The Year 9 Mathematics curriculum in Queensland (QLD), which aligns with the Australian Curriculum, is structured around **three content strands** and addresses a number of key topics within each.

The main categories (strands) of mathematics are:

1. **Number and Algebra**
2. **Measurement and Geometry**
3. **Statistics and Probability**

1. 🔢 Number and Algebra

This strand focuses on extending students' understanding of number systems and developing their algebraic manipulation and problem-solving skills.

Category	Key Topics (Scope)
Real Numbers	Recognising and using **rational** and **irrational numbers** (real number system). Expressing very large and very small numbers using **scientific notation**. Solving problems involving **ratio** and **direct proportion** (e.g., in practical modelling).
Indices and Exponents	Extending and applying the **exponent laws** (index laws) to numerical expressions and variables, including **integer exponents** and the **zero index**.
Financial Mathematics	Solving practical problems involving **simple interest**.
Algebraic Techniques	**Expanding binomial products** (e.g., $(x+a)(x+b)$). **Factorising monic quadratic expressions** (e.g., x^2+bx+c). Simplifying algebraic expressions, including algebraic fractions.
Linear and Non-linear Relations	Finding the **gradient** (slope), **midpoint**, and **distance** between two points on the Cartesian plane. **Graphing linear and quadratic functions** (parabolas). Solving **monic quadratic equations** algebraically (with integer roots) and graphically.

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2. 📐 Measurement and Geometry

This strand involves quantifying the physical world, understanding geometric shapes, and applying theorems and trigonometry.

Category	Key Topics (Scope)
Measurement	Applying formulas to calculate the **surface area** and **volume** of **right prisms and cylinders**. Determining **percentage errors** in measurements, recognising that all measurements are estimates.
Geometric Reasoning	Solving problems involving **similarity** and **scale** in two-dimensional situations (e.g., similar triangles). Applying **angle properties** and **geometric theorems**.
Pythagoras' Theorem	Applying **Pythagoras' Theorem** to solve problems, including finding the distance between two points on the Cartesian plane.
Trigonometry	Using the **trigonometric ratios** (**sine, cosine, and tangent**) to solve problems involving **right-angled triangles**. Understanding the connection between similarity and trigonometric ratios.
Transformation	Applying the **enlargement transformation** to shapes.

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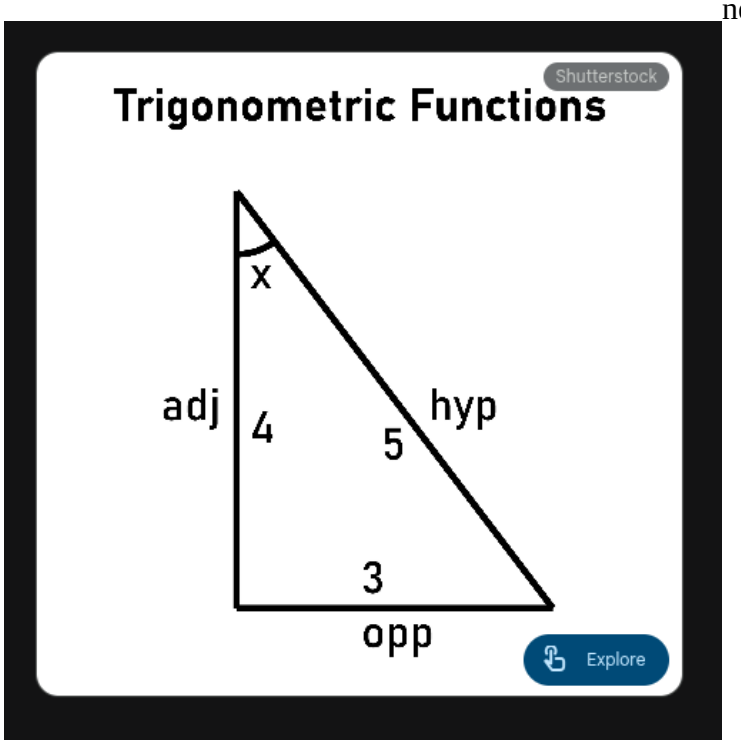

3. 📊 Statistics and Probability

This strand focuses on collecting, analysing, interpreting data, and calculating the likelihood of events.

Category	Key Topics (Scope)
Data Representation and Interpretation	Comparing data displays using **mean**, **median**, and **range** to describe and interpret numerical data sets. Understanding the position of the mean and median in **skewed, symmetric, and bi-modal displays**. Constructing **histograms** and **back-to-back stem-and-leaf plots**.
Data Collection	Comparing techniques for collecting data using **primary and secondary sources**.
Probability	Calculating **relative frequencies** to estimate probabilities. Listing outcomes for **two-step chance experiments** (with and without replacement) using tools like **tree diagrams** or **arrays**, and assigning probabilities for those outcomes.

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