

Rural Church Schools Academy Trust
A RCSAT Mathematician
Warmingham CE Primary





RCSAT Curriculum Overview 2021
LET YOUR LIGHT SHINE
Matthew 5:16



Article 29: Children’s education should develop each child’s personality, talents and abilities to the fullest. It should encourage children to respect others, human rights and their own and other cultures. It should also help them learn to live peacefully, protect the environment and respect other people.

Our Curriculum Policy details our intent behind our curriculum, how we implement it and our desired impact. At RCSAT, the school curriculum consists of all those activities designed or encouraged within its organisational framework to provide the intellectual, emotional, personal, social, spiritual and physical development of all its pupils. It includes not only the subject specific curriculum but also the ‘informal’ programme of enrichment and extra-curricular activities.

The curriculum at RCSAT, developed over a number of years, is firmly rooted in and stems directly from our Vision, Mission and Core Values.

Our Vision – ‘**Let your Light shine**’ *Matthew v5:16*

Our Mission – ‘**A Caring Christian Family Where We Grow Together**’

Our Core Values – WE aim to create an enjoyable, inclusive, safe, and nurturing environment that allows all children to develop spiritually, morally and socially. – *every child is a child of God, made to contribute to our world.*

We aim to create an inspiring environment, which encourages enthusiasm for lifelong learning and establishes an expectation of high standards – *knowing the way, showing the way and going the way.*

We aim to encourage caring, sensitive, and inclusive attitudes where individuals feel secure, valued and respected by others. – *like Jesus showed us through his teachings.*

We aim to provide a broad and connected curriculum which challenges and develops the potential of each child – *as Jesus needed his disciples to support and guide, so we look to others with more knowledge.*

We aim to develop a positive relationship between home, school and our wider community - *as a family – as brothers and sisters.*

The RCSAT curriculum is designed to:

Embody - the Christian values we live by

Enable – all children to flourish in mind, body and spirit

Ensure – that all pupils are given the experiences to ‘Let their Light Shine.’

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|--------------------|---|---|--------------------------|
| Reading | <ul style="list-style-type: none"> Loving God, loving and accepting ourselves and loving and responding well to others A joy of learning A peaceful classroom environment Kindness and generosity towards others Gentle interactions Patience and understanding Excellent behaviour and positive attitudes | <p>PSHE and Pastoral</p> <p>Being an inclusive school that celebrates diversity and ensures that all pupils are given equality of opportunity regardless of gender, special needs, disability or race.</p> <p>Love the Lord God with all your heart, with all your soul and with all your mind. Love your neighbour as yourself. Matthew 22: 36-40</p> <ul style="list-style-type: none"> Positive relationships High levels of praise Love and care for others Learning from mistakes Fostering a growth mindset & perseverance Equal opportunity for all pupils Nurturing positive self-esteem | Religious Education |
| Writing | <p>The Fruit of the Spirit is Love, Joy, Peace, Patience, Kindness, Generosity, Faithfulness, Gentleness and Self control Galatians 5: 22-23</p> | | Art |
| Spelling & Grammar | <p>GROWING THE FRUIT OF THE SPIRIT</p> | | Design & Technology |
| Speaking | <p>Christian Distinctiveness</p> | | Computing & E-safety |
| Maths | | | Music |
| Science | | | Physical Education |
| History | | | Modern Foreign Languages |
| Geography | | | Early Years Curriculum |

Intent:

The schools within RCSAT are strongly committed to helping our children grow and develop the skills required to be successful in life. Our curriculum is designed to promote every child's individuality giving them the skills, knowledge and understanding to prepare them for the future. At RCSAT, our Connected Curriculum is planned around the development of Knowledge, Skills and Understanding. We ensure a curriculum that nurtures fascination and imagination and promotes an appreciation of creativity & individuality. One that also works in strong partnership with parents and carers to ensure high standards, engendering a strong sense of community, where all children and families are key to the delivery of a challenging, inspirational and innovative curriculum.

As a trust, we provide varied opportunities throughout their time with us, which promote independent, interactive and collaborative learning that builds on the children's natural curiosity and eagerness to learn. We teach children to aspire to be the best possible version of themselves through our key drivers.

Our Key Drivers:

- Inspirational and connected curriculum which instils a love of learning
- Curiosity and appreciation of God's world through our Christian Values
- A culture of care for everyone in our community and in the world around us (RRSA, Global Learning, British Values)
- Aspiring to become the best person God created us to be – Let your light shine (Matthew 5:16)

Academic success comes through creativity and problem solving; responsibility and resilience, as well as physical development, well-being and mental health all being key elements in supporting the whole child through their learning journey. Our curriculum also celebrates diversity and utilises the skills and knowledge of the community to enhance our curriculum while supporting the children's emotional and spiritual development.

Implementation:

Our curriculum is driven by a desire to develop the whole child and therefore delivers much more than just the National Curriculum.

Our connected curriculum provides opportunities for the children to learn about managing themselves, relationships and situations.

Our curriculum is not simply a set of encounters from which children form ad hoc memories; it is designed to be remembered in detail – to be stored in our children's long-term memories so that they can later build on it, forming an ever wider and deeper pool of knowledge.

Our curriculum is connected. It is planned vertically between year groups, horizontally within the academic year and diagonally to build on prior knowledge.

Our connected curriculum stems from a key question linked to a specific concept which then underpins the children's learning. Knowledge around this concept is delivered through primary sources such as high-quality texts, music, art and technologies, enabling connections to be made across a range of National Curriculum subjects. Our teachers skillfully plan to ensure the children in their class experience a curriculum that inspires a love for learning.

Our curriculum is predominantly organised around rich and engaging, high-quality texts, making links and connecting to all curriculum areas where relevant. There is always an overarching text which connects the curriculum across the school. Beneath which sit key texts in each year group. Subject leads ensure progression and coverage of knowledge, skills and understanding are weaved into a meaningful and cohesive curriculum drawing in learning based on local, national and international events.

Medium term plans outline the learning to take place for the term and are developed as mind maps using the phrases; As Artists, As Geographers, As Historians, As Writers, As Readers, As Mathematicians, As Musicians, As Programmers, As Designers, As Performers, As respectful, responsible citizens to frame ideas and concepts to be taught. The core basic skills of English and Maths are planned and delivered to reflect the National Curriculum 2014 changes and many elements of the new statutory orders are reflected in our practice.

We also feel that the following are necessary to support the implementation of our connected curriculum:

Learning Environment – We work hard to make sure that our learning environment supports the development of the whole child both inside, outside and beyond. Our classrooms are well organised and resourced allowing children to choose resources independently to support their learning. Our outdoor areas have been developed to enhance our connected curriculum with developments such as: running paths, outdoor stage, mini woodland, outdoor reading provision, wilderness area and forest schools. This enables pupils to explore at break and lunch-times and gives teachers a range of resource to tap into to support teaching and learning at various points within the year.

Learning Partners – It is important that as a school we engage with external partner, locally, nationally and internationally to bring added dimensions to our curriculum offer. We partner with artists, musicians, coaches, poets, cultural organisations, engineers, other schools to bring expertise and difference to our curriculum offer. These may be short term projects over a few weeks or much longer endeavours. It is through these partnerships that we may light a spark of interest, enthusiasm and passion within our children that they may carry forward with them into their future lives and schooling.

New Pedagogies – As we continue to develop our curriculum, our approach to teaching and learning also develops. We take a blended learning approach where multiple disciplines will be touched upon within a lesson. It may be a 'Science' based lesson where problem solving, maths, literacy and art disciplines are enveloped within the taught session. Project based inquiry learning coupled with direct instruction ensure that our curriculum is relevant and provides children with opportunities to develop the skills of communication, collaboration, critical thinking, citizenship and creativity whilst also building their own character.

Impact:

Through our connected approach:

- Our children will have the capacity to control and express their emotions and handle interpersonal relationships whilst keeping themselves safe.
- Our children will become confident and successful lifelong learners, demonstrating the Christian Values to ensuring they let their individual lights shine as they make the right choices about their learning.
- Our curriculum has an ambition for high achievement of all pupils irrespective of their background or starting point.
- Our curriculum promotes a love of learning.

The curriculum also includes those features which produce the school's ethos (i.e. the 'hidden curriculum') such as the quality of relationships and the values exemplified by the way the school sets about its task. Our aim is to provide a curriculum which will firstly expand the pupil's knowledge, experience and imaginative understanding, and thus his/her awareness of moral and Christian values and capacity for enjoyment, and secondly, enable the pupil to enter the world after formal education is over as an active participant in society and a responsible contributor to it, capable of achieving as much independence as possible.

There is an Act of Worship every day. Worship is a time where we come together to reflect on the school's vision and to learn about the *'person, love & work of Jesus'* which is central to the school's vision and curriculum. The daily Act of Worship promotes the Christian and Learning values which permeate the ethos of the school. As such, Worship is an essential part of the school day and the contributions of staff, pupils, clergy and other visitors are valued highly.

Why is Mathematics Important?

Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills, and the ability to think in abstract ways. Mathematics is important in everyday life, many forms of employment, science and technology, medicine, the economy, the environment and development, and in public decision-making. Different cultures have contributed to the development and application of mathematics. Today, the subject transcends cultural boundaries and its importance is universally recognised. Mathematics is a creative discipline. It can stimulate moments of pleasure and wonder when a pupil solves a problem for the first time, discovers a better solution to that problem, or suddenly sees hidden connections.

RCSAT's Vision for Mathematics - On completion of the mathematics curriculum our pupils will have developed:

- An understanding of the important concepts and an ability to make connections within mathematics.
- A broad range of skills in using and applying mathematics.
- Fluent knowledge and recall of number facts and the number system.
- The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.
- The ability to think independently and to persevere when faced with challenges, showing a confidence of success.
- The ability to embrace the value of learning from mistakes and false starts.
- The ability to reason, generalise and make sense of solutions.
- Fluency in performing written and mental calculations and mathematical techniques.
- A wide range of mathematical vocabulary.
- A commitment to and passion for the subject.

Mathematics at Warmingham

As Mathematicians our children develop a solid conceptual understanding of Maths, rather than being able to simply complete a set of mathematical procedures. This is why our children adore Maths – it's fun because we make it purposeful and practical and never a page of boring old 'sums' to work their way through. Maths is a problem waiting to be solved.

Our children become confident Mathematicians because we provide them a wide range of exciting and varied experiences. They learn in a fun and practical way which ensures they have a concrete understanding of concepts before moving on. Our approach encourages the children to work collaboratively, communicate their ideas clearly whilst rising to the challenging of solving a mathematical problem.

Daily Maths lessons are taught across the school in mixed ability classes. The children also have opportunities to develop their mathematical skills in their cross-curricular study work. Lessons are scaffolded to support struggling learners and rich, sophisticated problems are set to challenge advanced learners. A wide range of resources are available to help children visualise their learning.

We use a range of resources including 'Maths No Problem' to complement our teaching and learning. We introduce the children to Maths through the use of concrete, pictorial, abstract methods to give children a deeper understanding of how mathematics works. This ensures the children build a solid foundation of conceptual understanding and fluency.

The teaching of Mathematics in our Reception Class (Otters) consists of daily Maths workshops that focus on specific areas of the subject. These sessions focus on counting, using number names in the correct order and recognising numbers in the environment. The children learn through a range of practical contexts using images, objects, stories, rhymes and songs to engage and promote the importance of number. The children are introduced to the language of 'more or less' and start to recognise simple shapes from everyday objects. They begin to develop early problem-solving skills to encourage them to use Maths outside of the classroom. In Otters, Maths teaching is based on the EYFS curriculum.

Key Stage 1 and 2 (Hedgehogs, Squirrels and Badgers) pupils will spend much longer on certain key areas, such as place value and the four operations (addition, subtraction, multiplication and division) to fully embed the concept before moving on. In Hedgehogs, Squirrels and Badgers, Maths teaching is based on the National Curriculum. We explicitly teach each topic once throughout the year, but these areas of Maths are met

continuously through our representations and lead in stories in other Maths lessons. Therefore, nothing is truly taught in isolation.

A KS1 Mathematician at RCSAT

YEAR 1 Number and place value

- I can count to and across 100, forward and backwards, beginning with 0 or 1 from any number.
- I can count in multiples of 2, 5 and 10.
- I can count, read and write numbers to 100 in numerals.
- I can say what is one more or one less than any number.
- I can read numbers from 1 to 20 in numerals and words.
- I can identify and represent numbers using objects and pictorial representations including the number line and use the language of: equal to, more than, less than (fewer), most least

YEAR 2 Number and place value

- I can count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.
- I can read and write numbers to at least 100 in numerals and in words.
- I can compare and order numbers from 0 up to 100; using $<$ $>$ $=$ signs.
- I recognise the place value of each digit in a 2-digit number.
- I can identify, represent and estimate numbers using different representations, including the number line.
- I can use place value and number facts to solve problems.

YEAR 1 Calculations

- I can represent and use number bonds and related subtraction facts to 20.
- I can add and subtract 1-digit and 2-digit numbers to 20, including zero.
- I can read, write and interpret mathematical statements involving addition, subtraction and equals signs.
- I can solve one-step problems that involve addition and subtraction, using objects and pictorial representations.
- I can solve missing number problems.
- I can solve one-step problems involving multiplication and division, by using concrete objects, pictorial representations and arrays.

YEAR 2 Calculations

- I can recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100.
- I can add and subtract mentally, including:
 - A 2-digit number and ones
 - A 2-digit number and tens
 - Two 2-digit numbers
 - Adding three 1-digit numbers
- I can add and subtract numbers using concrete objects and pictorial representations, including:
 - A 2-digit number and ones
 - A 2-digit number and tens
 - Two 2-digit numbers
 - Adding three 1-digit numbers
- I recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
- I can solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures.
- I can solve problems with addition and subtraction applying my increasing knowledge of mental and written methods.
- I can recall and use multiplication and division facts for the 2, 5 and 10x tables, including recognising odd and even numbers.

- I can calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs.
- I can solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context.
- I can show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
- I can show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.
- I can ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.
- I can ask and answer questions about totaling and comparing categorical data.

YEAR 1 Fractions

- I can recognise, find and name a half of an object, shape or quantity.
- I can recognise, find and name a quarter of an object, shape or quantity.
- I can compare, describe and solve practical problems for lengths and heights; mass/weight; capacity and volume; and time.
- I can measure and begin to record lengths and heights; mass/weight; capacity and volume; and time.
- I recognise and know the value of different denominations of coins and notes.
- I can tell the time to the hour.
- I can tell the time to half past the hour.
- I can draw hands on a clock face to show these times.
- I can sequence events in chronological order using language.
- I recognise and use language relating to dates, including days, weeks, months and years

YEAR 2 Fractions

- I recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.
- I can write simple fractions.
- I recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

YEAR 1 Measurement

- I can compare, describe and solve practical problems for lengths and heights; mass/weight; capacity and volume; and time.
- I can measure and begin to record lengths and heights; mass/weight; capacity and volume; and time.
- I recognise and know the value of different denominations of coins and notes.
- I can tell the time to the hour.
- I can tell the time to half past the hour.
- I can draw hands on a clock face to show these times.
- I can sequence events in chronological order using language.
- I recognise and use language relating to dates, including days, weeks, months and years

YEAR 2 Measurement

- I can compare and order lengths, mass, volume/capacity and record the results using $>$ $<$ and $=$
- I can choose and use standard units to estimate and measure length/height in any direction in m and cm using rulers.
- I can choose and use standard units to estimate and measure mass in kg and g using scales.
- I can choose and use standard units to estimate and measure temperature in $^{\circ}\text{C}$ using thermometers.

- I can choose and use standard units to estimate and measure capacity in l and ml using measuring vessels.
- I recognise and use symbols for £ and p and combine amounts to make a particular value.
- I can find different combinations of coins that equal the same amount of money.
- I can tell and write the time to five minutes, including quarter to/past and draw the hands on a clock face to show these times.
- I can compare and sequence intervals of time.
- I know the number of minutes in an hour.
- I know the number of hours in a day.
- I can solve simple problems in a practical context involving addition and subtraction of money of the same units, including giving change.

YEAR 1 Geometry – properties of shapes

- I recognise and can name common 2D shapes (rectangles, including squares, circles and triangles.)
- I recognise and can name common 3D shapes (cuboids, including cubes, pyramids and spheres.)

YEAR 2 Geometry – properties of shapes

- I can compare and sort common 2D shapes and everyday objects.
- I can compare and sort common 3D shapes and everyday objects.
- I can identify and describe the properties of 2D shapes, including the number of sides and line of symmetry in a vertical line.
- I can identify and describe the properties of 3D shapes including the number of edges, vertices and faces.
- I can identify 2D shapes on the surface of 3D shapes.
- Geometry – position and direction
- I can order and arrange combinations of mathematical objects in patterns and sequences.
- I can use mathematical vocabulary to describe position, direction and movement.

YEAR 1 Geometry – position and direction

- I can describe position, directions and movement, including half, quarter and three-quarter turns.

YEAR 2 Statistics

- I can interpret and construct simple pictograms.
- I can interpret and construct tally charts.
- I can interpret and construct block diagrams.
- I can interpret and construct simple tables.

Greater Depth in Mathematics

- I can solve problems with a greater complexity.
- I can independently investigate and explore mathematical concepts.
- I can explain what I have discovered clearly.
- I can use higher order skills such as creating, modifying, convincing, justifying, comparing, and evaluating.

A Year 3 Mathematician at RCSAT

Number, place value, approximation and estimation/rounding

- I can count from 0 in multiples of 4, 8, 50 and 100.
- I can compare and order numbers up to 1,000.
- I can read and write numbers to 1,000 in numerals and words.
- I can find 10 or 100 more or less than a given number.
- I can recognise the place value of each digit in a 3-digit number.
- I can identify, represent and estimate numbers using different representations.
- I can solve number problems and practical problems using above.

Calculations

- I can add and subtract 3-digit numbers with ones, tens and hundreds.
- I can add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
- I can estimate the answer to a calculation and use inverse operation to check answers.
- I can solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- I can recall and use multiplication and division facts for the 3, 4 and 8x tables.
- I can write and calculate mathematical statements for multiplication and division using the multiplication tables, including for 2-digit numbers, using mental and progressing to formal written methods.
- I can solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.

Fractions, decimals and percentages

- I can count up and down in tenths.
- I recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10.
- I recognise and can find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.
- I can compare and order unit fractions and fractions with the same denominators.
- I can add and subtract fractions with the same denominator within one whole.
- I can solve problems involving the above.

Measurement

- I can compare lengths using m, cm & mm.
- I can compare mass using kg & g.
- I can compare volume/capacity using l & ml.
- I can measure lengths using m, cm & mm.
- I can measure mass using kg & g.
- I can measure volume/capacity using l & ml.
- I can add and subtract lengths using m, cm & mm.
- I can add and subtract mass using kg & g.
- I can add and subtract volume/capacity using l & ml.
- I can tell and write the time from an analogue clock (12 hour clock).
- I can tell and write the time from an analogue clock (Roman numerals).
- I can estimate and read time with increasing accuracy to the nearest minute.
- I can record and compare time in terms of seconds, minutes and hours.
- I can use the following vocabulary: o'clock, am, pm, morning, afternoon, noon and midnight.
- I know the number of seconds in a minute.
- I know the number of days in each month, year and leap year.
- I can compare the duration of events.

- I can measure the perimeter of simple 2D shapes.
- I can add and subtract amounts of money to give change, using both £ and p in a practical context.

Geometry – Properties of Shapes

- I can identify horizontal, vertical lines and pairs of perpendicular and parallel lines.
- I can draw 2D shapes.
- I can make 3D shapes using modelling materials.
- I recognise 3D shapes in different orientations and describe them.
- I recognise that angles are a property of shape or a description of a turn.
- I can identify right angles.
- I recognise that two right angles make a half-turn & three make a three-quarter turn.
- I can identify whether angles are greater than or less than a right angle.

Statistics

- I can interpret and present data using bar charts, pictograms and tables.
- I can solve one-step and two-step questions using information presented in scaled bar charts, pictograms and tables.

Greater Depth in Mathematics

- I can solve problems with a greater complexity.
- I can independently investigate and explore mathematical concepts.
- I can explain what I have discovered clearly.
- I can use higher order skills such as creating, modifying, convincing, justifying, comparing, and evaluating.

A Year 4 Mathematician at RCSAT

Number, place value, approximation and estimation/rounding

- I can count in multiples of 6, 7, 9, 25 and 1,000.
- I can order and compare numbers beyond 1,000.
- I can find 1,000 more or less than a given number.
- I recognise the place value of each digit in a 4-digit number.
- I can read Roman Numerals to 100 and know that over time the numeral system changed to include the concept of zero and place value.
- I can identify, represent and estimate numbers using different representations.
- I can round any number to the nearest 10, 100 or 1,000.
- I can count backwards through zero to include negative numbers.
- I can solve number and practical problems with the above (involving increasingly large numbers).

Calculations

- I can add and subtract numbers with up to 4-digits using the formal written methods of column addition and subtraction.
- I can estimate and use inverse operations to check answers in a calculation.
- I can solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why.
- I can recall multiplication and division facts up to 12x12.
- I can use place value, known and derived facts to multiply and divide mentally including multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- I recognise and use factor pairs and commutativity in mental calculations.
- I can multiply 2-digit numbers by a 1-digit number using formal written layout.
- I can solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Fractions, decimals and percentages

- I can count up and down in hundredths.
- I recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.
- I recognise and show using diagrams, families of common equivalent fractions.
- I can add and subtract fractions within the same denominator.
- I recognise and write decimal equivalents to a $\frac{1}{4}$ $\frac{1}{2}$ and $\frac{3}{4}$.
- I recognise and write decimal equivalents of any number of tenths or hundredths.
- I can round decimals with one decimal place to the nearest whole number.
- I can compare numbers with the same number of decimal places up to 2 decimal places.
- I can find the effect of dividing a 1-digit or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.
- I can solve problems involving increasingly harder fractions and fractions to divide quantities, including non-unit fractions where the answer is a whole number.
- I can solve measure & money problems involving fractions & decimals to 2 decimal places.

Measurement

- I can compare different measures, including money in £ and p.
- I can estimate different measures, including money in £ and p.
- I can calculate different measures, including money in £ and p.
- I can read, write and convert time between analogue and digital 12-hour clocks.
- I can read, write and convert time between analogue and digital 24-hour clocks.
- I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
- I can convert between different units of measurements
- can measure and calculate the perimeter of a rectilinear figure in cm and m.
- I can find the area of rectilinear shapes by counting squares.
- I can calculate different measures.

Geometry – Properties of Shapes

- I can compare and classify geometric shapes, including quadrilateral and triangles based on their properties and sizes.
- I can identify lines of symmetry in 2D shapes presented in different orientations.
- I can complete a simple symmetric figure with respect to a specific line of symmetry.
- I can identify acute & obtuse angles and compare and order angles up to two right angles by size.

Geometry – Position and Direction

- I can describe movements between positions as translations of a given unit to the left/right and up/down.
- I can describe positions on a 2D grid as coordinates in the first quadrant.
- I can plot specified points and draw sides to complete a given polygon.

Statistics

- I can interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
- I can solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Greater Depth in Mathematics

- I can solve problems with a greater complexity.
- I can independently investigate and explore mathematical concepts.
- I can explain what I have discovered clearly.
- I can use higher order skills such as creating, modifying, convincing, justifying, comparing, and evaluating.

A Year 5 Mathematician at RCSAT

Number, place value, approximation and estimation/rounding

- I can count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.
- I can read, write, order and compare numbers to at least 1,000,000.
- I can determine the value of each digit in numbers up to 1,000,000.
- I can read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.
- I can round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 and 100000.
- I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.
- I can solve number problems and practical problems with the above.

Calculations

- I can add and subtract numbers mentally with increasingly large numbers.
- I can add and subtract whole numbers with more than 4 digits, including using formal written methods.
- I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
- I can identify multiples and factors, including finding all factor pairs of a number and common factor pairs of two numbers. I use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- I can establish whether a number up to 100 is prime and recall prime numbers up to 19.
- I recognise and use square numbers and cube numbers, and the notation for squared and cubed.
- I can multiply and divide numbers mentally drawing on known facts.
- I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- I can multiply numbers up to 4 digits by a 1-digit or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.
- I can divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.
- I can solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.
- I can solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
- I can solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates.

Fractions, decimals and percentages

- I can recognise mixed numbers and improper fractions and convert from one form to the other.
- I can write mathematical statements >1 as a mixed number.
- I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
- I can compare and order fractions whose denominators are multiples of the same number.
- I can add and subtract fractions with the same denominator and denominators that are multiples of the same number.
- I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- I can read and write decimal numbers as fractions.
- I recognise and can use thousandths and relate them to tenths, hundredths and decimal equivalents.
- I can round decimals with 2 decimal places to the nearest whole number and 1 decimal place.
- I can read, write, order and compare numbers with up to 3 decimal places.
- I can solve problems involving numbers up to 3 decimal places.
- I recognise the percent symbol and understand that percent relates to 'number parts per hundred'.
- I can write percentages as a fraction with denominator hundred, and as a decimal.

- I can solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator or a multiple of 10 or 25.

Measurement

- I can solve problems involving converting between units of time.
- I can convert between different units of metric measure.
- I understand and use approximate equivalences between metric units and common imperial units, such as inches, pounds and pints.
- I can measure and calculate the perimeter of composite rectilinear shapes in cm and m.
- I can calculate and compare the area of rectangles (incl. squares), and including using standard units (cm² and cm³) to estimate the area of irregular shapes.
- I can estimate volume and capacity.
- I can use all four operations to solve problems involving money using decimal notation, including scaling.

Geometry – properties of shapes

- I can use the properties of rectangles to deduce related facts and find missing lengths and angles.
- I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- I can identify 3D shapes, including cubes and other cuboids, from 2D representations.
- I know angles are measured in degrees.
- I can estimate and compare acute, obtuse and reflex angles.
- I can identify angles at a point and one whole turn.
- I can identify angles at a point on a straight line and $\frac{1}{2}$ a turn.
- I can identify other multiples of 90°.
- I can draw given angles and measure them in degrees.

Geometry – position and direction

- I can identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

Statistics

- I can complete, read and interpret information in tables, including timetables.
- I can solve comparison, sum and difference problems using information presented in a line graph.

Greater Depth in Mathematics

- I can solve problems with a greater complexity.
- I can independently investigate and explore mathematical concepts.
- I can explain what I have discovered clearly.
- I can use higher order skills such as creating, modifying, convincing, justifying, comparing, and evaluating.

A Year 6 Mathematician at RCSAT

Number, place value, approximation and estimation/rounding

- I can read, write, order and compare numbers up to 10,000,000.
- I can determine the value of each digit in numbers up to 10,000,000.
- I can round any whole number to a required degree of accuracy.
- I can use negative numbers in context, and calculate intervals across zero.
- I can solve number problems and practical problems with the above.

Calculations

- I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
- I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

- I can identify common factors, common multiples and prime numbers.
- I can perform mental calculations, including with mixed operations and large numbers.
- I can multiply multi-digit numbers up to 4 digits by a 2 digit whole number using the formal written method of long multiplication.
- I can divide numbers up to 4 digits by a 2 digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
- I can divide numbers up to 4 digits by a 2 digit number using the formal written method of short division where appropriate.
- I can solve problems involving addition, subtraction, multiplication and division.
- I can use my knowledge of the order of operations to carry out calculations involving the four operations.

Fractions, decimals and percentages

- I can use common factors to simplify fractions and use common multiples to express fractions in the same denomination.
- I can compare and order fractions, including fractions >1 .
- I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
- I can multiply simple pairs of proper fractions, writing the answer in the simplest form.
- I can divide proper fractions by whole numbers.
- I can associate a fraction with division to calculate decimal fractions equivalents for a simple fraction.
- I can identify the value of each digit to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places.
- I can multiply 1-digit numbers with up to 2 decimal places by whole numbers.
- I can use written division methods in cases where the answer has up to 2 decimal places.
- I can solve problems which require answers to be rounded to specified degrees of accuracy.
- I can recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Ratio and proportion

- I can solve problems involving the relative sizes of two quantities, where missing values can be found using integer multiplication and division facts.
- I can solve problems involving the calculation of percentages and the use of percentage comparisons.
- I can solve problems involving similar shapes where the scale factor is known or can be found.
- I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Algebra

- I can express missing number problems algebraically.
- I can use simple formulae.
- I can generate and describe linear number sequences.
- I can find pairs of numbers that satisfy an equation with two unknowns.
- I can enumerate possibilities of combinations of two variables.

Measurement

- I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to 3 decimal places.
- I can convert between miles and kilometres.
- I recognise that shapes with the same areas can have different perimeters and vice versa.

- I can calculate the area of parallelograms and triangles.
- I recognise when it is possible to use the formulae for the area of shapes.
- I can calculate, estimate and compare volume of cubes and cuboids, using standard units.
- I recognise when it is possible to use the formulae for the volume of shapes.
- I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate.

Geometry – properties of shapes

- I can compare and classify geometric shapes based on the properties and sizes.
- I can describe simple 3D shapes.
- I can draw 2D shapes given dimensions and angles.
- I recognise and build simple 3D shapes, including making nets.
- I can find unknown angles in any triangles, quadrilaterals and regular polygons.
- I recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
- I can illustrate and name parts of circles, including radius, diameter and circumference.
- I know the diameter is twice the radius.

Geometry – position and direction

- I can draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes.
- I can describe positions on the full co-ordinate grid (all four quadrants).
- Statistics
- I can interpret and construct pie charts and line graphs and use these to solve problems
- I can calculate and interpret the mean as an average.

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