



7th Grade Science
Lesson: Tuesday, April 8, 2020



Learning Target:

I can identify the causes and locations of major wind systems.

Let's Get Started:

What do you notice happening with the weather on a windy day?

Watch this Bill Nye [video](#) on winds.

Practice:

Important Ideas to Remember:

What is the relationship between pressure and wind? Cold air sinks – it is under high pressure.

Warm air rises – it is under low pressure. Cold air always move into warm air.

What is wind? The movement of air from one place to another is wind.

Coriolis Effect – winds/oceans move in a curved pattern due to the curvature of the Earth. See more on this [video](#).

What are Global winds? (See Map 2 slides ahead)

- Polar Easterlies – winds at the poles 90 to 60 degrees latitude, move from the north to the south west.
- Prevailing Westerlies – winds that blow from 60 degrees to 30 in a southwest to north easterly direction.
- Trade winds - flow from 30 degrees to the equator in a northwest to southwest direction.
- Doldrums - an area of calm winds at the equator winds from the N and S hemisphere meet there.

(continued on next slide)

Practice Continued

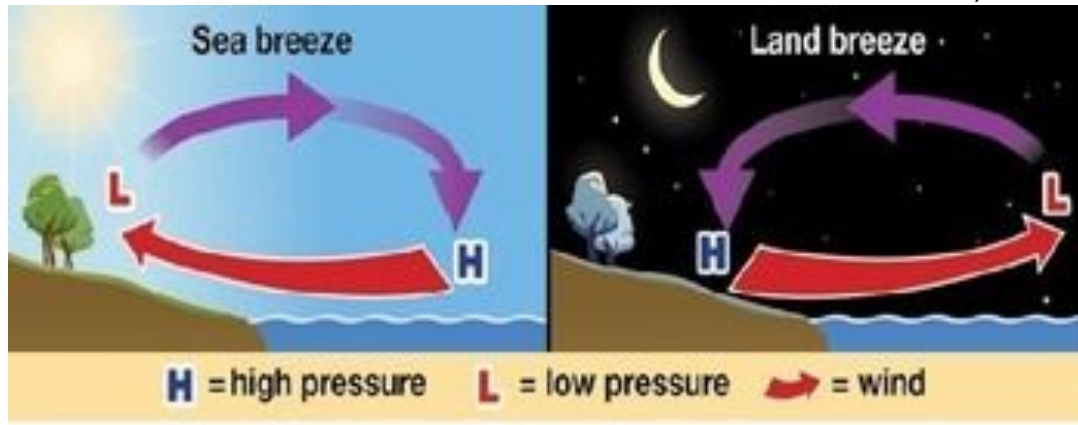
Global Winds Continued...

-Horse Latitudes – are located at 30 degrees. Is an area of low pressure pressure of calm air/winds and ocean waters. Ship merchants threw Horses overboard to save themselves

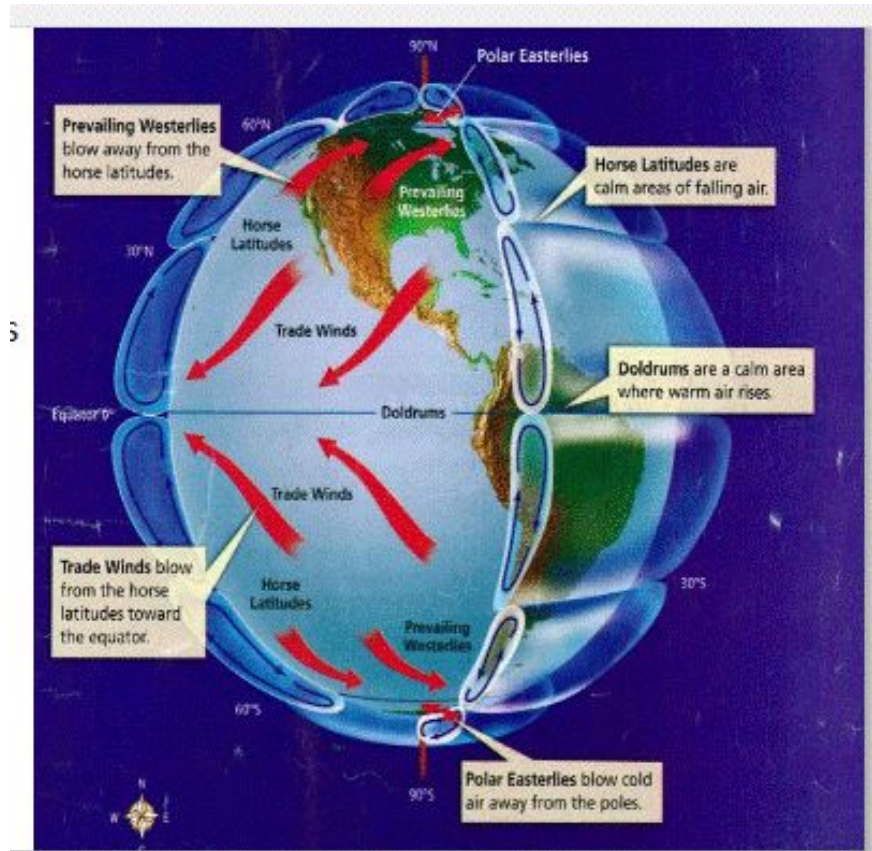
-Jet Stream-A narrow belt of strong winds that blow in the upper troposphere at 400 km per hour. It affects the movement of weather. It is not constant in that it changes its path of direction.

Local Winds: Land Breeze & Sea Breeze

During the day, sand heats up faster than the ocean water, creating a low pressure area. The water is cooler= high pressure. Air moves from the ocean to land, creating a sea breeze. During the night, sand cools faster than the ocean. Air moves from the sand to the ocean, creating a land breeze.



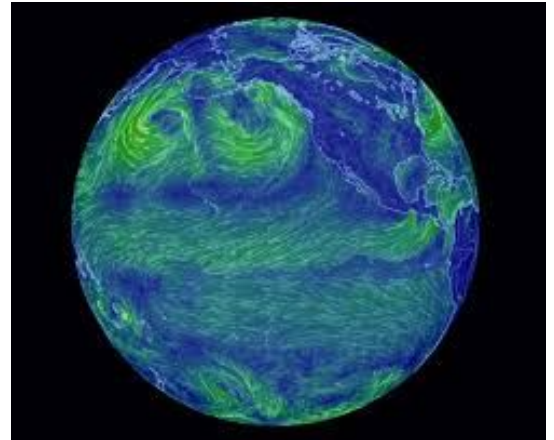
Global Winds Map



Practice Continued

Go to the following [link](#) to view current global winds for approximately 30 seconds and answer the following questions on a separate sheet of paper. Use the previous slides of information to help you as well.

1. What causes winds?
2. What parts of the Earth receive the most heat from the Sun? What parts receive the least amounts of heat?
3. Why do there appear to be less winds along the Equator?
4. Why do there appear to be more winds near the North and South Poles?



Practice Continued

Review your answers to the questions on the previous slide.

1. What causes winds? **The uneven heating of the Earth's surface causes areas of high and low pressure.**
2. What parts of the Earth receive the most heat from the Sun? **The Equator receives the most heat from the Sun, no matter what time of the year it is.**
3. Why do there appear to be less winds along the Equator? **Because there is more heat, the air tends to rise upwards, rather than travel horizontally.**
4. Why do there appear to be more winds near the North and South Poles? **Because there is little heat there, the air has sunk downwards and is rushing towards areas of warmth, which have less pressure.**

Practice Continued



Watch the following video on [global winds](#) and answer the following questions on a separate sheet of paper.

1. The combination of what two things causes global wind patterns?
2. What is the main difference between the Polar Easterlies and the Westerlies?
3. Why is there very little wind at the Doldrums?
4. Why are most of the world's deserts located along the Horse Latitudes?

Practice Continued



Review your answers.

1. The combination of what two things causes global wind patterns?
Convection belts caused by pressure and the Coriolis effect.
2. What is the main difference between the Polar Easterlies and the Westerlies?
The direction they travel in and the latitude they form at.
3. Why is there very little wind at the Doldrums?
There is very little pressure.
4. Why are most of the world's deserts located along the Horse Latitudes?
The sinking air is very dry.

More Practice

Test your skills on this Quizizz [practice](#) on winds.

