



# Boorowa Central School

Excellence through Respect, Responsibility and Participation

## Assessment Task Feedback

Student: \_\_\_\_\_

Task: \_\_\_\_\_

Teacher Feedback

### STRENGTHS

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- 
- 

### AREAS TO STRENGTHEN

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- 
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- 
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### WHAT OTHER THINGS I COULD HAVE DONE - Student Response

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- 
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Teacher Comment \_\_\_\_\_

MARK



### EFFORT

### NAME

Didn't try very hard and gave up	Put in a bit of effort	Worked OK but could have done more	Worked very well	Pleased with my effort
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### DIFFICULTY OF THE TASK

Too hard	Hard	Some parts were hard but achievable	OK	Easy
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## Assessment Task Notification

All tasks should be clearly outlined in the notice and give information pertaining to the nature of the task, the outcomes being assessed and the marking schedule giving individual component weightings.

<b>Teacher:</b> Mr Corcoran	<b>Course:</b> Inv. Science
<b>Task and Number:</b> 2 Making a Model Presentation	<b>Task Weighting:</b> 30%
<b>Date Issued:</b> 3/6/20	<b>Date Due:</b> Friday 26/6/20
<b>Syllabus component:</b> Module 2 & 3	
<b>Syllabus outcomes being assessed:</b>  <b>Outcomes assessed</b> INS11/12-1 develops and evaluates questions and hypotheses for scientific investigation INS11/12-2 designs and evaluates investigations in order to obtain primary and secondary data and information INS11/12-4 selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media INS11/12-5 analyses and evaluates primary and secondary data and information INS11/12-6 Solve scientific problems using primary and secondary data, critical thinking skills and scientific processes INS11/12-7 Communicate scientific understanding using suitable language and terminology for a specific audience INS11-10 Develop, and engage with, modelling as an aid in predicting and simplifying scientific objects and processes	
<b>Description of task:</b>  <h3>Context</h3> <p>In this module you have learnt the importance of scientific models in both developing a scientific understanding of concepts and explaining concepts to an audience.</p> <h3>Task</h3> <p><b>What have you always wondered about?</b> <b>Construct a working (and moving!) scientific model to explain the answer.</b> Einstein famously wondered about what would happen if you travelled in a train at the speed of light and came up with a model to explain his answer. As a child, did you wonder why is the sky blue? Or have you ever wondered exactly how paracetamol or antibiotics work? This is your chance to ask your own question and build a working model to explain your answer.</p> <h3>Submission, presentation and assessment</h3> <p>A summary of your model, plan and how you will create it must be submitted as a tri-fold display. You will be provided with feedback throughout the process and assist you in using your time effectively. Your working model will be assessed as part of a <i>science fair</i> where your peers will exhibit their models to an audience. You will create a tri-fold poster to introduce your working model that has information you collect in the portfolio</p>	



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## Important Details

- Your question must start with 'why' or 'how' as it is posing a question for inquiry. They should not begin with 'what'.
- Your proposed question must be approved by your teacher.
- Your model must move and show the dynamics behind the answer to your question. It does not necessarily have to be physical model (that is; you could create a dynamic computer model that demonstrates things well).
- Your model must also be able to explain future predictions.
- Consider the expense of the materials you will like to use to build your model and how well it will function in a science fair environment. Basic materials may be able to be brought be the school if given enough warning
- You will be allocated 6-10 hours of class time (approximately 2-3 weeks) to complete the task.
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## Submission of Task requirements:

**Hand in model and tri-fold poster in class**

**Note:** If a student is absent for an assessment task or fails to submit a task when it is due, then a medical certificate or other acceptable explanation must be presented on the first day the student returns to school or a zero mark is awarded.

**Marking rubric**

<b>PORTFOLIO SECTION</b>	<b>SYLLABUS OUTCOME</b>	<b>1 limited- not evident</b>	<b>2 developing</b>	<b>3 satisfactory,</b>	<b>4 sound</b>	<b>5 excellent.</b>
1. Brainstorm of ideas	INS11-1	Does not develop an enquiry question even with extensive teacher guidance	Shows a limited ability to develops a question that can be tested with a model and starts with 'why' or 'how'  Needs extensive teacher guidance	Develops a question that can be tested with a model and starts with 'why' or 'how'.  needs some teacher guidance	Demonstrates ideas and thoughts and develops a question that can be tested with 'why' or 'how'  Needs minimal teacher guidance	Demonstrates extensive ideas and original thoughts and develops a question that can be tested with a model and starts with 'why' or 'how' needs no teacher guidance
2. The use of models in science	INS 11-7	demonstrates limited knowledge and understanding of scientific concepts	demonstrates basic knowledge and understanding of scientific concepts	demonstrates satisfactory knowledge and understanding of scientific concepts	demonstrates thorough knowledge and understanding of scientific concepts, including complex and abstract ideas	demonstrates an extensive knowledge and understanding of scientific concepts, including complex and abstract ideas
3. Title page	INS11-1	Little or no information, just a heading/	Page has limited information and diagrams and the student does describe the scientific superficially describes the concepts demonstrated in the model	Page has a satisfactory image and information describing the scientific concept that will be modelled in a succinct way	Page is well presented, and the images and information describe scientific concept and prediction that will be modelled in a succinct way	Page is well presented and catches reader attention. The images and the information provided clearly relating to the prediction the model will demonstrate in a succinct way



4. Background research	<p><b>INS11-1</b> <b>INS 11-7</b></p>	<p>communicates scientific understanding using limited scientific terms</p>	<p>communicates scientific understanding using basic scientific terms and application of nomenclature</p>	<p>communicates scientific understanding effectively using scientific terms and application of nomenclature</p>	<p>communicates scientific understanding, logically, and effectively using correct scientific terms and application of nomenclature in a variety of formats and wide range of contexts</p>	<p>communicates scientific understanding succinctly, logically, and consistently using correct and precise scientific terms and application of nomenclature in a variety of formats and wide range of contexts</p>
5. Plans for my model	<p><b>INS11-2</b> <b>INS11-6</b></p>	<p>Partially outlines how the model will obtain data and information</p> <p>Limited or no diagrammatical evidence</p>	<p>Outlines how the model will obtain data and information</p> <p>Diagrams inadequate too small, drawn in pen, messy, missing important labels</p>	<p>Designs and plans the model, explaining the use of materials and evaluates risks</p> <p>Diagrams adequate (drawn in pencil fairly easy to read, most labels)</p>	<p>Plans for the materials used in the model to obtain reliable, valid and relevant primary data, evaluating risks, Diagrams are labelled. Drawn in pencil</p>	<p>Designs and plans for the materials used in the model to obtain accurate, reliable, valid and relevant primary data, evaluating risks Diagrams are labelled. Drawn in pencil</p>
6. evaluation ( initial-self-evaluation)	<p><b>INS11-2</b> <b>INS11-6</b></p>	<p>provided limited documentation and shows no clear direction</p>	<p>put forward some ideas for future improvements</p>	<p>put forward some good and practical ideas for future improvements</p>	<p>exhibited rational thinking in the testing and evaluation of the working model and put forward directions for future development</p>	<p>used critical thinking in the evaluation and testing of the model, discussing alternatives and modifications and suggested worthwhile directions for future development in a succinct manner</p>

7.Final model Double Marks	INS 11-7	no change no photos	Photos demonstrate superficial changes made from initial design ( e.g. painting it) At least 1 photos is shown	Photos demonstrate some changes made from initial design, At least 2 photos are shown showing some changes	Photos demonstrate most changes made from initial design 3 photos are shown showing changes	Photos demonstrate all changes made from initial design At least 3 photos are shown displaying detail of changes
8. Tri Fold Poster Triple Marks	INS 11-7 INS11-6	The poster is omitted or contains a poor attempt describing what was done.	The poster is not appealing to look at and shows no pride of work The poster contains little information The poster one picture which isn't labelled The poster is written in a vague manner and is not clear	The poster is somewhat appealing to look at and shows some pride of work The poster contains most information The poster has some pictures which are labelled and clear The poster is written in a vague manner and is somewhat clear	The poster is somewhat appealing to look at and shows some pride of work The poster contains most information The poster identifies how the model looked The poster has some pictures which are labelled and clear The poster is written in a vague manner and is somewhat clear	The poster is appealing to look at and shows pride of work The poster contains all information The poster identifies the how the model looked The poster has pictures which are labelled and clear The poster is written in a concise manner and is clear
10.Evaluation of the final model	INS 11-10	Demonstrated a limited understanding of the scientific concepts/s demonstrated in the model and the model shows a limited connection to the scientific phenomena	Demonstrated a basic understanding of the scientific concepts/s demonstrated in the model and describes some of its applications in the model	Demonstrated a good understanding of the scientific concepts/s demonstrated in the model and justifies the materials used in the model and relates this to its application in explaining the scientific phenomena described	Demonstrated an expensive understanding of the scientific concepts/s demonstrated in the model and evaluates the materials used in the model and its application in predicting and explaining scientific phenomena described	Demonstrated a detailed and expensive understanding of the scientific concepts/s demonstrated in the model and evaluates the materials used in the model and its application in simply predicting and explaining scientific phenomena described
<b>Total grade</b>	<b>60</b>					

Student portfolio

# Year 11 investigating science

Making a Model Assessment task

Student name: \_\_\_\_\_

Lesson	Tasks to be completed	Date completed	Teacher check
1	<ul style="list-style-type: none"><li>• Receive task information and notification and read through with teacher.</li><li>• Begin brainstorming ideas (complete this by next lesson)</li></ul>		
2	<ul style="list-style-type: none"><li>• Summary of uses of models in science.</li></ul>		
2	<ul style="list-style-type: none"><li>• Title page and question</li></ul>		
3 - 5	<ul style="list-style-type: none"><li>• Complete background research</li></ul>		
6-7	<ul style="list-style-type: none"><li>• Plan the building of the model and gathering supplies. These need to be brought to school in a labelled box by the next lesson</li><li>• Begin Tri-fold display</li></ul>		
8 - 9	<ul style="list-style-type: none"><li>• Building the model prototype.</li><li>• Evaluate prototype and suggest improvements.</li></ul>		
10 - 11	<ul style="list-style-type: none"><li>• Construct final model and work on A4 information sheet</li></ul>		
12	<ul style="list-style-type: none"><li>• Set up Science Fair display with model</li><li>• Submit portfolio to teacher</li></ul>		

### Section 1: Brainstorm of Ideas

In the space below brainstorm ideas including questions you have always wanted to answer, ideas you find interesting, areas you want to understand better, etc.

Discuss these early ideas with your peers and teacher. Clarify whether one is suitable for you to build a working model of. You do not have to limit yourself to this space.



## Section 2: The use of models in science

Using the knowledge, you have gained in class, answer the following questions.

What is a model?

What is a working model?

Why are models used in Science?

What are the advantages of using models?

Why did you choose your concept to make a model of?

How do you believe a model can be used to demonstrate this idea?

Using diagrams/photos describe the overall design for your model

### Section 3: Title page

Create a page that includes words and ideas to summarise the scientific concept you are going to make a model for. Include an image that you believe represents this concept. This will be the front page in your portfolio.

### Section 4: Background research

Read widely on your topic using the internet, books and scientific journals.

You need information about the science behind the model you are making.

Diagrams may be useful

Keep a note of any references you find useful. Answer the following questions and submit this page with your bibliography which should use Harvard referencing or another appropriate referencing style

How did you decide your references were i) relevant and ii) reliable?

\_\_\_\_\_

For all your references write an annotation or summary of the information you gained from it.

Include your reference list (this may be added to as the assessment continues)

Section 5: Plans for my model

Explain what medium you are going to use for your model.

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List any materials needed and include their approximate cost and where you will get them from

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Draw a diagram of your model or use photos to show how it is going to be put together. Include size measurements

## Section 6: Making my model (prototype)

During the construction you must take at least 3 progress photos which include a date and time. These will need to be printed and put into your portfolio.

Section 7: Evaluation of my model.

How successful is your model in demonstrating your concept?

\_\_\_\_\_

Does it help to explain the concept?

\_\_\_\_\_

How would you like to change the model to improve it?

\_\_\_\_\_

Explain how you will make these changes; include any materials that will be needed and their cost and supplier. Before you change your model have your teacher sign and date this page.

\_\_\_\_\_

## Section 8: Final model

You will have lessons to make your final model which will be on display.

Remember it will be reviewed by peers and your teachers. Take at least 3 photos of the changes you made and under each explain the change .



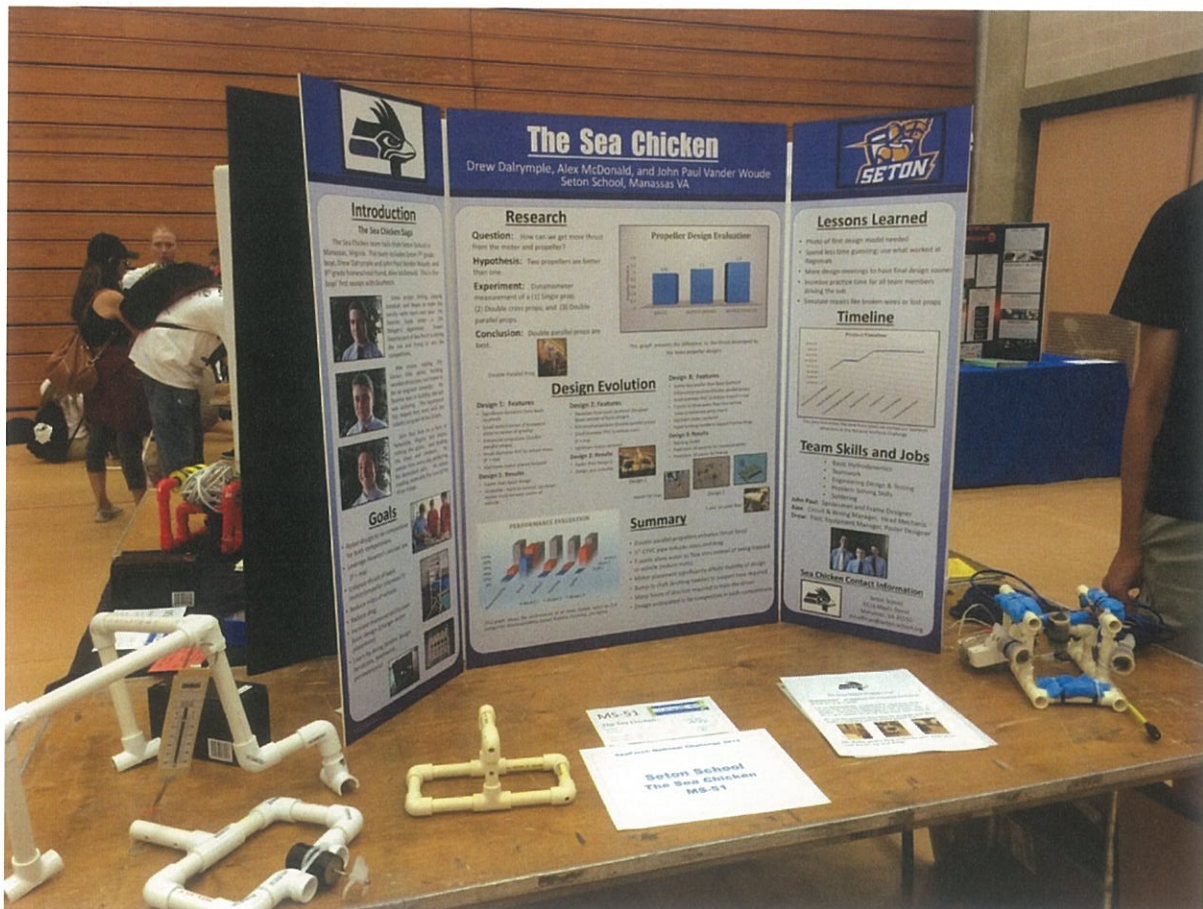
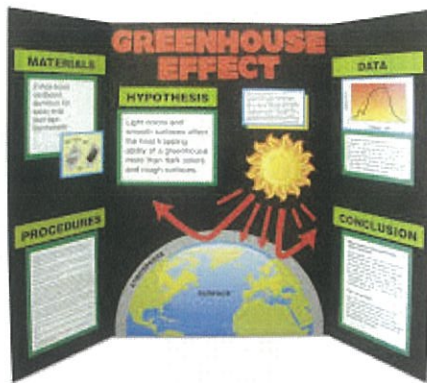
## Section 9: Science Expo display

Your model will be put on display in the Science Fair like display

You will also need to complete a tri-fold poster of a summary of your model and all information and pictures of your assessment. This should be appealing to look at and provide the viewer with a viewpoint of your work.

Your final display will have the model in front of your tri-fold poster

Remember your model should explain the concept you should not have to explain it to the audience.



## Section 10: Evaluation of my final model

You will be asked to write an **evaluation of your model**

You should include detailed and extensive understanding of the scientific concepts/s demonstrated in the model. You should evaluate the effectiveness of the materials used in the model and its application in simply predicting and explaining scientific phenomena described