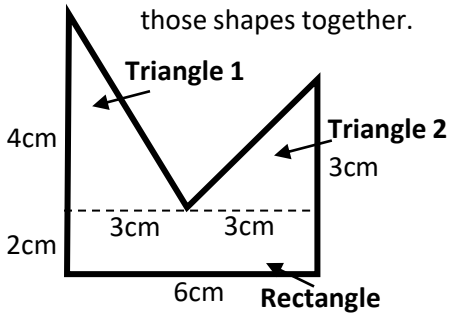
MEASUREMENT SENSE – SET 7 – PART 1

(A) *Can find the area of a complex shape by separating it into familiar shapes.*

Split the complex shape into familiar shapes add those shapes together.



Triangle 1 Area + **Triangle 2 Area** + **Rectangle Area**

3 x 4 = 12
12 ÷ 2 = 6 cm²

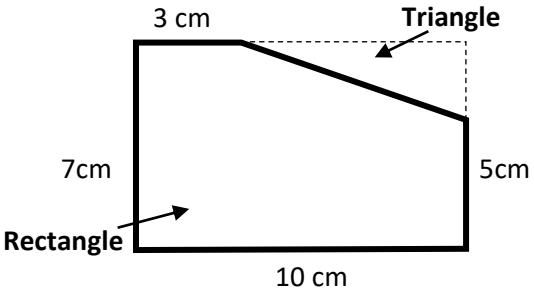
3 x 3 = 9
9 ÷ 2 = 4.5 cm²

2 x 6 = 12cm

Total Area of Polygon

6cm² + 4.5cm² + 12cm² =
= 22.5cm²

Find a larger familiar shape, and subtract shapes from it.



Rectangle Area - **Triangle Area**

7 x 10 = 70cm²

((10 – 3cm) x (7 – 5cm)) ÷2
7 x 2 = 14
14 ÷ 2 =7cm²

Total Area of Polygon

70cm² - 7cm²
=63cm²

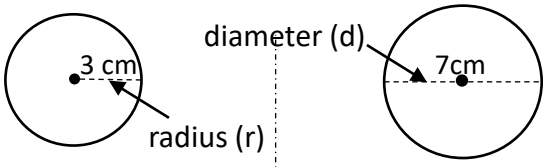
(B) *Can find the circumference of a circle from the radius or diameter.*

Circumference of a circle
Is the distance around the circle.

Circumference of circle = **2∏r**

Pi = ∏ = 3.14

Or = 2 x 3.14 x radius or = 3.14 x diameter



Radius of a circle

A straight line passing from a side to the centre of a circle.

Diameter of a circle

A straight line passing from side to side through the centre point of the circle.

Find the circumference

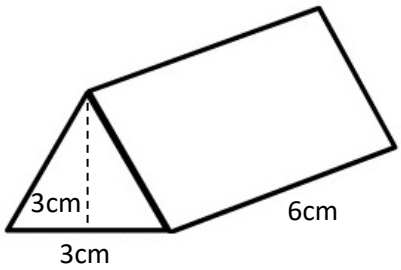
= 2 x 3.14 x 3cm
= 3.14 x 6cm
= 18.84 cm

Find the circumference

= 3.14 x 7cm
= 21.98 cm

If the diameter of a circle was 1m or radius 0.5m, the circumference is 3.14 times bigger than the diameter so it would take 3.14m to ger around the circle. An easy activity students could draw outside with chalk and measure with string.

(C) *Can find the volume of a prism.*



First find the area of the 2d base (end) shape, then multiply it by the height (length) of the shape.

Triangle Area

3 x 3 = 9
9 ÷ 2 = 4.5 cm²

Triangular Prism area

Total Area of Triangle x Length
4.5 cm² x 6cm =
=27 cm³

(D) *Understand the metric relationship between 1g = 1ml = 1cm².*

20g = 20ml = 20cm²
1kg = 1L = 1000cm²

500cm² = **?** ml
30ml = **?** g
9cm² = **?** g

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Measurement Sense – Set 7 – Part 2

Note: Temperature and time have been forgotten from the learning progression framework so we have placed them where we see is best based on the NZC.

Can multiply and divide to convert units of time e.g.
- convert minutes into hours and vice versa by multiplying or dividing by 60
- convert hours into days by multiplying or dividing by 24

How many seconds in 1 day?
1 × 24 × 60 × 60 = 86,400 seconds

How many hours has an 80 year old lived?
80 × 365 × 24 = 700,800 hours (doesn't take into account leap years, so would be more)

Can work with dates and times across time zones

Flight NZ123 From Auckland to Melborne leaves Auckland at 8:50am and arrives in Melbourne at 10:55am. Melboune is 2 hours behind Auckland. How long did the flight take?
As Melbourne is 2 hours behind, 10:55am there is 12:55pm in Auckland
8:50am to 12:55pm = 4 hours, 5 minutes

Can read and use temperatures with negative integers e.g. -2°C

Today the high was 7°C and the low was -3°C. Tomorrow is expected to be 1°C colder overnight, but 2°C warmer in the day. What is the range of temperatures tomorrow?
High = 7 + 2 = 9°C
Low = -3 – 1 = -4°C
9 - -4 = 13°C range of temperature