

Why Maths Outdoors?



Learning outcomes

1. Consider the benefits of teaching mathematics outdoors
2. Celebrate the unique qualities of the outdoor environment and how it can lend itself effortlessly to children's mathematical development
3. Inspire Maths Champions to understand and strengthen the role the adult plays in learning maths outdoors
4. Demonstrate how to utilise a range of different outdoor environments to support children's mathematical development, looking at the key areas of maths learning
5. Provide Maths Champions with the opportunity to share their experiences and ideas.

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The research and benefits of mathematics outdoors

Offers a sense of freedom

Offers maths in context

Large scale

Health benefits

Awe and wonder of the natural environment

Reduces stress and improved well-being



<https://www.diva-portal.org/smash/get/diva2:1260202/FULLTEXT02.pdf>

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Reflection

Please give an example of how you might use free or natural resources to support children's maths learning outdoors?



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Key concepts of mathematics

Comparison Having a feel for the relative size of numbers e.g. five is more than two, but 20 is a lot more than three. 	Counting Saying the number sequence, counting objects, and knowing how many there are. 	Cardinality Understanding the meaning of each number, the 'threeness' of three or 'eightness' of eight. 	Composition Understanding that numbers are made up of other numbers e.g. seeing six on the dice as three and three. 
Shape and Spatial awareness Understanding properties of shapes and the development of spatial thinking e.g. the locations of things and routes to get to places. 	Pattern Identifying patterns in the environment and routines, understanding pattern rules in order to predict what will come next. 	Measure Using numbers to compare qualities such as a length of weight, using units, such as centimetres or grams. 	Subitising Recognising small numbers of things like two and three without counting. 

5

Counting



6

Comparison



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Composition



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Subitising



1 bowl



1 spoon



8 bun cases



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Measures: Mud kitchens



- Size
- Weight
- Capacity
- Balance
- Speed
- Time

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Measures: Outdoor sand and water



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Measures: Ramps, construction and natural resources



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SSA: Obstacles courses, trails, routes etc.



- Shape
- Shape properties
- Position
- Direction



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SSA: Dens and special places



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Pattern: Nature and the environment



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Creating patterns



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The role of the adult



- Observing, responding and building
- Creating a maths friendly outdoor environment
- Bringing mathematics into children's natural play
- Being playful with mathematical activities and problems
- Sustained shared thinking.

Siraj-Blatchford, I., Sylva, K., Muttock, S., Gilden, R. and Bell, D. (2002), [Researching Effective Pedagogy in the Early Years](#) (REPEY): DfES Research Report 356. London: DfES, HMSO.

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Supporting parents with maths outdoors



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Ideas and inspiration for outdoor maths

19



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Resources available with this webinar

- PowerPoint with notes
- Two outdoors maths activities to use in your setting
- Natural number cards 1-20
- The big ideas memo cards
- Recipe cards for mud play kitchens
- Four outdoor maths activities for parents
- Two research papers

Resources in other areas of the programme:

- Maths Outdoors folder in the resource section
- Loose parts webinar

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Social media networking



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Champions
Facebook





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21

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Any questions?

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22