Shotton Hall Primary School

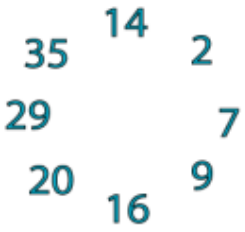
Working together to

S H I N E

Successful, Happy, Inspired and Nurtured towards Excellence

Maths Challenge

In the circle of numbers below each adjoining pair adds to make a square number:



For example,

$14 + 2 = 16, 2 + 7 = 9, 7 + 9 = 16$

and so on.

Can you make a similar - but larger - cycle of pairs that each add to make a square number, using all the numbers in the box below, once and once only?

2, 3, 4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 17, 19, 21, 28, 30, 34.

Can you order the digits 1, 2 and 3 to make a number which is divisible by 3?
And when the final digit is removed again it becomes a two-digit number divisible by 2,
then finally a one-digit number divisible by 1?

Can you order the digits 1, 2, 3 and 4 to make a number which is divisible by 4?
And when the final digit is removed it becomes a three-digit number which is divisible by 3.
And when the final digit is removed again it becomes a two-digit number divisible by 2,
then finally a one-digit number divisible by 1?

Can you order the digits 1, 2, 3, 4 and 5 to make a number which is divisible by 5?
And when the final digit is removed it becomes a four-digit number which is divisible by 4.
And when the final digit is removed it becomes a three-digit number which is divisible by 3.
And when the final digit is removed again it becomes a two-digit number divisible by 2,
then finally a one-digit number divisible by 1?

What systems are you using?
What do you know about numbers which can be divided by 3, 4, 5?
Now what about taking this further for digits 1, 2, 3, 4, 5, and 6?
What do you know about numbers which can be divided by 6, 7, 8 and 9?