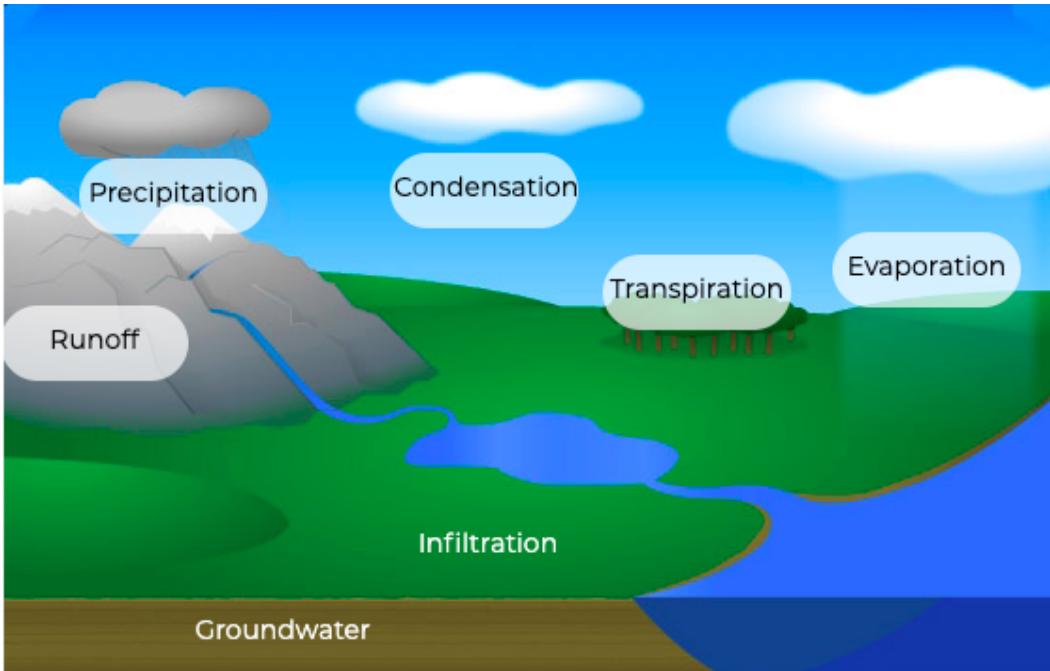
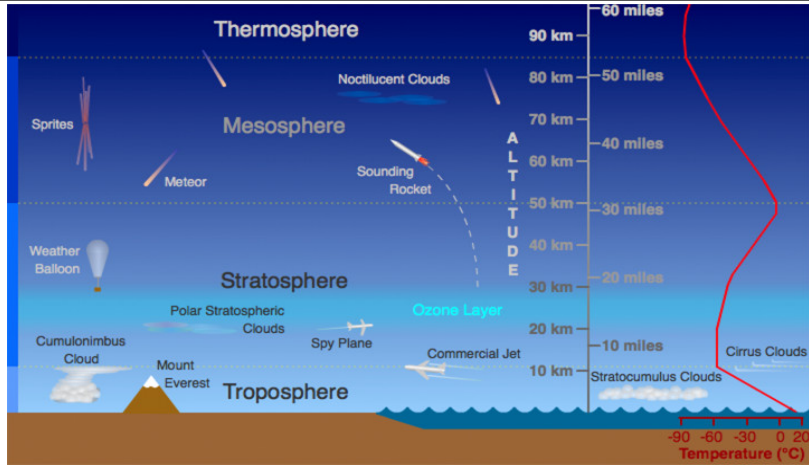
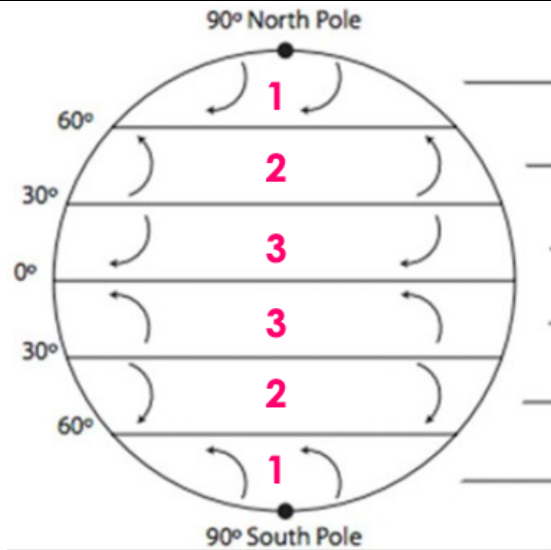
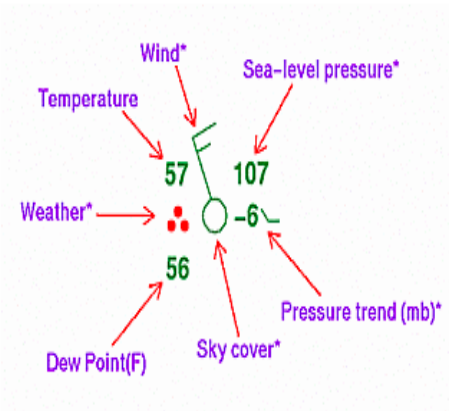
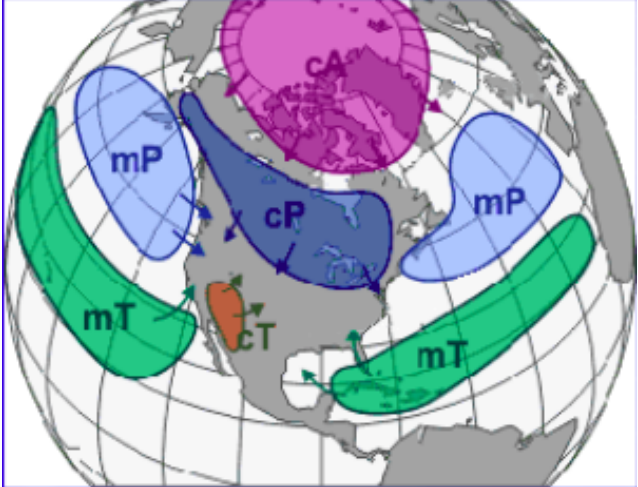


Topic: Climate and Meteorology	Learning Goals • Explain how human activities impact the water cycle of the atmosphere and hydrosphere. • Distinguish between atmosphere and hydrosphere and their ability to form weather patterns and climate zones. • Discuss the role of the Earth-moon-sun system in weather and climate. • Interpret how the changes in climate can affect the frequency and severity of severe weather.
2.01 Water Cycle	At the end of this lesson, you will be able to: • describe the water cycle • identify properties of water • describe the process of water changing state • apply the Law of Conservation of Matter to the water cycle • identify potential human impacts on the water cycle
Define:	
Hydrosphere	
Biosphere	
Geosphere	
Explain the Properties and movement of water and how the law of conservation of matter relates to the water cycle	
What are the three states of water?	
How does water moved from place to place (Draw arrows on the image)? What does each term mean?	 The diagram illustrates the water cycle in a landscape. At the top, clouds are labeled with 'Precipitation' and 'Condensation'. On the right, the sun is shown over a body of water, with 'Evaporation' labeled. In the center, a green hill has trees with 'Transpiration' labeled. At the bottom, a brown area represents the ground, with 'Infiltration' labeled. A river flows from the left, labeled 'Runoff', and continues to the right. The entire scene is set against a blue sky and green land.

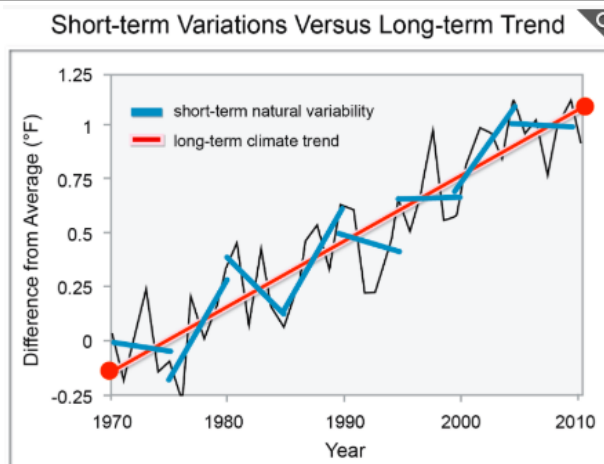
Explain 6 ways humans can impact the water cycle.	
	1.
	2.
	3.
	4.
	5.
	6.
2.02 The Atmosphere	At the end of this lesson, you will be able to: - describe the composition of Earth's atmosphere - describe interactions of the atmosphere with other Earth systems - describe the relationship between air pressure and altitude - evaluate how wind energy can be used to conserve resources
What are the percentages of gases that make up the atmosphere?	
Compare each layer of the atmosphere (temperature, composition, pressure and altitude and characteristic).	 The diagram illustrates the layers of Earth's atmosphere and the temperature profile. The layers, from bottom to top, are the Troposphere, Stratosphere, Mesosphere, and Thermosphere. Key features include: Troposphere: Contains clouds like Cumulonimbus, Stratocumulus, and Cirrus. It is the layer where weather occurs. Key locations shown are Mount Everest and a Commercial Jet. Stratosphere: Contains the Ozone Layer and Polar Stratospheric Clouds. A Spy Plane is shown flying in this layer. Mesosphere: Contains Noctilucent Clouds. A Sounding Rocket is shown launching from the surface. Thermosphere: Contains Sprites. A Meteor is shown entering the atmosphere. A vertical axis on the right shows altitude in both kilometers (0 to 90 km) and miles (0 to 60 miles). A red line at the bottom indicates the temperature profile in degrees Celsius, ranging from -90 to 20. https://www.youtube.com/watch?v=LPHF323XIWw
Label the Earth's Global Winds	 The diagram shows a circular representation of Earth with latitude lines at 90° North Pole, 60°, 30°, 0° (Equator), 30°, 60°, and 90° South Pole. Arrows indicate the direction of wind flow. The regions are numbered 1, 2, and 3, representing the major wind belts: Region 1: Polar regions (from 90° to 60° in both hemispheres), showing polar easterlies. Region 2: Subtropical high-pressure belts (between 30° and 60° in both hemispheres), showing westerlies. Region 3: Equatorial region (between 30° and 30°), showing trade winds.
Define: Barometer	

Radiosonde	
How does temperature and pressure relate to each other?	
Wind power	How does it work? https://www.youtube.com/watch?v=DILJJwsFl3w Advantage: Disadvantage:
2.03 Weather vs. Climate	At the end of this lesson, you will be able to: • compared weather maps with climate maps • investigated the types of data collected from weather stations • explored climate zones around the world • predicted the types of plants and animals that live in different climate zones
What is the difference between weather and climate?	
What are six instruments used to measure weather?	1. 2. 3. 4. 5. 6.
Explain the different climate zones.	
2.04 Meteorology	At the end of this lesson you will be able to: • observe how a meteorologist uses the scientific method to create weather forecasts • investigate the development of modern meteorology • use weather station models to analyze weather data • determine weather patterns using air masses, fronts, and types of clouds
Define	
forecasts	
meteorology	
What information is gathered from a meteorologist to determine the weather?	

How is a station model helpful in determining weather of a locate area?	 is provided below. https://www.wpc.ncep.noaa.gov/html/stationplot_printer.html
Weather	High Pressure = Cold Weather (Normally dry air, bad storms) Low Pressure = Warm Weather (Humid air, tropical storms) *Air moves from high to low pressure
Define Front and label the symbols	
What are the 5 main types of air masses? Remember P means polar (cold) and M mean (wet) Maritime T means Tropical (hot) and Continental means (dry)	
2.05 Severe Weather	At the end of this lesson, you will be able to: • relate the formation of severe weather to various physical factors • compare characteristics of severe weather conditions for thunderstorms, tornadoes, hurricanes, and cyclones • explain how weather conditions in Florida influence human behavior • examine how computer models can help people prepare for severe weather
Explain how each form and how you prepare for each storm:	
Hurricane	

Hail	
Flood	
Lightening	
Tornado	
Drought	
2.06 Global Climate Change	At the end of this lesson, you will be able to: • describe the interaction of Earth's systems that contribute to climate • define the greenhouse effect and its impact on Earth • discuss the effects of the Earth-Sun-Moon relationship on climate • identify factors that affect climate, including natural and human impacts
Earth Systems are interconnected. Know the difference between the earth systems.	
Heat is transferred in three ways. Define and give examples..	Convection: Radiation: Conduction:
Draw the greenhouse effect and list the greenhouse gases.	

Analysis Earths past climate and factors that affect climate change.

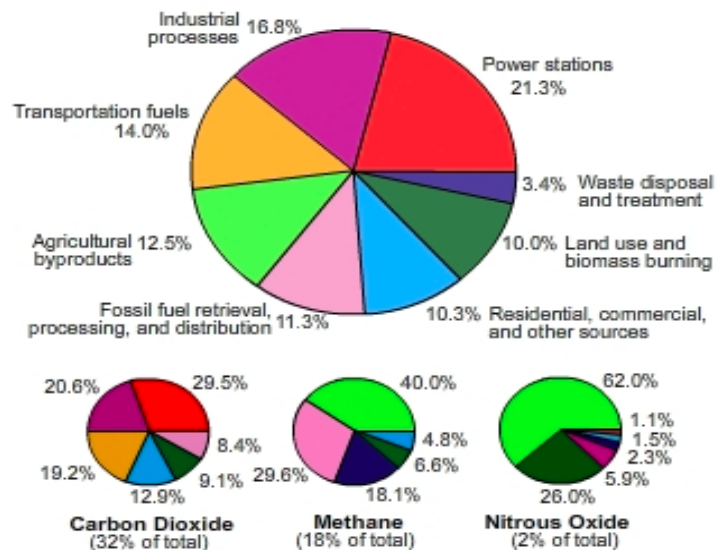


List five effects of climate change.

- 1.
- 2.
- 3.
- 4.
- 5.

How does greenhouse emissions increase global temperatures? What area contributes the most to greenhouse emissions?

Annual Greenhouse Gas Emissions by Sector



List 7 pieces of evidence that supports global climate change.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.