



# OLOW Science Fair 2019



## Investigation Plan

### Ask a question

1. What is the question you want to investigate?

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### Make a Prediction

2. What do you think might happen or what do you think you might find?

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### Answer the question

3. What will you do to get the evidence you need to answer your question?
  - Observe things
  - Design and make something to use
  - Count, time or measure
  - Change something and see what happens
  - Record what you found
4. How can you organise your evidence so that it makes sense?
  - Can you draw a chart?
  - Can you plot a graph?
  - What patterns can you recognise?
  - Can you put things in order?
5. What does your evidence mean?
  - What can you tell from the graphs and charts?
  - What might cause any of the patterns that you found?
6. How can you piece it all together to answer your projects question?
  - Did what you expect to happen, happen?
  - Did you find out anything unexpected and can you explain why?
  - If you were to repeat your investigation, would you do anything differently?

# Steps of The Scientific Method

## The Question

Your science fair project starts with a question. This might be based on an observation you have made or a particular topic that interests you. Think what you hope to discover during your investigation, what question would you like to answer? Your question needs to be about something you can measure and will typically start with words such as what, when, where, how or why.

## Background Research

Talk to your parent/teacher and use resources such as books and the Internet to perform background research on your question. Gathering information now will help prepare you for the next step in the Scientific Method.

## Hypothesis

Using your background research and current knowledge, make an educated guess that answers your question. Your hypothesis should be a simple statement that expresses what you think will happen.

## Experiment

Create a step by step procedure and conduct an experiment that tests your hypothesis. The experiment should be a fair test that changes only one variable at a time while keeping everything else the same. Repeat the experiment a number of times to ensure your original results weren't an accident.

## Data

Collect data and record the progress of your experiment. Document your results with detailed measurements, descriptions and observations in the form of notes, journal entries, photos, charts and graphs.

## Observations

Describe the observations you made during your experiment. Include information that could have affected your results such as errors, environmental factors and unexpected surprises.

## Conclusions

Analyse the data you collected and summarize your results in written form. Use your analysis to answer your original question, do the results of your experiment support or oppose your hypothesis?

## Communication

Present your findings in an appropriate form; a poster or a display board for the science fair competition.