

# **The Atmosphere**

**Grade 4**

**Science**

**Unit 6: Planet Earth and Its Moon  
Louisiana Comprehensive Curriculum**

## **Unit Description**

During this unit activities explore some of the processes and cycles experienced at Earth's surface. Investigations involve the slow weathering processes, the water cycle, the study of weather, and the effects of human efforts to manage and use natural resources. Additional activities provide an opportunity to study the Earth's atmosphere.

## **Student Understandings**

Students will be introduced to and use the basic weather instruments and relate the data collected by observation and equipment to the prediction the weather. Students will be able to identify the layers of the atmosphere, the energy balance, and the density principle.

## **Guiding Questions**

1. Can students identify some processes and cycles that change Earth's surface?
2. Can students describe how weathering affects the earth's surface?
3. Can students explain the water cycle?
4. Can students explain how simple weather measuring tools work to measure the weather?

## Unit 6 Grade-Level Expectations (GLEs)

<b>Earth and Space Science</b>	
57.	Explain how unequal heating of Earth's land and water affects climate and weather by using a model (ESS-E-A2)
58.	Draw, label, and explain the components of a water cycle (ESS-E-A3)
59.	Measure, chart, and predict the weather using various instruments (e.g., thermometer, barometer, anemometer) (ESS-E-A4)
60.	Identify various types of weather-related natural hazards and effects (e.g., lightning, storms) (ESS-E-A4)
61.	Identify safety measures applicable to natural hazards (ESS-E-A4)
62.	Classify rocks and minerals according to texture, color, luster, hardness, and effervescence (ESS-E-A5)
63.	Demonstrate and explain how Earth's surface is changed as a result of slow and rapid processes (e.g., sand dunes, canyons, weather, Earthquakes) (ESS-E-A5) (ESS-E-A1)
64.	Describe and sequence the phases of the Moon and eclipses (ESS-E-B2)
66.	Diagram the movement of the Moon around Earth and the movement of Earth around the Sun (ESS-E-B2)
68.	Identify the relationship between Earth's tilt and revolution and the seasons (ESS-E-B4)

## Unit 1: Measuring and Comparing Louisiana Comprehensive Curriculum

### Unit Description

In this unit, various investigations require accurate measurements using a variety of tools. Taking measurements and making comparisons are two skills that are developed throughout the science units and practiced across the curriculum.

### Student Understanding

As students explore the properties of the atmosphere, they develop the skill in measuring accurately in both metric and standard U.S. system units and recording quantitative data. Graphing skills develop as students explore motion and analyze positional changes over time. Students develop an understanding of types of forces and the relation of force to motion. Students develop an understanding of the motion of particles in relation to temperature and changes in state.

### Guiding Questions

1. Can students recognize the effect that size, mass, and volume have on the functioning of a variety of materials?
2. Can students use a graph to illustrate the interrelationship of measurements such as time, speed, and mass?

### Unit 1 Grade-Level Expectations (GLEs)

Physical Science	
24.	Illustrate how heating/cooling affects the motion of small particles in different phases of matter (PS-E-A4)
25.	Describe various methods to separate mixtures (e.g., evaporation, condensation, filtration, magnetism) (PS-E-A5)