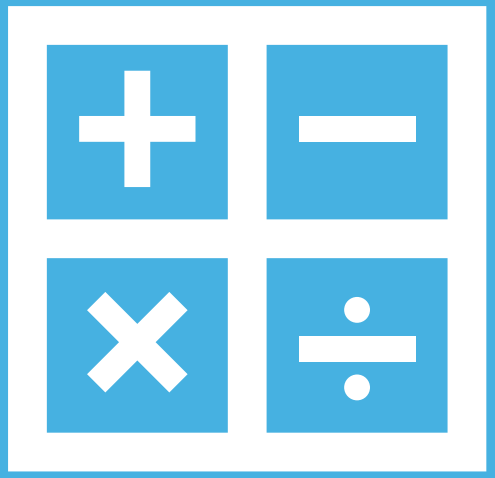
Mathematics



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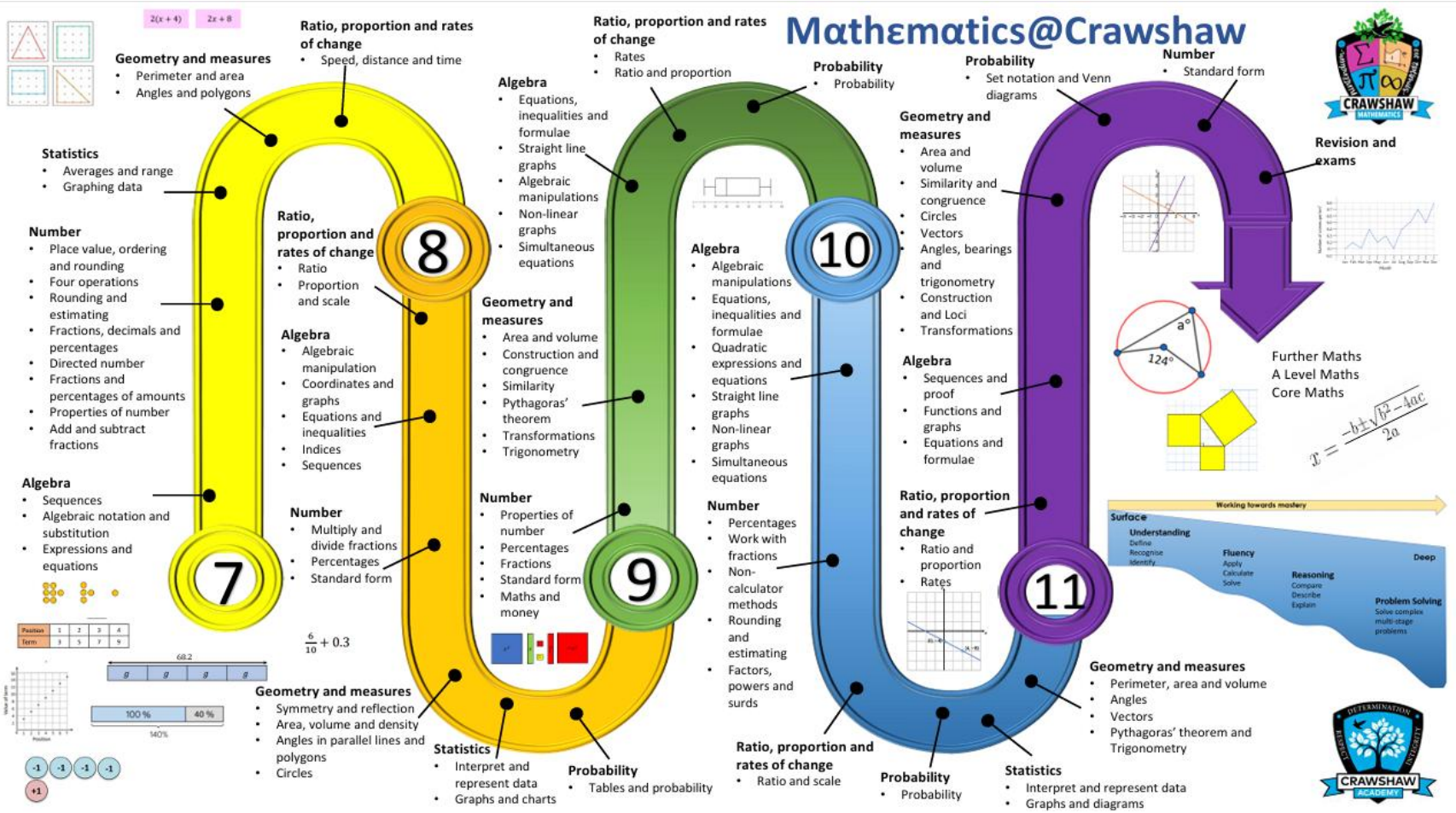
Respect • Integrity • Determination

Curriculum Outline

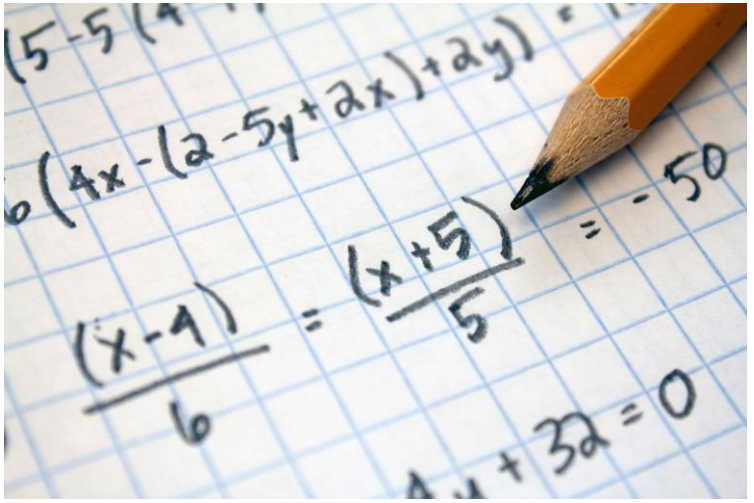


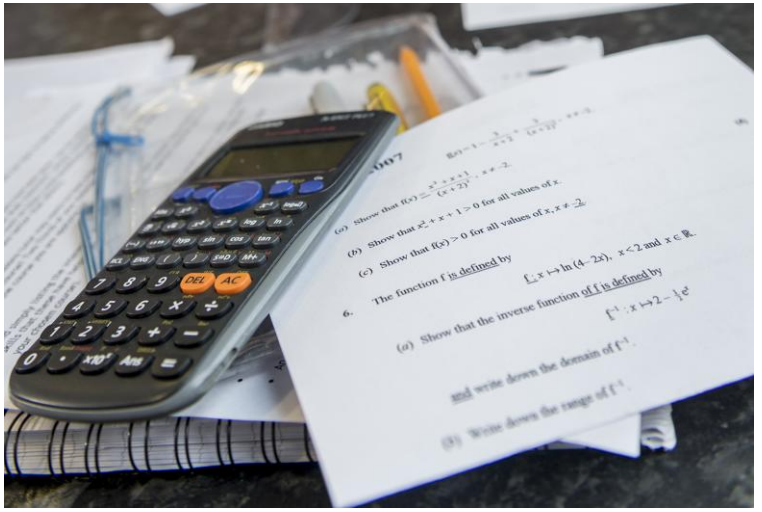
Respect • Integrity • Determination

Why is the study of Mathematics important?

Mathematics is an important subject because it helps students develop logical thinking, problem-solving skills and resilience. These skills support students not only in school but also in everyday life, such as interpreting information, managing money and making informed decisions. Mathematics also provides a strong foundation for many future careers, including science, technology, engineering and finance.

At Crawshaw Academy, the mathematics department aims to spark a passion for mathematics in every student, regardless of their starting point. We encourage students to explore patterns, make connections between different topics and understand the reasoning behind mathematical ideas rather than simply memorising methods. By focusing on the “why” behind mathematics, we help students build confidence, deepen their understanding and prepare successfully for GCSE and beyond.





What knowledge and skills will your child learn in KS3 Mathematics?

Number

Students strengthen their number skills, including working accurately with integers, fractions, decimals and percentages. They learn to estimate, check the reasonableness of answers, and use mental and written methods confidently.

Algebra

In algebra, students begin to use letters to represent numbers and relationships. They learn to simplify expressions, substitute values, solve equations, explore sequences and understand graphs, helping them describe patterns and make predictions.

Ratios and proportion

Students learn how to compare quantities, scale up or down, use percentages, and solve real-life problems involving things like recipes, best buys, speed, conversions and growth.

Geometry and Measures

In geometry and measures, students learn about shapes, angles, symmetry, perimeter, area and volume, alongside using accurate measurement and understanding properties of 2D and 3D shapes.

Statistics and Probability

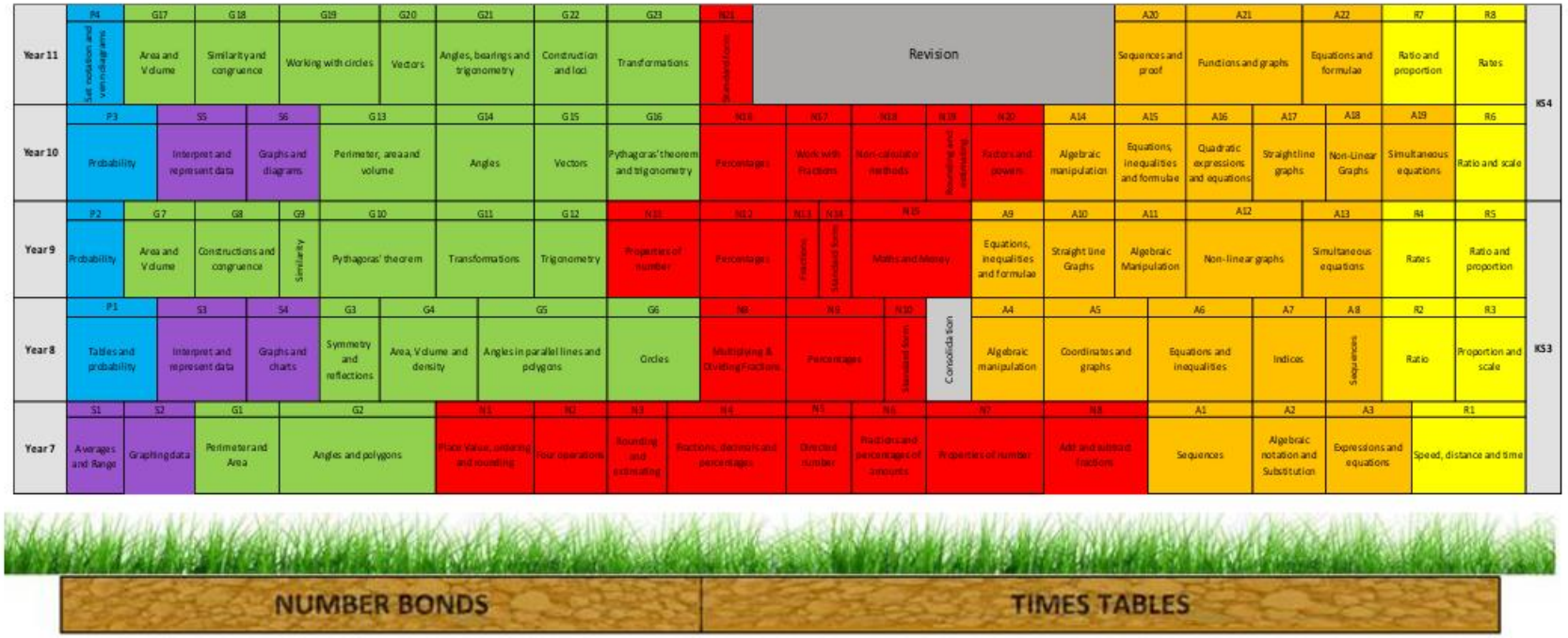
In statistics and probability, students learn how to collect, display and interpret data using graphs and charts, and they explore probability to understand how likely events are and to make informed predictions.

Across all topics, students are encouraged to reason clearly, explain their thinking, and solve problems in different contexts — building confidence, resilience and strong mathematical understanding.

The Curriculum Wall

Building your Mathematical knowledge

Curriculum Outline



Key to topics: N = Number, A = Algebra, G = Geometry, R = Ratio and Proportion, S = Statistics, P = Probability

Respect • Integrity • Determination

WHAT MAKES A GREAT MATHEMATICIAN?

Curriculum Outline

Problem Solving

Problem solving is an important part of mathematics. I can use my understanding, skills and reasoning to help me work towards solution.

Understanding

Mathematics is a network of linked ideas. I can connect new mathematical thinking to what I already know and understand.

Tools

I have a toolkit that I can choose tools from to help me solve problems. Practising using these tools helps me become a better mathematician.

Attitude

Mathematics makes sense and is worth spending time on. I can enjoy mathematics and become better at it by persevering.

Reasoning

Mathematics is logical. I can convince myself that my thinking is correct and I can explain my reasoning to others.

How is Mathematics assessed at KS3?

Knowledge assessments

We assess pupils' mathematics in a variety of ways to make sure we have a full picture of their understanding and progress. This includes both **formative assessment** (ongoing checks during lessons) and **summative assessment** (more formal end-of-topic or end-of-term tests).

What This Looks Like in the Classroom

- **Mini whiteboards** are used in every lesson. This allows teachers to see every pupil's thinking and quickly identify who may need more help or challenge.
- **Carefully planned questions** encourage children to think deeply about the maths they are learning.
- Teachers also assess through **observing children**, **discussing ideas**, **marking work**, and using **short assessments**.

What We Are Looking For

Assessments help us understand how well children can:

- Grasp key mathematical concepts
- Work accurately and efficiently
- Apply their knowledge to different types of problems, not just familiar ones

Children are encouraged to use their classwork and resources such as **knowledge organisers** to support, review and strengthen their learning.

Homework is used to help consolidate learning. We use Sparx Maths (www.sparxmaths.com) as our main weekly homework platform.

How does Mathematics link to personal development?

Careers

Mathematics highlights the real-world applications of mathematical skills in various professions. Lessons explore how mathematics is used in fields such as engineering, finance, architecture, data science, and technology, demonstrating the relevance of mathematical concepts like algebra, statistics, and geometry. Students work on projects and problem-solving exercises modelled on real industry scenarios, helping them understand how mathematics supports tasks like budgeting, design, or data analysis. This makes mathematics more engaging and helps students see a clear link between their studies and future career options.

Fundamental British Values

Click here to find out how Mathematics helps to promote the Fundamental British Values (FBV).

SMSC

Click here to find out how Mathematics develops Spiritual, Moral, Social and Cultural (SMSC) understanding.

Economic Well-being

Click here to find out how Mathematics provides financial education and promotes economic well-being.

Extra Information

Enrichment

Axiom Maths Club
Axiom Maths Club is part of a national organisation designed to help children develop their mathematical thinking through a programme of fun, challenging puzzles. Pupils take part in small groups called **"maths circles"**, which meet once a week to explore a curriculum of rich, engaging mathematical problems.

What Pupils Do in Maths Circles

- **Explore challenging maths beyond the classroom**
  Pupils work through a structured set of problems that introduce them to fascinating mathematical ideas not usually covered in the National Curriculum. This helps deepen their understanding and broaden their experience of maths.
- **Learn to get 'stuck'—and then 'unstuck'**
  Problems are designed to be tricky. Pupils learn that it is normal not to get the answer straight away, and they build resilience and confidence as they work towards a solution.
- **Experience 'flow' in their learning**
  Maths circles are relaxed, enjoyable environments with no tests or pressure. Pupils often become absorbed in the challenge and enjoy the satisfaction of exploring ideas at their own pace.
- **Join a like-minded community**
  Axiom provides a space where children who enjoy maths can meet others who feel the same. It helps build a positive attitude toward maths in a culture where it isn't always celebrated as much as it should be.