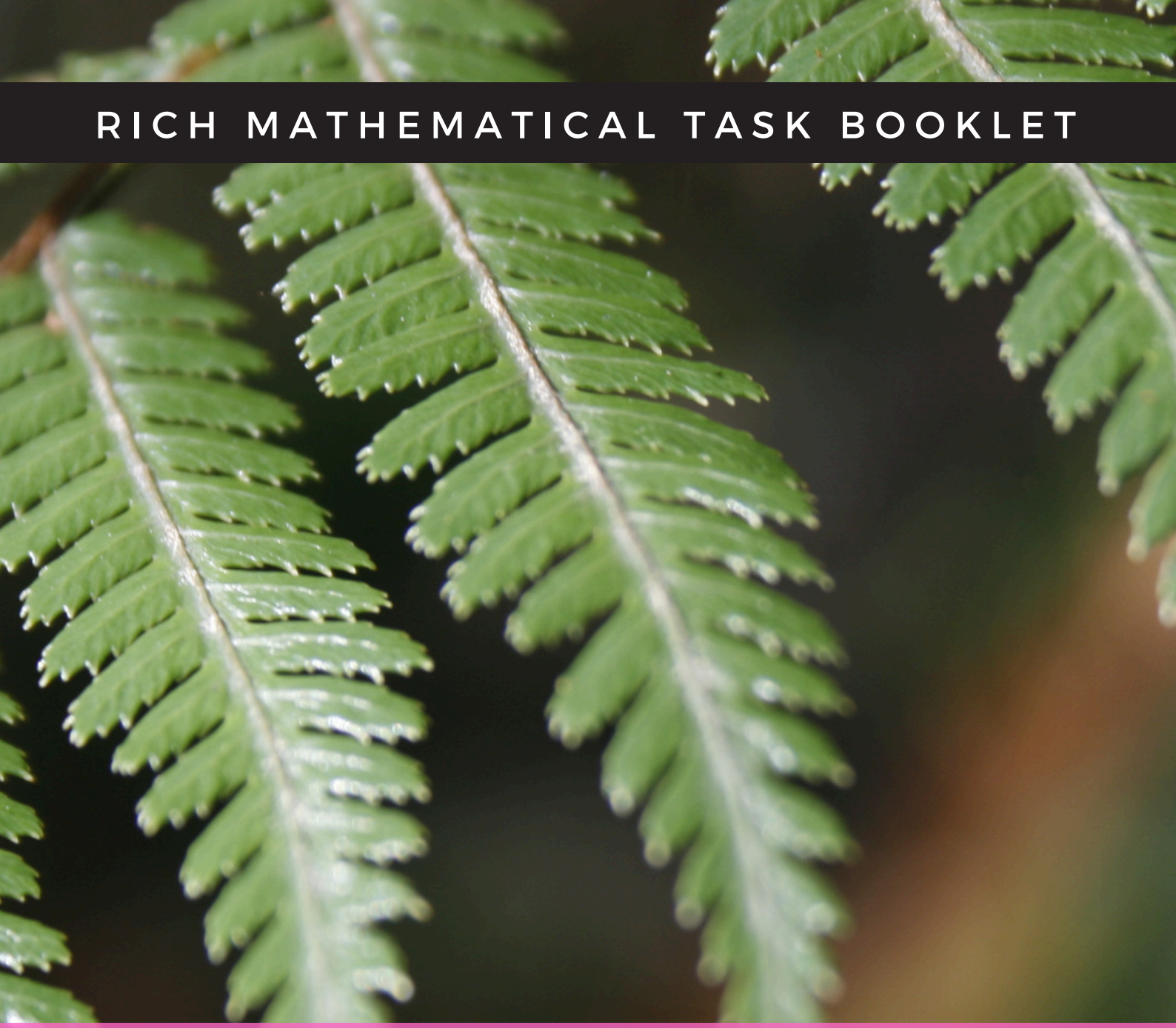
RICH MATHEMATICAL TASK BOOKLET



GEOMETRY

YEAR 3

Copy Masters

Year 3 - Geometry

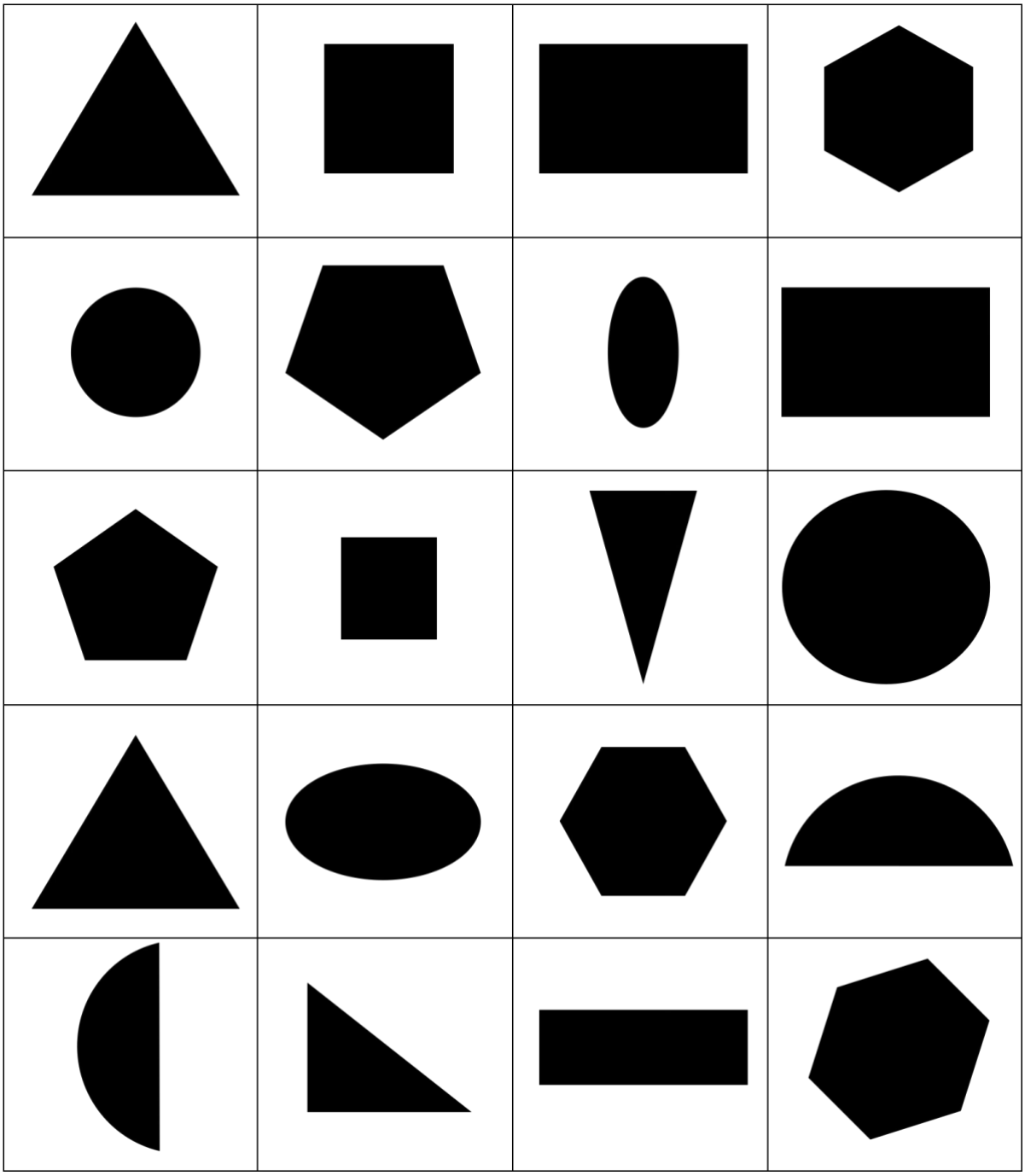
Task 1

Sort these shapes into different groups.

Describe what you notice about them.

How are the shapes in the group the same?

How are the shapes in the group different?

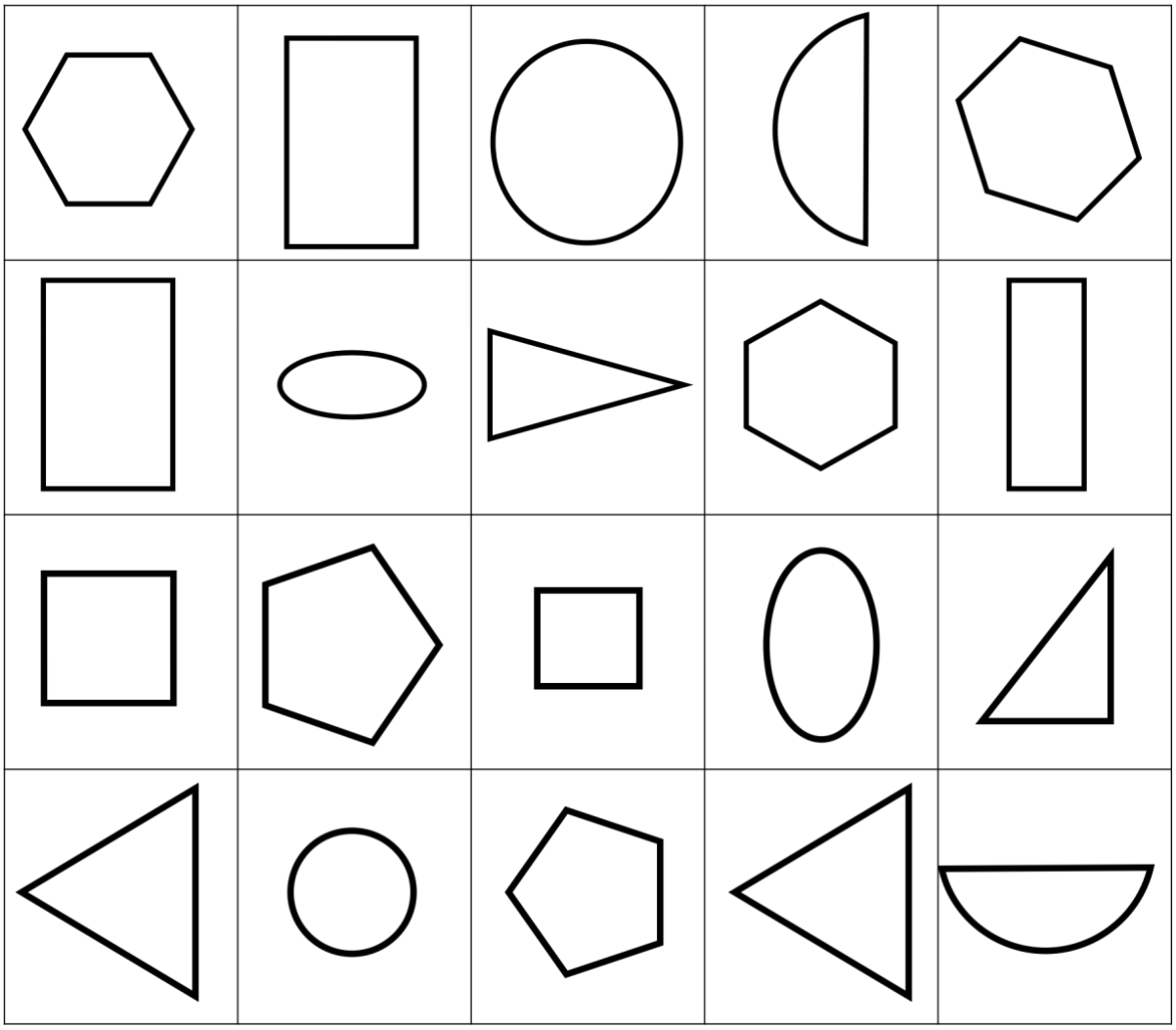


Year 3 - Geometry

Task 1 (independent)

Sort the shapes into different groups.

Name these shapes



Task 2

What do you notice about the shape of these different things?

Sort them into groups which you think are the same.

Sort them into groups which you think are different.

Explain and justify why you sorted them into the different groups.

Task 2 (independent)

Sort your objects into cuboids, cylinders, and spheres.

Talk with a partner about why they are cuboids, cylinders, and spheres.

Play a game with your partner of "guess what I have behind my back".

Hide one of your shapes behind your back.

Describe it to your partner. They have to draw it and say whether it is a cuboid, cylinder or sphere.

Take turns doing this. What do you notice?

Task 3

Make an attribute train using the shapes.

Task 3 (independent)

Choose a rule and record this.

Use the rule to make an attribute train.

How many different trains can you make?

Task 4

Choose a large shape.

Use paper squares to complete the puzzle.

Try and use as few squares as possible to solve the puzzle.

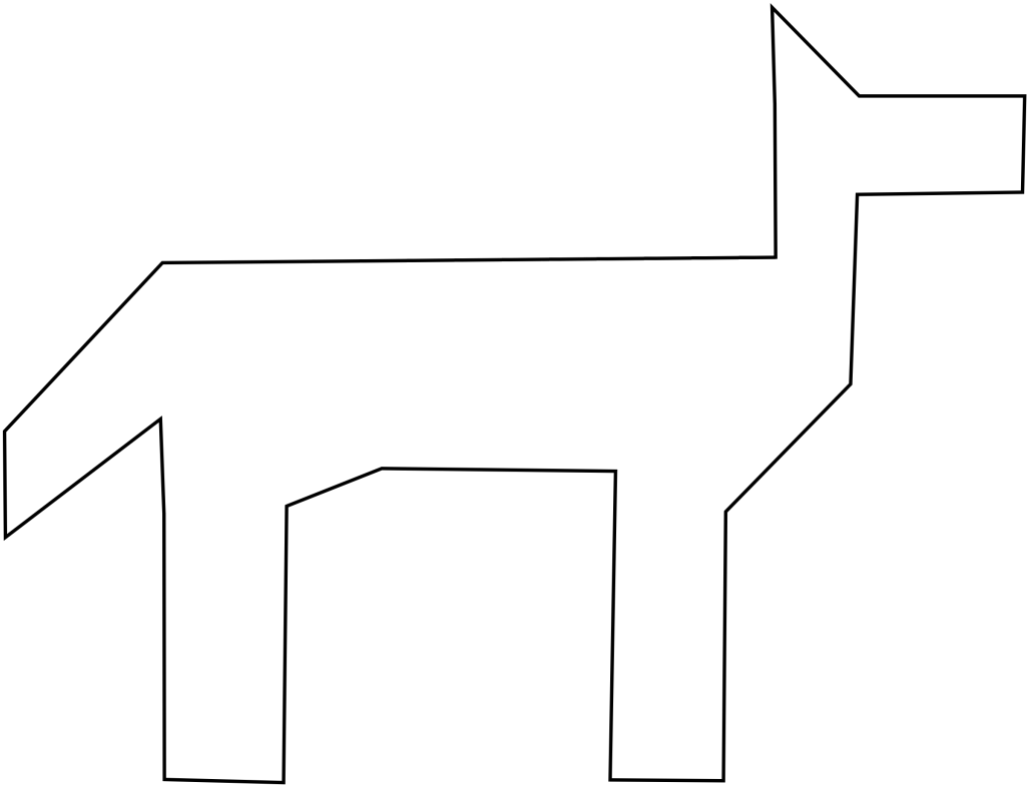
Choose a different large shape.

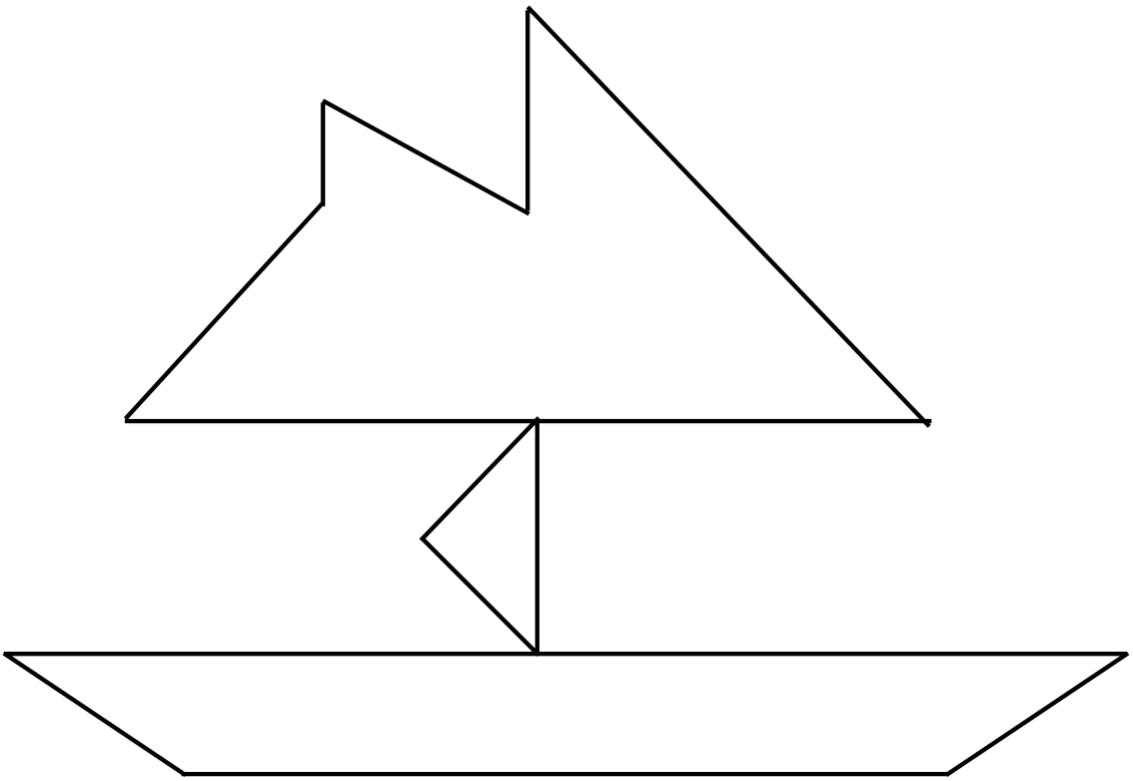
Use the paper squares to complete the puzzle.

Try and use as few squares as possible to solve the puzzle.

Year 3 - Geometry

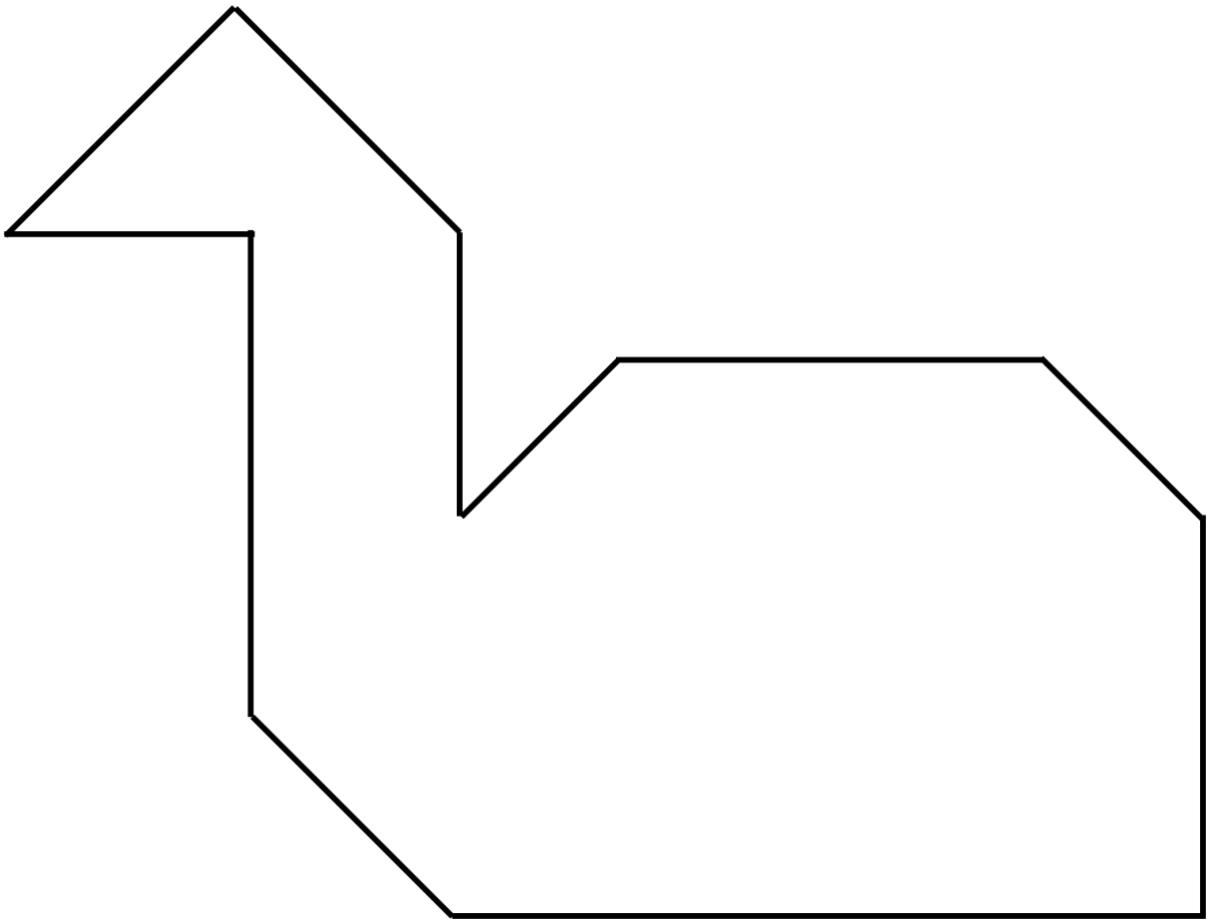
Task 4 – Larger Shapes





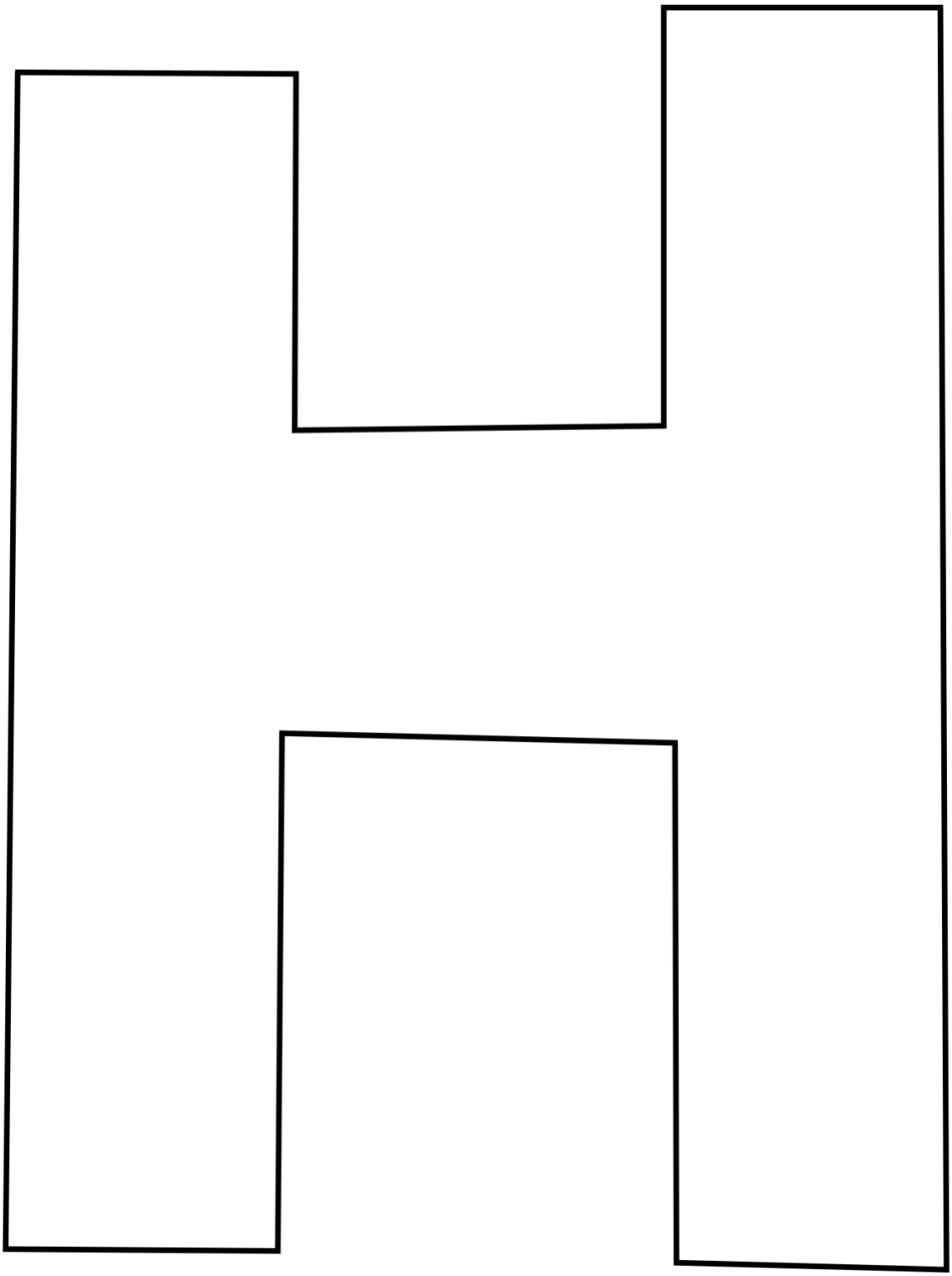
Year 3 - Geometry

Task 4 – Larger Shapes



Year 3 - Geometry

Task 4 – Larger Shapes



Task 4 (independent)

Choose a large shape.

Use the paper squares to complete the puzzle.

You can cut the squares in three different ways:
Mid-point to mid-point (to make a rectangle)
Corner to corner (to make a triangle)
Corner to midpoint (to make a triangle and quadrilateral).

Try and use as few squares as possible to solve the puzzle.

Choose a different large shape.

Use the paper squares to complete the puzzle.

You can cut the squares in three different ways:
Mid-point to mid-point (to make a rectangle)
Corner to corner (to make a triangle)
Corner to midpoint (to make a triangle and quadrilateral).

Try and use as few squares as possible to solve the puzzle.

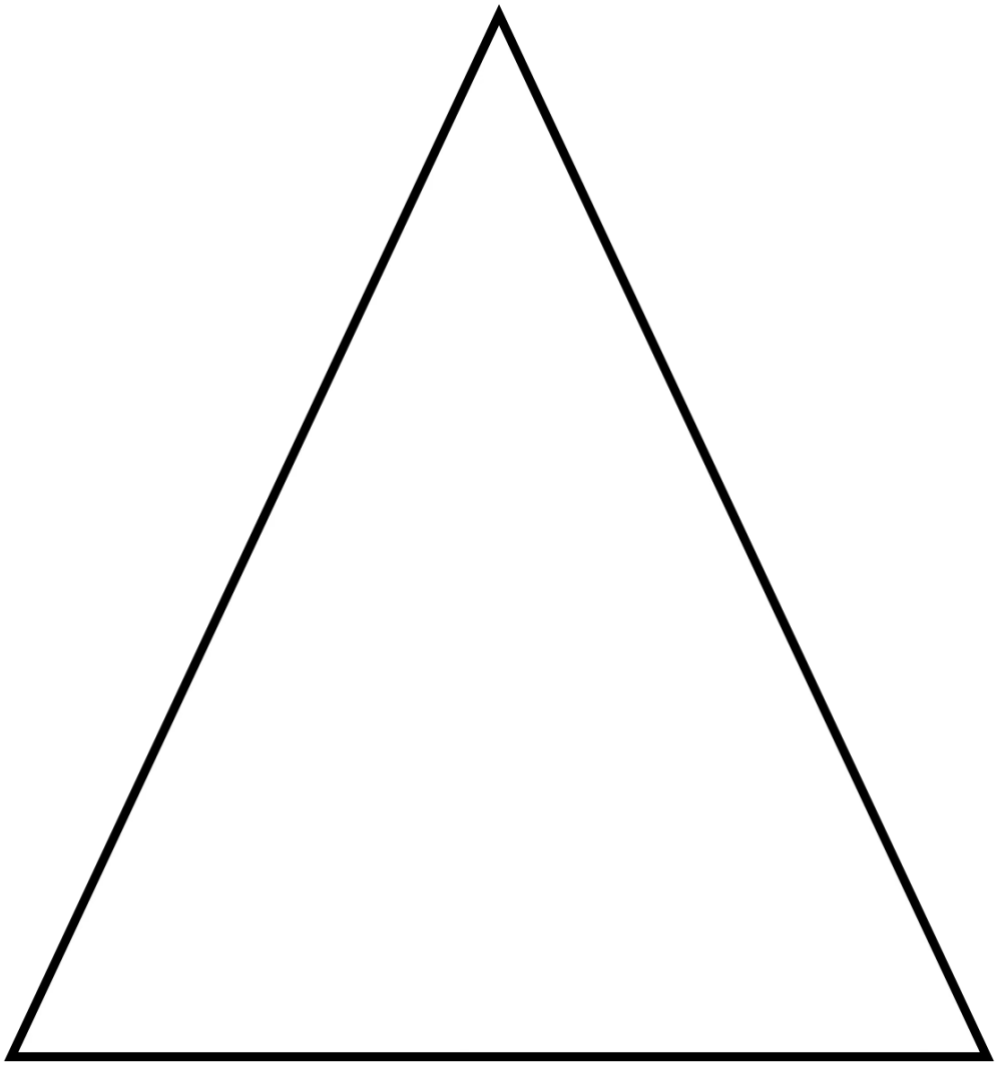
Task 5

Make the picture.

Draw the lines on to the larger shape.

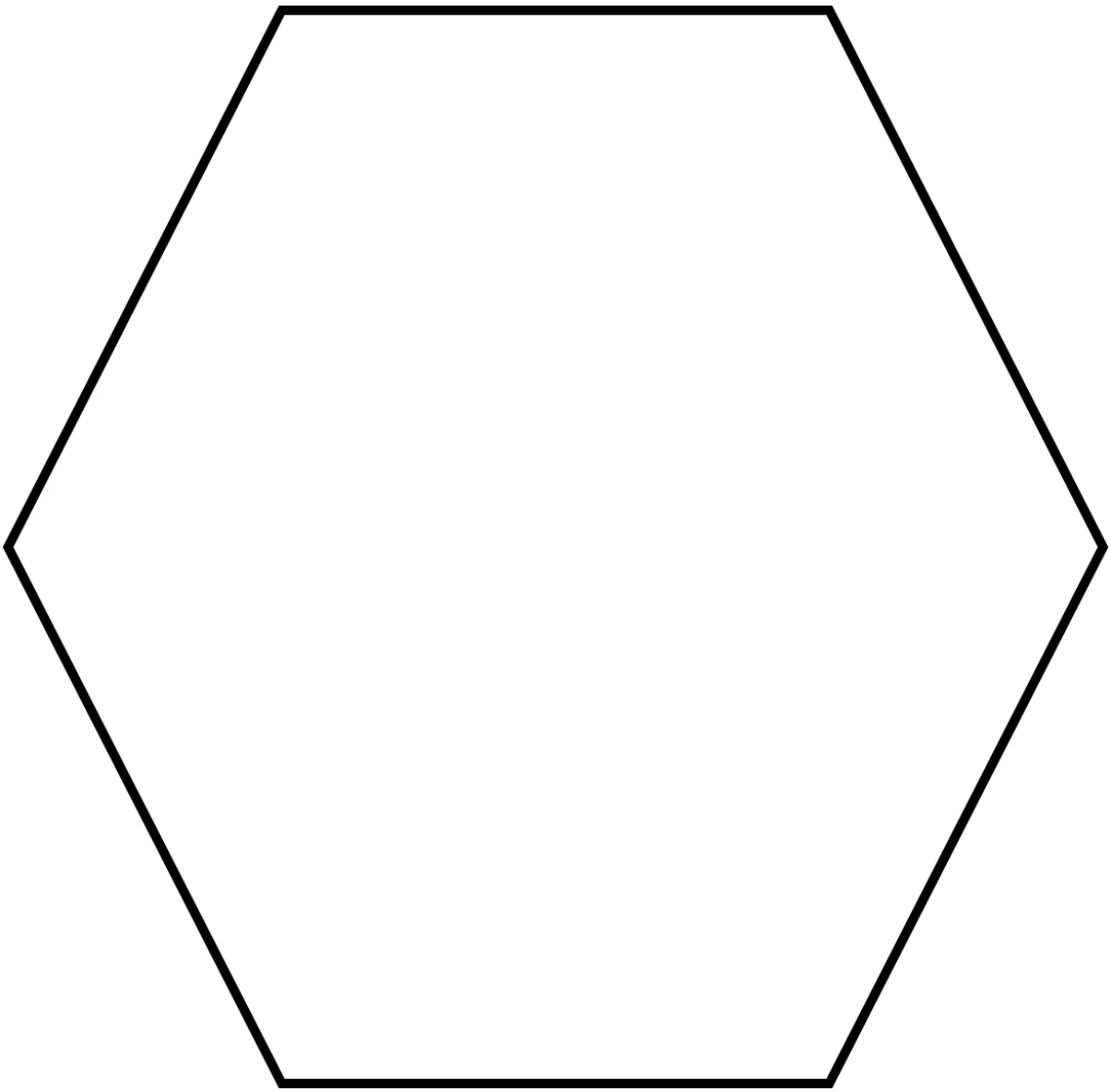
Cut out the smaller shapes from the larger shape when you have drawn in the lines.

Complete the puzzle.



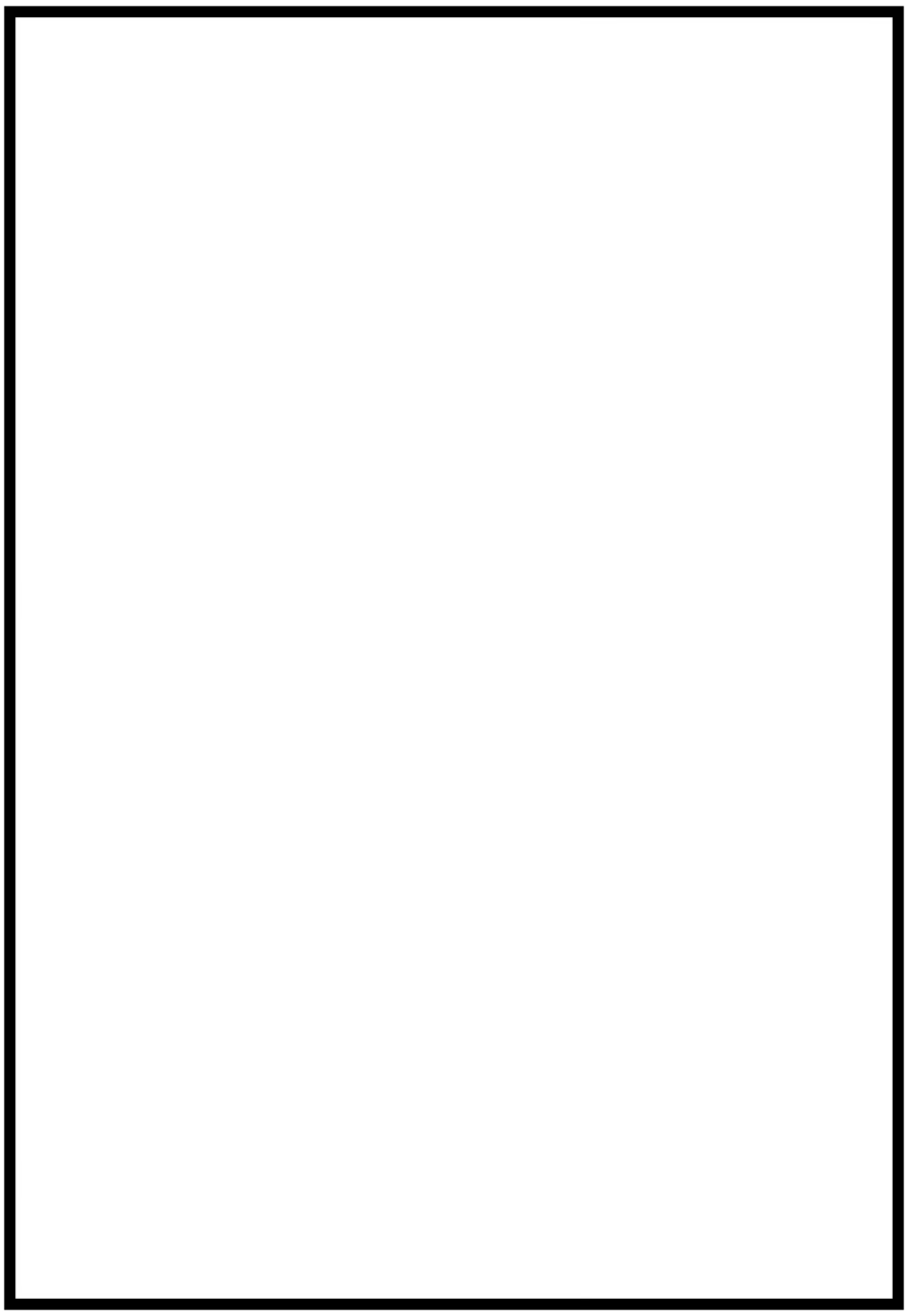
Year 3 - Geometry

Task 5 – Shapes



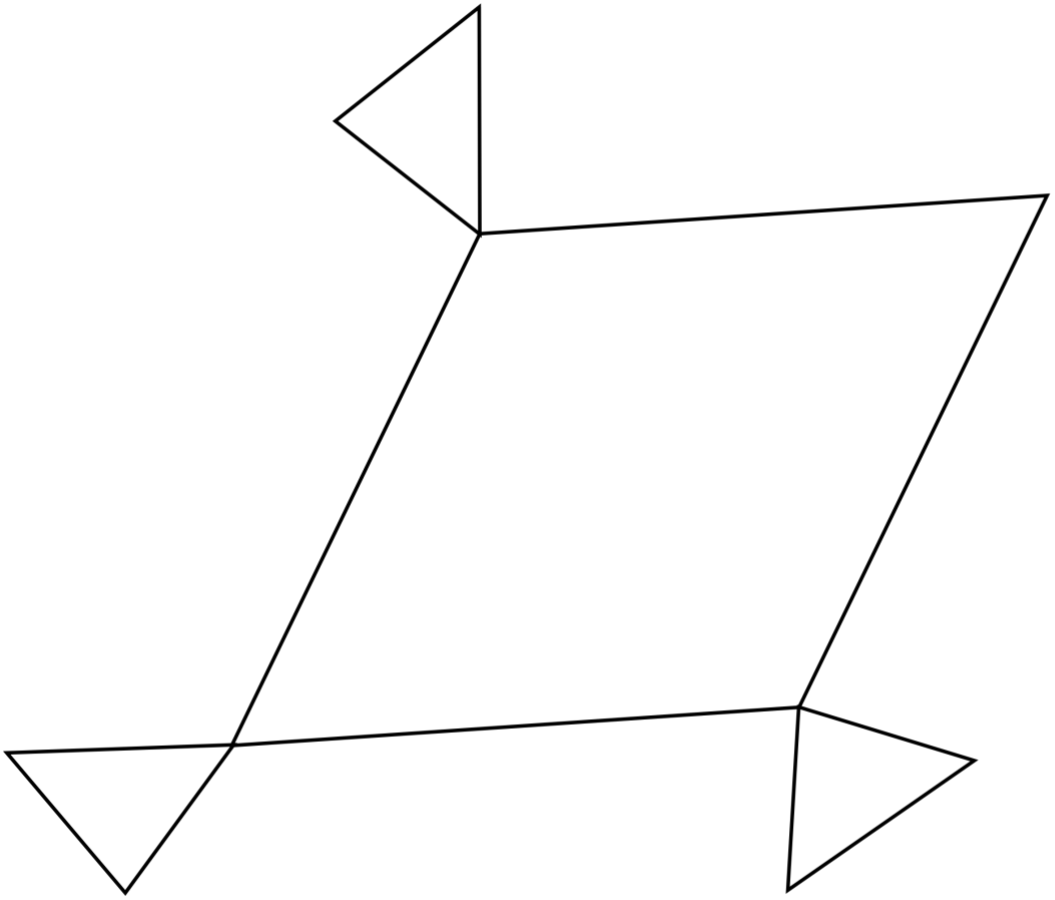
Year 3 - Geometry

Task 5 - Shapes



Year 3 - Geometry

Task 5 – Shapes (independent task)



Task 5 (independent)

Choose a puzzle.

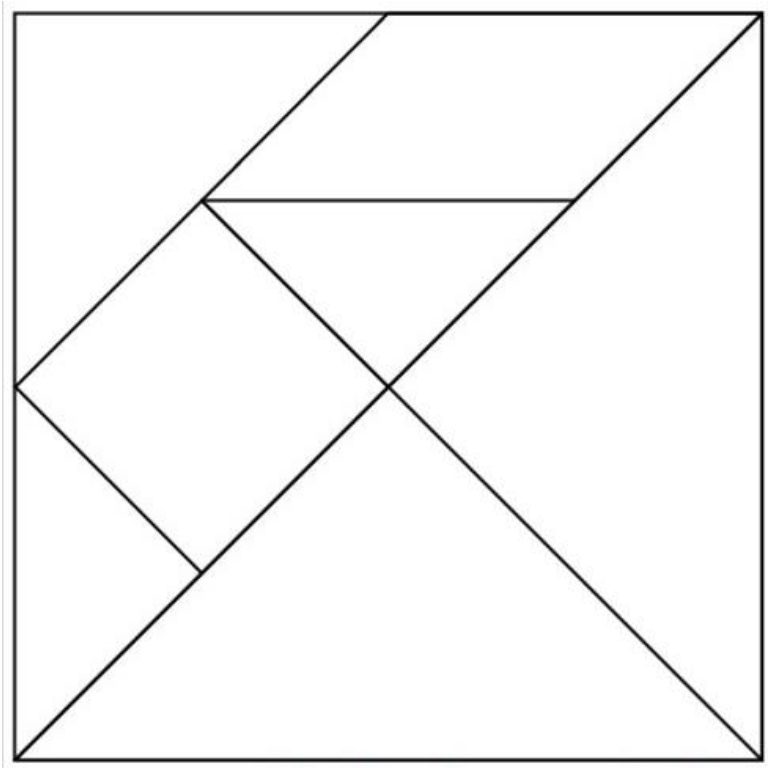
Use the pattern blocks to complete the puzzle.

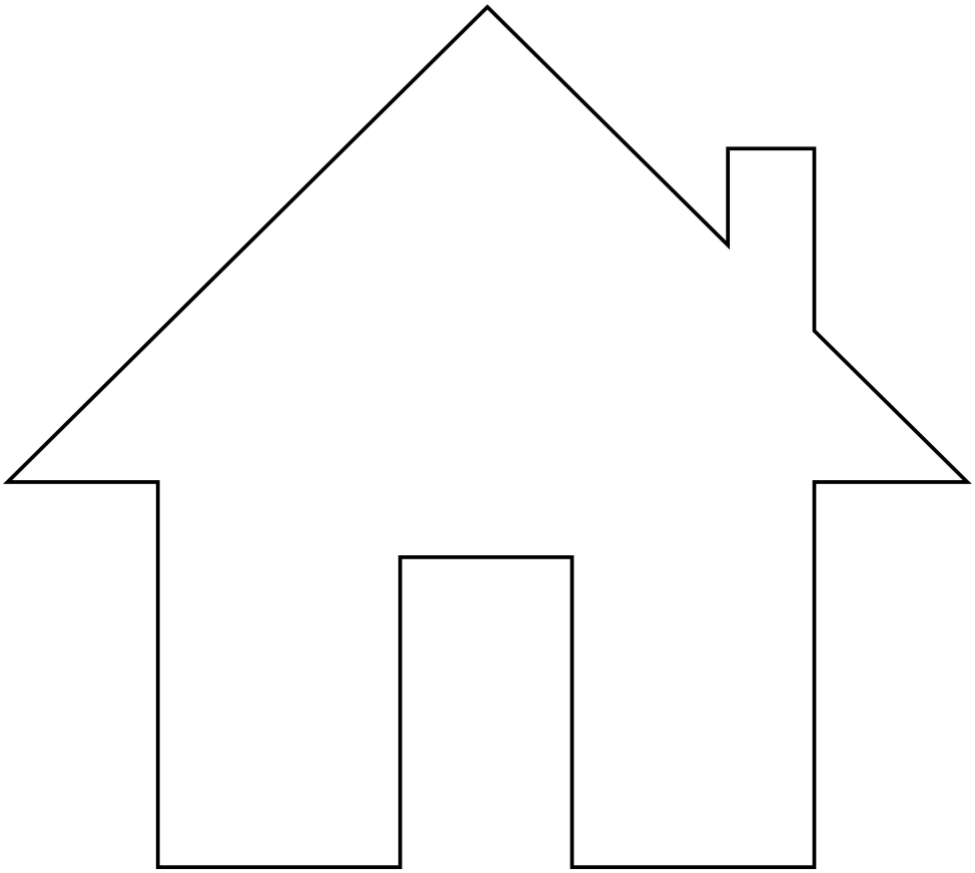
Choose another puzzle.

Use the pattern blocks to complete the puzzle.

Year 3 - Geometry

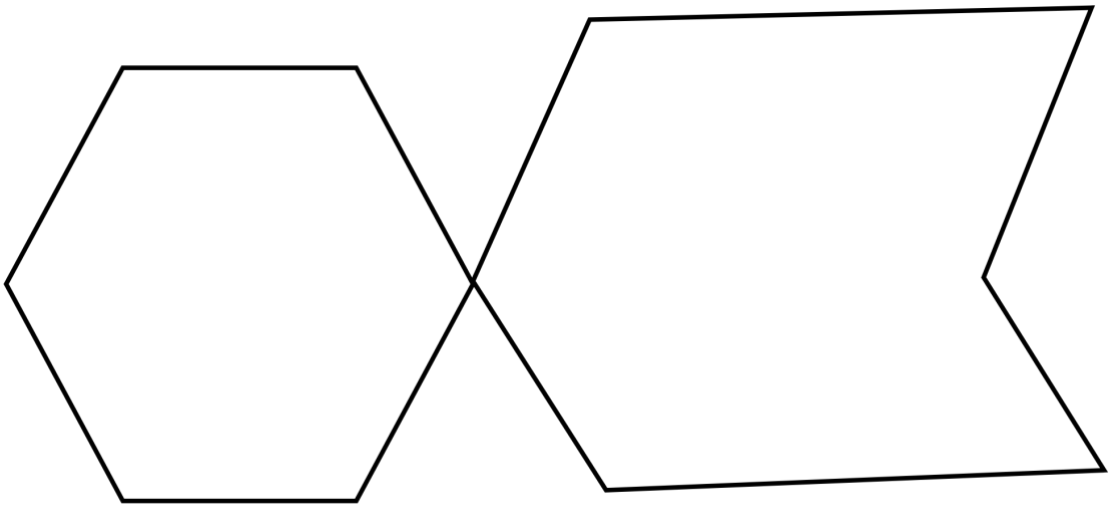
Task 5 – Tangram Puzzles

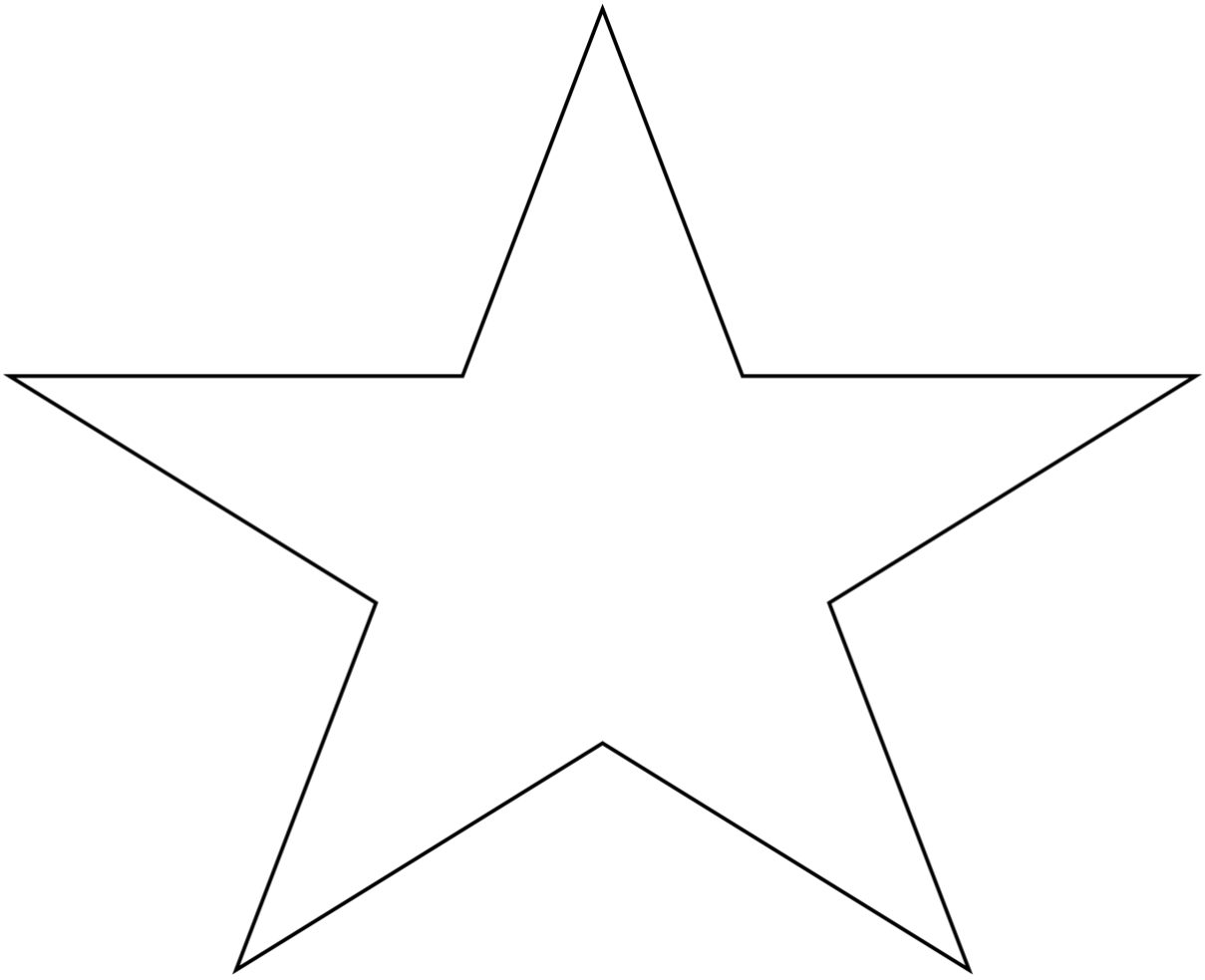




Year 3 - Geometry

Task 5 – Tangram Puzzles



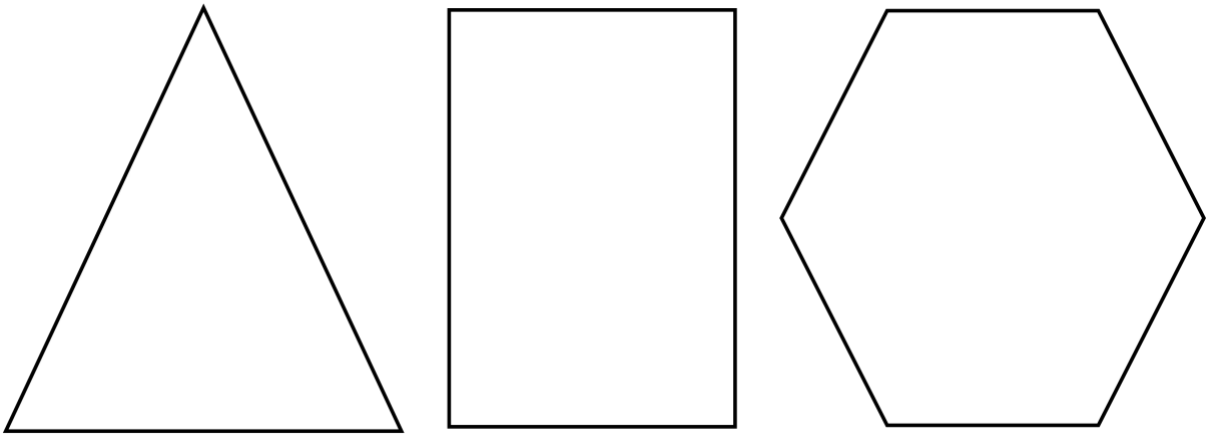


Task 6

Use the shapes to design your own wrapping paper.

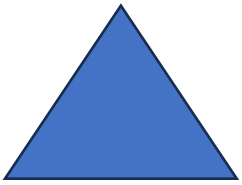
Use reflection, rotation and translation in your design.

Make a prediction first, what will your transformations look like?

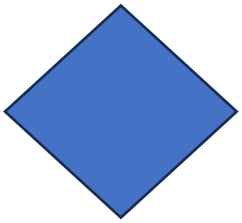


Task 6 (independent)

Rotate this shape four times.



Reflect this shape four times.



Translate this shape four times.

Design your own wrapping paper.

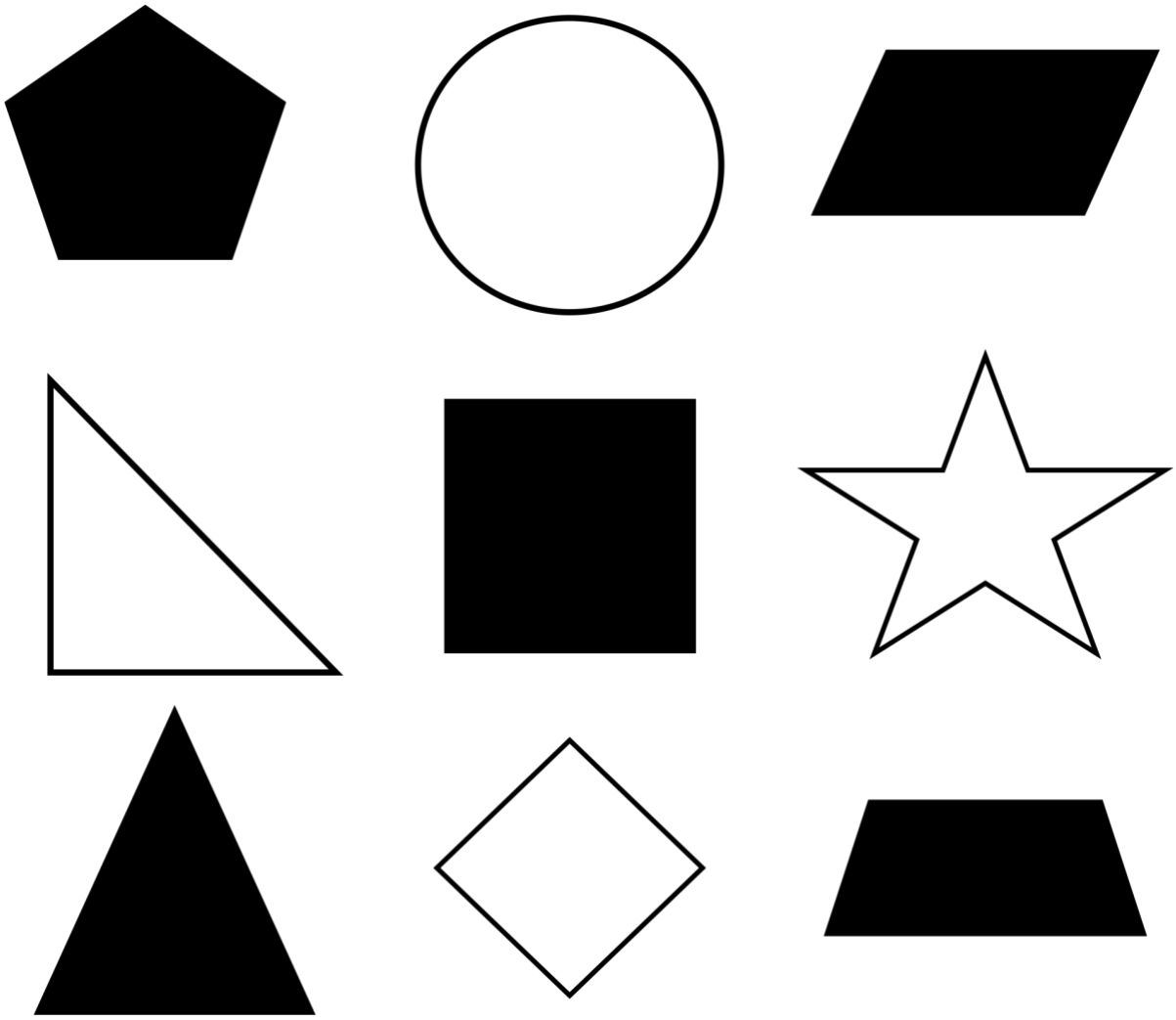
Task 7

Discuss and explore the mirror symmetry of each shape. Make a prediction about each shape. Make a prediction about each shape. Explain and justify the lines of symmetry.

Which shapes reverse?

Which shapes invert?

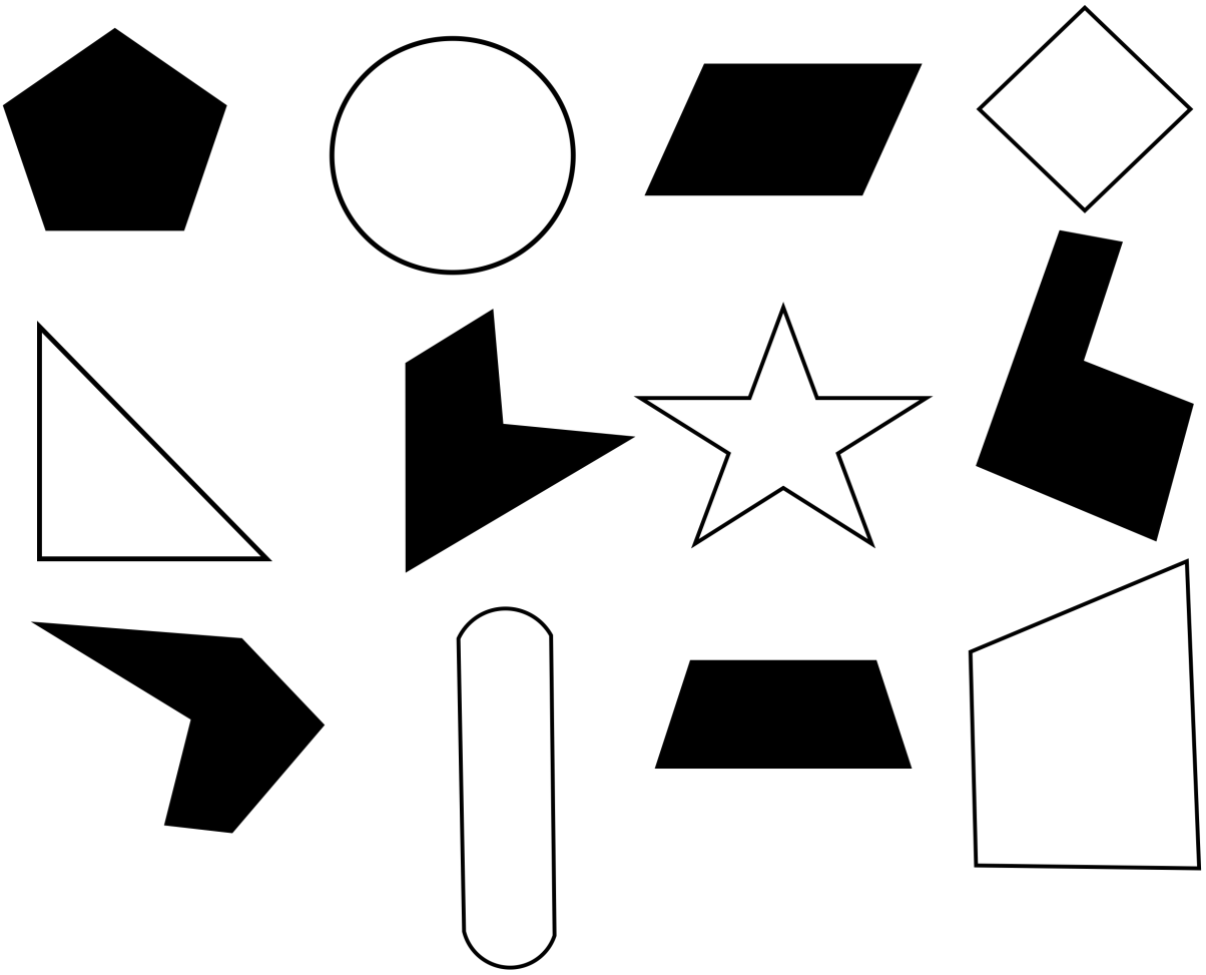
Which shapes stay the same?



Task 7 (independent)

Fold the shapes so that each side is congruent and symmetrical.

Sort the shapes into two different groups. In one group put all the ones that are not symmetrical and in the other group put all the ones that could be described as symmetrical.



Task 8

You are the puppeteer.

Design a set of instructions for a puppet to move from one place to another using slides.

Test your instructions and make sure that others can follow them.

Task 8 (independent)

Write a set of 8 direction cards using arrows (or abbreviations).

Without moving first think about where your finishing position will be on your grid paper.

You might want to test out your instructions using counters and then get a buddy to see whether they can follow your instructions by walking them like a puppet would.

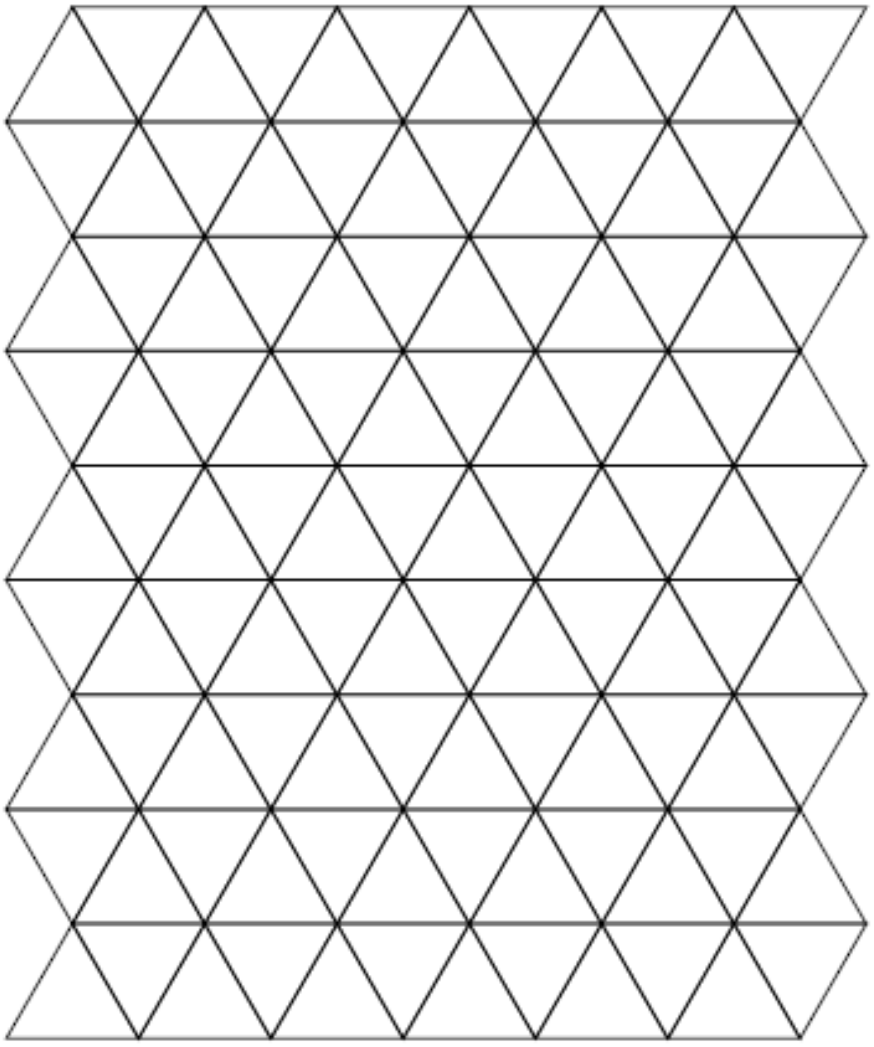
Year 3 - Geometry

Task 9

Use the triangular grid paper to record the path of a puppet if they were made to follow these instructions:

Forward one step, turn clockwise through one ten-minute angle, Repeat these commands until your puppet is back at where they started.

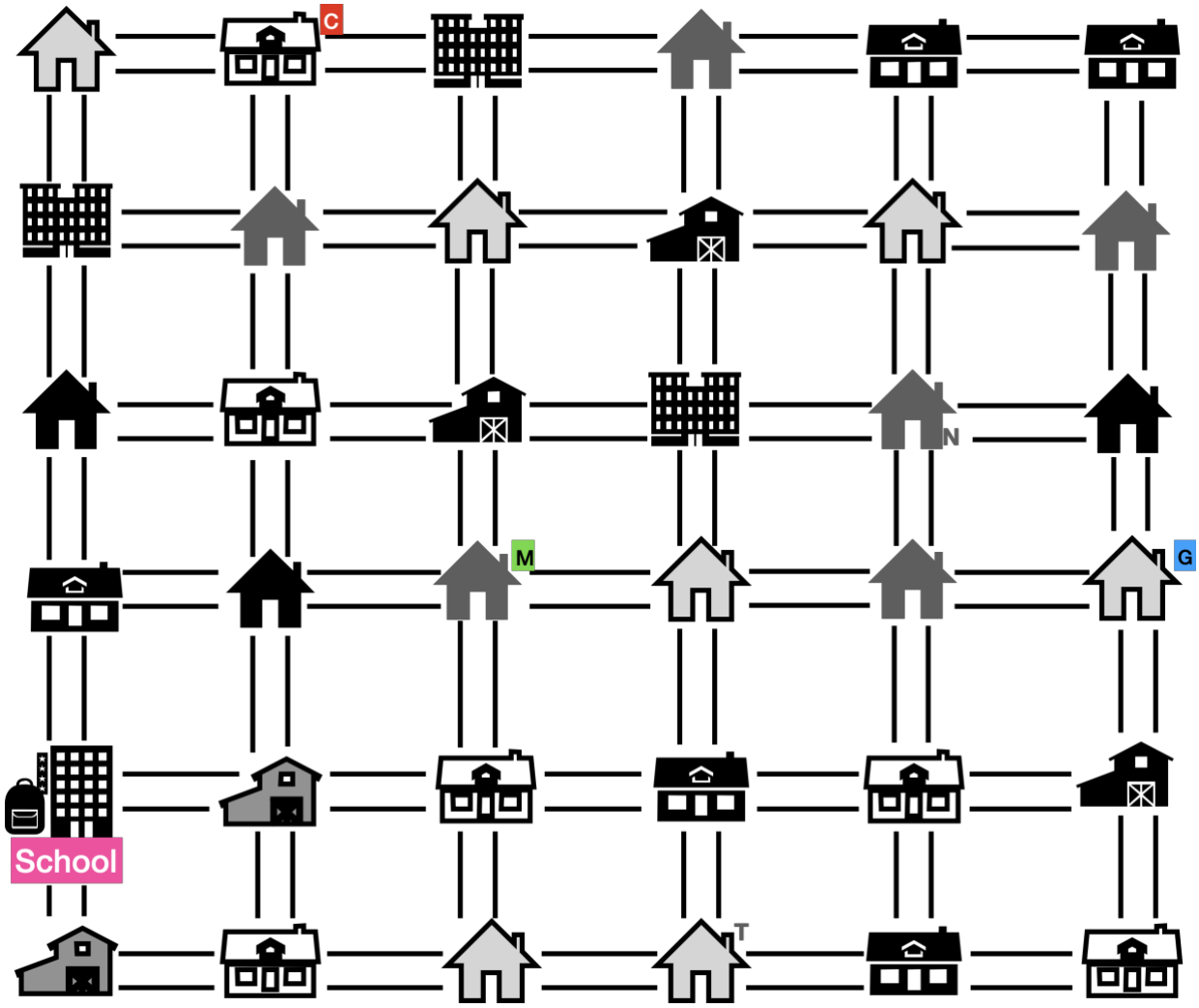
What shape does this make? Be ready to explain and justify why.



Year 3 - Geometry

Task 9 (independent)

Complete the questions about the different ways the children can go to school.



How many different ways can George go to school?

How many different ways can Margo go to school?

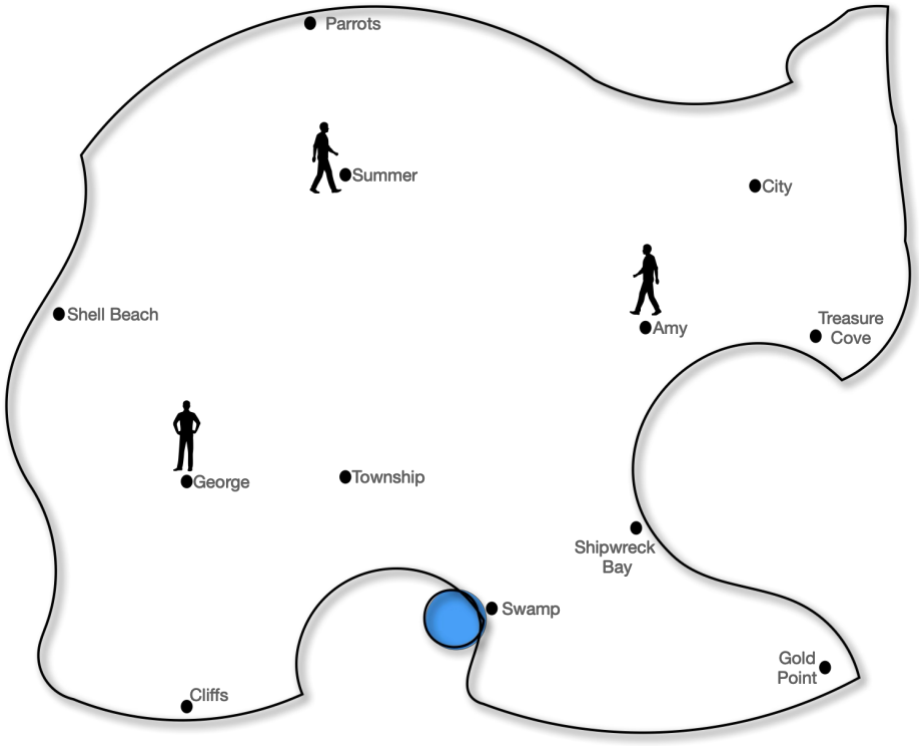
How many different ways can Charlie go to school?

What is the shortest way George can get to Charlies house?

What is the shortest way Margo can get to Charlies house?

Year 3 - Geometry

Task 10



1. George is facing the cliffs. He makes a quarter turn anticlockwise and is now facing _____.

2. Amy is facing Shell Beach. She makes a half turn clockwise and is now facing _____.

3. Summer is facing the city. She makes three quarter turn clockwise and is now facing _____.

4. Amy is facing Shell Beach. She makes a quarter turn anti-clockwise and is now facing _____.

5. Summer is facing the city. She makes a quarter turn _____ and is now facing the parrots.

Follow the clues and draw yourself and your buddy on the map.

- You are facing gold point and if you turned a quarter turn anticlockwise would face shipwreck bay.
- You are facing the swamp and if you turned a three quarter turn clockwise you would face the city.

Task 10 (independent)

Draw your own map with people and features on it. Write a set of questions someone else could answer about your map and people.

Task 11

You are pirates!

Design your own Treasure Island - it may look like this:

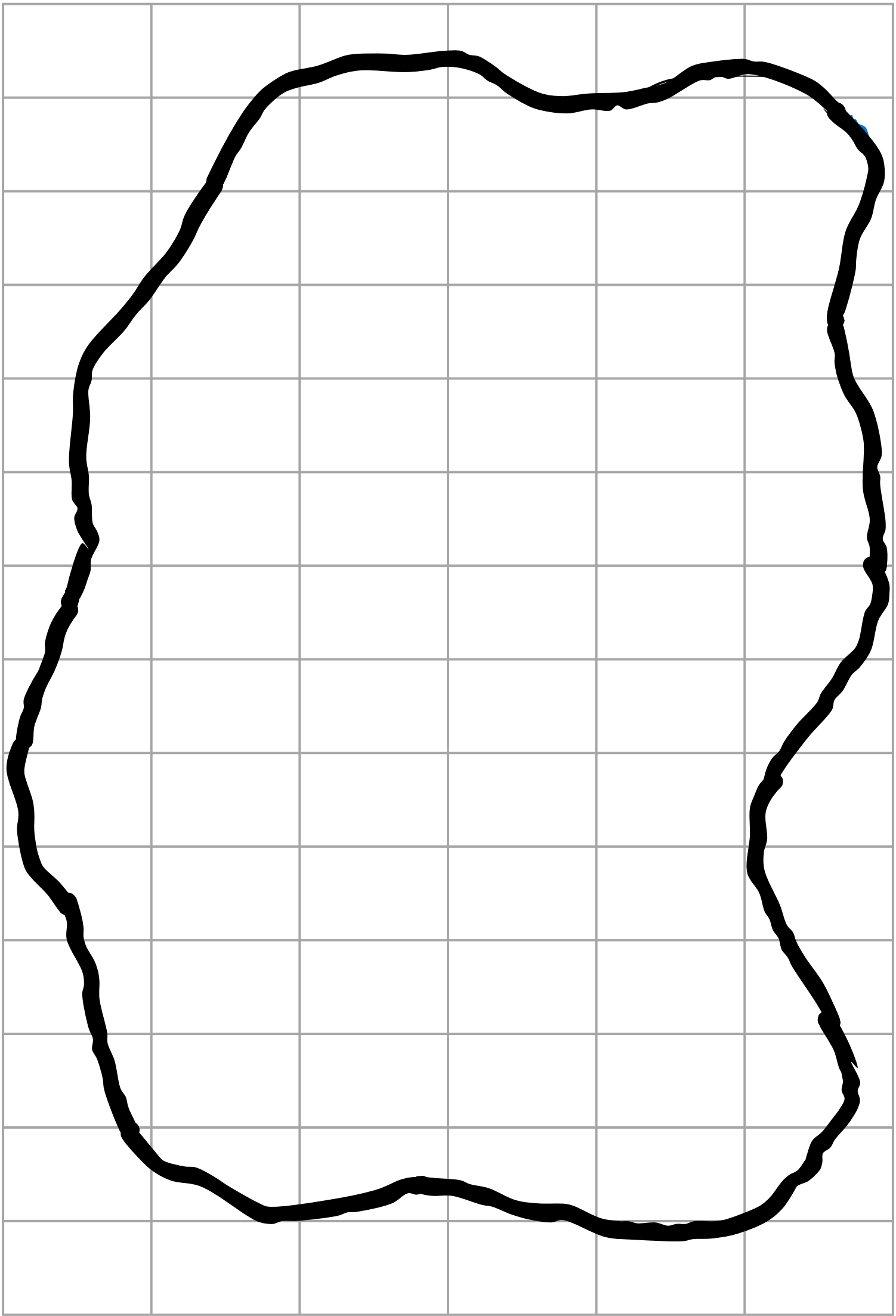
Your island needs to have hills, a swamp, trees and be surrounded by the sea. Pick a landing place on the edge of the island and mark it as your shipwreck.

Bury your treasure somewhere on the Island - Now write instructions for how you are going to find it again.

Give instructions for another pirate crew to find the treasure. Every square is a kilometre across.

Task 11 (independent)

Design a treasure map and write instructions for someone to follow.



Task 12

You are going to deliver messages around the school.

Write a series of instructions to move from our classroom to the office.

Write a series of instructions to move from our classroom to your buddy room.

Year 3 - Geometry

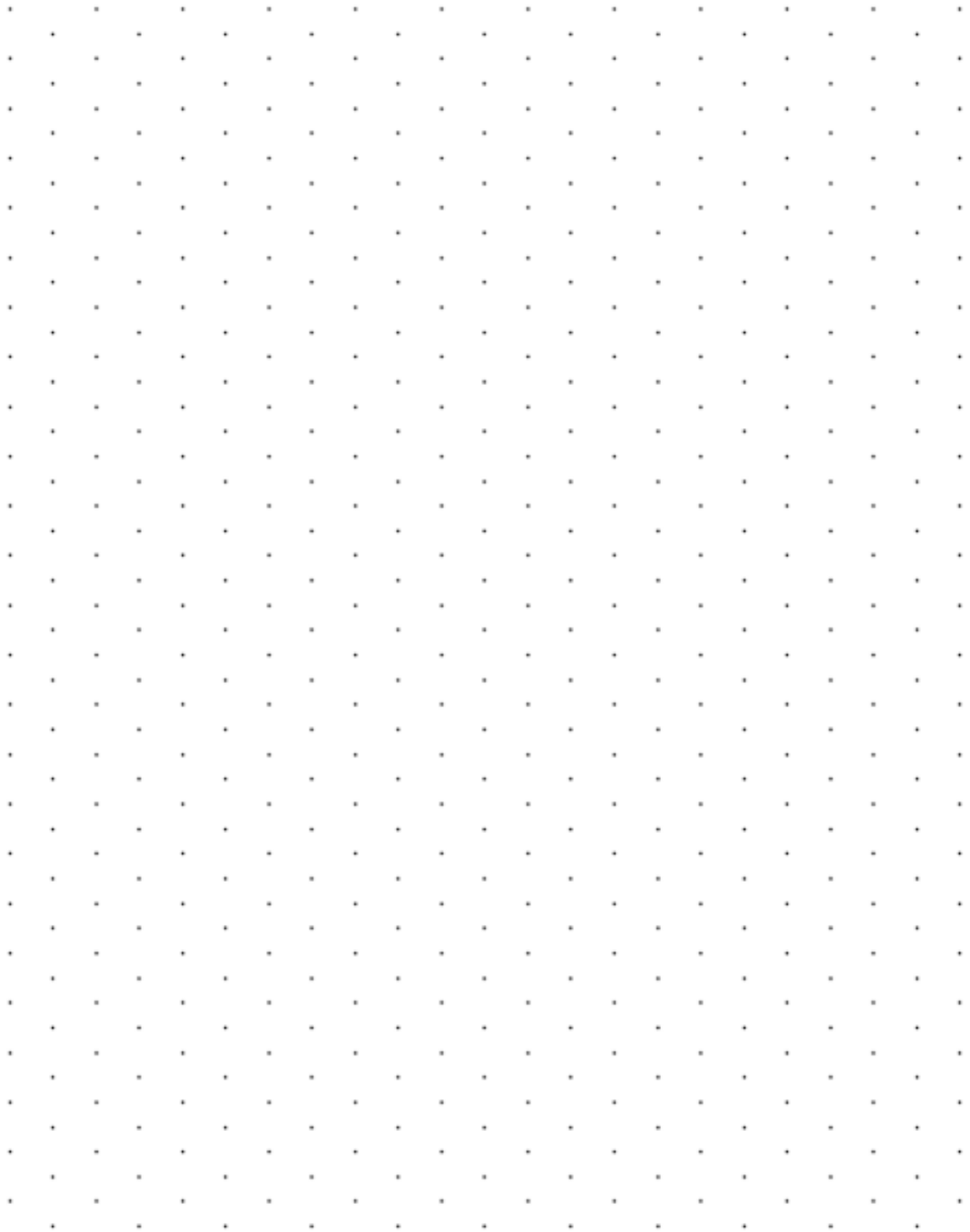
Grid Paper

Year 3 - Geometry

Dotty Paper

Year 3 - Geometry

Isometric Dotty Paper



Year 3 - Geometry

Squared Paper