

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

Unit Description

This unit examines weather and climate patterns, 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.

Student Understandings

Students 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. As a result of their knowledge of the mechanisms that drive weather and climate, students will gain skill at analyzing weather data to generate short-term weather forecasts.

Guiding Questions

1. Can students trace the flow of heat through the processes of the water cycle?
2. Can students describe how convection, conduction, and radiation drive what we call weather?
3. Can students explain why almost all weather occurs in the troposphere?
4. Can students use weather data to generate short-term weather forecasts?

Unit 3 Grade-Level Expectations

Earth Science	
2.	Trace the flow of heat energy through the processes in the water cycle (ESS-H-A1)

GLE #	GLE Text and Benchmarks
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)