



COLLABORATIVE MATHEMATICS INVESTIGATIONS

collaborative MATHS INVESTIGATIONS

 **PAPER CHAINS**

<u>MATERIALS:</u> 1 x sheet of A4 paper 1 x recording sheet per person	1 x pair of scissors 1 x glue stick	<u>WORK IN PAIRS:</u> my name: _____ partner's name: _____
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INVESTIGATION:
Design a method to make the longest possible paper chain using a single piece of paper

STEPS:

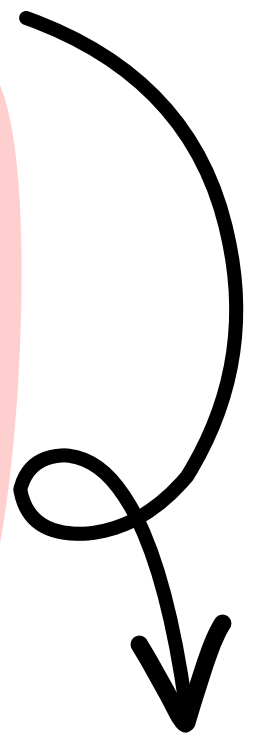
1. With your partner, spend 2 minutes discussing how you will cut and join your paper to make the longest possible chain
2. Estimate how long your chain will be: _____
3. Using only a sheet of paper and glue, make the longest paper chain you can in 15 minutes

THE RESULTS:

4. How long is your chain? _____
5. Describe the method you used to make your chain: _____

6. List the lengths of all the paper chains, in ascending order: _____

Keep scrolling to see
what's included!



WANT A RANGE OF MATHS CHALLENGES TO GET YOUR STUDENTS ENGAGED AND WORKING TOGETHER?

- ♥ Six low-prep investigations provide meaningful maths practices
- ♥ Every investigation encourages students to collaborate and learn from each other
- ♥ Students solve real challenges through investigation, reasoning and problem-solving



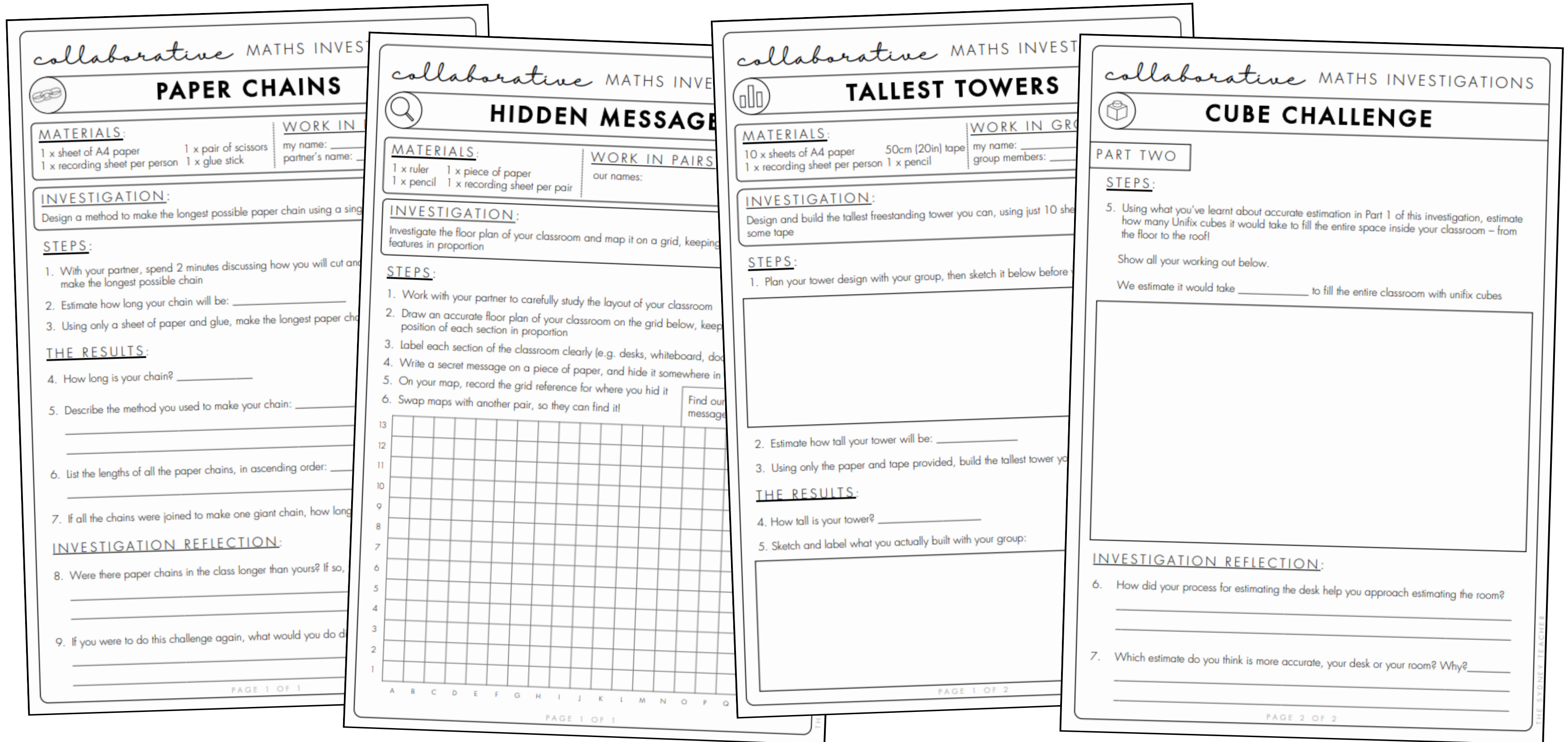
collaborative MATHS INVESTIGATIONS

Enjoy six hands-on, collaborative maths investigations for pairs and small groups.

Each one follows the same simple structure: plan, investigate, record, compare and reflect, so students build confidence with the process while the maths and context change every time.

#	Investigation	Skills	Materials	Page
01	Paper Chains	- Length - Ordering decimals - Adding decimals	- A4 paper - Scissors - Glue stick	4
02	Hidden Message	- Grid references - Scale and proportion - Spatial reasoning	- Ruler - A4 paper	5
03	Tallest Towers	- Length - Ordering decimals	10 sheets of A4 paper 50cm (20in) tape - Pencil	6 & 7
04	Ruler Reflex Test	- Length - Ordering decimals - Calculating averages - Graphing - Comparing data	- Ruler - Pencil	8 & 9
05	Paper Planes	- Length - Ordering decimals - Calculating averages - Graphing - Comparing data	- A4 paper - Tape measure - Pencil	10 & 11
		- Area - Volume	Unifix cubes (or similar)	

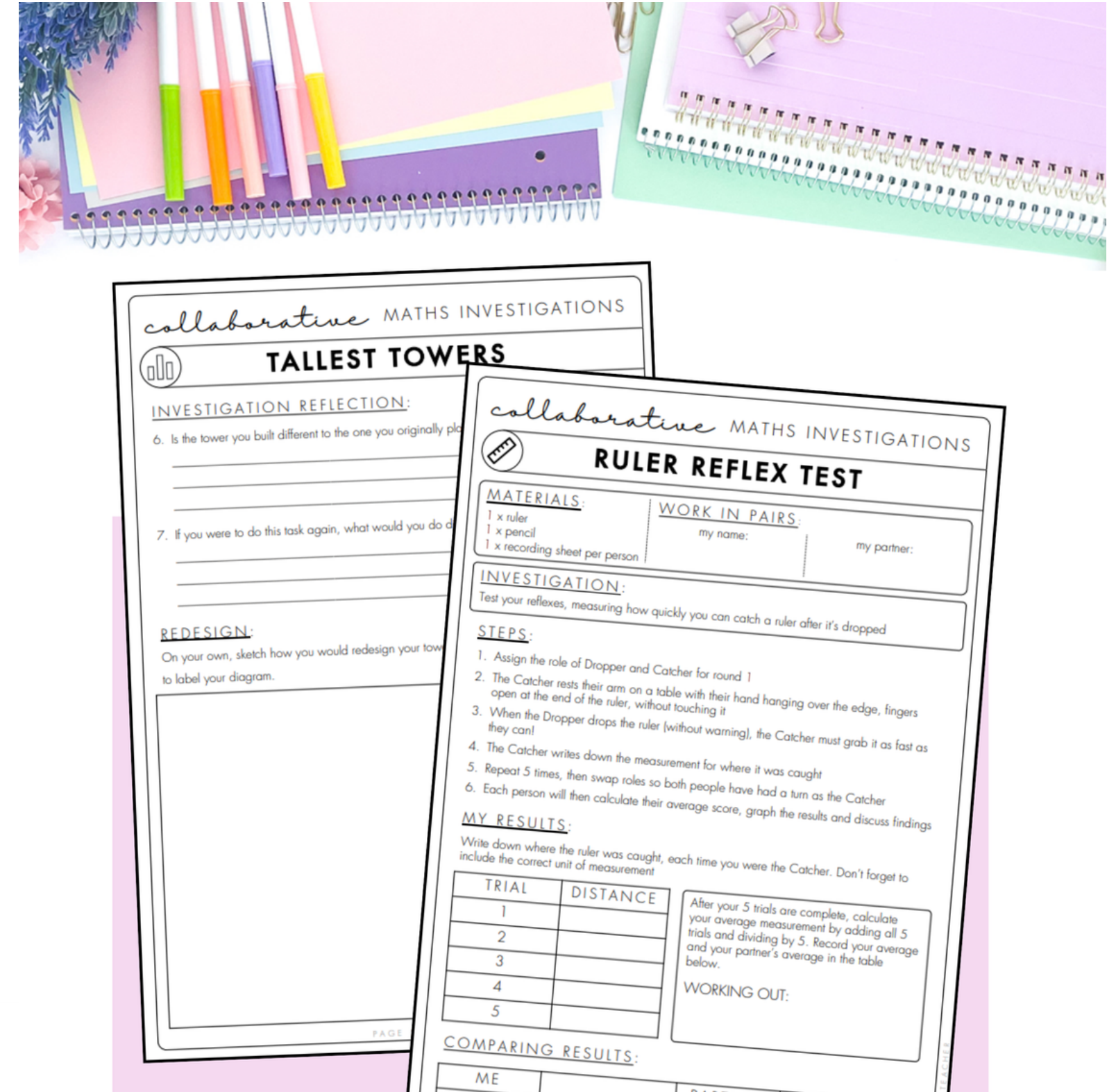
INCLUDES ALL THESE AND MORE!



WHAT'S INCLUDED?

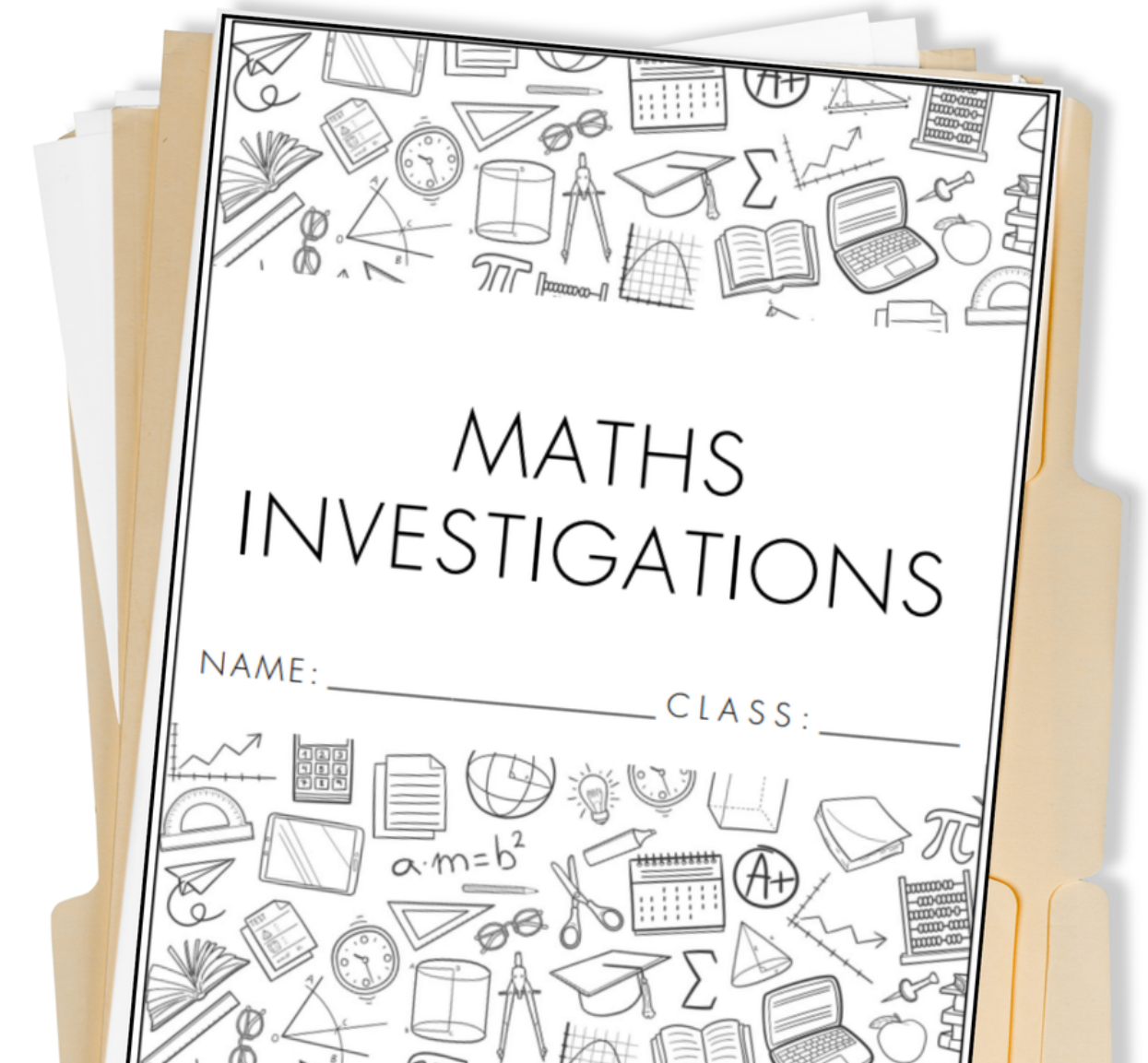
📍 **Six collaborative maths investigations:**
Paper Chains, Hidden Message,
Tallest Towers, Ruler Reflex Test,
Paper Planes and Cube Challenge

📍 **Consistent Plan → Investigate →
Record → Compare → Reflect
structure throughout**



WHAT'S INCLUDED?

- ♥ Fully scaffolded recording sheets for every investigation
- ♥ Activities designed for pairs or small groups of 3
- ♥ Hands-on challenges using simple classroom materials
- ♥ Both 'maths' and 'math' spelling provided to match UK and US spelling conventions.



HOW YOU CAN USE THIS RESOURCE



Use for collaborative maths lessons, problem-solving sessions or small-group activities.



Add to maths rotations, extension work or early-finisher tasks for extra practice.



Encourage students to explain their thinking, share strategies and compare results.



collaborative MATHS INVESTIGATIONS

 **CUBE CHALLENGE**

MATERIALS: unifix cubes (or similar) 1 x recording sheet per person	1 x pencil 1 x ruler	WORK IN PAIRS: my name: _____ partner's name: _____
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INVESTIGATION:
Use estimation strategies to calculate area and volume

PART ONE

STEPS:

1. With just a single unifix cube and a ruler, estimate how many cubes would be needed to cover the entire surface of your desk. Show all working out below.

Our first estimate: _____
2. Measure the full length and width of your desk with unifix cubes:
Number of cubes that fit across the length: _____

LOOKING FOR
MORE?

Bring maths to life with **Save the Mathematicians Escape Room**, a fun, no-calculation escape room that gets Years 3–6 students thinking, collaborating and solving problems!

SAVE THE MATHEMATICIANS ESCAPE ROOM

THE SYDNEY TEACHER

TEAM BUILDING
LOGIC PUZZLE

TASK TWO PUZZLE SHEET

T	D	H	R	E	B
D	I	V	I	D	E
O	F	E	R	A	U
U	F	A	C	T	O
D	E	C	I	M	A
P	R	O	D	U	C
Z	E	M	E	L	E
E	N	E	V	E	I
R	C	M	U	S	
O	E	Y	L	P	

TASK FOUR PUZZLE SHEET

PIGPEN CIPHER

A	B	C
D	E	F
G	H	I

J	K	L
M	N	O
P	Q	R

S	
T	U
V	

A diagram consisting of two intersecting diagonal lines forming an 'X' shape. Four dots are placed at the intersections of these lines with horizontal and vertical lines passing through the center. The dots are labeled as follows: 'W' at the top intersection, 'Z' at the bottom intersection, 'X' at the left intersection, and 'Y' at the right intersection.

MATHEMATICIANS ARE...

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>F<	L.O.J.F.O
T	
J.O.J	W.O.O.J
F.F.V.F.O.J	
J.C>O.F	O.A.O.F<
J.F.V>	J.O.O

YEARS 3-6