

Solar Data – what can it show us?

Science, English
Curriculum Levels 1-2

Activity Description

Genesis Energy has installed solar panels at selected schools across Aotearoa/ New Zealand. This activity encourages the students to learn about the data coming from the solar panels and how weather and season influences their performance. The data tells the students how much electricity the solar panels are generating. You could adapt this activity for data generated over a month.

Schools do not need solar panels to use this activity as data from any of the School-gen schools can be used



Teaching rationale

Students learn in a simple way about the data from the school's solar panels (<http://schoolgen.co.nz/solar-schools>) and how weather changes the data. The data tells the students how much electricity the solar panels are generating over a period of time.

Curriculum Links

Area	Achievement Objective
Science (Level 1-2)	<p>Nature of Science <i>Investigating in science</i></p> <ul style="list-style-type: none">• Students will collect data from school solar panels and make explanation of the recorded data. <p>Communicating in science</p> <ul style="list-style-type: none">• Students will build their language and develop their understandings of the many ways the natural world can be represented as they analyse their recorded data and make meaning from it. <p>Participating and contributing</p> <ul style="list-style-type: none">• Students will relate the data obtained to local weather patterns. <p>Planet Earth and Beyond <i>Earth systems</i></p> <ul style="list-style-type: none">• Students will explore and describe weather over a period of time. <p><i>Astronomical systems</i></p> <ul style="list-style-type: none">• Students will share ideas and observations about the weather and its effect on the amount of sunlight available to generate electricity. <p>Physical World <i>Physical inquiry and physics concepts</i></p> <ul style="list-style-type: none">• Students will use data to explain the effect of the weather on the output of the solar panels.
English (Level 2)	<p>Listening, Reading, and Viewing and Speaking, Writing, and Presenting <i>Processes and strategies</i></p> <ul style="list-style-type: none">• Students will show some understanding of ideas contained in observed information and observed data recordings when they consider and describe simple patterns from weather changes and solar outputs.

Running the activity

For this activity students will need:

- ▲ A copy of the Weather Journal table below.
- A copy of the School-gen Data Bar graph template below to record the School-gen solar data in.

Weather Journal-

1. In the Weather Journal ask the students to record what the weather is like every day for a week, using the symbols suggested to show clouds/ rain/temperature (top 3 rows).
2. Go to the School-gen website and find the solar data for each day of the week (electricity generated measured in kilowatt-hours).
3. Ask the students to record this number in the bottom row of the table.

School-gen Data Bar graph –

4. Ask the students to complete the bar graph based on this data generated over the week.

Reflection

Using the results from the Weather Journal and the School-gen Data Bar Graph, the students will reflect on what they have learned about solar panels and weather.

1. Which day did the solar panels generate the most electricity?
2. Why do you think this was?
3. Which day did the solar panels generate the least electricity?
4. Why do you think this was?



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Weather Journal

Complete the Journal using the symbols	Monday Date:	Tuesday Date:	Wednesday Date:	Thursday Date:	Friday Date:
Are there clouds in the sky? <ul style="list-style-type: none"> • No clouds <input type="checkbox"/> • Some clouds <input type="checkbox"/> • Lots of clouds <input type="checkbox"/> 					
Is it raining? <ul style="list-style-type: none"> • No rain <input type="checkbox"/> • Some rain <input type="checkbox"/> • Lots of rain <input type="checkbox"/> 					
What is the temperature? <ul style="list-style-type: none"> • Cold <input type="checkbox"/> • Warm <input type="checkbox"/> • Hot <input type="checkbox"/> 					
Fill in the row with the data from the Schoolgen website. The data tells you the total amount of electricity the solar panels generated each day. kWh kWh kWh kWh kWh

