warm air is moving up—what is moving air called??*

*Which way is the wind blowing? Up? Have you ever felt wind like that? How does wind move?*

*How many of you have been at the beach? What gets warmer more quickly, water or land?* (the sand is warmer than the water)

*So, the water is cool, the sand is hot. Think of the air rising from the land and water. Which is rising faster/more?* (from the sand)

Illustrate on board, drawing sand and water, then drawing arrows to show how the air is moving up from the land and also coming in from the water.

*The wind begins to blow in from the cooler water to fill up the space that the warm air left when it went up. That makes wind.*

*One more thing makes a difference in weather. On a summer day, what might you say the weather is like?* (hot!)

*Temperature makes a difference in weather! How close the sun is to the earth helps make the different temperature.*

 Show flashcard (Temperature—the measure of how hot or cold something is).

*What kind of weather can you have in winter that you would not have in summer?* (snow, cold) *It must be colder (lower) than 32 for water to freeze to make snow. So, if the temperature is below 32, it is cold.*

*How about in summer? What is the temperature then? In our classroom it is 70. That is a comfortable temperature without a coat on. Does it get warmer than that in the summer? Yes, sometimes it may get up to 100 or even 120.*

*So, can you tell if these temperatures are hot or cold?*

 Say a temperature. (23, 100, 95, 10, 80, 92, 0, 30)

If the temperature is hot, tell the class to shiver. If it is cold, tell them to fan themselves.

*What do you think the temperature is today? What was it this morning? Why different?* (sun warmed it up today)

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**Closing:**

*Tell me again—what are the four things that make different weather?*

 Sun, wind, water, land

What else affects weather? (temperature)

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**Homework / Assignment:**

Worksheet drawing four things that make weather.

Match the weather to the type of clothing you would wear.

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Lesson taken from Purposeful Design Science, Level 2 (a division of ACSI)

Worksheets are blackline masters from here (though the first one could easily be teacher-created).