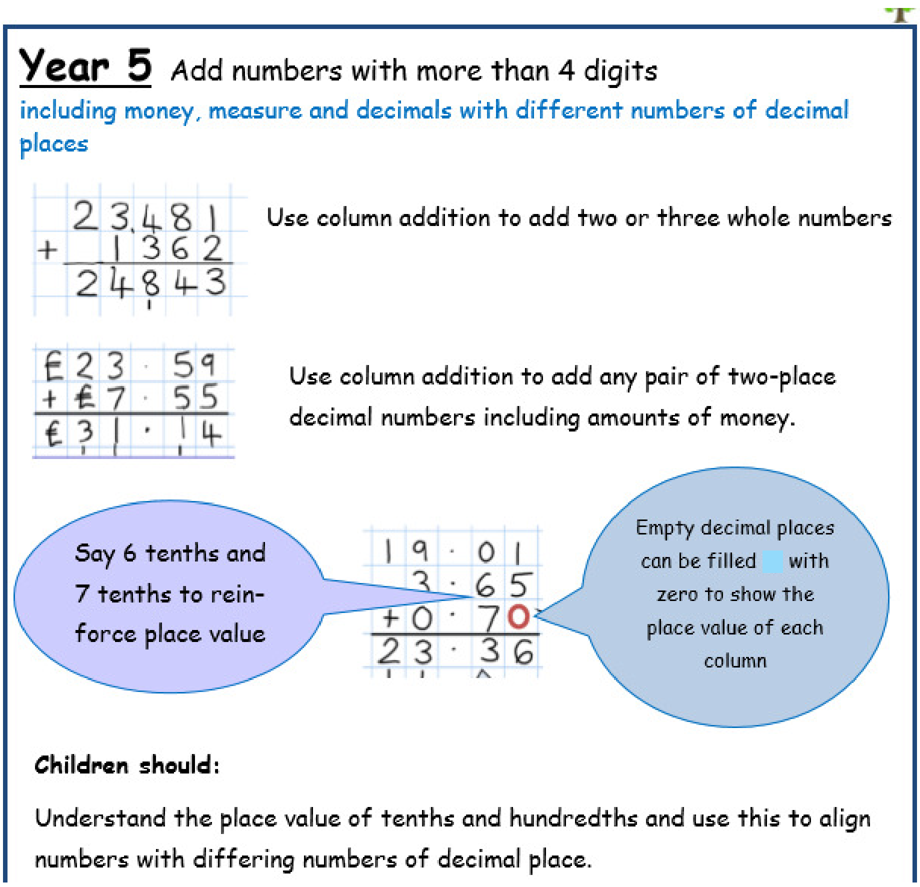
YEAR 5

A PARENTS' GUIDE TO MATHS IN THE CURRICULUM

CURRICULUM INNOVATION GROUP

Calculations

I can add and subtract numbers mentally with increasingly large numbers
Addition: Try using partitioning (breaking numbers down into hundreds, tens and units) and knowledge of number bonds to add numbers in your head. Eg. 145 + 155. 100 + 100 = 200 40 + 50 = 90 5 + 5 = 10 200 + 90 + 10 = 300



Year 5 Add numbers with more than 4 digits

including money, measure and decimals with different numbers of decimal places

$$\begin{array}{r} 23481 \\ +\ 1362 \\ \hline 24843 \end{array}$$

Use column addition to add two or three whole numbers

$$\begin{array}{r} £23.59 \\ +\ £7.55 \\ \hline £31.14 \end{array}$$

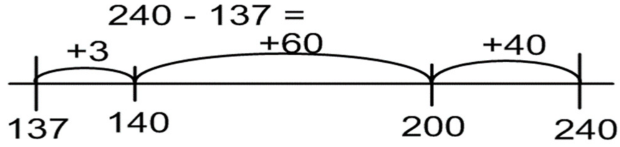
Use column addition to add any pair of two-place decimal numbers including amounts of money.

$$\begin{array}{r} 19.01 \\ 3.65 \\ +\ 0.70 \\ \hline 23.36 \end{array}$$

Children should:

Understand the place value of tenths and hundredths and use this to align numbers with differing numbers of decimal place.

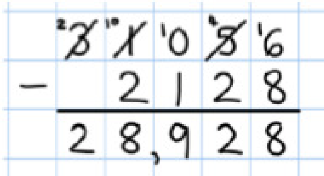
Subtraction:
240 – 137
Try counting on a number line in your head to subtract mentally and find the difference between two numbers.



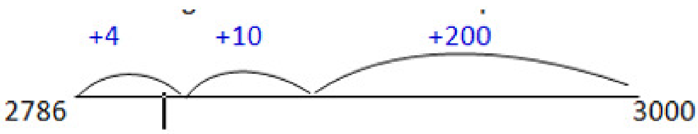
Year 5 Subtract with at least 4-digit numbers

including money measures and decimals

Use compact column subtraction to subtract numbers with up to 5 digits.

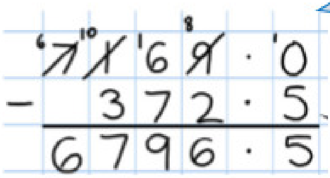


Use counting on for subtractions where the larger number is a multiple or near multiple of 1000, or for decimals



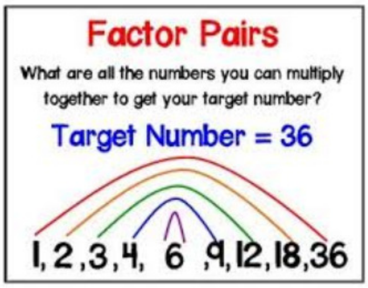
Subtract with decimal values, including mixtures of integers and decimals and aligning the decimal point

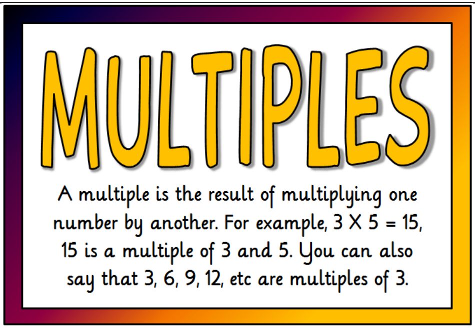
Add a zero in any empty decimal place to aid understanding of what to subtract



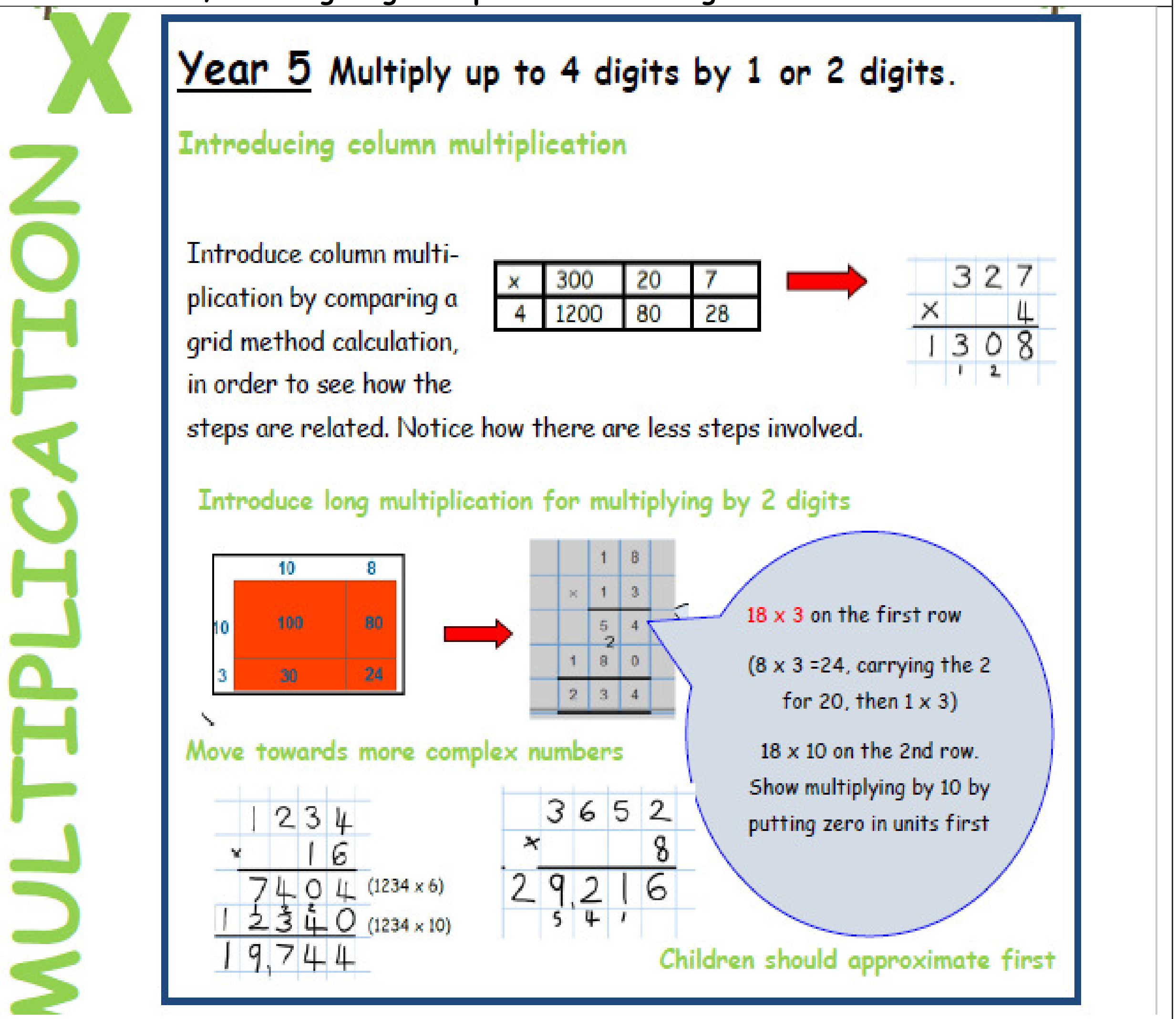
A game of darts would be good to practice mental addition and subtraction!

I can identify multiples and factors, including finding all factor pairs of a number and common factor pairs of two numbers

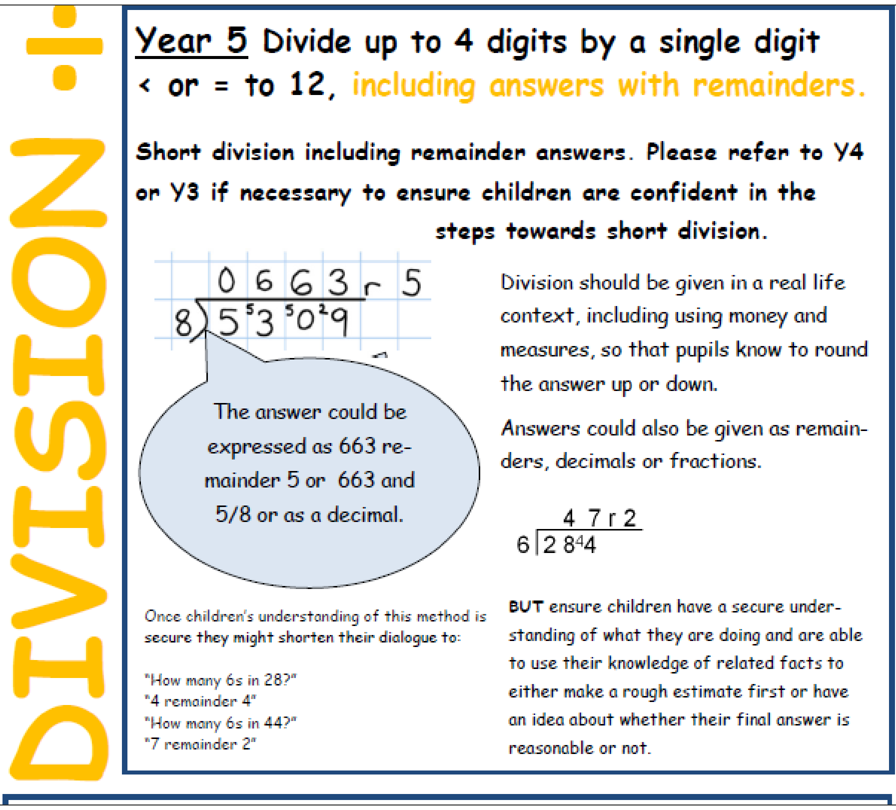




I can multiply numbers up to 4 digits by a 1-digit or 2-digit number using a formal written method, including long multiplication for 2-digit numbers



I can divide numbers up to 4 digits by a 1-digit number using the formal written method of short division



DIVISION ÷

Year 5 Divide up to 4 digits by a single digit < or = to 12, including answers with remainders.

Short division including remainder answers. Please refer to Y4 or Y3 if necessary to ensure children are confident in the steps towards short division.

$$\begin{array}{r} 0\ 6\ 6\ 3\ r\ 5 \\ 8\overline{)5\ {}^{5}3\ {}^{5}0\ {}^{2}9} \end{array}$$

The answer could be expressed as 663 remainder 5 or 663 and 5/8 or as a decimal.

Division should be given in a real life context, including using money and measures, so that pupils know to round the answer up or down.

Answers could also be given as remainders, decimals or fractions.

$$\begin{array}{r} 4\ 7\ r\ 2 \\ 6\overline{)2\ 8\ {}^{4}4} \end{array}$$

Once children's understanding of this method is secure they might shorten their dialogue to:

"How many 6s in 28?"
"4 remainder 4"
"How many 6s in 44?"
"7 remainder 2"

BUT ensure children have a secure understanding of what they are doing and are able to use their knowledge of related facts to either make a rough estimate first or have an idea about whether their final answer is reasonable or not.

I can multiply and divide mentally using known facts

Use what you know about times tables and doubling and halving to help solve more difficult problems. For example:
To multiply by 50, multiply by 100 and halve the answer.
To multiply by 25 you multiply by 100 and then divide by 4.
To multiply by 4, double the number and double again. Double the answer again to multiply by 8.
To divide by 4, halve the number and halve again. Halve the answer again to divide by 8.

Use times table knowledge to help solve similar problems involving decimals:
7 x 8 = 56.

0.7 x 0.8 =

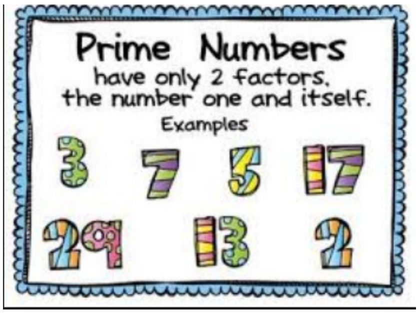
5.6 ÷ 8 =

Which numbers could be written in the boxes?
6 x 0.9 = ☐ x 0.03
6 x 0.04 = 0.008 x ☐

Number

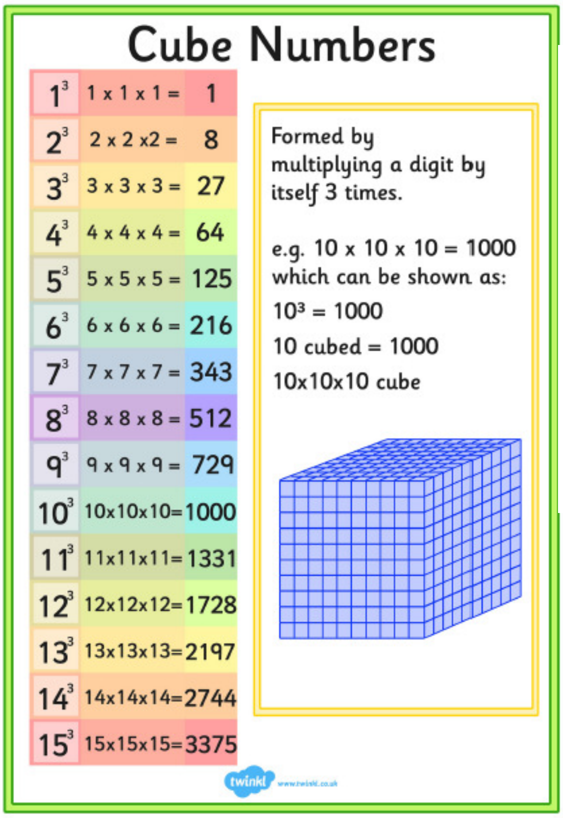
I can use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers

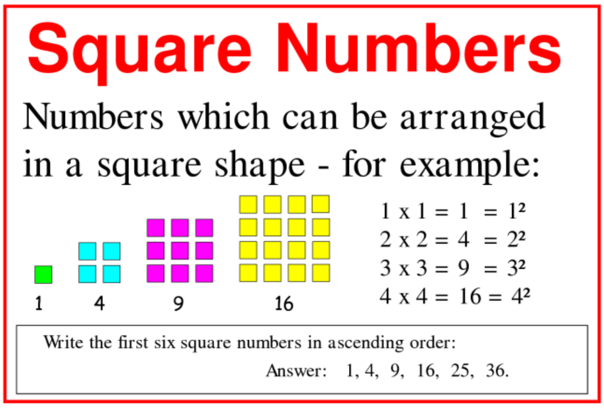
Children need to know prime numbers.



e.g. 2, 3, 5, 7, 11, 13, 17, 19.......

I can recognise and use square numbers and cube numbers, and the notation for squared and cubed





I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

Multiplying and Dividing by 10, 100 and 1000

10 000	1000	100	10	1	•	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					•			

Multiplying

X 10 digits move LEFT **1** space
X 100 digits move LEFT **2** spaces
X 1000 digits move LEFT **3** spaces

←

Dividing

÷ 10 digits move RIGHT **1** space
÷ 100 digits move RIGHT **2** spaces
÷ 1000 digits move RIGHT **3** spaces

→

÷ 10

Th	H	T	U		t	h
		2	7	•	0	0
		(÷ 10)	2	•	7	0
		(÷100)	0	•	2	7

To divide by 10, move the digits one space to the right
To divide by 100, move the digits two spaces to the right

I can count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000

Eg, 30; 300; 3,000; 30,000; 300,000;
900,000; 90,000; 9,000; 900; 90;

I can read, write, order and compare numbers to at least 1,000,000

Eg. 986, 452 is nine hundred and eighty six thousand, four hundred and fifty two.

Millions	Hundred-thousands	Ten-thousands	Thousands	Hundreds	Tens	Ones

Find large numbers in the everyday environment and ask children to say the number in words. Eg. House prices, football match attendances, charity money raised – Children in Need, Red Nose Day

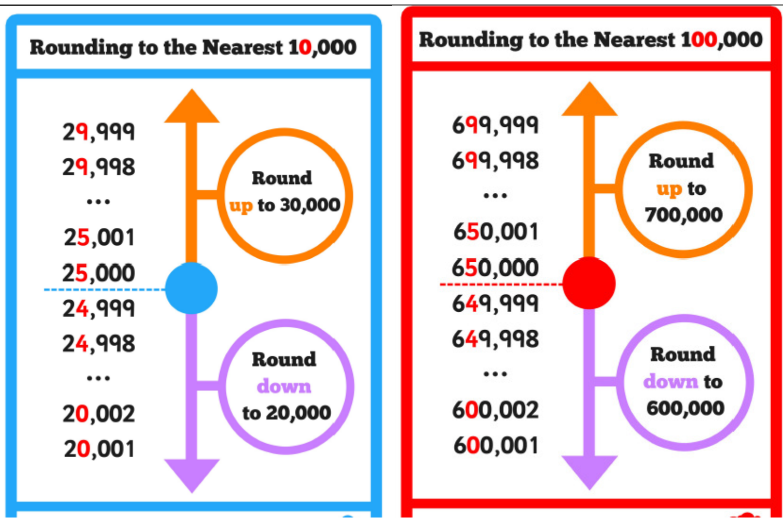
I can determine the value of each digit in numbers up to 1,000,000

Using the larger numbers, ask the value of certain digits.
Eg. 546, 789 - The 6 is worth 6000 (six thousand)

I can read Roman numerals to 1,000 (M) and recognise years written in Roman numerals

M – 1000 D – 500 C – 100 L – 50 X – 10 V – 5 I - 1
Eg. MDCV – 1605
Look for examples of numbers in the world around you – clocks, watches, year at the end of TV credits.

I can round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 and 100000



Use rhymes to help children to remember the rules of rounding:
1,2,3,4 – round it down to the one before.
5,6,7,8,9 – round it up to the next one on the line.
Look at larger numbers, for example, house prices or the cost of cars, and round them to the nearest 10,000 and 100,000

I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

Look for examples in everyday contexts. For example: temperature rises and falls. Ask the differences between two temperatures (one positive and one negative). You could do this whilst watching the weather forecast.

Statistics

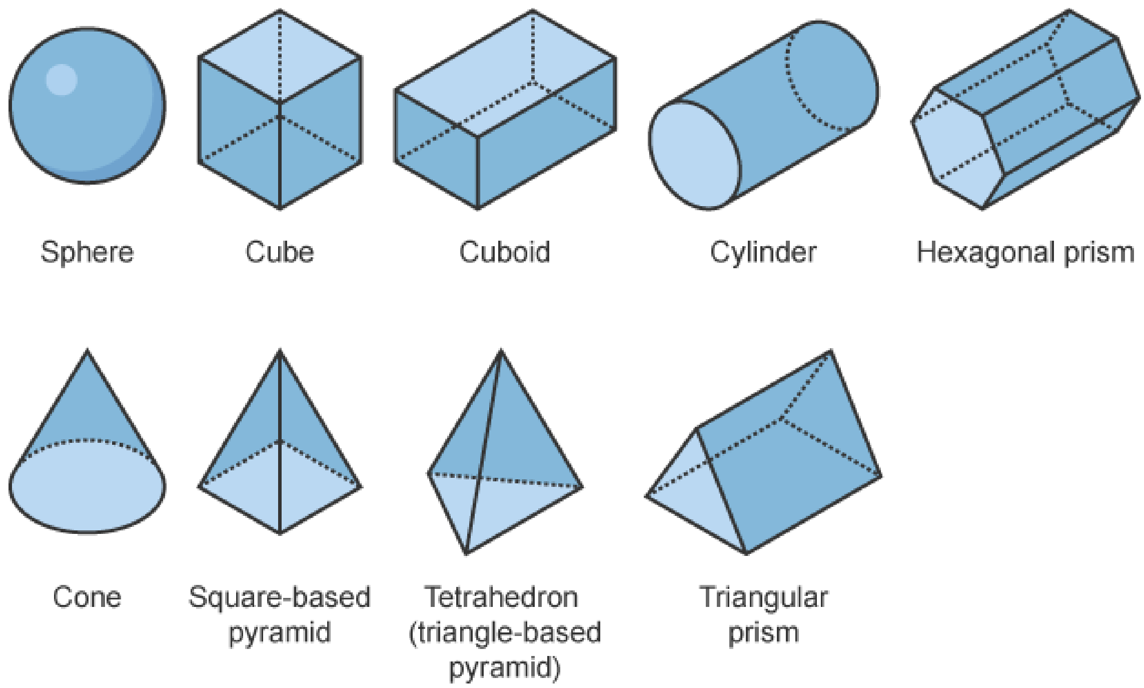
I can complete, read and interpret information in tables, including timetables

Look for examples when travelling or on holiday on various modes of transport such as trains, trams and buses. Discuss different journey options and look at how the information is organised and read in columns.
You can also look at timetables on line and allow your child to plan a journey beforehand.

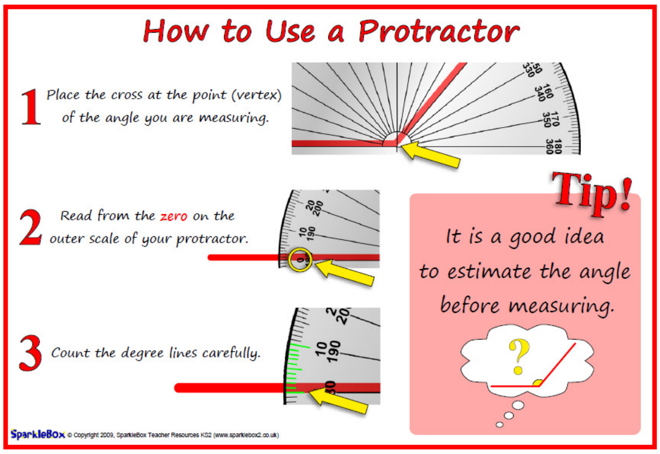
Shape, space and measure

I can identify 3D shapes, including cubes and other cuboids, from 2D representations

Look for examples of shapes at home or when out and about. Discuss how many faces, edges and vertices (corners) the shape has.

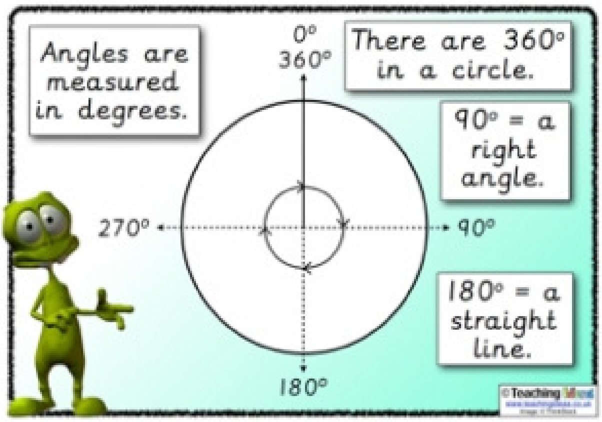


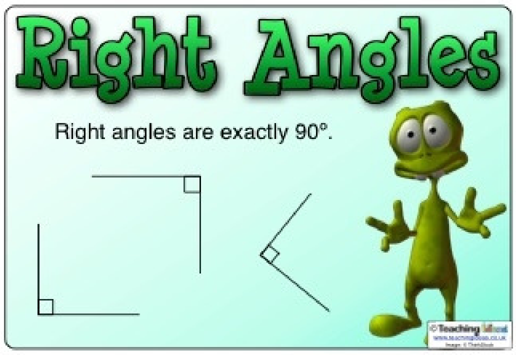
I know angles are measured in degrees.
I can draw given angles and measure them in degrees.
I can estimate and compare acute (less than 90 degrees), obtuse (more than 90, but less than 180 degrees) and reflex (more than 180 degrees) angles.



Practise using a protractor to measure angles accurately to the nearest degree. Discuss how to accurately line up the protractor and how to read the scale to take the measurement.
Try challenging a partner to draw angles of a given size to the nearest degree. Swap with your partner and check how accurate your drawing is and how close you each were.
Check that answers are sensible by looking at whether your answer should be acute (less than 90°) or obtuse (between 90° and 180°).
What's my angle is a good website for measuring and estimating angles

I can identify angles at a point and one whole turn
I can identify angles at a point on a straight line and ½ a turn





Learn key facts about angles:

- one whole turn is 360°
- angles on a straight line add up to 180°
- a right angle is 90°

I can identify other multiples of 90°

90°, 180°, 270° or 360°.
Practise directions by playing a 'Simon Says' style game and follow instructions to turn or jump in different multiples of 90°.
For example: Simon says, jump 90° clockwise; Simon says turn 270° anticlockwise.
For an extra challenge, try turning in multiples of 45°: 45°, 90°, 135°, 180°, 225°, 270°, 315°, 360°.

Fractions, decimals and percentages

I can solve problems involving numbers up to 3 decimal places

Try solving problems with decimals such as money. Look for opportunities to add, subtract and multiply amounts of money.
For example: One pineapple costs £1.39 – how much would 2 pineapples cost?
Is this 3 for 2 offer good value for money?

I recognise the percent symbol and understand that percent relates to 'number parts per hundred'

Investigate percentages when shopping in the sales.
What does 20% off mean? Try finding 10% (by dividing by 10) and then double this amount to find 20%.
Eg, 20% off £45.
Find 10% - 45 ÷ 10 = £4.50
£4.50 x 2 = £9
£45 - £9 = £36

I can write percentages as a fraction and as a decimal

Know the basic fraction, decimal and percentage equivalences:

Decimal	Percentage	Fraction
0.5	50%	$\frac{1}{2}$
0.25	25%	$\frac{1}{4}$
0.75	75%	$\frac{3}{4}$
0.2	20%	$\frac{1}{5}$
0.1	10%	$\frac{1}{10}$
$0.\dot{3}$	$33.\dot{3}$%	$\frac{1}{3}$

There are a number of games on the Woodlands Junior website to test your child's knowledge on this topic.

Measurements

I can solve problems involving converting between units of time

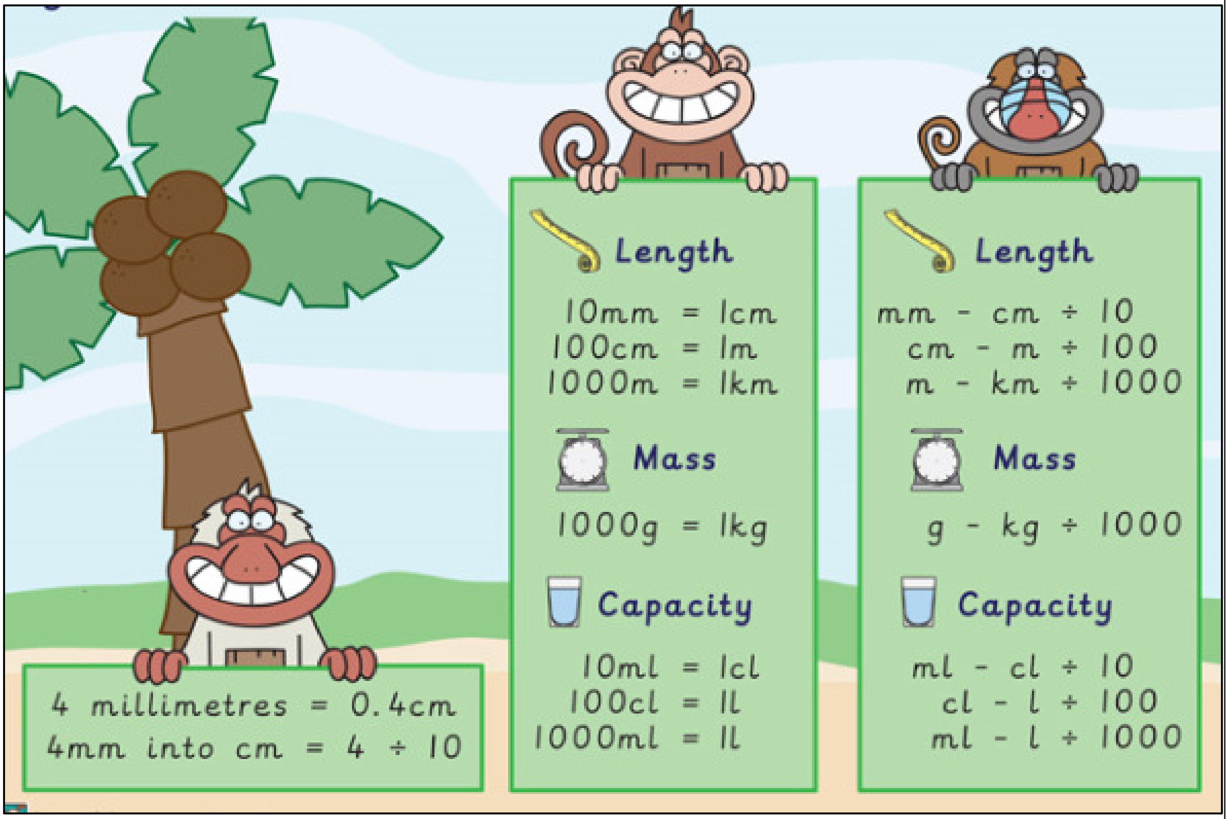
Try converting between days, hours, minutes and seconds.

For example:

- How long is it until the party begins? In hours? In minutes? In seconds?
- How long is the journey?
- Countdown to Christmas – how many days are left? How many hours would that be? http://www.xmasclock.com/
- How old are you in days?

I can convert between different units of metric measure

Use measures in everyday, practical contexts at home. For example, in art and craft activities, baking, DIY tasks and sports activities.
Know the conversions between different units and swap between them.
For example:
How long is this football pitch in metres? What about cm?
How much flour do we need in grams and kilograms?



Swanland Education Trust

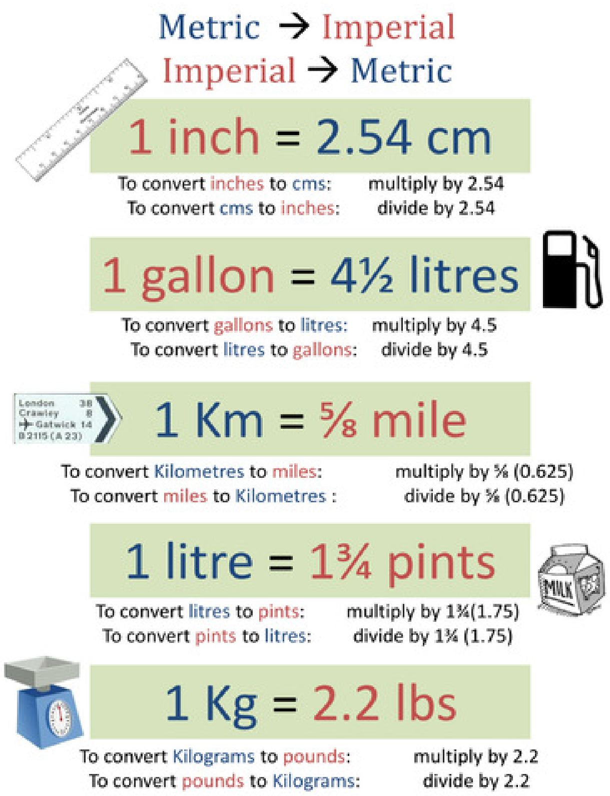
I understand and use approximate equivalences between metric units and common imperial units, such as inches, pounds and pints

Discuss the link between metric and imperial in everyday contexts such as baking, the capacity of different containers (milk bottles and different mugs, cups and glasses) and measurements on tape measures and rulers.
Discuss how miles and kilometres are related when travelling abroad.

I can estimate volume and capacity

Have fun (and get wet!) estimating the volume and capacity of different containers at home. This could be in the sink, the bath or even the paddling pool! Then try measuring the actual capacities using a measuring jug and see how close you were!

For an extra challenge, you could even convert the capacities between millilitres and litres.



Key facts to practise and know in Y5

- TIMES TABLES. Although children should have learned all of the times tables, they still need to regularly practise all of the times tables up to 12 x 12. If they don't use them….they lose them!
- Multiples
- Factors (including common factors)
- Prime numbers
- Prime factors
- Composite numbers (non primes)
- Square numbers
- Cubed numbers
- Roman numerals
- Angles are measured in degrees

To see the whole of your child's Year 5 curriculum, use the following link:

The National Curriculum for Mathematics

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf

Useful websites:

http://www.mathplayground.com/measuringangles.html

http://www.amblesideprimary.com/ambleweb/mentalmaths/protractor.html