

# Shape and Space/ Handling Data

## Requirements for Using Mathematics

Across the curriculum, at a level appropriate to their ability, pupils should be enabled to:

- choose the appropriate materials, equipment and mathematics to use in a particular situation;
- use mathematical knowledge and concepts accurately;  
• work systematically and check their work;
- use mathematics to solve problems and make decisions;  
• develop methods and strategies, including mental mathematics;
- explore ideas, make and test predictions and think creatively;
- identify and collect information;  
• read, interpret, organise and present information in mathematical formats;
- use mathematical understanding and language to ask and answer questions, talk about and discuss ideas and explain ways of working;
- develop financial capability;
- use ICT to solve problems and/or present their work;

using their **Knowledge and Understanding of:**

Shape and Space

Handling Data

(Non-Statutory)

# Prerequisite Skills (Q Skills) in USING MATHEMATICS across the Curriculum

Progress is also demonstrated by decreasing levels of support from adults: with direction, with decreasing direction, without direction.

Q1 Experience (experience/encounter)	Q2 Respond (become aware, respond, interact intermittently)
In sensory activities and activity-based learning/play-based learning, pupils:	In sensory activities and activity-based learning/play-based learning, pupils:
<ul style="list-style-type: none"> <li>• encounter a variety of mathematical materials and equipment;</li> </ul>	<ul style="list-style-type: none"> <li>• interact with materials and equipment;</li> </ul>
<ul style="list-style-type: none"> <li>• experience mathematical activities;</li> <li>• experience daily routines;</li> </ul>	<ul style="list-style-type: none"> <li>• respond to mathematical activities;</li> <li>• become aware of daily routines;</li> </ul>
<ul style="list-style-type: none"> <li>• experience a problem;</li> <li>• encounter simple logical strategies;</li> </ul>	<ul style="list-style-type: none"> <li>• become aware of the existence of a problem;</li> <li>• respond and interact with simple logical strategies;</li> </ul>
<ul style="list-style-type: none"> <li>• experience a variety of simple patterns;</li> </ul>	<ul style="list-style-type: none"> <li>• become aware of and respond to a variety of simple patterns;</li> </ul>
<ul style="list-style-type: none"> <li>• encounter collections of objects;</li> <li>• encounter a variety of objects/pictures/symbols;</li> </ul>	<ul style="list-style-type: none"> <li>• interact with a range of objects;</li> <li>• interact with matching and collecting of objects/pictures/symbols;</li> </ul>
<ul style="list-style-type: none"> <li>• experience a range of mathematical language;</li> </ul>	<ul style="list-style-type: none"> <li>• respond to some basic mathematical language;</li> </ul>

For example:

- experience moving body parts within a space;
  - experience moving in a range of spaces and environments;
  - experience a range of both natural and manufactured 2D and 3D shapes of varying sizes, colours and textures;
  - experience a range of 2D and 3D materials (both natural and manufactured);
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- experience a range of objects/materials of differing shapes, sizes, textures, colours and smells (both natural and manufactured).

For example:

- become aware of moving body parts within a space;
  - become aware of moving in a range of spaces and environments;
  - respond showing some interest to a range of both natural and manufactured 2D and 3D shapes of varying sizes, colours and textures;
  - respond to a range of 2D and 3D materials (both natural and manufactured);
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- interact with a range of objects/materials of differing shapes, sizes, textures, colours and smells (both natural and manufactured) with all/some senses.

# Prerequisite Skills (Q Skills) in USING MATHEMATICS across the Curriculum

Progress is also demonstrated by decreasing levels of support from adults: with direction, with decreasing direction, without direction.

<b>Q3 Engage</b> (engage with, imitate modelled behaviour, direct attention, focus, recognise)	<b>Q4 Actively Participate</b> (interact, share, actively participate, collaborate, anticipate, recall)	<b>Q5 Consolidate</b> (begin to develop an understanding)
In structured activities, in familiar and accessible contexts within activity-based learning/play-based learning, pupils:	In structured activities, in familiar and accessible contexts within activity-based learning/play-based learning, pupils:	In structured activities, in familiar situations and contexts, pupils:
<ul style="list-style-type: none"> <li>engage with mathematical materials in response to teacher guidance/modelling;</li> </ul>	<ul style="list-style-type: none"> <li>recognise that a choice has to be made when selecting materials and equipment for a simple activity;</li> </ul>	<ul style="list-style-type: none"> <li>make choices in selecting specific materials and equipment for a simple activity;</li> </ul>
<ul style="list-style-type: none"> <li>recognise mathematical activities in response to cues and prompts;</li> <li>engage with daily routines in response to teacher modelling;</li> </ul>	<ul style="list-style-type: none"> <li>participate in mathematical activities;</li> <li>participate in daily routines;</li> </ul>	<ul style="list-style-type: none"> <li>show some understanding of mathematical notation, such as numerals/words/sets;</li> <li>anticipate and follow through daily routines;</li> </ul>
<ul style="list-style-type: none"> <li>engage with and imitate ways of asking for help;</li> <li>recall simple logical strategies in response to teacher modelling;</li> </ul>	<ul style="list-style-type: none"> <li>demonstrate a basic understanding that problem solving requires a strategy, such as asking for help;</li> <li>participate in simple supported logical strategies;</li> </ul>	<ul style="list-style-type: none"> <li>attempt a range of problem-solving strategies, such as seeking help;</li> <li>become familiar with an increasing range of basic logical strategies;</li> </ul>
<ul style="list-style-type: none"> <li>imitate simple and familiar patterns in response to teacher modelling;</li> </ul>	<ul style="list-style-type: none"> <li>participate in copying simple patterns;</li> </ul>	<ul style="list-style-type: none"> <li>recognise and continue simple patterns;</li> </ul>
<ul style="list-style-type: none"> <li>respond to and engage with objects being collected;</li> <li>engage with and imitate a simple sequence of objects/pictures/symbols that includes an element of choice;</li> </ul>	<ul style="list-style-type: none"> <li>actively participate in the collection of objects/information;</li> <li>represent familiar events/situations/experiences with appropriate symbols/objects/pictures;</li> </ul>	<ul style="list-style-type: none"> <li>communicate basic information and assist in its organisation;</li> <li>represent a wider range of familiar/unfamiliar events/situations/experiences with appropriate symbols/objects/pictures;</li> </ul>
<ul style="list-style-type: none"> <li>recognise and engage with some basic mathematical language;</li> </ul>	<ul style="list-style-type: none"> <li>recall and participate in activities involving simple mathematical language;</li> </ul>	<ul style="list-style-type: none"> <li>begin to understand appropriate mathematical language;</li> </ul>
<p>For example:</p>	<p>For example:</p>	<p>For example:</p>
<ul style="list-style-type: none"> <li>imitate moving his/her body parts or position within a space;</li> <li>imitate moving in a range of spaces and environments;</li> <li>imitate/engage in collecting specified objects from a specified area or putting specified objects in a specified area on request;</li> <li>imitate the sorting of a range of both natural and manufactured 2D and 3D shapes of varying sizes, colours and textures;</li> <li>imitate the handling of a variety of materials (both natural and manufactured);</li> </ul>	<ul style="list-style-type: none"> <li>participate in moving and rotating his/her body parts or changing position within a space;</li> <li>move within a range of spaces and environments;</li> <li>participate in collecting and putting familiar objects in familiar places on request;</li> <li>participate in sorting activities using a range of both natural and manufactured 2D and 3D shapes of varying sizes, colours and textures;</li> <li>change a shape using pliable materials (both natural and manufactured);</li> </ul>	<ul style="list-style-type: none"> <li>move and rotate his/her body parts or change position on request within a space;</li> <li>demonstrate an understanding of restriction within a given space;</li> <li>move to a designated position/space on request;</li> <li>collect and put unfamiliar objects in unfamiliar places on request;</li> <li>sort a range of both natural and manufactured 2D and 3D shapes of varying sizes, colours and textures according to self-chosen criteria;</li> <li>combine 2D and 3D to make simple 2D and 3D constructions;</li> </ul>
<ul style="list-style-type: none"> <li>imitate the matching of object to object, picture to picture and object to picture using differing shapes, sizes, textures, colours (both natural and man-made) with some/all of the senses;</li> <li>imitate the sorting of a 'family' of objects/pictures.</li> </ul>	<ul style="list-style-type: none"> <li>actively participate in the matching of a range of objects/materials of differing shapes, sizes, textures, colours and smells and become familiar with the terms 'different', 'same', 'match' and 'belong together';</li> <li>participate in activities where objects/pictures are sorted into a 'family'.</li> </ul>	<ul style="list-style-type: none"> <li>sort real objects for one criterion and re-sort for a different criterion;</li> <li>demonstrate an understanding that a set of objects/pictures is a 'family', that they belong together and there is some way in which they are the same and label/identify/communicate similarities.</li> </ul>