Inequality Symbols

Equality and Inequality

larger > smaller
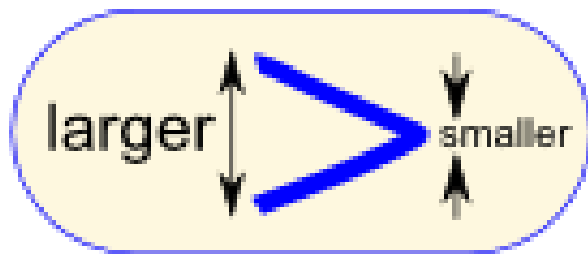
= equal

≠ not equal

> greater than

≥ greater than or equal

< less than

≤ less than or equal

Examples:

x < 5   means x is less than 5

p ≥ 100   means p is greater than or equal to 100

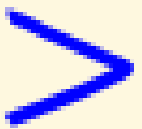y > -2   means y is greater than -2

Other Topics/Units this could appear in:

- Numbers, powers, roots, decimals and rounding
- Expressions and substituting into a formula
- Expand and simplify
- Solving equations

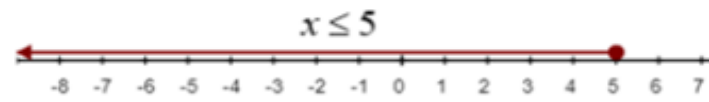| Keyword/Skill	Definition/Tips
Integer	Whole number including 0 and negative numbers. No fractions or decimals.
Inequality	Compares two values showing if one is less than, greater than or not equal to each other.
Greater than	One number is BIGGER than another number.
Less than	One number is SMALLER than another number.
Equal to	Two things have the SAME value.
Equation	Says that two things are equal. (1 + 1 = 2).
Satisfy	A value that solves an equation. E.g. $2x + 1 = 9$ x =4 so x=4 satisfies the equation.
Variable	A symbol for a number we don't know yet, usually a letter.
Coefficient	A number used to multiply a variable. E.g. $6y = 6 \times y$. y is the variable and 6 is the coefficient.
Inverse	Opposite of (i.e. x and ÷, + and -)
Solve	Find all of the values that satisfy the inequality.

Y8 Mastery Unit 3 – Forming and Solving Inequalities

Inequalities Symbols on a Number Line

Symbol	Circle		Direction of Arrow
<	Open	○	Left
>	Open	○	Right
≤	Closed	●	Left
≥	Closed	●	Right

We use open and/or closed circles to represent inequalities on a number line. A closed circle means that the number **is** included in the represented group of values. An open circle means that the number **is not** included in the represented group of values.

Examples:

$x > 5$

$x < -1$

$x \geq 3$

$x \leq 5$

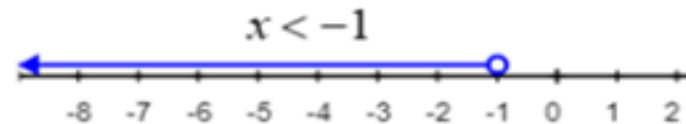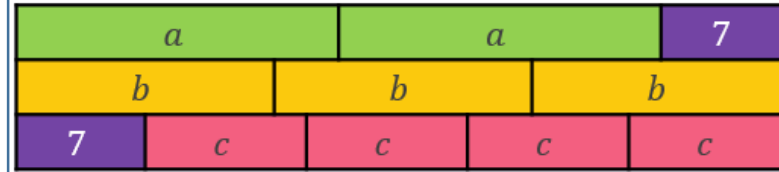| Keyword/Skill	Definition/Tips
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Solving Inequalities

Solving an inequality means finding the range of values that **satisfy** the inequality.

$$3x + 7 < 22$$

$$22 - 7 = 15$$

$$3x < 15$$

$$x < 5$$

We can also use bar models to form new inequalities.

e.g.
$$2b < 2a$$
$$4c + 7 = 2a + 7$$
$$3b > 4c$$

$$2x + 3 < 17$$

$$17 - 3 = 14$$

$$2x < 14$$

$$x < 7$$

$$2x + 3 < x + 17$$

$$17 - 3 = 14$$

$$2x < x + 14$$

$$x < 14$$

We can use bar models to represent the size of each side of the inequality. This allows us to see how much bigger/smaller one side is compared to the other. It also allows us to make changes to both sides in order to solve the inequality.

Keyword/Skill	Definition/Tips
Product	Means multiply
Prime number	A number that has exactly two **factors**
Integer	Whole number including 0 and negative numbers. No fractions or decimals.
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