Maths - Year 5

Pattern and Algebra 5: Using equivalence to solve problems

Key Vocabulary

Factor	A number that divides into another number exactly.
Compensate	Adjust numbers to make a calculation easier.
Complements	Numbers that add together to make a given total, e.g. 25 and 75, 50 and 50 are complements to 100.

## 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 symbols can be used to stand for different missing numbers.
- Solve missing number problems using an expanding knowledge of e.g. complements, doubles, inverses.
- Explain that brackets are used to show the order in which calculations are to be carried out.

Mathematical Methods

- Using symbols to show inequalities e.g. 78 + 30 > 79 + 28.
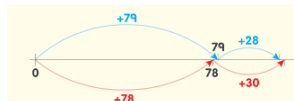
- Exploring inequalities with missing numbers.

$132 + 5 > 4 + \square$,
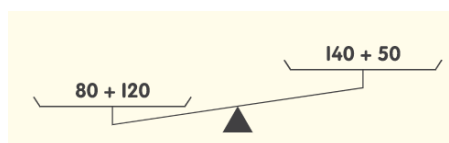
$76 - \square > 76 - 8$,

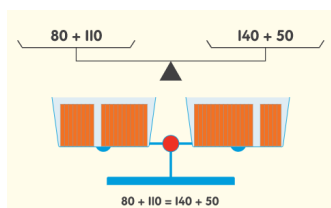$400 - 5 < 401 - \square$,

$30 \times 5 > 30 \times \square$,
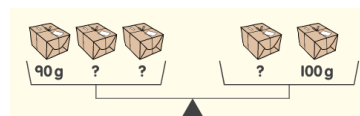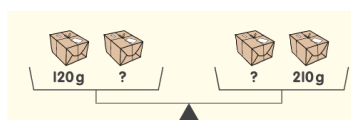
$17 \times 6 < \square \times 6$,

$300 \div 10 > 300 \div \square$.

- Exploring balancing number sentences.

- Finding missing numbers in balancing number sentences.

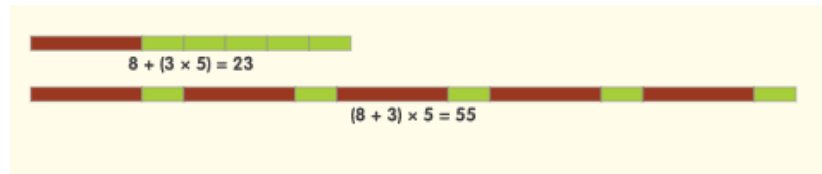- Solving problems where symbols stand for unknown numbers.

$$\blacklozenge \times \blacktriangledown = \bigcirc + 30$$
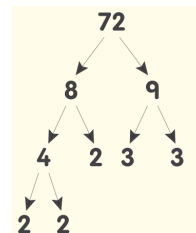
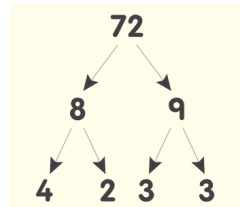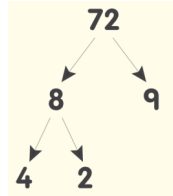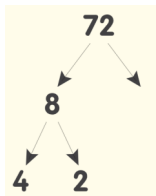$\bigstar + \square = \clubsuit \times \pentagon$

$\square \times \blacktriangleright = \bigcirc - \blacktriangledown$

$\bigstar + \square + \square = \clubsuit \times \bigcirc$

- Recording with brackets.

$8 + (3 \times 5) = 23$

$(8 + 3) \times 5 = 55$

- Introducing factor trees.

72

8

4   2

72

8   9

4   2

72

8   9

4   2   3   3

72

8   9

4   2   3   3

2   2

$2 \times 2 \times 2 \times 3 \times 3 = 72$

Can you..?

- Complete $347 = 25 > 349 +$ ☐

- Create 3 solutions to the balancing number sentence ★ + ▲ + ▲ = ◆ x ⬡

- Put the brackets in the correct place : $3 \times 4 + 2 \times 5 = 90$.

- Draw a factor tree for 210.