Renewable Energy

Powering our World

Empowering our Minds

This Design Booklet belongs to _____.

Design Brief

As a renowned scientist, the local Energy companies have called upon you to research the viability of a renewable form of energy to replace fossil fuels. You will have 3 weeks to conduct extensive research and plan a presentation for the expo. The energy companies will be expecting you to support your presentation with a model clearly showing the important features necessary for the production of electricity using your desired renewable form of energy. Company executives will require a written explanation supporting your model.

To be successful you must:-

- Develop and make an eye-catching, realistic model of the features necessary for the production of electricity using your desired renewable form of energy. Your model must be no larger than 50cmx50cmx50cm
- Complete this design booklet outlining how you went about the design process.
- Be prepared to present your model and findings at a scientific expo.
- Submit your written explanation text for evaluation.

Consider the different types of renewable energy. Make a list of the positives and negatives of each.

Energy	Positives	Negatives

Make a decision about which renewable form of energy you would like to investigate further. Write a list of questions you will be addressing in your investigation.

Type of renewable energy:_____

List of questions you will be investigating:

Identify the main features of how the energy is converted into electricity e.g. construction of a dam.

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What materials will you need to create your design?

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Flow Chart showing how your energy source is converted into electricity:

Draw an initial plan of your 3D model. This should include a front, side and birds-eye view.

What steps will you take to create your model?

What labels will be important for you to include on your model?

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Now you can MAKE your model.

Consider the purpose and function of your model. How has it worked or not worked? Does it need to be altered? Draw any parts you have modified from your original plan.

Evaluate your completed design/model

Did the design work as planned? Explain.

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What worked well? Why?

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What would you improve? Why?

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What challenges did you encounter?

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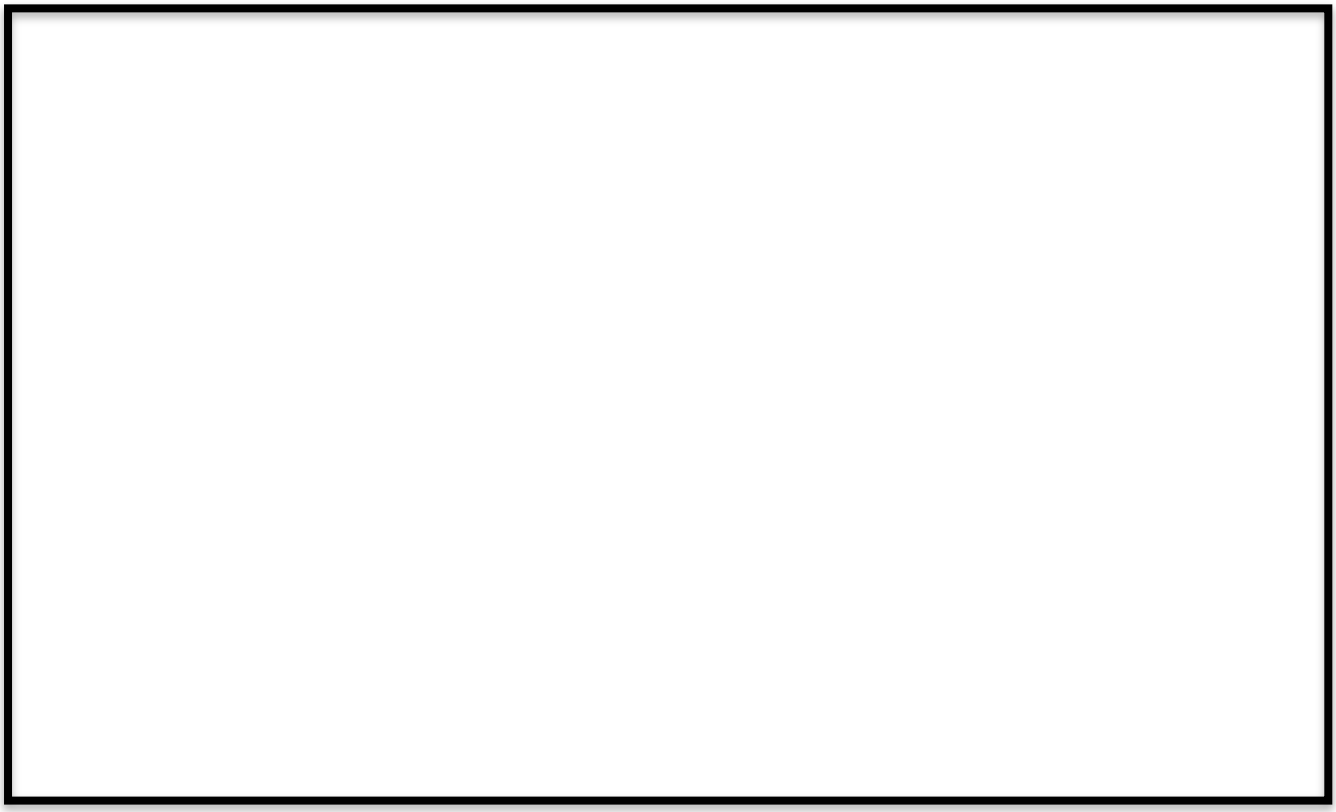
Draw a picture (or take a photo) of your final design.



Assessment Rubric

Category	0-1 point	2 points	3 points	4 points
Knowledge and Understanding of renewable form of energy	The information presented does not represent the process of making electricity from the form of energy chosen	Important information is missing and/or there are easily identifiable scientific inaccuracies. The audience has a limited understanding of the information.	The information presented has some supporting details and gives the audience some new understanding of the topic. The information is understood by the audience.	The information presented includes many details and increases the audience's knowledge of the topic. The information is clearly understood by the audience as demonstrated by their ability to retell information
Creativity and Originality	No evidence of original thought	Experimented with one idea	Evidence of trialing more than one idea	Evidence of exploring a range of designs
Design Booklet	Some sections attempted with little information provided	Some sections complete with some detail	All sections completed with some detail	All sections completed with detailed and accurate information
Design Brief	Did not follow the brief	-	-	Followed the brief
Written Component	The student has not completed the written component.	The student has completed the written component but the facts are not correct and/or there are grammatical and spelling errors.	The student has completed the written component with scientific accuracy and no more than 2 grammatical or spelling errors.	The student has completed the written component with no mistakes and it is supported by relevant pictures or diagrams.

Total Points Possible = 20

Final Score - ☐

Teacher Comments –

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Planning Page (Notes, Ideas, Sketches)