Task: Te Aonui o Tama-nui-te-Rā — Our Solar System

Approach:	One to one
Focus:	Solar system
Resources:	4 pictures
Kupu:	Matawhero = Mars

Questions / instructions:

Ka whakawhitiwhiti kōrero tātou mō te marama, te rā, Papatuanuku me te aorangi o Matawhero (Tūmatuaenga).

Whakaaturia te pikitia o te marama ki te ākonga (pikitia 1).

Anei tētahi pikitia o te marama.

In this activity we'll talk about the moon, the sun, Earth and Mars.

Show student moon (picture 1).

Here is a picture of the moon.

1. He aha hoki te marama?

   He aha ngā kōrero e mōhio ana koe mō te marama?

   What is the moon?

   Try to tell me all that you know about the moon.

	% responses
satellite of the Earth *(travels round the earth)*	2
smaller than Earth	4
made of rocky materials	12
about 400,000kms from Earth	0
reflects sun onto Earth *(provides light at night)*	8
has lots of craters	8
has no atmosphere/oxygen/air/ ozone/clouds, etc.	4
any other valid scientific response *(not myths or historical events)*	0

2. Whakaarohia kua tae atu koe ki te marama.

   He aha tētahi āhuatanga tino rerekē ake i te noho ki Papatuanuku, ka pā ki a koe i te marama?

   Imagine you have arrived on the moon.

   What would you notice that is different from being on planet Earth?

	% responses
no atmosphere/oxygen/air	41
black sky all the time	8
you can see the earth from there	0
less gravity than on Earth	0
[no gravity]	[24]
no vegetation/animals/people	33
rocky/dusty/barren landscape	18
no water	12

3. He aha te take e kite ana tātou i te marama?

   HE ĀWHINA: *Mā te aha tatou e kite ai i te marama?*

   How is it that we can see the moon with our eyes?

   PROMPT: *What makes the moon visible to us?*

	% responses
light of sun reflected from moon	19

4. He aha e rerekē ai te āhua o te marama e kite ana tātou?

   HE ĀWHINA: *Whakamāramahia mai he aha e rerekē ai te āhua o te marama i ētahi pō.*

   Why do you think that the moon appears to change its shape?

   PROMPT: *Try to explain why the moon looks different at different times of the month or year.*

	% responses
part seen *(as bright)* depends on relative positions of sun, moon and earth	6
has idea, but not well explained	17

Whakaaturia te pikitia o Papatuanuku (pikitia 2) me te pikitia o Matawhero (pikitia 3) ki te ākonga.

Show student Earth (picture 2) and Mars (picture 3).

Anei tētahi pikitia o Papatuanuku me tētahi anō o Matawhero.

E ai ki ngā kaipūtaiao, kāore te tangata pēnei i a tātou e ora ki Matawhero, engari ka ora tātou ki Papatuanuku.

Here is a picture of planet Earth and a picture of planet Mars.

Scientists tell us that people like us cannot live on Mars but we know that we can live on planet Earth.

5. He aha ngā take kāore te tangata e ora ki Matawhero?
   Kōrerohia mai ngā take katoa e mōhio ana koe.

   Why can't people live on planet Mars?
   Tell me as many reasons as you can think of.

		% responses
Temperature: *(very hot during day, cold at night)*	both	0
	just one	52
atmosphere issues		54
lack of water		30
lack of food		12

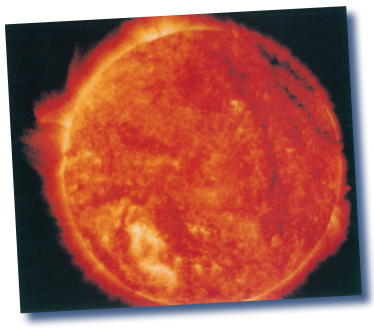
6. He aha tātou te tangata e ora ai ki Papatuanuku?
   Kōrerohia mai ngā take katoa e mōhio ana koe.

   Why are we able to live on planet Earth?
   Tell me as many reasons as you can think of.

	% responses
temperature suits our bodies	6
air/oxygen/atmosphere	71
water	54
food sources	43

Whakaaturia te pikitia o te rā (Pikitia 4) ki te ākonga.

Show student sun (picture 4).



Anei tētahi pikitia o te rā.

Here is a picture of the sun.

7. Ehara te rā i te aorangi. He aha hoki te rā?

   The sun is not a planet. What is the sun?

	% responses
star	52
ball of fire/gases	20

8. He aha ngā āhuatanga rerekē o te rā me Papatuanuku?

   How is the sun different from planet Earth?

	% responses
much bigger	22
extremely hot/ball of fire	82
no life or life requirements *(e.g. water/oxygen)*	14
no well-defined surface *(outer layers gas/plasma rather than solid/liquid)*	6

		% responses
Total score:	20–33	0
	16–19	0
	12–15	20
	8–11	28
	4–7	47
	0–3	5

Commentary:

Students showed quite limited knowledge of the moon and Mars, but substantially more knowledge of the Earth and sun.