

Wai Mīharo — Wonderful Water

Approach: Independent

Focus: Explain buoyancy and flotation in three situations.

Resources: None

Questions/instructions:

Look at the pictures then answer the questions.

Tirohia ngā pikitia, kātahi ka whakautu i ngā pātai.

1. Imagine that you have a ball of plasticine. You put it in water and it sinks. Then you shape it into a boat. Now it floats. Why did the ball of plasticine sink but the boat float?

Tēnā me pohewa noa he poi kerepēhi [ball of plasticine] tāu. Ka kuhuna e koe ki rōto i te wai, ka totohu. Kia hangaia e koe he i waka, kātahi ka mānu. He aha te poi kerepēhi i totohu ai, i mānu kē ai ko te waka?



- boat shape displaces enough water to hold weight of plasticine
- more spread out so it floats/ water holds it up there
- because there is air inside it.

% responses	
GEd	MI
0	0
4	5
29	11



2. Why do things feel lighter when you pick them up under water?

He aha i māmā ake ai he mea ka hikina ana mai i raro i te wai?

- some of the weight is supported by the water displaced
- because water is less dense than air
- there is less or no gravity under water

% responses	
GEd	MI
2	5
1	2
21	13



3. Someone holds the ball at the bottom. Why does it jump out of the water when they let it go?

Ka pupuritia e tētahi te poi ki raro. Kia tukua, nā te aha i peke ake ai te poi?

Under the water:

- ball weighs less than the water displaced
- air in the ball makes it rise

Above the water:

- ball moves upward because of inertia
- ball is going fast when it reaches the surface

% responses	
GEd	MI
1	0
43	36
0	0
3	0

Commentary:

This was a difficult task beyond the reach of most year 8 students. There was not a statistically significant difference between GEd (General Education) and MI (Māori Immersion) students.