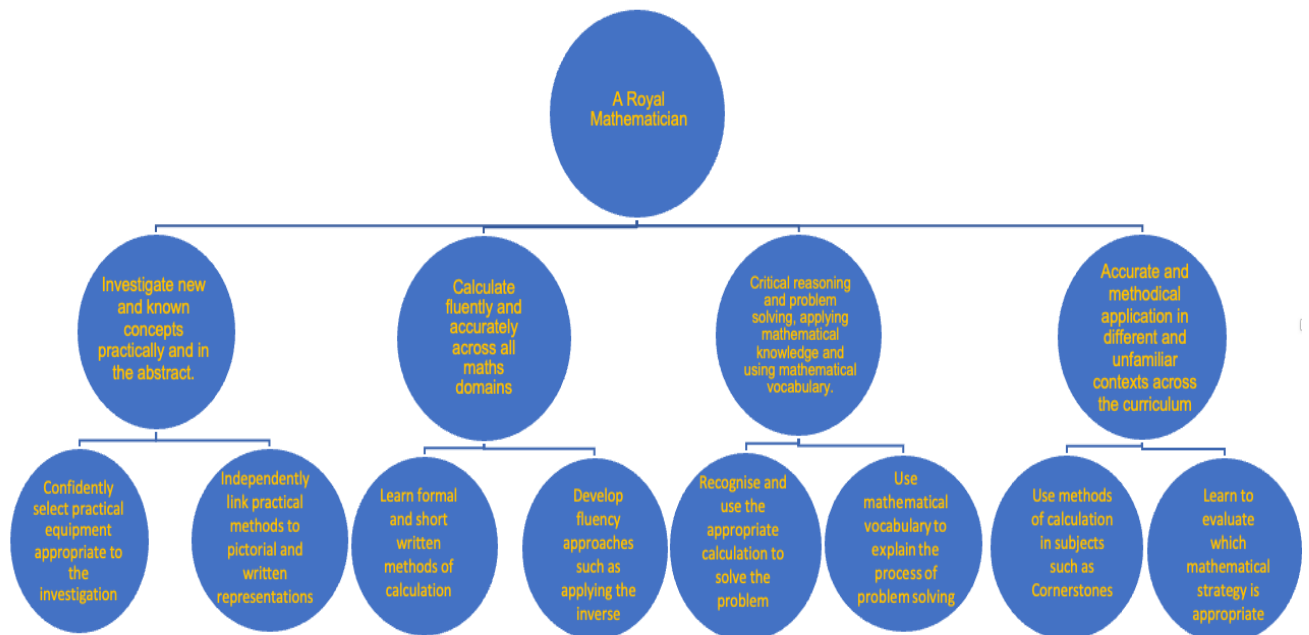


# The Royal School Maths Pathway



The maths pathway depicted above shows the progression and development of mathematical knowledge, skills and application as students move through the school. The design and structure of the maths curriculum is intended to link practical use of manipulatives with formal written methods and the application of these methods to problem-solving to show a deeper understanding. The four strands of maths which form the curriculum are: practical investigation, written calculation, reasoning and problem solving and cross-curricular application.

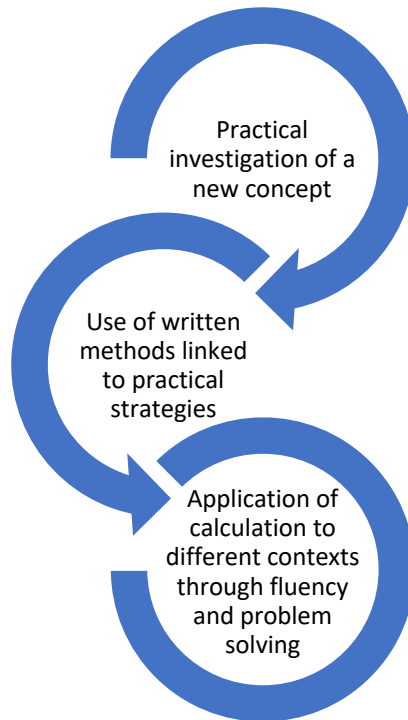
As students progress through the school, they will be supported to access these strands and develop mathematical skills appropriate to their age and ability. It is our intention that students leave the school able to independently apply all four strands of maths in all areas of the curriculum.

The teaching of mathematics follows the National Curriculum (2014), which provides a detailed basis for what should be taught at each key stage. The National Curriculum is further supported by *Teaching Mathematics in Primary Schools (2021)*.

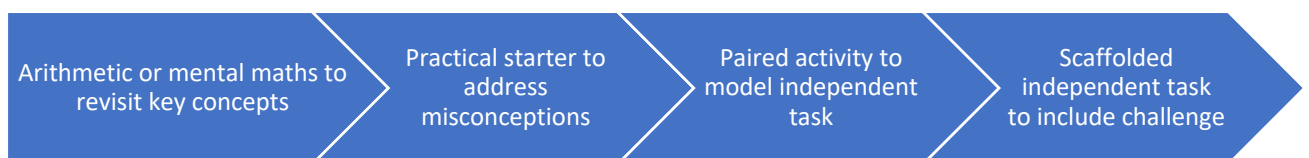
The progression of calculation and problem-solving skills and knowledge are laid out in the calculation policy.

### Maths lessons and the planning cycle

Maths lessons follow the 3 Phase planning cycle, adapted to ensure that all students can access the curriculum at their own level and are supported to progress to problem-solving and mastery activities. This planning structure is modelled below:



Lessons are structured to be inclusive of all students through removing structural barriers to learning:



## Support and challenge

Support and challenge are intentionally built into the lesson and planning structure to create an inclusive maths learning journey that also extends our more able.

Support is provided through the maths lesson structure, but also through:

- Communication InPrint
- 'Scaffolding up' – providing handy hints to allow students to access the curriculum independently
- Practical resources
- Mixed ability working
- Live feedback

Challenge is provided through:

- 'Brain strain' questions
- Calculation/explanation format in KS2
- 'Ceilingless learning' providing open ended questions and sentence stems to support deeper mathematical understanding.

## Assessment and feedback

Assessment and feedback take place in the following ways:

- Against curriculum objectives on FFT at the end of each 3-phase cycle. This assessment is used to identify trends across classes and year groups and adapt planning accordingly. FFT is also used to analyse student progress and record a teacher assessment against end of year objectives. This is communicated to parents in reports and at parents' evenings.
- Through live feedback in each lesson, where misconceptions are addressed at the time. Where necessary, fluid focus groups or pre-teaching are used to embed understanding.
- Through peer and self-assessment, where students reflect on their own learning.
- Through Cornerstones and SATS tests (see below for statutory assessments)
- Through the Year 4 Multiplication Check, including the use of Times Table Rock Stars for immediate assessment and feedback on multiplication tables from Year 2-Year 6.
- Feedback to parents through reports and parents' evenings, to discuss pupil progress.
- Parent workshops feeding back on supporting students at home, along with youtube videos and modelled support.
- Regular teacher-parent dialogue regarding progress at school.
- Cross-curricular homework projects to assess home application of maths.

## Statutory Assessment

Statutory assessment in mathematics takes place at 4 points across the Primary school:

- GLD assessments in EYFS
- KS1 SATS assessments in Year 2
- Multiplication tables check in Year 4
- KS2 SATS in Year 6.

Preparation for these assessments takes place in a range of ways, according to the age of the students involved.

- GLD is assessed using a range of observations matched against the Early Learning Goals. These observations include photographs, written observations and examples of student work.
- KS1 SATS are assessed against the Teacher Assessment Framework and moderated by the local authority, as well as using KS1 SATS test papers to triangulate judgements. Students take practice assessments at 3 points in the year and are supported to become familiar with the structure of questions through class teaching and focus groups. The school works in conjunction with the local authority to analyse data trends and access support for students in Year 2.
- The multiplication tables check in year 4 is the culmination of a three year journey of learning multiplication tables, supported through the use of Times Table Rock Stars (TTRS). TTRS is used from Year 2 upwards to support the learning of multiplication tables in school and at home. It is an interactive, online tool that engages students in competitions within classes, years and across schools. It also provides a diagnostic tool for staff to identify gaps and teaching points. A range of strategies are used in Year 3 and 4 to familiarise students with the structure of the tests and make them confident on the application of their times table knowledge across the curriculum.
- KS2 SATS tests, as well as teacher assessment at the end of Year 6, are the culmination of the 4 year journey of KS2. Preparation takes place throughout those 4 years through use of Cornerstones tests for diagnostic gap identification and test preparation, the clear lesson structure which remains the same to Year 6 and bespoke intervention to address gaps and support key elements such as test stamina, understanding SATS style questions and developing explanations. Practice papers are undertaken in Year 6 and results are analysed in conjunction with the local authority to create a data picture across the city and identify areas where support is required.