Task: Tai Timu Tai Pari — Moving Water

Approach:	One to one
Focus:	Tides
Resources:	Video recording on laptop computer
Kupu:	tai timu = low tide tai pari = high tide

Questions / instructions:

He mahi rorohiko tēnei.

Ka mātakitaki tāua i tētahi whiti ataata e whakaari ana i te timu me te pari o te tai. Ka whakaaturia te tai timu i te tuatahi, kātahi ka kitea te tai pari i taua wāhi anō.

Pāwhiria te pātene *Tai Timu Tai Pari*, ka timata te whiti ataata.

This activity uses the computer.

In this activity we're going to look at a video showing low tide and high tide. The first part shows low tide. The second part shows the same place later in the day at high tide.

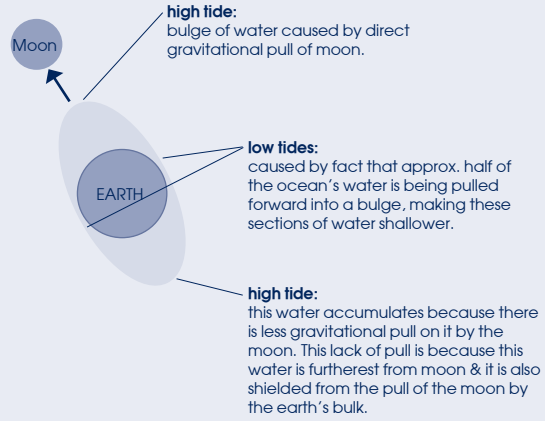
Click the *Moving Water* button and the video will start.

[No voiceover; sound of waves only]

Diagram that accompanied marking guide:

Tides are caused mainly by the moon. When the moon is overhead, its gravity pulls upwards on the sea, pulling it away from the shore, causing a bulge.

Tides rise and fall twice in 24 hours 50 minutes. This is because of the gravitational pull which creates two high tides and two low tides at any one time during the course of the 24 hours. The extra 50 minutes is due to time it takes the moon to move in its own orbit around Earth.



"tides operate on a 12+ hour cycle = 2 x low & high tides in 24 hours" would be an example of an *"any other response"*.

		% responses
1. Ia rā neke ai te tai ki waho, ka hoki mai anō ki roto. Ki tōu mōhio, he aha te tai e neke ai ki waho, kātahi ka hoki anō ki roto? Every day the tide goes in and out. What do you think causes the tide to go in and out?		
	full explanation	0
	mentions moon and gravitational forces	0
	mentions moon	9
2. Mehemea ko te 6 karaka i tētahi ata te wā timu o te tai, he aha te taima ka timu anō ai i muri iho? If low tide is at 6 o'clock in the morning, about what time will it be low tide again?		
[about 12 hours 25 minutes later]	6:30pm	0
	6:00pm	14
3. Ki tōu mōhio, he aha te tai e timu ai i ngā wā e rua i te nuinga o ngā rangi? Why do you think the tide is out twice most days?		
	mentions idea of two bulges and two shallows *(see marking guide)*	0
Total score:	4–6	0
	3	0
	2	5
	1	15
	0	80

Commentary:

Very few students showed any understanding of the source or mechanisms of tides