Technology is a creative, purposeful, multidisciplinary activity aimed at meeting needs and opportunities through the development of products, systems or environments. Knowledge, skills and resources are combined to help solve practical problems within particular social contexts. Its extensive cross-curricular possibilities reflect its vast pervasiveness throughout the world in which we learn and live as individuals, groups and societies.

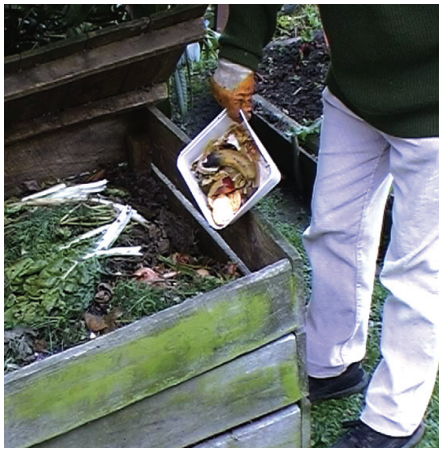
To attempt to represent all or even most of the areas, meanings and applications of technology within the national monitoring assessment programme would be unrealistic. After careful examination of the scope of the technology curriculum, it was decided to assess some key aspects. Selected areas of content and broadly overlapping contexts (e.g. personal, home, school, community) have been chosen as means of investigating the processes students use and the ideas they have.

This chapter reports the results of 20 technology tasks administered to individual students in Māori immersion settings.

Nine of the tasks were administered in one-to-one interview format and eight were attempted in stations format. The remaining three tasks were administered in a team or group situation.

National monitoring results are reported task by task so that results can be understood in relation to what the students were asked to do. Ten of the 20 tasks, however, have been designated *link tasks*, in order to allow comparisons of performance between the 2004 and later assessments. Performance data for those 10 tasks is presented in this report but the tasks are described in general terms only.

Many students identified some key issues in the technology tasks, but tended to give little attention to more subtle or technical issues. Their answers commonly lacked detail and elaboration, especially when asked to give explanations.



Task: He Paihikara – Bikes

Approach:	One to one
Focus:	Investigating and evaluating design
Resources:	2 pictures
Kupu:	kaieke = rider anga = frame pīkau = carrier

Questions / instructions:

I tēnei mahi ka āta whakaaro koe ki tētahi momo paihikara o ngā rā o mua.

Whakaaturia te whakaahua 1 (he paihikara).

In this activity you will be thinking about a bike used in the olden days.

Show picture 1 (bike).

1. Ko wai rā te tangata ka eke i tētahi paihikara pēnei i tēnei?

   Who might have ridden this bike?

2. Ka whakamahia tēnei paihikara mō te aha?

   What would they have used the bike for?

	% responses
questions 1 and 2 not marked	•

Whakaaturia te whakaahua 2 (he tiriti).

E whakaatu ana tēnei whakaahua i te tangata nāna nei te paihikara i whakamahi hei kawe taonga.

Show picture 2 (street scene).

This picture shows the delivery person who uses the bike to deliver parcels.

3. He aha ngā painga o tēnei paihikara hei āwhina i te kaieke. Kōrerohia mai ō whakaaro katoa mō ngā painga o tēnei paihikara.

   HE ĀWHINA: Kōrero mai mō te tūru.

   Kōrero mai mō te āhua o te anga o te paihikara.

   Kōrero mai mō te pīkau i mua.

   He whakaaro atu anō hei kōrero mai māu?

3. What things about this bike make it good for the person who used it?
   See how many things you can tell me.

   PROMPTS: Tell me about the seat.

   Tell me about the shape of the bike frame.

   Tell me about the carrier at the front.

   Is there anything else you can think of?

	% responses
mentioned that the seat has springs to make it more comfortable	51
mentioned that the low bar on the frame made it easier to get on and off	0
mentioned that the mudguards stop mud and water splashing on the rider	2
mentioned that the carrier/basket helps the rider carry parcels	87
mentioned that the sign tells who the rider is/works for	7
mentioned that the wide tyres make the bike more stable and comfortable	0

Total score:	% responses
4–6	0
3	7
2	41
1	45
0	7

Commentary:

Most students focused on just two features – the basket to carry parcels and the sprung seat. As a result, only seven percent of students were credited with more than two of the six identified features.

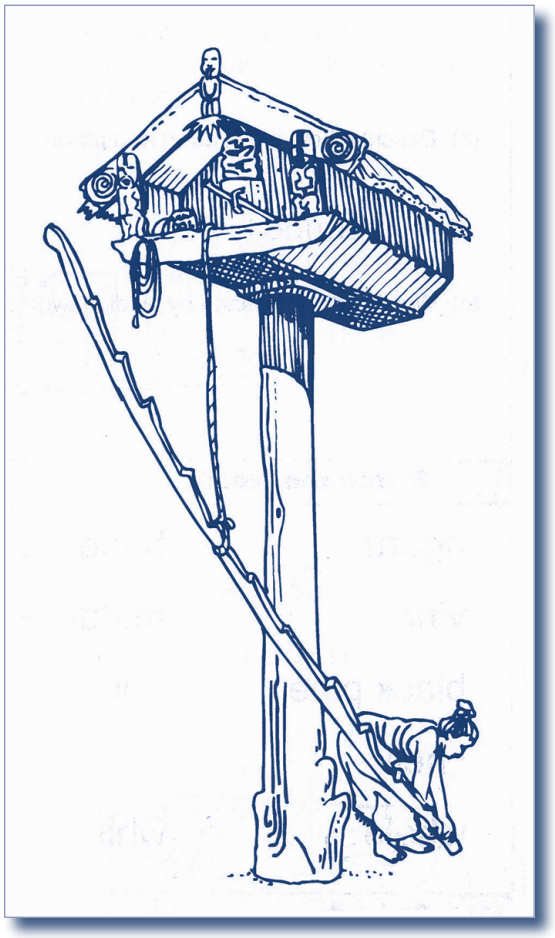
Task: **He Pātaka – He Pātaka**

Approach:	One to one
Focus:	Evaluating decisions, strategies and outcomes
Resources:	Picture
Kupu:	whakaputu = store

Questions / instructions:

Titiro ki te pikitia o tētahi pātaka o neherā.

Look at the picture of an early Māori food store.



	% responses
1. Tuhia kia toru ngā take i hangaia ai e ngā tīpuna he whare pēnei hei whakaputu i ā rātou kai. Try to give 3 reasons why Māori made buildings like this for storing their food?	
to keep pests out	81
to keep the food dry	8
to keep the food cool	0
to keep all food in one place so everyone can get to it easily	28
2. Ki ōu whakaaro, he aha e taea ai te neke i te arawhata mai i te pātaka? Why do you think the ladder can be moved away from the building?	
to reduce the likelihood of people accessing the food inappropriately *(e.g. theft)*	17
to reduce the likelihood of animals getting in	49
Total score: 4–6	2
3	24
2	38
1	27
0	9

Commentary:

Students focused very heavily on the issue of protecting food from pests.

Task: Kai Tere – Fast Food

Approach:	Station
Focus:	Identifying and depicting components in sequence
Resources:	Video recording on laptop computer
Kupu:	hoahoa = diagram tāina = toaster ara auheke = conveyor belt whakatahea = drain koko = scoop

Questions / instructions:

He mahi rorohiko tēnei.

Pāwhiria te pūtohu **Kai Tere**, ka mātaki ai i te rīpene ataata.
Mutu ana te rīpene ataata, koinei tō mahi.

This activity uses the computer.

Click on the button that says **Fast Food**.
The video will play.

VIDEO SCRIPT:

E hoko ana āhau i te hamupeka me te rīwai parai hei kai māku. Ka kōrero au ki te kaimahi, ā, ka patopato ia i ngā kai e hiahia ana āhau ki te rorohiko. Ka whakaaturia taku tono ki tētahi mata rorohiko i te kīhini, kia mōhio ai te tangata he aha ngā kai e hokona ana.

Ka raua atu ngā wāhanga e rua o te rōhi parāoa ki te tāina, kia mahana ai. Ka whakareri ia i te pepa tākai. Ka tuhia te momo hamupeka ki te pepa tākai. Kia mahana te rōhi parāoa, kātahi ka meatia te mīti ki runga i wāhanga tuatahi, ka raua ai ki te ngaruiti. Ka whakatakotoria te rētihi me te tōmato ki runga i te wāhanga tuarua o te rōhi parāoa. Ka oti te mīti te whakamahana, ka taupokina ki te kīnaki me te riki. Kātahi ka tākaitia taku hamupeka, ka tukuna ki te ara auheke. Ka tīkina atu e te wahine te hamupeka mai i te ara auheke, a, ka waihotia ki taku paepae. Ka tunua e te wahine aku rīwai parai, ka whakatahea te hinu, ā, ka kokoa ki roto i te pouaka.

Ka pai, kua reri aku kai ināianei.

Today I'm buying a burger and fries for my lunch. The girl who takes my order pushes buttons on a computer to show what kind of burger I'm ordering. The computer shows what I ordered on a TV screen in the kitchen so the man knows what to cook.

The man gets the top and bottom halves of the bun and puts them into a toaster to warm them up. When the bun is warming up, he gets a piece of wrapping paper ready. He writes what kind of burger it is on the wrapping paper. When the bun comes out of the warmer, a meat pattie is put on one half of the bun and then it's put into a microwave. When it's heating in the microwave, the man puts some lettuce and tomato on the other half of the bun. When the meat pattie is heated, he puts some sauce and onion on it. He wraps my burger into the piece of paper then he puts the burger on the shoot. The girl comes and collects the burger from the shoot and puts it on my tray. Next, the girl cooks some fries, drains the fat and scoops some into a box.

Now my lunch of burger and fries is ready to eat.

Kātahi:

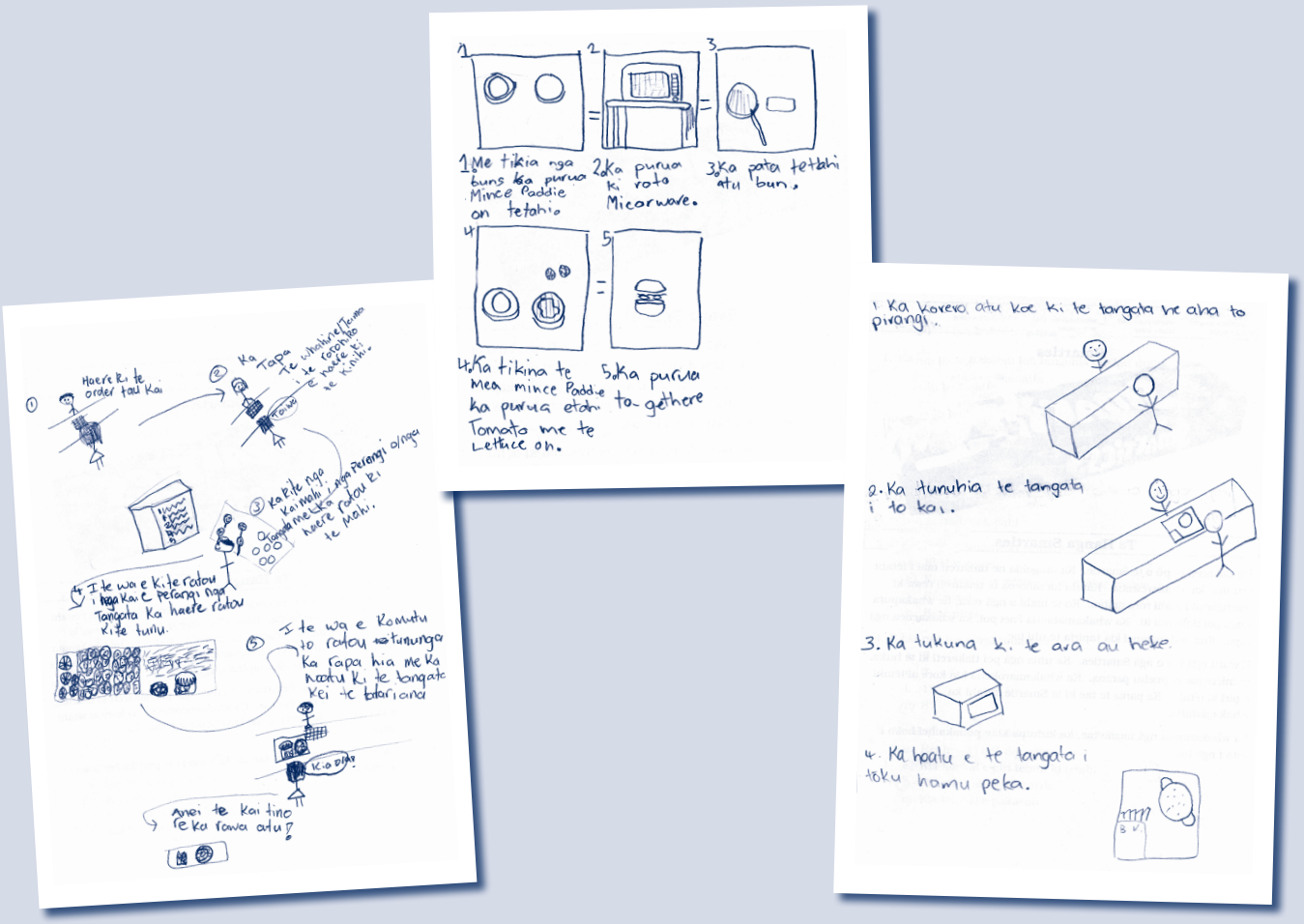
1. Tuhia tētahi hoahoa pai hei whakaatu i **NGĀ MAHI**.
2. Tuhia he kupu kōrero hei whakamārama i ngā mahi.
3. Tuhia he pere ki tō hoahoa hei whakaatu i te **RAUPAPATANGA** o ngā mea katoa ka mahia.

Then:

1. Draw an interesting diagram which shows **WHAT** is done.
2. Write words to help explain what is done.
3. On your diagram, draw arrows to show the **ORDER** in which everything is done.

		% responses
Steps included:	order given/taken	30
	buttons pushed on computer	17
	order shows up on TV screen	17
	top/bottom of bun in toaster	17
	name of burger on wrapping paper	9
	meat pattie on half of bun	24
	put in microwave	24
	lettuce, tomato on other half of bun	33
	pattie out of microwave; sauce, onions, pickles/gerkins on patties	13
	burger made *(no details)*	5
	burger wrapped in paper	20
	burger put on shute	7
	burger put on tray	4
	fries cooked	26
	fat drained	11
	fries scooped into box	11
	order placed on tray, ready to eat	4

Examples



		% responses
How clear are the steps in the diagram? *(consider words and pictures)*		
	consistently clear	26
	mainly clear	24
	sometimes clear	4
	never clear	46
Sequence/order of steps:		
	all steps mentioned are in correct order	35
	1 step mentioned is out of sequence	6
	2 steps mentioned are out of sequence	2
	order very jumbled	9
	order not shown	48
How is order shown?	arrows	11
	other clear way	41
	no clear indication of order	48

		% responses
Form of presentation:	pictures and diagram	13
	pictures only	20
	diagram only	2
	words only	65
Total score:	24–28	2
	20–23	5
	16–19	4
	12–15	19
	8–11	20
	4–7	4
	0–3	46

Commentary:

Most students scored relatively low on this task because they omitted most of the details of the process. A further factor in low performance was that half of the students did not indicate the order of the steps in the process.

Task: Tākaitia – Pack It Up

Approach:	Station
Focus:	Fitness for purpose
Resources:	5 pictures of objects to be packed; 5 labelled packaging materials:
	([a] - bubble wrap; [b] - shredded paper; [c] - corrugated cardboard; [d] - expanded polystyrene foam; [e] - coloured tissue paper)
Kupu:	rauangiangi = tissue paper; kāri kōwakawaka = corrugated card; kōmāmā = polystyrene
	tākai mirumiru = bubble wrap; pepa ngakungaku = shredded paper; pūrere kīhini = kitchen appliance

Questions / instructions:

1. E tika ana kia tākaitia ngā pereti **i mua** i te kuhuna atu ki te pouaka.
The stack of plates needs to be packaged **before** they are put in a box.

He aha hei tākai i ngā pereti?
Tuhia te reta o te momo tākai.
Write the letter of the material you would use to package the plates.

a. bubble wrap	a. tākai mirumiru	✓	40
b. shredded paper	e. pepa ngakungaku		
c. corrugated cardboard	i. kāri kōwakawaka	✓	17
d. expanded polystyrene foam	o. kōmāmā		
e. coloured tissue paper	u. rauangiangi		

He aha e pai ai taua tākai mō ngā pereti?
What is good about that material for packing the plates?

justification judged to be good 8

2. E tika ana kia tākaitia ngā hū pēpi **i mua** i te kuhuna atu ki tētahi kōpaki.
The baby booties need to be packaged **before** they are put in some wrapping paper for a present.

He aha hei tākai i ngā hū pēpi?
Tuhia te reta o te momo tākai.
Write the letter of the material you would use to package the booties.

a. bubble wrap	a. tākai mirumiru		
b. shredded paper	e. pepa ngakungaku		
c. corrugated cardboard	i. kāri kōwakawaka		
d. expanded polystyrene foam	o. kōmāmā		
e. coloured tissue paper	u. rauangiangi	✓	55

He aha e pai ai taua tākai mō ngā hū pēpi?
What is good about that material for packing the booties?

justification judged to be good 4

3. E tika ana kia tākaitia te pūrere kīhini **i mua** i te kuhuna atu ki te pouaka.
The kitchen appliance needs to be packaged **before** it is put in a box.

He aha hei tākai i te pūrere kīhini?
Tuhia te reta o te momo tākai.
Write the letter of the material you would use to package the kitchen appliance.

a. bubble wrap	a. tākai mirumiru		
b. shredded paper	e. pepa ngakungaku		
c. corrugated cardboard	i. kāri kōwakawaka	✓	41
d. expanded polystyrene foam	o. kōmāmā	✓	34
e. coloured tissue paper	u. rauangiangi		

He aha e pai ai taua tākai mō te pūrere kīhini?
What is good about that material for packing the kitchen appliance?

justification judged to be good 4

4. E tika ana kia tākaitia te ipu putiputi **i mua** i te kuhuna atu ki te pouaka.
The vase needs to be packaged **before** it is put in a box.

He aha hei tākai i te ipu putiputi?
Tuhia te reta o te momo tākai.
Write the letter of the material you would use to package the vase.

a. bubble wrap	a. tākai mirumiru	✓	28
b. shredded paper	e. pepa ngakungaku		
c. corrugated cardboard	i. kāri kōwakawaka		
d. expanded polystyrene foam	o. kōmāmā	✓	49
e. coloured tissue paper	u. rauangiangi		

He aha e pai ai taua tākai mō te ipu putiputi?
What is good about that material for packing the vase?

justification judged to be good 4

5. E tika ana kia tākaitia ngā tāre **i mua** i te kuhuna atu ki te pouaka.
The dolls need to be packaged **before** they are put in a box.

He aha hei tākai i ngā tāre?
Tuhia te reta o te momo tākai.
Write the letter of the material you would use to package the plates.

a. bubble wrap	a. tākai mirumiru	✓	8
b. shredded paper	e. pepa ngakungaku	✓	30
c. corrugated cardboard	i. kāri kōwakawaka		
d. expanded polystyrene foam	o. kōmāmā		
e. coloured tissue paper	u. rauangiangi		

He aha e pai ai taua tākai mō ngā tāre?
What is good about that material for packing the dolls?

justfication judged to be good 8

Total score:		
	9–10	0
	7–8	0
	5–6	21
	3–4	43
	0–2	36

Commentary:

On average, about half of the students chose an appropriate packaging material for the items to be packaged but less than 10 percent gave a good justification for their choice.

Task: **Hei Huaki Ipu – Jar Opener**

Approach:	One to one
Focus:	Investigating and evaluating design
Resources:	Jar opener, jar with lid firmly screwed on
Kupu:	kauwhiti = lever

Questions / instructions:

Hoatu te ipu me te taputapu huaki ipu ki te ākonga.

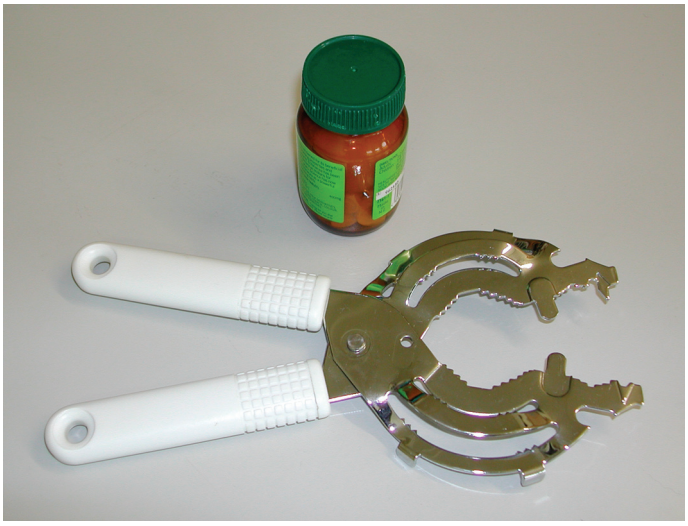
He taputapu tēnei hei tango atu i te taupoki o tētahi ipu. Tangohia, tirohia, rawekehia, whakamahia hei tango i te taupoki o tēnei ipu.

Tukuna he wā mahi.

Give student opener and jar.

This is an opener for helping to get the lids off jars. You can pick it up and have a good look at it. You can also try using it on this jar.

Allow time.



1. He aha ngā tino āhuatanga o te hanga o tēnei taputapu e pai ai te tango i te taupoki o tētahi ipu?

   What is special about the design of the opener that helps open jars?

2. He ngāwari ake te tango taupoki mā te whakamahi i tēnei taputapu, tērā i te whakamahi noa i ō ringaringa. He aha ai?

   Tell me why it could be easier to open a jar using this tool rather than using your hands.

		% responses
Teeth - to grip lid, hold it tightly:	feature and use	42
	feature or use	35
Its materials – to make it strong:	feature and use	2
	feature or use	0
Includes provision for a wide range of lid sizes:	feature and use	13
	feature or use	2
Leverage action gives opening power:	feature and use	0
	feature or use	0
Padded handles - aid comfort/strength of grip:	feature and use	6
	feature or use	19
Hook for levering off lids:	*(e.g. Agee lids)*	4

3. He momo taputapu motuhake tēnei. Ka kīia he kauwhiti. He aha tētahi atu taputapu e whakamahi ana i te kauwhiti?

   The jar opener is a special type of tool called a lever. Can you think of another tool at home that works like a lever?

		% responses
Appropriate lever given:		
	yes – can opener *(only)*	62
	yes – same type as jar opener *(pair of levers hinged at fulcrum)*	4
	yes – other type of lever	11
	no	23
Total score:	5–9	36
	4	24
	3	19
	2	8
	1	7
	0	6

Commentary:

Most students identified the importance of the teeth and could suggest another tool that worked like a lever but had little success in identifying and explaining the design features.

Task: Tūru Rorohiko – Computer Chair

Approach:	Station
Focus:	Generating and evaluating possible design solutions
Resources:	Picture
Kupu:	tapanga = label

Questions / instructions:

He pikitia tēnei o tētahi rorohiko e noho ana ki tōna tēpu.

Āta whakaarohia te āhua o tētahi tūru e tika ana mō tēnei tēpu rorohiko, e pai ai te noho a te pakeke, a te tamariki hoki.

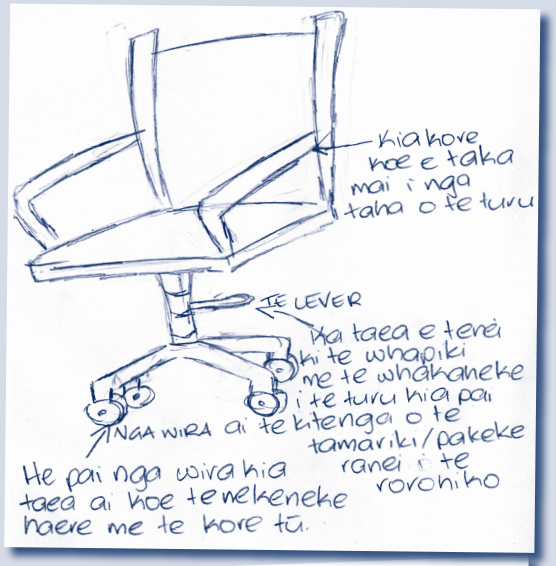
1. Tuhia he pikitia o te tūru.
2. Tuhia ngā tapanga ki tō pikitia, hei whakaatu i ngā wāhanga motuhake o te tūru, me ngā take e pai ai te tūru mō te tamariki me te pakeke.

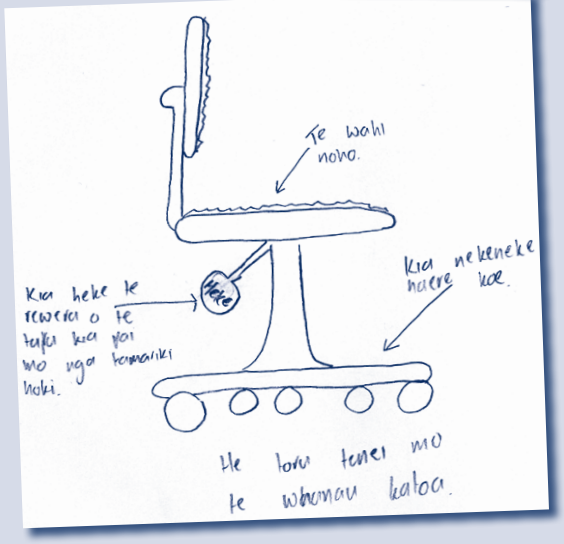
This picture shows a computer on a special table.

A special computer chair is needed that would be good for both children and adults to use at home.

1. Make a drawing of a chair.
2. On your drawing write labels to show how it would work, and why it would be good for both children and adults.

Student examples:





		% responses
Features included:	legs/pedestal	94
	seat	96
	back	94
	padding	45
	arm rest *(not necessarily desirable)*	21
Castors/wheels:	feature included	70
	explanation of how it works	38
Swivel seat:	feature included	13
	explanation of how it works	13
Seat height adjustment:	feature included	60
	explanation of how it works	45
	explanation of value of feature	11
Foot rest/adjustment:	feature included	6
	explanation of how it works	0
	explanation of value of feature	0
Back height adjustment:	feature included	9
	explanation of how it works	8
	explanation of value of feature	2
Back tilt adjustment:	feature included	11
	explanation of how it works	6
	explanation of value of feature	0
Total score:	13–21	0
	10–12	4
	7–9	53
	4–6	30
	0–3	13

Commentary:

Most students included the core features needed but relatively few included some of the potentially useful refinements.

Task: **He Pihikete – Biscuits**

Approach: One to one
Focus: Exploring technological change and its impact
Resources: 2 pictures
Kupu:

Questions / instructions:

Ko te wheketere mahi pihikete te kaupapa o tēnei mahi.

Titiro ki ēnei pikitia e rua.

Hoatu te pikitia tuatahi ki te ākonga (te wheketere tawhito).

Koia nei te pikitia o tētahi wheketere mahi pihikete, e rima tekau tau ki muri.

Hoatu te pikitia tuarua ki te ākonga (te wheketere hou).

He wheketere mahi pihikete hou tēnei.

Whakatakotoria ngā pikitia tētahi ki te taha o tētahi.

Me āta whakaaro koe he aha ngā rerekētanga matua o ngā wheketere mahi pihikete rima tekau tau ki muri me ngā wheketere hou o ēnei wā.

This activity is about factories where biscuits are made.

Here are two pictures.

Give student picture 1 (old factory).

This picture shows a factory where biscuits were made about 50 years ago.

Give student picture 2 (modern factory).

This picture shows a modern factory where biscuits are being made now.

Place pictures 1 and 2 alongside each other.

Now I would like you to think about the main changes in biscuit factories from fifty years ago to nowadays.

Pikitia 1

Pikitia 2

	% responses
1. He aha ngā rerekētanga e kitea mai ana?	
What changes do you notice about the factories?	
more modern, sophisticated machinery	91
fewer or no people involved	89
more hygenic methods	7
less dangerous conditions for workers	2
2. Nā te aha i puta ai ēnei rerekētanga i roto i ngā rima tekau tau?	
Why have these changes happened?	
quantity of biscuits required has increased	6
increased cost of employing people	6
more sophisticated machinery developed /available	63

		% responses
3. He aha te pānga o ēnei rerekētanga ki te oranga tāngata?		
How have these changes affected people's lives?		
distribution networks allow fewer, larger, centralised factories		2
higher safety/hygiene requirements		6
less employment *(overall)*		28
shift from manual to more sophisticated jobs		22
less work-related health problems		0
factory-made biscuits now readily available, cheaper and widely consumed		6
Total score:	6–13	4
	4–5	39
	3	27
	2	23
	0–1	7

Commentary:

Most students focused on the more sophisticated machinery in the modern factory and the associated reduction in staff required. Less obvious features were rarely identified or discussed.

Task: Te Tunu Kai – Cooking

Approach:	Station
Focus:	Evaluating decisions and consequences
Resources:	3 pictures
Kupu:	

Questions / instructions:

Whakamahia ai e te whaea o Tāne te hāngi, te umu hiko me te ngaruiti hei tunu kai. He painga tō te mahi hāngi, he painga tō te umu hiko, he painga anō tō te ngaruiti.

Tane's mum uses a hāngi, an electric oven and a microwave. All are useful for cooking. There are good things about using each of these ways.

1. He aha ngā painga o te mahi hāngi hei tunu kai?
   Why is a hāngi useful for cooking?

2. He aha ngā kaupapa pai mō te mahi hāngi?
   When would you use a hāngi?

	% responses
good for cooking food for lots of people	6
doesn't require electricity *(can cook outside)*	6
important for cultural/social occasions	35
doesn't need a lot of attention during cooking	0

3. He aha ngā painga o te umu hiko hei tunu kai?
   Why is an electric oven useful for cooking?

4. He aha ngā wā pai mō te whakamahi umu hiko?
   When would you use an electric oven?

	% responses
can control temperatures accurately	0
can cook in lots of different ways:	
– including at same time	0
– not including at same time	19

5. He aha ngā painga o te ngaruiti hei tunu kai?
   Why is a microwave useful for cooking?

6. He aha ngā wā pai mō te whakamahi ngaruiti?
   When would you use a microwave?

	% responses
cooks quickly	37
good for defrosting, reheating	38
low energy use/doesn't heat environment as much as stove	4

Overall extent to which student was able to justify comparisons of the three cooking methods:

		% responses
3 or more valid comparisons		0
2 valid comparisons		2
1 valid comparison		23
no valid comparisons		75
Total score:	6–13	0
	4–5	12
	3	11
	2	33
	0–1	44

Commentary:

More than three quarters of the students scored no more than two out of a possible 13 marks.

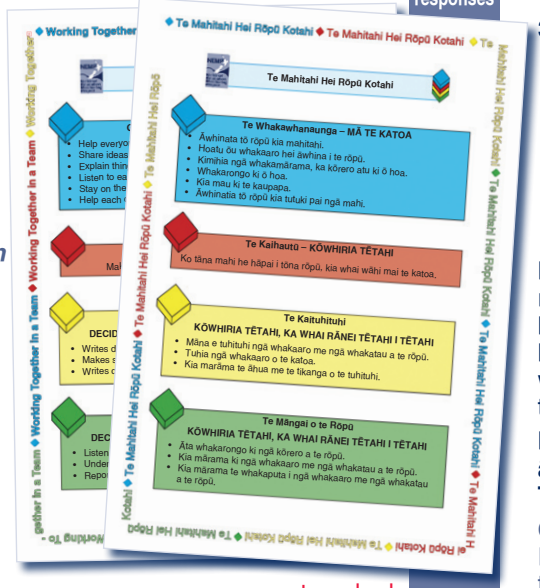
Task: He Kēmu Rorohiko – Computer Games

Approach:	Group
Focus:	Evaluating consequences
Resources:	Picture, *Working Together Team* card, team answer sheet
Kupu:	

Questions / instructions:

Pānuihia te kāri *Hei Mahi Ngātahi*, ka whakamāramaai.

Read and explain *Working Together Team* card with the students.



1. Kua tākaro katoa koutou i ētahi kēmu rorohiko?

   How many of you have played computer games?

not marked •

Hoatu te pikitia.

He pikitia tēnei o tētahi tangata e tākaro kēmu rorohiko ana. Ki ētahi tāngata, he pai te tākaro kēmu rorohiko. Ki ētahi atu tāngata, kāore e pai ana. Ko tā koutou mahi i konei, he whakawhitiwhiti kōrero mō ngā āhuatanga pai o te tākaro kēmu rorohiko, me ngā āhuatanga kāore e pai ana. Tuhia ō koutou whakaaro ki tēnei pepa, ka kōrero anō ai tātou i muri iho.

Hoatu te pepa whakautu. Tukuna he wā mahi.

Hand out picture.

Here is a picture of someone playing a computer game. Some people think it is good for children to play computer games. Others think it is not good for children to play computer games. In this activity, you will be discussing the good and not so good things about computer games. As you discuss your ideas, write them on this sheet so that we can talk about them later.

Hand out answer sheet. Allow time.

2. Kōrero mai ki ahau he aha ngā āhuatanga pai o te tākaro kēmu rorohiko, me ngā āhuatanga kāore e pai ana.

   Ka kōrero mai ngā ākonga i ō rātou whakaaro.

   Tell me the good and not so good things about children playing computer games.

   Students respond.

	% responses
Good things:	
develops useful skills *(problem solving, hand/eye coordination)*	15
gives useful knowledge	31
positive social reasons *(play with someone)*	8
motivating/entertaining/enjoyable	54
Not so good things:	
negative social reasons *(do by yourself)*	54
health issues *(eye strain, RSI, lack of exercise)*	46
learning undesirable skills/knowledge/ attitudes *(violence)*	46

3. Kei te hiahia koutou ki te huri i ētahi o ngā whakaaro, he whakaaro atu anō rānei hei tāpiri atu ki te pepa whakautu nei?

   Tukuna he wā hei tuhi i ētahi anō whakaaro, hei huri rānei i ētahi o ngā whakaaro.

   Are there any ideas you want to change or more ideas that you want to add to your answer sheet?

   Allow time for students to change or add ideas.

Mehemea ka puta he whakaaro hou ki ngā kaihanga kēmu rorohiko, ka rerekē te āhua o ngā kēmu. Whakawhitiwhiti kōrero mō te whakapai ake i ngā kēmu rorohiko mō ngā rā kei te heke mai. Tuhia ō koutou whakaaro ki muri o te pepa whakautu. He pai mēnā ka riro i tētahi ākonga hou te rākau tuhi mō tēnei mahi.

Hurihia te pepa whakautu, ka whakahau ai i tētahi atu ākonga, māna e tuhi ngā whakaaro mō tēnei pātai. Tukuna he wā mahi.

Computer games change as inventors think of new ideas. In your group discuss how you would like computer games to be improved in the future. Write down your answers on the back of the sheet of paper. It would be good if a different person was your writer this time.

Turn the answer sheet over and encourage a different student to scribe for this part of the task. Allow time.

4. Kōrero mai ki ahau ō koutou whakaaro mō te whakapai ake i ngā kēmu rorohiko mō ngā rā kei te heke mai.

   Ka whakautu mai ngā ākonga.

   Tell me the ideas that you had for improving computer games in the future.

   Students respond.

		% responses
Improving games:		
greater impact, realism, use of 3D		23
better designed for social interaction		8
more interactive or able to be customised		46
more educational, knowledge focused		38
ideas for reducing health concerns		0

5. He whakaaro atu anō hei tāpiri mā koutou? E hiahia ana rānei ki te huri i ētahi o ngā whakaaro?

   Tukuna he wā hei tuhi i ētahi anō whakaaro, hei huri rānei i ētahi o ngā whakaaro.

   Are there any ideas you want to change or more ideas that you want to add?

   Allow time for students to change or add ideas.

		% responses
Total score *(based on questions 2 and 3)*:	6–7	0
	5	8
	4	15
	3	31
	2	23
	0–1	23

Commentary:

Based on data from 13 teams in 10 schools, almost half of the students identified fewer than three good or bad things about students playing computer games.

Task: Te Tuku Para – Organic Waste

Approach:	One to one
Focus:	Evaluating consequences and generating solutions
Resources:	2 pictures
Kupu:	wairākau = compost

Questions / instructions:

I tēnei mahi, ka tirohia ētahi pikitia e whakaatu ana i ētahi huarahi tuku para.

In this activity you will be looking at pictures showing different ways to dispose of waste.

1

2

Whakaaturia te pikitia 1.

He pouaka wairākau tēnei, me te wāhi e whakamahia ai te wairākau.

1. Pēhea nei te pānga o tēnei huarahi tuku para, ki te tangata me te taiao?

Show picture 1.

Here is a picture of a compost bin and where the compost is used.

1. How do you think this way affects the environment and people?

	% responses
doesn't fill up landfill/ less to be carted away	11
creates useful product for garden	71
can be done easily at home by one person	2
can have unpleasant smell or look	11
low operating cost *(compared to landfill)*	6

Whakaaturia te pikitia 2.

He pēke rāpihi tēnei me te wāhi e tukuna ai ngā pēke pēnei.

2. Pēhea nei te pānga o tēnei huarahi tuku para, ki te tangata me te taiao?

Show picture 2.

Here is a picture of a rubbish bag and a landfill where the rubbish ends up.

2. How do you think this way affects the environment and people?

	% responses
easy for people to do	10
requires special transport and workers	6
fills up landfill space	21
doesn't break down easily	4
creates unsightly mess/smell at landfill	32
damages environment *(including plants/animals)* through unwanted by-products in air/water	60

3. He aha tētahi atu huarahi tuku para e mōhio nā koe?

Can you tell me another way that people get rid of waste?

Number of ways mentioned:	% responses
4	0
3	0
2	10
1	53
0	37

4. Pēhea nei te pānga o tēnā huarahi tuku para ki te tangata me te taiao?

How do you think this way affects the environment and people?

	% responses
not marked	•

Commentary:

Most students identified just one idea for each question.

LINK TASK: 1
Approach: One to one
Focus: Investigating design

Total score:	% responses
8–12	0
6–7	27
4–5	52
2–3	15
0–1	6

LINK TASK: 2
Approach: One to one
Focus: Investigating and evaluating design

Total score:	% responses
14–18	0
11–13	17
8–10	26
5–7	27
0–4	30

LINK TASK: 3
Approach: Station
Focus: Evaluating strategies and decisions

Total score:	% responses
6–12	6
5	7
4	20
3	21
0–2	46

LINK TASK: 4
Approach: Station
Focus: Evaluating decisions and consequences

Total score:	% responses
7–10	15
5–6	38
3–4	26
0–2	21

LINK TASK: 6
Approach: Station
Focus: Taking into account conflicting demands

Total score:	% responses
12–21	4
10–11	8
8–9	13
6–7	40
0–5	35

LINK TASK: 7
Approach: One to one
Focus: Evaluating design

Total score:	% responses
4	0
3	10
2	33
1	36
0	21

LINK TASK: 10
Approach: Team
Focus: Generating possible solutions and strategies

Total score:	% responses
8–15	8
6–7	9
4–5	8
2–3	25
0–1	50

LINK TASK: 11
Approach: Station
Focus: Evaluating decisions and consequences

Total score:	% responses
8–9	15
6–7	27
4–5	24
2–3	19
0–1	15

LINK TASK: 12
Approach: One to one
Focus: Managing resources

Total score:	% responses
8–20	2
6–7	8
4–5	13
2–3	29
0–1	48

LINK TASK: 14
Approach: Group
Focus: Managing resources

Total score:	% responses
5–9	17
4	8
3	8
2	9
1	16
0	42