



This resource is part of a suite of materials created to inspire entrants, and support parents, teachers and those out-of-school to make deeper connections with their surroundings. The *maths inside* is waiting to be discovered!

Below, you can find an example documenting the submission journey for an **Early Years** entry to the *maths inside* photo competition ([credits](#)).

We welcome [entries](#), both individually and in groups, from all ages of children and young people, as well as parents, guardians, carers and teachers and anyone qualifying for the out-of-school category! See [mathsinside.com](#) for full details.

## The Rainbow on my Road

Have you seen a lot of rainbows around lately? Have you made your own colourful hope rainbow to display on your window? Have you ever seen a real rainbow? Do you think you can find some maths inside the rainbow, whether it is a homemade rainbow or the beautiful rainbows which appear during certain weather, can you take a picture and write about the maths inside your rainbow?



Whilst I was out and about at the supermarket, I noticed this rainbow on my shopping bag. I thought to myself – how did they fit little love hearts into the shape of the rainbow? Can I fit different shapes inside the shape of a rainbow? What shape is the rainbow itself? Do all of the colours have the same shape? Why do the colours appear in this order – is it based on a natural rainbow or was it to make it pretty, is there a specific pattern?

This photo could lead to the title

Small shapes, big rainbow

with the commentary

This picture of rainbow is made up of lots of smaller colourful heart shapes

I looked at my commentary and thought I could do better!

So I took a look at the rainbow I made to display in my window and had a think.



I coloured in the rainbow in a different order to the shopping bag, does all rainbows follow the same pattern of colours? What is the pattern of colours? Why did I choose this pattern of colours, did I pick my favourite colours, did I copy a picture or a friend? What order do I sing the colours of the rainbow song in, do my friends sing the order in the same way? Is my rainbow symmetrical (is it the exact same on both sides, would it appear the same in a mirror?), why is my rainbow not symmetrical? Are rainbows in nature symmetrical?

Looking at my rainbow from the outside of my house I can see all the colours, but on the inside of my house I can only see white paper. Can I make my rainbow identical on both sides of paper? Why have I displayed my rainbow in this way? How would I change my rainbow so that I can see the colour from inside my house and white from the outside of my house? Where is my rainbow placed? Is my rainbow on the inside of my window indoors or is it stuck outside the window outdoors? What does my rainbow have around it? Does it have other shapes? Does it have writing? Have I put this writing/shapes in a

position? Where have I placed this writing around my rainbow? Where have I placed the rainbow itself, is it on an upstairs window, downstairs window, drawn on the ground with chalk? Why have I put it here – can more people see it, is it the highest I can reach, did someone taller than me help me put it up higher?

The picture of my hope rainbow for our carers leads to the title

Sky-high Shapes

with the commentary

My rainbow has the colours in the order of the rainbow song and they can only be seen from the outside cause I coloured them picture on one side. I placed my rainbow in the highest window in my home so that it can be seen by lots of people near or far. My rainbow is different and the same to those in nature. It is the same because I can only see my rainbow from one side. It is different because it is not symmetrical, but I think it looks nicer this way!

Later in the day on my walk, I spotted a real rainbow in the photo below. What shape is this rainbow? Why is the rainbow this shape and not another shape? Can I see all of the rainbow or only part of the rainbow? When did I see this rainbow – was it sunny, cloudy, rainy? What weather combinations do we need to see a rainbow, and why does it appear in this weather? Have I seen a rainbow anywhere else – in bubbles, in oil, through a special type of glass? How did that rainbow form? Where was this rainbow, was it above me, below me, far away, close? Was this rainbow big or small – the rainbow I noticed was big and it was very wide but not very tall. What colours do you see? How many colours are there – do the colours look like they blend together? Is this rainbow the same as a rainbow you would draw?



This image of an actual rainbow could lead to the title

When there is rain look for rainbows

followed by the commentary

When the sun shines brightly through raindrops, we can see a rainbow! The rainbow is in the shape of a very big circle, but we can only see part of it. We can only see it when the sun is behind us

Now I am not sure which photo, title and commentary to submit to the competition — luckily I can submit both because they fit it two different categories!

*Remember that submissions need to be original to be eligible for the maths inside photo competition. Judges can only accept original photos, commentaries and titles that are not featured, shared or displayed elsewhere (this includes social media and other competitions). See the [T&C](#) for more information, and please do get in touch if you have any additional questions.*

## credits

This [suite of resources](#) are the fruit of a collaborative project between undergraduate and postgraduate students from the [University of Glasgow — School of Mathematics & Statistics](#), and [Dr Andrew Wilson](#) (*maths inside* Founder and Director).

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The photos above are credited to *Keren Thomson*.