



St Joseph's Catholic Primary School

Maths Handbook 2022-2023



Maths at St Joseph's – Intent, Implementation and Impact

Intent

Maths is an amazing subject. At St Joseph's, our intent for mathematics is to teach a **rich, balanced and progressive** curriculum using maths to **reason, problem solve and develop fluent conceptual and procedural understanding** in all areas of maths so that we produce **confident and resilient mathematicians** of the future. Our curriculum allows children to better **make sense of the world around them** by making connections between mathematics and everyday life. Our policies, resources and schemes support our vision for our students **to master maths** and we encourage maths to be **incorporated across different curriculum areas**. We have a yearly timetable of activities and events to keep maths **relevant, maintain its high profile in school and make it fun** and engaging.

Implementation

To implement our intent we believe that a mastery of the maths curriculum is required. To offer our children the ability to learn the **language of maths** and to use it to communicate their mathematical thinking, to be **fluent with key skills**, to have a **thorough conceptual understanding** of age appropriate materials and the ability to **confidently apply** their knowledge to unknown and everyday situations requires a scheme that can deliver our vision.

We believe that White Rose Maths can support our teachers to deliver these expectations. We use the scheme's yearly overview with its **small learning steps** to ensure that our pupils have a thorough understanding of the concepts within each year group. The **progression of learning** through the year groups supports our pupils' mastery of the Key Stage 1 and 2 National Curriculum and provides them with a comprehensive understanding with which to **continue on their maths journey** into Key Stage 3. Alongside the White Rose materials, we use

many other resources to ensure that **our offer is rich and varied**. These include NCETM, NRich, Third Space Learning and Deepening Understanding.

Planning:

1. We use [White Rose](#) yearly planning to structure the order of the units and the small steps within each unit.
2. [Challenge](#) can be found on the promoted sites of NCETM, NRich, Third Space Learning and Deepening Understanding but these are not exclusive and teachers are encouraged to find or create the right task for the right outcome, whether this be increased fluency or open ended problem solving.

We have a **focus on the language of maths** within all our lessons and our maths displays reflect this vocabulary. Our children enter school with a limited range of vocabulary and so we aim to broaden this through the **modelled** use of mathematical language by all staff and an **expectation** that all children can use the correct language too. If a concept is taught with the correct language, then the repeated use of that word **reinforces** the concept. We believe that a child who has the correct vocabulary can **reason about maths much better** and, therefore, has a **better conceptual understanding** of maths too.

Language:

1. All year groups have a collection of vocabulary linked to each unit taught.
2. Vocabulary is displayed in all classes.
3. Staff to model the use of the correct mathematical vocabulary and expect the children to use it too (in and outside the maths lesson).
4. Children to answer in full sentences where appropriate, using accurate vocabulary.

Fluency is another key skill when mastering maths. In order that our children have fluency of key skills to **support an automaticity** in maths, we provide **extra time** outside the taught lessons to practice **rapid recall of key facts or continued practice** of an important skill. This happens in short, daily sessions to reinforce and embed these vital components to mastering maths. We also use **Times Tables Rock Stars** to speed up multiplication and division fluency and the **One-Minute Maths app** from White Rose, which provides practice for age related

fluency skills and should be used for one minute each day. These 2 apps support working at home to promote independent learning as a life-long skill.

Fluency:

1. All year groups should set aside at least 2 extra sessions (around 15 minutes) where rapid recall of key year group facts, key skills and / or recapping of knowledge already taught should take place. Key facts and skills are taken from the Ready to Progress document published by the government. In addition, Teaching children to calculate mentally, a Primary Strategy published in 2010, has examples of how to teach mental maths.
2. TT Rock Stars is used by Key Stage 2 to practice multiplication and division facts. This should be timetabled at least once a week and encouraged as homework. Independent improvement is praised by staff as a life long skill. Key Stage 1 use Numbots (part of the TT Rock Stars program) which supports number bond knowledge.
3. The One-Minute app can be used in class time but is mainly used for homework. It targets the fluency skills of each year group and should be used to practice skills for one minute every day.
4. Homework focuses on the number facts of each year group and reinforcing concepts and procedures taught in lessons.

Assessing our children is a key teaching skill. Staff assess **informally** throughout a maths lesson. Tasks and activities may be changed, slowed down, speeded up and adapted in numerous different ways to produce successful learning. Lesson based assessments can also take the form of **teacher-led tasks, self-assessment or peer assessment** with conclusions informing next steps for each learner. We also have more **formal** assessments that are recorded. Each unit will have a pre-assessment to pitch the learning correctly and a post-assessment to decide on the understanding and retention of each child and the next teaching steps. These formal assessments are for use within class to support the teacher make decisions about **whole class learning** or identify **individuals for targeted support**. There are also the formal termly assessments, which will usually take the form of **unseen tests**. These support the **maths lead and the school track the progress** of each cohort as they progress through school. Our implementation is frequently reviewed to ensure that it is suitable and effective for our children.

Assessment and intervention:

1. Prior to teaching a unit – a pre-unit assessment will take place. This is the end of unit assessment from the previous year group. From the outcomes, the pitch of the current unit will be decided. If the cohort perform badly, the key targets of the unit may need to be taught again before moving into the present year group curriculum. If a specific aspect of previous learning is missing, it may be that this is taught before the unit begins or is included within the unit's teaching programme. It may be that the children are ready to start their current learning with no interventions at all. The pre-unit assessment may also highlight individuals who are not ready for the unit or have gaps in previous learning. In these cases, formal intervention, daily pre-learning or additional lesson support will be required.
2. Within a lesson - The simple task build up of the lessons is designed to offer the class teacher the opportunity to assess at regular intervals and offer more or less support, to rework a task or move forward into the next, to work with a grown up or partner or continue independently and to address any misconceptions. Ideally, real time support within lesson is the best intervention.
3. At the end of each unit – there is a post-unit task for the children included within the White Rose unit. This should provide an opportunity to review the learning taken place and the next steps for learning. Additional days may be built into the curriculum if required or interventions for individuals outside the maths lessons.
4. At the end of each term – the children in Year 1 carry out the White Rose end of term tasks, Year 2 sit an old SATs paper, Year 3 and 4 use end of term White Rose, Year 5 sit a scaled test paper and Y6 an old SATs paper.
5. At the end of the school year – the children sit a final assessment to check their learning throughout the school year and check their progress. Year 1 and 3 use White Rose, Year 2 will sit official SATs in May, Year 4 will use a scaled score paper to provide information for their Year 5 learning journey, Year 5 will continue to use the scaled score papers and Year 6 will sit their official SATs papers in May.
6. Formal interventions:
 - Sandwell test to assess a baseline of knowledge. KS1 and KS2 editions.
 - Maths Mastery 4 subject based interventions (Place Value, Number, counting, addition and subtraction).
 - Problem solving support

Our **staff are our most important resource** to enable the intent to be achieved. We support their teaching of mathematics through appropriate **high quality CPD** ensuring confidence and mastery of the skills and knowledge that they are required to teach. Maths is a **continuous learning curve** and so our CPD reflects

this as we constantly strive for a greater understanding in our **own knowledge** of the maths targets and **how children learn maths** best (techniques, manipulatives and empowerment). All staff are **encouraged to raise questions**, seek support and request further training if needed in order to ensure everyone is confident in what they teach. **Good practice is always shared** between staff and our CPD is used to **inform teaching and learning across school**.

Continued Professional Development:

	Staff CPD
Autumn 1	<p style="text-align: center;">REPRESENTATIONS AND STRUCTURE</p> <p>When planning, have an understanding of the <u>language</u> that you will need to model. Have the language on the display board and introduce it to the children within their maths lessons. Expect your children to use the language accurately to reason about their maths knowledge.</p>
Autumn 2	<p style="text-align: center;">REPRESENTATIONS AND STRUCTURE</p> <p>When planning, have an understanding of the <u>representations</u> that you will teach in that unit. Ensure that they are well chosen and convey the maths being taught accurately.</p>
Spring 1	<p style="text-align: center;">FLUENCY</p> <p>Making fluency fun – how is learning on number facts made enjoyable and achievable? Maths Meetings, Monday lesson, homework etc</p>
Spring 2	<p style="text-align: center;">FLUENCY</p> <p>How successful are our students with fluency? How can we make them even more successful? Can they see the wider use of number facts?</p>
Summer 1	<p style="text-align: center;">THINKING MATHEMATICALLY</p> <p>Do we understand the links within the year group curriculum (number facts supporting addition)? Within the primary curriculum (addition to 10 supports to 20 – progression)? Within their daily routine and future lives (% helps understanding wages)?</p>
Summer 2	TBD

Resources and equipment are **audited regularly** so that children have materials of **high quality and accuracy** to support their learning. Shared **school resources** are available for staff to use and students have access to resources that support specific conceptual learning taught and also basic operational knowledge within the **classroom**.

Resources:

1. Shared resources are in 2 large blue cupboards outside year 1. They are labelled and all in good condition. Staff are responsible for taking and returning equipment to these cupboards. Please let Becky or Rosie know if any equipment is missing or damaged.
2. Each class should have a range of manipulatives and resources useful for the cohort they are teaching. Resources should be freely available in class for all children and should not be viewed as a low ability learning aid but a way of reasoning in all maths topics.

3. Small cubes, dienes, counters, number lines, 100 squares, multiplication squares and bead strings are all useful in the classroom.



We believe that maths should be fun and enjoyable. All children should have a positive attitude to maths and build a resilience to problem solving. We promote the idea that incorrect answers are an important part of the learning process, that they are to be valued and used to support knowledge building. We are also keen that the children appreciate where maths can be found in their everyday lives so that they understand its importance to their learning and life as adults in the world.

Fun and enjoyment:

	Fun, games and activities
Autumn 1	TT Rock Star competition
Autumn 2	TT Rock Star competition November – Barvember activities from White Rose site December – Christmas quizzes for KS1 and KS2
Spring 1	TT Rock Star competition
Spring 2	TT Rock Star competition March 23 rd – World Maths Day (competitions and quizzes)
Summer 1	TT Rock Star competition
Summer 2	TT Rock Star competition



Everyday lives project suggestions for 2022/23:

Tuck shop profit and loss monitors

Knowledge exchange / support between year groups

Large scale banner projects (measure and shape) – sports day, Remembrance Day etc

Real life mathematicians research projects for homework

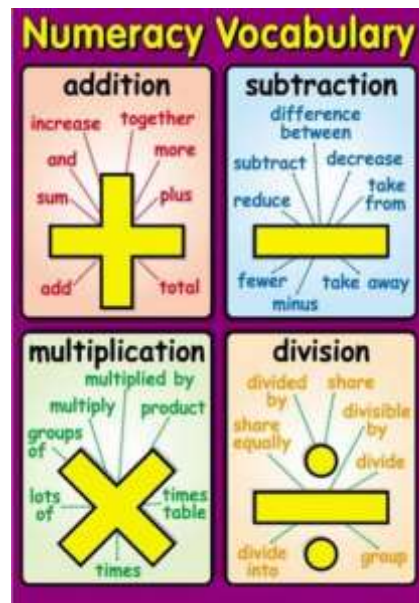
Impact

Our learners are **confident and resilient** mathematicians. It is a subject that both **boys and girls love**. When we have Maths Days or classroom quizzes, the children are **excited and eager to participate**. All children love the Times Table Rock Star app that we promote and celebrate in school. Our maths results **outperformed national levels** last year with 84% of our Year 6 children achieving Expected (compared to 71% nationally) with 26% of these being at Greater Depth.

Non-negotiables

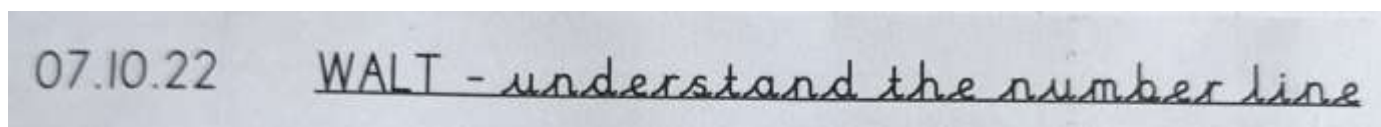
Classroom:

1. Maths display around the unit topic.
2. Vocabulary displayed and used within each topic.
3. Manipulatives to be available for all children.
4. TT Rock Star display, monitoring students' progress in speed or accomplishment.

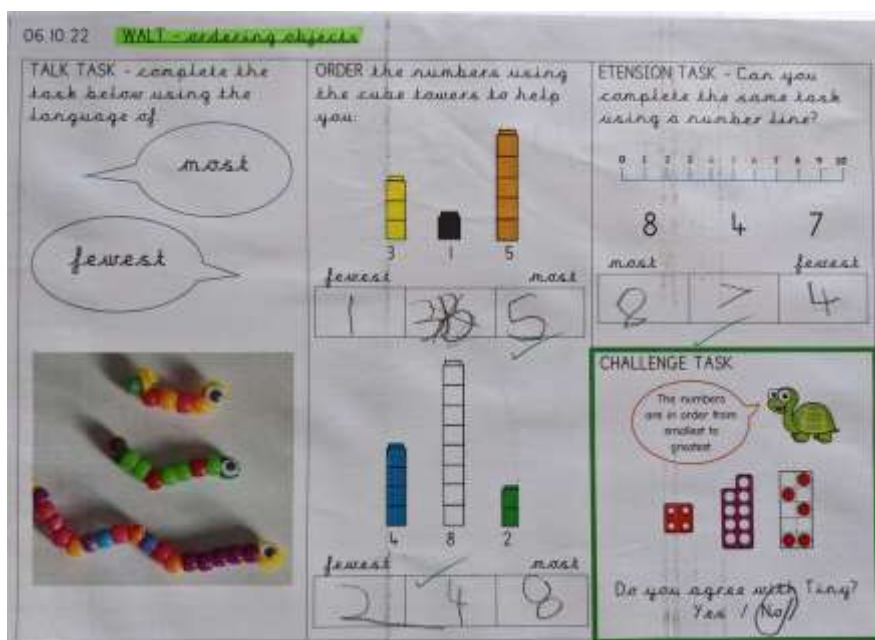


Books:


1. Number date and a WALT for all lessons recorded



2. Challenge task to be available for all children in each lesson



3. Marking carried out by the adult working with the child:

- A  shows that a child was given verbal feedback
- WALT highlighted in **green** when the target achieved
- WALT highlighted in **yellow** when partially achieved

- WALT not highlighted at all when target not achieved
- Where a child has partially achieved or not achieved a target, additional work or corrections should be seen in order for them to achieve this target. This should happen before the next lesson (morning task the following day or same day intervention)



4. Reasoning should be seen regularly (that is some written explanation of their maths thinking – Key Stage 2 weekly and Key Stage 1 where appropriate).

Teaching and Learning:

1. All children engaged in the lesson.
2. Manipulatives and other support available in all lessons.
3. Teacher modelling language use and children answering in full sentences where appropriate.
4. Children being given the opportunity to reason with maths knowledge and understanding.
5. Differentiation used appropriately.

