Autumn 2 - Year 4
Addition, Subtraction and Area

This is your Bingo Card for my half termly 'Maths Missions'!
These challenges should encourage children to **think like mathematicians**: investigating, generalising, proving, spotting patterns, creating systems and explaining reasoning. This is an optional extra for children who want to do further Maths challenges after completing the home learning set by their class teacher. Tick them off as you go! ☺

1. Area Architect

Design your dream bedroom.

Every item must fit inside a floor plan.



Calculate:
- Floor area
- Furniture area
- Remaining space

2. The Rectangle Investigation

How many different rectangles have an area of 24?

Can you:
- Draw them?
- Explain why there are no more?



3. Impossible Areas

Can two different shapes have the same area?

Investigate.

Prove it and record your findings.



4. The 1000 Challenge

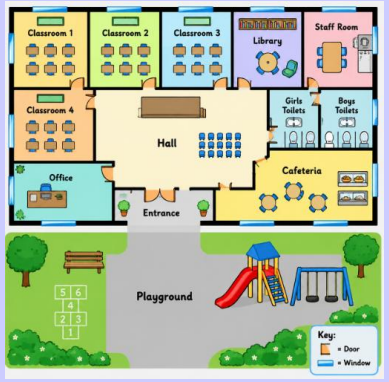
Create as many calculations as possible equalling exactly 1000.

Use:
- All four operations
- Brackets if you know them

5. Floor Plan Designer

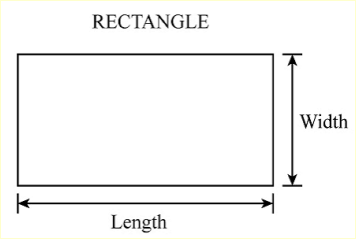
Design a zoo, theme park or school using rectangles.

Include area calculations.



6. Area Pattern Investigation

What happens when:
- Length doubles?
- Width doubles?
- Both double?



Can you find a rule?

Year 4 Bonus Challenge

The Multiplication Mystery

Pick any number.

Multiply it by:

- 9
- 99
- 999

Investigate at least 20 examples.

Examples:

12 × 9

12 × 99

12 × 999

What patterns appear?

Can you explain them without using a calculator?

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Grand Challenge:

Can you create a rule that works every time?





Ultimate Whole-School Challenge

The Christmas Tree Code Challenge

One morning, a strange pattern appears on a Christmas tree:

★

★ ★

★ ★ ★

★ ★ ★ ★

The first row has 1 star. The second row has 2 stars. The third row has 3 stars.

Bronze Mission

Count:

- How many stars are in a tree with 5 rows?
- How many stars are in a tree with 6 rows?
- How many stars are in a tree with 10 rows?

Can you find a quick way?

Silver Mission

What if the tree had:

- 15 rows?
- 20 rows?
- 50 rows?

Can you find a pattern?

Record your thinking.

Gold Mission

A mathematician says:

"I can work out the number of stars in ANY Christmas tree without drawing it."

Can you discover their method?

Test it.

Convince somebody it works.

Grandmaster Mission

Can you answer:

- How many stars would be in a tree with 100 rows?
- 1,000 rows?
- Could there be a tree with exactly 95 stars?
- Could there be a tree with exactly 183 stars?

How do you know?