Think of a Number

Objectives
- To improve mental addition, subtraction, doubling and halving
- (To introduce the idea of using symbols to represent quantities)

> **Main curriculum links**
> **N1/E2.5 Multiply using single digit numbers**
> - know doubles of numbers to 10
> - understand that relationship between doubling and halving
>
> **N1/E3.3 Recall addition and subtraction facts to 20**
> **N1/L2.4 Evaluate expressions and make substitutions in given formulae in words and symbols to produce results**
> - understand that words and symbols in expressions and formulae represent numbers
>
> **Other curriculum elements will also be covered if larger numbers, fractions, decimals or negative number are used.**

Teaching ideas
Use as a 10 minute mental starter.

It will generate lots of discussion and your learners will want to know why the answer is always 9. Tailor your explanation to the level of your students.

For example, for Level 1/2 students write it out like this on the whiteboard:

My 'mystery number' =
Two lots of my 'mystery number' =
Etc.

Repeat with another mystery number

Then say, "Is it okay if I just write 'n' instead of writing 'my mystery number' every time, otherwise this will take ages?" This makes a gentle introduction to the idea of using letters to represent numbers…

Mystery number	n
Double it	$n \times 2 = 2n$
Add 10	$2n + 10$
Halve it	$n + 5$
Add 4	$n + 5 + 4 = n + 9$
Take away n	$n + 9 - n = 9$

This resource kindly contributed by **Judith White, Somerset Adult Learning and Leisure.**
N1/E2.5 (doubling, halving), **3.3** (addition and subtraction), **L2.4** (substitution) – see page 1 for details.
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Think of a number

Think of a number between 1 and 10

Double it

Add 10

Halve it

Add 4

Take away the number you first thought of

Write down your answer

What answer did other people get?

Does this always happen? Try starting with:

- a larger number

- a negative number

- a fraction

Why does this work?