

Shape and space: Shape – Suggestions for learning at home

Why learning about shape is important

We are surrounded by shapes every day. Children encounter shapes in their toys, in sports, through identification of letters and numerals, in household objects, etc. An ability to identify and understand shapes and their properties supports children to engage with and organise their surroundings. Shapes are central to many professions – construction workers, architects, graphic designers, artists, engineers, etc. all use applications of shape and geometry. Through engaging with shapes, children are also supported in connecting mathematics with subjects such as art and science, and can become increasingly aware of the beauty and wonder of mathematics.

IDEAS TO SUPPORT LEARNING

- Point out 2-D shapes in everyday objects around the house or while out and about, e.g., *identify the outline shape of a dinner plate, a window, or a football.*
- Once your child is comfortable with 2-D shapes, introduce them to 3-D shapes such as cubes, spheres, cones, and cylinders. Help them understand the difference between 2-D and 3-D shapes by comparing their flatness or depth.
- Take children on a shape scavenger hunt around the house or community. Provide them with a list of shapes to find and encourage them to identify and name the shapes they see in everyday objects.
- Give children a collection of everyday objects (e.g., *books, toys, containers*) and ask them to sort the objects based on their shapes. Encourage them to describe the attributes of each shape as they sort.
- Provide children with building materials such as blocks or playdough and challenge them to build structures using different shapes. Encourage them to experiment with stacking, balancing, and combining shapes to create their designs.
- Read shape-themed books together and explore online resources such as educational videos and interactive games that teach about 2-D and 3-D shapes. Discuss the shapes and their properties as you explore.
- Take a walk outside and encourage children to look for shapes in nature (e.g., *leaves, rocks, clouds*). Discuss the shapes they find and how they are similar or different from the shapes they've learned about.
- Involve children in cooking or baking activities that involve using different shaped ingredients (e.g., *cutting sandwiches into triangles, using cookie cutters to make shapes*). Talk about the shapes as you cook and explore their properties.
- Present children with shape-based challenges or puzzles to solve, such as tangram puzzles or shape pattern completion tasks. Encourage them to use critical thinking and problem-solving skills to find solutions.

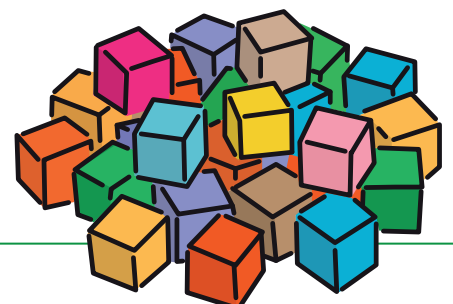
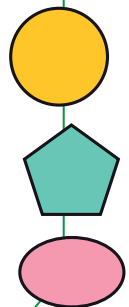
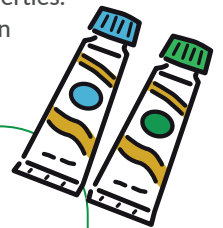
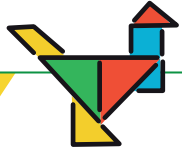
BOOKS

- *Ship Shapes*, Stella Blackstone, 4+ years
- *The Perfect Fit*, Naomi and James Jones, 4+ years
- *Captain Invincible and the Space Shapes*, Stuart J. Murphy, 6+ years
- *Hamster Champs*, Stuart J. Murphy, 7+ years
- *Sir Cumference and the First Round Table*, Cindy Neuschwander, 9+ years
- *Sir Cumference and the Great Knight of Angleland*, Cindy Neuschwander, 9+ years
- *Sir Cumference and the Isle of Immeter*, Cindy Neuschwander, 9+ years
- *Sir Cumference and the Dragon of Pi*, Cindy Neuschwander, 9+ years

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

GAMES / ACTIVITIES

- Mystery Shape Feely Bag/Box
- I Spy
- Shape Sort (against the clock)
- Geoboards
- Tangram puzzles
- Pattern Blocks
- Geometric building sets
- Puzzle cubes
- 'Shape Matching' memory card games
- Magna Tiles



LEARNING ONLINE

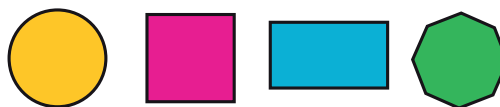
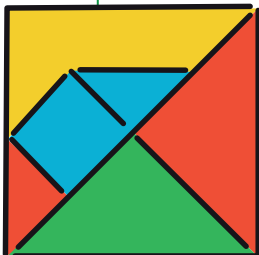
- Help My Kid Learn www.helpmykidlearn.ie
- Scoilnet www.scoilnet.ie/primary/theme-pages/mathematics/
- Maths Week Ireland Parents' Zone www.mathsweek.ie
- Maths Eyes <https://haveyougotmathseyes.com/>

Useful terms to search online: shape, shape and space, learning, primary, maths, 3-D shapes, 2-D shapes, properties, length, width, depth, angles, polygons, nets, games, activities



ARTS AND CRAFTS

- Shape is one of the elements used to create art. Allow children investigate and identify examples of shapes used in art by artists such as Picasso, Matisse, Mondrian and Kandinsky.
- Provide children with a variety of coloured construction paper and various 2-D shapes cut out of paper or foam sheets (circles, squares, triangles, rectangles, etc.). Encourage them to create a collage by arranging and gluing the shapes onto a larger piece of paper to form a picture or pattern.
- Give children modelling clay, playdough, or recycled materials (such as cardboard tubes, egg cartons, and bottle caps) and challenge them to create 3-D sculptures using different geometric shapes. Encourage them to experiment with stacking, moulding, and combining shapes to build their sculptures.
- Create stamping tools using 2-D shapes cut out of foam sheets or sponges attached to wooden blocks. Provide children with paint and paper, and let them explore stamping different shapes to create geometric patterns and designs.
- Search online for printable or digital tangram pieces or templates, and challenge children to create pictures or animals using the tangram shapes.
- Mandalas are geometric designs with intricate patterns that often incorporate shapes such as circles, squares, and triangles. Search online for 'blank mandala templates' or circular paper, and encourage them to create their own mandalas using a variety of shapes and colours.
- Provide children with templates or instructions for making paper models of cubes, pyramids, prisms, etc. They can cut out the templates, fold along the lines, and glue the edges to create 3-D shapes.
- Provide children with small, coloured tiles or paper squares and a blank grid. Encourage them to investigate whether the shapes tessellate. Create geometric mosaics by arranging the tiles or squares on the grid to form patterns or pictures using 2-D shapes.



YOUR OWN IDEAS

