

MY NASA DATA Lesson:

Basic Line Plots

Purpose:

To engage students in basic line plot analysis using authentic NASA data.

Grade Level: 3 – 5

Estimated Time for Completing Activity:

One 30 minute class period.



Image courtesy NASA

Learning Outcomes:

- Students will observe line plot data on Monthly Wind Speed
- Students will identify title and axis labels
- Students will identify highest and lowest value on provided line plot
- Students will evaluate changes in the ocean wind speed over 10 year average time frame
- Students will draw conclusions about windy vs less windy months of the year for a certain location
- Students will manipulate data sets from MyNASAData website via printed copy

Prerequisite

- Knowledge of wind
- Knowledge of Month abbreviations (or a reference sheet available)
- Knowledge of speed and units of speed in a basic sense

Vocabulary:

- [line plot](#)
- [wind](#)

Lesson Links:

- [Live Access Server Advanced Edition](#)
- [Student Work Sheet](#)
- [Line Plot PowerPoint](#)

Background:

Line plots are a useful way to display data especially change over time. The teacher directed part of the lesson uses a plot displaying the average wind speed from 1995-2005 for 36.8 N and 76 W (Virginia Beach). The student independent practice part of the lesson includes utilizes a plot displaying the average wind speed from 1995-2005 for 24.6 N and 77.8 W (Bahamas). In the extensions sections, notice opportunity to build upon basic line plot analysis skills and opportunities for further assessment.

Procedure:

Pre-Lesson kinesthetic Activity: Run Like the Wind

1. Use a meter tape to use as a start and stop reference point.
2. Have students walk past the meter stick and time the students as they walk past the meter stick.
3. If you have the space in the classroom, make reference points that are further apart so that students can run or walk. This will allow you to more accurately determine their speed.
4. Make a chart of who is the fastest and slowest at walking or running

Tips provided under teacher notes section

1. Display provided line plot for student viewing, in this case it is Virginia Beach.
2. Ask students to put their finger on what they think is the title of the graph.
3. Have students circle the title of the graph. Discuss how the title on this particular graph is at the bottom. Most graphs display the title at the top.
4. Ask students what the graph is about. Direct their attention to the titles Wind Speed and Virginia Beach, Virginia, USA because this graph shows wind speed for Virginia Beach.

5. Have students put their pencil on the numbers of the graph. Point out the numbers represent meters per second, which is a way to measure speed. Scientists measured how many meters wind traveled in one second. Line plots generally have numbers on the left to show measurement values.
6. Have students put their elbow on the part of the graph that shows the months of the year. Point out the bottom shows the months of the year. Scientists measured wind speed each month. Line plots generally display words on the bottom.
7. Ask students to find the highest point on the line plot and circle it. How do you know this is the highest point? It is nearest the top of the graph
8. What does that mean? That was the fastest wind speed recorded
9. Ask students to find the lowest point on the line plot and circle it. How do you know this is the lowest point? It is nearest the bottom of the graph
10. What does that mean? It was the slowest wind speed recorded
11. Ask students to name the month with the highest wind speed, in this case it would be January, and lowest wind speed, in this case it would be June. Model this by putting your finger or pointer on the highest point, it is circled, and showing that you can find the number to the left and month name to the bottom. Repeat for lowest point.
12. Independent practice. The questions correspond to independent practice sheet.

Questions:

What is the title of the graph?

What do the numbers on the left mean?

What do the abbreviations at the bottom of the graph mean?

What month has the highest wind speed?

What month has the lowest wind speed?

Extensions:

Extensions:

Compare Bahamas data to Virginia Beach data. Have students work with a partner. One partner using Bahamas plot and one with Virginia Beach plot.

Are the highest and lowest values the same?

Are the months with highest or lowest wind speed the same?

Why do you think they are different?

Making a generalization: Which location, Virginia Beach or the Bahamas seems more windy? Why do you think? Provide think time and allow students to share with a classmate

Lesson plan contributed by Becky Schnekser, MY NASA DATA Team

[Click here for Teachers Notes](#)

[View lesson without Standards](#)

