Inequalities – Knowledge Organiser

Objective
Understand and use correct vocabulary and notation associated with inequalities
Write down integer values that satisfy a given inequality
Show and identify inequalities on number lines
Solve linear inequalities in one variable and represent solution on a number line

Key Facts

Symbols

$x < 2$ means x is less than 2
$x \leq 2$ means x is less than or equal to 2
$x > 2$ means x is greater than 2
$x \geq 2$ means x is greater than or equal to 2

Representation

On a number line circles are used to highlight key values:

○ is used for less/greater than
● is used for less/greater than or equal to

1) State the values of n that satisfy:

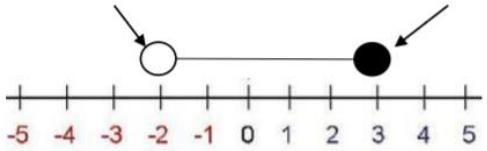
$-2 < n \leq 3$

Cannot be equal to 2 can be equal to 3

-1, 0, 1, 2, 3

2) Show $-2 < n \leq 3$ on a number line

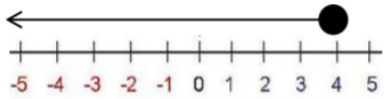
Cannot be equal to 2 can be equal to 3



Solving Inequalities

Solve this inequality and represent the answer on a number line:

$5x - 6 \leq 14$
$+6 \quad +6$
$5x \leq 20$
$\div 5 \quad \div 5$
$x \leq 4$



Solve the inequality with the same steps as solving an equation

Key Concept Check

- Show me an inequality with the solution x ≥ 5. And another. And another …
- How can we solve 4 < 4x < 20 and represent the answer on a number line?

Key words used in this unit:

Inequality – The relationship between two expressions that are not equal

Integer – A whole number

Solution set – The set of values that satisfy a given set of equations or inequalities.

Solve – Find a numerical value that satisfies the equation or inequality

Unknowns – A number or set of numbers that we do not know or need to find, usually given as a letter/symbol.

Variable – A letter used to stand for a number