



Shape Properties

Spatial Reasoning Toolkit

Understanding the properties of shapes is a key aspect of spatial reasoning. This poster outlines key development steps for children from birth to 7 years. You can encourage children's spatial development by providing ample time for exploration and by using spatial words during play and everyday routines. Spatial reasoning is central to everyday living and research has shown that it is also a strong predictor of future mathematical and scientific attainment.

0-6 months

Children are learning to: Explore differently shaped objects and their properties through seeing and feeling/mouthing.



Spatial Language:
'round' and 'pointy'

6-12 months

Children are learning to: Attempt to fit shapes into spaces on inset boards, sometimes successfully.



Spatial Language:
'inside', 'bigger/smaller' and 'fits'

2-year-olds

Children are learning to: Respond to differences between shapes and sizes, and associated informal language as well as gestures.



Spatial Language:
'flat', 'round', 'giant' and 'teeny'

3-year-olds

Children are learning to: Show awareness of differences between shapes, including selecting items by their shape and size so they are appropriate (e.g. chooses a triangular block for a roof).



Spatial Language:
'slanting', 'pointy' and 'too large/small'

4- and 5-year-olds

Children are learning to: Understand and use mathematical terms to describe shapes (e.g. *cylinder*) and properties as well as informal language and analogies (e.g. slanty, wiggly, box or roof-shaped).



Spatial Language:
'face', 'corner' and shape names

4- and 5-year-olds

Children are learning to: Identify several examples of the same shape (e.g. different triangles) and be able to visualise that a shape is the same even in different orientations.



Spatial Language:
'turned around' and 'on its corner'

6- and 7-year-olds

Children are learning to: Use mathematical terms to describe regular and irregular shapes (e.g. *cuboid*, *prism*, *pyramid*, *hexagon*, *octagon*). Describe shapes using mathematical terms for properties.



Spatial Language:
'right angle', 'face' and 'vertex'

6- and 7-year-olds

Children are learning to: Visualise transformations using reflection and rotation to predict how shapes will look.



Spatial Language:
'rotate' and 'flip'

