

## Wacky Weather

Sitting on the dock at her beach house, Angelica noticed how beautiful the waves were as they rushed into shore. She could not believe how cool it was on the beach. The day had been very hot and humid. This was typical weather in Florida during the summer, but today it was almost unbearable to be outside. Angelica and her family had played in the water and the hot sun all day. They were sunburned and tired, but they were going out for dinner since her mother did not want to cook.

### SCIENCE FACT #1

What is the difference in Weather and Climate?

**Weather:** Weather is the day to day state of the atmosphere. A typical weather forecast will include the amount of moisture in the air, wind speed, temperature, and approaching storms.

**Climate:** Climate is an average of the weather in a specific place over a long period of time. For example the climate of Antarctica would be different than the climate of Florida. Florida does have cold days, but the average temperature or the climate of Florida is warmer than Antarctica.

Angelica and her family walked along the shore line as they went to the restaurant near their house. "How amazing the ocean is tonight," her father said as they went in to eat. This restaurant had always been their favorite because of the cool air that blew through the windows of the porch as they ate. This was refreshing after a long hot day. The sky that night was the most beautiful red and orange glow. Just past the edge of the visible ocean, you could see the sun setting on the horizon.

Angelica's mind began to wonder why the glow was so much different tonight than usual. Angelica always had thoughts like this and rarely told anyone about them. She feared they would make fun of her like they did the last time she asked a crazy question. Angelica thought back to science class and recalled a poem that her teacher told her once. The poem was something about sailors and red sky, but Angelica could not remember the entire poem.

### SCIENCE FACT #2

What causes wind? Wind is caused by an uneven heating of the Earth's surface. Near the ocean, this is caused by the different amount of time that it takes the ocean and the land to heat. The land heats up faster than the water; however, the land also cools off faster than the water. This is why at night the land feels cooler than the water and during the day, the land feels hotter than the water.

As her family was finishing eating, Angelica's father commented on how the wind had picked up and they might need to be heading in so that they did not get caught in the storm. Angelica continued to wonder about the poem as they walked back to their house. The night air seemed to flow steadily towards the ocean that night as it always did and Angelica thought about how much she loved the weather at the beach.

**SCIENCE FACT #3**

**Land Breeze:** At night land cools much faster than the water. The warm air above the water rises and the cool air above the land moves out to replace it. This is called a land breeze. A breeze is named by the direction that it comes from.

**Sea Breeze:** During the day the land heats up much faster than the water. The warm air above the land rises and the cooler air above the water moves in to replace it. This is called a sea breeze.

The next day Angelica woke up and noticed that the water was sparkling blue in the morning sun. Her family had a day planned that was packed full of adventures. They were going exploring in the ocean. Her family had been taking a SCUBA adventure every year since she could remember and today was the day. Angelica wondered how the weather would hold out. She wondered if it would be blazing hot like it had been the day before. As they stepped onto the sand, Angelica could barely contain herself and she rushed to the ocean water to cool her feet. She thought about the ocean water the evening before and wondered why the water would be warmer at night than in the morning. This does not make any sense, she thought. Once again, her thoughts were distracted and she left another unanswered question looming in space.

The days at the beach pass by so quickly, Angelica thought as they finished up their diving and turned to head home. The tide was getting lower and they needed to get the boat back to dock before the low tide prevented them from docking and lifting their boat for the evening.

**SCIENCE FACT #4**

**Tides:** The tides are the daily rise and fall of the earth's major water sources. The movement of the water is caused by the gravitational pull of the moon and the sun on the earth. The moon is a much bigger influence on the water due to its closeness to the earth.

As Angelica and her family turned in for bed, Angelica noticed that the sky was beautiful, but not orange and red like the night before. Her eye caught a glimpse of the weather channel as she turned the corner to head towards her bedroom. The weather man was calling for storms in the ocean the next morning. She hoped that the day would not be ruined by bad weather.

As Angelica laid her head down on her pillow, a little bit of the poem came back to her. The poem was something about a red sky and morning time and taking warning. Wondering what that meant, she drifted off to sleep.

**Old saying of unknown origin:** "Red sky at night, sailor's delight. Red sky in morning, sailor's warning". Often sailors and others who rely on weather to complete their job or to insure safety will use things in nature to prepare for storms before they approach. Today we use meteorologists to help us predict the

**Name** \_\_\_\_\_

**Date** \_\_\_\_\_

Early next morning, Angelica awoke at the sound of thunder looming off shore. The waves were crashing sharply into the dock and the winds were howling. She was a little nervous about the storm and its fast approach. I guess the sky this morning was right, Angelica thought. I guess red sky in the morning does help the sailors to know when to head into shore, and then red sky at night just warms their evenings and calms their fear of storms.

Name \_\_\_\_\_

Date \_\_\_\_\_

<p style="text-align: center;"><b>Lesson Plan: Wacky Weather</b> Designed for students in Grades 5 and 6</p>
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**Students will learn:**

- the difference between climate and temperature;
- what causes weather;
- what tides are;
- what causes winds.

Example: Student Task #1:

- Students read the story, “Wacky Weather”, and then research the role of a weather forecaster. They can then use newspapers and the internet to plan a skit about the weather for a particular day.

Example: Student Task #2:

- Students read the story, “Wacky Weather”, and then make a board game in a group to highlight the different vocabulary associated with weather.

Name \_\_\_\_\_

Date \_\_\_\_\_

## Wacky Weather

**Directions:** Use the story, “Wacky Weather”, to answer the following reading questions. Try to answer as many questions as you can without looking back for the answers. Remember to answer in complete sentences and watch your spelling.

1. In the story, Angelica’s feet started burning as she stepped onto the shore and she rushed to the ocean to cool them off. This allowed her to realize that the water was warmer than the land at night and cooler during the day. Why is this?

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2. What is the difference between a land breeze and a sea breeze?

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3. What would the climate be like at the North Pole?

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4. Describe the climate and the weather where you live. What is the difference between climate and weather?

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5. Draw a picture of a land breeze and a sea breeze. Make sure to label the direction that the wind is blowing in your picture. Also mark which air is cool and warm in each picture.

Land Breeze

Sea Breeze

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## Wacky Weather

### ANSWER KEY

1. In the story, Angelica's feet started burning as she stepped onto the shore and she rushed to the ocean to cool them off. This allowed her to realize that the water was warmer than the land at night and cooler during the day. Why is this?
  - **At night land cools much faster than the water.**
  - **During the day the land heats up much faster than the water.**
2. What is the difference between a land breeze and a sea breeze?
  - **Land Breeze: At night land cools much faster than the water. The warm air above the water rises and the cool air above the land moves to replace it. This is called a land breeze. A breeze is named by the direction that it comes from.**
  - **Sea Breeze: During the day the land heats up much faster than the water. The warm air above the land rises and the cooler air above the water moves in to replace it. This is called a sea breeze.**
3. What would the climate be like at the North Pole?
  - **Climate is the average of the weather in a specific place over a longer period of time.**
  - **The climate at the North Pole would be very cold. The average temperatures of the summers are approximately 0 degrees Celsius and the winters can get to an average of -30 degrees Celsius.**
4. Describe the climate and the weather where you live. What is the difference between climate and weather?

**Answers will vary.**

  - **Weather: Weather is the day to day state of the atmosphere. A typical weather forecast will include the amount of moisture in the air, wind speed, temperature and storms that are approaching.**
  - **Climate: Climate is an average of the weather in a specific place over a longer period of time.**
5. Draw a picture of a land breeze and a sea breeze. Make sure to label the direction that the wind is blowing in your picture. Also mark which air is cool and warm in each picture.

**Night Time: This drawing should show the air above the water staying warmer than the air above the land. The wind would blow from the land to the sea.**  
**Day Time: During the day, the air above the land would be warmer and the air from the sea would blow towards the land.**