

# TOPIC 8

## Display, Describe, and Summarize Data

In this topic, students study data sets and how to display and analyze them.

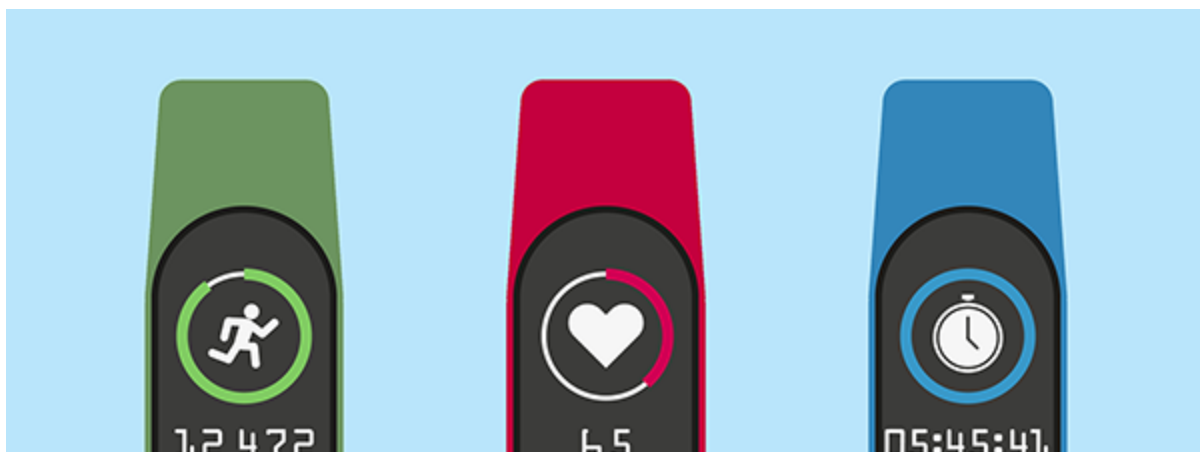
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### CONNECT THE MATH

The news is full of information, facts, and figures, known as *data*. Data analysis allows us to understand and interpret those facts and figures. In this topic, students focus on *numerical* data.

Data sets may include information about food, cars, population statistics, or scientific research. Data can be shared as statistics but also in images. Many devices collect and display data about physical activities.

Look for data sets that your family can discuss. How many data items are in the set? What trends do you see in the data? How would you describe the data set with a measure of center? How varied are the data values?





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## LESSON 8-1

### Recognize Statistical Questions

A statistical question anticipates variability in responses and can be answered by collecting and analyzing data.

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#### LESSON OBJECTIVES

- Identify statistical questions.
- Write statistical questions and display the collected data.

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#### HOW CAN YOU HELP WITH HOMEWORK

##### Review Lesson Content

Watch and share these video tutorials with your student:

- [What Is Numerical, or Quantitative, Data?](#)

##### Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- [statistical question](#)

You can use these search terms and phrases to help your student find additional help online:

- identifying a statistical question
- writing a statistical question



## LESSON 8-2

### Summarize Data Using Mean, Median, Mode, and Range

The mean, median, and mode are measures that can be used to describe the center of a data set. The range is a measure that can be used to describe the variability of a data set.

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#### LESSON OBJECTIVES

- Determine the mean, median, mode, and range of a data set.

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#### HOW CAN YOU HELP WITH HOMEWORK

##### Review Lesson Content

Watch and share these video tutorials with your student:

- [How Do You Find the Mean of a Data Set?](#)
- [What Is the Median of a Data Set?](#)
- [How Do You Find the Range of a Data Set?](#)

##### Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- [mean](#)
- [measure of center](#)

- [measure of variability](#)
- [median](#)
- [mode](#)
- [range](#)

You can use these search terms and phrases to help your student find additional help online:

- finding measures of center
- finding the range of a data set
- using statistical measures to describe a data set

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## LESSON 8-3

### Display Data in Box Plots

A box plot is a good choice for displaying a distribution of numerical data values on a number line.

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#### LESSON OBJECTIVES

- Display data in a box plot.
- Interpret and analyze a box plot.

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#### HOW CAN YOU HELP WITH HOMEWORK

##### Review Lesson Content

Watch and share these video tutorials with your student:

- [What Is a Box-and-Whisker Plot?](#)
- [How Do You Make a Box-and-Whisker Plot?](#)

## Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- [box plot](#)
- [interquartile range \(IQR\)](#)
- [quartiles](#)

You can use these search terms and phrases to help your student find additional help online:

- making a box plot
- finding the IQR
- interpreting a box plot

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# LESSON 8-4

## Display Data in Frequency Tables and Histograms

Data values can be organized into equal intervals and displayed in a frequency table or histogram.

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### LESSON OBJECTIVES

- Organize data into equal intervals and display data in a frequency table or histogram.
- Interpret and analyze a histogram.

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### HOW CAN YOU HELP WITH HOMEWORK

#### Review Lesson Content

Watch and share these video tutorials with your student:

- [How Do You Make a Histogram?](#)
- [What Is a Frequency Table?](#)

### Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- [frequency table](#)
- [histogram](#)

You can use these search terms and phrases to help your student find additional help online:

- making a frequency table
- making a histogram
- interpreting a histogram

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## LESSON 8-5

### Summarize Data Using Measures of Variability

Measures of variability, such as the mean absolute deviation (MAD) and interquartile range (IQR), describe the spread and clustering of data in a set.

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#### LESSON OBJECTIVES

- Calculate the mean absolute deviation (MAD) and interquartile range (IQR) of a data set.
- Summarize data using measures of variability.

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#### HOW CAN YOU HELP WITH HOMEWORK

##### Review Lesson Content

Watch and share these video tutorials with your student:

- [How Do You Find the Interquartile Range of a Data Set?](#)
- [How Do You Summarize Data Using Measures of Variability?](#)

### Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- [absolute deviation](#)
- [mean absolute deviation \(MAD\)](#)
- [interquartile range \(IQR\)](#)

You can use these search terms and phrases to help your student find additional help online:

- calculating the mean absolute deviation
- determining the interquartile range
- measures of variability

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## LESSON 8-6

### Choose Appropriate Statistical Measures

Data sets may best be described using different measures of center and variability.

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#### LESSON OBJECTIVES

- Select the most appropriate measure of center and variability for a data set.
- Use measures of center and variability to describe data sets.

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#### HOW CAN YOU HELP WITH HOMEWORK

##### Review Lesson Content

Watch and share these video tutorials with your student:

- [How Do You Figure Out Whether the Mean, Median, or Mode Best Describes a Data Set?](#)
- [How Do You Find the Interquartile Range of a Data Set?](#)

### Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- [outlier](#)

You can use these search terms and phrases to help your student find additional help online:

- choosing the best measure of center
- choosing the best measure of variability

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## LESSON 8-7

### Summarize Data Distributions

A set of numerical data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape.

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#### LESSON OBJECTIVES

- Describe the center, spread, and overall shape of a data set.
- Summarize numerical data sets using measures of center and related measures of variability.

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#### HOW CAN YOU HELP WITH HOMEWORK

##### Review Lesson Content

Watch and share these video tutorials with your student:



- [How Do You Figure Out Whether the Mean, Median, or Mode Best Describes a Data Set?](#)
- [What is the Interquartile Range?](#)

### **Review Key Vocabulary**

Review key vocabulary from this lesson in your student's glossary:

- data distribution

You can use these search terms and phrases to help your student find additional help online:

- describing data distributions
- summarize a data distribution
- describing the shape of dot plots
- describing the shape of box plots