

Mathematics Activity Card

Level 3 (easily adaptable for other levels)

Essential Learning Area – Mathematics

Measurement

Equipment

- > Balls for throwing.
- > Paper and pencils for collecting data.
- > Measuring equipment e.g. tape measures, metre rulers.

Achievement objectives

- > Demonstrate knowledge of the basic units of length by making reasonable estimates.
- > Perform measuring tasks, using a range of units and scales.

Learning outcomes

- > Accurately measure ball throws using appropriate metric units.
- > Make reasonable estimates.

Suggested assessment

Students investigate the idea that older students can throw further than younger students using ideas of length. Teachers could use this to assess students' ability to:

- > demonstrate knowledge of the basic units of length
- > perform measuring tasks
- > devise and use problem-solving strategies to explore situations mathematically
- > record in an organised way and talk about the results of mathematical exploration.

Notes

- > This activity is based on *Mathematics in the New Zealand Curriculum*.

Before this lesson

- > Students would benefit from having learnt about a variety of measuring devices and units, how to perform measuring tasks accurately and how to solve various measurement problems.

Teaching and learning

Throwing

- > Discuss appropriate units of measurement for recording ball throws.
- > Students estimate how far they can throw and catch the ball successfully with their partner, using the following method:
 - Partners stand face to face, one throws the ball and when their partner catches it they take a step back.
 - Repeat this until the ball has been dropped three times.
 - Students measure the distance and compare it to their original estimate.
 - Peer check measurements for accuracy.
- > Ask students to reflect on the factors they thought made throwing and catching successful.
- > In pairs: Pick one or two of the success factors to focus on (e.g. eyes on the target) and repeat the activity including the estimate.
- > Discuss and share results. How accurate were their estimates and measurements? Were they more successful throwing and catching the second time?

What to watch for

Measurement

- > Are students' estimates reasonable?
- > Do they start their measurements from a base line?
- > Are they using the appropriate metric units to measure?
- > Can they discuss and compare results?

Overarm throws

- > Eyes focused on the target.
- > Drive through hip, shoulder, arm, elbow, wrist, fingers.
- > Step forward onto foot opposite the throwing arm and shift weight onto front foot.
- > Release the ball with other arm pointing in the direction of the throw.

What next?

- > Students measure long jump, high jump or throwing various objects such as jandals, beach ball etc.
- > Students measure a group long jump – one person jumps and the next jumps from where the first person landed.
- > Students collate the results of everyone's throws, display them in graph format and summarise their findings.
- > Students devise their own measuring challenges.