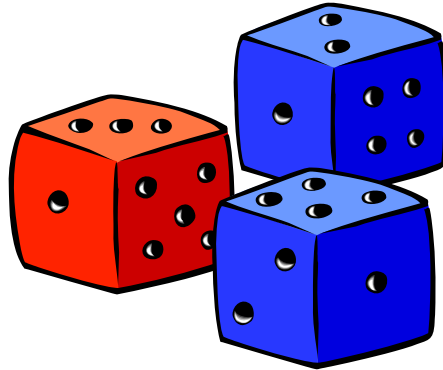
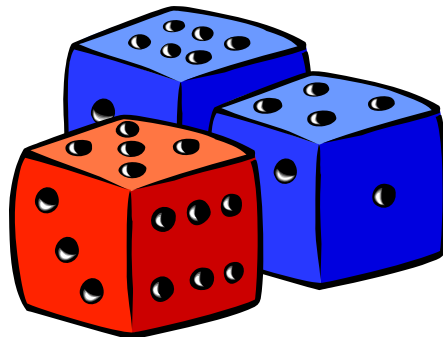


### Three Dice

Imagine rolling three dice



1. Add up all three numbers.  
How many different totals can you get?
2. Add two of the numbers and subtract the third.  
Get an answer of 5  
Find as many different ways as you can.



### Learning and Teaching Objectives

- Have a system for finding all possibilities
- Organise the recording of possibilities (ordered list, table)
- Use a method of tracking what has been included and what has not
- Have a way of deciding when all possibilities have been found

### Three Dice Solution

total	Possible dice
3	1,1,1
4	1,1,2
5	2,2,1
6	2,2,2
7	2,2,3
8	3,3,2
9	3,3,3
10	4,4,2
11	5,5,1
12	4,5,3
13	4,4,5
14	5,5,4
15	5,5,5
16	5,5,6
17	6,6,5
18	6,6,6

Difference of 5
$6 + 5 - 6$
$6 + 4 - 5$
$6 + 3 - 4$
$6 + 2 - 3$
$6 + 1 - 2$
$5 + 5 - 5$
$5 + 4 - 4$
$5 + 3 - 3$
$5 + 2 - 2$
$5 + 1 - 1$
$4 + 4 - 3$
$4 + 3 - 2$
$4 + 2 - 1$
$3 + 3 - 1$