Unit 3, Lesson 1

Getting to Know You

Let's work together to collect data and explore statistical questions.

1.1 Types of Questions

Use the four questions to make a group of two related questions. What property do the items in the group share that the others do not?

- Question A: How many potato chips are in this bag of chips?
- Question B: What is the typical number of chips in a bag of chips?
- Question C: What type of chips are these?
- Question D: What type of chips do students in this class prefer?

1.2 Representing Data About You and Your Classmates

Your teacher will assign you a set of 3 questions.

1. Write an additional question of interest that requires data collected from the class to answer.

2. For each of the 4 questions of interest, write a survey question that will help you collect data from the class that can be analyzed to answer the question of interest. Ask the 4 survey questions to 15 classmates, and record their responses to collect data. Then return your group.

3. Summarize the data for each question in a sentence or two, and share the results with your group

4. With your group, decide what the responses for the questions numbered 1 have in common. Then do the same for questions numbered 2 and 3.

5. Does the question you wrote fit best with the questions numbered 1, 2, or 3? Explain your reasoning.

CC BY NC 2024
Illustrative Mathematics®

responder's name	question 1 response	question 2 response	question 3 response	my question response

Are you ready for more?

1. Find a news article that uses numerical data to discuss a statistical question.
2. Find a news article that uses categorical data to discuss a statistical question.

Lesson 1 Summary

Statistics is about using data to solve problems or make decisions. There are two types of data:

- **Numerical data** are expressed using numbers that can be put in order. For example, the question "How tall are the students in this class?" would involve measuring the height of each student, resulting in numerical data.
- **Categorical data** are expressed using characteristics. For example, the question "What brand of phones do people use?" would involve surveying several people, with their answers resulting in categorical data.

The question that you ask determines the type of data that you collect and whether or not there is *variability* in the data collected. In earlier grades, you learned that there is variability in a data set if not all of the values in the data set are the same. These are examples of **statistical questions** because they are answered by collecting data that have variability:

- "What is the average class size at this school?" would produce numerical data with some variability.
- "What are the favorite colors of students in this class?" would produce categorical data with some variability.

These are examples of **non-statistical questions** because they are answered by collecting data that does not vary:

- "How many students are on the roster for this class?" has only one possible answer. There is only one value in the data set, so there is no variability.
- "What color is this marker?" has only one answer. There is only one value in the data set, so there is no variability.