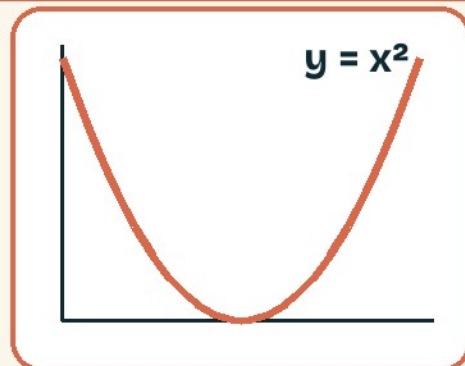


Functions and Graphs

Rules that turn inputs into outputs

WHAT IS IT?

A function is a rule: put a number in and you get exactly one number out. A graph draws that rule as a picture, so you can see how one thing changes with another.



THE BIG IDEAS

- 1 One input gives one output, every time.
- 2 A graph shows many input-output pairs at once.
- 3 The shape tells the story: a straight line means steady change, a curve means the rate of change is itself changing.
- 4 Slope measures steepness: rise divided by run.

YOU SEE IT WHEN ...

Phone plan cost against minutes used

Distance travelled over time on a trip

The height of a ball as it flies

WORDS YOU WILL MEET

Input / output

what goes into and comes out of a function

Domain

all the inputs allowed

Range

all the outputs that can come out

Slope

steepness of a line: rise over run

Intercept

where a graph crosses an axis

Linear

the graph is a straight line

GOOD TO KNOW FIRST

Solving basic equations and plotting points on a grid.

IN YOUR COURSE YOU WILL ...

- Read and draw graphs
- Write rules like $f(x) = 2x + 1$
- Compare linear, quadratic and exponential functions
- Shift and stretch graphs

Start tip: Make a small table of inputs and outputs before you draw the graph.