learning focus:

✓ solve problems using data represented in bar graphs, circle graphs, and dot plots

✓ make inferences about a population

✓ compare the shapes, centers, and spreads of dot plots and box plots

A MANEUVERING THE MIDDLE ® RESOURCE

DATA & STATISTICS

7th GRADE

a 10 day TEKS-aligned unit
TEKS: 7.6F, 7.6G, 7.12A, 7.12B, 7.12C

ready-to-go, scaffolded student materials

DATA AND STATISTICS UNIT
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student friendly + real-world application

skill application

Unit: Data & Statistics
Student Handout 2

Name _____
Date _____ Pd _____

POPULATION INFERENCES

POPULATION INFERENCES
- Once a sample has been collected from a population, an _____ about the entire population can be made by setting up a proportion.
- These inferences can also be used to compare different populations and make _____

Use the information below to answer the q_____

1. Eastside Middle School conducted a sur_____ which elective they were most likely to par_____

	SPAN_____
6TH GRADE	14

a. How many students were surveyed?

b. What percentage of students surveyed_____

c. There are 350 students in the 6th grade_____ how many students can be expected to sig_____

d. Of the 350 students in the 6th grade, ho_____ theater?

e. The school decides to drop any elective_____ says that since only 6 students would like t_____ is or is not correct.

_____

_____

f. Mark each of the following statements_____
_____ Over half of the students at Eas_____
_____ Combined, the Spanish and art c_____
_____ Out of the 350 students at Easts_____

2. A video company randomly selected teen and adult subscribers and asked them their preferred genre of TV shows.

Use the survey results in the graph at right to answer the questions below.

TV SHOW
□ TEENS
□ ADULTS

NUMBER OF PEOPLE

COMEDY   DRAMA   ACTION
GENRE

a. How many total subscribers were surveyed?

b. What percentage of subscribers su_____

c. The video company estimates that th_____ sample, how many adult subscribers ca_____

d. What percentage of subscribers tha_____

e. Mark each of the following statement_____
_____ More teens were surveyed tha_____
_____ Adults liked dramas more than_____
_____ Half as many teens chose acti_____

Use your knowledge of population infere_____

3. The school counselor randomly sele_____ ways they get home from school. Base_____ represent the data?

TRANSPORTATION HOME

NUMBER OF STUDENTS

BUS   CAR   WA_____
TRANSPORTATION METHO_____

Summarize today's lesson:

Unit: Data & Statistics
Homework 2

Name _____
Date _____ Pd _____

POPULATION INFERENCES

The Mitchell Junior High newspaper staff conducted a survey on school start times with two samples of 40 randomly selected students to represent the entire 600-member student population. The results are shown below.

	7:45 AM START TIME	8:30 AM START TIME	9:00 AM START TIME
SAMPLE #1	12	18	10
SAMPLE #2	14	19	7

1. Read each headline and explain if the statement is supported by the data.

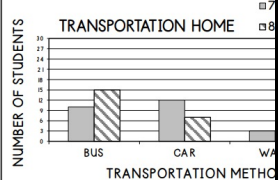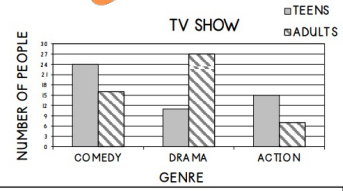| HEADLINE A	HEADLINE B	HEADLINE C	HEADLINE D
OVER 300 STUDENTS WANT TO START AFTER 8:00 AM	8:30 AM START TIME MOST POPULAR WITH STUDENTS	SMALL PERCENTAGE OF STUDENTS WANT TO START AT 7:45 AM	LESS THAN 100 STUDENTS WANT TO START AT 9:00 AM

Headline A: _____
_____
Headline B: _____
_____
Headline C: _____
_____
Headline D: _____

Use your understanding of population inferences to answer the questions below.

2. A school board randomly samples 80 students to determine their opinion on requiring school uniforms for the next school year. The table shows the results of the survey.

OPPOSED	UNDECIDED	IN FAVOR
11	24	45

a. If 1,200 students are in the district, how many students can be expected to oppose school uniforms?

b. Bernice says that based on the survey, a student is more likely to be undecided or opposed than in favor. Do you agree or disagree? Why or why not?

higher level analysis

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7th GRADE

streamline your planning process with unit overviews

✓ key vocabulary

✓ vertical alignment

DATA AND STATISTICS
OVERVIEW

TEKS

READINESS STANDARDS

7.6G Solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents.

7.12A Compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads.

SUPPORTING STANDARDS

7.6F, 7.12B Use data from a random sample to make inferences about a population.

7.12C Compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations.

BIG IDEAS

- Statistics are a way of examining a population and making inferences
- The shape, center, and sprea
- Data can be represented gra

ESSENTIAL QUESTION

- How can you determine wha
- How can statistical informat
- When two populations overla

DATA AND STATISTICS
PACING GUIDE

TEKS

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Populations and Samples	Population Inferences	Interpreting Bar Graphs	Interpreting Circle Graphs	Data and Statistics Quiz
Student Handout 1 Homework 1	Student Handout 2 Homework 2			

DAY 6	DAY 7	
Interpreting Dot Plots	Comparing Dot Plots	
Student Handout 5 Homework 5	Student Handout 6 Homework 6	

sample pacing calendar

DATA AND STATISTICS
OVERVIEW

TEKS

TOPIC	TEACHING TIPS
Entire Unit	• Analyzing data can be difficult for students who struggle with reading comprehension. Oftentimes assessments have several lengthy answer choices. I always suggested that students treat each statement as a true or false statement and even mark it out to the side. It helped students to focus in on only one statement at a time. • In the standards it specifically states "part-to-part" and "part-to-whole" comparisons. These comparisons can include percents, so I would suggest reviewing percent proportions (even before circle graphs).
Population Inferences	• This is a great opportunity to get students out of their seats and working with others. Ask them to create a short (2-3) question survey and use it to collect data amongst their classmates. Based on their data, students should be able to use a proportion to make inferences about the school population. Ask students to make improvements on their collection methods to ensure it is a random sample.
Interpreting Bar Graphs	• I like to ask students to label the value of each bar on top before answering any of the questions. • If possible, try and bring in realistic graphs from online publications. It helps students to see the how graphs are a part of everyday life and to make real-world connections. • As an introductory idea, pass out one sticky note to each person in class. Then, project a blank graph onto the whiteboard with various categories (e.g., favorite subject, favorite food, favorite TV show) Ask students to place their sticky note the column that most applies to them. Then, use the information to play "two truths and a lie," where students will need to create two statements that are true and one that is false from the data.

teaching ideas

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unit study guide + assessments

✓ **quizzes**

✓ **editable unit test**

QUIZ: DATA & STATISTICS

Use the table below to answer questions 1-2.

	6TH GRADE	7TH GRADE	8TH GRADE
A-HONOR ROLL	15	11	14

Answers
1. _____
2. _____
3. _____
4.

1. A sample of students is taken from the school's A honor roll. The school estimates that there are 360 students on t... how many students on the A honor roll are...

2. If there are 360 students in the school... students are 7th graders?

Answer the following questions.

3. A new restaurant in town is surveying... residents to determine how much they typ... pay for a meal out. Which of the followin... describes a random sample?

A. They go door-to-door in a nearby neighborhood.

B. They randomly select 50 residents of... nursing home.

C. They call 200 randomly selected town residents.

D. They ask patrons if the price was reas...

5. A streaming service randomly selected... of shows they watch per week. Of those... on the data, if the company has 2,500 su... week?

A. 400
B. 1,125
C. 1,400
D. 800

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 COMPARE TWO POPULATIONS BASED ON RANDOM SAMPLES. 7.12C

1. A random sample from the 6th and 7th grade student population was taken to determine which clubs were the most popular.

	YE...
6TH GRADE	
7TH GRADE	

a. If there are 280 6th graders and 20... in the yearbook?

b. What percent of 6th graders are inv...

c. The school decides to drop any club... clubs be dropped?

I CAN USE DATA FROM A RANDOM SA...

2. At an office building, a random sam... employees was taken to determine the... preference in eyewear. Use the grap... to determine which statements are tru... false. Correct any false statements.

EYEWEAR

NUMBER OF PEOPLE

CONTACTS   GLASSES   N...

TYPE OF EYEWEAR

SEVENTH GRADE CURRICULUM

DATA AND STATISTICS

UNIT NINE: ANSWER KEYS

answer keys included

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