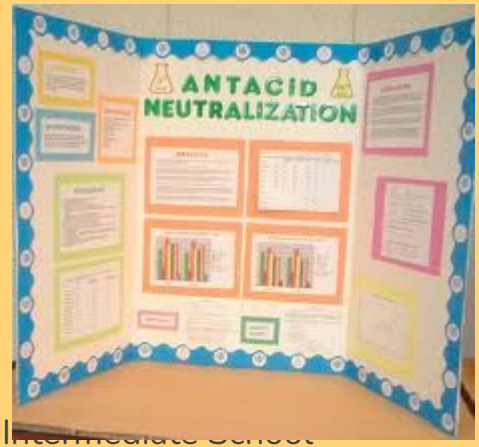

1. Choose a Topic
2. Do Some Research
3. Formulate Hypothesis
4. Design an Experiment
5. Perform the Experiment
6. Analyze the Data
7. Create a Board
8. Give a Presentation


Science Fair
EVERYTHING UNDER THE SUN
A+


Wave
Hello
To
Cam
Barry


ANTACID
NEUTRALIZATION


PROBLEM
PROJECT TITLE
RESULTS
DATA
HYPOTHESIS
CONCLUSION
EXPERIMENT
NEXT TIME
MODEL
ABSTRACT




I'm going to do a Technology Display and invent something! It can be a new idea or something already made but mine will be cheaper, more environmentally friendly and much easier to use

I'm doing a Science Display and have an idea for an experiment!



Technology

or

Science

Created by John Marsh Tauranga Intermediate School

**If your investigations require testing or changing the environment of a person or an animal you must see Mr Marsh first and get an Animal Ethics Form, complete it and he must then APPROVE that you can do it!**












# The Science Investigation Process




First:
Choose a topic for investigation. This becomes your Aim.

- What do I see around me?
- What would happen if...
- What is the best product to....
- I saw this on TV and is it possible?
- I think the best way to make something is...

Check out the following for ideas:

- library
- Internet (Google: *science fair ideas*)
- Your teacher
- Your Family
- Your friends & classmates

For example:I aim to find out which dishwashing liquid is able to remove grease off plates the best.

## Second:
Write your Hypothesis

Remember it is your best guess:
- What do you think might happen?
- Predict an answer to your question
- Be specific
- Record in your log book

For example:My hypothesis is that Palmolive will remove more grease than Budget but less than Morning Fresh. The worst brand would be Finish.






# Third:
# Write your Method




You have to design a way to find an answer to your question.
A way to find out if you can prove your hypothesis

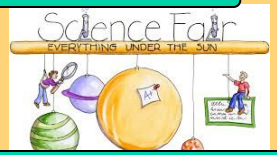
- It must be a "Fair Test"
- You must "control the variables"
- It is like a "recipe" that has a sequence of instructions and accurate measurements
- This will be taught and demonstrated in class
- It is so thorough that **ANYONE** could do **EXACTLY THE SAME TEST** again from your instructions.
- Record this in your log book

# Fourth:
# Write up your Results

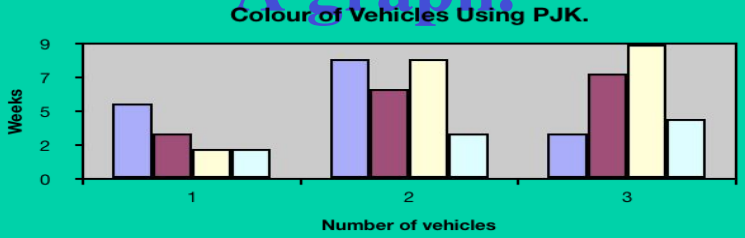
**Ok, this is where you list, explain or display all the information that you have discovered from your investigation.**

## or a table or tally chart

| Colour of vehicles using PJK | | | |
|---|---|---|---|
| | Week 1 | Week 2 | Week 3 |
| Blue | 4 | 2 | 1 |
| Red | 2 | 1 | 6 |
| Yellow | 1 | 3 | 1 |
| Green | 1 | 2 | 1 |




## A graph.




## What about some photos or video or slideshow of images??







# Fifth:

## Write up your Conclusion




You have to now MAKE SENSE of your investigation!



- Was your Hypothesis right?
- What did you learn?
- What could you do to make it better?
- Why did you get the results that you did?
- How does this influence our lives?
- Where could I go from here?

OH NO!!!

You may have to READ some books or do MORE research to find answers!

# The Science Investigation Process

1. Aim

2. Hypothesis

3. Method

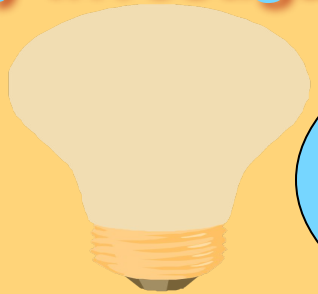
4. Results

5. Conclusion



# The Technology Investigation Process

What can you do to improve some piece of technology to make it more efficient



What can you do to improve some piece of technology to make it more environmentally friendly?




First:

Choose a topic for investigation. This becomes your Aim.

Solve a problem

What can you do to improve some piece of technology to make cheaper?
$$$

Invent something

What can you do to solve a technology problem that "bugs you"?

## Second:

Complete a Needs Assessment.

You have to PROVE that there is a real need for your invention

The evidence you provide could include:

- Surveys and questionnaires
- Tally charts and observations
- Research in particular internet
- Questioning target outlets
- Questioning target users
- Correspondence and recorded communication with experts




**Note: All communication with others (experts, retailers, suppliers,manufacturers) needs to be recorded in log book. This includes your questions, their answers, who you communicated with and the date.**

# Third:

From your Needs Assessment create a criteria for success based upon your Aim.




Design Criteria issues:

- Safety when used by target users
- Ease of use by target users
- Ease and efficiency of design
- Cost and affordability to target users
- Form in which it will be marketed
- Reliability when used by target users
- Environmental impact on manufacture, marketing and use
- Comparability to other products on the market (why is yours going to be better?)

# Fourth:
# Prototype development and testing

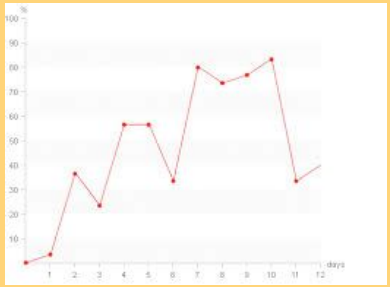


Design: drawings, mockups



Modify, change and rebuild prototypes

Build prototypes



Test & evaluate prototypes against criteria




# Fifth:
# Evaluation final design against criteria

- How does it stack up against original criteria?
- Who will use this product?
- Test it on a reasonable sample
- Why is this design the best?
- Why is this design better than what is available on the market?
- Get advice from professionals in the market:- retailers, manufacturers and distributors.

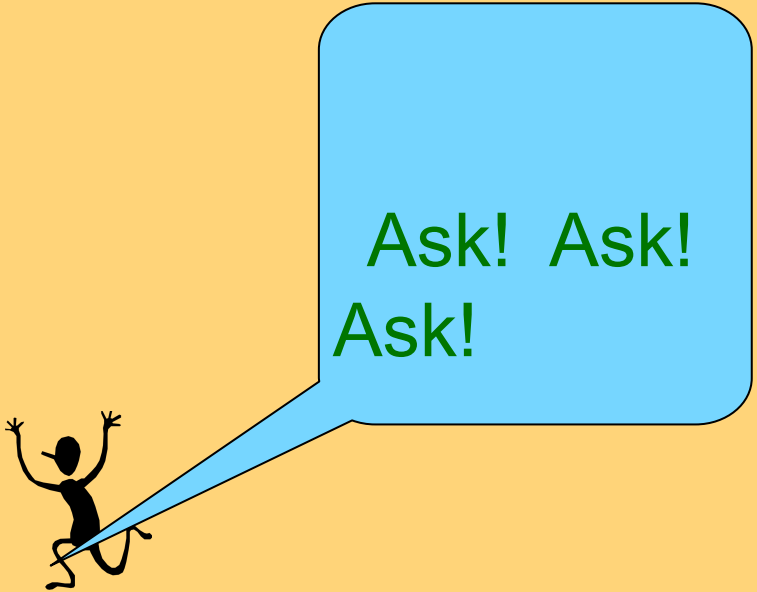
Record all evaluation information and correspondence in your log book.




## Sixth:
## Marketing

It's a great idea so share it!

- **Who will manufacturer it?**
- **What will it be made from?**
- **How much will it cost?**
- **How will you advertise it?**
- **How will you package it?**



# The Technology Investigation Process

First:
Choose a topic and Aim.

Second:
Complete a Needs Assessment.

Third:
Create Criteria for success

Fourth:
Prototype development and testing

Fifth:
Evaluation final design

Sixth:
Marketing

# The End



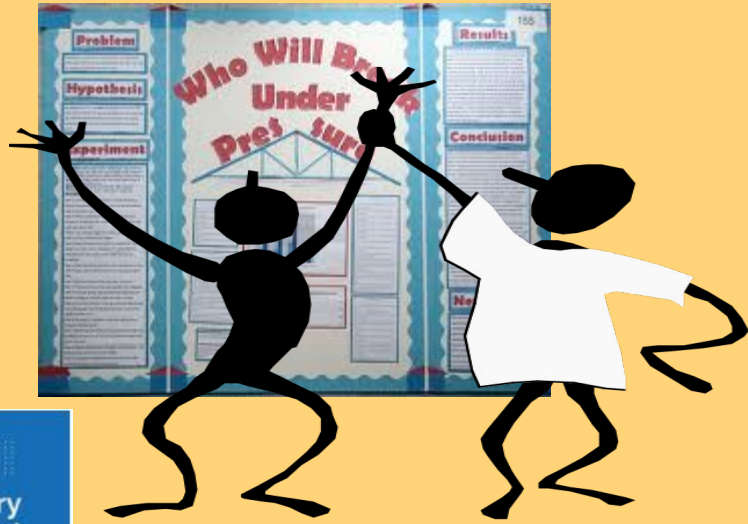













**Well not quite as now you have to present it all.**

**But**

**that's another story which you leave until the experiment/ investigation is completed!!!**