Maths - Year 4

Pattern and Algebra 3: Exploring 'equals' in balancing number sentences
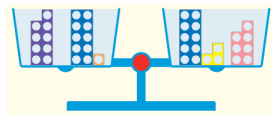
Key Vocabulary

Equivalent	Different ways of representing the same value, e.g. 6 + 2 is equivalent to 8.
Brackets	Used to show the order in which calculations are carried out.
Balancing calculations	A calculation that uses the equals symbol to claim that two expressions are equal e.g. 80 + 110 = 140 + 50.
Adjusting/ Compensating	Making a small change to a calculation, making it easier to solve.

Mathematical Skills

- Use the < and > symbols to compare expressions in balancing number sentences and explain their reasoning.
- Adjust and compensate numbers in balancing number sentences without calculating.
- Explain that Numicon Shapes can be used to stand for different missing numbers.
- Explain the knowledge they have drawn on to solve missing number problems e.g. complements, doubles, inverse.
- Explain that brackets are used to show the order in which calculations are to be carried out.
- Explain that three numbers can be multiplied together in any order and the product will be the same.

Mathematical Methods

- Using symbols to show inequalities.

$$39 + 34 < 49 + 34 \text{ and } 49 + 34 > 39 + 34.$$

- Exploring balancing number sentences e.g. 9 + 11 = 13 + 7

- Finding missing numbers in balancing number sentences.

- Solving problems where shapes stand for unknown numbers.

- Exploring equivalence in subtracting sentences e.g. £10 - £6 = £12 - £☐

- Using number rods to explore equivalence.

$$10 + \square = 12 + 4 \qquad 19 + 6 = 5 \times \square$$
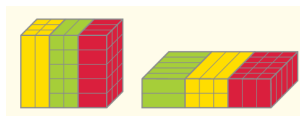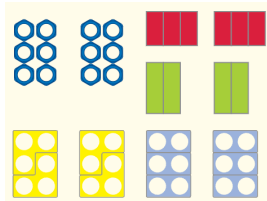
- Introducing recording with brackets.

$4 + (2 \times 3) = 10$

$(4 + 2) \times 3 = 18$
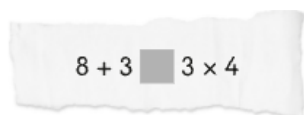
- Exploring the associative property of multiplying.

E.g. 2 x 3

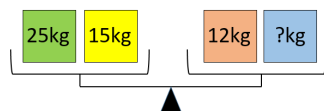$(2 \times 5) \times 3 = (2 \times 3) \times 5 = (3 \times 5) \times 2.$

Can you..?

- Work out the missing sign.

$8 + 3 \boxed{} 3 \times 4$

- Balance the scale.

25kg 15kg   12kg ?kg

- Write balancing number sentences for the rods.

- Add brackets to the correct place in the number sentence.

6 + 6 x 3 = 24