

Parents' Guide to Mathematics
Grade Level Content Expectations
What your child needs to know by the end of Grade 7/ Stage 8

1. Number

Properties:

- Multiply and divide integers.
- Use squares, square roots, cubes and cube roots of numbers.
- Use index notation for positive integer powers.
- Know and use the order of operations, including brackets, with more complex calculations.
- Write a number in terms of its prime factors.
- Identify rational and natural numbers.
- Multiply and divide integers and decimals by 0.1 and 0.01.
- Convert fractions to recurring decimals and vice versa.
- Multiply and divide by decimals (up to two places) and integers.
- Multiply and divide an integer by a fraction and a mixed number.
- Subtracting and adding mixed numbers.

Problem solving:

- Reduce a ratio to its simplest form, including a ratio expressed in different units.
- Use the unitary method to solve simple problems involving ratio and direct proportion.
- Sharing a quantity in a given ratio.
- Rounding to given significant figures.
- Solve simple problems mentally.

2. Algebra

- Simplify or transform linear expressions by collecting like terms.
- Factorizing expressions.
- Know that algebraic operations follow the same order as arithmetic operations.
- Evaluate formulae, including quadratic and cubic expressions.
- Construct expressions.
- Construct and solve linear equations, with integer coefficients.
- Solve equations with unknowns on both sides.
- Substitute positive and negative integers into formulae, linear expressions and expressions involving small powers.
- Represent an inequality on a number line.
- Identify gradient and y-intercept in equations written in the form $y = mx + c$.
- Construct tables of value and plot graphs of linear functions, where y is given explicitly in terms of x.
- Draw a function and its inverse.

3. Measure:

- Use names and abbreviations of units or measurement to measure, estimate, calculate and solve problems in everyday contexts involving mass, length, area, capacity, mass time and angle.
- Use rough metric equivalents of imperial measures to solve problems.
- Convert square and cube units.
- Calculate using money including converting between currencies.
- Calculate percentage increase and decrease.
- Solve simple problems that include simple interest, discount, profit, loss and tax.

4. Geometry:

- Understand and use the vocabulary, notation and labeling conventions for lines, angles and shapes.
- Identify parallel and perpendicular lines.
- Use and interpret the vocabulary of triangles, quadrilaterals and polygons.
- Understand and use the formula for the sum of interior angles of a regular polygon.
- Know the sum of angles at a point, on a straight line and in a triangle.
- Recognize vertically opposite angles.
- Identify alternate angles and corresponding angles.
- Know and use angle properties of equilateral, isosceles and right-angled triangles and special quadrilaterals to solve problems.
- Calculate the area of different shapes as well as compound shapes.
- Know and use the formula for the volume of a cuboid.
- Know the definition of a circle and the names of its parts.
- Know and use the formulae for the circumference of a circle.

Mathematics Policy

The rich 6th, 7th and 8th grade Mathematics CS curriculum provides a strong base for the upcoming academic years. Building on knowledge gained in previous years, students grasp new mathematical skills and are encouraged to develop their logical thinking. Discussions and reflection will be a regular part of the class.

Class policy:

- Students will be given daily homework and at times classwork assignments instead.
- Every homework is uploaded on LMS.
- Daily given material is uploaded in the “daily homework” tab on LMS.
- The teacher will go around and make sure students have completed the assigned homework.
- Homework will be discussed and solved the following day to make sure that students understand the given concepts.
- Assessments and quizzes will be reviewed in class.
- Students are encouraged to ask questions.
- Students are encouraged to gain confidence and come to conclusions independently.
- Students will be working individually, in pairs, or within a group to encourage peer knowledge exchange.

Resources:

- Book: Cambridge Lower Secondary Complete Mathematics (Second edition)
- Homework Book: Cambridge Lower Secondary Complete Mathematics (Second edition)
- Worksheets
- Study sheets

Grading:

- First assessment (20 marks)
- Second assessment (20 marks)
- Third assessment includes: Project, quizzes, class participation and homework (20 marks)
- Final exam (40 marks)