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)

- 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;
- experience a range of mathematical language;

For example:
- experience a range of materials;
- experience a range of number rhymes and songs;
- experience games where objects are hidden or rearranged;
- encounter simple two factor patterns;

Number/Money

Number

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:

Money

Q2 Respond
(become aware, respond, interact intermittently)

- interact with materials and equipment;
- respond to mathematical activities;
- become aware of the existence of a problem;
- respond and interact with simple logical strategies;
- become aware of and respond to a variety of simple patterns;
- interact with a range of objects;
- interact with matching and collecting of objects/pictures/symbols;

For example:
- respond with some interest to a range of materials;
- respond to number rhymes and songs;
- respond to/search for objects that are out of sight;
- show awareness of a range of simple two factor patterns;

- respond intermittently to activities that include real/pretend coins and real/pretend shopping situations which involve giving and receiving.

For example:
- respond intermittently to activities that include real/pretend coins and real/pretend shopping situations which involve giving and receiving.
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#### 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;

**For example:**
- interact with a range of materials and with support match two unequal and two equal sets;
- engage in and/or imitate some actions during number rhymes and songs;
- engage in and/or copy rote counting in ones up to 10;
- imitate touching count up to 10;
- imitate the matching of numerals up to 10;
- imitate different ways of making sets, using a range of different materials, for a given number within 10;
- respond to and imitate ordinal number terminology – first, second, third;
- imitate ordering of sets up to 10;
- engage in mathematical games in which objects are rearranged and/or concealed;
- imitate a range of simple two factor patterns;

**For example:**
- imitate the exchange of coins in the context of play/role play and pretend/real life shopping activities;
- imitate modelled choosing of objects they would like to spend their money on;
- imitate the sorting and classifying of real coins from pretend coins.

#### 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;
- recall and participate in activities involving simple mathematical language;

**For example:**
- participate in matching a range of materials, numerals and sets and demonstrate an understanding of 1:1 correspondence;
- communicate at least one number from a familiar rhyme/song/story;
- recognise and count forwards numbers up to 10;
- touch count consistently up to 10;
- order numbers within 5;
- match numerals using different fonts up to 10;
- participate in different ways of making sets, using a range of different materials, for a given number, within 10;
- actively participate in activities that involve adding one more to change the label of a set;
- recognise sets up to 10;
- participate in activities using ordinal number terminology;
- participate in ordering sets up to 10;
- participate in combining two sets using concrete objects;
- participate in different ways of partitioning sets into sub-sets;
- estimate sets up to 5;
- use ordinal number terminology;
- order sets up to 10;
- combine two sets and give the total;
- explore different ways of partitioning sets into sub-sets and communicate the outcome;
- understand that the number of objects are the same when objects are rearranged or concealed;
- understand in counting activities that ‘none’ is represented by 0/zero;
- create repeating patterns using objects, numbers or pictures;

#### 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;
- recognise and continue simple patterns;
- communicate basic information and assist in its organisation;
- represent a wider range of familiar/unfamiliar events/situations/experiences with appropriate symbols/objects/pictures;
- begin to understand appropriate mathematical language;

**For example:**
- match and demonstrate an understanding of 1:1 correspondence and the terms ‘more than’, ‘less than’, ‘not enough’ and ‘the same’;
- participate in number rhymes/songs/stories involving numbers up to 10;
- count forwards in ones from different starting points with numbers up to 5;
- touch count consistently up to 10 and know the size of a set is given by the last number;
- count backwards, within 5, in ones from different starting points;
- match numerals using different fonts up to 10;
- order numbers within 5;
- investigate different ways of making sets, using a range of different materials, for a given number, within 10;
- explore and demonstrate understanding that 1 more changes the label of a set;
- recognise sets of up to 10 and label with the correct numeral;
- estimate sets up to 5;
- use ordinal number terminology;
- order sets up to 10;
- combine two sets and give the total;
- explore different ways of partitioning sets into sub-sets and communicate the outcome;
- understand that the number of objects are the same when objects are rearranged or concealed;
- understand in counting activities that ‘none’ is represented by 0/zero;
- create repeating patterns using objects, numbers or pictures;
- exchange coins for goods in the context of play/role play;
- choose objects they would like to buy from a limited selection of two or three items;
- exchange coins in simple transaction when out shopping;
- participate in matching and sorting individual coins;
- actively participate in the sorting and classifying of real coins and pretend coins.

**For example:**
- exchange coins for goods in the context of real life money activities, such as tuck shop, canteen, and understand the concept of waiting for change;
- understand the concept that cash can be represented by cards/vouchers;
- indicate objects they would like to buy from a wider range;
- identify the number on a coin;
- distinguish real coins from pretend coins.