Dilton Marsh Church of England Primary School

Learning together. Growing together.

Some Year 6 Key Skills To Help Your Child With Maths

Introduction

At Dilton Marsh Church of England Primary School we follow the new mathematics curriculum. In addition to knowing and applying basic mathematics skills, students are required to reason, think independently, solve problems using different strategies, and effectively communicate their methods. Parents help at home is essential in helping children develop and strengthen these skills.

Here are some suggestions for parents helping at home:

- Let your children know you believe they can be successful in math.
- Encourage and support risk taking and celebrate perseverance.
- Encourage your children to solve problems with you.
- Help them identify different methods or strategies to use in finding solutions and resist the temptation to provide the answer or method. There is usually more than one way to solve a problem, and simpler strategies are often effective.
- Provide opportunities for your children to explain and justify their thinking.
- Connect mathematics to real life experiences. Emphasising the mathematics around us helps to make mathematics education relevant.
- Ask good questions of your children about their homework and be good listeners when your children respond.
- Encourage children to estimate answers before working out the answer.

Good questions, and equally important, good listening can help children make sense of mathematics, build their confidence, and encourage mathematical thinking and communication. A good question opens up a problem and supports different ways of thinking about it. Some questions to try while helping a child might include:

- What do you already know about this?
- What do you need to find out?
- How might you begin?
- How can you organise your information?
- Can you draw a picture to explain your thinking?
- Are there other possibilities?
- What would happen if ...?
- What do you need to do next?

Contents Page

<u>Step 1</u>

Read, write and order numbers to 1 hundred million and know the value of each digit:

Place Value Chart								
Millons			Thousands			Ones		
Hundred Million	Ten Million	Million	Hundred Thousands	Ten Thousands	Thousands	Hundred	Tens	Ones
100,000,000	10,000,000	1,000,000	100,000	10,000	1,000	100	10	1

Your child will need to know the value of each digit in numbers up to 1 hundred million.

Support your child in reading the number, and partitioning and recording the value of each number.

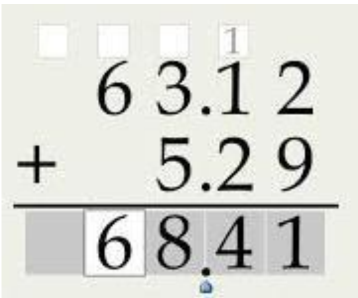
Key words: Place value, units, tens, hundreds, thousands, ten thousand, hundred thousand, million, hundred million

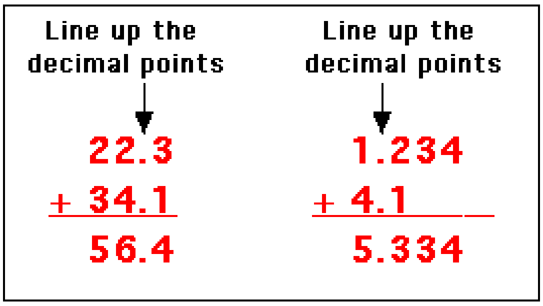
Calculation:

Be secure in use of formal addition and subtraction methods – e.g. column method.

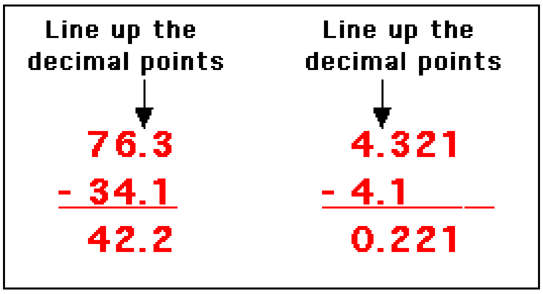
Addition

Remind the children that they must keep the numbers in the correct place value columns.





Subtraction



Ask the children to explain the process of ‘borrowing’ and why we do this in addition and subtraction.

Step 2

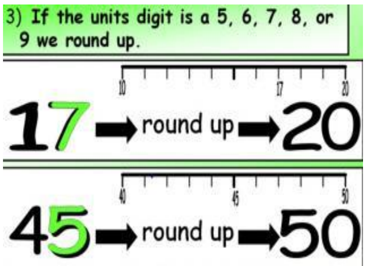
Ordering Numbers:

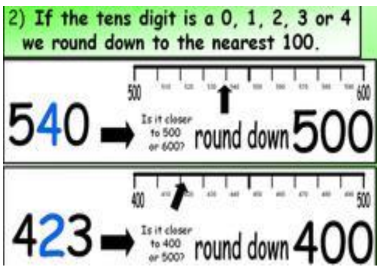
Children need to order numbers in ascending and descending order.

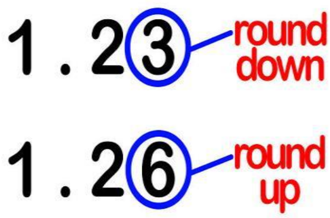
Ascending **Descending**

Rounding:

Children must be able to round numbers to the nearest 10, 100, 1000 and to the nearest whole number. Remind the children that if the number are larger than five you round up!

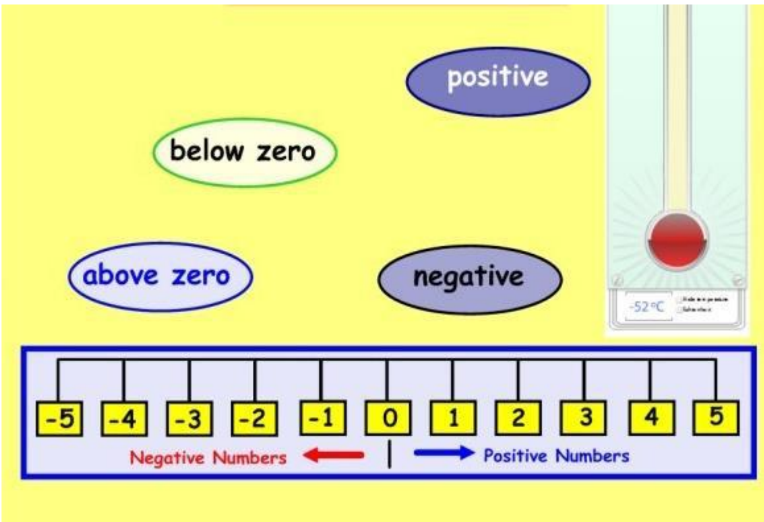






Negative Numbers:

Children need to be able to identify negative numbers and count backwards and forwards through zero**.**



Factors and Prime Numbers:

Prime numbers are numbers that can only be divided by themselves and 1. For example: 3, 7, 11, 13, 17, 19, 23 etc.

Factors of a number are any numbers that divide into it exactly.

For example, the factors of 6 are 1, 2, 3 and 6. The factors of 8 are 1, 2, 4 and 8.

For larger numbers it is sometimes easier to 'pair' the factors by writing them as multiplications.

For example, 24 = 1 x 24 = 2 x 12 = 3 x 8 = 4 x 6

So the factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24**.**

Read and write decimal numbers as fractions:

You child will need to be able to record decimal number as fractions.

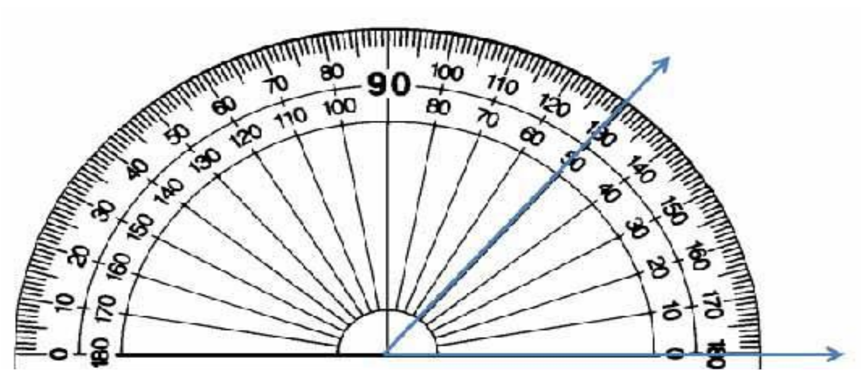
Support your child in understanding the idea that a decimal is part of a whole, just as a fraction is. Help them spot any patterns between the decimals and fractions.

Decimal	Fraction	Decimal	Fraction
0.1	1/10	0.25	¼
0.2	2/10 1/5	0.5	½
0.3	3/10	0.75	¾
0.4	4/10 2/5	0.333..	1/3
0.5	5/10	0.666…	2/3
0.6	6/10 4/5		
0.7	7/10		
0.8	8/10 4/5		
0.9	9/10		
1.0	10/10 = 1		

Measure angles to the nearest degree:

It is important when using a protractor that your child reads the correct scale. The protractor needs to be placed at the point where the angle meets.

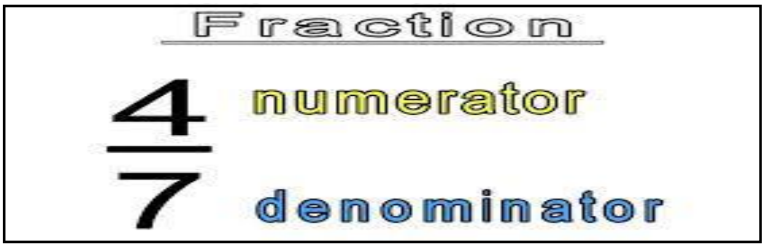
You choose the scale to read by choosing the one where the zero sits on the line of the angle.



Step 3

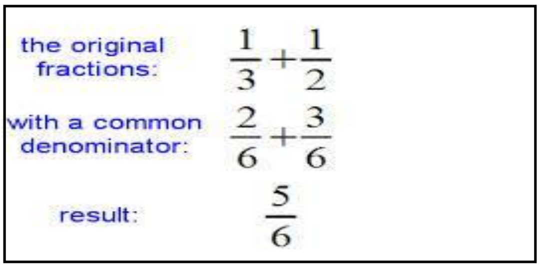
Adding and Subtracting fractions:

Your child should know that fractions are different parts of a whole.



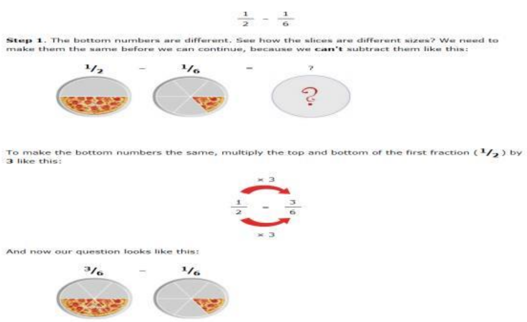
In order to add fractions with a different denominator:

Make the denominators the same by finding a common factor. For example 3 and 2 are both in the 6 times table.



In order to subtract fractions with a different denominator:

Make the denominators the same by finding a common factor.



Now you can calculate the answer:

3-1 = 2 /6

Multiplying with decimals:

Example: Multiply 0.25 by 0.2

start with: $\mathbf{0.25 \times 0.2}$

multiply without decimal points: $\mathbf{25 \times 2 = 50}$

0.25 has **2** decimal places,

and 0.2 has **1** decimal place,

so the answer has **3** decimal places: **0.050**

Percentages:

The children should know that per cent means out of 100. When we work out the percentage of a number we are therefore finding a fraction over 100.

50% of a number is 50/100, 25% of a number is 25/100.

To find the percentage of a number we

Example: Calculate 25% of 80

$$25\% = \frac{25}{100}$$

$$\text{And } \frac{25}{100} \times 80 = \mathbf{20}$$

So 25% of 80 is **20**

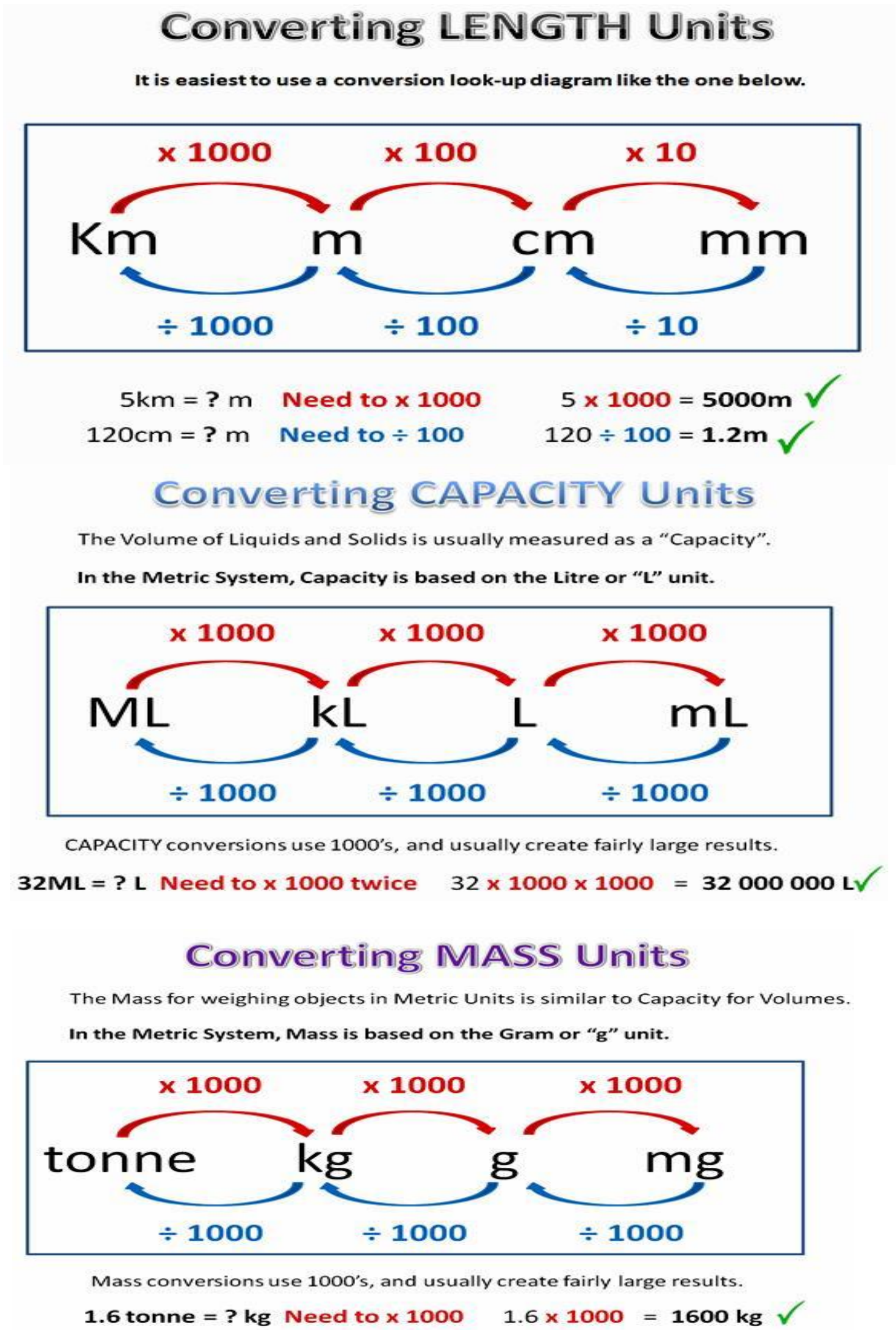
Example: 15% of 200 apples were bad. How many apples were bad?

$$15\% = \frac{15}{100}$$

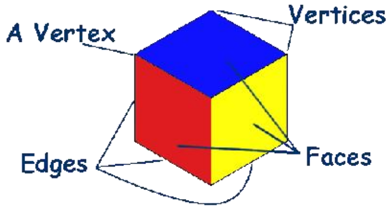
$$\text{And } \frac{15}{100} \times 200 = 15 \times \frac{200}{100} = 15 \times 2 = \mathbf{30\ apples}$$

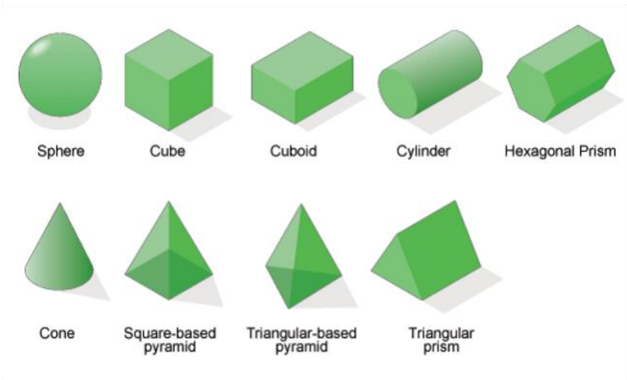
30 apples were bad

Covert between metric units of measurement: mm, cm, m, km, g, kg, ml, l:



Identify 3-D shapes:

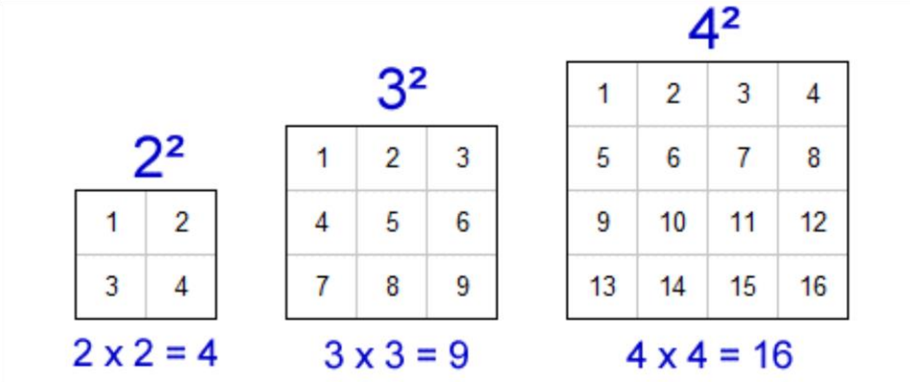




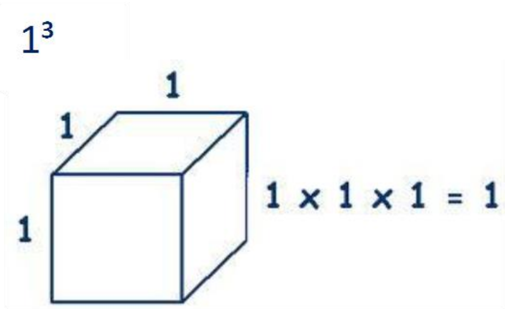
As well as being able to describe the properties of 3D shapes, they also need to be able to create nets for these shapes. This can be supported by exploring packaging of various shapes and discussing the features of each net in relation to the 3D shape.

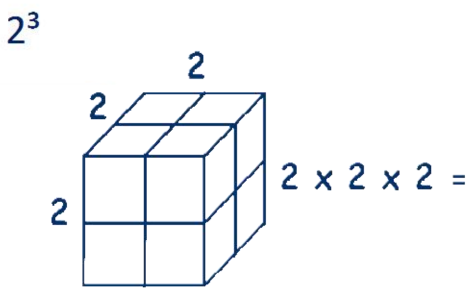
Understand the concept of squared and cubed numbers:

Squared numbers are the result of multiplying one number by itself.



Cubed numbers are the result of multiplying a number by itself twice.





Probability:

$$\text{Probability of an event happening} = \frac{\text{Number of ways it can happen}}{\text{Total number of outcomes}}$$

Example: the chances of rolling a "4" with a die

Number of ways it can happen: 1 (there is only 1 face with a "4" on it)

Total number of outcomes: 6 (there are 6 faces altogether)

$$\text{So the probability} = \frac{1}{6}$$

Example: there are 5 marbles in a bag: 4 are blue, and 1 is red. What is the probability that a blue marble will be picked?

Number of ways it can happen: 4 (there are 4 blues)

Total number of outcomes: 5 (there are 5 marbles in total)

$$\text{So the probability} = \frac{4}{5} = \mathbf{0.8}$$