Shape space measures and spacial awareness at Heymann

It is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures

Nursery	Reception
Building blocks to achieve • Talk about and explore 2D and 3D shapes eg circles, rectangles, triangles and cuboids using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round' • Understand position through words alone- no actions or pointing – in, on, under, up, down • Discuss routes and locations, using words like 'in front of' and 'behind'. • Make comparisons between objects relating to size, length, weight and capacity. • Select shapes appropriately eg for building models • Combine shapes to make new ones • Talk about and identify the patterns around them. eg: stripes**,** designs Use informal language like 'pointy', 'spotty' • Extend and create ABAB patterns • Begin to use first, then, after that appropriately • Comparison- what is the same? What is different?	**Building blocks to achieve** • Select, rotate and manipulate shapes in order to develop spatial reasoning skills • Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. • Continue, copy and create repeating patterns. Notice errors in patterns • Compare length, weight and capacity.
Continuous provision: • Natural and man-made objects to create pattern • Construction resources- Lego/Duplo bricks/wooden blocks • 2D shapes to manipulate and explore • Water areas with different containers to compare • Sand areas inside and out where children can compare and talk about filling and emptying different sized containers • Dough to manipulate in different ways • Sensory play (cornflour/glitter/sand) to mark make/copy shapes and patterns • Jigsaws • Geo boards	**Continuous provision:** • Water areas with different containers to compare • Sand areas inside and out where children can compare and talk about filling and emptying different sized containers • Role play including post office, shops etc where children can compare size and weight of objects. • Cubes to measure length • Rulers • 3D shapes to build with. • 2D shapes to make pictures and patterns with • Pegs, cubes, beads, pens etc to copy continue and create repeating pattern • IWB – create patterns

• Toys that encourage positional language (dolls house/teddy bears picnic etc) • Equipment to build obstacle courses (crates/wooden planks) • Patterned paper/clothes/rugs • Beanstalk to compare heights of children/objects/towers • 3D shapes to create with (box modelling/building) • Resources that encourage pattern creating (compare bears/numicon/beads) • Books that explore size in book corner (Goldilocks/superworm etc)	• Record own height, hand/foot length and compare to peers and adults • 2D and 3D shape hunts around the unit • Jigsaws • Printing using shapes • Teddies and other toys to take on positional language journeys • Equipment for obstacle courses • Balance scales • Planting – measure growth of plants • Ribbon, string, dough snakes etc to compare and measure • Egg timers
Role of adult: • Model comparative language – bigger/smaller, heavier/lighter, full/empty • Model identifying patterns in clothes/wrapping paper/outside etc • Model repeating patterns with natural objects – eg stick, stone, stick, stone • Noticing shapes in the environment and describing their properties (look the clock is round it's a …., can you find anymore circles?) • Modelling positional language – 'put your hands behind your back' • Questionning – what is the same? What is different (e.g. shapes/objects)	**Role of adult:** • Model comparative language using 'than' and encourage children to use this vocabulary. For example: "This is heavier than that." • Ask children to make and test predictions. "What if we pour the jugful into the teapot? Which holds more? • Model continuing and creating a repeating pattern • Model language to compare and describe shapes
Vocabulary • **2D Shape names (circle/square/triangle/rectangle)** • **Positional language (in/on/under/behind/next to/between)** • **Heavy/light/heavier/lighter** • **Full/empty/overflowing** • **Describing shape vocab: side/corner/straight/curved** • **Pattern** • **Same/different (compare)**	Vocabulary • Heavy, light, heavier, lighter • Tall, short, long, taller, shorter, longer • Full, empty, overflow • Square, rectangle, triangle, circle, cube, cuboid, sphere, cone, cylinder • Side, corner, face, edge, vertices, flat, curved • Repeating pattern