

Mathematical Skills – Line of Development

The Primary School Curriculum describes the skills that children should acquire as they develop mathematically. These skills include:

- Applying and problem-solving
- Communicating and expressing
- Integrating and connecting
- Reasoning
- Implementing
- Understanding and recalling

Skill: Applying and Problem-solving

Infants	First and Second	Third and Fourth	Fifth and Sixth
select appropriate materials and processes for mathematical tasks	select appropriate materials and processes for mathematical tasks and applications	select appropriate materials, concepts and processes for mathematical tasks and applications	select appropriate materials, concepts and processes for particular tasks and applications
select and apply appropriate strategies for completing a task or solving a problem	select and apply appropriate strategies for completing a task or solving a problem	select and apply a variety of strategies to complete tasks and projects or to solve problems	select and apply a variety of strategies to complete tasks and projects or solve problems
recognise solutions to problems	recognise solutions to problems apply concepts and processes in a variety of contexts	evaluate solutions to problems apply concepts and processes in a variety of contexts analyse problems and plan an approach to solving them	reflect upon and evaluate solutions to problems apply concepts and processes in a variety of contexts analyse problems and plan an approach to solving them

Skill: Communicating and Expressing

Infants	First and Second	Third and Fourth	Fifth and Sixth
<p>discuss and explain mathematical activities</p> <p>record the results of mathematical activities concretely and using diagrams, pictures and numbers</p> <p>discuss problems presented concretely, pictorially or orally</p>	<p>discuss and explain mathematical activities</p> <p>listen to and discuss other children's mathematical descriptions and explanations</p> <p>discuss and record the results of mathematical activities using diagrams, pictures and symbols</p> <p>discuss problems presented pictorially or orally</p>	<p>discuss and explain the processes used and the results of mathematical activities, problems, and projects</p> <p>listen to and discuss other children's mathematical descriptions and explanations</p> <p>discuss and record the processes and results of work using a variety of methods</p> <p>discuss problems presented verbally or diagrammatically and carry out analyses</p>	<p>discuss and explain the processes used and the results of mathematical activities, problems and projects in an organised way</p> <p>listen to and discuss other children's mathematical descriptions and explanations</p> <p>discuss and record the processes and results of work using a variety of methods</p> <p>discuss problems and carry out analyses</p>

Skill: Integrating and Connecting

Infants	First and Second	Third and Fourth	Fifth and Sixth
connect informally acquired mathematical ideas with formal mathematical ideas	connect informally acquired mathematical ideas with formal mathematical ideas	connect informally acquired mathematical ideas and processes with formal mathematical ideas and processes	connect informally acquired mathematical ideas and processes with formal mathematical ideas and processes
recognise mathematics in the environment	recognise mathematics in the environment	recognise mathematics in the environment	recognise mathematics in the environment
recognise the relationship between verbal, concrete, pictorial and symbolic modes of representing numbers	recognise the relationship between verbal, concrete, pictorial and symbolic modes of representing numbers	represent mathematical ideas and processes in different modes: verbal, pictorial, diagrammatic , and symbolic	represent mathematical ideas and processes in different modes: verbal, pictorial, diagrammatic and symbolic
carry out mathematical activities that involve other areas of the curriculum	carry out mathematical activities that involve other areas of the curriculum	recognise and apply mathematical ideas and processes in other areas of the curriculum	recognise and apply mathematical ideas and processes in other areas of the curriculum
	understand the mathematical ideas behind the procedures he/she uses	understand the connections between mathematical procedures and the concepts he/she uses	understand the connections between mathematical procedures and the concepts he/she uses

Skill: Reasoning

Infants	First and Second	Third and Fourth	Fifth and Sixth
<p>classify objects into logical categories</p> <p>recognise and create sensory patterns</p> <p>justify the processes or results of activities</p>	<p>classify objects into logical categories</p> <p>make guesses and carry out experiments to test them</p> <p>recognise and create mathematical patterns and relationships</p> <p>justify the processes and results of mathematical activities</p>	<p>make hypotheses and carry out experiments to test them</p> <p>explore and investigate mathematical patterns and relationships</p> <p>justify processes and results of mathematical activities, problems and projects</p> <p>make informal deductions involving a small number of steps</p> <p>reason systematically in a mathematical context</p>	<p>make hypotheses and carry out experiments to test them</p> <p>search for and investigate mathematical patterns and relationships</p> <p>justify processes and results of mathematical activities, problems and projects</p> <p>make informal deductions</p> <p>reason systematically in a mathematical context</p>

Skill: Implementing

Infants	First and Second	Third and Fourth	Fifth and Sixth
devise and use mental strategies and procedures for carrying out mathematical tasks use appropriate manipulatives to carry out mathematical tasks and procedures	devise and use mental strategies and procedures for carrying out mathematical tasks use appropriate manipulatives to carry out mathematical tasks and procedures execute procedures efficiently	devise and use mental strategies and procedures for carrying out mathematical tasks use appropriate manipulatives to carry out mathematical procedures execute standard procedures efficiently with a variety of tools	devise and use mental strategies and procedures for carrying out mathematical tasks use appropriate manipulatives to carry out mathematical procedures execute standard procedures efficiently with a variety of tools

Skill: Understanding and Recalling

Infants	First and Second	Third and Fourth	Fifth and Sixth
recall and understand terminology.	understand and recall terminology and facts	understand and recall terminology, facts and definitions	understand and recall facts, definitions and formulae