Autumn 2 – Year 1
Addition, Subtraction and Shape

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. Shape Hunter Challenge

Find every 2D and 3D shape you can around your home.

Can you:

- Sort them in different ways?
- Create your own rule for sorting?
- Find a shape that belongs in two groups?

Perhaps you could record your findings in your own way.

2. Number Bonds Mastermind

How many ways can you make 10?

Challenge:

Can you organise them systemically?
How do you know you haven't missed any?
Can you only use 2 numbers or are there more ways of making 10?

3. Build a Shape City

Create a model city using shapes and objects around your home.

Questions:

- Which shapes make the strongest buildings?
- Which shapes stack best?
- Which shapes leaves gaps?



4. Missing Number Mystery

Create 20 missing-number calculations for someone else to solve.

Can you make them increasingly difficult?

_____ + 7 = 10

5. Shape Pattern Designer

Create repeating patterns using shapes.

Can you:

- Create a pattern with more than one rule?
- Design one that tricks people?

Make as many as you can!



6. The Number 10 Investigation

Everything must total 10!

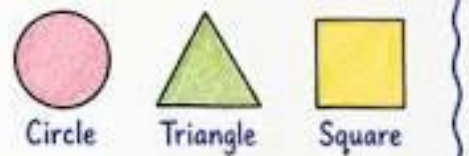
Use:

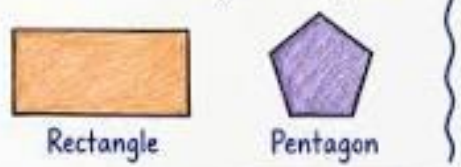
- Toys
- Coins
- People
- Jumps
- Claps

How many different ways can you show 10?

Can you do this for other numbers?

2D SHAPES vs 3D SHAPES





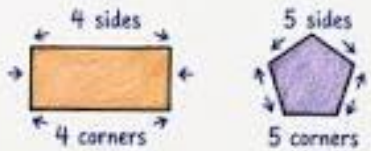




2D Shapes

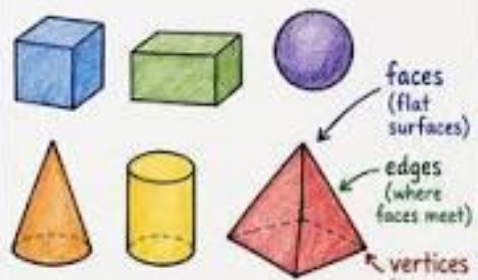
Flat shapes with length and width.





3D Shapes

Solid shapes with length, width and height.



REMEMBER!

- 2D = flat
- 3D = solid
- 2D shapes are drawn on paper
- 3D shapes can be held



Year 1 Bonus Challenge
The Shape Hotel Mystery

A new hotel is opening for shapes!
Your job is to decide which room each shape should stay in.
You must collect or draw lots of shapes, including:

- circles
- triangles
- squares
- rectangles
- cubes
- cuboids
- spheres
- cylinders



Step 1

Create your own hotel with different rooms.
For example:

- Shapes with corners
- Shapes without corners
- Shapes that roll
- Shapes that stack



Step 2

Create your own hotel with different rooms.
For example:

- Shapes with corners
- Shapes without corners
- Shapes that roll
- Shapes that stack

Step 3

Create your own hotel with different rooms.
For example:

- Shapes with corners
- Shapes without corners
- Shapes that roll
- Shapes that stack

Detective Challenge

Can you find a shape that could stay in:

- 2 rooms?
- 3 rooms?
- 4 rooms?

Grand Challenge

Draw the most complicated shape hotel possible.
Can you explain why every shape belongs where you put it?



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?