

Consecutive Numbers

Consecutive numbers are numbers which follow each other in order, without gaps.

5, 6, 7 and 8 are consecutive numbers.

Sometimes they are in reverse order when a countdown is happening, maybe for a rocket launch. However, they usually happen in an order going up, like when you turn each page of your reading book.

This investigation uses consecutive numbers. You are going to explore them with your mathematical brain. You never know, you might discover something really exciting!

First:

Choose four consecutive numbers between 10 and 50.

e.g. 11, 12, 13 and 14

____, _____, _____ and _____

Second:

Place a plus or minus between each of the chosen four until you have found all the possibilities

e.g.

$$11 + 12 + 13 + 14 =$$

$$11 - 12 + 13 + 14 =$$



Third:

Find the answers to each of your calculations.

e.g.

$$11 + 12 + 13 + 14 = 50$$

$$11 - 12 + 13 + 14 = 26$$

Fourth:

Try another set of consecutive numbers. What you notice? Compare your two sets of answers and begin to make predictions of what might happen with other sets of consecutive numbers.

Does the same thing happen when five consecutive numbers are used? What do you notice? Record your findings.

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First:

Choose four consecutive numbers between 10 and 50.

e.g. 11, 12, 13 and 14

11, 12, 13 and 14

Any four consecutive numbers between 10 and 50.

Second:

Place a plus or minus between each of the chosen four until you have found all the possibilities

e.g.

$$11 + 12 + 13 + 14 =$$

$$11 - 12 + 13 + 14 =$$

$$11 + 12 + 13 + 14 =$$

$$11 - 12 + 13 + 14 =$$

$$11 + 12 - 13 + 14 =$$

$$11 + 12 + 13 - 14 =$$

$$11 - 12 - 13 + 14 =$$

$$11 - 12 + 13 - 14 =$$

$$11 + 12 - 13 - 14 =$$

$$11 - 12 - 13 - 14 =$$

Above are all the plus and minus possibilities for any set of four consecutive numbers.

Third:

Find the answers to each of your calculations.

e.g.

$$11 + 12 + 13 + 14 = 50$$

$$11 - 12 + 13 + 14 = 26$$

$$11 + 12 + 13 + 14 = 50$$

$$11 - 12 + 13 + 14 = 26$$

$$11 + 12 - 13 + 14 = 24$$

$$11 + 12 + 13 - 14 = 22$$

$$11 - 12 - 13 + 14 = 0$$

$$11 - 12 + 13 - 14 = -2$$

$$11 + 12 - 13 - 14 = -4$$

$$11 - 12 - 13 - 14 = -28$$

Fourth:

Try another set of consecutive numbers. What do you notice? Compare your two sets of answers and begin to make predictions of what might happen with other sets of consecutive numbers.

Children should comment on how all of the answers are even. Depending on which order they have written their calculations down they may comment on how each answer decreases as you look down the calculations. They should comment how this happens for both sets of consecutive numbers. They might begin to make other predictions about what they think might happen for other sets of consecutive numbers.

Does the same thing happen when five consecutive numbers are used? What do you notice? Record your findings.

Children should comment on how when 5 consecutive numbers are added and subtracted the answer is always an odd number. They may also notice how there are some similarities between the four and five consecutive numbers too.