

**Focus Question 1: Why measure weather?****Lesson 1: Weather Instruments**

*Different tools can be used to measure different weather conditions.*

Students ask questions about the structure and function of weather instruments in order to determine the function of the instrument.

**Lesson 2: Measuring Weather**

*Weather conditions can vary from place to place.*

Students carry out an investigation by measuring air temperature, wind speed and direction, and precipitation to determine if weather can vary over short distances.

**Lesson 3: Predicting Weather**

*Scientists use weather measurements to predict the weather.*

Students obtain and combine information about how meteorologists use data collected from weather tools to identify patterns and make predictions about future weather.

**Lesson 4: Build an Anemometer**

*A tool can be designed that measures wind speed.*

Students build anemometers and carry out an investigation to measure the speed of the same wind twice to test the consistency of the anemometer.

**Focus Question 2: What does weather in the past tell us about weather in the future?****Lesson 5: High and Low**

*Average weather is calculated over many years.*

Students represent data on temperature for the past five years in their school's location in a bar graph. They identify the pattern to construct an argument for the future temperature in their school's location.

**Lesson 6: Travel Plans**

*Average weather is used to describe climate.*

Students represent data on average temperatures and precipitation over twelve months in their school's location in a bar graph. They identify the pattern to describe the likely weather conditions in their school's location.

**Lesson 7: Around the World**

*There are five main types of climate in the world.*

Students combine information from a map and text to describe differences between the climates in different places on Earth.

**Lesson 8: North and South**

*Northern and Southern Hemisphere places with the same climate have opposite seasons.*

Students combine information from cards and text to describe differences between seasons in different hemispheres of the Earth.

**Focus Question 3: How does climate affect the way buildings are designed?**

**Lesson 9: Hazardous Weather**

*Hazardous weather can cause problems.*

Students obtain and combine information about blizzards, hurricanes, and tornadoes in order to identify the cause of weather-related problems.

**Lesson 10: Roof Research**

*Roofs can be designed that protect against weather hazards.*

Students obtain information from text and from carrying out an investigation to learn about roof structures that will function to drain water during heavy precipitation.

**Lesson 11: Design and Build a Roof**

*Engineering design is based on the criteria of the solution.*

Students design and build a roof structured to withstand the effects of a climate with heavy precipitation.

**Lesson 12: Test a Roof**

*A design needs to be tested to see how well it works.*

Students use evidence from an investigation testing the function of a roof to make an argument about the merit of different roof designs to withstand a climate with heavy precipitation.

**Science Challenge**

**Focus Question 4: How can climate and weather data help us plan a soccer tournament?**

**Lesson 13: Kids Cup Part 1**

*Climate and weather data can be used to predict future weather.*

Students make a graph to show the pattern of temperature, precipitation, or hazardous weather for a city throughout the year

**Lesson 14: Kids Cup Part 2**

*Climate and weather data can be used to plan events.*

Students analyze and interpret patterns in climate data to make a claim about which month would be best to host a kids' soccer tournament in a particular city.

**Lesson 15: Kids Cup Part 3**

*Climate and weather data can be used to plan events.*

Students use evidence based on climate data to agree or disagree with other students' claims for the best time and location to host a kids' soccer tournament.