

Data Displays: Histograms & Box Plots

Name: _____ **Date:** _____

LEARNING OBJECTIVE

The student will organize a data set into a histogram and a box plot to visualize its distribution.

MATERIALS NEEDED

- graph paper
- ruler
- pencil
- colored pencils
- the data set from Week 5

HANDS-ON ACTIVITY

1. Using your Week 5 data set (or a new set of 10-15 measurements), decide on 4-5 equal-width intervals (bins) that cover the full range.
2. Tally how many data points fall in each interval, then draw a histogram on graph paper with bars representing each bin's frequency.
3. Find the five-number summary of your data: minimum, first quartile (Q1), median, third quartile (Q3), and maximum.
4. Draw a box plot below your histogram on the same graph paper, using the five-number summary and your ruler to mark accurate positions.
5. Shade the box (between Q1 and Q3) in one color and draw the whiskers to the min and max in another color.

QUESTIONS

1. What are the 4-5 intervals (bins) you used for your histogram, and which bin had the highest frequency?
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2. What is the five-number summary of your data set?
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3. Looking at your histogram's shape, is your data roughly symmetric, skewed left, or skewed right? Explain.

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- 4. What does the width of the box in your box plot (the interquartile range) tell you about your data?**
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