



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* choice

### What is this?

This is an example to inspire and support Secondary Teachers to design an interdisciplinary learning (IDL) activity based on the *maths inside* photo competition, and leads learners towards the creation of an entry. This activity is based on Third/Fourth Level experiences and outcomes (Es+Os) and complements the [Chances in Camping example journey](#), its [displayed final submission](#), and [Image Bank 1](#) for Early Years to Fourth Level (Pre-school–S3).

### CfE experiences and outcomes: Third/Fourth Level

- I can find the probability of a simple event happening and explain why the consequences of the event, as well as its probability, should be considered when making choices [MNU 3-22a](#)
- By applying my understanding of probability, I can determine how many times I expect an event to occur, and use this information to make predictions, risk assessment, informed choices and decisions [MNU 4-22a](#)
- I can convey information, describe events, explain processes or concepts, and combine ideas in different ways [LIT 3-28a](#)
- I can persuade, argue, evaluate, explore issues or express and justify opinions within a convincing line of thought, using relevant supporting detail and/or evidence [LIT 4-29a](#)
- I have continued to experiment with a range of media and technologies, handling them with control and assurance to create images and objects. I can apply my understanding of the properties of media and of techniques to specific tasks [EXA 4-02a](#)

### Purpose of the activity

To explore, through outdoor learning, the role of probability and chance in our decisions and how the chances in our decisions can be altered. To invoke curiosity in day to day activities and encourage creativity through an engaging piece of writing and a visually appealing photograph. To provide opportunity to apply digital literacy skills.

### Learning activity

- Find 3 similar items differing in one attribute, such as 3 tent poles identified with colours and codes (as seen in the resource) or 3 different length sticks (this example will be continued below). Other possibilities could be, 3 types of footwear (e.g. boot, flipflop, shoe), 3 remote controls, 3 types of cutlery, etc.
- Hold the 3 items so that they are indistinguishable. For example, holding the sticks in a way that hides their length or placing them into a bag/box.
- Consider as a group the likelihood or probability that, for example, the shortest stick is selected
- Allow a participant to choose a stick and reveal if they managed to pick the shortest one
- Using the questions in [Image Bank 1](#) or the [Chances in Camping example journey](#), invite learners to consider where else codes appear and how our environment is designed to support making decisions and decreasing the likelihood of making a mistake
- Invite learners to document their discoveries in a commentary, either individually or in groups
- Have each group or individual take a photograph of the 3 items, and discuss what makes a visually appealing and engaging photograph. For example, framing (what is in and out the photo), composition (how the objects are arranged in the photo), lighting, emotion (how does the photo make you feel?), hand gestures and body language, etc.,
- After returning indoors, *maths inside* sticker ([how to guides](#) available) and [submit](#) to the competition

### Extension activity

- To reach MNU 4-22a target, consider how many times on average (selecting a stick at random) are needed to select the shortest stick. This can lead to an understanding of applying the probability of  $\frac{1}{3}$  into the expectation of needing to perform the choice 3 times on average to get the desired result
- After discussion and prediction, perform the experiment in pairs recording the results and comparing data to confirm the number of times it takes to get the expected result on average

### 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)

The authors are Jordan Baillie, Nanette Brotherwood, Tanushree Bharat Shah, Lucas Farndale, Emma Hunter, Christopher Johnson, Harkamal Kaur, Christian Lao, Samuel Lewis, Kathleen McGill, Megan Ruffle, Yvonne Somerville, Andrew Wilson, and Yuanmin Zhu