Playing Around With Numbers

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INTRODUCTION

The following ideas would be suitable across the KS1 to KS4 age range… it all depends upon how far students are able to extend their thinking from numerical to finding algebraic solutions.

MATHEMATICAL CONTENT

- Sequences

APPLICABILITY

KS1 – KS4

The idea is for pupils to write the answers three 'easy' calculations.

Having done this the intention is for them to continue the patterns and analyse outcomes.

I would intentionally only give one sequence sheet out at a time so pupils do not merely answer each calculation and consider they have 'finished' having completed the final sequence. This also embraces differentiated learning in terms of deepening pupils' understanding of what is 'going on'.

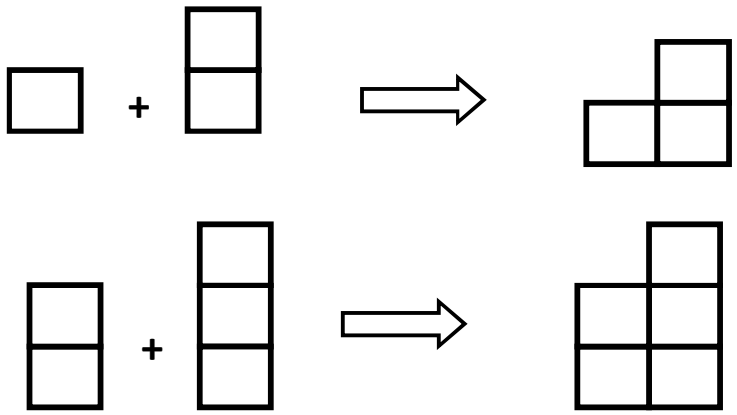
Some pupils may benefit by using squares or linking cubes or being asked to draw pictures.

Sequence A

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

Continue the pattern.
What do you notice about the answers?
Why does it happen?

So a picture which might help pupils understand what is 'going on' in the above problem might look as follows:



Sequence B

1 + 3 =

3 + 5 =

5 + 7 =

Continue the pattern.

What do you notice about the answers?

Why does it happen?

Sequence C

1 = 1

1 + 3 =

1 + 3 + 5 =

1 + 3 + 5 + 7 =

Continue the pattern.

What do you notice about the answers?

Why does it happen?

Sequence D

1 = 1

1 + 2 + 1 =

1 + 2 + 3 + 2 + 1 =

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

Continue the pattern.

What do you notice about the answers?

Why does it happen?

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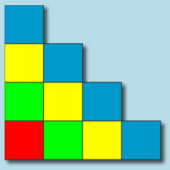

Sequence E

1 + 2 + 3 =

2 + 3 + 4 =

3 + 4 + 5 =

Continue the pattern.

What do you notice about the answers?

Why does it happen?

Sequence F

1 = 1

1 + 2 =

1 + 2 + 3 =

1 + 2 + 3 + 4 =

Continue the pattern.

What do you notice about the answers?

Why does it happen?

Sequence G

For the following sequence pupils might be given a square piece of paper and some scissors

½ = ½

½ + ¼ =

½ + ¼ + ? =

Continue the pattern.

What do you notice about the answers?

Why does it happen?