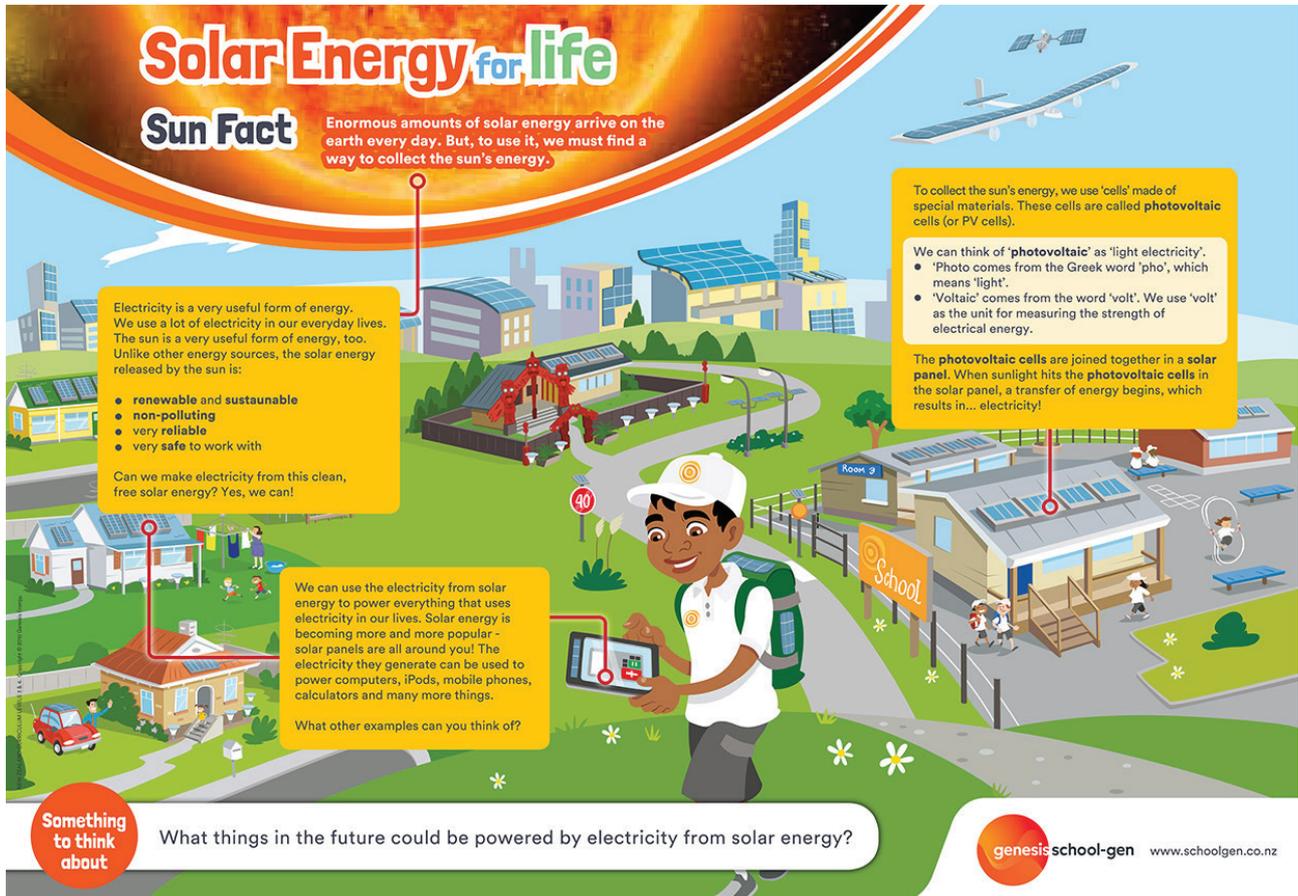


Schoolgen Poster 2 Teacher Guide

Solar Energy for Life: Levels 3 – 4



Solar Energy for life

Sun Fact Enormous amounts of solar energy arrive on the earth every day. But, to use it, we must find a way to collect the sun's energy.

Electricity is a very useful form of energy. We use a lot of electricity in our everyday lives. The sun is a very useful form of energy, too. Unlike other energy sources, the solar energy released by the sun is:

- renewable and sustainable
- non-polluting
- very reliable
- very safe to work with

Can we make electricity from this clean, free solar energy? Yes, we can!

We can use the electricity from solar energy to power everything that uses electricity in our lives. Solar energy is becoming more and more popular - solar panels are all around you! The electricity they generate can be used to power computers, iPods, mobile phones, calculators and many more things.

What other examples can you think of?

To collect the sun's energy, we use 'cells' made of special materials. These cells are called **photovoltaic cells** (or PV cells).

We can think of 'photovoltaic' as 'light electricity'.

- 'Photo' comes from the Greek word 'pho', which means 'light'.
- 'Voltaic' comes from the word 'volt'. We use 'volt' as the unit for measuring the strength of electrical energy.

The **photovoltaic cells** are joined together in a **solar panel**. When sunlight hits the **photovoltaic cells** in the solar panel, a transfer of energy begins, which results in... electricity!

Something to think about What things in the future could be powered by electricity from solar energy?

genesis school-gen www.schoolgen.co.nz

About this Poster

Enormous amounts of solar energy arrive on the earth every day.

This poster looks at how we can collect the sun's energy to create electricity and power everything that uses electricity in our lives.

This poster has been created for New Zealand Curriculum levels 3-4

Poster Discussion Questions

- On the poster what are the four main reasons that state why capturing the sun's energy is a positive goal now and for the future?
- List how many things you use in a day

that use electricity.

- What things in the future could be powered by electricity from solar power?
- What are photovoltaic panels?
- How many inventions that use solar power can you find in the poster?
- What is the meaning of photovoltaic?
- Is there the potential to capture the sun's energy to enable us to have an unlimited supply of electricity?
- Describe how solar power could change our lives in the future?

Related Activity Links

- How to make a solar oven
- How to make a paper circuit house

Key Words

Solar energy	Energy from the sun that is converted into thermal or electrical energy.
Renewable Energy	Comes from a naturally occurring resource that is continually replenished without using fossil fuels or any other limited resource. These include water (hydroelectricity), wind farms, steam (geothermal sources) and the sun (solar energy).
Solar panels	A solar panel is a device that collects and converts solar energy into electricity.
Photovoltaic Cell	Device that converts light energy (photons) to electrical energy.
Sustainable	Capable of being continued with minimal long-term effect on the environment.
Reliable	The sun is a constant, renewable source of energy so can be viewed as reliable
Safe	As a raw form of energy, solar energy is free from danger or harm.
Electricity	electric current used as a source of power.
Non-polluting	Not harmful to living things.

New Zealand Curriculum Links

Science Level 3-4	Investigating in Science	Students will work together to collate and analyse data from the school's solar panels.
	Communicating in Science	Students will engage with a range of science texts and begin to question the purposes for which these texts are constructed when they research the facts about solar energy and the alternatives.
	Participating and Contributing	Students will research the facts about solar energy and its alternatives and write a persuasive argument in support of solar energy. Students will interpret available solar electricity generation data and develop explanations that explain this data.
Physical World	Physical inquiry and Physics concepts	Students will interpret solar electricity generation data and identify and describe patterns relating to the position of the sun in relation to the Earth that affect the capacity to generate solar energy.
English Level 4	Listening, Reading, and Viewing and Speaking, Writing, and Presenting	
	Processes and Strategies	Students will integrate sources of information, processes, and strategies confidently to identify form, and express ideas about converting solar energy into heat.
	Purposes and Audiences	Students will show an increasing understanding of how texts are shaped for different purposes and audiences when they write a persuasive argument in support of solar panels.
	Language features	Students will use a range of vocabulary, including correct scientific terms, when they write a persuasive argument in support of solar panels.
	Structure	Students will use an appropriate text structure when they write a persuasive argument in support of solar panels