

St. Joseph's Catholic Primary Academy



Mathematics Policy

Reviewed April 2020
Updated September 2021

St. Joseph's Catholic Primary Academy

Mathematics (England)

Date	Review Date	Subject Leader	Nominated Governor
September 2021	September 2022	Kate Melling	Paula Weston

We believe this policy relates to the following legislation:

- Education Act 1996
- Education Act 1997
- Standards and Framework Act 1998
- Education (National Curriculum) (Temporary Exceptions for Individual Pupils (England) Regulations 2000
- Education Act 2003

The following documentation is also related to this policy:

- Designing and Timetabling the Primary Curriculum - a practical guide for Key Stage 1 and 2 (Qualifications and Curriculum Authority 2002)
- National curriculum in England: Mathematics programmes of study

We believe mathematics is 'a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.' (The National Curriculum in England Framework Document (DfE) 2014)

We have a duty to ensure compliance with the revised National Curriculum and with the application of the new programmes of study and attainment targets. We understand that 'the National Curriculum provides pupils with an introduction to the core knowledge that they need to be educated citizens.'

Our well-balanced curriculum promotes the spiritual, moral, cultural, cultural, mental and physical development of pupils and prepares them for the opportunities, responsibilities and experiences of later life. We will develop pupils' spoken language, reading and writing in all subjects and will develop pupils' mathematical fluency.

We wish to work closely with the School Council and to hear their views and opinions as we acknowledge and support Article 12 of the United Nations Convention on the Rights of the Child that children should be encouraged to form and to express their views.

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We as a school community have a commitment to promote equality. Therefore, an equality impact assessment has been undertaken and we believe this policy is in line with the Equality Act 2010.

We believe it is essential that this policy clearly identifies and outlines the roles and responsibilities of all those involved in the procedures and arrangements that is connected with this policy.

Aims

- To ensure that all pupils become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- To ensure that all pupils reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- To ensure that all pupils can solve problems by applying 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.

(The National Curriculum in England Framework Document (DfE) 2014)

- To develop an enthusiasm for and fascination with mathematics.
- To increase the confidence of each pupil in mathematics to enable them to apply the knowledge and skills with assurance.
- To promote the teaching of numeracy and literacy within all subjects.
- To share good practice within the school.
- To work with other schools to share good practice in order to improve this policy.

Roles and Responsibility for the Policy

Role of the Governing Body

The Governing Body has:

- appointed a member of staff to be responsible for the curriculum leadership of Mathematics;
- delegated powers and responsibilities to the Headteacher to ensure all school personnel and stakeholders are aware of and comply with this policy;
- responsibility for ensuring compliance with the legal requirements of the National Curriculum;
- responsibility for ensuring that the school complies with all equalities legislation;
- nominated a designated Equalities governor to ensure that appropriate action will be taken to deal with all prejudice related incidents or incidents which are a breach of this policy;
- responsibility for ensuring funding is in place to support this policy;
- responsibility for ensuring this policy and all linked policies are maintained and updated regularly;
- responsibility for ensuring all policies are made available to parents;
- the responsibility of involving the School Council in the development, approval, implementation and review of this policy;

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- nominated a link governor to visit the school regularly, to liaise with the Headteacher and the coordinator and to report back to the Governing Body;
- responsibility for the effective implementation, monitoring and evaluation of this policy

Role of the Headteacher and Senior Leadership Team

The Headteacher and the Senior Leadership Team will:

- ensure all school personnel are aware of and comply with this policy;
- work closely with the subject leader and the link governor;
- ensure compliance with the legal requirements of the National Curriculum;
- consider disapplying a pupil from all or part of the National Curriculum for a period of time if this will benefit the child;
- encourage parents to take an active role in curriculum development;
- provide leadership and vision in respect of equality;
- provide guidance, support and training to all staff;
- monitor the effectiveness of this policy by:
 - observing teaching and learning
 - planning scrutinies and work trawls
 - discussions with pupils and members of the school council
- annually report to the Governing Body on the success and development of this policy

Role of the Subject Leader

The Subject Leader will:

- lead the development of this policy throughout the school;
- work closely with the Headteacher, the nominated governor and SENCO;
- be accountable for standards in this subject area;
- monitor standards by:
 - auditing the subject area
 - review of the scheme of work
 - monitoring teachers planning
 - lesson observations
 - scrutinising children's work
 - discussions with pupils
- ensure continuity and progression throughout the school;
- devise a subject improvement plan;
- provide guidance and support to all staff;
- provide training for all staff on induction and when the need arises regarding;
- attend appropriate and relevant INSET;
- keep up to date with new developments;
- undertake an annual audit and stock take of resources;
- purchase new resources when required and in preparation for the new academic year;
- manage the subject budget effectively;

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- undertake risk assessments when required;
- review and monitor;
- annually report to the Governing Body on the success and development of this policy

Role of the Nominated Governor

The Nominated Governor will:

- work closely with the Headteacher and the subject leader;
- ensure this policy and other linked policies are up to date;
- ensure that everyone connected with the school is aware of this policy;
- attend training related to this policy;
- report to the Governing Body every term;
- annually report to the Governing Body on the success and development of this policy

Role of Teachers

Teachers will:

- comply with all aspects of this policy;
- work closely with the subject leader to develop this policy;
- devise medium and short term planning;
- develop mathematical fluency, numeracy and mathematical understanding in all subjects;
- develop pupils' spoken language, reading, writing and vocabulary in all subjects;
- plan and deliver good to outstanding lessons;
- plan differentiated lessons which are interactive, engaging, of a good pace and have a three-part structure;
- have high expectations for all children and will provide work that will extend them;
- assess, record and report on the development, progress and attainment of pupils;
- achieve high standards;
- celebrate the success of pupils in lessons
- implement the school's equalities policy and schemes;
- report and deal with all incidents of discrimination;
- attend appropriate training sessions on equality;
- report any concerns they have on any aspect of the school community

Role of Pupils

Pupils will:

- be aware of and comply with this policy;
- be encouraged to work in partnership with the school by making decisions and exercising choice in relation to their educational programme;
- listen carefully to all instructions given by the teacher;
- ask for further help if they do not understand;
- participate fully in all lessons;

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- participate in discussions concerning progress and attainment;
- treat others, their work and equipment with respect;
- support the school Code of Conduct and guidance necessary to ensure the smooth running of the school;
- liaise with the school council;
- take part in questionnaires and surveys

Role of the School Council

The School Council will be involved in:

- determining this policy with the Governing Body;
- discussing improvements to this policy during the school year;
- organising surveys to gauge the thoughts of all pupils;
- reviewing the effectiveness of this policy with the Governing Body

Role of Parents/Carers

Parents/carers will:

- be aware of and comply with this policy;
- be encouraged to take an active role in the life of the school by attending:
 - parents and open evenings
 - parent-teacher consultations
 - curriculum development workshops
- be encouraged to work in school as volunteers;
- be encouraged to respond to curriculum information newsletter;
- be informed via termly newsletters of their child's topics;
- asked to provide suggestions and ideas for improving this subject;
- be asked to take part periodic surveys conducted by the school on curriculum development;
- be invited to make presentations to pupils on aspects of this subject area;
- encourage effort and achievement;
- encourage completion of homework and return it to school;
- provide the right conditions for homework to take place;
- expect their child to hand in homework on time;
- join the school in celebrating success of their child's learning;

Policy Procedure

Teaching and Learning Style

We use a variety of teaching and learning styles in order to develop children's knowledge, skills and understanding. We follow a mastery approach to maths using the Singapore style supported by White Rose maths. We also use material from NCETM. The lessons follow a very definite pattern as follows

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1. Full class teaching using the White Rose teaching materials.
2. Children work independently sitting in mixed ability groups as follows
 - Children choose (sometimes with help from the teacher) whether to work on bronze, silver or gold work (from White Rose premium and the White Rose scheme of learning). They mark their own work using worksheets set out at mark stations.
 - Children complete marking, traffic light their work and hand in.
 - TA works with the children while the teacher looks through the books and decides who needs to move on and who needs intervention. The TA can use the flash back 4 materials from white Rose or other materials that the teacher feels will be beneficial (times tables, arithmetic etc)
 - After the work is marked, the teacher and the TA work with any children to complete fluid intervention.
 - Depth marking is via pupil conferencing throughout the week with every child having a conferencing session and comment for maths every week.

Curriculum Planning and Organisation

Teachers collaborate on the planning of the subject to ensure parity in provision and to share expertise. Curriculum planning is managed in three phases namely:

Long Term Planning – from White Rose with flexibility to allow topics to fit with Cornerstones Curriculum topics

- details what is to be taught over the year
- provides teaching guidelines and overall objectives for each year group for the whole year

Medium Term Planning – from Power Maths

- organises the subject into termly or half-termly sections
- is more detailed and the objectives are more specific in nature
- is developed by the teachers, who respond to the needs of their pupils
- ensures a balanced distribution of work is undertaken across each term
- can be filled in on a school medium term planning grid or on the Cornerstones timetable according to teacher choice

Short Term Planning

- details the subject curriculum over the week
- plans lessons in detail with specific class objectives
- is set out according to teacher choice
- has individual lessons placed on the Cornerstones curriculum timetable

The White Rose scheme of work is used as teaching material for the children to complete in class and adapted by the teachers to suit the needs of the pupils in their class. All classes have access to 'concrete' 'manipulative' materials and these should be used as teachers feel it appropriate and as children see their need. As a general guide, the maths we teach should go from the concrete to the pictorial to the abstract.

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NCETM materials are available for children who are working at mastery level in a particular maths topics.

Links with ICT

The use of information and communication technology will promote, enhance and support the teaching of this subject area. However, calculators 'will not be used as a substitute for good written and mental arithmetic but will be 'introduced near the end of KS2 to support pupils' conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure.'

Inclusion

We believe that we are an educationally inclusive school as we are concerned about the teaching and learning, achievements, attitudes and well-being of all our pupils. We aim to provide places for all pupils who express a preference to join this school.

We work hard to offer equality of opportunity and diversity to all groups of pupils within school such as children:

- from both sexes;
- all genders
- who have Special Educational Needs;
- who are looked after;
- from minority faiths, ethnicities, travelers, asylum seekers, refugees;
- who are gifted and talented;
- who are at risk of disaffection;
- who are young carers;
- who are sick;
- who have behavioural, emotional and social needs;
- from families who are under stress

We believe we have a duty to ensure that all children have equal rights to the opportunities offered by education and that all children will be encouraged to fulfil their potential in their academic, physical and creative achievements.

We want to give all children the right to access high quality educational experiences, to take part in a broad and balanced curriculum and to be part of the social life of the school.

We recognise that within the school we have more-able, gifted and talented children. We believe that:

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- more-able children demonstrate a higher ability than average for the class and often require differentiated tasks and opportunities to learn through challenges;
- gifted children are those who have the ability to do well in more than one subject;
- talented children demonstrate an innate talent or skill in creative, cultural or sporting fields

We have an even greater obligation to plan and deliver well-structured lessons with appropriate assessment plus ambitious targets for pupils who have low levels of prior attainment or come from disadvantaged backgrounds.

Also, we have a duty to cater for pupils whose first language is not English by planning teaching opportunities to help them develop their English and to gain full access to the National Curriculum.

Differentiation

Differentiation is best defined as 'the process by which differences between learners are accommodated so that all students in a group have the best possible chance of learning.' (Geoff Petty)

The main purpose of differentiation is to challenge and raise standards of learning by ensuring that curriculum objectives are accessible to all our children despite their backgrounds or abilities. We see differentiation as a form of integration and not exclusion.

Differentiation must reflect the learning objective and can be achieved in a variety of ways either by task, by support or by outcome and should be chosen by fitness for purpose.

We want all children to achieve success, therefore we will ensure they are able to access differentiated tasks that are matched to their level of attainment so that they can demonstrate successfully what they know, understand and can do. Children will self-differentiate choosing a bronze, silver or gold task to meet their confidence and ability level and moving onto the mastery task when they have completed gold.

The main feature of effective differentiation is good planning resulting in effective teaching and learning with children making good progress. Also we expect to see in all classes interested well motivated children responding to challenges, children working productively on task and being aware of their own progression.

Special Educational Needs

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We want pupils with identified special educational needs to have full access to all subjects of the National Curriculum with teachers planning lessons that have no barriers to pupils achieving and with appropriate targets relating to the subject.

Assessment for Learning

Teachers will:

- carry out continuous assessment;
- use short-term assessments matched to the teaching objectives to adjust their planning;
- make comments in pupil's books when carrying out conferencing;
- carry out medium-term assessments to measure progress against key objectives to adjust planning;
- carry out long-term assessment to assess progress against school and national targets;
- administer national tests and assessment in Y2 and Y6;
- carry out tests at the end of Y3, Y4 and Y5;
- use long-term assessments to help them plan for the next academic year;
- inform parents and carers of their child's progress and targets

Monitoring & Review of the Subject

Monitoring of standards of children's work and the quality of teaching is the responsibility of the subject coordinator supported by the Headteacher and the Senior Leadership Team.

Standards will be monitored by:

- looking at pupils' work
- subject observations
- pupil discussions
- audit of subjects
- scrutiny of planning
- general curriculum discussions
- looking at assessment data
- at PPMs

Contribution of the Subject to other Areas of the Curriculum

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Mathematics contributes to many subjects within the primary curriculum and opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts.

Resources

The school has a full range of resources to support the teaching of this subject throughout all year groups. Resources are upgraded and replenished when the need arises. An annual stock-take and audit is undertaken by the subject coordinator in the summer term in preparation for the next academic year.

Raising Awareness of this Policy

We will raise awareness of this policy via:

- the School Handbook/Prospectus
- the school website
- folders in the staffroom
- meetings with parents such as introductory, transition, parent-teacher consultations and periodic curriculum workshops
- school events
- meetings with school personnel
- communications with home such as weekly newsletters and of end of half term newsletters
- reports such annual report to parents and Headteacher reports to the Governing Body
- information displays in the main school entrance

Training

All school personnel:

- have equal chances of training, career development and promotion
- receive training on this policy on induction which specifically covers:
 - National Curriculum programmes of study and attainment targets for all subjects
 - teaching and learning
 - planning
 - assessment
 - key skills
- receive periodic training so that they are kept up to date with new information

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- receive equal opportunities training on induction

Equality Impact Assessment

Under the Equality Act 2010 we have a duty not to discriminate against people on the basis of their age, disability, gender, gender identity, pregnancy or maternity, race, religion or belief and sexual orientation.

This policy has been equality impact assessed and we believe that it is in line with the Equality Act 2010 as it is fair, it does not prioritise or disadvantage any pupil and it helps to promote equality at this school. (See Initial Equality Impact Assessment)

Monitoring the Effectiveness of the Policy

The practical application of this policy will be reviewed annually or when the need arises by the coordinator, the Headteacher and the nominated governor.

A statement of the policy's effectiveness and the necessary recommendations for improvement will be presented to the Governing Body for further discussion and endorsement. (See Policy Evaluation)

Headteacher:	E McCullagh	Date:	September 2021
Chair of Governing Body:	R Mellows	Date:	September 2021

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APPENDIX I – MASTERY IN MATHS – APPROACH AT ST. JOSEPH'S

Mastery in Maths – Teaching approach using White Rose and power maths

The following shows the new process for delivering mastery in maths using the white rose.
Teacher led – **Main input using White Rose Teaching Materials**

Children choose the level of activity they think they will be able to tackle based on the input given..

- Bronze – **Fluency Activity - Power Maths**
- Silver – **Reasoning activity – White Rose**
- Gold – **Problem solving activity – White rose**

We now have the White Rose Premium materials that we use for bronze and silver while gold may be taken from the older White Rose reasoning and problem solving materials as the teacher feels appropriate.

During this time teachers and teaching assistants should be discussing the children's work with them, ensuing higher level questioning and promoting the use of mathematical language.

-How did you get that answer? Is there another way of working it out? Can you show me how you did that? Are you happy with your answer? Why? Prove it! Convince me! Show me.

Children go to marking stations and mark their work then traffic light it.

Children hand their books to the teacher. Teacher goes through the books and assesses there and then whether the children have achieved or not. This will be ticked at the bottom of the maths book page as red, amber or green. The work is already marked by the children so this task is designed to take no more than 10 minutes. In-depth marking takes place once a week as a conferencing exercise. TA delivers 10 minutes of fluency work to whole class whilst teacher is doing this.

TT rockstars and marking of morning arithmetic, Flash Back 4

Same day intervention. When the teacher has marked the maths books and decided whether children have achieved the objective or not, they deliver intervention to the children who were red and orange. The children who got green move onto the next level of questions using **White Rose Maths or NCETM Mastery booklets/Nrich**. This could be delivered as a group task with the teacher explaining the mastery process and questions.

KSI – Timings above and process may differ as children are introduced to the new process. Year 1 children will begin to choose their own level of activity in the Spring Term.

Times tables

It is essential that all children leave their year group knowing the required times tables. That is by rote, quick fire and division facts.

We will be using times table rock stars to improve recall of multiplication and division facts.

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Children's books

Each day there must be a date and learning objective underlined with a ruler and always in pencil.

If children are writing answers in their books the question that they are answering must be evident.

One number one square. Miss a line under each question.

Children mark their work following the mark scheme – no need for peer marking in maths.

Children must evidence in their books whether they have done bronze, silver or gold by use of stickers available in every classroom and from the maths co-ordinator when they have run out.

When the teacher collects the books in the objective is marked by a tick in the red, amber and green boxes at the bottom of the book page.

If intervention is given then this is marked with FI (Fluid Intervention).

Children carry out any intervention work in their book in green fix it pen.

Mastery questions for those that achieved the objective that day must be printed and trimmed ready for them to use – there is an assumption that some children will get to mastery each lesson.

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