



Outdoor Classrooms Ltd

senco's Natural Initiative



Maths Dot Pattern Set



A natural resources set designed to engage children's imagination, fun and sense of curiosity, to achieve understanding and knowledge in maths. Pack includes activity suggestions and learning goal links.

For further information or to order, please contact us:

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Senco's Natural Initiative

Maths Dot Pattern Set

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EN71-1; EN71-2; EN71-3;
2024 / 2025

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**Warning! Not suitable for
children under 36 months.
Small parts – choking hazard !**
For children aged 3 -12 years

AIM:

- ◆ To allow every child the opportunity to reach their own personal potential.
- ◆ To support all children's health and development through environmental improvements. Healthy learners are better learners.
- ◆ To make primary education provision 'SEND-friendly'.

Objective:

1. Promote the use of natural resources, instead of those made from artificial, synthetic or chemically treated materials.
2. Promote healthy garden practices to complement individual SEND children's ability to thrive.
3. Empower SENCO practitioners with information (see pg 14 to 26) to support them to :-
 - ◆ Reduce environmental toxins in educational gardens, such as weedkiller and treated timber.
 - ◆ Reduce exposure to man-made chemicals and heavy metals, like those in plastic grass, rubber crumb fall surfaces and treated timber, all to provide a healthier educational environment.
 - ◆ Aid healing, growth and repair for optimal development by reducing the work our bodies need to do to clear extra unwanted and unnecessary chemical toxins.
 - ◆ Allow nature and life to flourish in a healthy environment, for us all to share.
4. To provide information and resources to enable education settings to demonstrate best practice in supporting health and sustainability to the wider community.
5. Provide samples and examples of well thought-out education resources that are made from natural, sustainable UK wood and tested to the high CE/CA Toy Standards.



Senco's Parents Pack Contains:

- 12 x Oval dot number counters (1-6):**
- 6 x Button counters**
- 1 Spinner Spindle:**
- 1 x Double sided spinner (1-6 numerals
on one side and dots on the reverse)**





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Care and Safety Instructions:

Please keep these instructions for further reference.



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Warning: May contain loose parts
Not suitable for children under 36 months
For children aged 3 -12 years

*This product has been tested to UK, CA/CE standards –
for use by children over 36 months.*

Do not allow the children to put any of the loose parts in their mouths.
If these parts are to be used by children under 3 years old, all bark must be removed.

The adult is responsible for risk assessing each pack, making a judgement relative to the age and developmental stage of the child – and either removing any small wooden pieces from the child's reach or supervising appropriately.

This is a natural product which may (or may not) contain bark. If the bark peels off, remove it completely and check that the surface underneath is smooth. If necessary, use sandpaper to smooth it over. Should any pieces become damaged or broken, these must be removed immediately, discarding any small pieces. Those with sharp edges must be discarded, or the wood smoothed over with sandpaper.

Do not allow the children to throw the blocks, as some of the pieces/blocks may be heavy.

These sets are made from natural and durable UK-grown wood – pine, ash, oak, larch or western red cedar – containing **no** poisonous chemical treatments. All the wood has been passed to stringent toy standards CA/CE EN71-2 and EN71-3. The sets have also passed EN71-1.

It is not advisable to put the equipment away wet, damp, or in a wet bag, especially for long periods of time, e.g., holidays. It is also recommended that the components are not placed on or near excessive heat, e.g., next to a heater, as this can stress and damage the wood.





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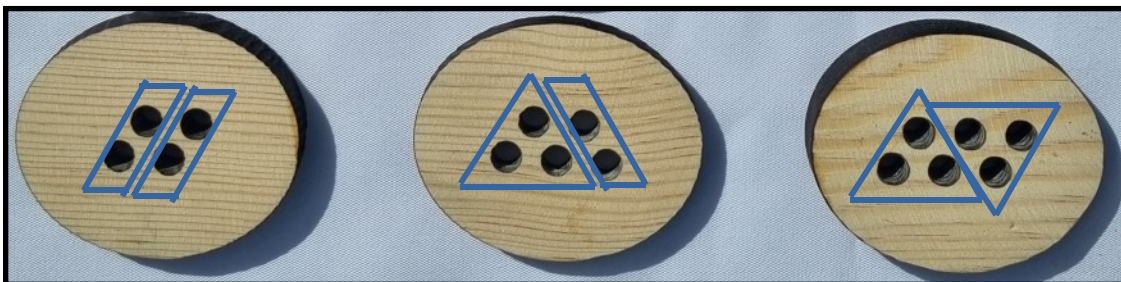
Maths Dot Pattern Set

A simple, yet elegant set of counters and a spinner to explore numbers 1 - 6.

The double-sided spinner is an excellent tool to begin fine-motor manipulation and co-ordination. Practising spinning with both hands develops even greater skill levels. It's a great achievement to gain a satisfying spinning motion! The spinner has 1 – 6 numerals printed on one side, and on the reverse are dotted patterns corresponding with the numerals. The dots can be felt and counted by touch and are also fun to use when 'subitising'.



The oval counters represent numerals as holes, which can be felt from both sides. The holes allow natural sunlight (or torch light) to shine through them, clearly showing their dot pattern. These dot patterns, seen on both the spinner and the oval counters, have been configured in such a way as to copy the 'triangle positioning' of eyes and mouth. Babies use this in-built triangle pattern recognition to identify their parent's face. This type of configuration also helps children to quantify (through visual subitising) groups of dots. These patterns of ones, twos and threes enable the children to break down larger quantities into smaller groups (subitising). The children can also see the repeating patterns of smaller amounts, so helping to more easily to identify larger amounts (here to six). These dot patterns make it easier for learners to recognise the components of numbers, as seen below.. These activities supports children in more accurately assessing quantities and number bonds.



The oval dot counters are compatible with a larger 'Oval Counters' product range, which uses a 'cam-lock' feature. This feature is designed to work with several boards to make learning fun and easier to understand.





Maths Set Activity Suggestions:-

by *Instagram@Early_years_diaries (Primary Teacher)*



1. Spin Mastery

Instructions: The children practise spinning the number spinner. Can they make it spin successfully?
Encourage the use of both hands.

Focus: *fine motor skills (hand-eye and bilateral coordination, tripod grip and strength); concentration; patience and self-regulation.*

Extension Ideas: 1. Count how long it takes for the spinner to stop spinning.

2. Compare spinning times.
3. Teach a friend how to spin.

2. Quick Recognition

Instructions: Spin the spinner and name the number that it lands on. Try with both the numeral and dot sides of the spinner.

Focus: *number recognition, subitising, counting, fine motor skills*

Extension Ideas: 1. Write down the number, using various tools/surfaces (in sand, mud, chalk etc.)

2. Make a body movement to match the number spun (e.g., 3 star jumps or 4 hops)

3. Spin and Match

Instructions: Spin the spinner. Use either the numeral or dot pattern side of the spinner. Find the corresponding oval counter to match the number shown on the spinner. Start with the dots and progress to the numeral side as the children develop numeral recognition..

Focus: *number recognition, subitising, matching, fine motor skills.*

Extension Ideas: 1. Write down the number, using various tools/surfaces (in sand, mud, chalk, etc.)

2. Hide the oval counters inside a 'sensory tray' (e.g., a nature or sand tray) so that the children can find and match them.

4. Spin and Count

Instructions: Spin the spinner and count out the number of button counters to match. Use both the numeral and dotted sides of the spinner.

Focus: *Number recognition, one-to-one counting, subitising, fine motor skills.*

Extension Ideas: 1. Write down the number, using various tools/surfaces (in sand, mud, chalk, etc.)

2. Hide the button counters inside a 'sensory tray' (e.g., a nature or sand tray) so that the children can find and match them to the number from the spinner.

5. Spin, Count and Build

Instructions: Spin the spinner and count out the matching number of counters, then stack them into a balanced tower.

Focus: *Number recognition, one-to-one counting, fine motor skills, persistence, spatial awareness.*

Extension Ideas: 1. Spin the spinner twice and build two towers. Build each tower with the correct quantity of counters to match the number landed on when the spinner was spun – compare the numbers of counters in each tower and their heights.

2. Experiment with the structure of the towers. Can they be built / balanced in different ways by changing their shape and height?

6. Spin and Add

Instructions: Spin the spinner **twice**, recording each amount (using the button counters or the oval dotted counters) then add each number together. Record this final number.

Focus: *Number recognition, subitising, counting, addition, combining two groups, fine motor skills.*

Extension Ideas: 1. Write down the number sentence to match the number problem, using various tools/surfaces (in mud, chalk, sand, etc.)

2. Hide the round and oval dot counters inside a 'sensory tray' (e.g., a nature or sand tray). The children can find and match them to the two numbers the spinner landed on, showing the final total.



7. Spin and Compare

Instructions: Spin the spinner **twice**, recording each amount by counting out the button counters or the oval dot counters. Compare the amounts. Which is more? Which is less?

Focus: *Number recognition; counting; subitising; comparing quantities; vocabulary (less, more, equal, Same as); fine motor skills.*

Extension Ideas: - Spin the spinner **3 times** and record 3 amounts. Place these in order - from the smallest to the largest amount (or vice versa)

8. Explore Sharing

Instructions: Spin the spinner, recording each amount by finding the number of counters to match. Explore further by finding out whether these can be shared evenly into 2 groups.

Focus: *Number recognition, counting, early division, fairness, 'grouping' vocabulary (even, odd, equal), fine motor skills.*

Extension Ideas: 1. When the counters are in groups, write down the numeral to match each group (use various tools/surfaces – mud, chalk, sand, etc.)

2. * **'Doubles'** (see below) can be explored here, whenever the children find numbers that have been shared evenly*

9. Doubles

Instructions: Spin the spinner, recording the amount. Find its **'double'** using the counters.

Focus: *Number recognition, counting, doubling, early multiplication, fine motor skills.*

Extension Ideas: - Once the 'double' has been created, write down the number sentence to match. Use various tools/ surfaces, (in mud, chalk, sand etc., e.g., $5 + 5 = 10$)

10. Number Bonds to 6

Instructions: Spin the spinner and count out the number of button counters to match the numeral the spinner lands on. Use both the numeral and dotted sides of the spinner. Then, work out what's needed to add up to 6. Encourage the children to find the additional counters (or oval counters) that match the amount they need to add in order to end with 6 in total..

Focus: *Number recognition, counting, subitising, number bonds, part-whole understanding, fine motor skills.*

Extension Ideas: 1. Put the bond into a part-whole model frame.

2. Write the number sentence to match the bond, using various tools/surfaces (in mud, chalk, sand, etc.)

11. Tactile Counting (Mystery Match)

Instructions: Place the oval dotted counters into a small bag. Spin the spinner then try to feel for the correct counter to match the numeral on the spinner. (The child needs to 'feel' for the holes in the counter). Encourage the child not to look!

Focus: *Number recognition, subitising, tactile discrimination, fine motor skills.*

Extension Ideas: - Write down the number (in sand, mud, chalk, etc.)

12. Shadow Play

Instructions: Use the maths set outdoors in the sunlight (or with a torch) with white paper or a sheet. Hold the oval counters between the sunlight (or torchlight) and paper/sheet. Can the children count the dots created by the shadows that appear? Once this concept has been understood, spin the spinner again and see what number it lands on. Can the children find the correct oval counter whose shadow dot pattern match the number?

Focus: *Number recognition, counting, subitising, light and shadow exploration, and visual representation.*

Extension Ideas: 1. Explore further by moving the oval counters closer/further away from the white paper or a sheet surface.

2. Draw over the shadow created and write the numeral to match.

3. Explore pattern making, using some of the oval counters and drawing over the shadows they create.





Guidance for Reception Teachers;

Written by Michelle Hague and Jenny Elvins



These activities are designed to support early mathematical development. This is achieved through hands-on, engaging experiences using small wooden button counters and logs. The focus is on developing children's number sense, comparison skills, pattern recognition, and spatial reasoning.

1. Early Number Sense and Subitising.

Use the small button counters to support subitising. Hide some of the five logs underneath an upturned bowl, e.g., three logs hidden and two that the children can see. Inform the children that there are five logs altogether.

Ask them to suggest how many are hidden.



- Start with perceptual subitising (instantly seeing one group).
- Progress to conceptual subitising (seeing two groups and combining them to find the total).

Show small quantities in familiar patterns (e.g., dice, tens frame) and random arrangements.

2. Conservation and Numerosity.

Ask children to choose six logs and arrange them in different patterns and orientations.



- Use this to develop understanding of conservation: the quantity remains the same even when the arrangement changes.
- Use a variety of logs - all shapes and sizes (i.e., large, small, wide, narrow) - to explore numerosity. Six is still six, regardless of the size or shape of the objects.



3. Subtraction and Frames

Use small button counters with 'five' or 'ten frames' to explore subtraction from five or ten.

- Use pre-printed frames, or have children draw their own (e.g., outside with chalk). [Chalkboard five and ten frames, material five and ten frames, and five and ten frame rails are all available from Outdoor Classrooms Ltd.]
- Place all counters on the frame, then remove some and discuss how many are left, link to the language of part and whole



4. Hidden Object Games

Play quick memory games using button counters or logs: Shuffle and hide a selection underneath a bowl.

- Briefly lift the bowl and ask: 'How many did you see?' Or 'How many are missing?'



Addition learning resources are available to download from:-
www.earlyyearsoutdoor.co.uk

Additional resources and products are available from Outdoor Classrooms Ltd.





Outdoor Classrooms Ltd - Bespoke Education Gardens



Outdoor Classrooms Ltd is dedicated to offering innovative and engaging outdoor educational experiences for you and your children. Our goal is to create captivating environments that foster creativity, encourage curiosity, and promote a love of nature and learning. Our unique approach encourages children to explore and learn in a natural setting, where they acquire important skills and a deeper understanding of the world around them. All our timber is harvested in Yorkshire by our team of woodland and wildlife experts.

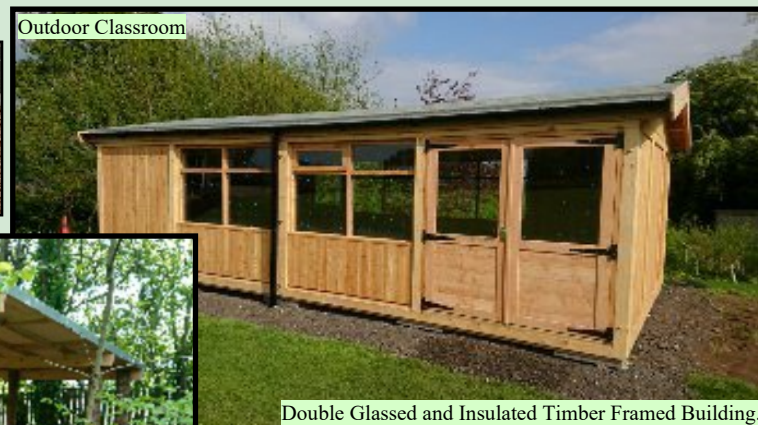
We have a huge range of products—here is a small sample:



Physical Play Area



Climbing Stumps



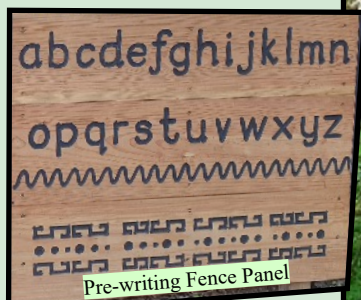
Outdoor Classroom

Double Glassed and Insulated Timber Framed Building.



Outdoor Classroom

Rustic Shelter



Pre-writing Fence Panel



Climbing Sculpture, Trim Trail and Tree Tunnel



Physical & Imagination Play Area

Tree Tunnels, Shaped Balancers, Climbing Sculpture, Log Edging and Woodchip

- Bespoke Outdoor Solutions
- SEND Care Cabins
- Sensory Learning Gardens
- Outdoor Seating
- Physical and Imagination Areas
- Shelters & Outdoor Classrooms
- Organic Food Growing Systems
- Wildlife Areas
- Forest School Resources & Furniture
- Outdoor Provision Resources
- Maths & Language Resources



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