

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"> • encounter a variety of mathematical materials and equipment; 	<ul style="list-style-type: none"> • interact with materials and equipment;
<ul style="list-style-type: none"> • experience mathematical activities; • experience daily routines; 	<ul style="list-style-type: none"> • respond to mathematical activities; • become aware of daily routines;
<ul style="list-style-type: none"> • experience a problem; • encounter simple logical strategies; 	<ul style="list-style-type: none"> • become aware of the existence of a problem; • respond and interact with simple logical strategies;
<ul style="list-style-type: none"> • experience a variety of simple patterns; 	<ul style="list-style-type: none"> • become aware of and respond to a variety of simple patterns;
<ul style="list-style-type: none"> • encounter collections of objects; • encounter a variety of objects/pictures/symbols; 	<ul style="list-style-type: none"> • interact with a range of objects; • interact with matching and collecting of objects/pictures/symbols;
<ul style="list-style-type: none"> • experience a range of mathematical language; 	<ul style="list-style-type: none"> • respond to some basic mathematical language;
For example:	For example:
<ul style="list-style-type: none"> • 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); 	<ul style="list-style-type: none"> • 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);
<ul style="list-style-type: none"> • experience a range of objects/materials of differing shapes, sizes, textures, colours and smells (both natural and manufactured). 	<ul style="list-style-type: none"> • 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.

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