

Maths - Year 2

Pattern and Algebra 7: Finding all possibilities

Key Vocabulary

Investigate	Make a check to find something out.
Systematic	Working with a fixed plan in a methodical way.
Combinations	Joining numbers or objects together in different ways.

Mathematical Skills

- Discuss and plan how to start an investigation.
- Reason that it is helpful to organise work systematically so they know they have found all possibilities.
- Develop their own ways of recording systematically.
- Check their results.

Mathematical Methods

- Finding possible combinations of two numbers equally 10.

Red cubes	Yellow cubes	Number of children who chose this combination
0	10	
1	9	
2	8	
3	7	
4	6	
5	5	
6	4	
7	3	
8	2	
9	1	
10	0	

- Exploring possible adding and subtracting facts e.g. with combinations of the numbers 10, 7, 3.

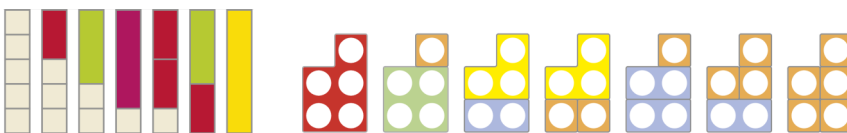
$$10 = 7 + 3 \quad 7 + 3 = 10$$

$$10 - 7 = 3 \quad 3 = 10 - 7$$

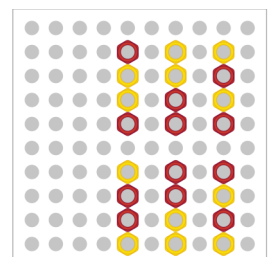
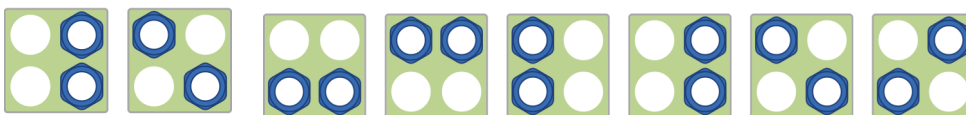
$$10 = 3 + 7 \quad 3 + 7 = 10$$

$$10 - 3 = 7 \quad 7 = 10 - 3$$

- Finding all possible ways of making 5 with numbers 1 - 5.



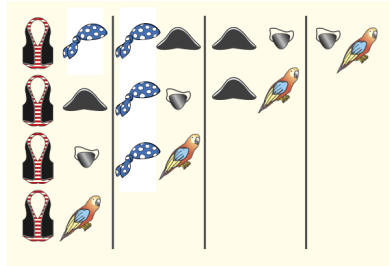
- Finding all possibilities when working with 4.



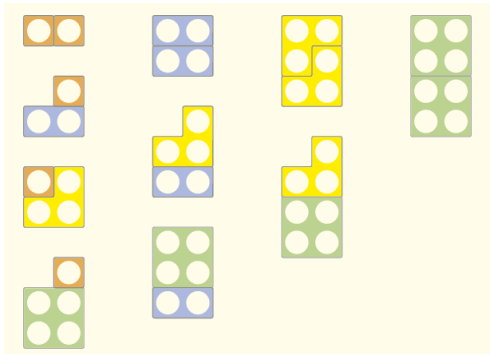
- How many different ways can you pay for something that costs 10p or £1.



- Finding all possibilities - pirate costumes.



- Finding all possibilities with a set of Numicon shapes 1 - 4.



1+1 2+2 3+3 4+4

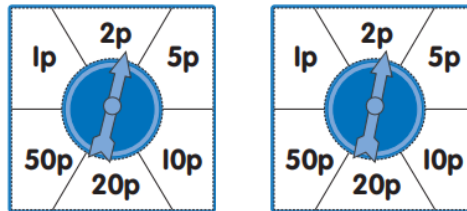
1+2 2+3 3+4

1+3 2+4

1+4

Can you..?

- What different combinations of two coins could you spin that add up to less than 20p? How do you know you have found all the different ways?



- There are three odd Numicon shapes in a bag and they are all different. If the total is greater than 12, what shapes could they be? Can you find all of the possible combinations?