Stage 8 – Algebra: solving equations and inequalities

Know it!

Knowledge	
I know...	How to solve equations with unknowns on one side including negative and fractional answers.
I know...	How to solve equations with unknowns on both sides including with brackets, and negative or fractional answers.
I know...	That the point of intersection of two graphs is the solution to a connected equation.

Link it!

Backward	Forward
Solving one and two step equations. Inverse operations. Expanding brackets.	Forming and solving equations. Solving inequalities.

Prove it!

What's the same, what's different? :
$2x + 7 = 25$ $3x + 7 = x + 25$ $x + 7 = 7 - x$ $4x + 14 = 50$

Show me a two-step equations with a solution of -8. And another. And another.

Say it!

Vocabulary	Definition
Algebra	Algebra uses letters (like x or y) or other symbols in place of values.
Unknown (Variable)	A symbol for a value we don't know yet. It is usually a letter like x or y.
Equation	An equation says that two things are equal. E.g. $4x - 7 = 16$
Operation	A mathematical process. The most common are add, subtract, multiply and divide (+, −, ×, ÷). But there are many more, such as squaring, square root etc.
Inverse operation	The operation that reverses the effect of another operation. E.g. Addition and subtraction are inverse operations.
Solve	To find a value (or values) we can put in place of a variable that makes the equation true. Example: x + 2 = 7; x = 5.
Solution	The answer when asked to solve an equation. When we put 5 in place of x we get: 5 + 2 = 7. 5 + 2 = 7 is true, so x = 5 is a solution
Substitute	Putting values where the letters are.
Point of intersection	The coordinate where two or more line cross each other.