

Year 8 Home Challenge

Science Investigation & Analysis Skills



Task

You will design and complete a simple experimental test at home to put into practice the skills we have covered so far. **Note:** *This should not be a huge task – just a simple investigation to collect data that you can graph and analyse.* You will have time in class to do your Excel graphs.

What your investigation must include:

Question

Hypothesis

Fair experimental test design:

- Clear independent variable – this must be a number:
 - *Eg. temperature; time; speed; number of turns; number of _____*
- Clear dependent variable (with measurement units)
- Clear controlled variables (at least 3)

Results table

Results graph – completed in Excel.

- Title and axis labels
- Scatter or line (whichever best represents your collected data)
- Trendline (or curve)

Analysis

- What do you learn from your data? Describe your results.
- An extrapolation – extend your trendline and make a prediction
- An interpolation – use your trendline to find a value you didn't actual measure yourself.

Evaluation

- Two things you could change next time to improve accuracy and results

Conclusion

- Was your hypothesis correct? Why or why not?
- Overall summary of finding.

Note: Use the template Word document to easily produce your mini report.

Possible Examples – CLASS BRAINSTORM:

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Home Investigation Challenge

Name: _____

Experiment Design:

Question:
Hypothesis:
Independent Variable:
Dependent Variable:
Controlled Variables:
1.
2.
3.

Results table (copy from Excel and paste below):

Graph (copy final graph from Excel and paste below):

Analysis:

What did you learn from your data?
What was your extrapolation using your trendline? (if X or Y is ___ then Y or X will be _____.)
What was your interpolation using your trendline? (if X or Y is ___ then Y or X will be _____.)

Evaluation:

Two things you could change next time to improve the accuracy and results?
1.
2.

Conclusions:

Was your hypothesis correct? Why or why not?
Overall summary of finding?

Marksheet
Home Investigation Challenge

Name: _____

Date: _____

Assessment Description:

Design a simple test experiment you can do at home. Graph and analyse results.

- 5 = Well Above
- 4 = Above standard
- 3 = At standard
- 2 = Below standard
- 1 = Well below standard

Achievement Standard		Achievement					Comments
		1	2	3	4	5	
IS1	identify and construct questions and problems that they can investigate scientifically						
IS3	identify variables to be changed, measured and controlled						
IS4	construct representations of data to reveal and analyse patterns and trends						
IS5	use their data to justify conclusions						
IS6	explain how modifications to methods could improve the quality of data						
IS8	use appropriate language and representations to communicate science ideas, methods and findings in a range of text types						

Overall comments:

Assessment Grade:
 (on balance)