Y3 / Y4 An addition game with four dice

Adding single digit numbers

Throw four dice. If the same value appears on two or more dice throw these again until you end up with four different numbers.

The idea is to make up as many 2-digit + 2-digit sums as possible.

How many different addition sums can you make?
Have you found all possible calculations?
What is the smallest answer?
What is the largest answer?

Put your answers in order from smallest to largest – perhaps on a number line

Y3 / Y4

A place value, an addition or a subtraction game with four dice

In pairs each person throws four dice.

The idea is to make two 2-digit numbers.

You can play an addition game or a subtraction game as follows:

Addition game

You have to decide how to rearrange your dice to make two 2-digit numbers in order to:

a) Make the largest total

b) Make the smallest total

Subtraction game

You have to decide how to rearrange your dice to make two 2-digit numbers in order to

a) Make the largest total difference or

b) Make the smallest total difference

when you subtract one number from the other.

Y4 / Y5

An addition game with 5 dice

This game requires 5 dice and two or more players.

Player 1 throws all five dice.

If either a 2 or a 5 appear then the score for that 'go' is zero and any of the dice which has a 2 or a 5 on it are removed.

The **same player continues** to throw the remaining dice. If no 2 or no 5 appears, then the score for that 'go' is the total of all spots showing.

For example if I throw 3, 1, 5, 6, 6 then I score zero because a 5 appeared. I now remove the 5 and for my next go I throw the remaining four dice

If on the next go I get 6, 1, 3, 4 (so no 2 or no 5 appears) I score 6 + 1 + 3 + 4 to make a total of 14. I then throw the four dice again.

Below is a full set of 'throws' together with the running totals:

1st throw	3, 1, 5, 6, 6	Total score 0 (because a 5 was thrown)
2nd throw	6, 1, 3, 4	14
3rd throw	2, 4, 4, 5 (score 0)	14 (Remove the dice with 2 and the 5)
4th throw	3, 6 (score 9)	23 (9 + 14)
5th throw	1, 4 (score 5)	28 (23 + 5)
6th throw	2, 6 (score 0)	28 (Now remove the dice with the 2)
7th throw	4 (score 4)	32
8th throw	3 (score 3)	35 (32 + 3)
9th throw	5 (score 0)	35

The final total for this is 35

The next player then takes the 5 dice and the game continues.

Y4 / Y5 / Y6

A game with six dice

This game is about scoring runs that always begin at 1

The first player throws all six dice and scores a certain number of points if any of the following combinations appear:

1, 2 (and anything else which is not a 3)

This scores 3

1, 2, 3 (and anything else which is not a 4)

This scores 6

1, 2, 3, 4 (and anything else which is not a 5)

This scores 10

1, 2, 3, 4, 5 (and anything else which is not a 6)

This scores 15

1, 2, 3, 4, 5, 6

This scores 21

Of course there could be two runs so a throw of

1, 2, 1, 3, 5, 2 could score 1+2+3 + 1+2 = 9

Likewise a throw of 2, 1, 1, 2, 2, 1 will score 1+2 + 1+2 + 1+2 = 9

Players take turns. See who has the highest running total after each player has had 10 turns.