



This resource is part of a suite of materials and activities created to inspire entrants, and support teachers, and parents to enter *maths inside*: a photo competition open to everyone in Scotland.  
*maths inside*: see different, make connections, celebrate!

## Discovering and documenting the *maths inside* mixing

### What is this?

This is an example to inspire and support First Level practitioners to design an interdisciplinary learning (IDL) activity based on the *maths inside* photo competition, and leads children towards the creation of an entry. This activity is based on First Level (P2–P4) experiences and outcomes (Es+Os) and complements the [Colour Wheel example journey](#), its [displayed final submission](#), and [Image Bank 1](#) for Early Years to Fourth Level (Pre-school–S3).

### CfE experiences and outcomes: First Level

- I can convey information, describe events or processes, share my opinions or persuade my reader in different ways [LIT 1-28a](#) / [LIT 1-29a](#)
- Having explored fractions by taking part in practical activities, I can show my understanding of:
  - how a single item can be shared equally
  - the notation and vocabulary associated with fractions
  - where simple fractions lie on the number line [MNU 1-07a](#)
- I have used a range of ways to collect information and can sort it in a logical, organised and imaginative way using my own and others' criteria [MNU 1-20b](#)
- I have the opportunity to choose and explore a range of media and technologies to create images and objects, discovering their effects and suitability for specific tasks [EXA 1-02a](#)
- I can create and present work using the visual elements of line, shape, form, colour, tone, pattern and texture [EXA 1-03a](#)
- I can create a range of visual information through observing and recording from my experiences across the curriculum [EXA 1-04a](#)

### Purpose of the activity

To explore the idea of proportions and ratios through paint colours and how mixing different amounts of each colour produces different results. To further explore the idea of mixtures, why certain materials combine into one and why some materials stay separated or 'unmixed'. To embark on a creative journey

to record the discoveries made in an engaging piece of writing and in a visually appealing photograph. To provide opportunity to apply digital literacy skills.

### Learning activity

- Using red, yellow, blue, white and black paints invite pupils to experiment to discover how many new colour combinations can be made
- Using the questions in [Image Bank 1](#) or the [Colour Wheel example journey](#), invite pupils to try mixing different amounts of each colour together. For example, two blobs of red paint and one blob of yellow, or three blobs of yellow to one blob of blue. Try this for each starter colour and count how many new colours the pupils can make, asking them to display their new findings and colours in a fun and creative way
- Using the notation and vocabulary associated with fractions ask pupils to indicate where the fractions of colours that arise lie on the number line
- Ask pupils to write down their discoveries in a commentary, either individually or in groups
- Have each group or individual take a photograph of their matched objects and discuss what makes a visually appealing and engaging photograph
- Digitally add the *maths inside* sticker ([how to guides](#) available) and [submit](#) to the competition

### Extension activity

We have seen that different paints combine fully together to make a new coloured paint, but what other mixtures could be created? Experiment with other media. Consider different combinations of, for example, water, milk, orange juice, tomato ketchup, toothpaste, oil, vinegar, sand, salt and sugar. First predict the outcome. Then follow up with the experiment of mixing combinations together to see if they combine into a new material or stay separated.

### National benchmarks

These activities provide learners opportunity to engage in further thinking and to integrate skills from across the curriculum in a context. Observation and feedback from these learning activities could contribute towards overall assessment of learners progress.

*Open to all ages with prizes in each level. You only need a mobile, the internet & curiosity! Enter on your own or as a team, mind to add the maths inside sticker, and submit in one, or in as many categories as you like. The photo should be your own, without changes, and for a chance to win, cannot be shared anywhere else. View the [T&C](#) for more information, and please do get in touch if you have any 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](#), [Education Scotland](#), and [Dr Andrew Wilson](#) (*maths inside* Founder and Director)

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