

Types of Data and Samples

Will the data be categories or numbers? Circle one.

Category data (qualitative) is words or groups, like red, cat or soccer.

Number data (quantitative) is counts or measures, like 3 pets or 42 cm.

What kind of data will each survey question give?

- | | | | |
|---|---------|-----------------|--------|
| 1. What is your favorite fruit? | Example | <u>category</u> | number |
| 2. How many pets do you have? | | category | number |
| 3. How tall are you, in centimeters? | | category | number |
| 4. What color are your shoes? | | category | number |
| 5. How many minutes is your trip to school? | | category | number |
| 6. Which sport do you like best? | | category | number |
| 7. In what month is your birthday? | | category | number |
| 8. How many books did you read last month? | | category | number |

What kind of data is each data set?

- | | | |
|--|----------|--------|
| 9. Lunch choices: pizza, soup, pizza, salad, soup | category | number |
| 10. Heights in cm: 132, 128, 140, 135, 129 | category | number |
| 11. Ways to get to school: walk, bus, car, bus, bike | category | number |
| 12. Minutes of reading: 20, 35, 15, 30, 45 | category | number |

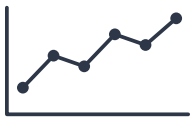
Types of Data and Samples

Circle the kind of data. Then circle the graph that fits it best.

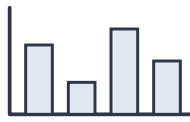
1. The favorite pets of 24 students: dog, cat, fish or bird.

Example

Data: category number



line graph



bar graph



line plot

2. The temperature outside at noon each day for two weeks.

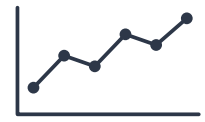
Data: category number



circle graph



pictograph



line graph

3. The lengths of 30 leaves, each measured in centimeters.

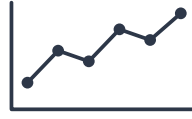
Data: category number



line plot



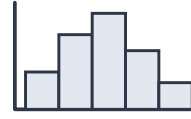
circle graph



line graph

4. How the 200 students at a school get there, as parts of the whole school.

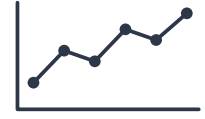
Data: category number



histogram



circle graph



line graph

5. How many of each kind of tree grow in a park, with one picture for every 5 trees.

Data: category number



pictograph



line graph



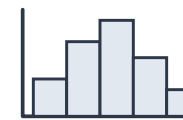
line plot

6. The heights of 50 sunflowers, sorted into groups: 100 to 119 cm, 120 to 139 cm and so on.

Data: category number



line graph



histogram



pictograph

Types of Data and Samples

Name the population. Is the sample fair or biased? Tell why.

The population is the whole group you want to learn about. The sample is the part of it you ask.

A fair sample is like the whole population. A biased sample leaves some people out or leans one way.

1. Ms. Lee wants to know the favorite lunch of all **300** students at her school. She asks the **12** students in the chess club.

Example

Population: all 300 students at the school

Sample: fair

biased

Why? Only one small club is asked, so it may not be like the whole school.

2. A coach wants to know which day the **60** players in a soccer league like to practice. She puts all **60** names in a hat and asks the **15** players whose names she draws.

Population: _____

Sample: fair biased

Why? _____

3. A town wants to know if people want a new skate park. The town asks **40** people at the skate shop.

Population: _____

Sample: fair biased

Why? _____

4. A principal wants to know how all **500** students get to school. She asks every tenth student on a list of all the students.

Population: _____

Sample: fair biased

Why? _____

Types of Data and Samples

Is the data counted or measured? Circle discrete or continuous.

Discrete data is counted. There are gaps between the values: 3 goals or 4 goals, never 3.5 goals.

Continuous data is measured. It can be any value in between, like 1.5 m or 1.52 m.

What kind of data is it? Example

1. The number of goals in each hockey game	<u>discrete</u>	continuous
2. The mass of each pumpkin at a farm	discrete	continuous
3. The number of students on each school bus	discrete	continuous
4. The time each runner takes to finish a race	discrete	continuous
5. The height of each tree in a park	discrete	continuous
6. The number of letters in each name in a class	discrete	continuous
7. The amount of rain each day in May	discrete	continuous
8. The number of pages in each book on a shelf	discrete	continuous

Could it be this value? Circle yes or no, then the kind of data.

9. The mass of a dog: 12.5 kg	yes	no	discrete	continuous
10. Children in a family: 2.5	yes	no	discrete	continuous
11. The length of a pencil: 14.3 cm	yes	no	discrete	continuous
12. Cars in a parking lot: 37.5	yes	no	discrete	continuous

Types of Data and Samples

Write survey questions. Then choose the fairest sample.

Write a survey question that gives each kind of data.

1. **Category data about food** Example

What is your favorite snack?

2. **Number data about pets**
-

3. **Discrete data about your family**
-

4. **Continuous data about your body**
-

Circle the letter of the fairest sample.

5. Your school has **400** students. You want to know their favorite season. Which sample is fairest?
- A** Ask the **20** students in the ski club.
 - B** Ask **40** students picked at random from a list of the whole school.
 - C** Ask your **5** best friends.
6. A city wants to know how far people travel to work each day. Which sample is fairest?
- A** Ask **100** people who live next to city hall.
 - B** Ask **100** people at a bus stop.
 - C** Ask **200** homes picked at random from all over the city.

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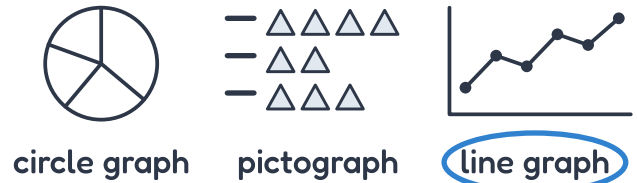
Example

Data: category number



2. The temperature outside at noon each day for two weeks.

Data: category number



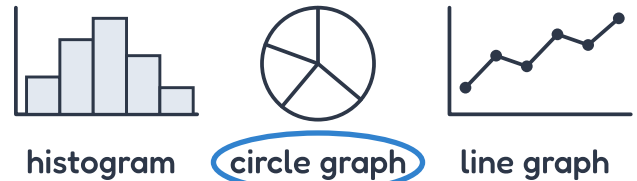
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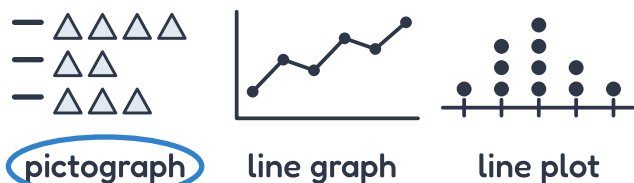
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2. A coach wants to know which day the **60** players in a soccer league like to practice. She puts all **60** names in a hat and asks the **15** players whose names she draws.

Population: the 60 players in the league

Sample: fair

biased

Why? Every player had the same chance to be picked.

3. A town wants to know if people want a new skate park. The town asks **40** people at the skate shop.

Population: the people who live in the town

Sample: fair

biased

Why? People at a skate shop are more likely to want a skate park.

4. A principal wants to know how all **500** students get to school. She asks every tenth student on a list of all the students.

Population: all 500 students at the school

Sample: fair

biased

Why? Students from the whole list are asked, so every grade and class is in it.

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1. Category data about food Example

What is your favorite snack?

2. Number data about pets

One way: How many pets live in your home?

3. Discrete data about your family

One way: How many brothers and sisters do you have?

4. Continuous data about your body

One way: How long is your arm span, in centimeters?

Circle the letter of the fairest sample.

- 5.** Your school has 400 students. You want to know their favorite season. Which sample is fairest?
- A Ask the 20 students in the ski club.
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