

Subject: Mathematics

Golden Concept: Mastery of Basic Skills

Purpose of Mastery of Basic Skills:

The mastery of basic skills in maths is important to both academic and practical aspects of an individual's life. Basic math skills form the foundation for more advanced mathematical concepts. Maths is also a powerful tool for problem solving – proficiency in basic skills enhances an individual's ability to analyse, break down complex problems and find solutions systematically. Basic math skills are essential in daily life for tasks such as budgeting, cooking, shopping and home improvement. In addition, many careers require a basic understanding of maths and proficiency in math can open up more career opportunities.

Assessment:

The assessment process for mastery of basic skills in maths typically involves a combination of formative and summative assessments.

In Maplefields, we use ongoing formative assessments to gauge students' understanding of basic skills. These can include quizzes, class discussions, starters/ plenaries, and interactive activities on the board. These provide immediate feedback for both students and teachers.

At the end of a topic, term or year, a summative assessment may be given to evaluate overall mastery of basic skills – this may require the application of basic skills in more complex scenarios.

Cross curriculum:

Science: Mathematical skills are essential in scientific inquiry, data analysis, and experimentation. Concepts such as measurement, probability, and statistics play a crucial role in scientific research.

History: Mathematics has historical significance, and understanding mathematical developments can provide insights into the evolution of civilizations, trade, and scientific thought.

Geography: Spatial reasoning skills in mathematics can aid in understanding geographical concepts, map reading, and interpreting data related to demographics and land use.

Art and Design: Geometry and symmetry, both mathematical concepts, play a significant role in art and design. Artists and designers often use mathematical principles in creating aesthetically pleasing compositions.

PE: Measurement and statistics are applicable in physical education for tracking fitness progress, analysing sports performance, and understanding biomechanics.

Design and technology: Basic math skills are fundamental in design and technology for tasks such as calculating dimensions, designing structures, and solving problems related to materials and mechanics.

Key Stage or stage breakdown:

Stages 1/2

- Focus: Foundation of basic numeracy and mathematical concepts.
- Emphasis: Understanding numbers, counting, addition, subtraction, shapes, and basic measurements.

Stages 3/4/5/6

- Focus: Building on the foundation, introducing more complex concepts.
- Emphasis: Multiplication, division, fractions, decimals, more advanced geometry and measurement, problem-solving.

Stages 7/8/9

- Focus: Further development of mathematical skills, preparing for more specialized study.
- Emphasis: Algebra, geometry, statistics, ratio and proportion, advanced problem-solving.

These key stages provide a structured approach to the development of mathematical skills, with each stage building upon the knowledge gained in the previous one. The idea is that by the end of stage 9, students have a solid foundation in basic and more advanced mathematical concepts, preparing them for more specialized study in Key Stages 4 and 5, which often correspond to secondary and post-secondary education.