Multiply by 8

$8 \times 3 = \underline{\quad}$
$2 \times 4 \times 3 = \underline{\quad}$
$2 \times 2 \times 2 \times 3 = \underline{\quad}$

What do you notice?
Why do you think this has happened?

Jack calculates 8×6 by doing
5×6 and 3×6 and adding them.

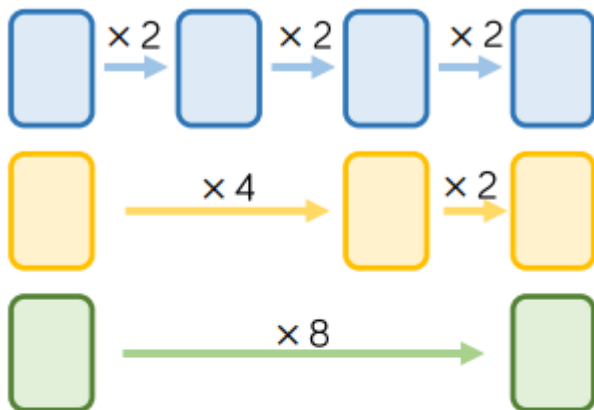$\underline{\quad} + \underline{\quad} = \underline{\quad}$

Ron calculates 8×6 by doing
$4 \times 6 \times 2$

$\underline{\quad} \times 2 = \underline{\quad}$

Whose method do you prefer?
Explain why.

Start each function machine with the same number.

What do you notice about each final answer?

Tommy knows the 4 times table table, but is still learning the 8 times table table.

Which colour row should he use? Why?

Reasoning and Problem Solving

$8 \times 3 =$ ___
$2 \times 4 \times 3 =$ ___
$2 \times 2 \times 2 \times 3 =$ ___

What do you notice?
Why do you think this has happened?

All of the answers are equal.
8 has been split (factorised) into 2 and 4 in the second question and 2, 2 and 2 in the third.

Jack calculates 8×6 by doing 5×6 and 3×6 and adding them.

___ + ___ = ___

Ron calculates 8×6 by doing $4 \times 6 \times 2$

___ $\times 2 =$ ___

Whose method do you prefer? Explain why.

Possible answers:
I prefer Jack's method because I know my 5 and 3 times tables.
I prefer Ron's method because I know my 4 times table and can double numbers.

Start each function machine with the same number.
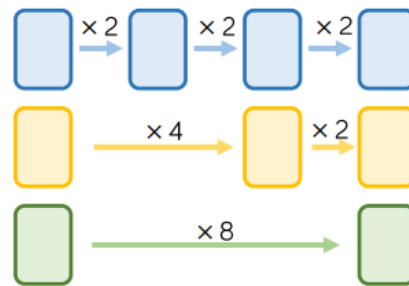
What do you notice about each final answer?

Tommy knows the 4 times table table, but is still learning the 8 times table table.

Which colour row should he use? Why?

Each time the final number is 8 times greater than the starting number.

Tommy should use the yellow row because he can double each multiple of 4 to calculate a number multiplied by 8 e.g. $4 \times 6 = 24$ so 8×6 is double that (48).