

Name of setting: Sam Goldsworthy, Childminder

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Information supplied by: Sam Goldsworthy

Title: Developing maths outdoors: a mud kitchen

Key points of good practice

- *Creating an outdoor kitchen can be achieved with little outlay using natural, found and unused items.*
- *An outdoor kitchen sustains the interest of boys and girls of differing ages and abilities and fosters very good use of mathematical language in practical ways as children weigh, measure, mix and sort.*

Background detail

Maths Champions is a programme which supports children and staff by embedding maths into play and activities. Led by a Maths Champion, its aim is to build confidence in maths among children and practitioners.

Sam Goldsworthy is a childminder who is part of a childminder group engaging with the Maths Champions Programme through their local authority. She offers home-based education and care to young children and childcare for school-aged children before and after school and in the school holidays. She currently has six boys on roll in the early years age group and two girls. Sam also offers support to other childminders living in her area.

What the setting wanted to achieve

The impetus of both the Maths Champion Programme and having a large number of boys on roll led Sam to consider how she offered maths in her setting. She knew from research that boys did less well in some areas of learning and she wanted to create more opportunities for maths in her garden as the boys in particular love being outside. They were less keen than the girls to engage with some of the indoor activities such as pattern making. Using ideas from the Maths Champions resources, Sam identified that establishing

an outdoor kitchen would engage children of all ages and give plenty of opportunities for maths through play.

How the setting planned for change

She has a large garden including a 'secret area' for the children in trees accessed by a 'secret path' the children love. She decided this would be the best location for the outdoor kitchen and her family helped to build it using natural and donated materials. The area also had weighing buckets to encourage more maths.

She asked parents to donate old unwanted kitchen equipment and used a variety of containers and utensils to provide a range of exciting play opportunities including a 'potions lab' and opportunities for sorting, weighing and categorising different natural materials like shells, and fallen apples. Sam also used pebbles collected from the beach and painted different foods on these for children to sort and weigh.





The success of the chosen area of practice focusing on improved outcomes for children and their families

Sam found the outdoor kitchen was popular with children of all ages including older children and both boys and girls. She has found it is suitable for children with different types of learning styles and that it sustains children's play for long periods of time.

Sam has free flow into the garden and boys in particular were drawn to the kitchen partly because of its attractive location along the 'secret path'. Boys enjoyed the practical application of maths, weighing out ingredients to make 'pancakes' and all children began to use mathematical language such as more, lots, light, heavy much more in their play.

Sam introduced a range of resources and activities suited to the children's differing ages. For example younger children sorted shells, apples and pine cones into groups. The older children differentiated which was heaviest, lightest and began to use positional language. Here are some of the observations Sam made of the children's learning.

*E held the pot to the mud kitchen and said 'more water please' as she had poured the pot of water onto the apples in the frying pan.
Use some language of quantities such as 'more' and 'a lot' 22-36 months*

*R counted the apples as he put them into the pot 2 3 4
Uses number names accurately in play 30 - 50 mths*

*C counted the shells as he put them into the scales in the garden 1 2 3 4 5 6 7 8 9
10
Recites numbers in order to 10 30-50 mths*

*M was able to pass me 2 pine cones from the pile when I asked him Selected
a small number of objects from a group when asked 22-36 months*

*H said big apple as he put them into the bucket
Uses the language of size 16-26 months*

*S was able to put the pine cones into a pot, the apples into another pot and
the scallop shells into another pot without any assistance,
Begins to organise and categorise objects 16-26 mths*

A particular interest was making 'potions' from coloured water, soil, sand using different cylinders, containers and beakers. Sam used milk containers with coloured water to help the children learn to lift and carry quantities and to use language of full, empty, half full. This potions lab was a particular success and really helped develop concepts of shape, weight and measure as children measured out the ingredients for their potions and made up different bottles and containers of the results. They counted the objects going into the potions and talked about quantities.

Sam has added to the outdoor kitchen area by developing a pulley system with buckets and weaving numbers through the trees. She has also enhanced her indoor space with bunting displaying numbers 1-20 and a clock.



Lessons learned/difficulties encountered

There were no particular difficulties, many of the outdoor improvements were made with very little or no cost using materials such as empty milk containers, pans and other donated containers and natural materials from her garden or collected on outings like shells, fallen apples and pine cones.

Next steps

Families have seen what Sam has done but are reluctant to try messy play at home. Sam wants to try engaging parents more in children's maths. She intends to supplement the home learning bags she has already made: the Camera Bag, Ready for school, Marvin the travelling monkey and Shapes with ones on outdoor hunts linked to maths.

National Day Nurseries Association

National Early Years Enterprise Centre, Longbow Close, Huddersfield, HD2 1GQ.

Tel: +44 (0)1484 40 70 70, Fax: +44(0)1484 40 70 60, Email: info@ndna.org.uk, Website: www.ndna.org.uk, Twitter: @NDNAtalk,