Autumn 2 - Year 6

Fractions!

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. Fraction Museum

Create an exhibition on fractions.

Include:

- Equivalent fractions
- Improper fractions
- Mixed numbers
- Real-life examples



2. Fraction Puzzle Creator

Design a puzzle involving fraction calculations.

Test it on three people.

Did they solve it?

Explain how it works and how it can be solved.

3. The Fraction Wall Investigation

Create your own fraction wall.

What patterns can you discover?

What can you prove?

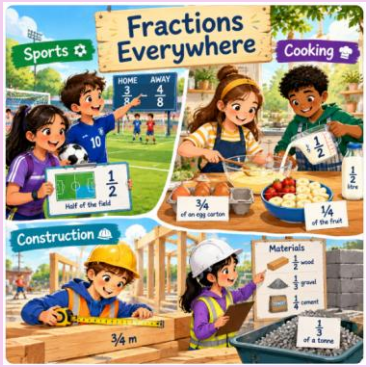


4. Fractions Everywhere

Find examples of fractions in:

- Cooking
- Sport
- Shopping
- Construction

Create a report.



5. Equivalent Fraction Hunt

How many equivalent fractions can you find for:

- $\frac{1}{2}$
- $\frac{1}{3}$
- $\frac{2}{3}$
- $\frac{3}{4}$

Can you explain the rule.



6. Fraction Challenges for Adults

Create five fraction questions so difficult that an adult struggles with them.

Then explain the solutions.



Year 6 Bonus Challenge

The Algebra Escape Room

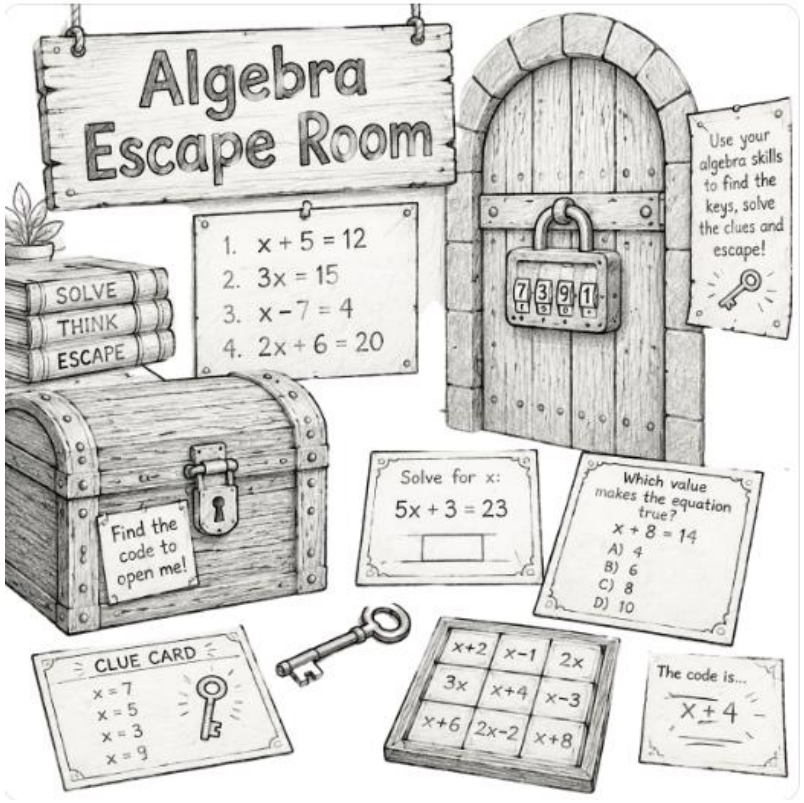
Create an escape room where every clue uses algebra.

Examples:

- $x + 7 = 15$
- $2x = 24$
- $3x + 5 = 20$

Create:

- at least 10 clues
- a storyline
- a final lock code



Grand Challenge:

Can you create clues where the player has to work backwards through multiple steps?



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?