Displaying Data: Educator Handout

OVERVIEW

This lesson plan requires students to identify the appropriate data displays for different types of wildlife data generated by the Snapshot Wisconsin project. It also provides students an opportunity to practice creating data displays and describe data using measures of central tendency.

KEY CONCEPTS

- Different data types require different data displays for decision making
- Displaying data can help show relationships between variables
- Data may support some relationships, but not others

LEARNING OBJECTIVES

Students will be able to:

- Choose an appropriate data display for the situation
- Practice creating common data displays and calculate measures of central tendencies

CURRICULUM CONNECTIONS

Curriculum	Standards
Wisconsin Standards for Science	SCI.SEP4.A.m
Wisconsin Standards for Mathematics	6.SP

KEY TERMS

Mean, median, mode, data display, trail camera

TIME REQUIREMENTS

45 minutes

SUGGESTED AUDIENCE

This activity is appropriate for middle school math students

PRIOR KNOWLEDGE

- Students should know how to find the mean, median, and mode
- Students should be familiar with graphing including: bar graphs, circle graphs, line graphs, histograms, stem-and-leaf plots, box-and-whisker plots, line plots and scatter plots (although these concepts will be reviewed)

SNAPSHOT WISCONSIN

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MATERIALS

- Data Display Review (presentation with review of display types and introduction to Snapshot Wisconsin)
- Displaying Data: Student Handout
- Graphing paper or computer software for creating data displays
- Calculator (optional)

TEACHING TIPS

- This lesson plan can be used as an activity or assessment after students have received instruction on data analysis and displays
- PowerPoint presentation can be adapted depending on student's prior knowledge

PROCEDURES

1. Using the Data Display Review, review types of data displays and instances where a data display is most appropriate
2. Optional: Using slides in the presentation, introduce Snapshot Wisconsin
3. Individually or in groups, have students complete the Displaying Data Student Handout

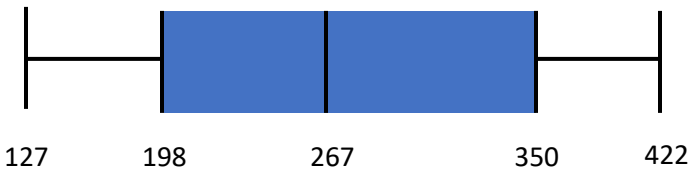
ANSWER KEY

1a. Explain what kind of graph Jen should use for each dataset and describe how she can make that graph.

For Dataset 1, a histogram can be used to show frequencies of data values in intervals of the same size. For Dataset 2, a line graph can be used to show how data changes over time. For Dataset 3, a bar graph can be used to show data in specific categories.

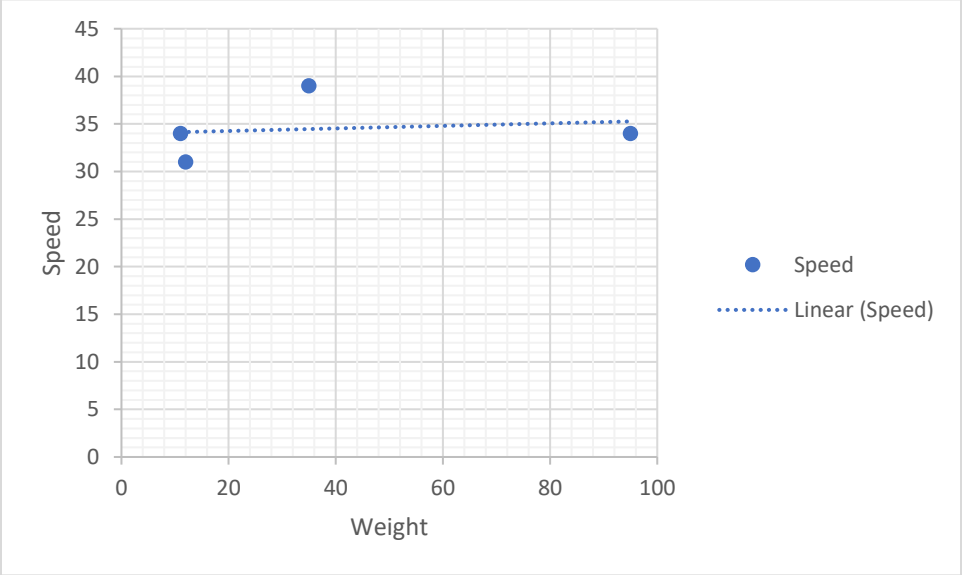
1b. For Dataset 2, find the mean, median, mode, range, and make a box-and-whisker plot. Round your answers to the ones place. Then use your measures and plot to make a statement about this dataset.

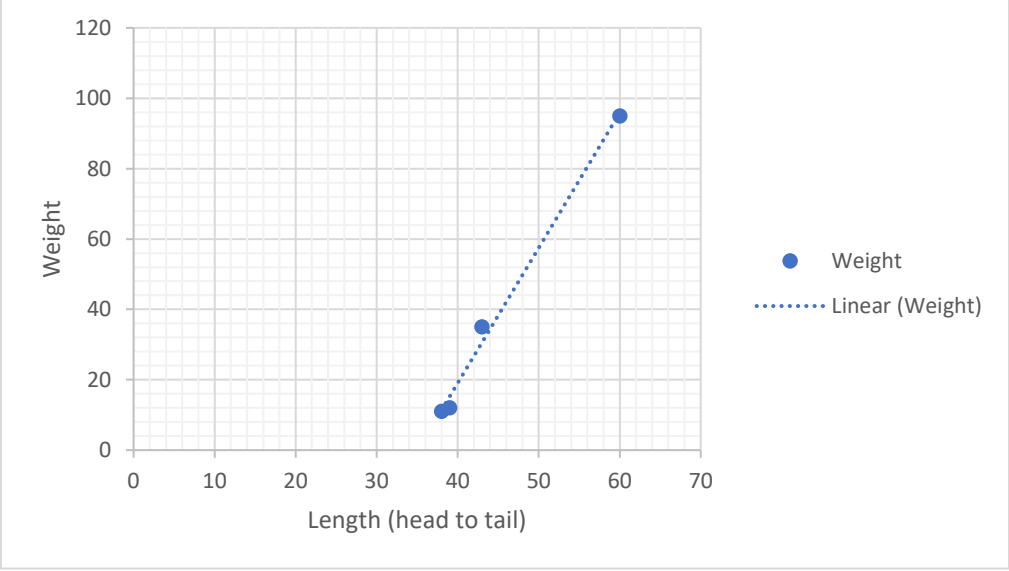
Mean = 276; Median = 267; Mode = 252, Range = 127 to 422. Sample statements may include: On an average month, 6 trail cameras capture 276 photos of animals.

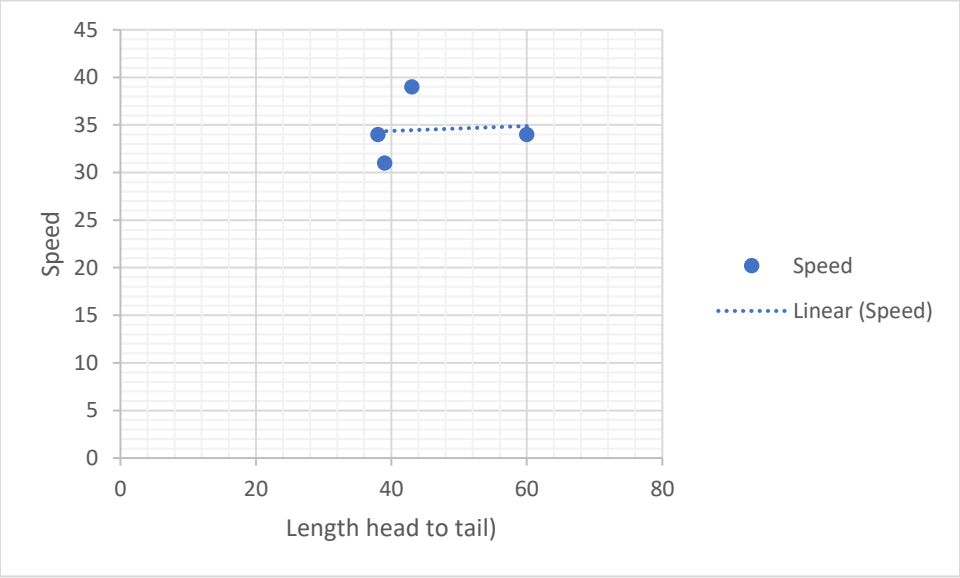


2a. Analyze this data using multiple scatterplots. Find a line of best fit if you can.

See examples below.







2b. Write three statements about the canids that are supported by the data.

Sample statements may include: As a canid's length increases, their weight also increases. There is no relationship between speed and length. There is no relationship between speed and weight.