

## Te Whakamakere Moni — Dropping Coins

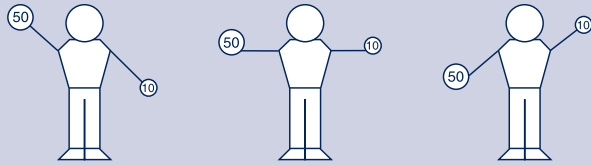
**Approach:** Station

**Focus:** Students demonstrate their intuition or prior learning about the effects of gravity on objects of differing mass, then carry out a practical investigation and interpret the outcome.

**Resources:** 50c coin, 10c coin.

**Questions/instructions:**

In this activity you will be finding out about how things fall.



1. **THINK FIRST** — do not try it yet.  
 You have a 10 cent coin and a 50 cent coin.  
 Which picture do you think shows a way to hold the coins before you drop them so they will hit the floor at the same time?  
 Circle the picture which you think shows the best way.

I tēnei mahi ka kitea e koe pēhea ai te makere o ētahi mea.

ĀTA WHAKAARO —  
 kaua e whakamātauria ināianei.

He tekau hēneti me te rima tekau hēneti tāu.

**Ki ōu whakaaro** ko tēhea te pikitia e whakaatu ana i te āhua pupuri i ngā moni i mua i te makeretanga, **kia kotahi ai te tau** a ngā moni ki te papa?

Porohitatia te pikitia e tika ana **ki a koe**.

✓ same level 54 43

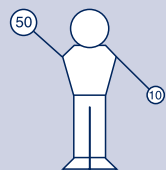
% responses  
**GEd MI**

2. **NOW TRY IT.**

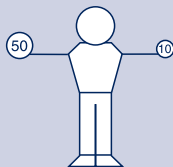
Hold your arms in each of the different ways and drop the coins. Write down which coin hit the floor first.

**KEI A KOE INĀIANEI**

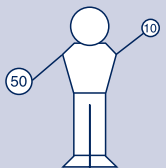
Torona ō ringa kia rerekē pērā i ērā o ia pikitia, ā, ka whakamakere ai i ngā moni. Tuhia te moni i tau tuatahi ai ki te papa.



10c first 83 57

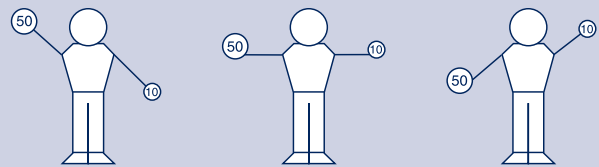


✓ both together 61 53



50c first 83 72

% responses  
**GEd MI**



3. Which is the best way to hold your arms so the coins hit the floor at the same time?

Circle the picture which you think shows the best way.

Ko tēhea te toro tino pai mō ō ringa, kia kotahi ai te tau a ngā moni ki te papa? Porohitatia te pikitia e tika ana ki a koe.

✓ same level 88 74

% responses  
**GEd MI**

4. What could you do to check your results in question 2?

Me aha koe e whakaritea ai ō otinga i te pātai tuarua?

repeat test 55 61

have second observer 24 6

**Commentary:**

MI (Māori Immersion) students scored statistically significantly lower than GEd (General Education) students.