

Break It Up!

Make a stick of 7 different colour cubes.
You can not change the order of the cubes.



Break the stick into two pieces
Here are 3 of the ways in which you can do it:



How many different ways can you find to break the stick?
Try sticks with a different number of cubes
Try with cubes which are all the same colour

Learning and Teaching Objectives

- Have a system for finding all possibilities
- Organise the recording of possibilities (drawings, ordered list, table)
- Describe a rule for a pattern in words or pictures

Break It Up! Solution

7 cubes of different colours

$$1 + 6$$

$$2 + 5$$

$$3 + 4$$

$$4 + 3$$

$$5 + 2$$

$$6 + 1$$

there will always be one less way of breaking the stick of cubes than the number of cubes in the stick

If the cubes are the same colour, there will be fewer ways to break the stick because

1 + 6 will now look the same as 6 + 1