Attitudes in maths

Achievement and pride

Challenge and struggle

What do we encourage in maths?

- Everyone Can Learn Maths to the Highest Levels. Encourage children to believe in themselves. There is no such thing as a “maths” person. Everyone can reach the highest levels they want to, with hard work.

- Mistakes are Valuable- Mistakes grow your brain! It is good to struggle and make mistakes. (but accuracy is important)

- Questions are Really Important Always ask questions, always answer questions Ask yourself: why does that make sense?

- Maths is about Creativity and Making Sense.
  Maths is a very creative subject that is, at its core, about visualizing patterns and creating solutions that others can see, discuss and critique.

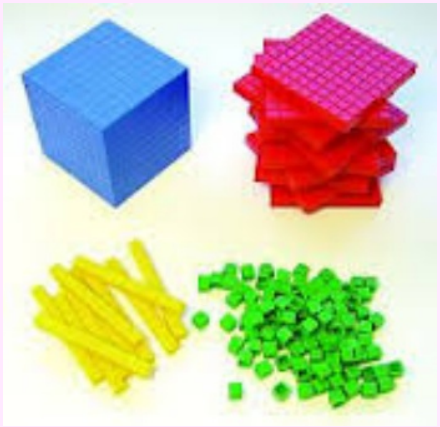
- Maths is about Connections and Communicating. Maths is a connected subject, Maths can be represented in different forms eg words, a picture, a graph, an equation, and link them.

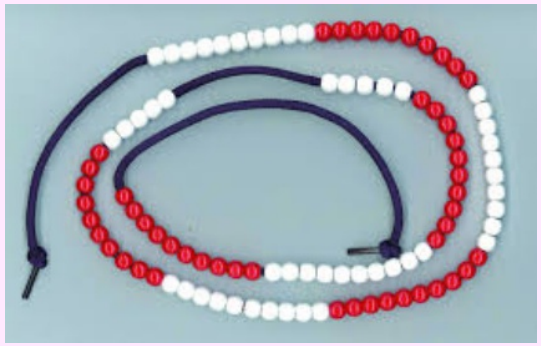
- Maths is about Learning not Performing.

- Maths is a growth subject, it takes time to learn and it is all about effort.

What do we encourage in maths?

Concrete resources



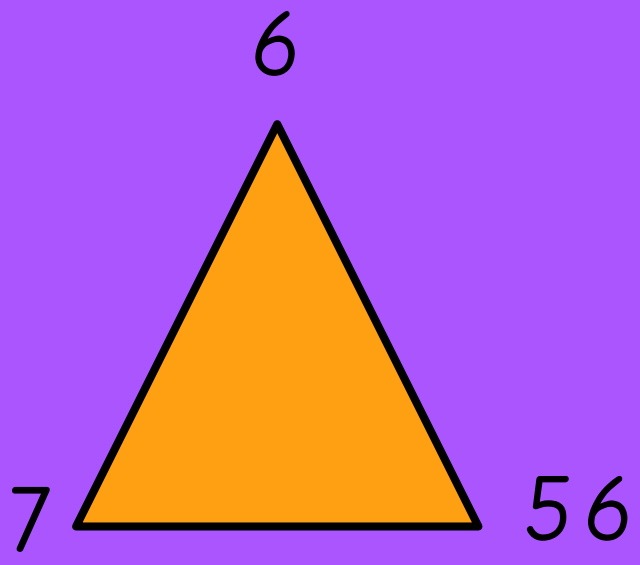


Number bonds

Doubling

Learning Times Tables

How could these three numbers be connected?



NC expectations. Why are they important?

draw it!

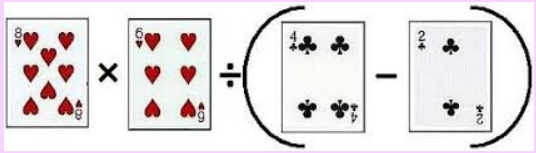
If I know 3 x 5= 15 What else do I know?

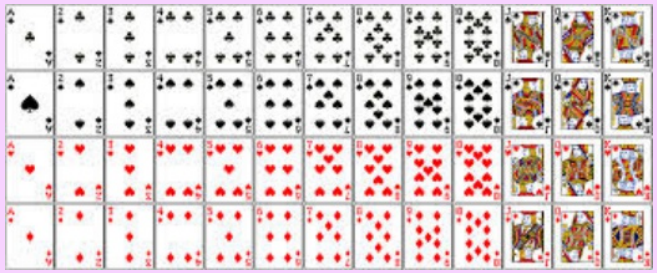
Make the number 3,456 in as many ways as you can!

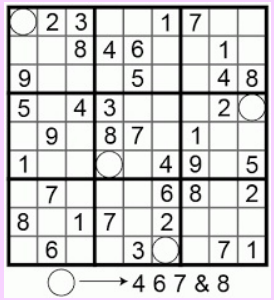
Fluency and treats!

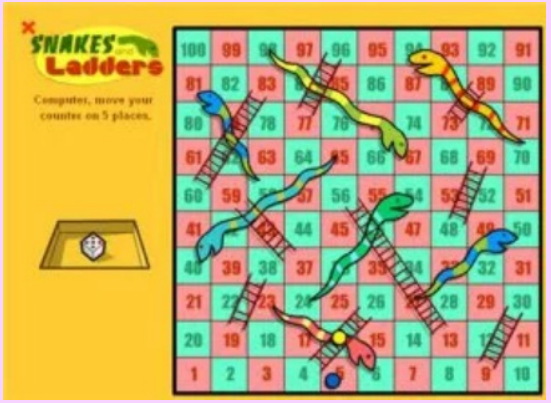
Eg: 70+80 1999+324 8+6 2997 + 3273 6-4.67

Games to play at home









Problem solving and reasoning:

Year 6

Miley has this number:
824,650
She takes forty thousand away.
Her answer is 820,650
Is this correct?
Explain how you know.

A house costs £250,000.
A motorised home costs £100,000.
A bungalow is priced half way between the two.
Work out the price of the bungalow.

0 3 3 5 5 6 7
Use the digit cards and statements to work out my number.
o The ten thousands and hundreds have the same digit.
o The hundred thousand digit is double the tens digit.
o It is a six-digit number.
o It is less than six hundred and fifty five thousand.
Is this the only option?

Year 5

Harriet has made five numbers, using the digits 1, 2, 3 and 4
She has changed each number into a letter.
Her numbers are:
1) aabdc
2) acdbc
3) dcaba
4) cdadc
5) bdaab
Here are three clues to work out her numbers:

- Number 1 is the greatest number.
- The digits in number 4 total 12
- Number 3 is the smallest number.

Simon says he can order the following numbers by only looking at the first three digits.
Is he correct?
Explain your answer.

12,887
12,587
12,745
12,967
12,562

Year 4

Two different two-digit numbers both
round to 40 when rounded to the nearest 10
The sum of the 2 numbers is 79
What could the two numbers be?
Is there more than one possibility?

Jasmine says:
"847 rounded to the
nearest 10 is 840"
Do you agree with Jasmine?
Explain why.

Use the clues to find the missing digits.
????
The thousands and tens digit multiply together to make 36
The hundreds and tens digit have a digit total of 9
The ones digit is double the thousands.
The whole number has a digit total of 21

Y1 Reasoning examples

Stars are worth 1. Triangles are worth 10. Triangles are worth 2. How many ways can you represent 20? Will there be more ways for 40? How do you know?

Using the same information, as above, can you work out what the circle is worth?

= 23

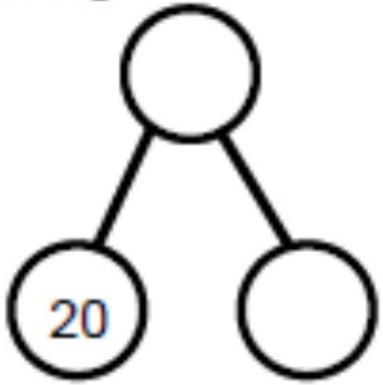
Jamie had some teddy bears. He said if I had another equal set of teddy bears I would have 20. Is he right? Explain why.

Y1 Reasoning examples

Below is a list of activities Jonathan did. Can you explain to him which he should spend a day, week and year on and why?

A holiday to Spain
A trip to the zoo
Learning in Year 1

Look at the part-whole model. Make all the part-whole models you can from these facts you have been given.



Y2 Reasoning examples

Put these clocks in order

- Here are some digit cards.

4	1	5

Tamsin and Lila each use two of the cards to make a 2 digit number.

Tamsin says,

> I have made the largest number you can make.

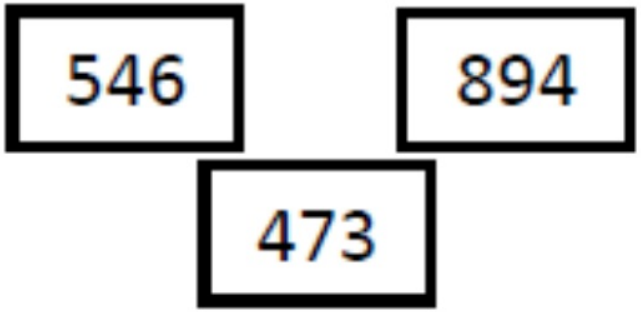
Lila says,

> I have made the smallest number you can make.

What is the difference between their numbers?

Y3 Reasoning examples

- Explain the differences in the values of 4 in the following numbers:



- 543 is made of 5 hundreds, 4 tens and 3 ones.
  It is also made of 54 tens and 3 ones.
  It is also made of 543 ones.
  Can you show 113 in these ways?
  Can you express 627 in the same way?

- Tom says 'I can use my 4 times table to help me work out my 8 times table'.
  Is he correct? Convince me.

- What pair of numbers could be written in the boxes?

- **True or false?**
  Put these statements into two piles.
  Explain why.

$$3 \times 4 = 0 + 12$$
$$5 \times 8 > 6 \times 8$$
$$28 \div 4 = 2 \times 4$$

Questions to develop a deeper understanding:

How did you see that idea?

Why does that answer make sense?

Why does that method work?

How is that method connected to others?

How can that idea be represented in different ways?

Can you prove it?

Can you prove it visually?

Can you justify your thinking?

Can you predict what would happen if...

Did you make any interesting mistakes?

Tell me about how you got your answer?

Tell me what you do know?

Strategy booklet

Where can you find it?

It's on the school website.