

Algebra: Patterns, rules and relationships – Suggestions for learning at home

Why learning about patterns, rules and relationships is important

Patterns, rules and relationships can be observed in the home, in the community and in the environment. Through learning about these, children develop the ability to make predictions, to understand what comes next and to make logical connections. By observing, creating and extending patterns, and by discovering and applying rules and relationships, children can develop their ability to think mathematically and to solve problems. They can also enhance their experiences in nature, story, art, music and movement, all of which can feature engaging and creative use of patterns.

IDEAS TO SUPPORT LEARNING

- Encourage your child to recognise patterns all around them such as in clothes, in music, in the garden. Find patterns in clothing (stripes, polka dots and prints), patterns in nature, patterns in books, patterns in art, etc. Notice and talk about shoe tracks when you walk through dirt, on the sand at a beach or in the snow.
- Support your child to create repeated patterns with everyday household items such as cutlery, food items, toys, buttons, etc.
- Recite and/or sing number rhymes or songs that involve number patterns or sequences such as 'The Animals Went in Two by Two' or the 'Happy Days' theme song.
- Create movement patterns with your child, e.g., *hop, skip, jump, hop, skip, jump, etc. tap into your child's interests such as football, basketball, dance, gymnastics, etc.*
- Explore rhythms and patterns in everyday songs and musical pieces. Clap, snap, stamp, click repeated rhythm patterns and where possible use percussion instruments.
- Many dance sequences have repeated movements. Encourage your child to enjoy copying and creating their own movement sequences. If your child enjoys Irish dancing, cultural dances or hip-hop, examine the sequences of pattern within these dances.
- When baking with your child, decorate cakes or buns with repeated geometrical patterns. Consider the appropriate toppings to use for aesthetic purposes.
- Play with number sequences, e.g., *choose a sequence of five numbers such as 4, 8, 12, 16, 20. can your child describe the number sequence? What is happening to the numbers in the sequence? Are they growing or shrinking? Can they predict the next/ tenth / fifteenth / twentieth number in the sequence? Can they identify a rule for this sequence?*
- Explore and practice pattern making through knitting or crochet.



BOOKS

- *Is it Red? Is it Yellow? Is it Blue?*, Tana Hoban, 4+ years
- *Simon Sock*, Sue Hendra, 4+ years
- *Beep Beep, Vroom Vroom!*, Stuart J. Murphy, 4+ years
- *A Pair of Socks*, Stuart J. Murphy, 4+ years
- *The Napping House*, Audrey Wood, 4+ years
- *Rooster's off to See the World*, Eric Carle, 4+ years
- *Monster Musical Chairs*, Stuart J. Murphy, 4+ years
- *The Waterhole*, Graeme Base, 5+ years
- *More or Less*, Stuart J. Murphy, 6+ years

**Your local library provides a wide range of free books and resources which support in developing children's mathematical learning*

GAMES / ACTIVITIES

- Connect 4
- Solitaire
- Dominoes
- Create, and extend shape patterns (drawn, or using magnets, foam shapes, etc.)
- Online pattern games
- Beads and Pattern Cards
- Odd One Out games
- Spot the Difference games
- Chess
- Draughts
- Create and extend patterns using playing cards



LEARNING ONLINE

- Help My Kid Learn www.helpmykidlearn.ie
- Scoilnet www.scoilnet.ie/primary/theme-pages/mathematics/
- Maths Week Ireland Parents' Zone www.mathsweek.ie
- Maths Eyes <https://haveyougotmathseyes.com/>

Useful terms to search online: patterns, rules, relationships, algebra, learning, primary, maths, sequences, growing patterns, shrinking patterns, games, activities

ARTS AND CRAFTS

- Print patterns with fruit or vegetables. Include a 2, 3 or 4 part repeated pattern.
- Explore patterns in textiles and fabrics. Discuss what makes certain designs more appealing. Can you improve or extend the design of a fabric of your choice?
- Observational drawing of pattern; using a drawing frame, closely examine natural items such as shells, flowers, leaves, feathers, wood bark and copy the pattern you see.
- Rangoli patterns: Search for rangoli patterns online to celebrate Diwali using pencils, paint, rice, lentils or chalk.
- Search for printable or online mandala patterns.
- Create bracelets and necklaces using simple bead patterns.
- Create designs, prints and decorations using pasta shapes.



YOUR OWN IDEAS

