

HARNESSING SOLAR ENERGY

Teacher-led Activity

This activity uses the legend of Māui and the Sun to explore the importance of solar energy in our lives and, how we can use technologies to harness solar energy at school.

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HARNESSING SOLAR ENERGY

INTENDED LEARNING OUTCOMES

Students will:

- make statements on how we use solar energy
- identify the way that Māui harnessed solar energy
- identify how solar energy is harnessed in our school
- complete a PMI¹ evaluation of the positive and negative effects on people and nature from increasing daylight hours.

WHAT YOU NEED

- The legend of *Māui and the Sun* (see supporting resources below).
- The [PMI Chart](#).

FOCUS

Do you like sunny days? Why or why not? What would happen if the sun didn't rise tomorrow?

The presence or absence of the effects the sun has on our activities.

Note: The text in italics provides a guide for the discussion.

MANAGING THE ACTIVITY

Read the legend of *Māui and the Sun*.

Synopsis

Long ago, the sun moved so quickly across the sky that the hours of daylight were too short. There was very little time to do anything during daylight. Māui was asked

by his mother to do something about it and he encouraged his brothers to help him catch the sun and slow it down. Using long ropes from harakeke, they made a snare to spread over the cave of the sun. As the sun rose, they struggled to hold the sun and after a great deal of persuasion the sun finally agreed to slow down.

Ask the students the following questions:

- Why did Māui think it was a good idea to trap the sun?
- What are Māui and Schoolgen schools both doing?
(Māui and Schoolgen schools are trapping solar energy to use.)
- How are Māui and Schoolgen schools trapping the solar energy?

PMI CHART

Either as a class or in groups complete the [PMI Chart](#).

Use the PMI tool to encourage students to look at all sides of the topic and recognise the strengths and weaknesses rather than focusing on their immediate emotional reaction.

REFLECTION

- Develop a class statement about how people and nature use solar energy.

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EXTENSION

Exploring how we harness solar energy.

What do we know today about other technologies we use that capture solar energy? Solar energy creates electricity using solar cells. Explore solar powered objects used in the school or at home.

- Using a solar calculator, make a simple calculation. Then find the solar cells and cover them with your finger for 30 seconds. Keep your finger on the solar cells and try to make the calculation again. What happens? (See supporting resources below for an activity using calculators.)
- Have you come across solar lights in the garden?

Explore customary ways of using natural resources. For example, geothermal for cooking, stones for a hangi, wind-power, using black rock in kumara beds to heat the soil, etc.

SUPPORTING RESOURCES

- Melser, June (1984). *Ko Māui me te Rā. He Purapura*. New Zealand: Dept of Education.
- Melser, June (1984). *Māui and the Sun. Ready to Read*. New Zealand: Dept of Education.
- Experiments in the Sun - Light (Solar Schools)
A solar energy activity that looks at solar calculators.

[http://www.solarschools.net/resources/pdf/Experiments in the Sun - Light.pdf](http://www.solarschools.net/resources/pdf/Experiments%20in%20the%20Sun%20-%20Light.pdf)

¹A PMI evaluation “Plus, Minus and Interesting,” is a quick and effective tool for drawing out positive, negative and interesting aspects of a learning experience.

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PMI CHART

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Complete the PMI Chart to organise your thoughts and reflect on the following question.

By having more daylight hours, what are the effects on people and nature?

PLUS (+)	MINUS (-)	INTERESTING (I)

BRAINSTORM THE TOPIC USING:

- PLUS (+) means the positive effects on people and nature from more daylight hours
- MINUS (-) means the negative effects on people and nature from more daylight hours
- INTERESTING (I) stands for any ideas that the students thought were interesting about the topic. Record questions as well.