High School Earth Science
Unit 3: Structure of the Dynamic Earth System
Louisiana Comprehensive Curriculum

Unit Description

Opportunities occur to analyze weather, the structure and composition of the envelope of air that we call the atmosphere, the ways heat is transferred at and near Earth's surface, and the differential heating of various Earth materials-all of which influence the weather.

Student Understandings

Students will develop an understanding that the influence of the Sun can be recognized in almost everything around us on Earth. They will be able to illustrate what happens to solar radiation received daily by Earth and describe how heat energy transferred through the processes in the water cycle drives the weather conditions they experience. They will be able to describe all of the layers of our atmosphere in terms of structure, composition, function, and temperature.

Guiding Questions

1. Can students illustrate what happens to almost 100% of the energy received from the Sun each day?
2. Can students identify the processes of the water cycle?
3. Can students describe how convection, conduction, and radiation drive what we call weather?
4. Can students explain why almost all weather occurs in the troposphere?
5. Can students list and describe each of the layers in Earth's atmosphere?

Unit 3 Grade-Level Expectations

Earth Science	
1.	Describe what happens to the solar energy received by Earth every day (ESS-H-A1)
3.	Describe the effect of natural insulation on energy transfer in a closed system (ESS-H-A1)
7.	Analyze how radiant heat from the Sun is absorbed and transmitted by several different Earth materials (ESS-H-A5)
8.	Explain why weather only occurs in the tropospheric layer of Earth's atmosphere (ESS-H-A5)
9.	Compare the structure, composition, and function of the layers of Earth's atmosphere (ESS-H-A6)
10.	Analyze the mechanisms that drive weather and climate patterns and relate them to the three methods of heat transfer (ESS-H-A6)