

He Tukinati — Nut Cracker

Approach: One to one

Focus: Describe the features of two different nutcrackers and evaluating them.

Resources: 2 nut crackers, bag of walnuts.

Questions/instructions:

In this activity you will be investigating how a nut cracker works and finding out how useful it is.

I tēnei mahi ka tūhura koe, ka pēhea rā te tukinati e mahi i tāna mahi, ā, me tō rangahau hoki i tōna whāinga pai.



1. Try to crack open the shell of this nut using only your hands. How did your hands feel trying to crack the nut shell open?

Me tahuri [try/tarai] koe ki te tuki i te anga o tēnei nati mā ōu ringaringa anake. I pēhea te rongo o ōu ringaringa i a koe e tahuri ana ki te tuki i te nati kia huaki?

% responses
GED MI

Give student the metal nut cracker.

2. Have you ever used one of these?

Kua whakamahi anō koe i tēnei?

yes 28 41

3. Put the nut in the nut cracker and try to crack the shell open. How did your hands feel using this nut cracker?

Kuhuna atu te nati, ā, ka tahuri ai ki te tuki, kia huaki mai te anga. I pēhea ōu ringaringa, i a koe e whakamahi ana i te tukinati?

4. How useful do you think the nut cracker is? Why?

Pēhea rawa te whāipainga o te tukinati? He aha ai?

Responses to 3 & 4 it cracks nut 57 38

it's easy to use (doesn't hurt hand) 33 30

it's easy to control amount of cracking 1 0



Give student the wooden nut cracker.

5. Have you ever used one of these?

Kua whakamahi anō koe i tēnei?

yes 7 14

6. Now try to crack the shell with this nut cracker. How do your hands feel using this nut cracker?

Kuhuna atu te nati, ā, ka tahuri ai ki te tuki, kia huaki mai te anga. I pēhea ōu ringaringa, i a koe e whakamahi ana i te tukinati?

7. How useful do you think this nut cracker is? Why?

Pēhea rawa te whāipainga o te tukinati? He aha ai?

Responses to 6 & 7 it cracks nut 26 27

it's easy to use (doesn't hurt hand) 28 32

it's easy to control amount of cracking 3 0

fragments are contained 14 8

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He Tukinati — Nut Cracker continued



8. Can you describe the differences between the two nut crackers and how they work?

He aha ngā

rerekētanga o te tukinati maitai, me te tukinati rākau, ā, pēhea hoki te whakamahi i ia tukinati?

	% responses	
	GEd	MI
different material (<i>metal vs. wood</i>)	24	3
different visual design	15	3
operating principle (<i>screw vs. lever</i>)	80	76

9. Do you think one of these nut crackers is better than the other? Which one?

Ki ōu whakaaro, he pai kē atu tētahi ki tētahi? Ko tēhea te mea pai?

Choice:	GEd	MI
wooden	57	55
metal	32	34
none	11	11

Why? He aha ai?

Explanation:	GEd	MI
strong justification	3	3
moderate justification	48	33
limited justification	40	45
no justification	9	19

10. Why do you think we have different types of nut crackers?

Ki ōu whakaaro he aha te take i whiwhi ai tātou i ētahi momo tukinati rerekē?

	GEd	MI
different consumer preferences, resources	70	44
inventors come up with new ideas	15	0
companies, individuals competing for market share	1	0

11. What do you think people in the future might use to crack open nuts?

Ā ngā rā e heke mai ana, he aha rā te mea ka whakamahia e te tangata hei huaki nati? [not marked]

He Kete Pine — Peg Basket

Approach: Independent

Focus: Explaining design features of a plastic peg basket.

Resources: Plan, peg basket kitset, pegs.

Questions/instructions:

Make up the peg basket so that it looks like the plan. Ask the teacher if you need help. Think about why the basket has been designed like this.

Mahia he kete pine kia rite ki te hoahoa. Ki te hiahia āwhina koe me pātai ki te kaiako. Whakaarohia te take i hangaia ai te kete kia pēnei.

Write answers to the questions.

Tuhia ngā whakautu ki ngā pātai.

Why has plastic mesh with holes been used?

Nā te aha i whakamahia ai te kirihou mata pūareare [small holes/mesh]?

	% responses	
	GEd	MI
mesh lets rain/water air through	60	50
plastic doesn't rust	3	5
plastic is flexible	5	7

Why do the top hooks go opposite ways?

Nā te aha i tohu aronga kē ai [opposite ways] ngā huka?

less likely that basket will fall off line	53	59
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Why does the basket have legs?

He aha i whai waewae ai te kete?

can sit well on ground or table	93	84
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Why is it brightly coloured?

He aha i pīataata [brightly coloured] ai te tae?

attractive, highly visible	80	84
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Why isn't the basket made up before it is sold in the shop?

He aha te take kāore i hangaia te kete, i mua i te hokonga e te toa?

package takes less space/packaging	48	39
reduce labour/manufacturing costs	3	9
reduce shipping costs	3	0
less damage in transit	20	14

Why is the basket rounded?

He aha i hanga porowhita ai te kete?

easier to assemble	3	18
easier to use	16	20
looks attractive	3	5
fewer corners to damage clothes	1	0

Total score: more than 6	3	0
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5-6	37	39
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3-4	44	43
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0-2	16	18
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Commentary:

Māori students in general education (GEd) settings scored statistically significantly higher than did Māori students in Māori immersion (MI) settings. The most substantial differences occurred in the explanations.