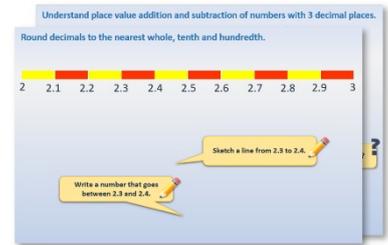


Week 10, Day 5

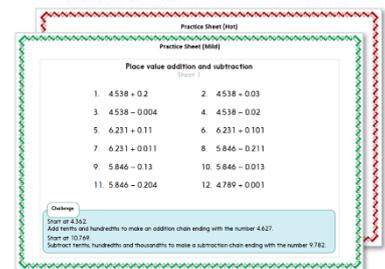
Find the area of rectilinear shapes

Each day covers one maths topic. It should take you about 1 hour or just a little more.

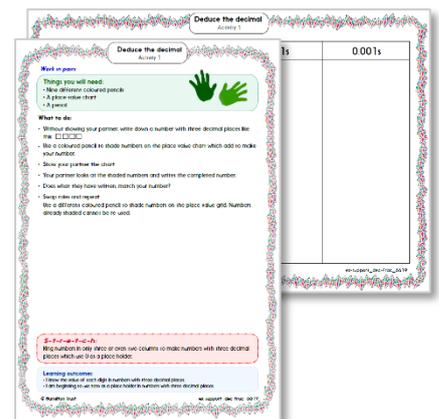
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



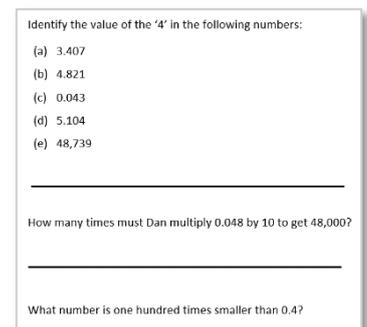
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



3. Finding it tricky? That's OK... have a go with a grown-up at **A Bit Stuck?**

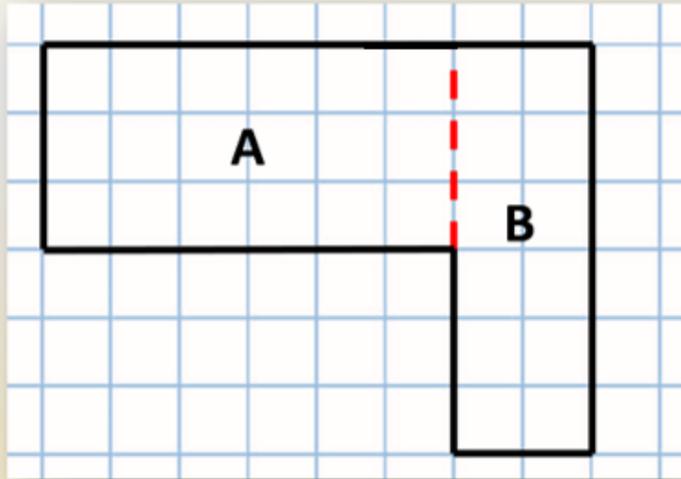


4. Have I mastered the topic? A few questions to **Check your understanding**. Fold the page to hide the answers!



Learning Reminders

Find the area of rectilinear shapes.



To find the area of the whole shape we can split it into 2 rectangles.

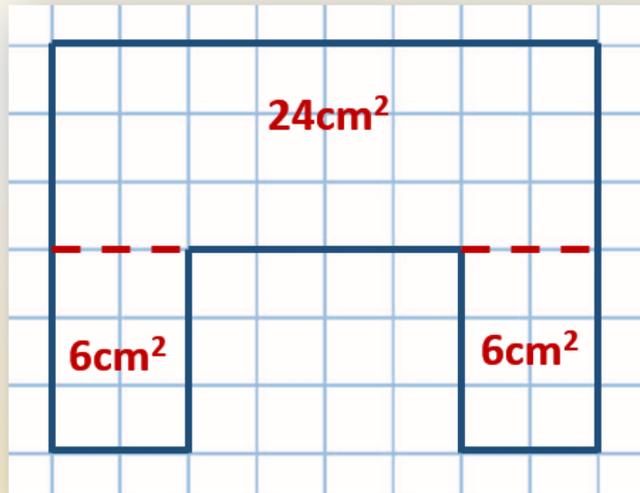
Rectangle A has an area of (3×6) .

Rectangle B has an area of 12cm^2 (6×2) .

The area of the **whole** shape is 30cm^2 .
 $(18\text{cm}^2 + 12\text{cm}^2)$.

Learning Reminders

Find the area of rectilinear shapes.



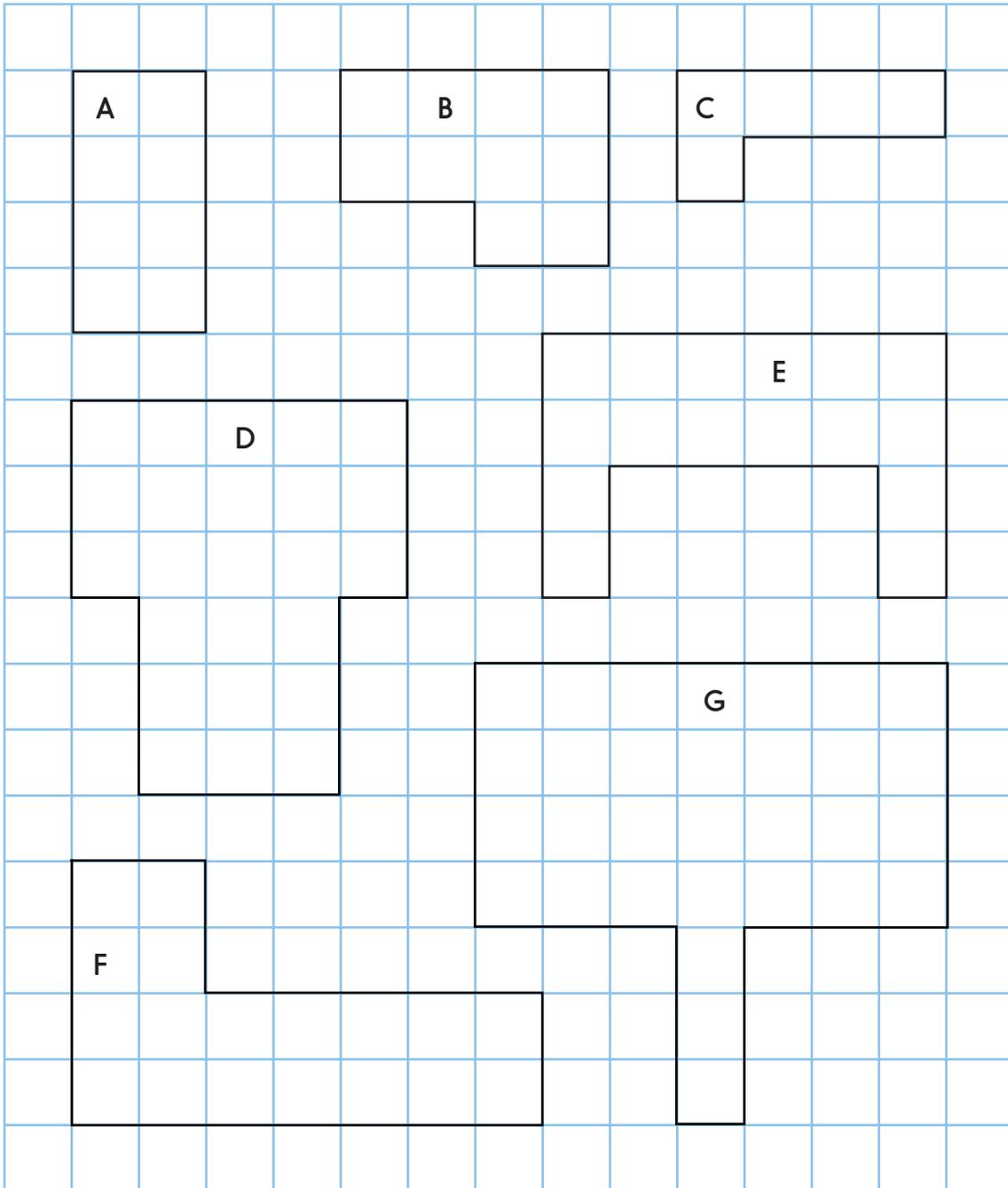
This shape has been split into 3 rectangles.

The area of the **whole** shape is 36cm^2 .

Practice Sheet Mild

Rectilinear areas

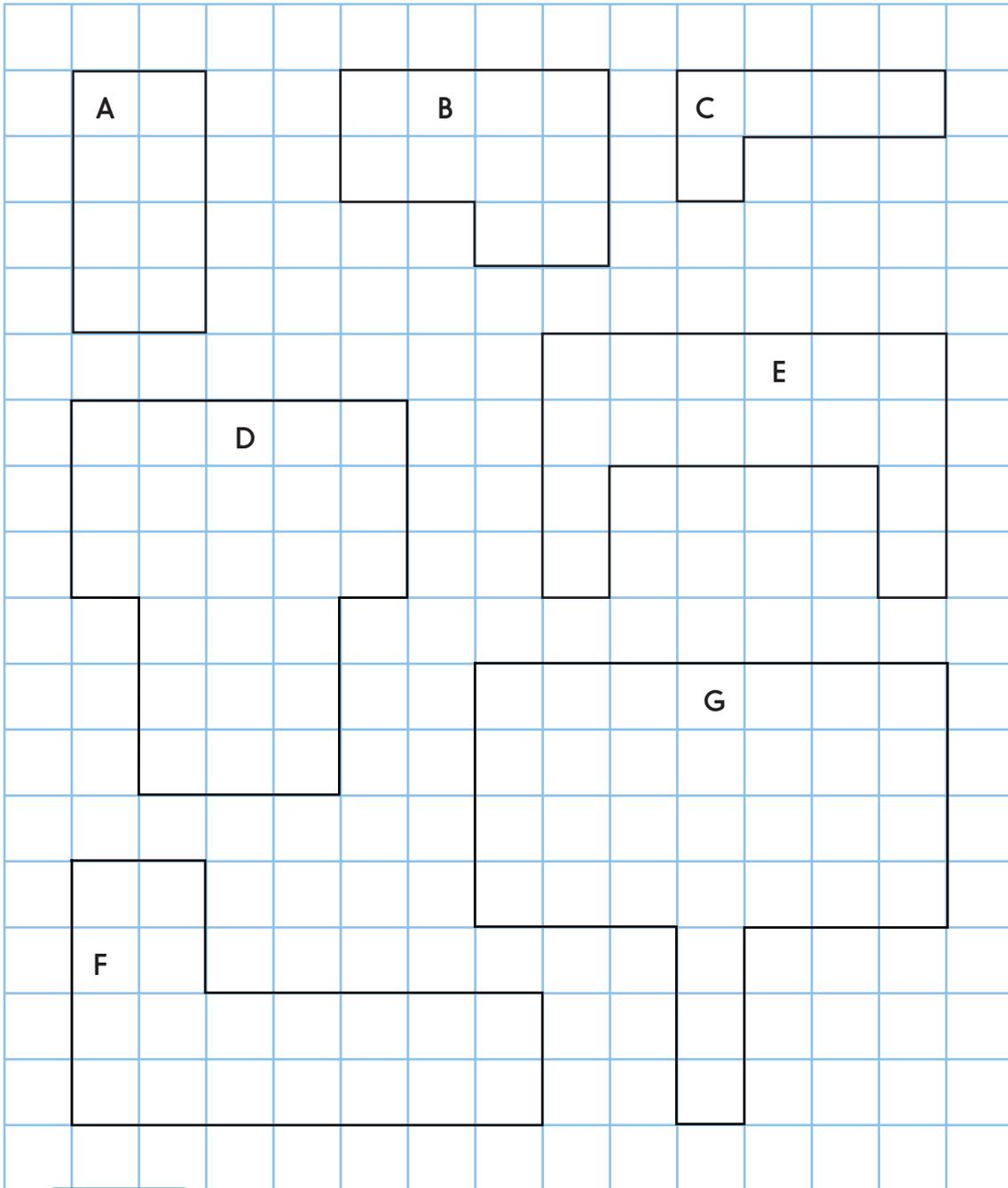
Which of these shapes has the largest area?



Practice Sheet Hot

Rectilinear areas

Which of these shapes has the largest area?



Challenge

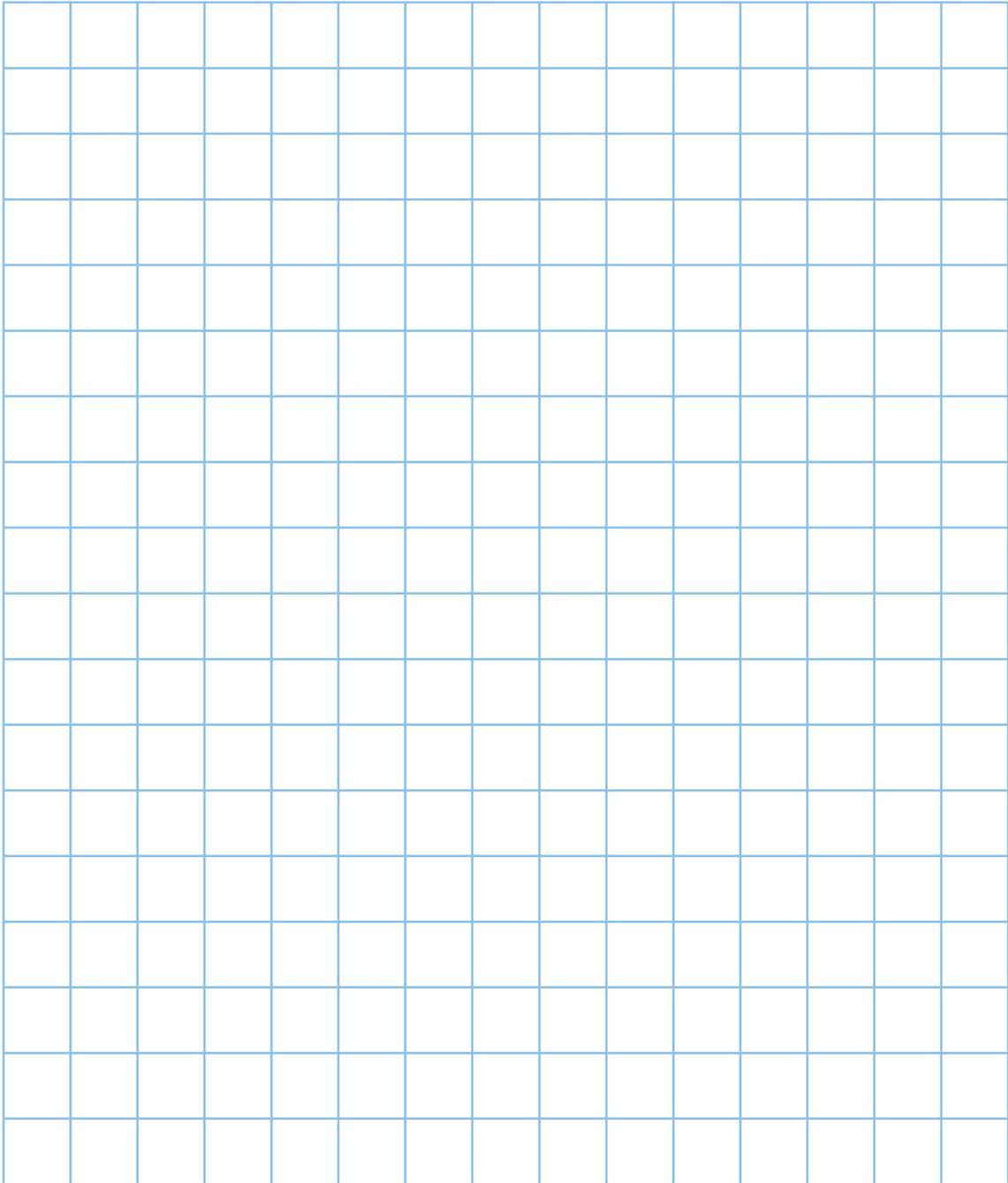
On the cm^2 paper, carefully draw an 'L' shape with an area of 40cm^2 and a 'T' shape with an area of 44cm^2 .

Split your shapes into rectangles to check their area.

Now draw an 'E' shape. How many rectangles do you need to split it into to find its area?

Practice Sheet Hot

Rectilinear areas



Practice Sheets Answers

Rectilinear areas (mild)

- A 8 cm²
- B 10 cm²
- C 5 cm²
- D 24 cm²
- E 16 cm²
- F 18 cm²
- G 31 cm²

In order of size from smallest to biggest: C, A, B, E, F, D, G

Which of these shapes has the largest area? G

Rectilinear areas (hot)

- A 8 cm²
- B 10 cm²
- C 5 cm²
- D 24 cm²
- E 16 cm²
- F 18 cm²
- G 31 cm²

In order of size from smallest to biggest: C, A, B, E, F, D, G

Which of these shapes has the largest area? G

Challenge

On the cm² paper, carefully draw an 'L' shape with an area of 40cm² and a 'T' shape with an area of 44cm².

Split your shapes into rectangles to check their area. Both 'L' and 'T' shapes split into 2 rectangles.

Now draw an 'E' shape. How many rectangles do you need to split it into to find its area? Four rectangles.

A Bit Stuck? Polyominoes

Work in pairs

Things you will need:

- lots of squares - all the same size, e.g. plastic or cut out from card
- pencil and paper



What to do:

- We have already explored all of the 'triominoes' and 'tetrominoes' that it is possible to make. We remembered that each square used had at least one side adjacent to the whole side of another square, and that a shape was only unique if it was not a reflection or rotation of another, i.e.

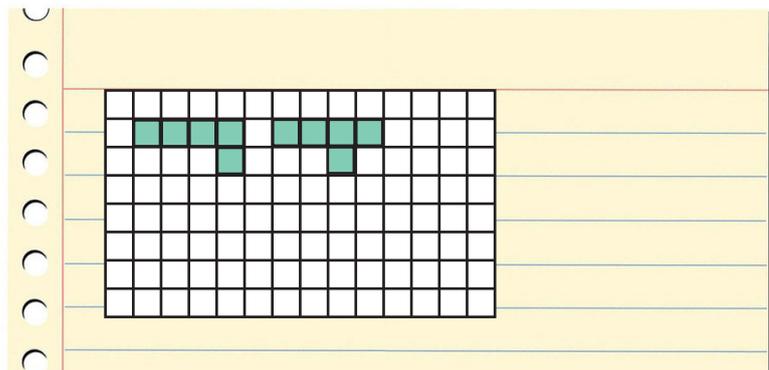


- Now, using 5 squares (all the same size), make or draw as many different rectilinear 'pentominoes' as you can.

How many do you think there might be? Why?

How can you be sure that each shape is unique?

How can you be sure you've found them all?

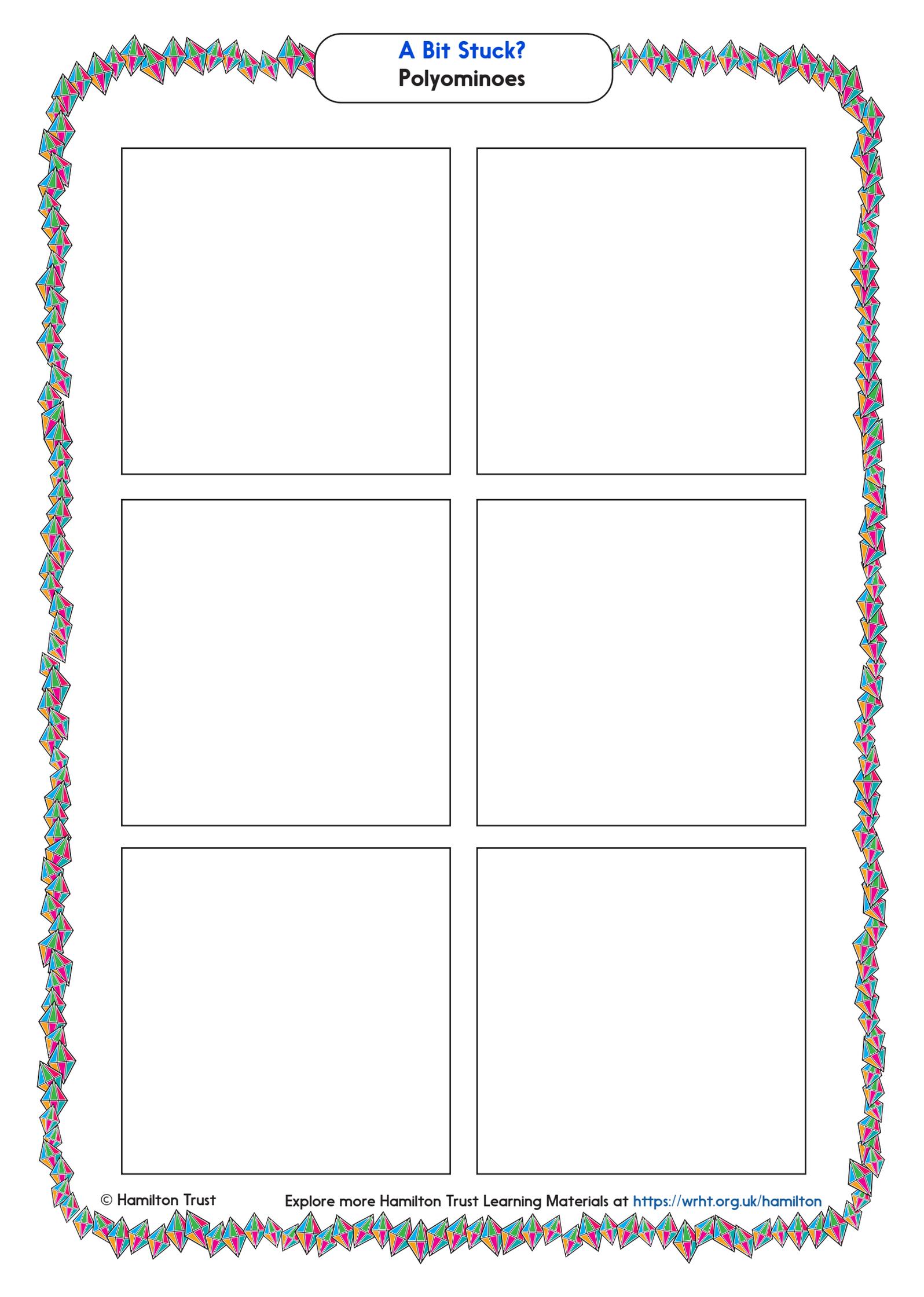


S-t-r-e-t-c-h:

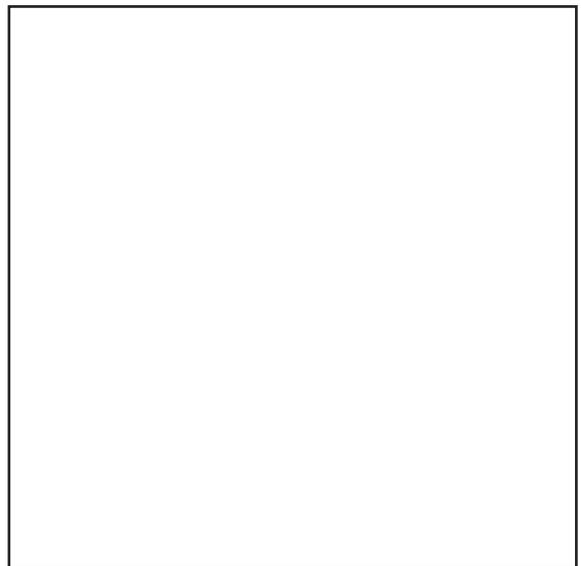
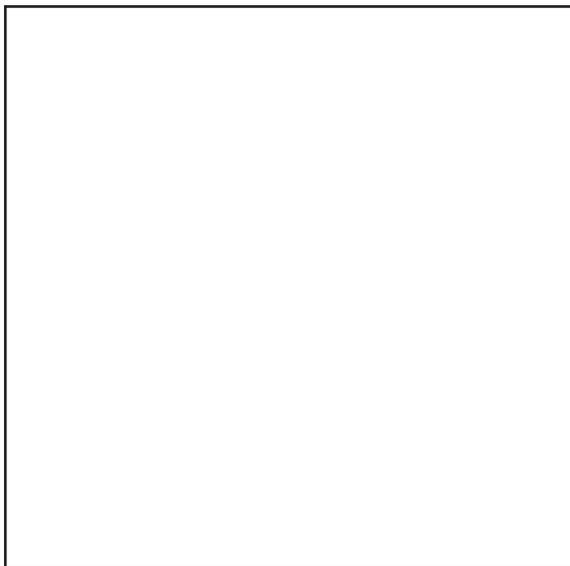
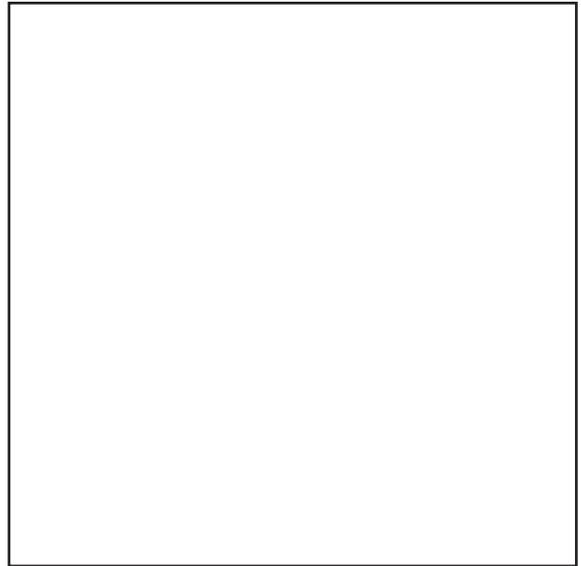
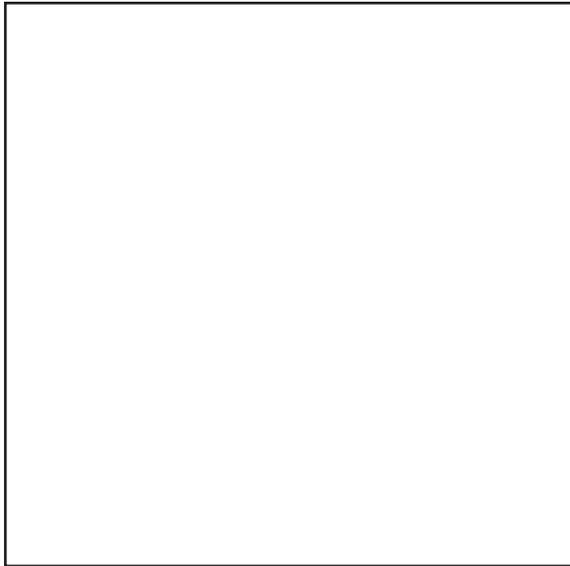
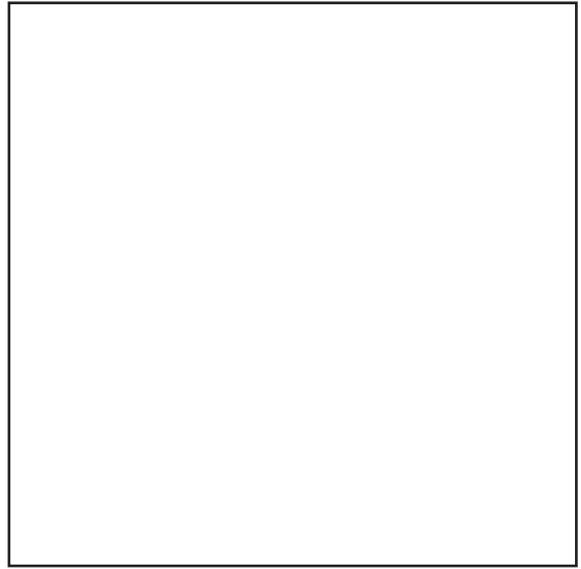
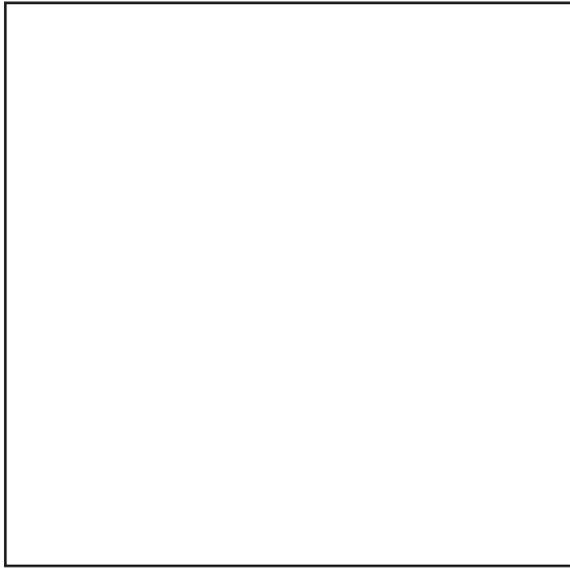
Using 6 squares, make or draw as many different rectilinear 'hexominoes' as you can.

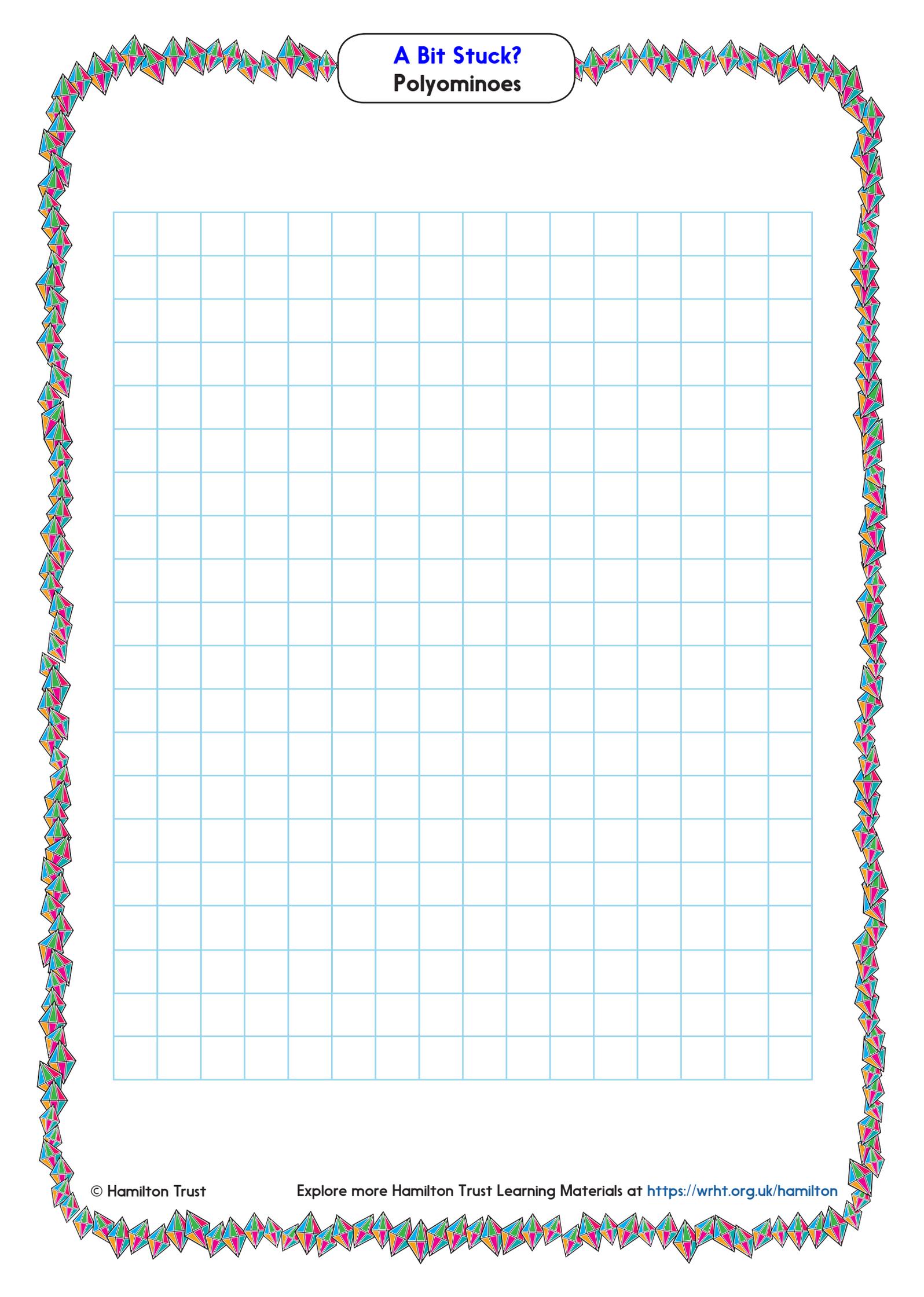
Learning outcomes:

- I can investigate rectilinear shapes.
- I can begin to investigate systematically.

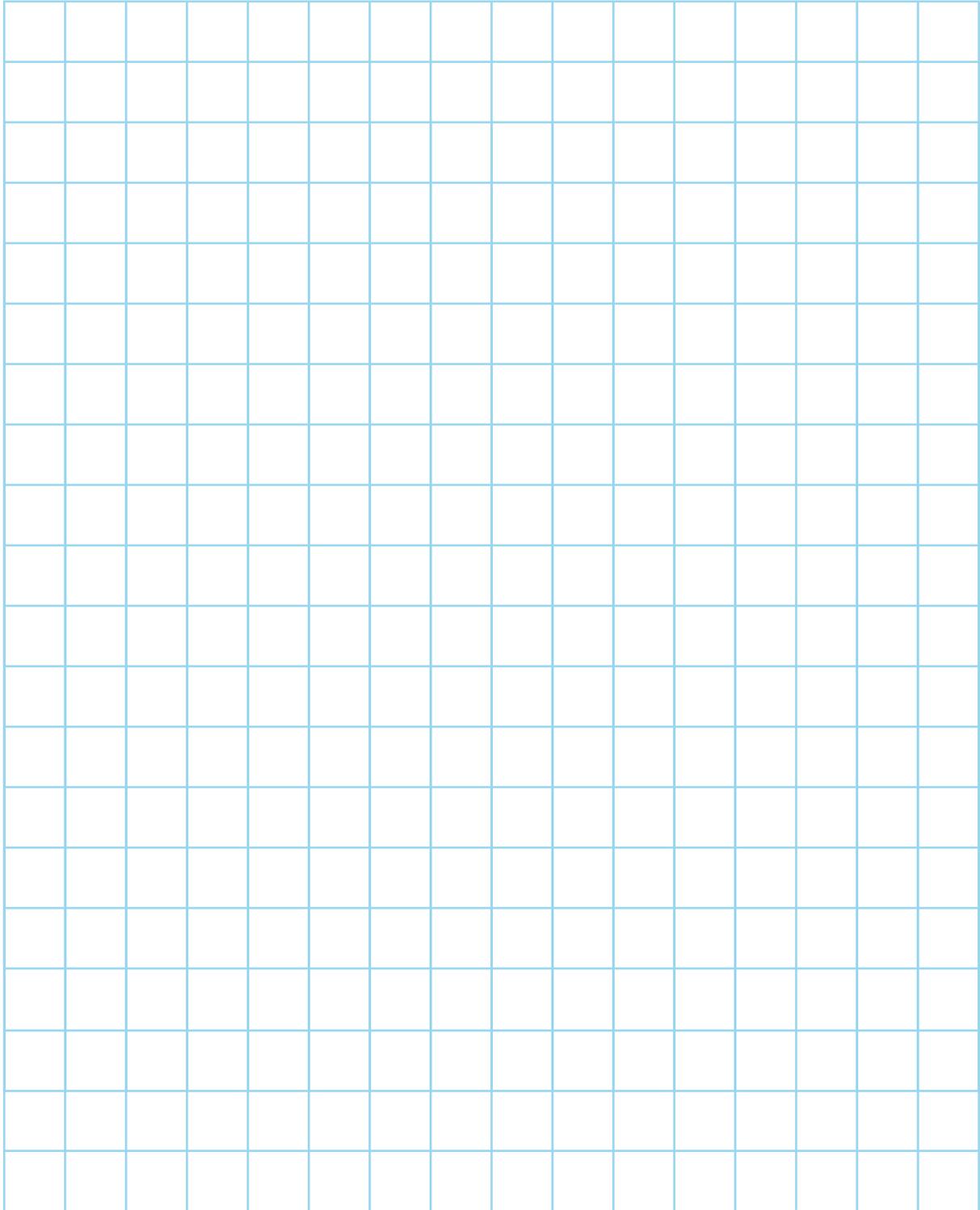


A Bit Stuck?
Polyominoes





A Bit Stuck? Polyominoes



Check your understanding

Questions

John has a rectangular bookmark

It measures 20cm by 6cm.

Draw it accurately and find its area.

It is too long for his book, so he cuts 1cm off the bottom.

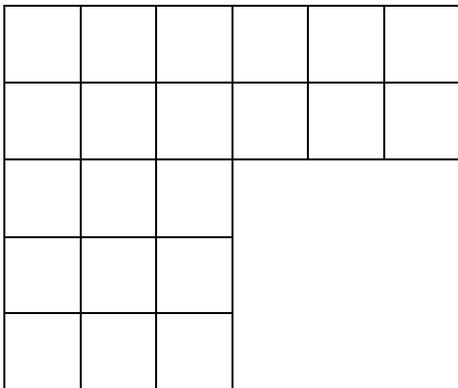
What is its area now?

Tanya has a silk scarf.

It measures 60cm by 30cm.

Is its area more or less than 100cm^2 ?

Find the area of this shape (each little square is a 1 centimetre square).



Check your understanding

Answers

John has a rectangular bookmark

It measures 20cm by 6cm.

Draw it accurately and find its area.

Area of the bookmark is 120cm^2 (not 120cm).

It is too long for his book, so he cuts 1cm off the bottom.

What is its area now? The area is now 114cm^2 , since it is now 19cm by 6cm. Some may give 119cm^2 (subtracting 1 from 120), if so refer to the drawing to demonstrate why this is incorrect.

Tanya has a silk scarf.

It measures 60cm by 30cm.

Is its area more or less than 100cm^2 ?

More since 60cm by 30cm gives an area of 1800cm^2 . An answer of 'less' might indicate that the child has added the numbers in the question, rather than multiplying them together.

Find the area of this shape. Each little square is a 1 centimetre square.

21cm^2 (not 21cm).

