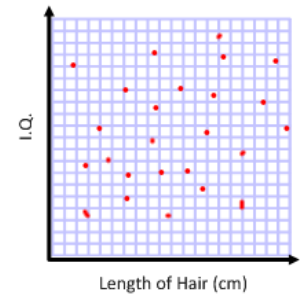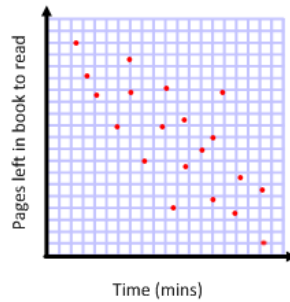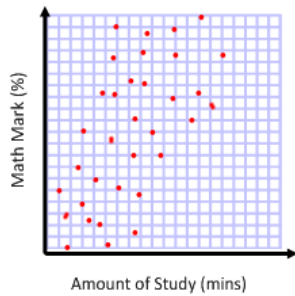# UNIT 3: Graphing Relations

Lesson 3.1: Scatter Plots

A. What is a scatter plot?

- It is a graph showing a set of _____.
- It shows a relationship between two_____.
- The relationship can be described by a _____.
- Trends can be _____or _____. It's also possible to have_____!

Ex. 1 Describe the trend shown in each of the following relationships.

Math Mark (%) vs Amount of Study (mins)

Pages left in book to read vs Time (mins)

I.Q. vs Length of Hair (cm)

B. Interpreting a Scatter Plot

Ex. 2 The scatter plot below shows July temperature data for some Ontario communities.
a) One data point is for Fort Frances, at latitude 48°N. What is the average daily maximum temperature in Fort Frances in July? _____   This information can be shown as a set of coordinates: _____

b) How many of the communities represented on this graph have average daily maximum temperatures greater than 22°C? What are their latitudes?
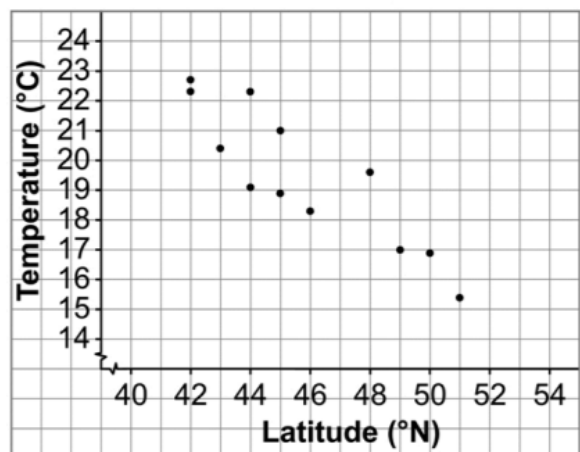
c) Is there a trend in the data? Explain.
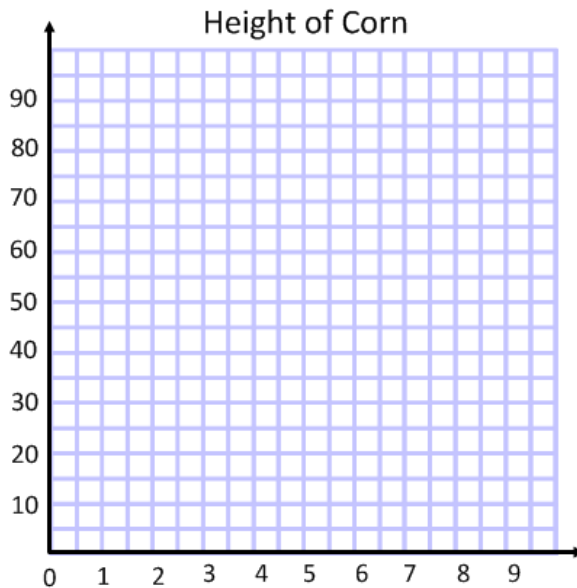

Average Daily Maximum Temperature in July

d) Label the important features of a scatter plot.

C. Creating a Scatter Plot

Ex. 3 Data was collected on the height of corn each week to see if there was a relationship between time and height. The data is shown in the following table of values.

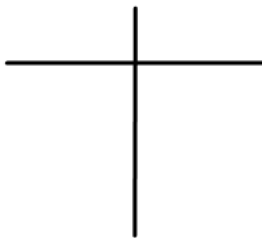| Length of Time (weeks)	Height of Corn (cm)
0	0
1	5
2	18
3	29
4	45
5	59
6	70

Height of Corn

a) Label the horizontal axis. This is the independent variable.
b) Label the vertical axis. This is the dependent variable.
c) Plot the points to create the scatter plot.
d) Describe the relationship between height and time.

D. Practice

Ex. 4 When you put gas in a car, the gas pump shows the number of litres of gas you have put in and the total cost.
a) What is the independent variable?   _____
b) What is the dependent variable?   _____

c) Label a table that could be used   d) Label the axes that could be used
to gather data for this relationship.   to graph the data for this relationship.
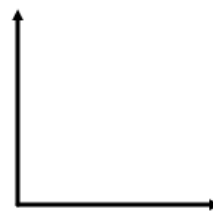
e) Describe the relationship you would expect to see from this data.

Ex. 5 Consider the following situation as it is labelled on the graph below.

a) Graph the points that you think could be part of the scatter plot.

Height of a Snowman After 5 Days of Increasing Temperatures

Height (cm)

0

Temperature (°C)
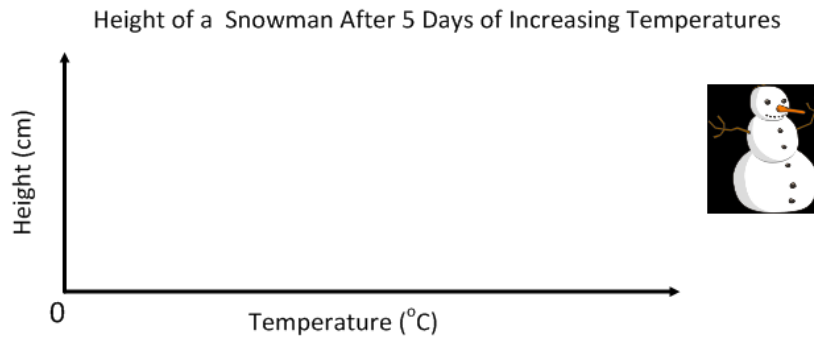
b) Explain your answer.

Ex. 6 Will each of the following sets of data show a positive correlation, a negative correlation, or no correlation? Justify your answer.

a) The charge left in your IPod and the number of hours you have listened to music.
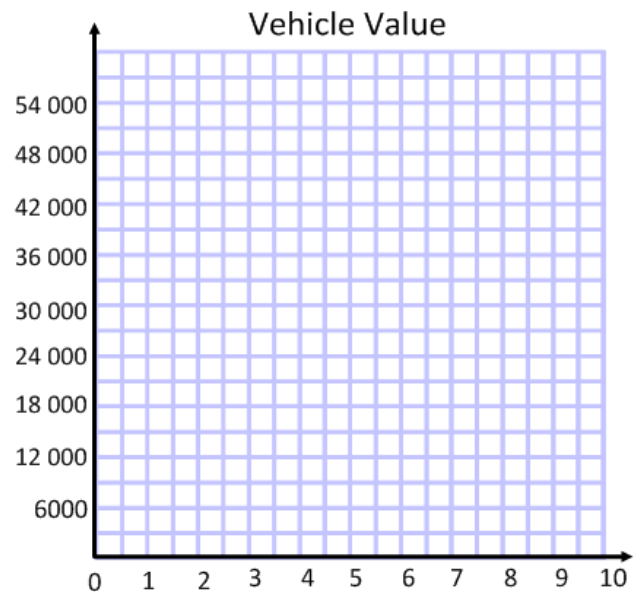
b) The amount of money you make and the number of hours you work.

c) Your hand size and the number of rings you own.

E. Homework

1. The data in the table represents the values of a vehicle after different amounts of time.

Number of Years After Purchase	Value of the Vehicle ($)
0	28 000
1	24 000
2	21 000
3	18 000
5	14 000
8	9000
10	5000

Vehicle Value

a) Label the horizontal axis. This is the independent variable.
b) Label the vertical axis. This is the dependent variable.
c) Plot the points to create the scatterplot.
d) Describe the relationship between vehicle value and time.

2. Will each of the following sets of data show a positive correlation, a negative correlation, or no correlation? Justify your answer.

a) The outside temperature in the summer and the number of people swimming.

b) The depth of Lake Ontario and the amount of rainfall and snowfall for that year.

c) The number of pets you own and the number of years you are educated.

d) Your science mark and the number of hours spent playing video games.

e) The outside winter temperature and the number of centimetres of ice on Trout Lake.