



High School Science Virtual Learning

Earth Science

Heat waves and cold snaps

May 01, 2020



High School Earth Science
Lesson: May 01, 2020

Objective/Learning Target:

Students will understand how the atmosphere can cause heat waves/cold snaps



Let's Get Started:

1. How do air masses move from one region to another?
2. What is a heat wave/cold snap?



Let's Get Started: **Answer Key**

1. **Prevailing winds move air masses around**
2. **Periods of 3 or more days where the temperature swings to an extreme hot or cold.**



Lesson Activity:

Directions:

1. Watch the short video below.
2. Answer the questions on the slides that follow.

Links: [El Nino and La Nina Explained](#)



Practice

Complete the following questions using the information you learned during the lesson activity.



Questions:

1. Explain the normal trade wind cycle and how it affects the Pacific Ocean.
2. Draw a diagram of normal Pacific Ocean currents/temperature.
3. What is it called when the trade winds are reduced? Explain what happens to the Pacific Ocean during this event.
4. Draw a diagram of the Pacific Ocean during this event.
5. When does El Nino occur?
6. What happens to weather in the north and south USA?
7. What is it called when trade winds are stronger than normal? Explain what happens to the Pacific Ocean during this event.
8. Draw a diagram of Pacific Ocean during this event.
9. What happens to weather in the north and south USA?



Once you have completed the practice questions check with the **answer** key.

1. Normal: trade winds blow east to west pushing Pacific Ocean water with them. Warm water ends up at the west side and cooler water rises from the bottom to replace it on the east side.
2. Sample diagram is in the video
3. Weak trade winds cause an event called El Nino. The warm water doesn't move as far west so less cool water rises in the east.
4. Sample diagram is in the video
5. Winter
6. Southern USA floods, northern US is warmer/drier
7. Strong trade winds cause an event called La Nina. The warm water is blown back toward the west side of the Pacific Ocean causing excess cold water to rise on the east side.
8. Northern USA floods, southern USA is warmer/drier



More Practice:

Follow the link below to watch a video about the impacts of El Nino on the USA west coast, then answer these questions:

1. What happens on the USA west coast when the ocean warms from El Nino? (this is the east end of the Pacific Ocean)
2. What happens in the middle ocean and Indonesia due to El Nino? (Indonesia is the west end of the Pacific Ocean)

Link: [Impacts](#)



Once you have completed the practice questions check with the **answer** key.

1. Evaporation causing heavy rains, leading to flooding and unusual marine life showing up.
2. The Pacific Ocean has more monsoons and coral dies, Indonesia has droughts and wildfires.



Additional Information:

Click on the link below for additional information.

[El Nino and predicting weather](#)