Contributor

FOR TEACHERS for students

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RENEWABLE ENERGY IN AUSTRALIA

Lesson Ideas

English

- Students to add words to a class word wall about 'Renewable Energy' and use these to create a personal dictionary.
- Students to complete the '**KWL Chart**' activity sheet to brainstorm what they know, want to know, and have learnt about renewable energy.
- Students to complete the '**Renewable Energy in Australia – Comprehension**' activity sheet.
- Students to write a letter to their school principal outlining their reasons for suggesting/choosing a renewable energy source to power their school.
- Students to design a brochure that promotes one form of renewable energy.
- Students to interview their local member of parliament. Devise some questions about his or her party's policy on energy and the environment.
- Students to write a narrative about what the world might be like in 50 or 100 years if we do not continue to adopt renewable energy solutions.
- Invite a renewable energy expert to visit your school and speak at an assembly or in class. Students to write a summary of the expert's speech/visit.
- Students to research Alexandre Edmond Becquerel and write a brief biography about him, including his contribution to solar energy.

Mathematics

- Students to survey friends, classmates and family members about ways in which they try to be energy efficient. Graph the results.
- Students to research and compare the costs of various clean energy sources with non-renewable sources (e.g. solar with fossil fuel produced energy), and record their results on a graph or table.
- Students to complete the '**Heat it Up**' activity sheet to determine if there is a suitable location for solar panels within their school.

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Science

- Students to research various forms of renewable energy and answer one or more of the following questions, then present their findings to the class:
  - How does it work?
  - Why is it considered renewable?
  - How is it used in Australia and around the world?
  - What are its features and benefits?
  - Are there any disadvantages? If so, what are they?
- Students to prepare a presentation, including photos, about ways in which they can (or have) conserve energy, either in their homes or at school.
- In groups, students to research the production and use of ethanol fuel in Australia and around the world. What is ethanol fuel and how is it produced? Discuss the advantages and disadvantages of using this fuel source.
- Students to use the '**Venn Diagram**' activity sheet to compare two types of renewable energy, or to compare a renewable energy source and a fossil fuel, such as coal.
- Students to investigate, describe and illustrate the carbon cycle.
- Students to complete the '**What is the Greenhouse Effect?**' activity to see an example of how the greenhouse effect and the Earth's atmosphere function.

Humanities and Social Sciences (History, Geography, Civics and Citizenship, Economics and Business)

- Students to discuss ways in which they can be energy efficient. Students to aim to use at least one energy efficiency idea per week. The ideas could form part of a visual classroom display.
- Students to discuss the issues affecting the local community, Australia, and the rest of the world, in relation to energy use, climate change and the environment.
- Students to debate: 'It should be compulsory to use renewable energy to power our homes, offices, schools etc.'
- Students to design a 'clean energy city', taking into consideration their energy needs and what energy source/s they will use. Students to present their ideas and designs in a 'pitch' to the rest of the class.

RENEWABLE ENERGY IN AUSTRALIA

- Students to investigate how hydropower has been used throughout the ages. Write an information report about their findings.
- Students to research current policies in relation to renewable energy and its use, then prepare a presentation about what their policies would be if they were Prime Minister.
- Students to research the Snowy Mountains Hydro-Electric Scheme and consider how it contributed to Australia's post-war economic development and national identity.
- Students to conduct an internet search to find the top 10 countries that are leading the world in renewable energy.

The Arts (Dance, Drama, Media Arts, Music, Visual Arts)

- Students to write, rehearse and perform a commercial to convince a specific audience to switch to a renewable energy source.
- Students to create a collage about energy efficiency, using recycled materials only.
- Students to design a cover for a fictional renewable energies magazine.

Health and Physical Education

- Students to investigate the effect of pollutants in the atmosphere on the health and wellbeing of humans and animals. Find out and discuss how using renewable energy sources might help reduce or even prevent some of these health issues.
- Students to investigate how they can use their own energy (such as walking or riding) to reduce their reliance on high energy use activities (such as being driven). Discuss the personal and environmental health advantages of this change.

Technologies (Design and Technologies, Digital Technologies)

- Students to discover how a wind turbine works and create their own model using recycled materials.
- Students to display their knowledge about renewable energy in Australia by completing the '**Renewable Energy – A Review**' activity sheet.
- Students to draw and label the essential parts of a solar cell.
- Students to investigate solar energy using solar educational kits (available from electronics stores).

RENEWABLE ENERGY IN AUSTRALIA

- Students to design a renewable energy powered appliance (e.g. solar-powered, water-powered, or wind-powered).
- Students to explore hydro energy by building a basic water wheel from materials such as paper plates, plastic cups or Lego.

Languages

- Students to research how other countries promote, celebrate or create awareness of renewable energy, clean energy or climate change (e.g. do other countries celebrate 'Earth Hour'?).