

# Year 6 Investigations – Multiply by 11

## Teacher Guide

### National Curriculum Objectives:

Mathematics Year 6: (6C6) [Perform mental calculations, including with mixed operations and large numbers](#)

Mathematics Year 6: (6C8) [Solve problems involving addition, subtraction, multiplication and division](#)

### Teaching notes:

This investigation is about examining a rule for multiplying 11 by a 2 digit number. The two different investigations you can carry out are:

1. To multiply any two digit number by 11, you can add the two digits of the number together, then put the sum between the two digits. Will this always work when multiplying by a 2 digit number? Why?
2. Can you come up with a rule for multiplying any 3 digit number by 11?

Use the question prompts if your pupils require some hints.

More [Year 6 Maths Investigation](#) resources.

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## Year 6 Investigations – Multiply by 11

1. To multiply any two digit number by 11, you can add the two digits of the number together, then put the sum between the two digits. Will this always work when multiplying by a 2 digit number? Why?

Ideas for concrete resources to provide:

- Calculator
- Scrap paper for calculations

Question prompts:

- What related multiplication facts are relevant?
- What happens if the two digits add to another two digit number?

2. Can you come up with a rule for multiplying any 3 digit number by 11?

Ideas for concrete resources to provide:

- Calculator
- Scrap paper for calculations

Question prompts:

- What happens when you multiply 11 by multiples of 100? Of 10? Of 1?
- How could you combine all of these separate answers to make the full answer?