

Year 10 Compulsory Science Project 2021

In this task you are required to complete an individual project as part of your assessment. You are required to design and carry out a simple experiment to test an idea or hypothesis.

Note: The experiment should be short-term (i.e. not run over more than four weeks).

You will also be required to give a short oral presentation of your findings in class.

Project Outline

Step 1 - choosing a topic

You may choose a topic that interests you to investigate. Some ideas include:

- Are all brands of kitchen paper equally absorbent?
- How does salinity affect plants?
- What effect does the colour of container have on heat absorption?
- Is there a relationship between gender and reaction time?

OR

You may, if you wish, use one of your own ideas. **HOWEVER, other ideas must be discussed with your teacher.** You should think about the feasibility of your investigation (e.g. can you perform the experiments at home using readily available materials?) and discuss any problems with your teacher.

Step 2- Planning

1. Definitions. You need to know the meaning of the following terms when used in scientific investigations.

Problem	Control	Theory
Hypothesis	Results	Experimental variable
Observation	Repetition	Independent variable
Procedure	Conclusion	Dependent variable

2. Planning Sheet. Complete a planning sheet and hand it in to your teacher for checking.
Your teacher will check your plan and discuss any problems with you.

Step 3- Project. Carrying out the investigation and writing a report

You will need to carry out the investigation that you outlined in your plan and write a report.

It is important that you refer to the marking scheme when you write your report to ensure that you have addressed all issues required.

Your report should not be more than 8 pages long (including graphs, diagrams etc.)

Presentation and marking scheme

Your report should be presented neatly in a folder.

The cover sheet must be attached to your project, with details completed.

The **marking scheme** is on the back of the cover sheet.

Photographs of you conducting the experiment must be included in your report.

Things to remember

- 1. This project must be all your own work.
Copying will result in a mark of zero being awarded.**
- 2. This project is worth 25% of your Year 10 Assessment mark.**

Date of notification: Tuesday, 30th March 12, 2021.

Date planning sheet due: Term 2, Week 2 Thursday, 29th April 2021.
- 3. Report is due to be handed in, on or before, Thursday, 10th June 2021.**
- 4. Marks will be deducted if either the planning sheet or project sheet report is handed in late without proof of illness or misadventure.**
- 5. Oral presentations will be held in class.**

Year 10 Science Research Project Experimental Planning Sheet

Here are a number of questions that you need to consider before you begin your investigation.
Answer these questions and submit the answers to your teacher as your experimental plan on or before
Thursday, 29th March 2021.

1. Problem:

What are you trying to find out in this investigation?

2. Background research:

What relevant information have you found; include at least one reference.

3. Hypothesis:

What do you think is the answer to the problem?

4. Testing your hypothesis

What is the independent variable in this investigation? (1)

What is the dependent variable in this investigation? (1)

What things need to be kept constant to make sure this is a fair test? (2)

Write your intended method in steps. Make sure the method includes how to keep the constants the same and how you will measure the dependent variable. (5)

Indicate how you will record your results. (1)

5. Apparatus:

List all the apparatus and materials you will need to conduct your investigation.

Marking:

1. Problem:	/1
2. Background research:	/4
3. Hypothesis	/2
4. Testing your hypothesis	/10
5. Apparatus:	/2
6. Clarity of presentation	/1

Total /20

**SCIENCE PROJECT
NOTIFICATION FORM
COVER SHEET**

STUDENT'S NAME: _____

SCIENCE CLASS: _____

TEACHER: _____

TITLE OF PROJECT:

PARENT ACKNOWLEDGEMENT:

I am aware the science project my son / daughter has completed is a major piece of work and DECLARE that the work presented for marking is that of the student named above.

Also in the event of obvious over assistance, the student will be penalized marks.

SIGNATURE (Parent/ Guardian)

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Submit this form with your project on or before Thursday, 10th June 2021.

Notes

1. Household measuring devices and materials can produce an excellent project. No school materials will be provided to students.

2. Safety - projects which pose a potential threat to person or property are deemed inappropriate and must not be carried out.

Year 10 Science Project Marking Sheet

Name: _____ Class: _____

Problem	Heading — Aim	1	____/5	I N V E S T I G A T I O N
	Question stated in simple terms	1		
	Hypothesis stated	2		
	Reference to other information (Product Information/Scientific Theory)	1		
Procedure	Heading Procedure/Method stated	1	____/10	
	Equipment list (partial list 1/2 mark)	1		
	Outline of procedure	1		
	Procedure listed in point form	1		
	Procedure matches experimental aim	1		
	Safety considerations outlined	1		
	Variables (Independent/dependent)	2		
	Constants listed	1		
	Student explains how constants maintained	1		
Results/ Observations	Heading Results stated	1	____/10	— 30
	Student shows evidence of some results	1		
	Student results tabulated	1		
	Student has appropriate title/column headings on table (1/2 mark each)	1		
	Student uses appropriate units	1		
	Student repeats experiment 3 or more times (1/2 mark for one repetition)	1		
	Student shows correct use of average result	1		
	Student uses appropriate graph	1		
	Student includes photographic evidence of themselves conducting the experiment	2		
Conclusion	Heading Conclusion stated	1	____/5	
	Student states their conclusion/s	1		
	Student's stated conclusion is linked to their results	1		
	Student states whether results support original hypothesis	1		
	Student states why they support hypothesis if yes or			
	Student states revised hypothesis if no	1		
Discussion	Heading Discussion stated	1	____/10	C O M M U N I C A T I O N
	Statement of agreement/disagreement with scientific theory or manufacturers claims	1		
	Student explains how results agree/disagree with theory/manufacturers claims	1		
	Student mentions where errors could occur in their measurement	1		
	Student explains what effect errors would have on their results/outcomes	1		
	Student states problems encountered while completing investigation	1		
	Student explains how this was overcome	1		
	Student lists further valid tests that could be done	1		
	Student explains what they would achieve	2		
References	Heading References stated	1	____/5	
	Valid sources	2		
	Student correctly lists sources			
	(Some sources 1 mark, all sources 2 marks)	2		
Presentation	Parental acknowledgement included	1	____/5	— 20
	Work clearly presented in a display book	1		
	Title page evident	1		
	Work neatly presented	1		
	Name and page number displayed on each page	1		

Total = _____ /50 Grade= _____

Marking

Marks will be awarded for

Planning Sheet	20 marks
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Project

Problem	5	
Procedure	10	
Results/Observations	10	
Conclusion	5	
Discussion	10	
References	5	
Overall Presentation	5	
Total		50 marks

Oral Presentation

Introduction	1	
Information	4	
Delivery	4	
Use of support material	3	
Language	2	
Stance	2	
Timing	3	
Conclusion	1	
Total		20 marks

Total Marks	90
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