

Wright City Science Curriculum

6th Grade

Grade	6
Unit of Study	Weather and Climate Systems
Length of Unit	5 weeks
Sample Essential Questions	Sample Corresponding Big Ideas
How does water move through Earth's systems in a cycle?	Water cycles through Earth's systems.
How do the Sun and gravity affect the movement of water on Earth?	The sun's energy and gravity drive water movement.
What happens when different air masses meet?	Different types of air masses interact to create weather fronts and patterns.
How does unequal heating of Earth create wind and ocean currents?	Unequal heating and Earth's rotation create convection currents, global winds, and ocean currents.

Missouri Learning Standards

Priority Standards

- 6-8.ESS2.C.1 Design and develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and force of gravity.
- 6-8.ESS2.C.2 Research, collect, and analyze data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.
- 6-8.ESS2.C.3 Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determines regional climates.

Unit 1 Sequence			
MLS	Topic(s)	Learning Targets	Academic Vocabulary
6-8.ESS2.C.1	Water Cycle	I can identify the processes that move water through Earth's systems, such as evaporation, condensation, precipitation, infiltration, runoff, and transpiration.	evaporation condensation precipitation infiltration runoff transpiration solar atmosphere groundwater
		I can explain how solar energy powers the movement of water from Earth's surface to the atmosphere and how gravity causes water to flow downhill, infiltrate soil, and return to oceans, lakes, and rivers.	
		I can create and label diagrams to show how water moves through different parts of Earth's systems and explain the processes that drive water movement.	
6-8.ESS2.C.2	Air Mass Interactions and Weather Changes	I can describe what an air mass is and how it forms over different regions (land or water, warm or cold areas).	air mass continental air mass maritime air mass polar air mass tropical air mass temperature humidity pressure front cold front warm front stationary front occluded front boundary interaction climate weather
		I can identify the major types of air masses (continental, maritime, polar, tropical).	
		I can describe how air masses move due to global wind patterns and differences in temperature and pressure.	
		I can explain how the meeting of different air masses forms weather fronts (cold fronts, warm fronts, stationary fronts, and occluded fronts).	
		I can identify patterns in data that show how air masses interact and how those interactions change weather conditions.	
		I can use data and evidence to explain how air mass movement and interactions lead to specific weather events (like storms, rain, snow, or temperature changes).	
		I can interpret weather maps to determine how fronts and air mass movements affect local and regional weather.	
6-8.ESS2.C.3	Earth's Heating, Rotation, & Climate Patterns	I can explain that the Sun's energy heats Earth unevenly because of its spherical shape and the tilt of its axis, which causes temperature differences between the equator and the poles.	solar energy unequal heating equator poles latitude
		I can explain how warm air and water rise and cool air and water sink, creating convection currents.	

		I can describe how these convection currents move energy around the planet.	axis convection convection currents rotation Coriolis effect climate global winds
		I can explain how Earth's rotation affects wind and ocean currents (Coriolis effect), which creates global wind belts and ocean current patterns.	
		I can create a model that shows how unequal heating and Earth's rotation cause patterns of air and ocean circulation.	
		I can label and explain my model to show how these circulation patterns affect regional climates.	

MLS	Learning Activities	
6-8.ESS2.C.1	Water Cycle Notes	Must Do ▾
6-8.ESS2.C.1	Journey Through the Water Cycle	Can Do ▾
6-8.ESS2.C.1	Water Cycle Vocabulary Foldable	Can Do ▾
6-8.ESS2.C.2	Air Masses and Fronts Notes/Heat Rises Demonstration	Must Do ▾
6-8.ESS2.C.2	Weather Forecasting Project	Option L... ▾
6-8.ESS2.C.3	Climate Notes	Must Do ▾
6-8.ESS2.C.3	Climate Brochure Project	Can Do ▾

Assessments		
MLS	Description or Location	Rubric/Location
6-8.ESS2.C.1	Water Cycle	Pear Assessment
6-8.ESS2.C.2	Air Mass Interactions and Weather Changes	Pear Assessment
6-8.ESS2.C.3	Earth's Heating, Rotation, & Climate Patterns	Pear Assessment

Additional Resources
Air Masses and Weather Fronts Generation Genius Video