GOLDEN VALLEY PRIMARY SCHOOL GUIDELINES FOR MATHEMATICS

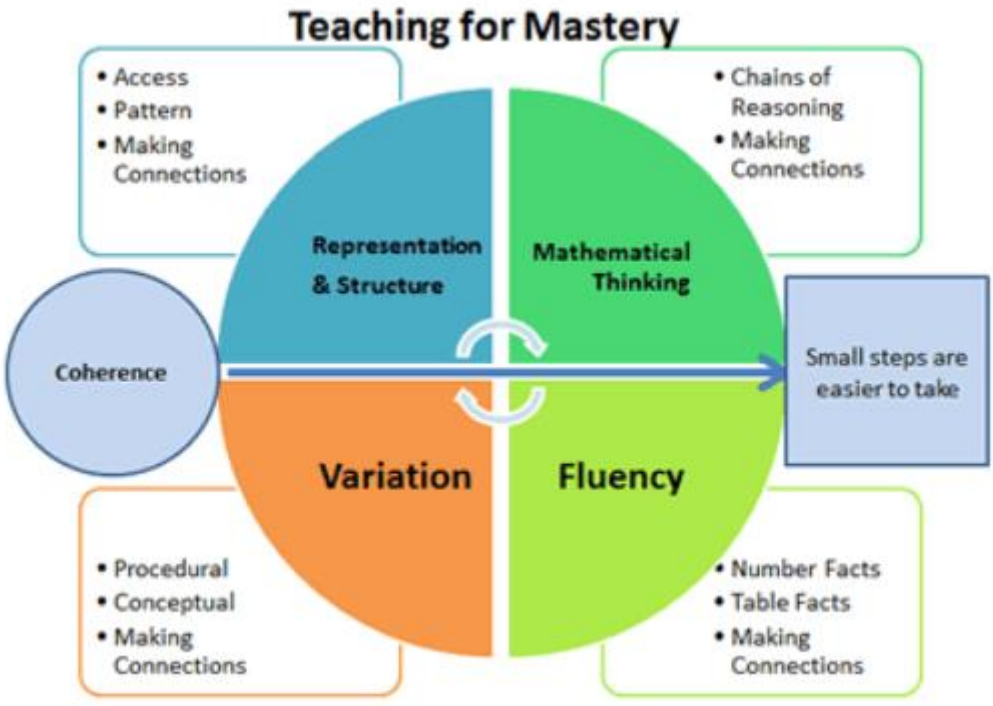
Learning for Lifelong Success.

Intent

At Golden Valley Primary School, we follow a Teaching for Mastery Approach and have chosen to use White Rose Maths to underpin our mathematics curriculum as it provides an ambitious, connected curriculum that is accessible to all pupils and has a clear progression through the primary years and beyond.

At the heart of curriculum is a commitment to develop resilience, confidence and self-belief; enabling our children to become fluent in the fundamentals of mathematics as well as develop their ability to reason and solve problems. Pupils are introduced to new mathematical concepts and develop reasoning and problem-solving skills using concrete resources; pictorial representations and finally numbers and symbols. We use the CPA (Concrete, Pictorial and Abstract) approach to help pupils understand mathematics and make links in their learning. We place great importance on mathematical language and questioning so pupils can discuss their understanding and develop their thinking.

The principles of a Teaching for Mastery Approach are:



Our intent is that…

- Children will develop a sense of enjoyment and curiosity about all aspects of mathematics.
- Children will become fluent in the fundamentals of mathematics, reason mathematically and solve problems by applying their skills and knowledge.
- Children have an understanding that maths is essential to everyday life.

Our intent focuses on equipping all pupils with the mathematics they need to master the curriculum for each year group, which requires that all pupils:

- recall number facts with speed and accuracy and use them to calculate and work out unknown facts.
- develop their ability to apply mathematical skills with confidence and understanding when solving problems.
- apply their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- express themselves and their ideas using the language of mathematics with assurance.
- have sufficient depth of knowledge and understanding to reason and explain mathematical concepts and procedures and use them to solve a variety of problems.
- develop positive attitudes to mathematics, recognising that mathematics can be both useful and enjoyable.
- nurture a fascination and excitement of mathematics.
- are able to use and apply the skills in other curricular areas.

Our expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress is based on the security of pupil's understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly are challenged through being offered rich and sophisticated problems before any acceleration through new content. Those children who are not sufficiently fluent with earlier materials are supported in a number of ways to consolidate their understanding, including through additional practice, before moving on.

As well as being fluent mathematicians, we aim to foster a love of learning; developing curious minds that are willing to take risks and experiment with ideas. With guidance and support, our aim is to develop a generation of children who leave primary education believing they can be successful mathematicians.

Role of the Subject Leader.

The Maths Subject Leader and Senior Leadership Team (SLT) will assess and address staff training needs as part of the School Development Plan. Individual teachers should continually develop their own skills and knowledge, identify their own needs and notify the subject leader to make requests for additional training or support throughout the year. The maths subject lead will keep up to date with curriculum developments and provide staff training as appropriate.

The subject leader will oversee the ordering of new equipment and replenishing core items. They will also ensure high standards across the maths curriculum through effective monitoring, modelling of lessons, pupil interviews and support with planning, as appropriate.

Implementation.

- A daily mathematics lesson of 45-60 minutes is taught in Year 1 – Year 6.
- In EYFS pupils experience daily mathematics learning through whole class teacher input; teacher directed tasks and child-initiated play. Opportunities for mathematics is developed through daily routines and all areas of learning.
- Children in EYFS and KS1 participate in the 'Mastering Number' project. This aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention will be given to key knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future.

A typical lesson is likely to include many of the following elements:

- Opportunity to address any whole class misconceptions from the previous lesson;
- Revisiting prior learning;
- Open-ended questioning;
- Children being encouraged to explain and justify their thinking using precise mathematical language, modelled by the adults;
- Children making links in their learning;
- Children engaged in mathematical talk;
- Children 'taking risks' and recognising making mistakes as part of the learning process;
- New concepts introduced using the CPA approach;
- Guided examples with children working on whiteboards;
- Reasoning and problem-solving skills taught explicitly;
- Stem sentences used to allow learners to verbalise their mathematical thinking;
- Consolidation of new concepts;
- Children engaged in varied fluency and intelligent practice (questions typified by their mathematical variation and designed to extend pupil's thinking rather than just being lots of examples presented in the same kind of way);
- Children working individually on a task, in pairs or in a small group;
- Resources such as number lines, hundred squares, place value counters, double-sided counters, ten frames, multiplication squares. Children are encouraged to access these independently to support their learning.
- Marking in the moment and self-marking.

Planning and Resources

- **Long Term Planning**

Teachers use the long-term planning based on the White Rose Maths resources. All mathematical topics are taught in blocks so that the children can master each mathematical concept and apply it across a range of contexts. The White Rose Maths curriculum is a cumulative curriculum, so that once a topic is covered, it is met many times again in other contexts. Spaced repetition of key topics occurs through the use of 'Flashback Four'.

- **Medium Term Planning**

Teachers use a medium-term planning outline based on the requirements of the National Curriculum to teach sequences that build learning over time (based on the planning produced by White Rose Maths). A strong emphasis on reinforcing number to build competency and opportunities to build reasoning and problem solving is embedded within the curriculum.

- **Short Term Planning**

All teachers will use the White Rose Maths Scheme of Learning.

Teachers evaluate the children's learning daily, making any necessary changes and adaptions in response to assessment for learning and the needs of the class. Where appropriate, LSA's will provide feedback to inform next steps planning.

Equal Opportunities and Inclusion

Golden Valley Primary School will ensure that all children are provided with equitable learning opportunities regardless of social class, gender, culture, race, disability or learning difficulties. We work hard to generate an inclusive environment where pupils and staff show respect for one another. All pupils have equal access to maths and all staff members follow the equal opportunities policy. Resources for children with SEND and children who are working above Age Related Expectations (ARE) are made available to support and challenge appropriately.

All children have the right to access the maths curriculum and teachers adapt their teaching and learning tasks and activities to ensure appropriate level of challenge is provided for all pupils. Teachers use a range of inclusion strategies, including paired work, open questions and direct, differentiated questioning and the activation of prior knowledge and contextual learning.

Additionally, in our approach to all teaching and learning, we use adapted resources wherever possible such as visual timetables, different coloured backgrounds and screen printouts.

Parents and Carers

Parental/carer involvement is highly encouraged, particularly where a parent has specific expertise to offer. Members of the wider community with experience and knowledge are also encouraged to raise the profile of maths in our school through assemblies and workshops, or during a dedicated maths week.

The support that parents and carers provide in supporting their children at home with maths based homework is also recognised and valued.

Impact

Assessment takes place at three connected levels: short-term, medium-term and long-term. These assessments are used to inform teaching in a continuous cycle of planning, teaching and assessment.

Formative assessments

As part of the ongoing teaching and learning process, teachers assess children's understanding through a range of Assessment for Learning strategies. Daily annotations, which inform day to day teaching and learning, are based on observation, questioning, informal testing and the checking and evaluation of work. This will inform planning for the following day.

Teachers make use of diagnostic questioning throughout all stages of pupils' learning, to identify misconceptions. Open-ended questioning is central to teacher input, enabling misconceptions to be revealed and explored. Learners will also be taught to assess and evaluate their own understanding by recognising successes, learning from their own mistakes and identifying areas for improvement.

Summative assessments

During Terms Two, Four and Six, Years 2-5 will complete NFER assessments. Year 6 will complete previous SATs papers. Analysis will be carried out to identify which key areas to focus on. This will inform teacher planning and organisation of intervention groups.

Year Two complete Optional SATS in Term 6.

Year One complete White Rose Maths Assessments which are used to inform teacher assessment and future planning. Assessments are carried out in Reception using observation and activities in line with Mastery Maths and White Rose.