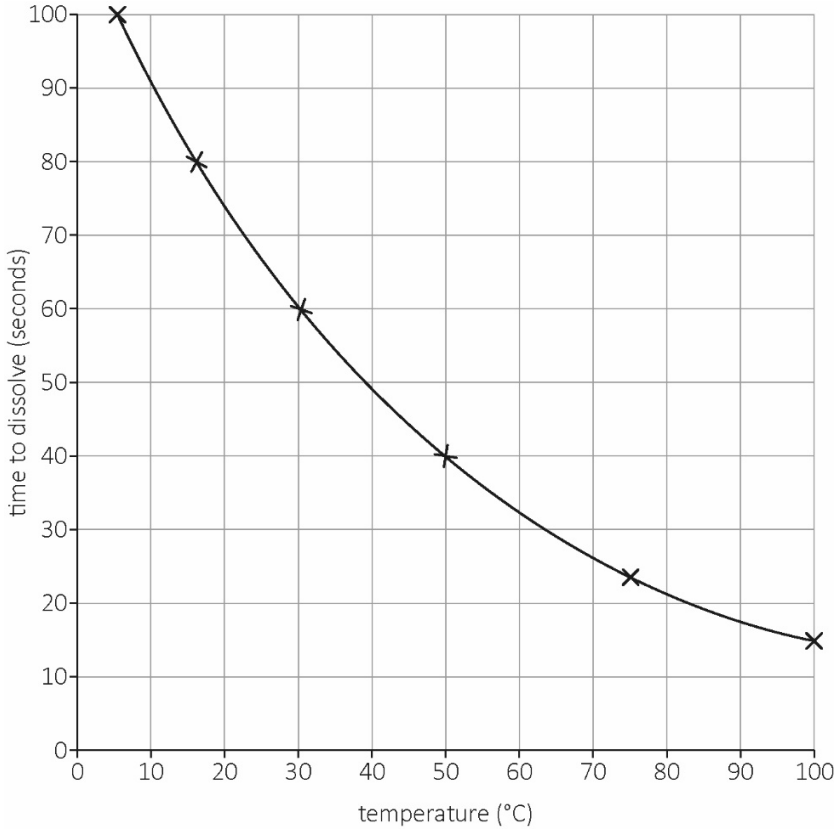
Name _____ **Date** _____

Worksheet 2.3

Reversible changes

Class 6 conducted a fair test to find out how different temperatures affect the rate at which sugar dissolves in water. They drew a graph of their results.



1 a Name the solvent used.

_____

b Name the solute used.

_____

2 a At which temperature did the sugar dissolve fastest?

_____

b How long did it take the sugar to dissolve at 30°C?

_____

c Predict how long it would take the sugar to dissolve at 20°C.

_____

d At which temperature did the sugar dissolve slowest?

_____

3 In order to make the investigation a fair test, name:

a the control variables that Class 6 kept the same

_____

_____

b the dependent variable that they measured

_____

c the independent variable that they changed.

_____

4 Write a conclusion for the investigation.

_____

_____

Help sheet

Remember that a solution is made of two parts:

- the solute – the substance that dissolves, usually a solid, e.g. salt or sugar
- the solvent – the substance in which the solute dissolves, usually a liquid, e.g. water.

When we read a line graph, we look at two sets of data that are connected, such as water temperature and how fast sugar dissolves. The graph shows us how one thing or factor changes in relation the other. The labels on the axes tell you which factors you are looking at.

We can find information about both factors from the graph. We need to look at the data points plotted. To find the time taken for sugar to dissolve at a certain temperature, find the temperature on the x-axis, then look for the data point on the graph line for that temperature. Now look at the value on the y-axis for that data point. This will be the time taken for the sugar to dissolve at that temperature.

Name _____ **Date** _____

Stretch questions

5 Class 6 repeated their measurements of the time taken for sugar to dissolve at different temperatures. Their results are recorded in the table.

Temperature in °C	Time for sugar to dissolve in seconds	Time for sugar to dissolve in seconds	Time for sugar to dissolve in seconds	Average time for sugar to dissolve in seconds
10	77	73	75	
20	52	48	50	
30	34	36	32	
40	26	27	19	
50	19	18	17	

a Why did class 6 repeat their measurements?

_____

_____

b What overall pattern can you see in the results?

_____

_____

c Are there any results that do not fit the pattern? If so, which results?

_____

_____

d Calculate the average for the different temperatures. Fill in the last column of the table.