

Good eggs

In this book extract, we discover how small-world play, using all types of resources, is an excellent way to engage young children with mathematical concepts and skills



Children of all ages are fascinated by the world around them. A small-world area can echo and represent the children's real world only in miniature. It can also include favourite fantasy figures to promote imaginative play. To make the area engaging it can be developed with natural materials to promote children's curiosity and offer a wealth of mathematical experiences.

A basic small-world kit should be regularly enhanced to stimulate the children's interests with, for example, small people, wooden train sets, cars and building bricks. Most importantly, small-world play does not need to come from a box of pre-set resources or kits.

Small-world resources provide plenty of opportunities for sorting, matching and counting. Children are able to consolidate their understanding of everyday experiences

further, as they recreate situations and scenes that they have encountered first-hand or have been introduced to via storybooks, television or other means.

For children new to small-world play, it may be helpful for adults to stage the initial engagement. A good example of this is the outdoor area, which is a gift for staging small-world play. Practitioners can develop the seaside or a local village, for children to then become the 'stage-hands' as they add props, move resources around and use their imagination. However, adults cannot be precious about what direction the children take the play. A seaside may become an alien moonscape or the village be attacked by a shark.

Children's play becomes more meaningful and their concentration span increases as they explore the world around them. There are plenty of opportunities for conversations that incorporate mathematical lan-

Dinosaur eggs that hatch into dinosaur babies provide opportunities for measurement

guage, particularly when the practitioner engages in the storytelling around the children's play; for example, 'Can you pass me the longest log?' or 'How many horses will fit into our den?' As you are invited into the children's play, share their stories – keeping in mind the opportunities to introduce mathematical concepts but remembering not to take over or change the direction of the children's exploration and risk losing their interest.

RESOURCES

- a large mat or low furniture to define the area
- natural materials, stored in appropriate and accessible baskets and boxes
- a selection of logs, drift wood and wooden disks of different widths, depths and lengths
- stones of different sizes, weights and shapes
- chalks for mark-making

- fir cones for counting and sorting by size
- garden edging to make fencing, roads and tracks (borders and boundaries)
- small pieces of material in various colours and tone
- small lengths of laminate flooring
- pots and/or baskets of herbs, leaves and flowers.

Ask the children what they would like to add.

CREATING ENABLING ENVIRONMENTS

When using their imagination, children are drawing upon their own memories of situations. They are consolidating their understanding of familiar experiences and concepts by practising them in a safe environment, at a pace that is right for them. Practitioners can support children's imaginative play with small-world resources that stimulate their imagination and engage the Characteristics of Effective Learning to reinforce simple maths concepts.

As children are playing and exploring, they will recognise familiar numbers, shapes and patterns that are displayed on everyday items and recreated in small-world resources that replicate their town, city or local transport. There are opportunities for active learning as children create new environments by making dens or homes for animals and figures. Creating and thinking critically is enabled as children make links and choose their own ways to do things. Small-world play offers many opportunities to demonstrate the following:

The fairies have come to stay

A glitter-ball hung from the ceiling and positioned so that it catches the light from a window might herald the arrival of fairies in the setting. The fairies then become a joy to count and track, offering the chance

to use some directional words such as up, down, sideways, etc. If it looks like the fairies are going to stay, they will need somewhere to live, and so a small-world environment begins to take shape with, for example, a fairy door with a number, wooden toadstools and a fairy tea set. Recreate the fairies' home outdoors too. Let the children consider how big the fairy village will be as they select sticks and twigs of the right length to build fairy homes.

A dinosaur egg

Begin your dinosaur play with a shaker egg placed in a nest in your small-world area for the children to discover, by proclaiming, 'Oh, my goodness, it seems a dinosaur has laid a huge egg! How long is it going to take to hatch?' Provide a calendar to plot the days. Once the baby dinosaur arrives, the children can consider how they are going to care for it; prompt them by asking, 'Where will our dinosaur live? How wide and tall will he grow?' Let the children measure the baby and then look for leaves and twigs that are long enough to keep him warm in his nest. This is a good time to think of different ways that children can measure; for example, a piece of string, a tape measure or a ruler, or perhaps just looking for something else that is the right length, so that they can then compare and contrast. The activity can be further extended by providing a pestle and mortar to make dinosaur food. ■

This is an extract from 'Chapter 3 – Small world' of Discovering Maths through Play (Pre-School Learning Alliance)



Creating and thinking critically is enabled as children make links and choose their own ways to do things

Maths outdoors

Showing why the outdoors is the perfect environment for mathematical learning is



Messy Maths: A Playful, Outdoor Approach for Early Years by early years consultant Juliet Robertson

(Independent Thinking Press, £18.99).

Due out this month and packed full of hands-on activities, the book illustrates how the natural and built worlds provide dynamic and constantly changing environments, offering an endless supply of patterns, textures, colours, quantities and other attributes that underpin much of the necessary early maths experiences.

The author, who specialises in outdoor play and learning, believes that every child and every adult is mathematically able. However, building confidence in maths depends on children having the time to make sense of abstract maths ideas through 'real' experiences, along with lots of opportunities to ponder, enjoy and discuss the concepts that they encounter – how much easier to understand the concept of weight if you can repeatedly lift, move and carry a range of heavy and light objects.

The book aims to show practitioners how they can:

- consider their own confidence and understanding in developing maths provision outdoors
- make maths real
- engage in conversations that will deepen children's understanding of mathematical concepts, and the value of maths
- enable children to have lots of informal, spontaneous mathematical experiences
- provide a range of open-ended ideas for adapting to children's interests as part of a playful approach to learning maths
- make the most of any outdoor space as a context for maths.

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DISCOVERING MATHS

Discovering Maths through Play, published by the Pre-School Learning Alliance, is a practical resource that seeks to ignite children's imagination and curiosity as they develop the early mathematical skills that provide a foundation for their future learning.

With a focus on everyday activities and real-life contexts for developing children's understanding of maths, this guide will

help practitioners identify maths learning opportunities and gain confidence in their ability to support young children's mathematical thinking.

To order a copy of *Discovering Maths through Play* (£11.55 for PLA members; £16.50 for non-members), visit www.pre-school.org.uk/shop, call 0300 330 0996 or email shop@pre-school.org.uk