

TetraTREEdron Project

Maths on Toast is inviting families, schools and communities to join together this December to build and decorate a festive tree with a difference, a **Tetratreedron** (or **Sierpinski tree**).

How YOU can get involved:

- **Families:**
Display a small tetratreedron in a window at home.
- **Schools/community centres/public spaces:**
Display a large tetratreedron made by joining tetrahedrons together to form one large sculpture.
- **Everyone:**
Share a picture with Maths on Toast!



St Peter's Primary School

Share!

Spread the word and share photos of your creations using the hashtags:

#tetratree

#positiveaboutmaths

tagging **@mathsontost**.

Or send your photos to **info@mathsontost.org.uk**.

We'll create an online community gallery on our website and you can view all submissions on social media by searching using the hashtags.

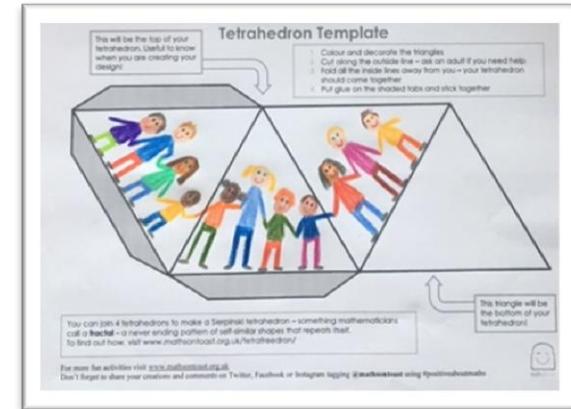
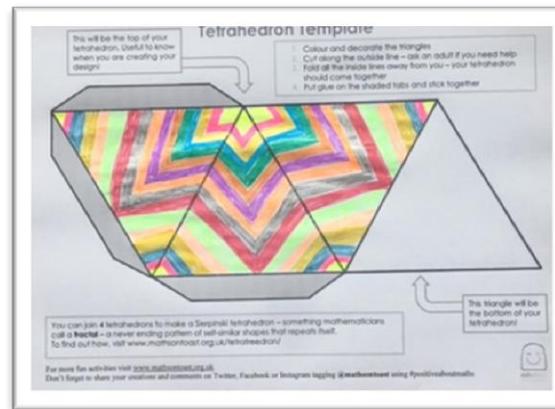
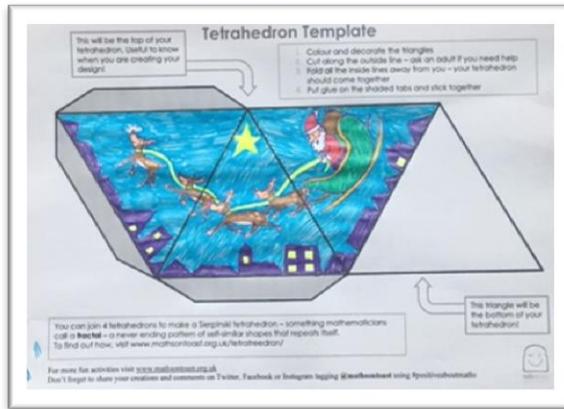
More tetrahedrons = A bigger tetratreedron!

For more fun activities visit www.mathsontost.org.uk

Don't forget to share your creations and comments on Twitter, Facebook or Instagram tagging **@mathsontost** using **#positiveaboutmaths**

How to make a one:

- Using Maths on Toast's template (you could also draw your own), follow the instructions to decorate and construct a tetrahedron. You can watch a short video here www.mathsontoast.org.uk/activities/tetrahedron/



Perhaps create a festive tetrahedron... ...a pattern...

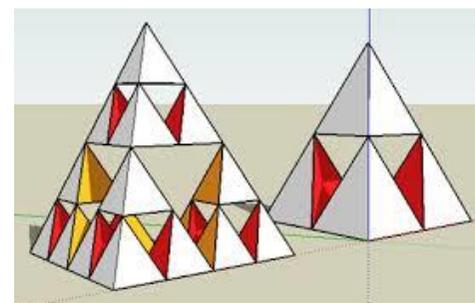
...or add your own design!

- Use tape (or a glue gun) to stick 4 tetrahedrons together to make a Tetratreedron.
- Stick 4 Tetratreedrons together if you'd like a bigger version.

How many will you need to make an even bigger tree?

Why's this maths?

You're discovering the concept of a 'fractal' and you're talking about shapes. As you make the structure you'll see different shapes formed by overlapping triangles. What other shapes can you see? There's also hidden multiplying! You've used 4 tetrahedrons to make a tetratreedron 2 levels high, can you work out how many tetrahedrons you need to make one 3 levels high?



So, what is a tetrahedron?

A tetrahedron is a shape made from four triangles. Not just any triangles - they need to be equilateral triangles (sides all the same length).

And a Sierpinski Tetrahedron?

Well, it looks like this. Look at it closely. Look at the whole shape, and then look at one corner. Do they look... similar? That similarity makes a Sierpinski tetrahedron something mathematicians call a 'fractal' - a shape that's made up of smaller versions of itself. A fractal can repeat endlessly to create larger and larger versions of itself.

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