

Maths Week 2019

<https://www.mathsweek.scot/>

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We have put together some activities to mark Maths Week. Outdoor Learning lends itself to creating a rich and supportive learning environment for Maths and Numeracy. The *Numeracy across Learning* document (<https://education.gov.scot/Documents/numeracy-across-learning-pp.pdf>) states that such an environment will support a skilful mix of a variety of approaches, including:

- active learning and planned, purposeful play
- development of problem-solving capabilities
 - developing mental agility
- frequently asking children to explain their thinking
- use of relevant contexts and experiences, familiar to children and young people
 - using technology in appropriate and effective ways
- building on the principles of Assessment is for Learning, including understanding the purpose and relevance of the activities
 - both collaborative and independent learning
- making frequent links across the curriculum, so that concepts and skills are developed further by being applied in different, relevant contexts
 - promoting an interest and enthusiasm for numeracy

The Maths activities below are designed to help you and your class explore your school grounds in the context of Maths. The ideas given are suggestions only. Why not have a go at developing your own outdoor Maths activities? Even better, encourage learners to develop activities for themselves!

Many of the ideas are taken from the following resource

<http://www.thinkingchild.org.uk/wp-content/uploads/2013/11/Free-Maths-Trails-pages-from-Thinking-Child.pdf>

The document includes ideas for MNU outdoors across Early, Primary and beyond. There are ready made Maths Trails but it is better to use the ideas to create site specific trails which relate to the work learners are already engaged in.

The tasks are readily adapted so that you can relate Maths discussion to learning that is going on in the classroom and flexible enough to adapt to the particular outdoor setting you are using.

Early Level

Task 1: Tiny Treasure Hunt

Resources: treasure chests (any small container with a lid), one each or one between 2

‘Collect as many items as you can to fit into the Treasure Chest.’

Each pupil or pair of pupils collects as many items as they can to fit into the treasure chest.

Set a time limit and gather the class together to discuss their treasure.

In their own space, each pupil/pair puts the finds in a line and counts them. Who has the most?

Can the pupils/pairs put them in size order – longest to shortest.

Can pupils/pairs sort them into groups – by colour, by shape, by type (stones with stones etc). Ask pupils to devise their own systems for sorting.

Task 2: Maths Scavenger Hunt

Resources: blank dry wipe board and white board pen (per pupil or per pair)

Ask the children to draw a line down the middle (top to bottom) and one across the middle (from left to right). Discuss the shapes created and the number of ‘boxes’ created. Talk about halves and quarters.

Set the children 4 tasks which relate to the Maths around us in our playground. After listening to one Maths activity, learners use the outdoor space to complete it and return to an adult to feedback. The next activity is set and so on until all 4 parts of the dry wipe board have been filled.

Suggested questions

- Find a circle in the grounds (playground marking, drain cover?) Draw a picture in one of the 4 boxes on the dry wipe board and return to adult
- Find 6 leaves, draw
- Find something with 4 legs (picnic table, 2 children?)
- Find something straight
- Find something shorter than your pinkie/something taller than your knee

First Level

Task: Playground Maths Trail

Possible Resources: blank dry wipe board and white board pen (per groups of 2 or 3), set squares, ruler

Ask the children to draw a line down the middle (top to bottom), draw further lines from top to bottom to create 4 (approximately) equal columns. Draw a line across the middle from left to right. Pupils will have divided their boards into 8 roughly equal parts/eighths.

Talk the children through the process of creating the different fractions. Ask how we could make sure that next time we **accurately** divide the boards into 8 equal parts.

Send the pupils to complete the following or similar tasks around the playground. Give out each task one at a time. Pupils can write down the task on the back of the board. Pupils return as a group to feedback before being issued with the next task. Pupils rub out the task they wrote down for the previous task before beginning the next.

Suggested questions

- Find 3 right angles and draw all 3 in one of the 8 boxes.
- Take the number of children in the class today and multiply by the number of legs on a picnic table.
- Using natural materials make a symmetrical shape/find a natural object with mirror symmetry/ find a man made object with mirror symmetry
- Look at the door handles on the outside of the school building – do they turn in a clockwise or anti clockwise direction?
- Find a tree and look at one of its leaves closely. How big is the leaf? Is it bigger or smaller than your hand? How many leaves does it take to cover both of your hands?
- How many legs (animal and man made) are in the playground right now?
- Which sign in the playground would be the most expensive to create. Why?
- How many windows are on the side of school building closest to us. What is half of that number?

Second Level

Task: Playground Maths Trail

Possible Resources: blank dry wipe board and white board pen (per groups of 4 or 5), set squares, ruler

Ask the children to draw a line down the middle (top to bottom), draw further lines from top to bottom to create 4 (approximately) equal columns. Draw a line across the middle from left to right. Pupils will have divided their boards into 8 roughly equal parts/eighths.

Talk the children through the process of creating the different fractions. Ask how to we could make sure that next time we **accurately** divide the boards into 8 equal parts.

Send the pupils to complete the following or similar tasks around the playground. Give out each task one at a time. Pupils can write down the task on the back of the board. Pupils return as a group to feedback before being issued with the next task. Pupils rub out the task they wrote down for the previous task before beginning the next.

Suggested questions

- Estimate how long it will take your entire class to walk/run 5 times across the playgrounds/walk a circuit of the playground. Check by sending the class to walk/run and time it.
- Find 4 different 2D shapes in the grounds. Draw and name them.
- Find 2 different 3D shapes. Draw and name them.
- Find, draw and name one example each of the following – right angle, obtuse angle, acute angle, straight angle, reflex
- Find a bench. How many legs has it got? How many slats have been used to make it? How many legs and slats would there be on 6 benches? If the bench is 2 metres long and the wood for the slats costs £2.00 per metre how much does it cost to make all the slats for the bench?
- How many footsteps does it take from the school gate to the entrance? Estimate then check.
- Using chalk or natural materials mark an arrow on the ground pointing to magnetic North.
- Find something *exactly* 8 cm long.
- If 50 children wanted to sit down, how many more benches would we need?
- What is the smallest number you can see times 7?

Task 2 Devise Your Own Maths Trail

Each group must devise their own Maths questions based on what they can see in the grounds.

To end the session select one or two that all the class can attempt. The group who set the question then question classmates on how they solved the problem. What made it a Maths/ Numeracy problem.

Extension: Challenge the class to create a Maths Trail for a younger class. Refer to the Maths Trail website given at the top of the resource.