nrich.

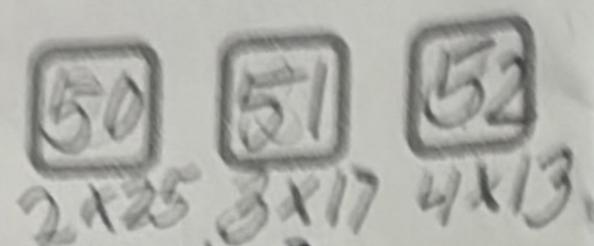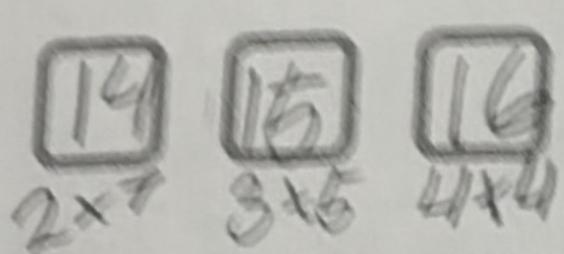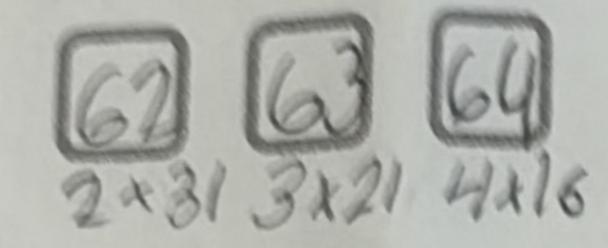Nimyah Smith

Here are some challenges involving consecutive numbers and multiples.
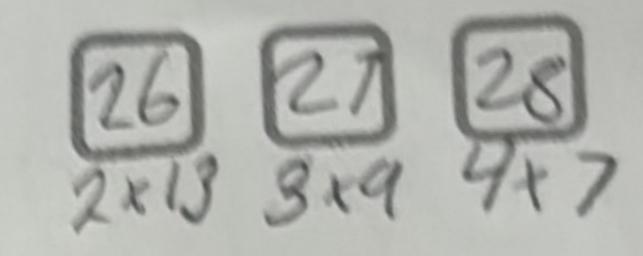
Can you find **three consecutive numbers** where the first is a multiple of 2, the second is a multiple of 3 and the third is a multiple of 4?

$$\boxed{50} \quad \boxed{51} \quad \boxed{52}$$
2×25 3×17 4×13

Can you find several examples?

$$\boxed{14} \quad \boxed{15} \quad \boxed{16}$$
2×7 3×5 4×4

$$\boxed{62} \quad \boxed{63} \quad \boxed{64}$$
2×31 3×21 4×16

$$\boxed{26} \quad \boxed{27} \quad \boxed{28}$$
2×13 3×9 4×7

What do you notice?
Can you explain your findings?

The last number is always an even number the is at least
one example of consecutive numbers

What if the first is a multiple of 3, the second is a multiple of 4, and the third is a multiple of 5?

123 124 , 125
3×41 4×31 5×25

What if the first is a multiple of 4, the second is a multiple of 5, and the third is a multiple of 6?

64, 65, 66
4×16 5×13 6×11

Is there a way to find sets of **four consecutive numbers** which are multiples of 2, 3, 4, and 5 (in this order)?

122 , 123 , 124 , 125
2×61 3×41 4×31 5×25

Or **five consecutive numbers** which are multiples of 2, 3, 4, 5, and 6 (in this order)?

122 , 123 , 124 , 125 , 126
2×61 3×41 4×31 5×25 6×21

Can you use what you have discovered to help you find a few sets of ten consecutive numbers in which:

- the first is a multiple of 1   1,261   1621×1
- the second is a multiple of 2   1,262   631×2
- the third is a multiple of 3   1,263   421×3
- the fourth is a multiple of 4   1,264   316×4
- the fifth is a multiple of 5   1,265   253×5
- the sixth is a multiple of 6   1,266   211×6
- the seventh is a multiple of 7   1,267   181×7
- the eighth is a multiple of 8   1,268   158.5×8 rounded
- the ninth is a multiple of 9   1,269   144×9
- the tenth is a multiple of 10?   1,270   127×10