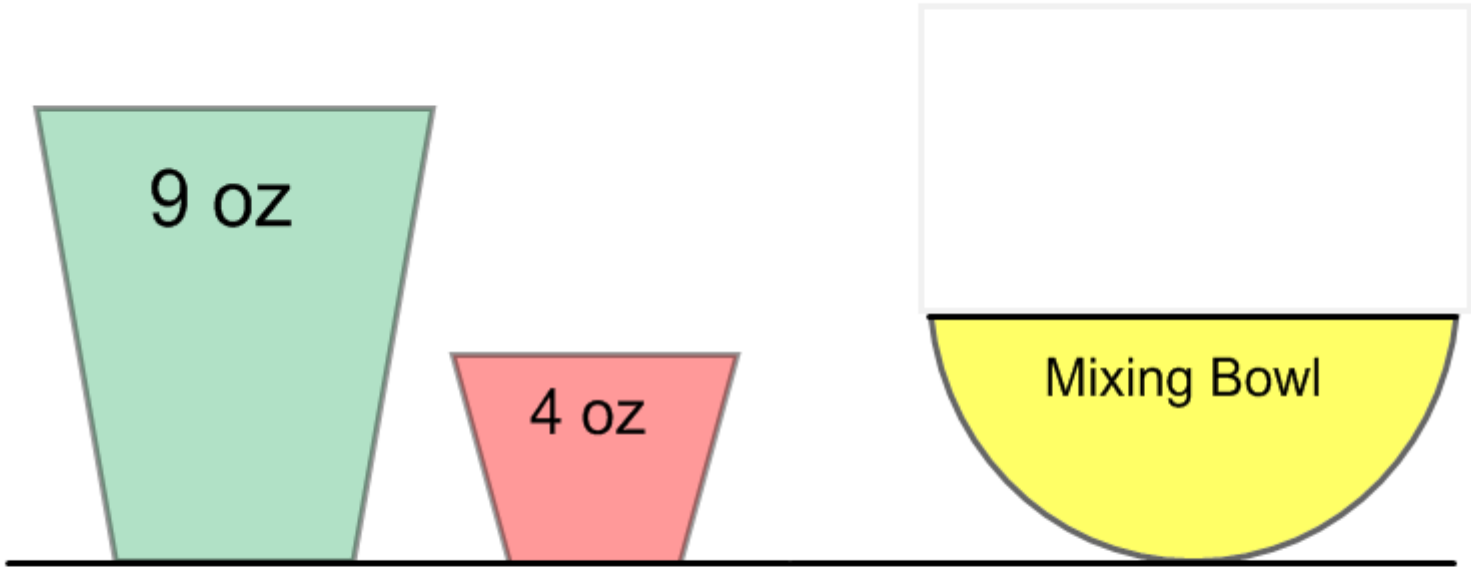
Barnston Primary is Mad about Maths

Parent Coffee Morning 8/6/15



Using *only* a 9-ounce container and/or a 4-ounce container, pour out *exactly* 6 ounces into the mixing bowl.

How do *we* measure the success of lessons?

How do you think *children* measure the success of the lessons?

What is *Mathematical Reasoning*?

Mathematical reasoning, even more so than children's knowledge of arithmetic, is important for children's later achievement in mathematics…..

Extract from 'Development of Maths Capabilities and Confidence in Primary Schools'
(Research Report – *DCSF-RR118*)

Don’t misunderstand...

Children need an understanding of number – the number system, place value

Children need to be able to calculate accurately at an appropriate level

(Get the basics right – times tables, place value, mental maths etc.)

However, we should also be teaching children to behave like mathematicians, engendering a confidence manipulating number (and shape), encouraging an attitude of enquiry.

We want there to be a buzz in maths lessons! We want all the children and parents, to be passionate about maths?

Why teach reasoning?

- Children need to be able to give a **convincing argument** that explains how or why a particular conclusion has been reached

- To become confident in mathematics they need to:
  - 'explain how you know'
  - 'explain why he/she is correct'
  - 'explain how this is possible'

Prompts for parents to guide children's reasoning

- What can you work out (from the information)?
- If you know that, what else do you know?
- Can you tell me what your thinking is?
- Shall we test that?
- Does it work?
- Do you still think it is ... ?
- Do you agree that ... ?
- Why is that bit important?
- So, what must it be?

Factors that impede successful reasoning

- Poor or unfocused interaction between children or children and adults
- Too much adult direction
- Too much adult talk

Facilitating pupil talk...

Go over times tables with them at home in exciting ways:

Mix up the order and time it/race against each other!

11x3=
3x3=
10x3=
7x3=
6x3=
1x3=
4x3=
8x3=
9x3=
2x3=
12x3=
5x3=

use codes:

E
B
AC
AD
CG
CE
CB
FC

work out number patterns together:

4 8 __ 16 __

15 20 26 __

use table knowledge to x and ÷

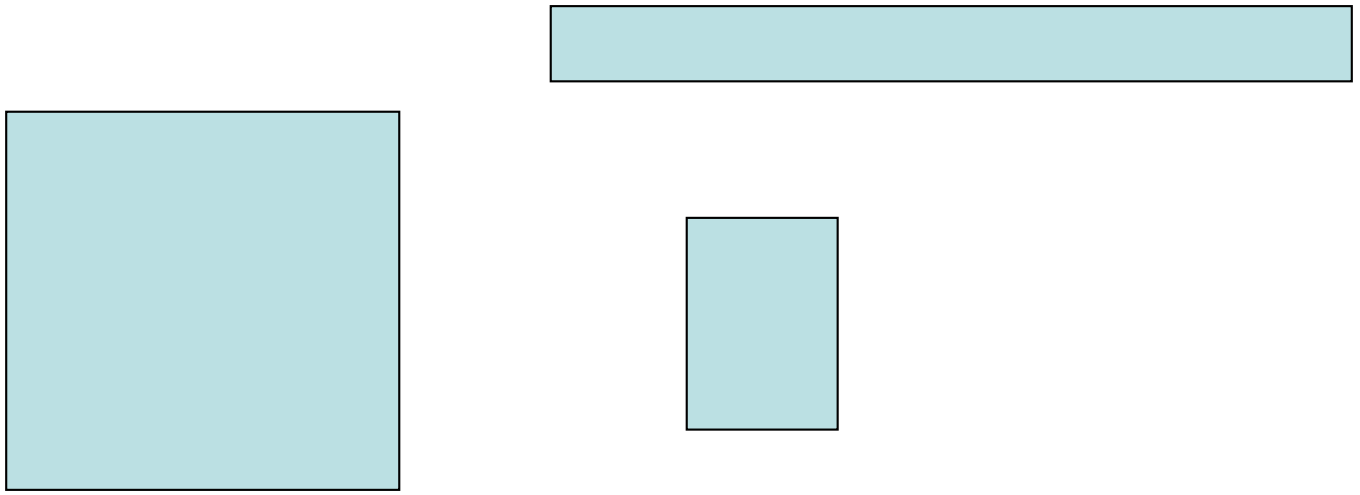
(3 15 5) (8 __ 3)

(45 5 9) (72 _ 8)

Some more ideas for reasoning

"Always, Sometimes, Never True"

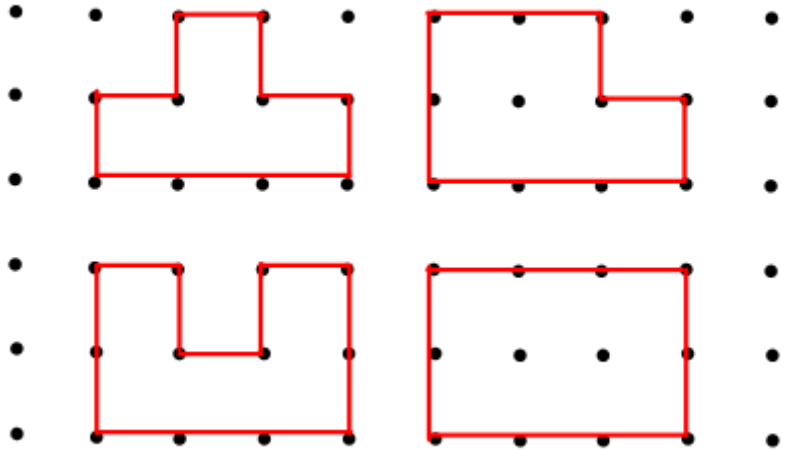
"Rectangles with larger perimeters have larger areas."



Some more ideas for reasoning

"Odd One Out"

Which shape is the odd one out, and why?



Even more ideas for reasoning

"Sorting"

Two sets have been mixed together. Can you sort the objects back into two sets? (The sets do not need to be the same size.)

34 23 16 8 28 29 32

17p 23p 12p 25p £1.05 71p 52p

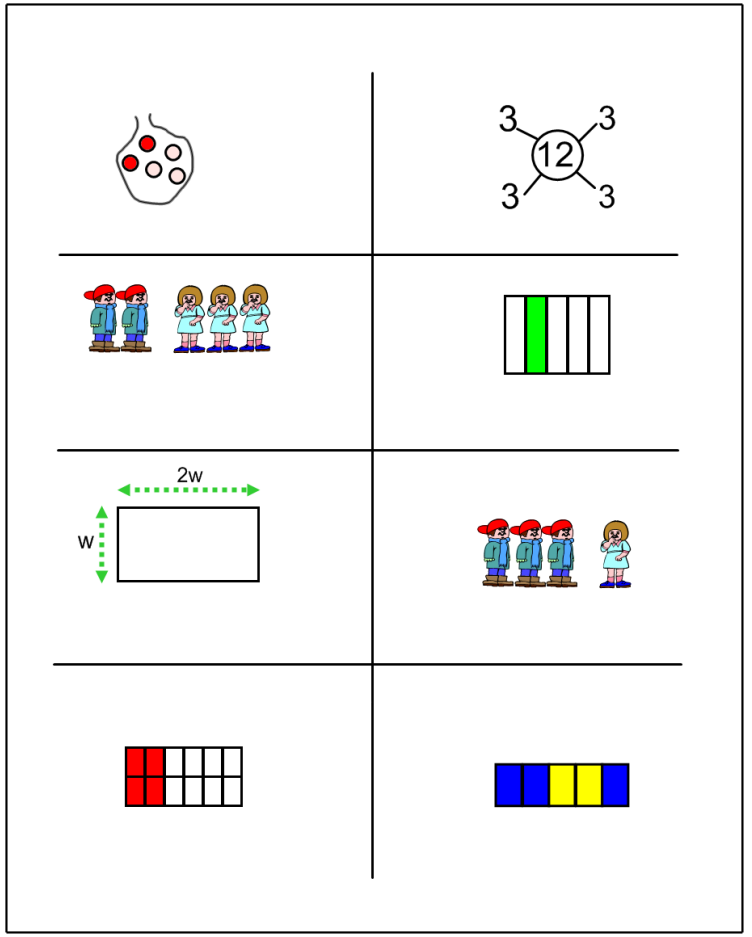
And more……

"Comparing / Contrasting"

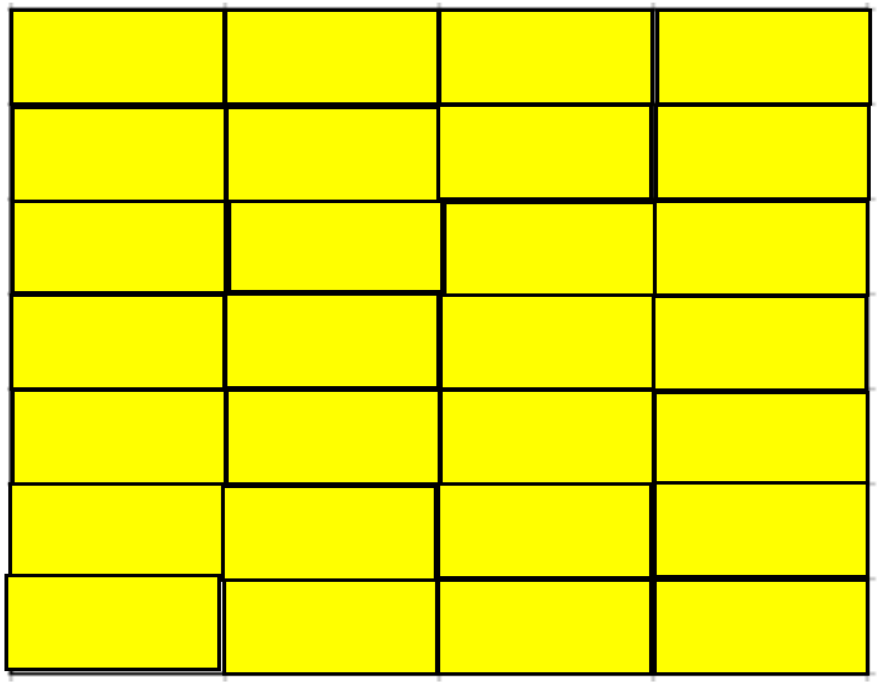
In which ways are two items similar or the same?
How are they different from the third?

Using grids

23	12	45	28	16	47
18	27	31	36	25	15
32	41	14	13	17	24
46	39	19	23	44	22

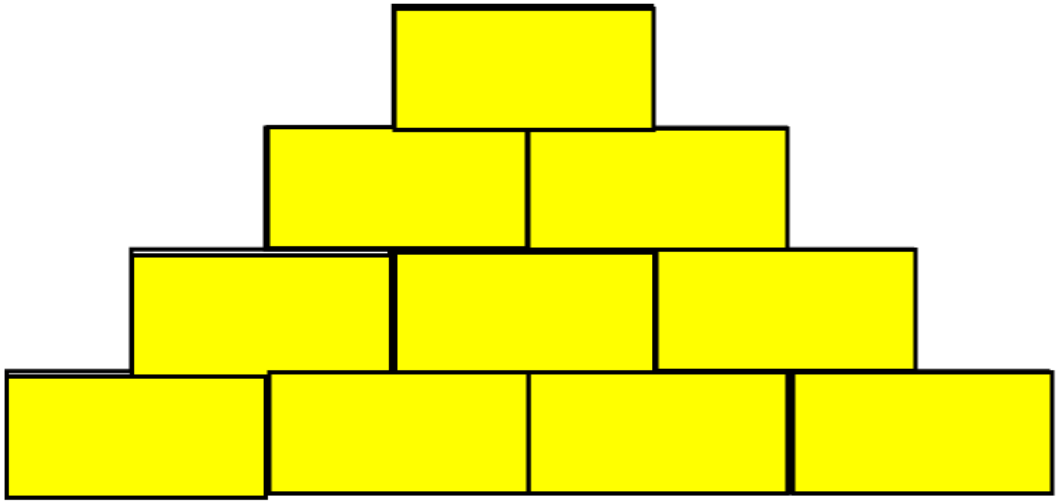


What grids/number sequences do the children in your class come across?

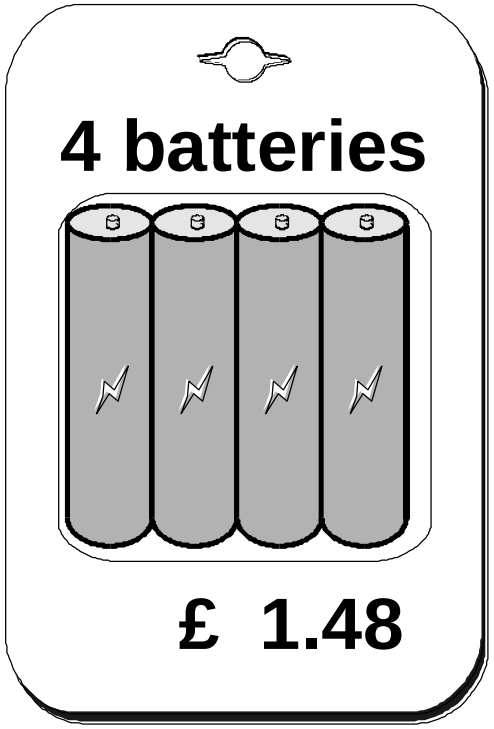


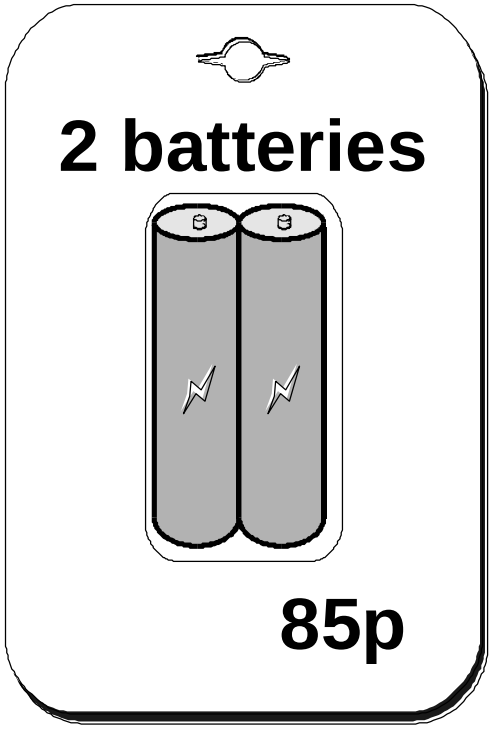
Change the size. Change the interval.
Change the starting point. Change the pattern of increase.

Or a number pyramid…



A shop sells batteries in packs of 4 and packs of 2.





Work out 10 batteries and take away from a set amount etc. Endless possibilities of questions. Write your own questions – can you make it really difficult? Can you make it into a problem rather than mathematical steps?

Use digits 2,3,5,7 only. You can use each digit once.

Use digits 1,9,6 only. You can use each digit once.

$$\square\square\square - \square\square\square = 105$$

Use digits 2,3,4,5,6,7 only. You can use each digit once.

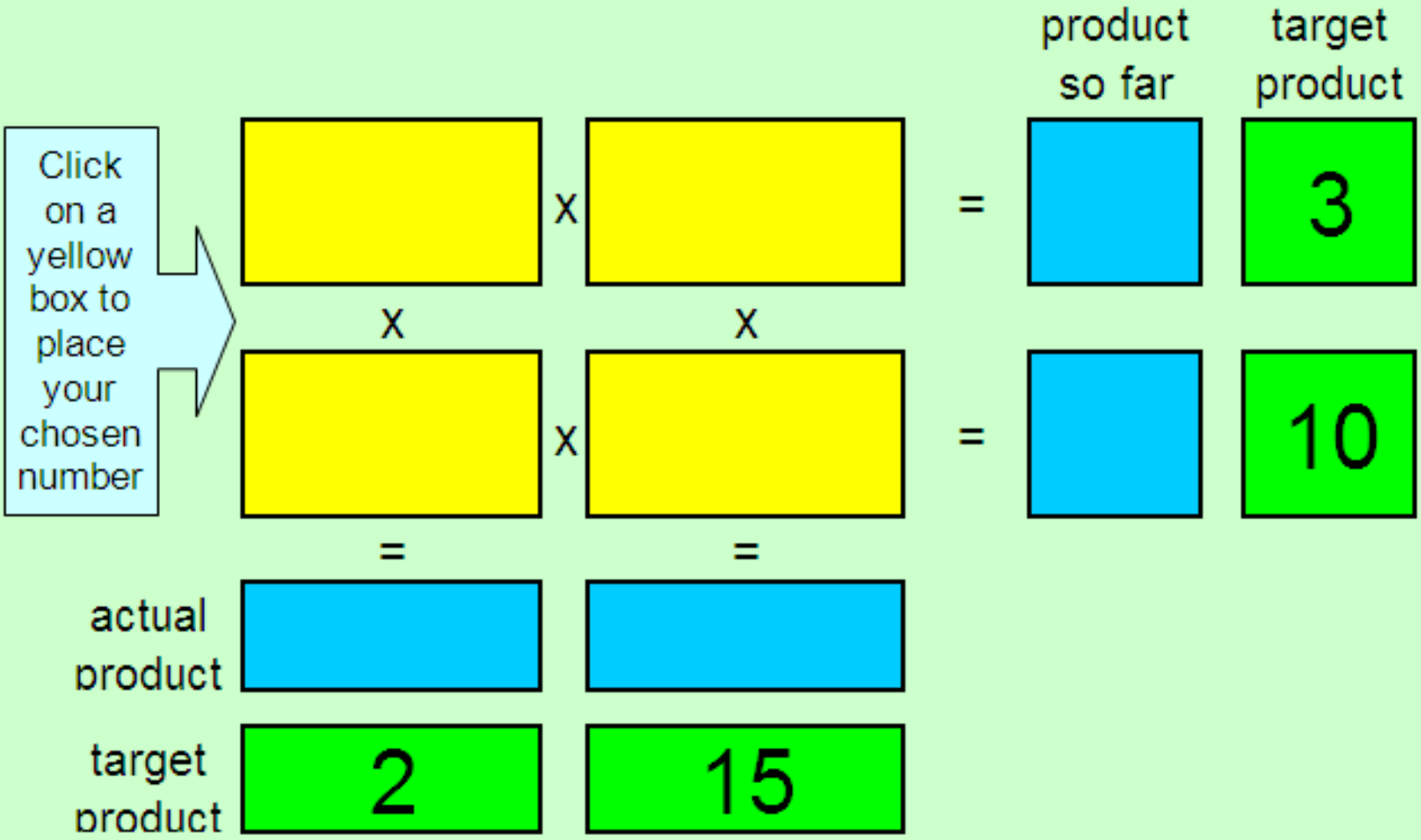
What about this...

$$4\,8\,6 - 1\,5\,9 = 3\,2\,7$$

Use digits 1 to 9 once.

Place these numbers into the yellow boxes to make the target products

1 2 3 5



ENJOY MATHS WITH YOUR FAMILY.

REASON ABOUT EVERY DAY LIFE SITUATIONS:

How can we fit all this into the car in a logical way?

I need to paint the fence panels, if 1 tin covers 1.5 panels, how many tins do we need to paint our fence?

Follow recipes – increase the amounts by halves – what will the new amounts be?

Pretend you are going to rearrange the furniture in a room, reason about where the items will fit – use estimating techniques. Move onto measuring with a tape measure. Ask your child to help you and ask what will happen if I……

Travelling in the car, estimate with your child the length of a journey – time it and reason how estimates can improve if we know the mileage of different journeys based on this estimate and timing.