

4 × 4 challenge

Working in table groups or with a partner, see if you can complete this number 4 themed challenge!

Can you use four number 4s in different ways to make all numbers from 0 to 10?

For this challenge you can use exactly four number 4s and any operations. For example, to make the number 4 you could do the following:

$$4 = 4 \times (4 - 4) + 4$$

The brackets show that you should do that part of the calculation first.

This works because:

- $4 - 4 = 0$
- So $4 \times (4 - 4)$ is the same as 4×0 , which equals 0
- If you add 0 and 4 you get 4, so $4 \times (4 - 4) + 4 = 4$!

Work together slowly, doing a small bit of each calculation at a time. Can you find more than one way of making each number?

4 × 4 challenge – solution

You should work out the parts in brackets before you do the rest of the calculation.

$$0 = 4 + 4 - 4 - 4$$

$$1 = (4 \div 4) + 4 - 4$$

$$2 = (4 \div 4) + (4 \div 4)$$

$$3 = (4 + 4 + 4) \div 4$$

$$4 = 4 \times (4 - 4) + 4$$

$$5 = (4 \times 4 + 4) \div 4 \quad \text{or} \quad ((4 \times 4) + 4) \div 4$$

$$6 = (4 + 4) \div 4 + 4$$

$$7 = 44 \div 4 - 4 \quad \text{or} \quad 4 + 4 - (4 \div 4)$$

$$8 = 4 + 4 + 4 - 4$$

$$9 = 4 + 4 + (4 \div 4)$$

$$10 = (44 - 4) \div 4$$