

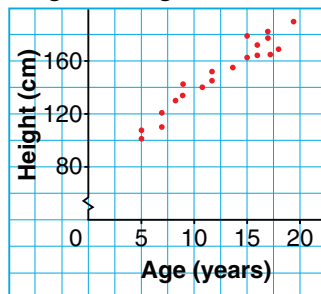
## Connect the Ideas

A scatter plot is used to relate two different measures. For example, the scatter plot in *Investigate*, page 147, relates the points each player scored with the time she played.

A relationship between the measures is shown by a **trend** in the data points.

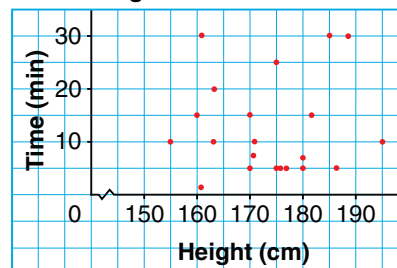
This mark,  $\frac{1}{2}$ , on an axis indicates that numbers are missing from the scale.

Height and Age of Students



The points in this scatter plot show a relationship. As you move to the right, the points go up. There is an upward trend.

Height and Time to Travel to School for High School Students



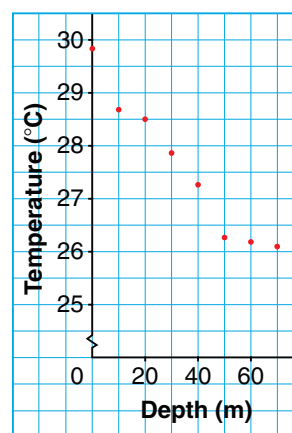
The points in this scatter plot do not show a relationship. There is no trend in the data.

## Practice

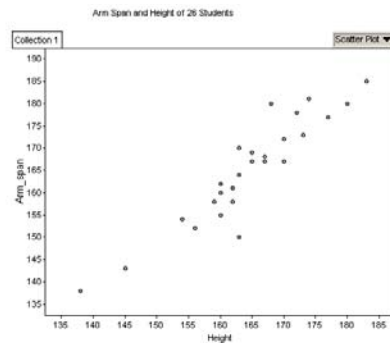
Your teacher will give you a large copy of each scatter plot.

1. Lake Turkana is in the Great Rift Valley in northwest Kenya. As part of a study of water quality, the water temperature in the lake was measured at different depths. The data are shown in this scatter plot.
  - a) What was the approximate temperature at a depth of 70 m? At the surface?
  - b) At what depth was the temperature a little more than 27°C?
  - c) Do the points in the scatter plot show a relationship? Explain your thinking.

Water Temperature and Depth in Lake Turkana



- 3. Assessment Focus** The *Census at School* project collects data from high school students across Canada and around the world. The graph shows data for 26 students.

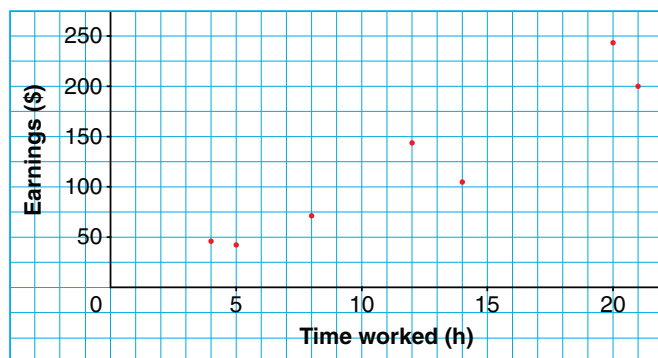


Source: Statistics Canada, *Education Matters: Insights on Education, Learning, and Training in Canada*. "Census at School". Catalogue no. 81-004-XIE, Vol. 2, No. 5, released February 28, 2006. Date extracted June 23, 2006.

The arm span and height are measured in centimetres.

- Liam is 154 cm tall.
    - What is his approximate arm span?
    - How many students have an arm span shorter than Liam's?
  - Maya is 177 cm tall.
    - What is her approximate arm span?
    - How many students have an arm span longer than Maya's?
    - Are any of these students taller than Maya? Justify your answer.
  - Describe any trends in the data. Justify your answer.
- 4.** As part of a social studies project, a group of high school students compared their earnings from part-time jobs.

**Student Earnings**



- One student earned \$112.
    - How many hours did she work?
    - How many students earned more money than this student?
    - Did any of these students work fewer hours? Explain.
  - About how much did the student who earned the most make?
    - How many hours did this student work?
    - Did any students work more hours?
  - Describe any trends in the data. Justify your answer.
- 5. Take It Further** Refer to the scatter plot in question 4.
- One student worked 8 h.
    - About how much did this student earn?
    - What is this student's hourly rate?
  - Identify one student who earned more per hour than the student in part a, and one who earned less. Explain how you know.

### In Your Own Words

Describe how a scatter plot can be used to show a trend in data. Use pictures, words, and numbers.