

How does this module fit into standards I'm required to teach?

- This module has students analyze real historical data about tornadoes in the state of Missouri. It covers the 6th grade data analysis and statistics standards.
- Students begin by watching a short video about tornadoes. They then brainstorm questions they have about tornadoes in the state of Missouri. For example: "How many tornadoes happen each year in Missouri? How much damage do tornadoes cause in Missouri?" They will then use an exploration of tornado data visualization to start answering some of these questions and see the need for ways to summarize the large amount of information.
- The questions students wrote can be used in a follow-up lesson to help define statistical questions. They can sort their brainstormed questions into "statistical" vs. "non-statistical" questions and discuss this vocabulary.
- Students will use the NOAA tornado data and Google Sheets to create various types of displays of data, including histograms, dot plots, box plots, and circle graphs. The histograms and dotplots allow for discussion of the shape of the distribution of the data for different variables.
- Students will use Google Sheets to calculate measures of center and variation for variables in the tornado dataset. Comparing these measurements allows for discussion of which statistical measure is most representative for the variable and why.
- As a summary/extension activity, students will select and answer one statistical question about tornadoes using their new skills. They will summarize and create a presentation of their findings.

What materials & technology are required?

- A projector or large display is needed for watching the tornado video.
- An internet capable device will be needed for each student. Students could pair for the first day's exploration, but will need their own device for creating displays of data and calculating measures of center and variation. Students will need access to Google Sheets.

What may be the most challenging for teachers?

- Students may need assistance creating the visualizations in Google sheets. It may be helpful to walk through step-by-step together with the teacher projecting their screen.