

About **Weather and Sky**

DeltaScienceModules, THIRD EDITION

Students explore *Weather and Sky* with twelve hands-on activities and the Delta Science Reader. Students first learn what weather is and build a weather vocabulary of words and symbols. Using their senses and several weather tools, students observe and measure four main weather factors: temperature, wind, clouds, and precipitation. They record data on a weather calendar, which helps them recognize daily and seasonal weather changes and patterns. They also find out how weather affects everyday life. Next, students compare the daytime sky and the nighttime sky. They trace shadows to discover that the Sun changes position in the sky through the course of a day, and they model how Earth's rotation causes day and night. Daytime observations reveal that the Moon also appears to move across the sky. Finally, by keeping Moon Journals, students conclude that the Moon's apparent shape and position in the sky change in a pattern that repeats about once a month.

In the Delta Science Reader *Weather and Sky*, students learn about weather and explore the sky. They learn what weather is and how we observe, measure, and record its main features. They read about the four seasons and how seasonal weather changes affect living things. Students' attention then turns to the sky and what we see in the sky during the day and at night. Students make a connection between their new weather knowledge and the world beyond school when they read about what a meteorologist does. Finally, they extend their learning with an introduction to Moon phases.

Overview Chart for Hands-on Activities

| Hands-on Activity | Student Objectives |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Observing Weather <i>page 13</i> | <ul style="list-style-type: none"> • observe, describe, and record the weather using words and pictures • discuss how weather affects everyday life • conclude that weather changes from day to day • discover that weather varies from place to place |
| 2 What Can We See in the Sky? <i>page 21</i> | <ul style="list-style-type: none"> • compare the daytime sky and the nighttime sky • recognize that the Sun is a star • discuss the Sun's role as the main source of heat and light for Earth • discover that, unlike the Sun, the Moon can be seen both during the day and at night |
| 3 The Sun Warms Earth <i>page 29</i> | <ul style="list-style-type: none"> • use a thermometer to measure and compare air temperature indoors and outdoors • measure and record the outdoor air temperature for 4 days • discuss the role of the Sun in heating Earth's land, water, and air • conclude from water temperature measurements that the Sun is the source of heat for Earth |
| 4 Wind <i>page 43</i> | <ul style="list-style-type: none"> • discuss wind as moving air • use a wind vane to determine wind direction • observe the effects of wind as it moves objects • rate wind speed by applying a simple wind scale to their observations |
| 5 Clouds <i>page 55</i> | <ul style="list-style-type: none"> • learn how clouds form • observe and describe clouds • find out about the three main types of clouds • relate cloud shapes to the kind of weather they bring |
| 6 Rain and Snow <i>page 65</i> | <ul style="list-style-type: none"> • learn how tiny water droplets become raindrops in clouds • discover that precipitation can fall as rain, snow, sleet, or hail • use a rain gauge to measure rainfall • discuss severe storms and how to stay safe in severe weather |
| 7 Seasons <i>page 75</i> | <ul style="list-style-type: none"> • define <i>season</i> and name the four seasons • discuss and illustrate weather in each season • conclude that the changing seasons form a predictable pattern |
| 8 Living Things and Seasons <i>page 83</i> | <ul style="list-style-type: none"> • explain how people's activities and clothing choices are affected by the seasons • explore how plants and animals are affected by seasonal changes in light, temperature, and precipitation |
| 9 Sunshine and Shadows <i>page 93</i> | <ul style="list-style-type: none"> • observe and describe a shadow • identify the three things needed to produce a shadow • record how a shadow's position and shape change as the direction of the light changes |
| 10 The Sun Rises and Sets <i>page 103</i> | <ul style="list-style-type: none"> • discuss what is meant by sunrise and sunset • model the rotation of Earth and identify rotation as the cause of sunrise and sunset • infer from shadow changes that the Sun appears to move across the sky |
| 11 The Moon Rises and Sets <i>page 111</i> | <ul style="list-style-type: none"> • observe and record the changing position of the Moon • discover that the Moon appears to move across the sky just as the Sun does • learn what causes moonrise and moonset |
| 12 Moon Phases <i>page 119</i> | <ul style="list-style-type: none"> • observe and record the changing shape of the Moon daily for 4 weeks • review the record of their observations to look for a pattern • identify the pattern of the Moon's changing shape and infer that this pattern repeats every 4 weeks |
| Assessment <i>page 131</i> | |

| Process Skills | Vocabulary | Delta Science Reader |
|--------------------------------------------------------------------------------------|---------------------------------------------|----------------------|
| observe; compare; collect, record, display, or interpret data; communicate | air, observe, record, weather | pages 2–5, 14 |
| classify, compare | Earth, Moon, planet, star, Sun | pages 9–13 |
| observe; measure; use numbers; collect, record, display, or interpret data; compare | degree, temperature, thermometer | pages 2–5 |
| observe; collect, record, display, or interpret data; compare; classify; communicate | wind, wind sock, wind vane | pages 2–5 |
| observe; collect, record, display, or interpret data; compare; classify; communicate | cloud, water vapor | pages 2–5 |
| observe; measure; use numbers; collect, record, display, or interpret data; compare | hail, rain, rain gauge, sleet, snow | pages 2–5 |
| compare, infer, classify, communicate | fall, season, spring, summer, winter | pages 6–8 |
| compare, infer, classify, communicate, predict | | pages 6–8 |
| observe; compare; collect, record, display, or interpret data; infer | shadow | pages 9–10 |
| compare, predict, make and use models, infer | sunrise, sunset | pages 9–10 |
| compare; collect, record, display, or interpret data; infer; make and use models | | pages 12–13 |
| collect, record, display, or interpret data; compare; infer | full Moon, new Moon, phases | pages 12–13, 15 |

See the following page for the Delta Science Reader Overview Chart.

Overview Chart for Delta Science Reader

Weather and Sky

| Selections | Vocabulary | Related Activity |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------|
| Think About... | | |
| What Is Weather? <i>page 2</i> | cloudy, observe, rainy, snowy, sunny, weather, windy | Activities 1, 3, 4, 5, 6 |
| What Are Seasons? <i>page 6</i> | season | Activities 7, 8 |
| What Can We See in the Sky in the Daytime? <i>page 9</i> | Earth, Moon, Sun | Activities 2, 5, 9, 10, 11 |
| What Can We See in the Sky at Night? <i>page 12</i> | | Activities 2, 11, 12 |
| People in Science | | |
| <ul style="list-style-type: none"> • A Meteorologist <i>page 14</i> | | Activity 1 |
| Did You Know? | | |
| <ul style="list-style-type: none"> • About Moon Phases <i>page 15</i> | phases | Activity 12 |

See pages 139–148 for teaching suggestions for the Delta Science Reader.