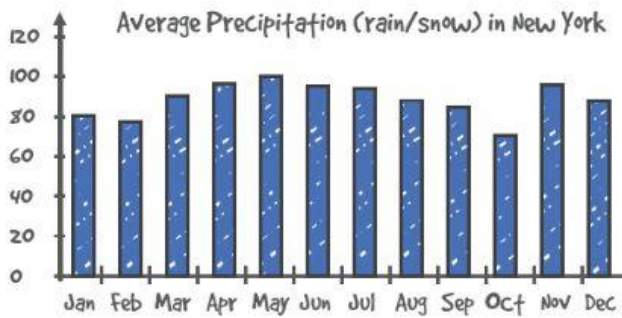③ Work through the following exercises.

1. The following bar chart represents the average monthly precipitation in New York.

Average Precipitation (rain/snow) in New York

Which months show the greatest and the least variation?

_____

_____

2. Identify the following details.
   a. 80 families of a town were asked if the properties they lived in were rented or owned.

   Population: _____

   Sample: _____

   Variable: _____

   b. For a school science project, a fertilizer will be tested on 50 plants. After applying the fertilizer, students will measure the plants' growth.

   Population: _____

   Sample: _____

   Variable: _____

   c. 100 boys and girls, aged 10 to 12, from a city are surveyed to find out how many hours of television they watch every day.
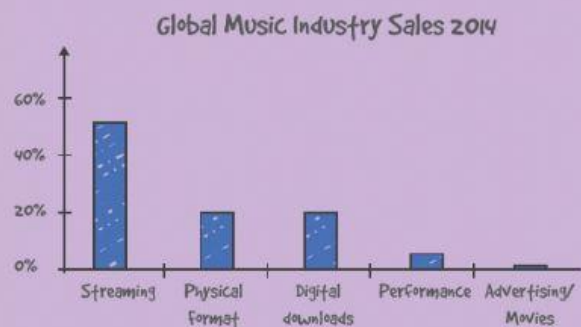
   Population: _____

   Sample: _____

   Variable: _____

There are several ways to represent data. Simple bar charts are representations of data where each bar is placed vertically or horizontally between two perpendicular axes, which identify the variables. The length of each bar is proportionate to the amount that it represents.

Variation of the values in a bar chart shows the extent to which they differ. The greatest variation is the difference between the smallest and the largest values. The least variation is the difference between the values that are closest to each other than the rest of the values.

Example:
Statistics show where the music industry made its sales in 2014. The music industry made the same amount of money from digital downloads as from physical formats (CDs and records).

Global Music Industry Sales 2014

The greatest variation was between streaming and advertising/movies (a difference of 50%), while the least variation was between performance and advertising/movies (a difference of 4%).
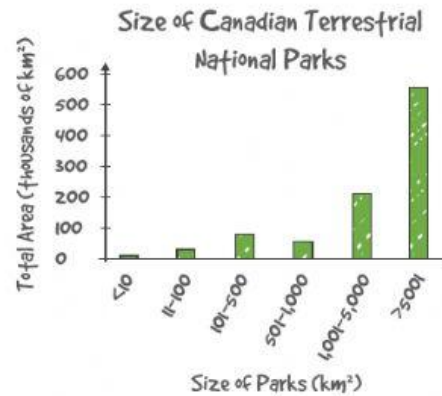
④ Classify the following variables as qualitative or quantitative.

1. Type of notebook: _____

2. Favorite food: _____

3. Number of students: _____

Week 4

(5) Look at the bar chart on the right and answer the following questions.

1. What total area do national parks from 101–500 cover?

_____

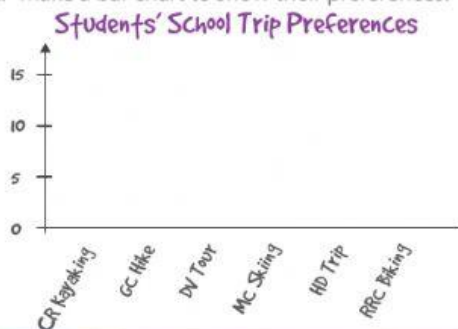2. Which bar represents a park that has a total area of 555,000 km²?

_____

Size of Canadian Terrestrial National Parks

Total Area (thousands of km²)

600 500 400 300 200 100 0

<10 11–100 101–500 501–1,000 1,001–5,000 >5,001

Size of Parks (km²)

(6) Students were asked where they should go on their school trip. These were their preferences.

Colorado River Kayaking ||||| ||||
Grand Canyon Hike |||||
Death Valley Tour ||||
Mount Charleston Skiing ||||| |
Hoover Dam Trip ||||| |||||
Red Rock Canyon Biking ||||| |

1. Make a frequency table to show their preferences.

Students' School Trip Preferences	
Place	Frequency

2. Make a bar chart to show their preferences.

Students' School Trip Preferences

15

10

5

0

CR Kayaking GC Hike DV Tour MC Skiing HD Trip RRC Biking

Key

Lines of Research
Do you know how many people there are in your country? Which institution is responsible for counting the population?

Research population and housing census in Mexico.

#KeyConcepts
census / INEGI

(7) Work through the following activity with a classmate.

Decide on a category to make up a survey. Here are some suggestions:
- Favorite food / sport / city / color / music
- How often do you go to the movies?
- Number of siblings / cousins / pets

Design one question to survey a sample of ten students. Specify the population, sample, and variable (qualitative or quantitative). Then create a frequency table and draw a bar chart to show your results.

TEAM UP!
Get into teams, go to TV Shows, and follow the instructions.

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Read and interpret simple bar charts.