

learning focus:

- ✓ describe the measures of center, spread, and shape of a set of data
- ✓ summarize numerical and categorical data
- ✓ represent data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots

DATA & STATISTICS UNIT

10 DAY TEKS-ALIGNED UNIT



A MANEUVERING THE MIDDLE® RESOURCE

DATA & STATISTICS



a 10 day TEKS-aligned unit

TEKS: 6.12A, 6.12B, 6.12C, 6.12D, 6.13A, 6.13B

**ready-to-go, scaffolded
student materials**

DATA AND STATISTICS UNIT

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student friendly + real-world application

self-checking practice

Unit: Data & Statistics
Homework 3

Name _____
Date _____ Pd _____

DOT PLOTS

Four students were given dot plots to create. Sketch the dot plots in questions 1-4. Then use the clues in A-D to determine each student's data set.

A
Sara's data set has a range of 5.

B
Julius's data set is skewed right.

C
Elisa's data set

D
Javon's data set is

1. The number of minutes a customer wait line at the grocery curbside pickup:
6, 9, 12, 7, 6, 10, 8, 8, 6, 6, 7, 6

Name: _____

3. The number of elementary schools in the regional cities:
5, 8, 10, 22, 16, 16, 3, 11, 19, 5

Name: _____

5. A large bag of individual candy packs is and marked on the dot plot below. Which

CANDY

10 11 12 13 14 15 16 17 18

NUMBER OF PIECES

Use your understanding of dot plots and statistical data to answer the questions below.

2. The ecological society sampled the green iguana population and made note of the length of each iguana sampled. The data is displayed in the dot plot below.

LENGTH OF A GREEN IGUANA

11 12 13 14 15 16 17 18

NUMBER OF INCHES

a. What is the mean? _____
b. What is the range? _____

e. Based on the shape of the data, which length of a green iguana?

3. A local neighborhood is seeking to be scores of each home are displayed in the

ENERGY EFFICIENCY RATING

58 60 62 64 66 68 70 72

EFFICIENCY SCORE

d. Label each of the following statements:
_____ A total of 20 homes were rated
_____ Exactly half of the ratings were
_____ The most common home rating

4. Mr. Tips asked his students to sketch close together. Which student(s) completed

a. Sara only
b. Javon only
c. Both Sara and Javon
d. Neither Sara nor Javon

Summarize today's lesson:

Unit: Data & Statistics
Student Handout 3

Name _____
Date _____ Pd _____

DOT PLOTS

DOT PLOT

A dot plot is a _____ display of data using a number line and dots to represent each data point. The data that repeats itself most often is the mode. In a dot plot, the mode is the _____ value.

A survey in the 6th grade class asked students to record the number of devices they had in their home. The information is recorded in the table below.

# OF DEVICES	0	1	2	3	4	5	6	7	8	9
FREQUENCY	1	2	4	5	7	5	4	2	2	1

1. Use the data in the table to make a dot plot. Then answer the questions that follow.

a. What do you notice about the shape of the dot plot? List any other observations in the space below.

b. Where would you say that most of the data lies on the dot plot? What is the median of the data?

SPREAD

The variability in the data points describes how far apart the data is from one another. This can also be represented by the _____.

CENTER

The median and the mean both represent the center of the data.

When the data is skewed, then the _____ is the best representation of the data.

When the data is symmetric, then the _____ is the best representation of the data.

SHAPE

Data can take on three different shapes:

skill application

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streamline your planning process with unit overviews

DATA AND STATISTICS OVERVIEW



READINESS STANDARDS

6.12C Summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution.

6.12D Summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution.

6.13A Interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots.

SUPPORTING STANDARDS

6.12A Represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots.

6.12B Use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution.

6.13B Distinguish between situations that yield data with and without variability.



key vocabulary



vertical alignment



sample pacing calendar

BIG IDEAS

- The shape, center, and spread of a data distribution
- Data can be represented graphically
- The measure of center describes the center of a data distribution
- The measure of variability describes the spread of a data distribution

ESSENTIAL QUESTION:

- What patterns do you notice in the data?
- How can statistical information be used to make decisions?

DATA AND STATISTICS PACING GUIDE



DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Measures of Center	Measures of Variability	Dot Plots	Stem and Leaf Plots	Data and Statistics Quiz
Student Handout 1 Homework 1	Student Handout 2 Homework 2			
DAY 6	DAY 7			
Histograms	Box Plots			
Student Handout 5 Homework 5	Student Handout 6 Homework 6			

DATA AND STATISTICS OVERVIEW



TOPIC	TEACHING TIPS
Measures of Center	<ul style="list-style-type: none">• Students need to be able to recognize that the mean and median are two different measures of center and that one is a better judge based on what the data set looks like. When the data is skewed, the median is the best representation. When the data is symmetric, the mean is the best representation.• Mode is also another measure of central tendency, but it is not a good representation of the center of a data set.• Students often associate mean with their grades because they are familiar with a grade point average.
Measures of Variability	<ul style="list-style-type: none">• This is a great discussion when looking at the statistics of a professional basketball team. There will be specific measurements (height) that have less variability, but then there will be others that have great variability (number of free throws, number of points scored).
Dot Plots and Stem-and-Leaf Plots	<ul style="list-style-type: none">• This is a great opportunity for students to gather their own data. Students can create their own statistical question and then survey the class and plot the data. Emphasize the importance of the scale on the dot plot and that each response gets its own dot.• A stem-and-leaf plot is primarily used to consolidate large data sets. Students need to be careful to ensure that each data point is represented on the plot and that they include a key, as sometimes decimals are represented on the plot. As an engagement piece, you might consider using meter sticks to have students measure a partner in centimeters and then record the data on a stem-and-leaf plot.
Histograms	<ul style="list-style-type: none">• Provide each student with a sticky note and ask them to write their name. Then, pose the question, "How many minutes does it take you to get ready in the morning?" or something similar. Discuss the various options for the x- and y-axis and then ask students to place their sticky note accordingly on the board. Students should be able to see a "life-size" histogram!

teaching ideas



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unit study guide + assessments



quizzes



editable unit test

Unit: Data & Statistics
Quiz 1

Name _____
Date _____ Pd _____

QUIZ: DATA & STATISTICS

Use the stem-and-leaf plot to answer questions 1-3.

The number of minutes employees commute to work are listed in the stem-and-leaf plot below.

STEM	LEAF
5	5 6 8 9 9
6	4 7
7	0 1 3 7
8	2

Answers

- _____
- _____
- _____
- _____

1. What is the median number of minutes

2. What is the range of the number of minutes
work?

3. Which of the following list of numbers
stem-and-leaf plot above?

- A. 5.5, 5.6, 5.8, 5.9, 6.4, 6.7, 7.0, 7.1, 7.3,
- B. 55, 56, 58, 59, 64, 67, 70, 71, 73, 7
- C. 55, 56, 58, 59, 64, 66, 67, 70, 71, 73, 7
- D. 55, 56, 58, 59, 64, 67, 70, 71, 73, 7

Use the dot plot to answer questions 4-5.

Mrs. Moore keeps track of the number of
log. She charts the time on a dot plot at the

4. Which statement about the data is true?

- A. The range is 20 minutes.
- B. The interquartile range is 10 minutes.
- C. The median number of minutes is 25.
- D. A total of 18 students were surveyed.

5. What is the mean number of minutes r

Unit: Data & Statistics
Review

Name _____
Date _____ Pd _____

DATA & STATISTICS UNIT STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure
to ask questions if you need more help with a topic.

**I CAN SUMMARIZE NUMERIC DATA WITH THE MEAN, MEDIAN, RANGE, AND INTERQUARTILE
RANGE. 6.12C**

1. The following data set represents the
average high monthly temperature in
CO.

44, 46, 54, 61, 71, 81, 88, 86, 77, 6

Mean: _____ Median: _____

3. The following data set represents
of an order (rounded to the nearest
fast-food drive thru.

10, 21, 34, 12, 6, 3, 14, 18, 22, 29, 9, 2

Q1: _____ Q3: _____ IQR: _____

**I CAN DIFFERENTIATE BETWEEN
VARIABILITY.**

5. Which of the following will yield a

- A. The number of days in a month
- B. The number of days in a week
- C. The shoe size of various five
- D. The number of letters in the a
- E. The number of patients at a d
- F. The distance between your ho

SIXTH GRADE CURRICULUM

DATA AND STATISTICS

UNIT TEN: ANSWER KEYS

answer keys
included



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