

Mathematics

# Representing inequalities

## Downloadable Resource

Mr Millar



# Try this

Organise these statements into groups.

What's the same or different about your groups?

How could you describe each group?

$$a > 5$$

$$a \leq 5$$

$$5 > a$$

$$a < 5$$

$$a \geq 5$$

$$5 \leq a$$

$$a = 5$$



# Independent task

Decide whether each statement is **true** or **false**.

$$2 + 20 < 3 + 20$$

$$20 + 2 < 20 + 3$$

$$2 \times 10 \leq 3 \times 10$$

$$2 \times 10 \geq 3 \times 10$$

$$2 - 20 < 3 - 20$$

$$20 - 2 < 20 - 3$$

$$10 \div 2 < 10 \div 3$$

$$2 \div 10 < 3 \div 10$$

Place a =, < or > in each statement

$$2 + 40 \quad 3 + 20$$

$$2 \times 0.4 \quad 3 \times 0.4$$

$$6 - 10 \quad 4 - 8$$

$$15 \div 5 \quad 5 \div 15$$



# Explore

- There are some red, green and blue counters in bag.
- There are more red counters than blue counters.
- There are more green counters than red and blue combined.

How could you express this information using inequalities?

How many red, blue and green counters could there be if there are 10 counters in total?

What if there are 11 counters?



# Answers



# Try this

Organise these statements into groups.

What's the same or different about your groups?

How could you describe each group?

Note that  $5 > a$  and  $a < 5$  have the same meaning.

So do  $a \geq 5$  and  $a \leq 5$

There are many other ways to divide into groups.

$$a > 5$$

$$a \leq 5$$

$$5 > a$$

$$a < 5$$

$$a \geq 5$$

$$5 \leq a$$

$$a = 5$$



# Independent task

Decide whether each statement is **true** or **false**.

Place a =, < or > in each statement

$$2 + 20 < 3 + 20$$

T

$$20 + 2 < 20 + 3$$

T

$$2 + 40 > 3 + 20$$

$$2 \times 10 \leq 3 \times 10$$

T

$$2 \times 10 \geq 3 \times 10$$

F

$$2 \times 0.4 < 3 \times 0.4$$

$$2 - 20 < 3 - 20$$

T

$$20 - 2 < 20 - 3$$

F

$$6 - 10 = 4 - 8$$

$$10 \div 2 < 10 \div 3$$

F

$$2 \div 10 < 3 \div 10$$

T

$$15 \div 5 > 5 \div 15$$



# Explore

- There are some red, green and blue counters in bag.
- There are more red counters than blue counters.
- There are more green counters than red and blue combined.

How could you express this information using inequalities?

$r > b$  and  $g < r + b$  where  $r, b, g$  are whole numbers

How many red, blue and green counters could there be if there are 10 counters in total?

1B, 2R, 7G OR 1B, 3R, 6G

What if there are 11 counters?

1B, 2R, 8G OR 1B, 3R, 7G OR 1B, 4R, 6G OR 2B, 3R, 6G

