IM 9–12 MATH v.1

Unit 1
One-variable Statistics

ALGEBRA 1

Lesson 1

Getting to Know You

Illustrative Mathematics®

Kendall Hunt

Learning Goal

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

Algebra 1

Types of Data

Warm-up: Which One Doesn't Belong?

Which one doesn't belong?

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?

Representing Data About You and Your Classmates

Your teacher will assign you a set of 3 questions.

- Write another question of your own that will require data collected from the class to answer.
- For each of the 4 questions, write a survey question that will help you collect data from the class that can be analyzed to answer the questions.
- Ask the 4 survey questions to 15 classmates and record their responses to collect data.
- After collecting the data return to your group.

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

Representing Data About You and Your Classmates

1. What is the question of your own that will require data collected from the class to answer?
2. What are the 4 survey questions you will ask your classmates?
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 question number 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 from number 1, 2, or 3? Explain your reasoning.

Representing Data About You and Your Classmates

Set A
1. On average, how many letters are in the family (last) names for students in this class?
2. Which month has the most birthdays from the class?
3. How many periods (or blocks) have there been before this math class?

Set B
1. On average, what is the furthest, in miles, that each student in this class has ever been from home?
2. Would the class rather have a snow day or a field trip day?
3. In what year was the 13th Amendment ratified?

Set C
1. About how long did it take students in this class to get to school this morning?
2. Which combination does the class prefer: peanut butter and banana or strawberry and banana?
3. What is the lightest element from the periodic table?

Set D
1. On average, how many movies in the theater did each student in the class watch this summer?
2. Does the class prefer to write on paper with or without lines?
3. How many seats are in the classroom?

Representing Data About You and Your Classmates

Set A

1. On average, how many letters are in the family (last) names for students in this class?

Set B

1. On average, what is the furthest, in miles, that each student in this class has ever been from home?

Set C

1. About how long did it take students in this class to get to school this morning?

Set D

1. On average, how many movies in the theater did each student in the class watch this summer?

Representing Data About You and Your Classmates

Set A

2. Which month has the most birthdays from the class?

Set B

2. Would the class rather have a snow day or a field trip day?

Set C

2. Which combination does the class prefer: peanut butter and banana or strawberry and banana?

Set D

2. Does the class prefer to write on paper with or without lines?

Representing Data About You and Your Classmates

Set A

3. How many periods (or blocks) have there been before this math class?

Set B

3. In what year was the 13th Amendment ratified?

Set C

3. What is the lightest element from the periodic table?

Set D

3. How many seats are in the classroom?

Getting to Know You

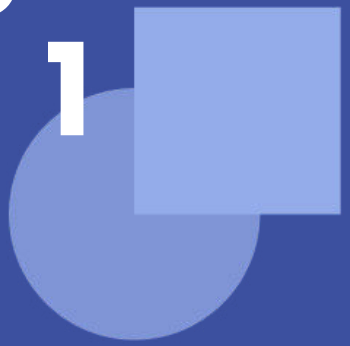
Lesson Synthesis

- What makes a question statistical?
- What is an example of a non-statistical question?
- What is an example of a statistical question that we have not used in class?
- What type data is collected to answer the statistical question, “Would the class rather have pizza or donuts?”
- What is an example of a statistical question that results in numerical data?
- What are some different ways to represent data graphically?

- I can tell statistical questions from non-statistical questions and can explain the difference.
- I can tell the difference between numerical and categorical data.

Learning Targets

Algebra 1



Categorizing Questions

Cool-down

Categorize each of these questions as one of these types, then explain your reasoning for putting the question in that category.

- Statistical question requiring numerical data to answer it
- Statistical question requiring categorical data to answer it
- Non-statistical question

1. On average, how many books does each person in the United States read each year?
2. How many acts are in the play Romeo and Juliet?
3. Which book was read most by students in the class this summer?
4. How many books are in the classroom right now?

categorical data

Categorical data are data where the values are categories. For example, the breeds of 10 different dogs are categorical data. Another example is the colors of 100 different flowers.

non-statistical question

A non-statistical question is a question which can be answered by a specific measurement or procedure where no variability is anticipated, for example:

- How high is that building?
- If I run at 2 meters per second, how long will it take me to run 100 meters?

numerical data

Numerical data, also called measurement or quantitative data, are data where the values are numbers, measurements, or quantities. For example, the weights of 10 different dogs are numerical data.

statistical question

A statistical question is a question that can only be answered by using data and where we expect the data to have variability, for example:

- Who is the most popular musical artist at your school?
- When do students in your class typically eat dinner?
- Which classroom in your school has the most books?