

## SCIENCE FAIR PROJECT ORGANISATION

### Come up with a question.

- What is your research question?
- Explain why you want to do the project. (Does it link with everyday life? Does it affect you or the people you know?)
- How can I find out the answer to my question?
- What is the best way to find out the answer to my question and why?

### Ask a question – Activity 3

- After choosing a topic it is important to create a scientific question that you can base your project on.
- It should be an interesting question that you want to work on for the next few weeks.
- It helps if it is focused so that you can answer it with a simple experiment.
- Science questions usually start with how, what, where, when, why, which or does.



### Create a Prediction/Hypothesis

#### Create a prediction/hypothesis

- Once you have come up with a question and read around the topic, you can create a hypothesis.
- A hypothesis is a prediction of what might happen if you try to test your problem.
- To help predict what will happen ask yourself the question – 'what do you think will happen in my experiment?'
- You have to be able to test your hypothesis experimentally as the next step will involve carrying out an experiment to prove your hypothesis correct or incorrect.
- My prediction/hypothesis is.....



## Identify and Group the different variables in your experiment

- The independent variable (the one you change) in my experiment is ...
- The dependent variable (the one you measure) in my experiment is...
- The control variables (the ones you keep the same) in my experiment are...

## List of Materials

- Write a list of everything you will need for your experiment. It is important that you have everything to hand.
- Draw a diagram of what your experiment 'set up' will look like. Remember to label the equipment on your diagram.

## Method

Write the step by step instructions that detail 'how' to carry out the experiment. It needs to be clear and detailed enough so that someone else could do the same experiment – a bit like a recipe in a cookbook!

## Results

- Gather your data and create a table of results by making observations **or** taking accurate measurements/readings using equipment
- Present your data in a way to help in answering your question

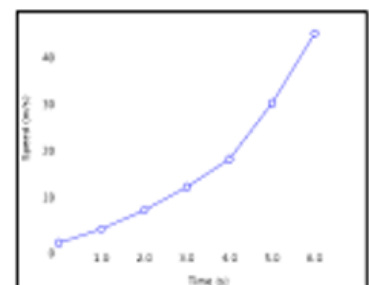
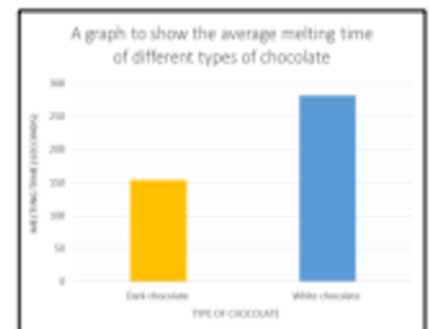
Use a bar graph if **independent variable** (the one you change) is **not** numerical

Melting times (minutes) of **different types of chocolate** (white and dark)

OR

Use a line graph – if both variables (**independent** and **dependent**) are numerical.

The **effect of temperature** (°C) on **plant growth** (cm) where you may change the temperature and measure the height of the plant.



Graphs are a great way to visually display data. When drawing a graph it is important to remember to...

1. Place the **independent variable** (the one you change) on the **x axis** and the **dependent variable** (the one you measure) on the **y axis**.
2. Label the x and y axes of the graph – remember the units! (E.g. seconds, litres, centimetres) and remember to give the graph a title, this can begin with 'This graph shows...'

Tip: Spreadsheet programmes such as Microsoft Excel are great for producing different styles of graph

## Conclusion

Summarise your results and identify whether they prove or disprove your hypothesis.

- What did you find out?
- What did you learn?
- Do your results support your prediction? Why or why not?
- Was your project successful? Why? What went well in your project? Were you able to answer your research question?
- What impact could your project have on other people?



## Evaluation

- What would you do differently if you were doing this project again? Why? What could you have done to make this project even better?

