

## He Pūrere Wheowheo — Buzzer

**Approach:** One to one

**Focus:** Using an electrical circuit for a particular purpose.

**Resources:** Floor plan of house, red pencil, battery, 4 wires with crocodile clips, switch, buzzer.

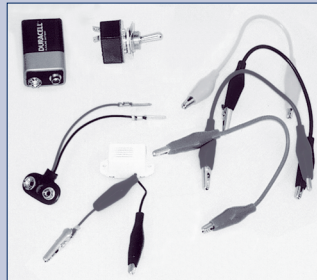
**Questions/instructions:**

Imagine that someone in your family is sick in bed. They feel too sick to call out when they want something. You decide to make it possible for them to call you when they want something by using an electrical buzzer.

Here is some equipment for making a buzzer that works.

Pōhewatia, kei te moenga tētahi o tōu whānau e māuiui ana. Nā te kaha o te māuiui, kāore e taea e ia te karanga atu, he aha tōna pīrangī. Ka whakaaro koe, ka hangaia e koe tētahi pūrere wheowheo kia taea e ia te whakatangi atu ki a koe.

Anei ētahi taputapu hei hanga pūrere wheowheo.



**Show equipment and name each component as you lay it out on the table.**

- Before you have a go with this equipment, try to describe to me how you would connect the equipment together to make the buzzer go.

I mua i tō whakamātau, whakamāramahia mai me pēwhea te honoi ngā taputapu kia tangi mai te pūrere wheowheo.

**Student explains.**

- Now you can have a go at making the buzzer go. You will need to use all of the pieces of wire. If you get stuck I can help you.

Me mahi koe ināianei. Ki te raru koe, kei konei ahau hei āwhina.

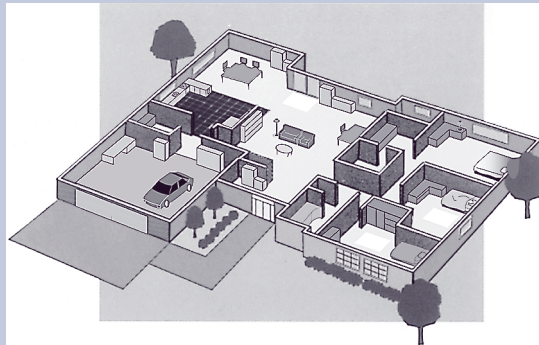
made buzzer sound 90 76

**Allow time.**

**Help needed:**

none	26	8
some clues	36	35
detailed verbal instructions	5	16
hands-on help	33	41

% responses  
GED MI



**Show student house plan.**

Here is a plan of the house where the family lives. This is the sick person's bedroom [room with person in bed], and here is the living room where most of the family will be.

Anei he hoahoa whare o te whānau. Anei te rūma moe o te tangata e māuiui ana (he tangata i te moenga i tētahi rūma). Anei te rūma noho, kei konei te nuinga o te whānau.

- Think about how you would set up the buzzer so that it would help the sick person in this house. Draw your ideas on this house plan, and show the main parts of the system you would make. As you are drawing, tell me what you are doing and why.

Me whakaaro koe me pēwhea te whakatū o te pūrere wheowheo kia āwhinatia ai te tangata māuiui i tēnei whare. Tāngia ōu whakaaro ki runga i tēnei hoahoa whare. Whakaatu mai i ngā wāhanga motuhake o tōu pūrere wheowheo. I a koe e tā ana, whakamāramahia mai kei te aha koe, ā, nā te aha i tā pērā ai koe.

**Give plan and red pencil to student. Prompt for explanation if necessary.**

		% responses	
		GED	MI
<b>Features of plan:</b>	switch in bedroom	88	82
	switch accessible to person in bed	86	80
	buzzer in place to be heard	82	88
	battery or identifiable power source in circuit	47	35
	wire(s) running from switch/battery to buzzer	79	82
	two wires shown (to complete circuit)	22	12



	% responses	
	GED	MI
<b>Total score:</b> 9-10	18	4
7-8	41	22
5-6	17	53
3-4	22	15
0-2	2	6

**Commentary:**

Māori students in general education (GED) settings scored statistically significantly higher than did Māori students in Māori immersion (MI) settings.