

Measurement That Makes Sense

WAALC Presentation 25th June 2026

presented by Julie Cairnduff on behalf of MAWA



In this session we will:

- Explore practical approaches to teaching measurement within the Core Skills Framework.
- Experience hands-on activities for developing understanding of length, time, capacity, and mass.
- Investigate the role of comparison, estimation, and personal benchmarks in measurement learning.
- Explore key measurement relationships, including centimetres and millimetres.
- Consider the language of measurement and how it supports learner understanding.
- Identify strategies for connecting measurement to everyday, workplace, and community contexts.

Quick Think - Before

What measurement skills do your students struggle with the most?

Length

Personal Benchmarks

Take out a phone, eftpos card, key and pen

Task

Which is closest to 10 cm?

Which is closest to 50 mm?

Which would be better measured in millimetres?

Which would be better measured in centimetres?

How did you decide?

What personal benchmarks were you using?

Use a ruler or measuring tape to find out the length of these objects in cm and mm

Benchmark	cm	mm
eftpos card		
phone		
key		
handspan		
palm		
finger width		
foot length		

Which measurements surprised you?

Which objects do you always carry with you?

Which would make useful benchmarks?

Broken Rulers

On your broken ruler or measuring tape find

1 mm

5 mm

10 mm

What do you notice about 10 mm?

Use your broken ruler or measuring tape to draw lines to match the following measurements.

10 mm

20 mm

50 mm

100 mm

What would these be called in centimetres?

Estimate and Check Walkabout

Choose 3 things in the room (table width, book length, laptop width, whiteboard, chair seat)

Estimate first using personal benchmarks.

Then measure and compare.

object	estimate	benchmark used	cm mm	reasonable estimate

Which benchmarks worked best?

Were your estimates reasonable?

Time

Digital Time Structure

"What time do you usually..."

wake up?

have lunch?

finish work?

go to bed?

Record responses.

What sorts of words did you use to communicate your times?



What does the 8 tell us?

What does the 35 tell us?

7:15

8:30

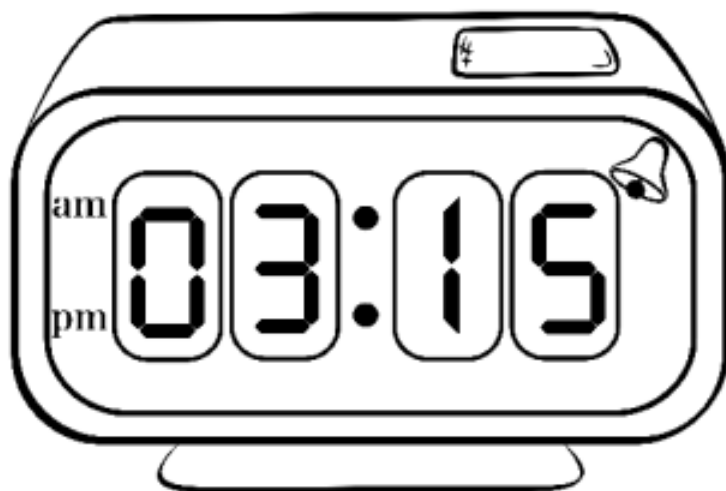
9:05

10:45

A digital clock is made up of an hour display and a minute display.

The hour numbers go on the left of the colon.

The minute numbers go on the right of the colon.



The hour display will show which hour of the day or night you are up to.

When the minute display shows 15, this means 15 minutes have gone past the hour.

This is called quarter past the hour.

One quarter of an hour is 15 minutes.



• **Process for Reading a Digital Clock**

1. Hours of the day on the left of the colon
2. Minutes gone past the hour on the right colon
3. Choose how to say it

Digital Clock Zero Place Holders

A digital clock is made up of an hour display and a minute display.
The hour numbers go on the left of the colon.
The minute numbers go on the right of the colon.



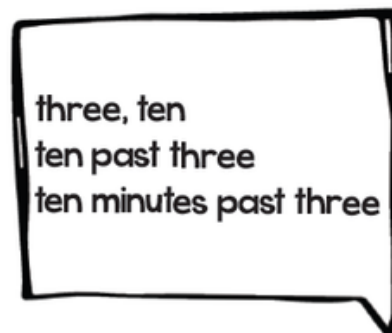
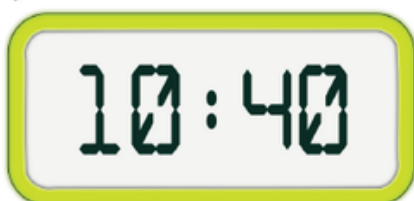
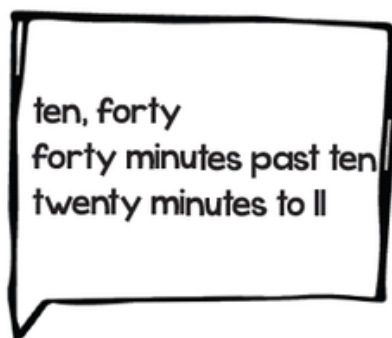
The hour display will show which hour of the day or night you are up to.
Zeros are used to hold the places in the hour and minute numbers that are less than ten.

One Time Many Ways to Say

8:15

3:30

11:45



Is This Possible?

Which one is impossible?

8:45

9:12

7:59

8:75

Why?

Which is harder for your learners?

Reading a digital time?

Understanding what the numbers mean?

Understanding spoken time language?

Connecting the two?

Stop the Clock!

A game for 2 players.

Player one chooses to add on 15, 30, 45 or 60 minutes and write the new time.

Player two chooses to add on 15, 30, 45 or 60 minutes and write the new time.

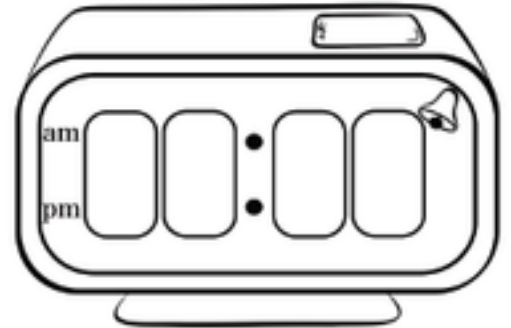
The winner is the person who gets the time to 12:00

start



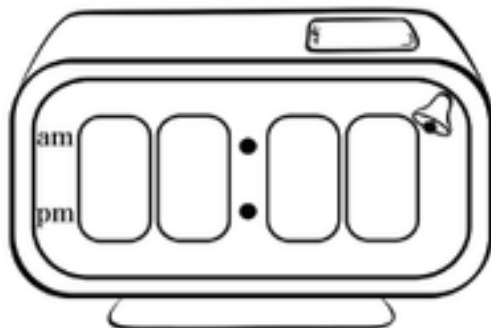
Player 1

time added



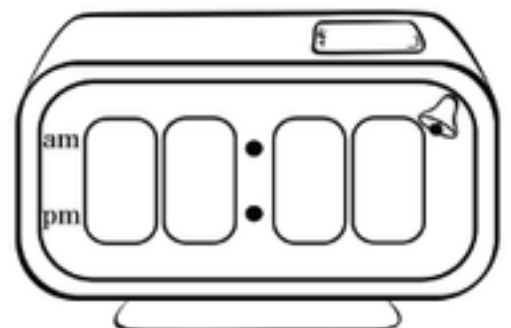
Player 2

time added



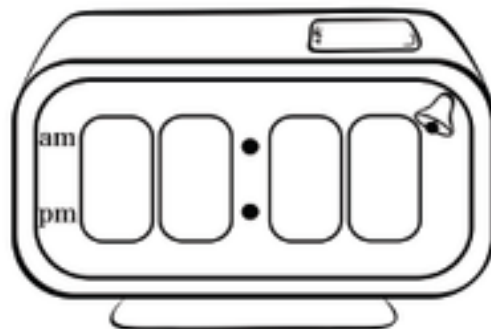
Player 1

time added



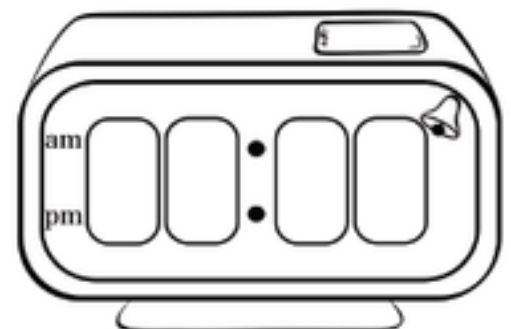
Player 2

time added



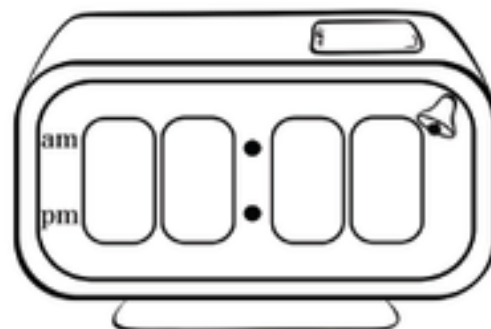
Player 1

time added



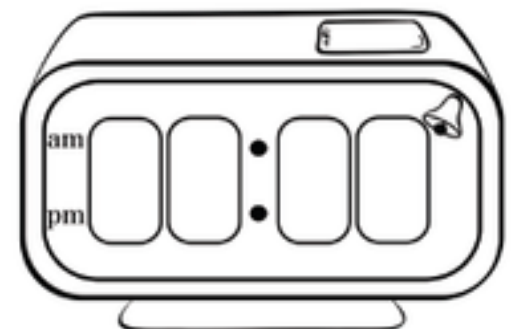
Player 2

time added



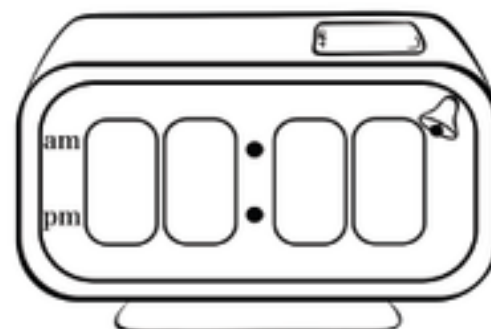
Player 1

time added



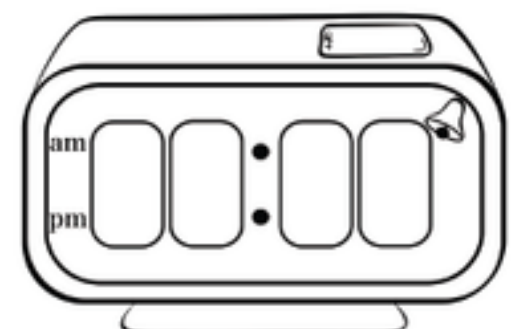
Player 2

time added



Player 1

time added



Capacity

What is a millilitre?

You need:

medicine syringes (1 mL, 5 mL, 10 mL)

medicine cups

coloured water

Task:

draw up 1 mL

draw up 5 mL

draw up 10 mL

What surprised you?

Is 1 mL larger or smaller than you expected?

Moving to Litres

You need:

coffee mug

soft drink can

water bottle

milk carton

Estimate:

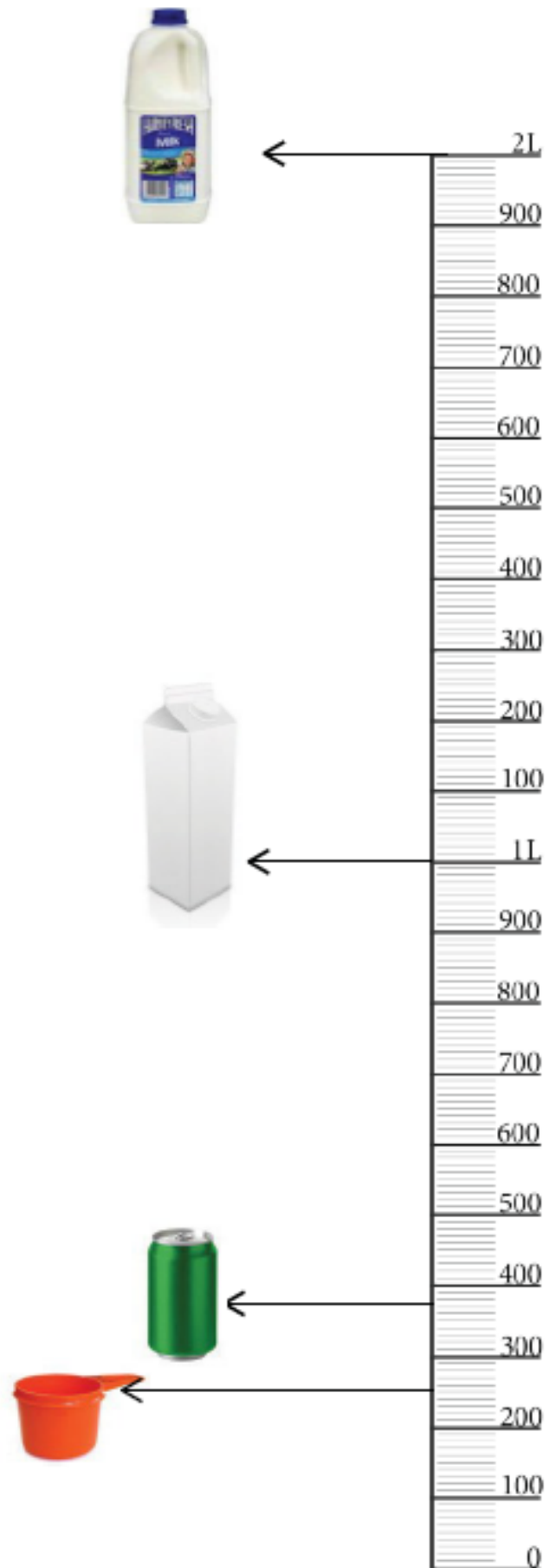
How many medicine cups?

How many 10 mL syringes?

Capacity Benckmarks

1. You will need 5 containers to complete this activity.
For each container, use a benchmark to compare it to, make an estimate of its capacity, and then use standard units to measure exactly.

Container	Benchmark	Estimate	Standard Measurement



Mass

Get a Feel for Grams

Heft weights of

100 g

250 g

500 g

1 kg

Handle them repeatedly.

Which feels closest to your phone?

Which feels closest to your keys?

Which feels closest to a carton of milk?

Get a Feel for Kilograms

Use benchmark masses.

$$4 \times 250 \text{ g} = 1 \text{ kg}$$

$$2 \times 500 \text{ g} = 1 \text{ kg}$$

$$10 \times 100 \text{ g} = 1 \text{ kg}$$

Build 1 kg with different benchmarks.

The Fraction Language of Mass

250g = quarter of a kilogram

500g = half a kilogram

750g = three-quarters of a kilogram

1000g = one kilogram

Link to Decimal Language

250g = quarter of a kilogram = 0.25kg

500g = half a kilogram = 0.5kg

750g = three-quarters of a kilogram = 0.75kg

1000g = one kilogram = 1.0kg

Estimate Using Benchmarks

Display items of various weights.

Estimate if it is more or less than 1 kg?

Closer to half a kilogram or a kilogram?

What would this feel like in your hand?

Across All the Attributes

Start with familiar and meaningful contexts.
Build understanding of units and relationships.

Develop personal benchmarks.

Compare before measuring.

Estimate before calculating.

Use concrete materials and tools.

Explicitly explore the language of the attribute and how this connects to the learner's life.

Quick Think - After

What measurement decisions did you make before arriving here today?

Which measurement decisions required formal mathematics?

Measurement makes sense when....

Feedback



Thank you
for your time

Keep in touch!



MAWA
Mathematical Association
of Western Australia