



## St Joseph's Catholic Primary School

### Mathematics Policy

<b>Agreed by the Governing Body on</b>	Spring 2015
<b>Review Date</b>	Summer 2016
<b>Review Schedule</b>	<b>Annual</b> / Biennial / Tri-annual / Termly
<b>Person(s) Responsible</b>	Mathematics Subject Leader

## **MISSION STATEMENT**

**In the St. Joseph's family, learning together through Jesus, we aim to develop to the fullest possible extent the whole person, socially, emotionally, creatively, academically, physically and spiritually.**

## PURPOSE

*“...teachers’ knowledge of mathematics for teaching must be like an experienced taxi driver’s knowledge of a city, whereby one can get to significant places in a wide variety of ways, flexibly and adaptively.” (Ma, 1999, p. 123)*

*“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 New national curriculum in England framework document, July 2013)*

## AIMS

St Joseph’s maths curriculum aims to ensure that all children are well prepared for the next stage of their education and for futures post-16. We want to ensure teaching is consistent; making all lessons at least good with many outstanding, so that every pupil receives a good mathematics education. Our ambition is that 100% of children will achieve a 2b or above at the end of Key Stage 1 and 100% will achieve a 4a or above at Key Stage 2.

We aim for all of our children to be strong mathematicians because they:

- Have a strong conceptual understanding of maths; its structures and its relationships
- Can recall and apply their knowledge confidently and efficiently
- Are secure in using written methods for which they have a clear understanding

We aim to place problem solving and investigative skills at the heart of our mathematics teaching. We recognise that collaboration and communication are crucial life skills and should be developed in our mathematics teaching.

The expectation is that all children welcome challenge and that teachers foster the attitude that we all, even the most able among us, should expect to struggle.

Through careful assessment, planning and preparation we aim to ensure that all children progress when they are ready. New knowledge and skills should be secured before new material is introduced. For those who grasp new material quickly, they should apply this to rich problem solving tasks.

## TEACHING AND LEARNING

All teaching must be at least good and in many cases outstanding.

Underpinning all good or outstanding teaching in mathematics is the expertise and sound subject knowledge of the staff.

Clear policies and regular professional development from a range of sources will develop the expertise of staff to help:

- in delivering the school's curriculum thoroughly and consistently
- in enhancing staff subject knowledge
- in weaving mathematical ideas into a coherent whole
- in choosing practical resources, visual images and information and communication technology that promote inclusive teaching and a deeper understanding for all
- in using good Assessment for Learning techniques to listen flexibly to children and to check and probe their understanding throughout

See also our [Teaching and Learning policy](#).

## INCLUSION

The following principles inform and guide our policy and practise:

- meeting the diverse and complex needs of each and every individual is embedded in everything that we do as a whole staff
- it is the responsibility of the school to enable the child to access and make progress through the curriculum
- equal opportunities is not the same as equal provision

Above all we celebrate and affirm the diversity in our school, our community, our society, and our world and commit ourselves to enabling all our pupils to participate constructively as they grow.

For every child to be able to participate we must know each of them as individuals. For children with SEND teaching must be closely linked to their IEP targets. What is good provision for a child with SEN is good for all children i.e. an abundance of activities that allow children to learn visually, through speaking and listening and kinesthetically.

We respond to children's diverse learning needs by:

- Creating effective learning environments

- Securing their motivation and concentration
- Providing equality of opportunity through a range of teaching approaches and modifying these for individual needs
- Using appropriate assessments
- Setting targets for learning
- Teaching more able children with their own class and extending their learning through differentiated group work, extra challenges and opportunities for independent learning. Where appropriate, special arrangements are made for an exceptionally gifted child e.g. they may be taught with children from a higher age range or may follow an individualised programme with more challenging problems to tackle

See also our **Inclusion policy**.

## **CURRICULUM**

The school works to the expectations set out in the framework document for the national curriculum in England, July 2013 for Years 1 to 6 and the Early Years Foundation Stage Curriculum, 2012. We do not follow a scheme of work, rather St Joseph's curriculum for mathematics is tailored to meet the individual needs of each cohort and to fulfil our ambition for the children by the time they leave us.

The school's curriculum places an emphasis on rich, applied mathematical tasks which allow the children many opportunities to persevere with problem solving. While some maths needs to be taught discretely, there is an emphasis on giving the maths a context so there is purpose for learning. Using the school environment and the wider world, the curriculum ensures children explore, make connections, seek patterns, recognise relationships and are creative with mathematics.

A good understanding of place value and key number facts is extremely important therefore we encourage use of a wide range of practical equipment to support this conceptual development including Numicon, Base Ten, Counting Sticks, Cuisenaire Rods, number lines, one hundred squares and much more.

Throughout all stages, children play with numbers, measures, shapes and patterns to develop numerical awareness and explore the idea of 'proof.' We promote mathematical games that involve point scoring and personal bests (both electronic, and 'hands on') as we know that if managed properly this is highly motivating.

See also our **Curriculum Statement** and **Calculation Policy**

## **PLANNING**

Teachers plan for deep coverage and mastery of the school's curriculum through both daily maths lessons and additional opportunities to develop mental maths skills.

Plans for daily maths lesson include teaching, practising, applying, and reviewing and cater for all learning styles (Visual, Aural and Kinaesthetic). Children's targets are at the forefront of all planning and are clearly linked to and reviewed through regular assessments.

Lessons include opportunities for

- practical activities and mathematical games
- problem solving
- individual, small group and whole class discussions
- open and closed tasks
- a range of methods of calculating e.g. mental, paper and pencil and calculator
- working with ICT
- outdoor learning

Plans should follow St Joseph's Calculation Policy which gives an overview of the development of addition, subtraction, multiplication and division from Reception to Year 6. Teachers should use this detailed information on progression through each strand and how to use practical resources and models to develop understanding at each stage.

Classes are mixed ability and the groups within classes are fluid. Teachers will use a range of grouping methods when planning. No children miss out on the daily mathematics lesson for the class as it is crucial they have access to Quality First Teaching. Occasionally, we may stream across cohorts if this is judged to best meet the needs of the children.

See also our **Calculation Policy** and **Homework Policy**

## **RESOURCES**

Children become fluent in mathematics when they have lots of 'hands on' experiences. Therefore, children and staff draw on a wide range of practical resources in order to develop the conceptual understanding of maths; its structures and its relationships. This then helps children move smoothly to abstract representations and recorded methods. Good use of resources also helps make the learning more interesting.

## **ASSESSMENTS**

All assessment is used to inform teaching and learning. We identify children's understanding and then swiftly focus interventions to overcome misconceptions.

At St Joseph's we assess children in four main ways:

- Assessment for learning: continuous

- Marking: daily/weekly
- Termly Assessing Pupil Progress (APP)
- End of Key Stage transitional Assessments: annually

Towards the end of the school year we assess and review pupils' overall progress and attainment by drawing upon APP, their class record of attainment against key objectives and supplementary notes and knowledge about children to produce a summative record. Accurate information is then reported to parents and the child's next teacher.

End of Key Stage assessments are moderated either with other schools or by the Local Authority.

See also our Marking in Mathematics policy and Assessment policy.

### **THE ROLE OF TEACHING ASSISTANTS**

Teaching Assistants are actively involved in teaching small groups within lessons and in providing intervention sessions. They support all groups in the classroom, enabling the teacher to also work with all groups on a weekly basis. They offer sensitive support and are expected to modify tasks, materials and teaching resources as required.

They demonstrate initiative in using practical resources to support learning and help pupils overcome difficulties, for example by using strings of counting beads to aid early multiplication. They are careful not to over-direct pupils' learning.

They spot misconceptions and gaps in learning, and take responsibility for assessing pupils in their groups, and help to identify the next steps and plan subsequent activities with the class teachers. They participated in reviewing pupils' progress and were particularly effective in identifying and supporting personal problems that presented barriers to learning.

### **USE OF ICT**

The role of technology in the our mathematics curriculum is to motivate and engage children and support children in analysing and communicating.

Calculators should be used throughout the school to promote play, exploration and fun with number. They may also be used at the teacher's discretion for children to check their own work. As a mechanism by which to find the answer, they will only be used with children working at Level 4 or 5, where the child has to make a sophisticated decision about the calculation required.

### **WHERE THERE ARE BARRIERS TO LEARNING / CHILDREN WHO FIND MATHEMATICS DIFFICULT**

At St Joseph's we have the highest expectations for all children. We act early to secure the essential knowledge and skills of the least able. In conjunction with the leadership

team, notably the Inclusion Manager and Maths Subject Leader, staff are encouraged to reflect on why these barriers exist in the first place, what can be done to prevent them arising in future.

Where gaps need to be closed for individuals or groups, we run a programme of interventions in the afternoons . The intervention used will depend on the nature of the difficulty for the child/ren. However, our principal interventions are Closing the Gap with Numicon in Key Stage 1 and Catch Up Numeracy in Key Stage 2. The impact of these is monitored and regularly reviewed.

## **LEADERSHIP**

Our Maths Subject Leader must always be an outstanding practitioner in their own right in order to lead by example. To tackle barriers and ensure consistency, they are responsible for:

- Monitoring teaching and learning through lesson observations, work scrutinies and pupil progress reviews
- Using the information gathered from data analysis to improve teaching and the curriculum
- Robustly challenging weak teaching and identifying what support or development is needed.
- Mapping interventions and deploying support staff effectively
- Assisting with individual and group target setting and ensure progress against these targets is effectively shared with parents
- Preparing and organising INSET as necessary

The Maths Subject Leader must also work in partnership with other members of the leadership team particularly the Inclusion Manager and our governors' School Improvement Committee in raising standards in Mathematics across our school and maintaining the high profile of mathematics in the School Improvement Plan.