

Imagine and build your own

4D Polytope

Gemma Anderson-Tempini is an artist who imagines different types of space. In the rooms and garden of the exhibition *And She Built A Crooked House*, you can see geometric shapes similar to these, which appear in many of her artworks. These shapes are called polytopes, and Gemma has been imagining, drawing and building them for many years.

Within this activity there are 9 individual 2D shapes, these are called nets. Each net can be cut and folded into a small 3D model. These small models can then be joined together to make a larger, more complex geometric model, which recreates the polytopes in the exhibition.

There are many different ways that these small 3D models can fit together, from this one set you could make a number of different large models.

To make your own model you will need:

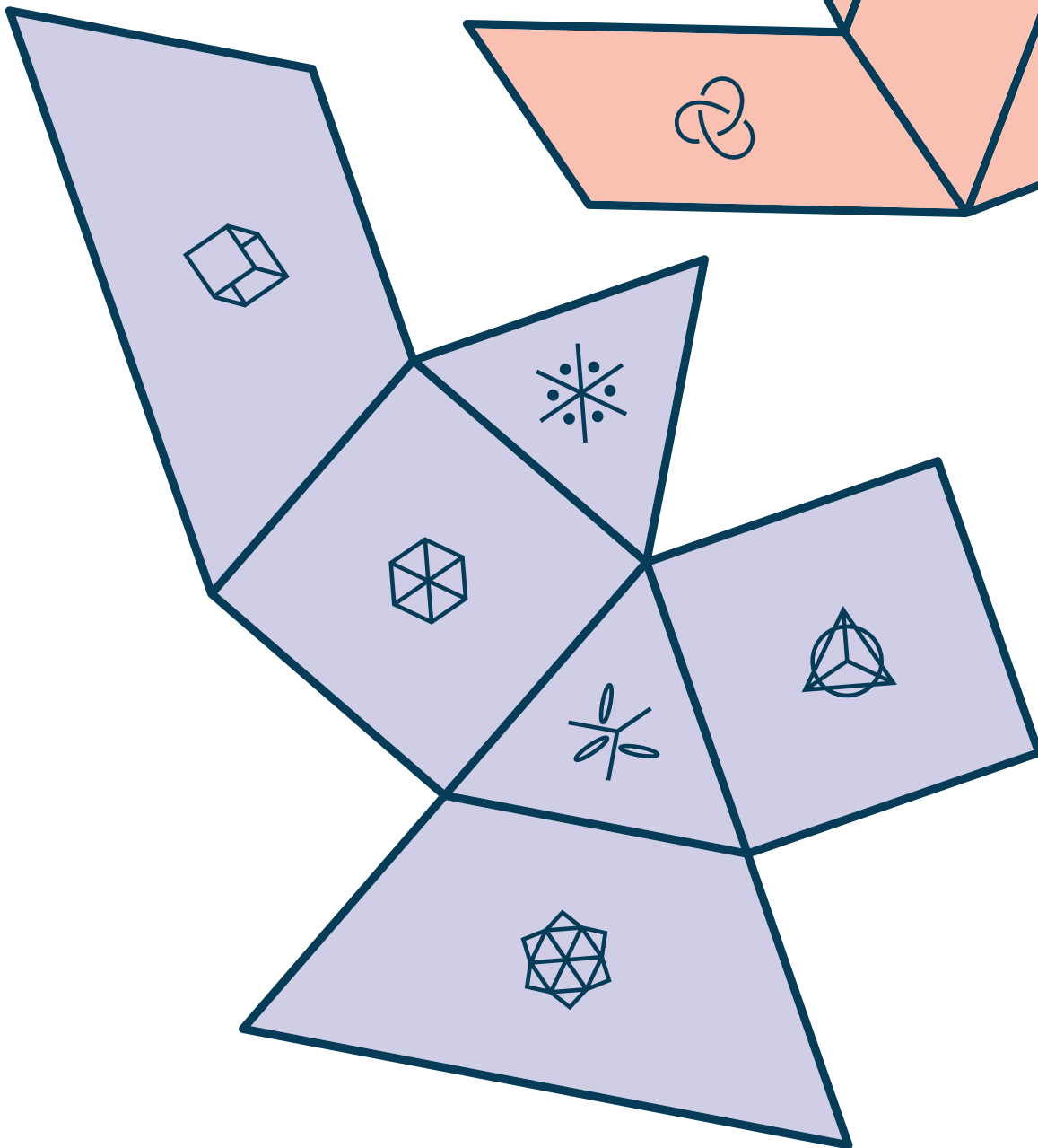
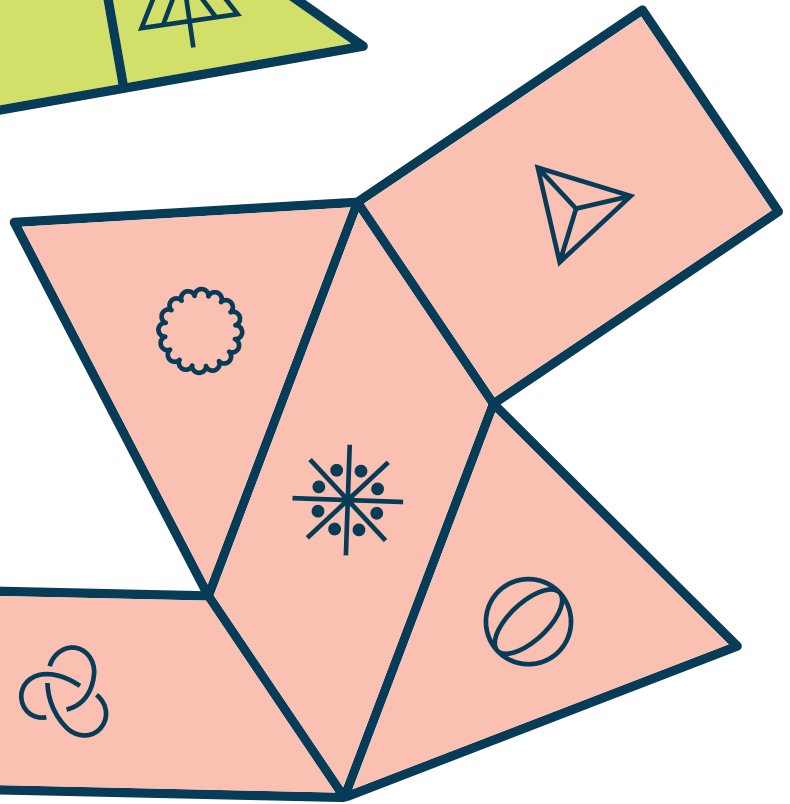
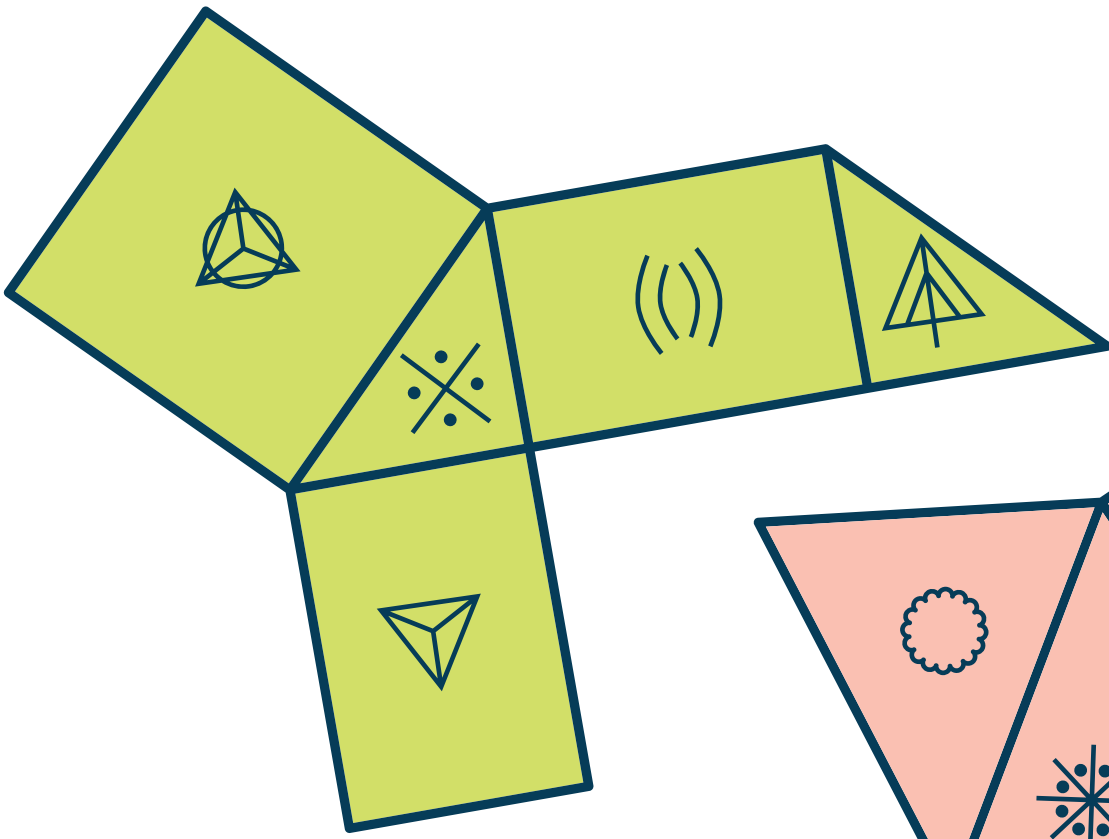
- Scissors
- Sellotape and/or glue dots

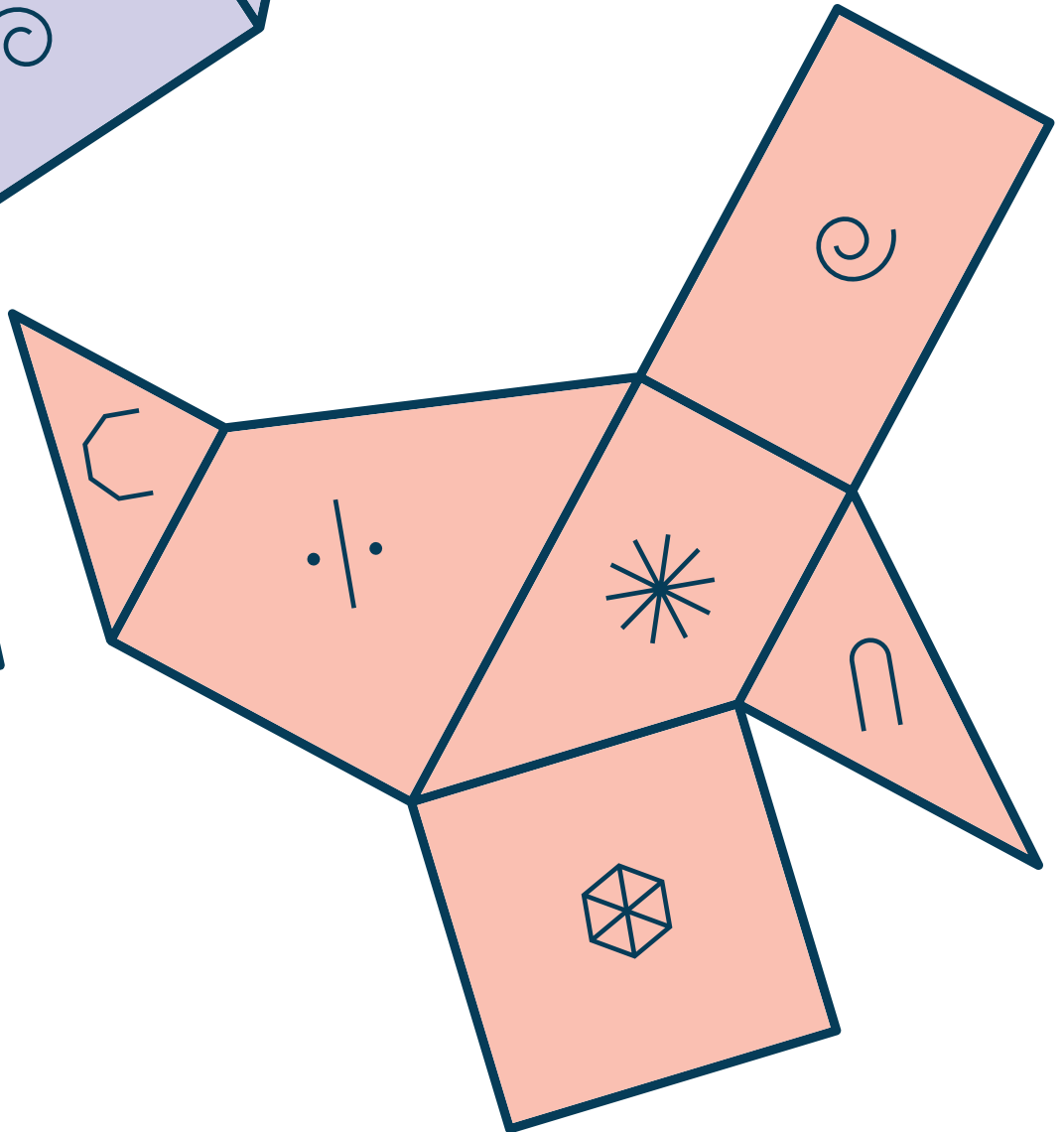
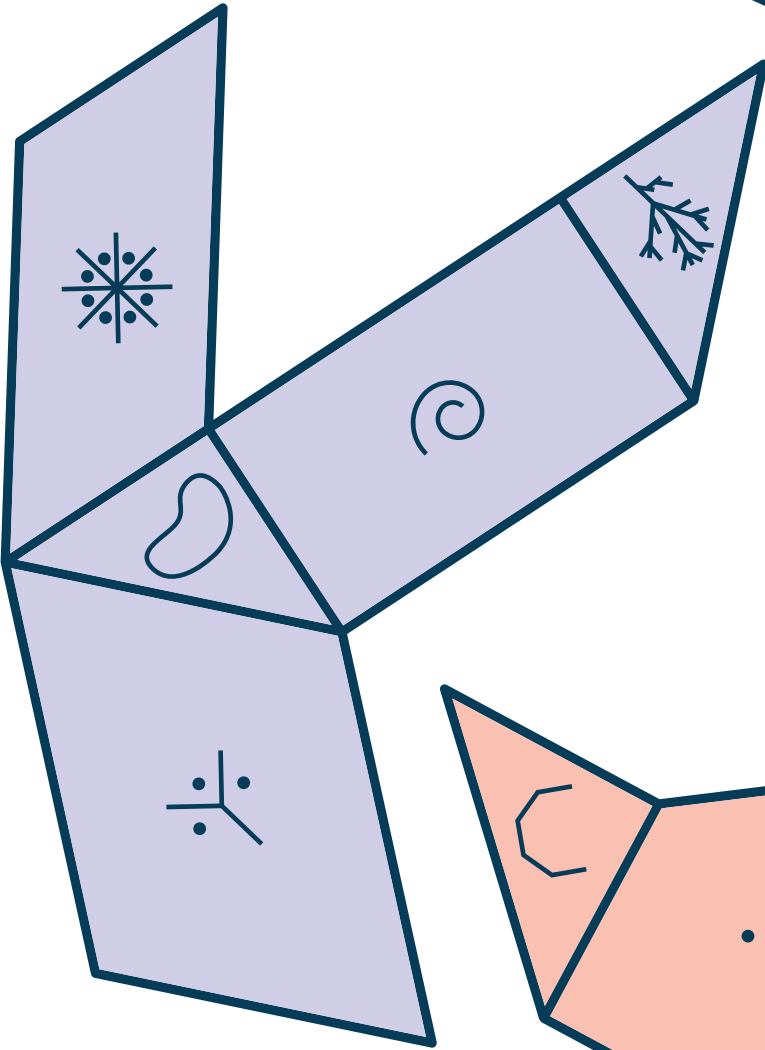
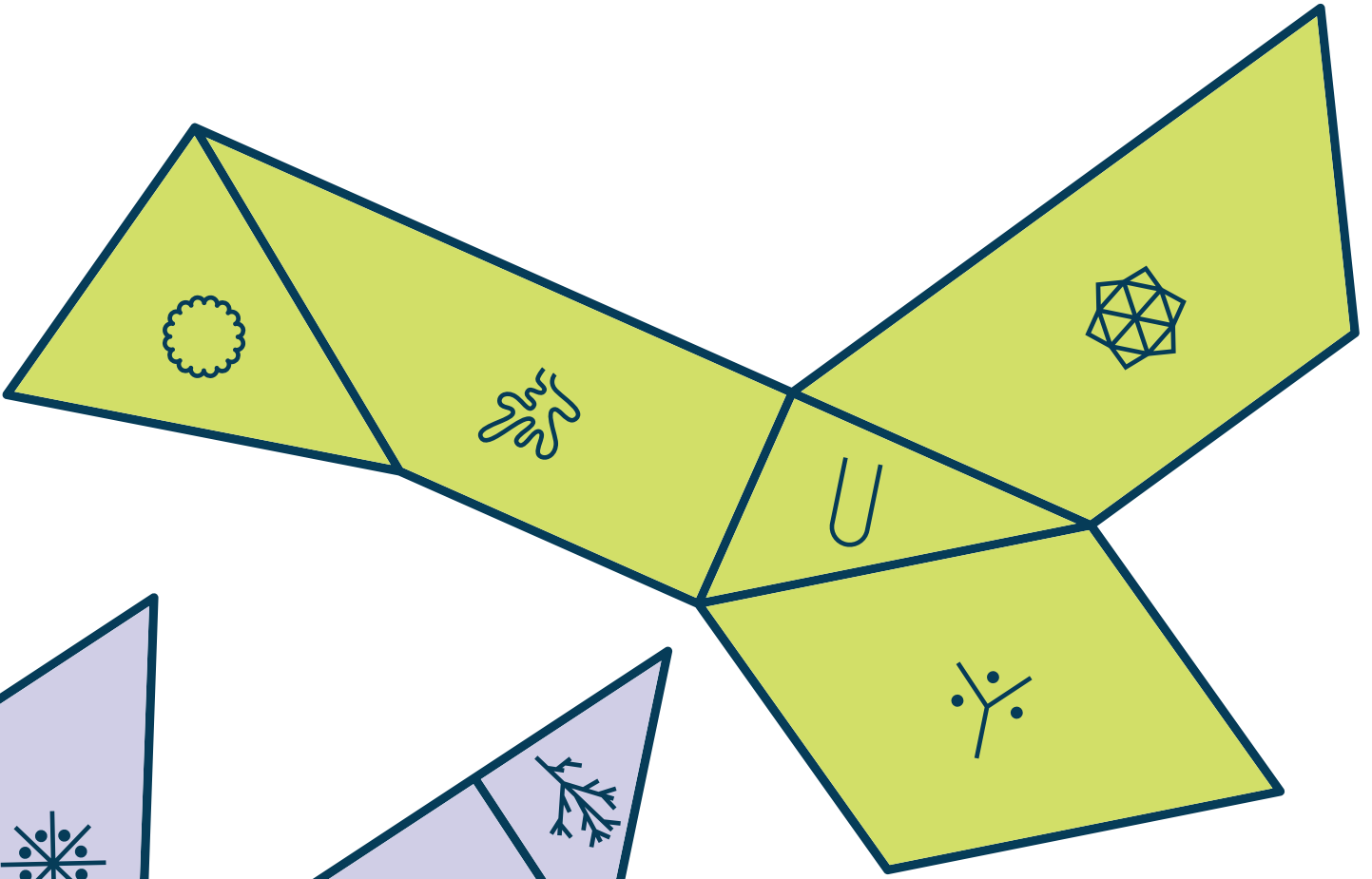
Instructions:

- 1 Cut out each 2D net along the outside edges of each shape on the sheet.
- 2 Working one 2D net at a time, fold along the lines and join the edges with sellotape to form a small 3D model.
- 3 When you have joined all the edges on your first piece, move on to the next and continue until you have 9 small models.
- 4 Now you can start to build your larger model by joining your smaller models together using the matching symbols and glue dots.
- 5 There are multiple ways that this can be done. We have shown you one way here.

Can you find the others?



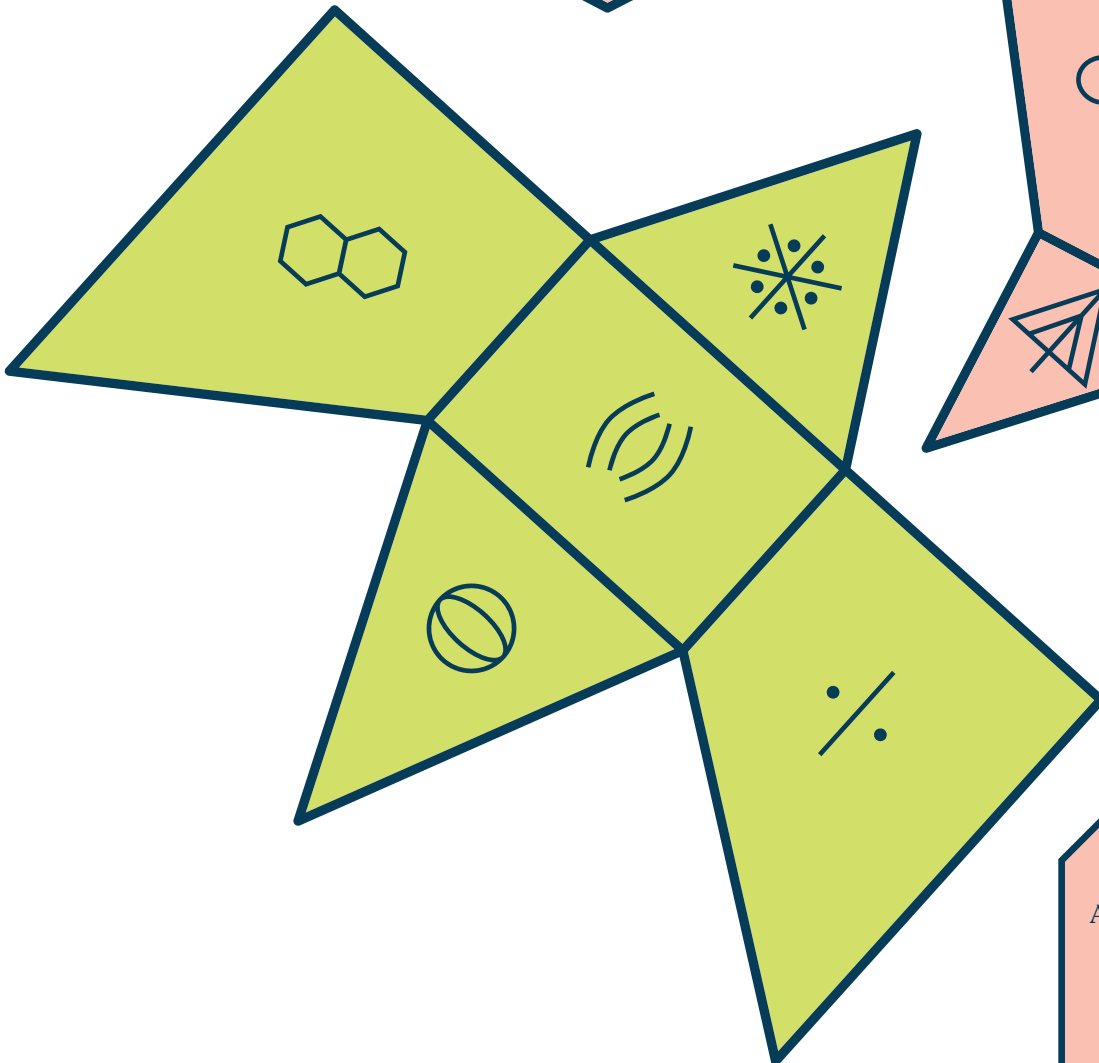
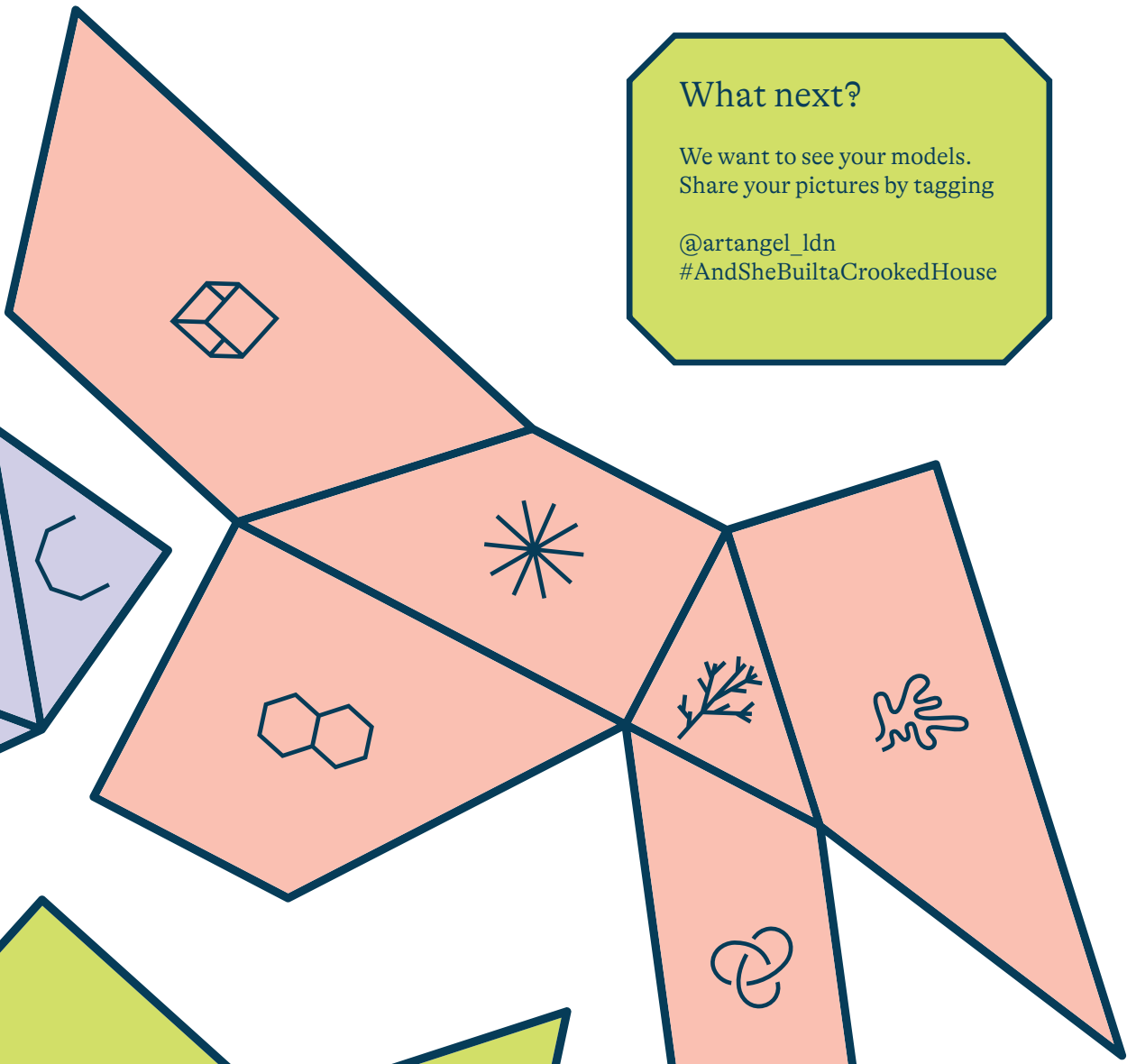




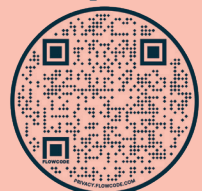
What next?

We want to see your models.
Share your pictures by tagging

@artangel_ldn
#AndSheBUILTaCrookedHouse



Find out more about Gemma
Anderson-Tempini and Artangel



“A polytope is a geometric object with flat sides (faces). Cubes, pyramids and triangular prisms are examples of 3D polytopes and can be unfolded to make a 2D shape called a net.

What makes our shape special is that we have started from a polytope in four dimensions and unfolded it to make 3D shapes. As a result it will be unlike any 3D shape you’ve seen before. As this model is made up of the faces of a 4D polytope, it will come together like a 3D jigsaw puzzle.”

Gemma Anderson-Tempini, artist

