

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.

Button Mix-up and Sort

I have a bottle of buttons in my room. I love collecting them! They are all mixed up. Can you see how many different types of buttons are here?!



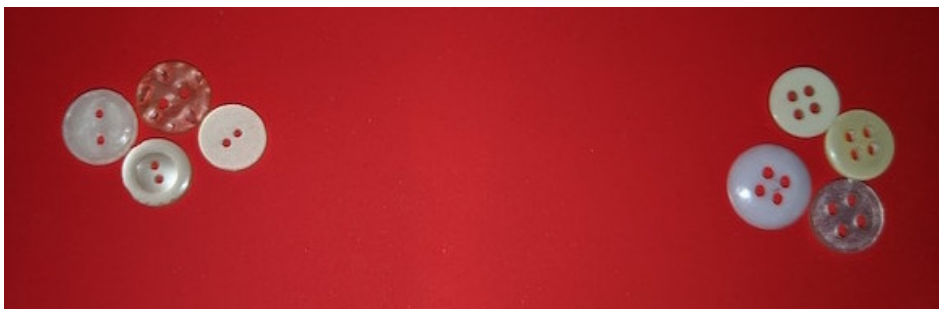
How could these be sorted? What features would you sort them by? How many different colours can you see? Where are the biggest ones? And the smallest? Can you find ones that are shiny, or rough, or smooth? Where are the buttons with two holes? Or four? There are many options!

Can you see that some buttons have four holes and some have two? I separated them in two piles and took a photo then gave it the title

Buttons in Stiches!

and commentary

I noticed that some buttons have two holes and some have four, so I separated them into piles. They need different stitches to tie them on



I like sorting the buttons by their holes, but then I noticed I have many different colours of buttons. What colours of buttons do I have in the first picture above? How many are there? Can you count how many? I thought about this and sorted them by colour, took a picture and it looked like this



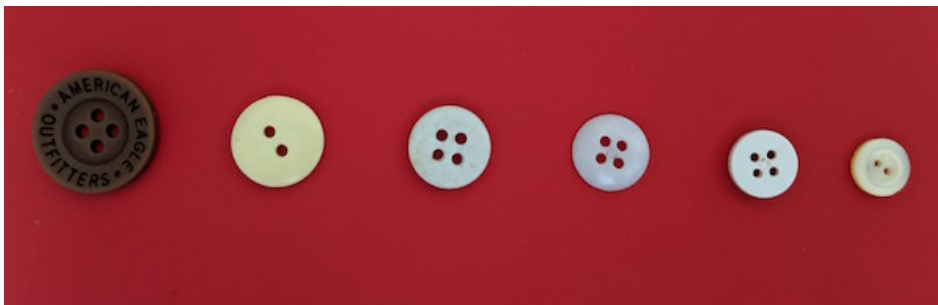
I chose the title for this picture

Colour Coded

and wrote the commentary

If I want to sew a button on my brown teddy bear, I will sort them by colour so I can easily find the brown one. If my friend wants to sew a missing button on his white shirt, he can find one in the white pile. My friend has a blue purse with a missing button – she can easily find the blue button. So, I decide to group them by colour

I like them sorted by colour, but take another look at my pile of mixed buttons. What sizes of buttons do you see? How many different sizes are there in the pile? Can I sort them by size? What size buttons can I use for my small teddy bear and what size for my big one? I picked out six buttons of all sorts of sizes and took another picture



I gave it the title

Size-wise

and the commentary

I have a big brown teddy bear and a small one too so I made my brown buttons line up from big to small. My bear whispered in my ear that it is wise to separate buttons based on their size and so we have Size-Wise.

What different ways of grouping these buttons can you think of? How could you sort the buttons into piles? I thought a bit more and took a picture with many different ways to group them for my submission – take a look!



For my final entry with all my explorations I chose the title

All Sorted!

With the commentary

I noticed that some buttons have two holes and some have four, so I separated them into piles. They need different stitches to tie them on. Then I sorted them by colour and I could find the right button to sew on my brown teddy bear, my friend can find the best button on for his white shirt, and other friend could fix their blue purse with a missing button. I have a big brown teddy bear and a small one too so I made my brown buttons line up from big to small. My bear whispered in my ear that it is wise to separate buttons based on their size and so this line is called size-wise. I found many more ways of grouping my buttons, some are shiny and some have patterns — some go together because they don't! I like collecting buttons and putting them in different groups.

What can you find around you? How can you grouped them? Could you group them differently? How many different ways can you group them? Can you find all the ways to group them?

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 *Tanushree Bharat Shah*.