IM 9–12 MATH v.1

Unit 1
Sequences and Functions

ALGEBRA 1

Lesson 16

Analyzing Data

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Learning Goal

Let's answer statistical questions by analyzing data, and comparing and contrasting measures of shape, center, and variability.

Algebra 1

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Experimental Conditions

Warm-up

To test reaction time, the person running the test will hold a ruler at the 12 inch mark. The person whose reaction time is being tested will hold their thumb and forefinger open on either side of the flat side of the ruler at the 0 inch mark on the other side of the ruler. The person running the test will drop the ruler and the other person should close their fingers as soon as they notice the ruler moving to catch it. The distance that the ruler fell should be used as the data for this experiment.

With your partner, write a statistical question that can be answered by comparing data from two different conditions for the test.

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Experimental Conditions

Warm-up

- What are your two conditions?
- How are you going to collect this data
- How many trials do you think you should do under each condition?

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Dropping the Ruler

Earlier, you and your partner agreed on a statistical question that can be answered using data collected in 2 different ruler-dropping conditions. With your partner, run the experiment to collect at least 20 results under each condition.

Analyze your 2 data sets to compare the statistical question. Next, create a visual display that includes:

- your statistical question
- the data you collected
- a data display
- the measure of center and variability you found that are appropriate for the data
- an answer to the statistical question with any supporting mathematical work

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Dropping the Ruler

- Once you collected your data, how did you answer your statistical question?
- How did you choose which measure of center and which measure of variability to use?
- Using the context of the two treatments, what did the measure of variability tell you?
- Imagine that you collected data for the same treatments from all the students in the class. How would this change how you displayed or analyzed your data?

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Heights and Handedness

Is there a connection between a student's dominant hand and their size? Use the table of information to compare the size of students with different dominant hands.

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Analyzing Data

Lesson Synthesis

- What did you find the most challenging about this lesson?
- What did you find interesting about this lesson?
- What mathematics do you need to know more about?

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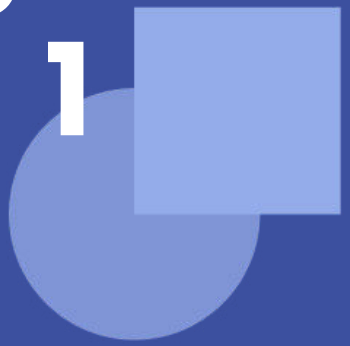
I can collect data from an experiment and compare the results using measures of center and measures of variability.

Learning Targets

Algebra 1



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