

# HANDOUTS AND ASSESSMENTS

*How can we use mathematics to compare what is typical and what is unique about our class?*

LEARNING THROUGH PERFORMANCE

## Class Profile

GRADE 6



## Get Started on the Culminating Project

### U.S. Census at School Questionnaire

The first 13 questions marked with an asterisk (\*) are international questions common to the countries participating in the Census at School program.

1. Are you male or female?\*

- ☐ Male  
☐ Female

2. How old are you?\*

Age (years) \_\_\_\_\_

3. Are you right-handed, left-handed or ambidextrous? (An ambidextrous person is able to use his or her right and left hands equally well.)\*

- ☐ Right-handed  
☐ Left-handed  
☐ Ambidextrous

4. How tall are you without your shoes on? Answer to the nearest centimeter.\*

Height (cm) \_\_\_\_\_

5. What is the length of your right foot (without your shoe on)? Answer to the nearest centimeter.\*

Right foot length (cm) \_\_\_\_\_

6. What is your arm span? (Open arms wide and measure distance across your back from tip of right hand middle finger to tip of left hand middle finger.) Answer to the nearest centimeter.\*

Arm span (cm) \_\_\_\_\_

7. In how many languages can you hold an everyday conversation?\*

Number of languages spoken \_\_\_\_\_

8. What is the main method of transportation you typically use to get to school? Choose one.\*

- |   |   |                                |
|---|---|--------------------------------|
| <input type="checkbox"/> Walk                     | <input type="checkbox"/> Bus                            | <input type="checkbox"/> Boat  |
| <input type="checkbox"/> Car                      | <input type="checkbox"/> Bicycle                        | <input type="checkbox"/> Other |
| <input type="checkbox"/> Rail (Train/Tram/Subway) | <input type="checkbox"/> Skateboard/Scooter/Rollerblade |                                |

9. How long does it usually take you to travel to school? Answer to the nearest minute.\*

Travel time (minutes) \_\_\_\_\_

10. Use your dominant hand to test your reaction time. Go to the Reaction Time link found on the Student Section page of the Census at School web site. Click "Start" and watch for the background color to change. As soon as it changes, hit "Stop" and note your reaction time. Record your reaction time in seconds as a decimal below.\*

Reaction time (seconds) \_\_\_\_\_

11. Test your memory. How quickly can you uncover all the pairs of pictures? Go to the Memory Test link found on the Student Section page of the Census at School web site. Click "Start" and then click on squares to uncover their pictures. Only matching pairs of pictures will remain uncovered. Keep clicking until you have uncovered all the pairs. Record your time in seconds as a number below.\*

Memory test time (seconds) \_\_\_\_\_

12. In what sport or activity do you most enjoy participating in?\*

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Athletics (Track & Field) | <input type="checkbox"/> Gymnastics                  | <input type="checkbox"/> Soccer                  |
| <input type="checkbox"/> Baseball/Softball         | <input type="checkbox"/> Hockey (Field)              | <input type="checkbox"/> Swimming                |
| <input type="checkbox"/> Basketball                | <input type="checkbox"/> Hockey (Ice)                | <input type="checkbox"/> Table Tennis            |
| <input type="checkbox"/> Bowling                   | <input type="checkbox"/> Lacrosse                    | <input type="checkbox"/> Tennis                  |
| <input type="checkbox"/> Cycling                   | <input type="checkbox"/> Martial Arts                | <input type="checkbox"/> Walking/Hiking          |
| <input type="checkbox"/> Dancing                   | <input type="checkbox"/> Rowing                      | <input type="checkbox"/> Other activities/sports |
| <input type="checkbox"/> Football (American)       | <input type="checkbox"/> Running/Jogging             | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Golf                      | <input type="checkbox"/> Skateboarding/Rollerblading |  |

13. How important are the following issues to you? Rate each on the scale from 0 (not important) to 1000 (very important). Record your rating of the importance of each issue in the boxes below.\*

Use the Rating Slider found on the Student Section page of the Census at School web site.

_____	Reducing pollution
_____	Recycling
_____	Conserving water
_____	Conserving energy (electricity, gas, oil for heating, lighting, car travel)
_____	Owning a computer
_____	Access to the internet

14. What is the length of your left foot (without your shoe on)? Answer to the nearest centimeter.

Left foot length (cm) \_\_\_\_\_

15. Which is longer, your right or left foot?

- ☐ Right foot
- ☐ Left foot
- ☐ Same length

16. What is the length of your index finger (finger next to your thumb) on your left hand? Answer to the nearest millimeter (there are 10 millimeters in one centimeter).

Index finger length (mm) \_\_\_\_\_

17. What is the length of your ring finger (located between your middle finger and little finger) on your left hand? Answer to the nearest millimeter (there are 10 millimeters in one centimeter).

Ring finger length (mm) \_\_\_\_\_

18. Which is longer on your left hand; your index finger or ring finger?

- ☐ Index finger
- ☐ Ring finger
- ☐ Same length

19. In which month were you born?

- |                                   |                                 |                                    |
|-----------------------------------|---------------------------------|------------------------------------|
| <input type="checkbox"/> January  | <input type="checkbox"/> May    | <input type="checkbox"/> September |
| <input type="checkbox"/> February | <input type="checkbox"/> June   | <input type="checkbox"/> October   |
| <input type="checkbox"/> March    | <input type="checkbox"/> July   | <input type="checkbox"/> November  |
| <input type="checkbox"/> April    | <input type="checkbox"/> August | <input type="checkbox"/> December  |

20. Which is your favorite season?

- |                                 |                                 |
|---------------------------------|---------------------------------|
| <input type="checkbox"/> Spring | <input type="checkbox"/> Fall   |
| <input type="checkbox"/> Summer | <input type="checkbox"/> Winter |

21. Do you have any allergies?

- ☐ Yes
- ☐ No

22. Are you vegetarian?

- ☐ Yes
- ☐ No



23. What is your favorite type of food?

- |   |   |                                      |
|---|---|--------------------------------------|
| <input type="checkbox"/> Poultry (e.g., chicken)        | <input type="checkbox"/> Rice/noodle dishes | <input type="checkbox"/> Vegetables  |
| <input type="checkbox"/> Meat (e.g., hamburgers, steak) | <input type="checkbox"/> Breads/sandwiches  | <input type="checkbox"/> Fruit       |
| <input type="checkbox"/> Seafood                        | <input type="checkbox"/> Salads             | <input type="checkbox"/> Desserts    |
| <input type="checkbox"/> Pizza/pasta                    | <input type="checkbox"/> Soups              | <input type="checkbox"/> Other       |
|   |   | <input type="checkbox"/> No favorite |

24. What type of beverage do you drink most often during the day?

- |                                       |   |                                 |
|---------------------------------------|---|---------------------------------|
| <input type="checkbox"/> Water        | <input type="checkbox"/> Soft drink (caffeinated)                 | <input type="checkbox"/> Tea    |
| <input type="checkbox"/> Milk         | <input type="checkbox"/> Soft drink (non-caffeinated)             | <input type="checkbox"/> Coffee |
| <input type="checkbox"/> Juice        | <input type="checkbox"/> Energy drink                             | <input type="checkbox"/> Other  |
| <input type="checkbox"/> Sports drink | <input type="checkbox"/> Powdered drink<br>(e.g., Kool-Aid, Tang) |                                 |

25. What is your favorite subject in school? Choose one.

- |   |                                    |   |
|---|------------------------------------|---|
| <input type="checkbox"/> Art            | <input type="checkbox"/> History   | <input type="checkbox"/> Computers and technology   |
| <input type="checkbox"/> English        | <input type="checkbox"/> Geography | <input type="checkbox"/> Mathematics and statistics |
| <input type="checkbox"/> Languages      | <input type="checkbox"/> Music     | <input type="checkbox"/> Physical education         |
| <input type="checkbox"/> Social studies | <input type="checkbox"/> Science   | <input type="checkbox"/> Other                      |

26. How many hours of sleep per night do you usually get when you have school the next day?

School night sleep time (hours) \_\_\_\_\_

27. How many hours of sleep per night do you usually get when you don't have school the next day?

Non-school night sleep time (hours) \_\_\_\_\_

28. How many people usually live in your home, including yourself?

Home occupants \_\_\_\_\_

29. Can the internet be accessed at your home?

- ☐ No internet connection
- ☐ Yes – dial-up connection
- ☐ Yes – broadband connection
- ☐ Yes—other (for example, internet access through mobile phone)

30. Which of these methods do you most often use to communicate with your friends? Select one.

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> In person            | <input type="checkbox"/> Myspace, Facebook,<br>other social<br>networking sites, or<br>blog | <input type="checkbox"/> Internet chat or instant<br>messaging |
| <input type="checkbox"/> Telephone (landline) |   | <input type="checkbox"/> Other                                 |
| <input type="checkbox"/> Cell phone           |   |  |
| <input type="checkbox"/> Text messaging       |   |  |
| <input type="checkbox"/> E-mail               |   |  |

31. About how many text messages did you send yesterday? \_\_\_\_\_

32. About how many text messages did you receive yesterday? \_\_\_\_\_

33. Estimate how many hours a week you usually spend doing the following activities:

Hanging out with friends \_\_\_\_\_

Talking on the phone \_\_\_\_\_

Doing homework \_\_\_\_\_

Doing things with family \_\_\_\_\_

Playing sports/outdoor games or activities \_\_\_\_\_

Playing computer/video games \_\_\_\_\_

Using social networking web sites \_\_\_\_\_

Sending/receiving text, SMS, or computer instant messages \_\_\_\_\_

Using the computer/internet \_\_\_\_\_

Watching TV \_\_\_\_\_

Paid work \_\_\_\_\_

Housework/Jobs at home \_\_\_\_\_

34. How much pressure do you feel because of the schoolwork you have to do?

- ☐ None
- ☐ Very little
- ☐ Some
- ☐ A lot

35. What is the highest level of education you plan to attain?

- |  |   |
|--|---|
| <input type="checkbox"/> Less than high school | <input type="checkbox"/> Undergraduate degree |
| <input type="checkbox"/> High school           | <input type="checkbox"/> Graduate degree      |
| <input type="checkbox"/> Some college          | <input type="checkbox"/> Other                |

36. What is your favorite type of music? Select one.

- |                                      |                                      |   |                                |
|--------------------------------------|--------------------------------------|---|--------------------------------|
| <input type="checkbox"/> Classical   | <input type="checkbox"/> Pop         | <input type="checkbox"/> Rhythm and blues (R&B) | <input type="checkbox"/> Other |
| <input type="checkbox"/> Country     | <input type="checkbox"/> Punk rock   | <input type="checkbox"/> Rock and roll          |                                |
| <input type="checkbox"/> Heavy metal | <input type="checkbox"/> Rap/Hip hop | <input type="checkbox"/> Techno/Electronic      |                                |
| <input type="checkbox"/> Jazz        | <input type="checkbox"/> Reggae      | <input type="checkbox"/> Gospel                 |                                |

37. Which of the following superpowers would you most like to have? Select one.

- |   |   |                                      |
|---|---|--------------------------------------|
| <input type="checkbox"/> Invisibility   | <input type="checkbox"/> Telepathy (read minds) | <input type="checkbox"/> Freeze time |
| <input type="checkbox"/> Super strength | <input type="checkbox"/> Fly                    |                                      |

38. Which would you prefer to be? Select one.

- ☐ Rich
- ☐ Famous
- ☐ Happy
- ☐ Healthy

39. Think about someone you most look up to. This could be someone you know personally or have read about or seen on TV. From the following list, choose the category that best describes this person.

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Relative             | <input type="checkbox"/> Business person  | <input type="checkbox"/> Doctor or nurse           |
| <input type="checkbox"/> Actor                | <input type="checkbox"/> Religious figure | <input type="checkbox"/> Musician or singer        |
| <input type="checkbox"/> Sports person        | <input type="checkbox"/> Politician       | <input type="checkbox"/> Friend                    |
| <input type="checkbox"/> Coach or club leader | <input type="checkbox"/> Teacher          | <input type="checkbox"/> Community leader or elder |
| <input type="checkbox"/> Other                |   |  |

40. If you had \$1000 to donate to a charity of your choice, what type of organization would you choose?

- ☐ Arts, culture, sports (e.g., community centers, museums, sports teams, music programs)
- ☐ Health (e.g., cancer, AIDS, diabetes research)
- ☐ Religious (e.g., church or activities related to worship)
- ☐ Environment (e.g., saving forests, clean air, clean water)
- ☐ Wildlife, animals (e.g., endangered species, prevention of cruelty to animals)
- ☐ Education/Youth development (e.g., reading, literacy and skills training, after-school programs)
- ☐ International aid (e.g., disaster relief, health, education and food aid in poor countries)
- ☐ Other



## Get Started on the Culminating Project

### CHECK FOR UNDERSTANDING • Statistical Questions

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

1. Give an example of a question that is **not** a statistical question.
2. Change your question so that it becomes a statistical question.
3. Give an example of a statistical question that yields numerical data.
4. Give an example of a statistical question that yields categorical data.
5. In your own words, describe your thinking about what makes a question a statistical question.



## 2

## Measures of Central Tendency

### CHECK FOR UNDERSTANDING • How the Center Changes

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

A student in Ms. Garcia's class, Cece, got the following quiz scores: 87, 94, 82, 76, and 91. Next week she will take another quiz.

1. How will her quiz average change if she gets a score of 100 on the new quiz?  
Justify your answer.
2. How will her quiz median change if she gets a score of 100 on the new quiz?  
Show and explain how you know.
3. What do you notice about the way Cece's quiz mean (average) and quiz median change when you add the score of 100?

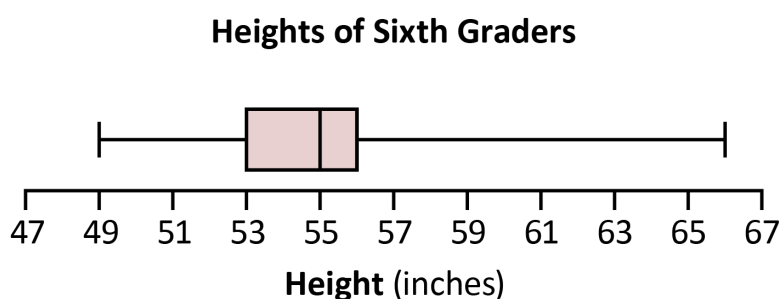
## 3

## Box Plots

## CHECK FOR UNDERSTANDING • Interpret Box Plots

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

This box plot shows the distribution of heights in Ms. Garcia's class. Complete the statements below by interpreting the box plot.



1. About half of the students are shorter than \_\_\_\_\_ inches.
2. Most of the students are \_\_\_\_\_ than 56 inches. (choose taller or shorter)
3. About 25% of the students are taller than \_\_\_\_\_ inches.
4. In this class, some students are between 49 and 53 inches tall. There are also some students who are between 56 and 66 inches tall. Malcolm says that there are more students in the group that are between 56 and 66 inches tall, because that section is longer on the box plot.  
Do you agree or disagree? Explain.

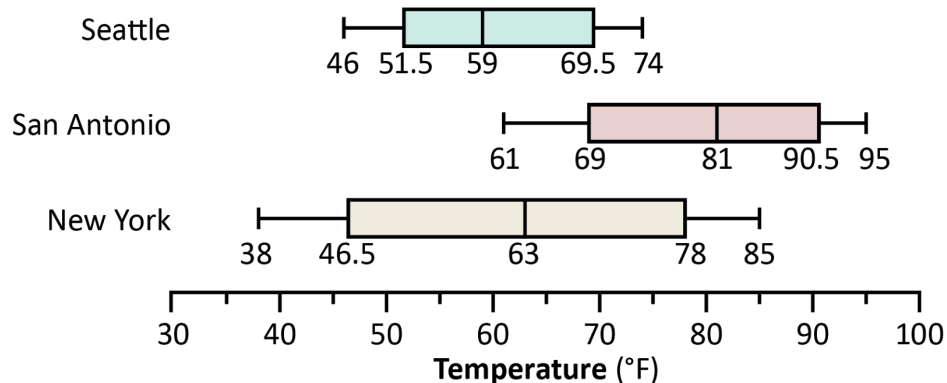
## 4

## Interpret Data

**CHECK FOR UNDERSTANDING • Compare Data Sets**

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

The box plots below show the distribution of three cities' average monthly temperatures.

**Average Monthly Temperatures of Three Cities**

Kari and Jack disagree about which city is coldest. Kari says that Seattle is colder, but Jack insists that New York is coldest.

1. Provide evidence that supports Kari's claim.
2. Provide evidence that supports Jack's claim.
3. Who do you agree with? Why?

## GROUP PREVIEW • Transportation Statistics

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

Ms. Garcia's students want to write letters to their city council in order to persuade the council to add a bus line that reaches their school. They decided to use data they collected as evidence to help support their claim.

Nia wants to create a statistical question about how students get to school so that she can collect data to use in her letter to the city council. Give an example of a statistical question that yields numerical data that she can use.

## INDIVIDUAL PERFORMANCE TASK • Transportation Statistics

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

Ms. Garcia's students want to write letters to their city council in order to persuade the council to add a bus line that reaches their school. They decide to use data they collected as evidence to help support their claim.

1. Nia collected the following data by surveying her classmates to see how far they travel (in miles) to get to school. Here are the responses she received:

{ 4.2, 1.9, 0.8, 4.6, 11, 2, 2.8, 3, 4.2, 0.6, 3.7 }

- a. Create a five-number summary for Nia's data.

Minimum:      1st Quartile:      Median:      3rd Quartile:      Maximum:

- b. Create a box plot for Nia's data.

- c. What is the mean of Nia's data? Why is it different from the median?

2. Henry collects data by surveying his classmates to see how far they travel (in miles) to get to school. Here are Henry's responses:

$\{ 9.1, 0.8, 0.6, 5.9, 1, 12, 2.3, 7.7, 3, 0.3, 8.3 \}$

Henry says his school is just like Nia's because he found the median and concluded that everyone he surveyed travels about 3 miles to get to school.

Do you agree with his conclusion? Why or why not?

3. The city council writes Ms. Garcia's class back and says they need to see more data. In order to add a bus, they require that the average distance students travel to get to school be 4 miles or more.

If a new student joins the class, what is the closest she or he could live to school that would raise the mean above 4 miles? Show your work.