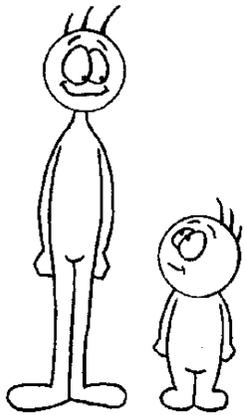


Measurement

Early Level 1 (Stage 1, 2 & 3) – By the end of Year 1

Key Idea: That objects have measureable attributes that can be compared
I am learning to compare the lengths, areas, volumes or capacities, and weights of objects directly.



I am **beginning** to use the lengths of two objects to make a direct comparison using taller, shortest etc.

A is taller than B

I am **beginning** to compare times and use language like;

fast slow long time
quick faster slower fastest
slowest

I am **beginning** to look at two different lengths, and say which one is longer and shorter

A _____

B _____

A is longer than B

I know the days of the week and use words like;

today yesterday
tomorrow next week
day night tonight
last night last week

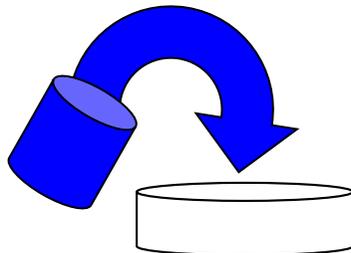
I am **beginning** to look at two different areas and compare them.

e.g." The white oblong is smaller than the blue oblong and the blue oblong is bigger than the white oblong"



I am **beginning** to find out which holds the most using words like;

Full
Empty
Enough
Too much



I am **starting** to recognise and name coins and notes

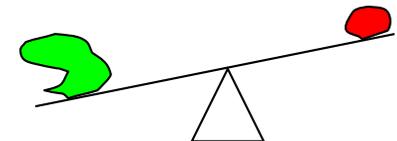


I am **starting** to use everyday language with temperature like;

hot cold freezing boiling
warm
hotter colder colder than
warmer than

I am **starting** to compare weights and use words like;

heavy heavier heaviest light lighter
lightest



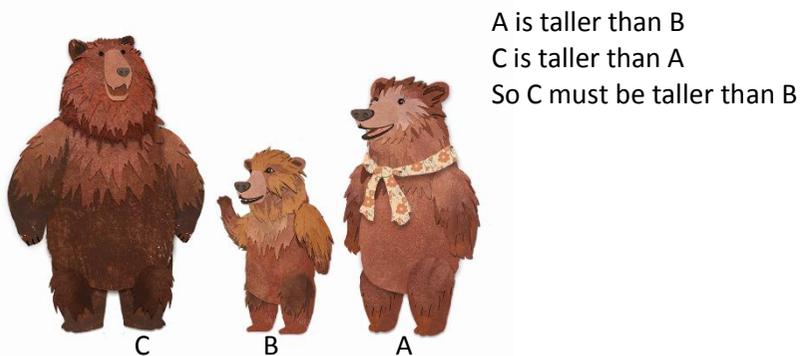
Measurement

Level 1 (Stage 4) – By the end of Year 2

Key Idea: That objects have attributes that can be measured using self-chosen units

I am learning to compare the lengths, areas, volumes or capacities, and weights of objects and the durations of events, using self-chosen units of measurement.

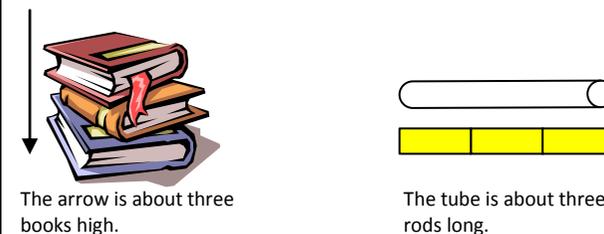
I can use the lengths of two objects to compare a third object using tall, taller, tallest etc.



I can compare times and use language like;

fast slow long time
quick, faster slower fastest
slowest

I can measure lengths by choosing my own objects.



I can use everyday language with temperature like;

hot cold freezing boiling
warm
hotter colder colder than
warmer than

I can look at two different areas and compare them.

e.g. "The white oblong is smaller than the blue oblong and the blue oblong is bigger than the white oblong"

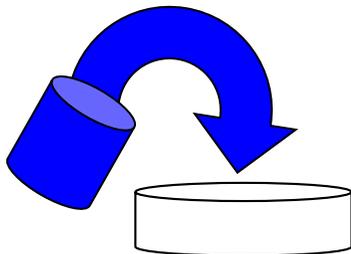


I can recognise and name coins and notes

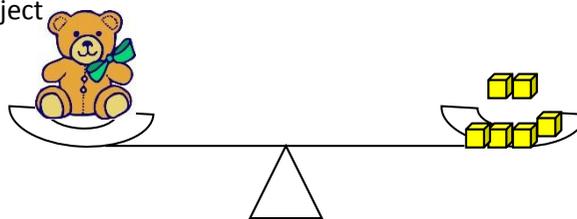


I can compare to find out which holds the most using words like;

Full
Empty
Enough
Too much



I can measure the weight of an object by choosing an object



I can indirectly compare two events to decide which is "quicker"

Ben



It took 4 claps to write my name and 9 claps to walk to the front of the class and back, so writing my name was quicker

Measurement

Early Level 2 (Early Stage 5) – By the end of Year 3

Key Idea: That standard units can be used to measure objects

I am learning to measure the lengths, areas, volumes or capacities, and weights of objects and the duration of events, using linear whole number scales and applying basic addition facts to standard units.

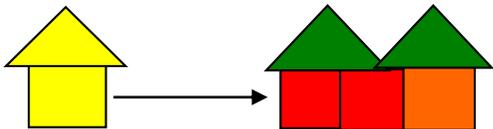
I am **beginning** to measure objects using the appropriate unit and describe the difference

Eg

A _____

B _____

A is 6 centimetres long and B is 3 centimetres long so A is longer by 3 cm.

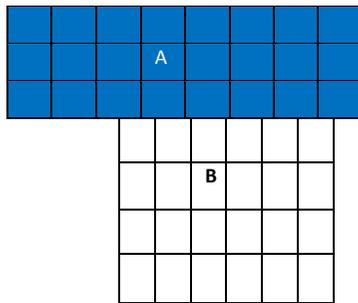


It is 5 kilometres from my house to the school

I am **beginning** to read and understand the size of measuring units.

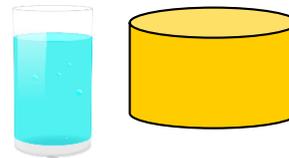
Eg kilometre, metre, centimetre, and millimetre
litre, 2L, and a millilitre, 5ml, 500ml
Kilograms, grams

I am **beginning** to measure two areas and describe the difference.



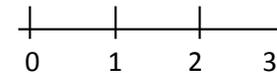
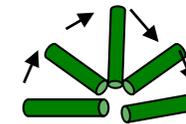
A = 24 square cm B = 24 square cm
A = B

I am **beginning** to understand measuring capacity and weight by using objects to measure metric units.



3 cups fill the bowl
3 cups = 1 litre
1 teaspoon = 5 ml

I am **beginning** to solve measurement problems by estimating with objects.



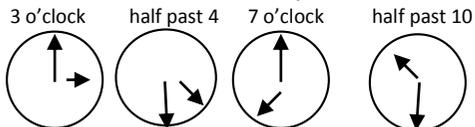
8 square metre tiles cover the floor
That's 4 squares + 4 squares
Or $2 + 2 + 2 + 2$

I am **beginning** to solve problems by joining and separating lengths.

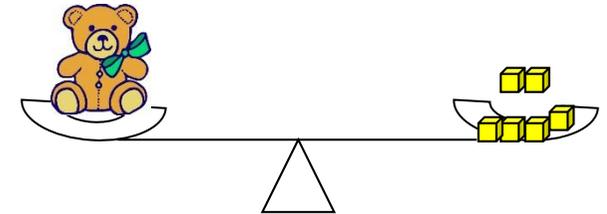
e.g. It is 8 km from my house to school. I have walked 3 km so I still have 5 more km to go. $3 + ? = 8$ or $8 - 3 = 5$

e.g. The perimeter of the classroom is $10m + 10m + 7m + 7m = 34m$

I am **beginning** to tell the time in hours and half hours (o'clock, and half past)



I am **beginning** to understand measuring the weight of an object using the metric system.

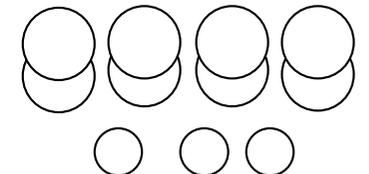


The bear weighs 6, 10gram blocks = 60grams

I am **beginning** to add different combinations of money together.



$\$5 + 5$ lots of $\$1$



8 lots of 50 cents + 3 lots of $\$2$

I am **beginning** to understand temperatures.

e.g. More than 20 degrees is hot, Less than 15 degrees is cold, 0 degrees is freezing, 100 degrees is boiling

Measurement

Level 2 (Stage 5) – By the end of Year 4

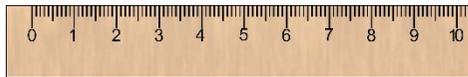
Key Idea: That standard units can be used to measure objects

I am learning to measure the lengths, areas, volumes or capacities, weights and temperatures of objects and the duration of events, reading scales to the nearest whole number and applying addition, subtraction and simple multiplication to standard units.

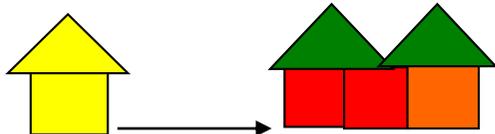
I can measure objects using the appropriate unit and describe the difference

Eg

A _____



A is 9 centimetres long.

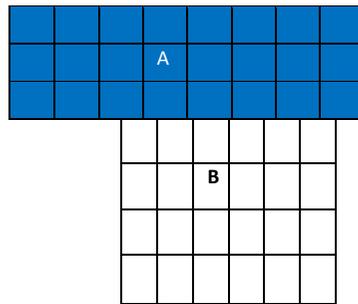


It is 5 kilometres from my house to the school

I can read and understand the size of measuring units.

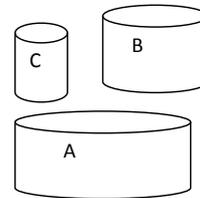
Eg kilometre, metre, centimetre, and millimetre
litre, 2L, and a millilitre, 5ml, 500ml
Kilograms, grams

I can measure two areas and describe the difference.



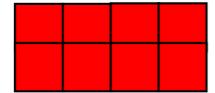
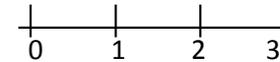
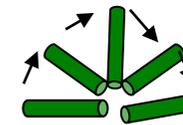
A = 24 square cm B = 24 square cm
A = B

I know how to measure capacity and weight by using objects to measure metric units.



B = 1 cup of flour = 20g
A = 2 cups of flour = 40g
C = 1/2 cup of flour = 10g
A is twice as heavy as B, and C is half the weight of B

I can solve measurement problems by estimating with objects and counting using metric units.



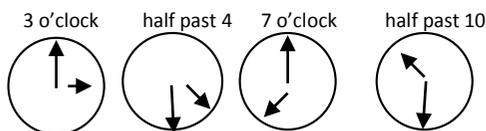
8 square metre tiles cover the floor
That's 4 squares + 4 squares
Or 2 + 2 + 2 + 2

I can solve problems by joining and separating lengths.

e.g. It is 8 km from my house to school. I have walked 3 km so I still have 5 more km to go. $3 + ? = 8$ or $8 - 3 = 5$

e.g. The perimeter of the classroom is $10m + 10m + 7m + 7m = 34m$

I can tell the time in hours and half hours (o'clock, and half past)



I can understand temperatures.

e.g. More than 20 degrees is hot, Less than 15 degrees is cold, 0 degrees is freezing, 100 degrees is boiling

I am able to read scales to the nearest whole number

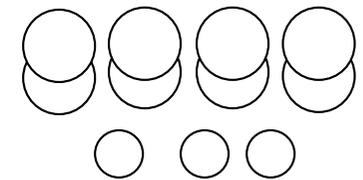


The apple weighs 10grams

I can add different combinations of money together.



\$5 + 5x \$1



8 x 50 cents + 3 x \$2

Measurement

Early Level 3 (Early Stage 6) – By the end of Year 5

Key Idea: That the attributes of an object can be measured against a standard scale.

I am learning to measure time and the attributes of objects, choosing appropriate standard units and working with them to the nearest tenth.

I am **beginning** to understand the mass or weight of an object by measuring to the nearest tenth on a scale

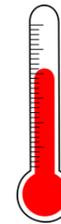


800 grams of lemon and limes

I can understand **time** in seconds, minutes, and hours using analogue and digital clocks in everyday tasks.

e.g How many seconds to do 10 basic facts?
How many minutes to run round the field?

I am **beginning** to read temperatures in degrees celsius using thermometers



I can read bus and train **timetables**, TV guides and classroom timetables

	1st	2nd	3rd	4th	5th	6th
Depot	07:30	07:45	08:00	08:15	08:30	08:45
Green St	07:40	07:55	08:10	08:25	08:40	08:55
High St	07:45	08:00	08:15	08:30	08:45	?
Central Park	07:48	08:03	08:18	08:33	08:48	09:03
Railway Station	07:53	08:08	08:23	08:38	?	09:08
Shopping Centre	08:00	08:15	08:30	08:45	09:00	09:15
Brown St	08:06	08:21	08:36	08:51	09:06	09:21
Church St	08:08	08:23	08:38	08:53	09:08	09:23
St Georges School	08:15	08:30	08:45	09:00		
Library	08:20	08:35	08:50	09:05	09:20	09:35
Hospital	08:25	08:40	08:55	09:10	09:25	09:40
Friary Walk	08:33	08:48	09:03	09:18	09:33	09:48
St Marys School	08:42	08:57	09:12			
Forest Rd	08:48	09:03	09:18	09:33	09:48	10:03
Swimming Pool	09:00	?	09:30	09:45	10:00	10:15

I understand and can use different units of length and their equivalents to measure things.

1 kilometre = 1 000 metres
1 metre = 100 centimetres
1 centimetre = 10 millimetres

I understand the basic units of mass or weight and their equivalents

E.g.
1 kilogram = 1 000 grams

I understand the basic units of capacity and their equivalents

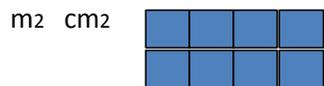
E.g. 1 litre = 1 000 millilitres
1/2 litre = 500 ml
1.5 litres = 1 500 ml

I am **beginning** to understand measurement problems by estimating lengths and checking by using rulers, tape measures, trundle wheels, and speedometers.

I am **beginning** to understand volume using equipment

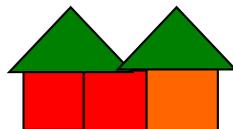
E.g How many place value cubes fill a toothpaste box?

I am **beginning** to understand what the symbols for the measurement of area mean



I am **beginning** to solve measurement problems by using a range of calculation strategies

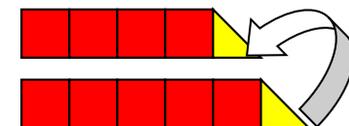
The perimeter of the classroom is $10m + 10m + 7m + 7m = 34m$ or $2 \times 10 + 2 \times 7 = 20 + 14 = 34$



I understand the size of a kilometre, metre, centimetre, and millimetre and when to use them in everyday situations

eg. Using metres to measure a basketball court or kilometres to measure the distance from home

I am **beginning** to understand measurement problems involving area by estimating and using metric units and combining half units.



10 square metre tiles cover the floor

Measurement

Level 3 (Stage 6) – By the end of Year 6

Key Idea: That appropriate standard units are selected to measure attributes of an object

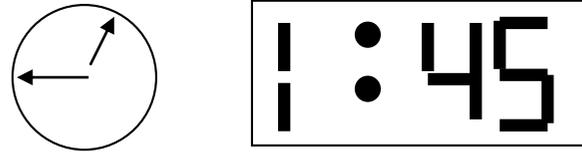
I am learning to measure time and the attributes of objects, choosing appropriate standard units and use arrays to find the areas of rectangles and the volumes of cuboids, given whole number dimensions.

I can understand the height of an object by measuring to the nearest tenth on a scale

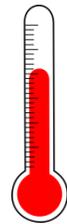


e.g. the giraffe is 1.5m tall

I can change analogue time to digital time and vice versa.



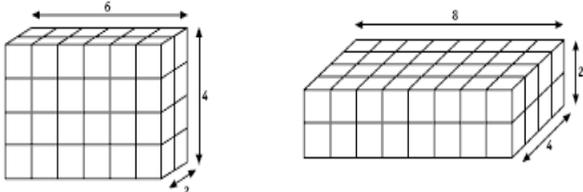
I can read temperatures in degrees celsius using thermometers



I can read bus and train timetables, TV guides and classroom timetables to recognise time difference

	1st	2nd	3rd	4th	5th	6th
Dipet	07:30	07:45	08:00	08:15	08:30	08:45
Green St	07:40	07:55	08:10	08:25	08:40	08:55
High St	07:45	08:00	08:15	08:30	08:45	?
Central Park	07:48	08:03	08:18	08:33	08:48	09:03
Railway Station	07:53	08:08	08:23	08:38	?	09:08
Shopping Centre	08:00	08:15	08:30	08:45	09:00	09:15
Brown St	08:00	08:23	08:36	08:51	09:06	09:21
Church St	08:08	08:23	08:38	08:53	09:08	09:23
St Georges School	08:15	08:30	08:45	09:00		
Library	08:20	08:35	08:50	09:05	09:20	09:35
Hospital	08:25	08:40	08:55	09:10	09:25	09:40
Friary Walk	08:33	08:48	09:03	09:18	09:33	09:48
St Marys School	08:42	08:57	09:12	09:27	09:42	09:57
Forest Hill	08:48	09:03	09:18	09:33	09:48	10:03
Swimming Pool	09:00	?	09:30	09:45	10:00	10:15

I can use edge lengths to find the volumes of cuboids using whole numbers



Volume = $4 \times 6 \times 2$ cubes = 48 cubes

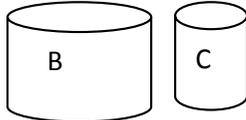
Volume = $2 \times 8 \times 4$ cubes = 64 cubes

I am **beginning** to solve weight problems by using a range of additive and multiplicative strategies

B = 864g C = 16g
How many C weigh the same as B?

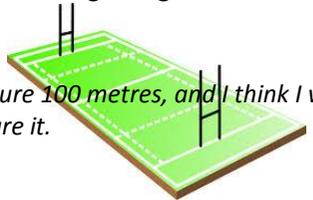
$864 \div 16$ as $432 \div 8$ as $216 \div 4$ as $108 \div 2 = 54$

or $16 \times 10 = 160$ so $16 \times 5 = 80$
 $800 + 16 = 816$ and $816 + 16 = 832$
 $832 + 16 = 848$ and $848 + 16 = 864$



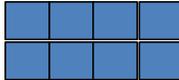
I am **beginning** to understand measurement problems by estimating lengths and checking using the appropriate measures

e.g. I think the field will measure 100 metres, and I think I will use a trundle wheel to measure it.



I can understand what the symbols for the measurement of area mean

m² cm²



I can solve measurement problems by using a range of calculation strategies

The perimeter of the classroom is $10m + 10m + 7m + 7m = 34m$ or $2 \times 10 + 2 \times 7 = 20 + 14 = 34$



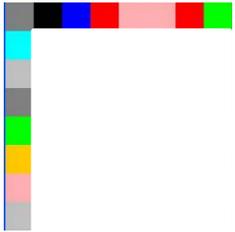
I can solve area problems by using equipment

eg place value blocks to measure length x width using a range of adding and multiplying strategies

3×18 as $3 \times 10 + 3 \times 8$ or 9×6

I am learning to use arrays to help me solve area problems

e.g. I know that the number along the top multiplied by the number down the side will tell me the area



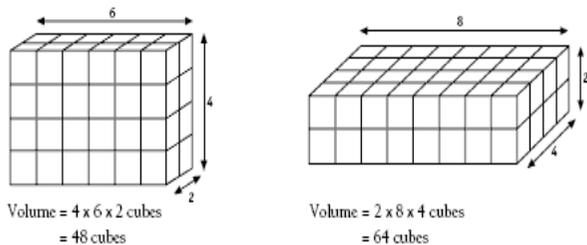
Measurement

Early Level 4 (Early Stage 7) – By the end of Year 7

Key Idea: The application of multiplicative thinking to measurement.

I am learning to measure time and the attributes of objects, using metric and other standard measures, make simple conversions between units and using side or edge lengths to find perimeters and areas of a variety of shapes given whole number dimensions.

I can use edge lengths to find the volumes of cuboids using whole numbers



I can make simple conversions between units using **whole** numbers

millimetres – centimetres – metres – kilometres
millilitres – litres
seconds – minutes – hours
grams - kilograms

e.g. 100,000 mm = 10,000 cm = 100 m
3,000 ml = 3L
3,600 secs = 60 mins = 1 hr
4,000 gms = 4 kgs

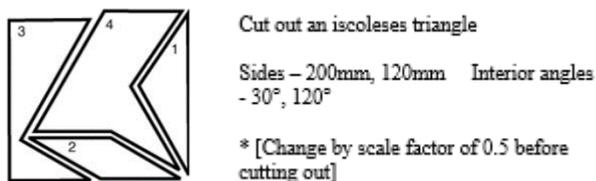
I am **beginning** to use side a formula to find the perimeters and areas of rectangles using whole numbers.



Perimeter =
 $4+3+4+3 = 14\text{cm}$

Area =
 $4 \times 3 = 12\text{cm}^2$

I am **beginning** to follow instructions, in diagram form, to construct two-dimensional mathematical shapes, e.g. triangles, quadrilaterals, pentagons and hexagon

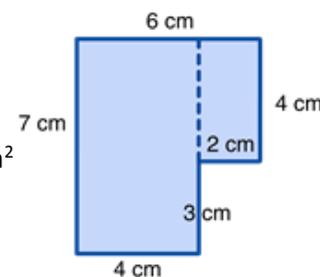


I can separate shapes into different rectangles to work out the area and perimeter

One rectangle is $7 \times 4 = 28\text{cm}^2$

The other rectangle is $2 \times 4 = 8\text{cm}^2$

So the total area is 36cm^2



I understand how to measure time and the attributes of objects using metric and other standards measures

E.g. *speed, distance, time, kilometres, metres, seconds, minutes, hours, reasonable, accurate, approximate, prediction*

I understand how to calculate speed from measured distance and time

How far am I travelling if I travel 40 km in half an hour?

I know that an hour is double half an hour so I need to double the distance travelled so they travelled 80 km/hr

I can describe the relationship between area and perimeter

"I'm thinking of a rectangle with an area of 24cm^2 . What could its perimeter be?"

Area	Perimeter
$4\text{cm} \times 6\text{cm}$	20cm
$3\text{cm} \times 8\text{cm}$	22cm
$2\text{cm} \times 12\text{cm}$	28cm
$1\text{cm} \times 24\text{cm}$	50cm

All the perimeters are even, The perimeters are getting larger, The sum of the dimensions is equal to half the perimeter, The dimensions are all factor pairs of 24, As the perimeter gets larger the rectangle gets 'narrower'/'skinnier'/'thinner'.

Measurement

Level 4 (Stage 7) – By the end of Year 8

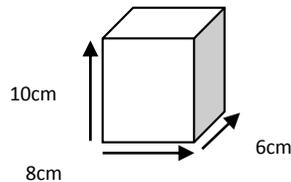
Key Idea: The application of multiplicative thinking to measurement.

I am learning to use metric and other standard measures, make simple conversions between units using decimals and using side or edge lengths to find perimeters and areas of a variety of shapes and the volumes of cuboids.

I am **beginning** to solve volume problems by calculating length x width x height using additive and multiplicative strategies.

$$8 \times 6 = 48 \text{ and } 10 \times 48 = 480 \text{ cm}^3$$

$$8 \times 6 \times 10 = 480 \text{ cm}^3$$



I can make simple conversions between units using **decimal** numbers

millimetres – centimetres – metres – kilometres
 millilitres – litres
 seconds – minutes – hours
 grams – kilograms

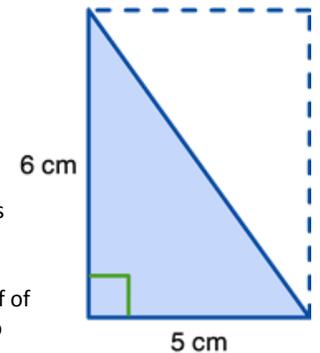
e.g. $3667 \text{ mm} = 367.7 \text{ cm} = 3.677 \text{ m} = 0.003677 \text{ km}$

I can use my knowledge on area of rectangles to help solve areas of triangles.

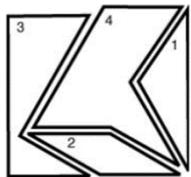
$$6 \times 5 = 30 \text{ cm}$$

$$30 \div 2 = 15 \text{ cm}^2$$

I added both triangles together to make a rectangle and went 6 times 5 then took half of the rectangle away to make a triangle and divided 30 by 2 to make 15 cm²



I can follow instructions, in diagram form, to construct two-dimensional mathematical shapes, e.g. triangles, quadrilaterals, pentagons and hexagon



Cut out an isosceles triangle

Sides – 200mm, 120mm Interior angles – 30°, 120°

* [Change by scale factor of 0.5 before cutting out]

I understand how to calculate the circumference of a circle from a measurement of diameter

$$c = \pi \times d$$

$$= 3.14 \times 10$$

$$= 31.4 \text{ cm}$$

I understand how to measure time and the attributes of objects using metric and other standards measures

E.g. *speed, distance, time, kilometres, metres, seconds, minutes, hours, reasonable, accurate, approximate, prediction*

I understand how to calculate speed from measured distance and time

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

I can understand the method to measure the length of circular objects

