## Weather and Climate: Lesson 11

**Essential Question:** How can we prevent a storm from becoming a disaster?

**Focus Question:** How do people know what weather to expect?

**Phenomenon Question:** Does the weather follow the same pattern every year?

| **Objective:** Interpret data to describe seasonal patterns in weather conditions over time. | **Materials:** Pencil | **Projected Slides:** 117–123 |
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**Share the following items with families in advance of the lesson.**

- Links: Lesson 11 Daily Video, Science Journal Lesson 11
- Materials list
- Assignment: After watching the video, students record the weather conditions for summer and fall and then describe patterns in average temperature and amount of precipitation.

**Remote Learning Recommendations**

| Type | | Pacing | Activity | Notes |
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| Hybrid (in-class synchronous and remote asynchronous) | Asynchronous (in Sync) | 10–15 minutes | Daily Video | Video description:<br>Students analyze data from multiple years and interpret the data to describe patterns in weather conditions for each season across multiple years. |
| | | 10 minutes | Assignment | The video asks students to record the weather conditions for summer and fall and then to describe patterns in average temperature and amount of precipitation. |
| | | 15 minutes | Virtual Class Meeting (Optional):<br>Science Discourse | Ideally this meeting occurs after students watch the video and complete the assignment:<br>• *Introduce Historical Weather Graphs Remote Alternative*<br>Facilitate a discussion to analyze local temperature and precipitation data. Prepare and display one copy of each graph from 1950, 1975, 2000, and 2015.<br>Support students as they analyze the three graphs to determine what weather conditions were like in each season of the graphed years. Students should record the following:<br>o The lowest average monthly temperature and the highest average monthly temperature for each season<br>o Any seasonal patterns in temperature<br>o The lowest year total precipitation and the highest yearly total precipitation<br>o Any seasonal patterns of precipitation<br>As needed, have students practice reading more data points until they are comfortable with the process. |

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| | | | | • Facilitate a discussion about what patterns in average temperature and precipitation students noticed as they analyzed the graphs. |
| | Synchronous | 5 minutes | Launch | Refer to Teacher Edition to conduct lesson Launch (Projected slides 117–119).<br>Give all students a chance to participate either in-person or virtually. |
| | | 35 minutes | Learn | Refer to Teacher Edition to conduct lesson Learn (Projected slides 120–121).<br>• Introduce Historical Weather Graphs<br>• Analyze Historical Weather Data<br>Give all students a chance to participate either in-person or virtually. |
| | | 5 minutes | Land | Refer to Teacher Edition to conduct lesson Land (Projected slides 122–123).<br>• Assign Optional Homework.<br>Give all students a chance to participate either in-person or virtually. |
| Additional Instruction | | | Differentiation (Optional) | If students need additional support, consider modeling how to determine the lowest and highest average temperatures during winter for the years graphed. For example, in the sample graph, the lowest average temperature for winter is 19°F and the highest average temperature for winter is 45°F.<br>Some students may benefit from using an index card to isolate each bar or set of bars on the graph. The card allows students to narrow focus to a single value or set of values.<br>An index card may also be used to read the value of a single data point more easily. Instruct students to use the edge of the index card to line up the top of a bar to the scale. Students can then more accurately estimate the value of the bar by observing where on the scale the bar reaches.<br>Some students may benefit from additional support in combining and summarizing data to notice patterns. Consider working one-on-one or in small groups by first modeling how to read and describe data for one month or one year. Build off these descriptions to summarize the weather conditions during each season across several years. |

| Asynchronous | Synchronous | Hybrid |
|---|---|---|
| Remote students using in Sync with optional virtual class meeting | Some students in-class and some remote but all participating live | In-class students are synchronous and remote students asynchronous |