### 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:

<table>
<thead>
<tr>
<th>Shape and Space</th>
<th>Handling Data</th>
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<tbody>
<tr>
<td>• experience moving body parts within a space;</td>
<td>• experience a range of objects/materials of differing shapes, sizes, textures, colours and smells (both natural and manufactured).</td>
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<tr>
<td>• experience moving in a range of spaces and environments;</td>
<td>• become aware of moving body parts within a space;</td>
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<tr>
<td>• experience a range of both natural and manufactured 2D and 3D shapes of varying sizes, colours and textures;</td>
<td>• become aware of moving in a range of spaces and environments;</td>
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<tr>
<td>• experience a range of 2D and 3D materials (both natural and manufactured);</td>
<td>• respond showing some interest to a range of both natural and manufactured 2D and 3D shapes of varying sizes, colours and textures;</td>
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<tr>
<td>• experience a range of objects/materials of differing shapes, sizes, textures, colours and smells (both natural and manufactured).</td>
<td>• respond to a range of 2D and 3D materials (both natural and manufactured);</td>
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#### 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.

<table>
<thead>
<tr>
<th>Q1 Experience (experience/encounter)</th>
<th>Q2 Respond (become aware, respond, interact intermittently)</th>
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<tbody>
<tr>
<td>In sensory activities and activity-based learning/play-based learning, pupils:</td>
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- encounter a variety of mathematical materials and equipment;
- experience mathematical activities;
- experience daily routines;
- experience a problem;
- encounter simple logical strategies;
- experience a variety of simple patterns;
- encounter collections of objects;
- encounter a variety of objects/pictures/symbols;
- experience a range of mathematical language;

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);
- experience a range of objects/materials of differing shapes, sizes, textures, colours and smells (both natural and manufactured).
## 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)

- In structured activities, in familiar and accessible contexts within activity-based learning/play-based learning, pupils:
  - engage with mathematical materials in response to teacher guidance/modelling;
  - recognise mathematical activities in response to cues and prompts;
  - engage with daily routines in response to teacher modelling;
  - engage with and imitate ways of asking for help;
  - recall simple logical strategies in response to teacher modelling;
  - imitate simple and familiar patterns in response to teacher modelling;
  - 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;
  - recognise and engage with some basic mathematical language;
  - engage with mathematical materials in response to teacher guidance/modelling;
  - imitate the sorting of a ‘family’ of objects/pictures.

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- 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);
- 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.

### Q4 Actively Participate
(interact, share, actively participate, collaborate, anticipate, recall)

- In structured activities, in familiar and accessible contexts within activity-based learning/play-based learning, pupils:
  - recognise that a choice has to be made when selecting materials and equipment for a simple activity;
  - participate in mathematical activities;
  - participate in daily routines;
  - demonstrate a basic understanding that problem solving requires a strategy, such as asking for help;
  - participate in simple supported logical strategies;
  - participate in copying simple patterns;
  - actively participate in the collection of objects/information;
  - represent familiar events/situations/experiences with appropriate symbols/objects/pictures;
  - actively participate in activities involving simple mathematical language;
  - actively participate in the matching of object to object, picture to picture and object to picture using 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’.

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- 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);
- 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’.

### Q5 Consolidate
(begin to develop an understanding)

- In structured activities, in familiar situations and contexts, pupils:
  - make choices in selecting specific materials and equipment for a simple activity;
  - show some understanding of mathematical notation, such as numerals/words/sets;
  - anticipate and follow through daily routines;
  - attempt a range of problem-solving strategies, such as seeking help;
  - become familiar with an increasing range of basic logical strategies;
  - communicate basic information and assist its organisation;
  - begin to understand appropriate mathematical language;
  - 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;
  - 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;
  - 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.

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- 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;
- 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.

(Non-Statutory)