

Years 0–10

Across years 0–10, Mathematics and Statistics takes students on a journey of increasingly sophisticated thinking about number, patterns, space, and data. Through purposeful exploration and practice, students build the knowledge and fluency they need to solve problems, reason logically, and make sense of the world around them.

The mathematical and statistical processes of investigating, representing and connecting situations, and generalising, explaining, and justifying findings are fundamental to all mathematical and statistical teaching and underpin the way students gain understanding of the knowledge and practices being taught.

Years 0–3

In years 0–3, teaching focuses on building students' ability to investigate, classify, and describe quantities, shapes, and data.

Teachers draw attention to properties of numbers and attributes of shapes.

Materials and pictures support visualisation of these numerical and geometric concepts.

Explicit teaching enables students to make connections between representations and to develop their reasoning.

Years 4–6

In years 4–6, teaching focuses on students' use of a variety of representations to model number operations and to solve word problems.

They extend their understanding of whole numbers to fractions and decimals, and they visualise, classify, and draw angles using benchmarks to support and justify their classifications.

Students apply their knowledge of number operations to reasoning about measurements and to investigating variations in patterns, shapes, probabilities, and data.

They begin to work with exponents, can tell the time, and convert between units of time.

Years 7–8

In years 7 and 8, teaching focuses on students' use of logic and reasoning to identify, clarify, and solve problems, make connections between mathematical and statistical concepts, and investigate patterns and variation.

They use appropriate conventions, vocabulary, and algebraic notation to clearly explain solutions and justify their approaches to solving problems. Students select, use, and adapt representations to visualise and extend their reasoning (e.g. number lines to represent integers, and equations to represent linear patterns).

They make generalisations, identify and calculate unknown quantities (e.g. the size of angles), and use data visualisations to evaluate claims and make conjectures. They begin to explore irrational numbers and to operate fluently with integers.

Years 9–10

In years 9 and 10, teaching focuses on students' use of proportional reasoning to transform numerical quantities, measurements, and shapes, including right-angled triangles.

They begin to generalise their understanding and application of tables, equations, and graphs, including to explore patterns and the connections between different representations.

They extend their understanding of area, perimeter, and volume for a variety of 2D shapes, including circles, and 3D shapes, including prisms.

They use data visualisations to investigate, represent, and explain patterns, trends, and variation, and they apply their knowledge to situations involving chance.

The Mathematics and Statistics learning area prepares students with the knowledge and practices they need to access related curriculum subjects in years 11–13, such as Statistics, Mathematics, and Physics.