

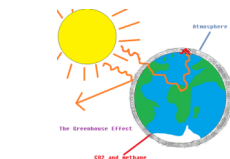

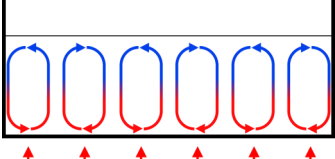
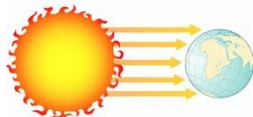
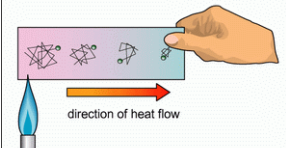
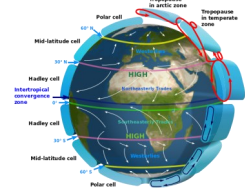

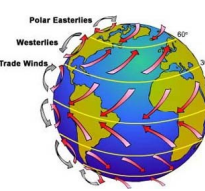
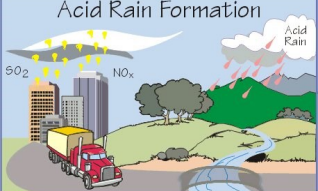
Weather Elements (air pressure & winds)


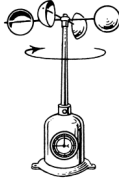

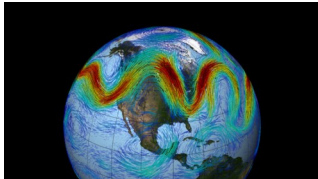
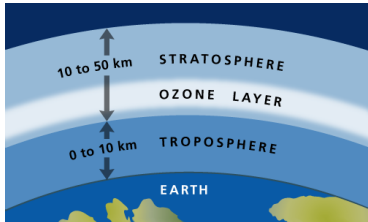
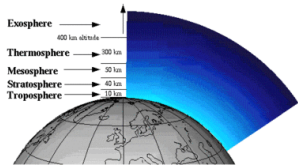

S6E4. Obtain, evaluate and communicate information about how the sun, land, and water affect climate and weather.

- A. Analyze and interpret data to compare and contrast the composition of Earth's atmospheric layers (including the ozone layer) and greenhouse gases.
- B. Plan and carry out an investigation to demonstrate how energy from the sun transfers heat to air, land, and water at different rates.
- C. Develop a model demonstrating the interaction between unequal heating and the rotation of the Earth that causes local and global wind systems.
- D. Construct an explanation of the relationship between air pressure, fronts, and air masses and meteorological events such as tornados of thunderstorms.
- E. Analyze and interpret weather data to explain the effects of moisture evaporating from the ocean on weather patterns weather events such as hurricanes.



Term	Info	Picture
atmosphere	The layer of gas that surrounds the Earth. It is made of gas and held close to Earth by gravity.	
air pressure	The amount of weight that the atmosphere presses down on Earth.	
wind	The horizontal movement of air. Wind blows from areas of high pressure to areas of low pressure.	
land breeze	A breeze that blows from land to sea after sunset. The land cools more quickly than the water and creates an area of high pressure.	
Sea breeze	A breeze that blows from sea to land. During the day when the land heats up faster than the sea.	
Coriolis Effect (review)	The rotation of the Earth causes a phenomena that causes objects in the Northern hemisphere to be deflected to the left, and objects in the Southern Hemisphere to be deflected to the right.	
global wind	Six major wind belts of the Earth. Three in each hemisphere; Polar Easterlies, Westerlies and Trade Winds.	
Greenhouse Effect	The warming of Earth's surface by the air above it. "Greenhouse Gases" (carbon dioxide, water vapor and methane) trap energy from the sun. It keeps the heat in; insulating Earth.	

Term	Info	Picture
Global warming	Gradual rising of Earth's temperature.	
Local wind	Small scale winds caused by temperature differences.	
Convection	The transfer of heat through a gas or a liquid. Causes currents where the warm air/liquid rises and the cool air/liquid sinks.	
Radiation	Transfer of energy in the form of waves or rays. Only kind of heat transfer that can travel through empty space. It is how the heat from sun reaches Earth.	
Conduction	The transfer of heat between two objects that are touching.	
Trade winds	Winds that dominate most of the tropics and subtropics throughout the world.	
Polar easterlies	Global prevailing winds that blow from the East to the West. At the North Pole and South Pole.	
Prevailing Westerlies	Global prevailing winds that blow from the West to the East. They are in the middle latitudes, and are the global winds that affect most of the United States.	
Acid precipitation	Rain, snow, hail, fog, sleet or dew that is high in acid content. It has a pH less than 5.6 and is caused by pollution.	

Term	Info	Picture
barometer	An instrument that measures atmospheric pressure; used in forecasting weather.	
anemometer	An instrument that measures wind speed.	
wind vane	An instrument that measures wind direction.	
jet stream	A band of wind that is always blowing. It is high up in the atmosphere. It moves fast between 120 -250 miles per hour. Form at the boundaries between hot and cold air masses.	
ozone	Made of three oxygen atoms, it is found in the stratosphere and absorbs UV rays from the sun and protects Earth from UV radiation.	
stratosphere	The second layer of the Earth's atmosphere. Airplanes fly in the lower part of the stratosphere, and it is where the Ozone Layer is found.	
CFC's	A chemical used as a propellant in aerosol cans that depletes the ozone layer.	

Learning Targets:

1. I can compare and contrast how land and water absorb and release heat.
2. I can describe how unequal heating rates of land and water affect weather patterns, winds, and storms.
3. I can explain how wind is created.
4. I can describe the creation of high and low pressure.
5. I can identify weather associated with high and low pressure.
6. I can explain how land and sea breezes are formed.



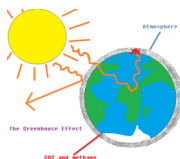

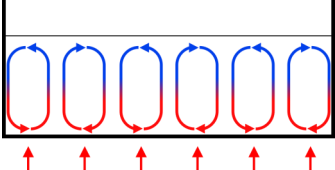
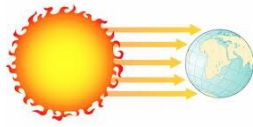
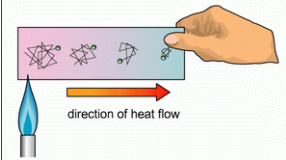
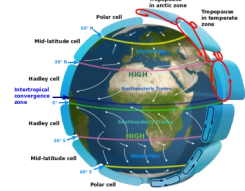

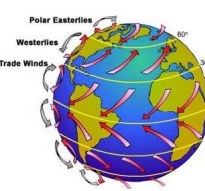
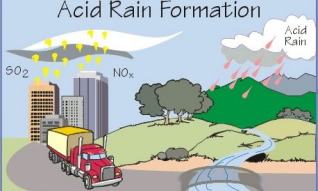
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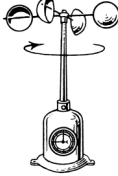

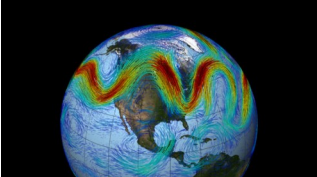
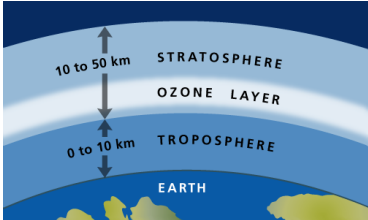
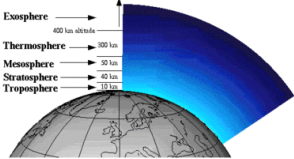

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