QRA

Maths Policy

EDUCATE. EMPOWER. INSPIRE.

Version Number	Version Description	Date of Revision
1	Original	Sept 2023
2	Rebranded & reviewed	July 2024
3	Adopted by QRA on transfer to HCAT	August 2025

QRA Maths Policy & Practice

Mathematics enables children to examine the world through a universal language that entails common concepts, operational skills and symbols. It enables children to predict, describe, explain, investigate, and communicate findings. Opportunities are identified which give children the confidence to work in individual and collaborative situations. In particular, children are taught to apply their knowledge and skills to a range of practical, real-life contexts, to ensure their learning is both purposeful and meaningful. Skills are linked and taught together to maximise teaching and learning time and to give context to learning. We emphasise the importance of times tables, mental maths skills and the ability to solve problems through mathematical concepts.

Equal opportunities

It is recognised that, for the maths to be meaningful for all children, the examples offered must reflect, but also extend, children's direct experience. Hence it is important to make use of real-life examples, but also be aware of other number systems. Children are grouped according to attainment within classes or year groups to ensure a high level of challenge and support for all. In EYFS, learning is extended into continuous provision to allow children to practically explore concepts through child-initiated play.

Aims

We believe that to raise standards we need to give children opportunities to:

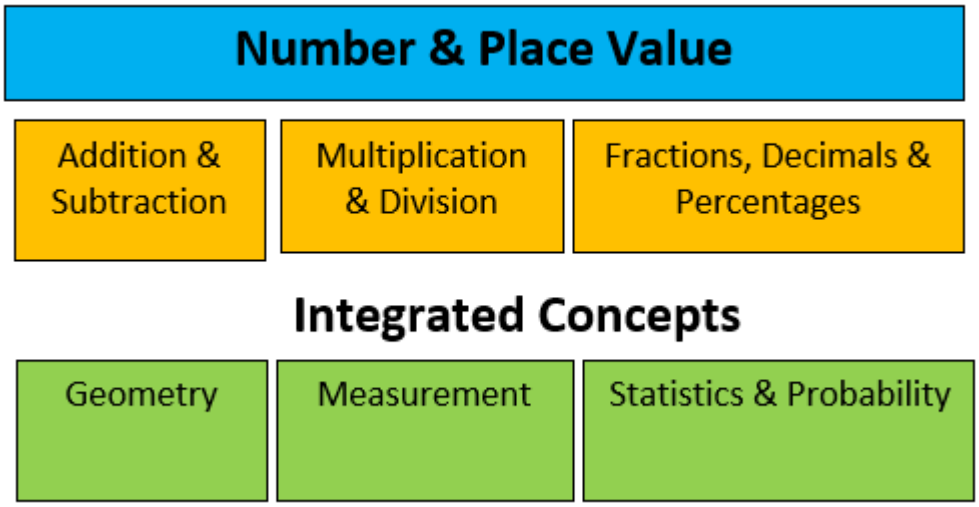
- acquire skills at a level appropriate to their ability and use these skills in cross-curricular situations
- develop independence in the application of their skills to different contexts
- choose to use mathematical strategies, knowledge and equipment in the course of day-to-day activities
- develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- use ICT as a mathematical tool, increasing understanding of mathematical concepts
- appreciate maths as a means of communication
- make links between maths and other curriculum subjects
- work individually and co-operatively to investigate problems, including those with open ended solutions
- mentally calculate solutions in oral and mental warm ups and through the teaching of mental strategies (great emphasis is placed on learning times tables)
- use mathematical vocabulary, in contexts, accurately and with understanding
- have enjoyment of the challenge of working out mathematical investigations
- develop confidence and resilience when applying mathematical concepts
- tackle problems presented in a variety of ways

Practice, planning and delivery

- The objectives of the National Curriculum form the basis of what is taught in mathematics at QRA and teachers use 'Year on a Page'' to sequence lessons and ensure progression across year groups and within lessons.
- Staff use materials from the range of resources to support planning for maths including: White Rose maths hub, NCETM, NRich, Classroom Secrets, Gareth Metcalfe etc.
- Staff plan using QRA Accelerated Learning planning format.
- EYFS encourage children to explore mathematics and mathematical ideas through child initiated independent play and problem solving in a carefully planned and resourced environment.
- All year groups have daily maths meeting sessions. These sessions focus on the quick recall of calendar maths facts, number facts, place value and timestables.

- Pre-assessments are used at the start of the unit to show previous understanding and learning and assess next steps.
- All year groups use the last week of term to focus on the teaching of times tables during maths meeting time.
- Times tables are taught little and often and weekly soundchecks take place in Y3 and Y4.
- At KS1 and KS2 Numeracy is delivered through whole class teaching, targeted group work and careful use of questioning.
- AFL informs our teaching and tailors learning to suit the needs of pupils.
- Numeracy groups are flexible with children moving groups to access support and challenge as necessary.
- Skills are taught through meaningful contexts and areas of maths are linked together to maximise learning time and to give context to teaching.
- 5 is fine is used to avoid repetition of the same style questions within a lesson and to ensure children progress on to Raise the Roof challenges.

Core concepts



Arithmetic

Mental Arithmetic skills are essential for children to apply mathematical concepts to immediate real-life problems. Teachers plan to rehearse and embed these skills with a range of real-life situations and quick recall activities. They focus on teaching mental skills and applying these through games and problem-solving activities.

The teaching of addition, subtraction, multiplication and division should be introduced through mental strategies which support the use of appropriate strategies and jottings. Children are encouraged to choose and use methods that are appropriate for the question/ task. Formal written methods are introduced in year 2 and progressed throughout KS2. (see also QRA Calculation Policy).

Times tables

The learning of times tables is practiced throughout all year groups as an essential mathematical skill that impacts upon all areas of mathematics. This is taught daily in Year 3 and 4. It is expected that all children will know their times tables to 12x12 by the end of Year 4, in line with Government expectations. Year 4 children sit the official Multiplication Times table Check (MTC) in the Summer Term. Times tables are taught using the 'Times Table stick' to help children make connections to all times tables. Use of games and interactive activities, aimed at creating mental agility and adaptability. The use of Times Table Rock Stars encourages children to practice at home as well as in

school. Those children that have progressed beyond this focus on developing their rapid recall speed and using and applying their times table knowledge in real life situations. (e.g. using their times table knowledge to calculate percentages of amounts, and applying their times table knowledge to algebra, exploring tables beyond 12 x 12). Every term, children take part in an intra/inter-school competitions across year groups and schools within the trust.

Problem solving

This is used as a vehicle for children to apply, rehearse and demonstrate their mathematical skills in real life contexts. The process of solving written problems is taught and the correct use of vocabulary emphasised. Problem solving activities are planned to be open ended to encourage resilience, collaboration and perseverance to explore a range of possibilities. Staff use problem solving activities as an opportunity for children to explain and verbalise their thinking, it is a method of checking the depth of understanding and identifying next steps. At QRA we use real life situations and problems to ensure that the curriculum is engaging and inspiring for all pupils. Raise the roof challenges are used in Y1 – Y6 to ensure all children have access to challenge in lessons.

Assessment and record keeping

- There are a variety of systems in operation, according to the age of the children and the purpose of the assessment. AFL is used throughout lessons to adjust teaching to meet need. Planning will be annotated to inform subsequent teaching opportunities.
- In Foundation Stage children's progress is recorded through observation and professional judgement, and is matched to EYFS age band stages. At the end of EYFS a judgement is made using the EYFSP profile statements.
- Year 1 – 6 complete pre-assessments for each unit in the Autumn term and use teaching and learning from the Autumn term to inform planning in the Spring and Summer terms.
- At KS1 & 2 children are assessed termly using the HCAT trackers. These track mathematical understanding to provide information on whether children are acquiring and consolidating concepts. From this gap analysis is done to inform future teaching and intervention.
- Objectives for each year group are highlighted on the Mathematics Curriculum document to ensure coverage and inform future teaching.
- Year 6 use previous SATs papers for half termly assessments and data tracked on EXCEL to check progress and next steps.
- At the end of Years 2 and 6 children sit Statutory Assessments and the results are reported to parents at the end of the school year. Year 1, 3, 4 and 5 children are assessed against the HCAT Assessment Trackers. Termly pupil progress meetings analyse data and discuss progress and attainment at individual, class, cohort and groups (PP, SEN, Girl/ boy, EAL etc) level. Based on this analysis interventions can be targeted as required.
- Assessment of times tables takes place termly (Y2 upwards) to ensure children are on track for testing at the end of year 4.
- Year 3 and Year 4 complete weekly Times tables soundchecks and data is inputted on EXCEL (arbor).

Adaptations

At QRA our curriculum is ambitious for all pupils, including those children with SEND. Curriculum designers and teachers have high expectations of what SEND pupils can achieve and the curriculum is not diluted or unnecessarily reduced for SEND pupils.

Every pupil is different and so what works for each pupil varies. Pupil's individual needs are considered and adaptations are planned to ensure the success of pupils in all subjects.

The way that our curriculum is designed ensures that chunks of learning are sequenced in a coherent way to enable all pupils, including those with SEND, to build on prior knowledge. Too much information at once can be a barrier to learning which is one of the reason why we have chosen half termly curriculum drivers.

Where pupils are identified with having complex needs it may be appropriate to provide a personalised curriculum which will be based on individual needs and will retain ambition for the pupil.

Where working memory is an issue for pupils, including those with SEND, we look to reduce extraneous load as much as possible as well as identifying key information when teaching. This helps pupils to pay attention to the content which they are expected to learn.

Adaptations to support individual pupils will be recorded on personal school support plans.

At QRA we do not assume that pupils with SEND learn content better through practical work as this can cause distraction and cognitive overload rather than increase clarity or accessibility. The curriculum is not narrowed for any pupils. Knowledge is taught and then pupils are provided with opportunities for scientific enquiry to test and investigate the knowledge taught. Pupils specific needs determine the types of adaptations which are required. These adaptations are in how the subject is taught rather than the content pupils are expected to learn. Where appropriate, learning will be chunked into smaller steps and pre learning and consolidation time in planned in to support need. Time is also planned to ensure pupils with SEND are pre taught vocabulary to support their understanding. Adaptations may include supporting pupils to pay attention to key aspects as well as reducing excessive or unhelpful demands on working memory.

Role of the leader

The quality of learning and teaching of Maths is monitored through lesson observation, learning walks, research and development and book audits. Individual feedback is given as soon as possible after the observation and actions agreed with that member of staff. These actions then become a focus of future observations. General feedback is given in staff meetings and any whole school issues discussed and actioned.

The leaders support colleagues as necessary in training needs and planning of appropriate activities.

To ensure continued development of school mathematical practice and the development of the subject an annual action plan is developed and regularly reviewed, evidenced and updated.

Alongside SLT, the leaders scrutinise data to highlight areas of development and action plan to move the subject forwards and raise standards. Again, these findings are shared with the Head and staff and areas actioned.