

ST. BEDE'S CATHOLIC JUNIOR SCHOOL

celebrates life and learning

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MATHEMATICS POLICY

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APPROVED BY:	CHAIR OF GOVERNORS
APPROVAL DATE:	JANUARY 2025
REVIEWED:	BIENNUALLY
NEXT REVIEW:	JANUARY 2027

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MISSION STATEMENT

St. Bede, patron of our school, wrote:

“It was always my delight to learn and to teach”.

We are a celebrating community, living the Gospel Values, committed to educating children in the light of the Catholic Faith.

We journey together so that we

“Might have life - life in all its fullness”.

John 10:10

“Mathematics is the language in which God has written the Universe.” - Galileo

INTENT

At St. Bede's we believe that the main reason for teaching mathematics is its importance in the analysis and communication of information and ideas. It is used to describe, to illustrate, to interpret, to predict and to explain. It develops the essential numerical skills that enable pupils to understand and communicate with the modern technological world, the ability to think in abstract ways and to solve problems. However, it is not only taught because it is useful. It is a source of delight, offering pupils intellectual excitement in the discovery of relationships, the pursuit of rigour and the achievement of elegant solutions. Mathematics provides the chance to prove beyond doubt, using logical argument. Pupils are encouraged to appreciate the essential creativity of mathematics.

“Surely it is not knowledge, but learning; not owning but earning; not being there, but getting there; that gives us the greatest pleasure.” Carl F Gauss, 1777 – 1855.

In accordance with our Mission Statement our aim is to cater for individual needs, whilst providing challenging, stimulating learning opportunities, in mathematics, which will inspire independence and confidence. We:

- Present new mathematical concepts in a practical context.

- Present mathematics as a creative and fascinating process in which children are encouraged to use their imagination, initiative and flexibility of mind.
- Develop an appreciation by pupils of the relationships within mathematics itself.
- Show that mathematics is an essential part of communication. Pupils are given the opportunity to describe, illustrate, interpret, predict and explain using mathematical language and conventions.

The school fulfils the requirements of the National Curriculum 2014, for mathematics, in aiming 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.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- **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.

IMPLEMENTATION

The school has implemented the ‘Maths – No Problem!’ scheme. The focus is on teaching to mastery. It is based on the research of Jerome Bruner, Richard Skemp, Jean Piaget, Lev Vygotsky, and Zoltan Dienes. The programme emphasises problem-solving and pupils use their core competencies (Visualisation, Finding Patterns, and Mental Strategies) to develop a relational understanding of mathematical concepts.

One of the key learning principles is the concrete – pictorial - abstract approach (CPA). The CPA approach, suggests that there are three steps (or representations) necessary for pupils to develop understanding of a concept. Reinforcement is achieved by going back and forth between these representations.

The textbooks have been researched in huge detail and the varied examples have been specifically chosen to stretch pupils into harder concepts, create depth and generate dialogue. The workbooks allow pupils to work independently, demonstrate their understanding and assess their own learning. The teachers have access to a website which contains all of the pupil materials along with extra teacher resources.

Pupils in all years are placed in ability groupings for the teaching of mathematics. This narrows the range of ability within each class and allows the teacher to meet the pupil’s needs more effectively.

Resources that are used frequently, such as number lines, counters, dice, multi-link cubes, dienes, hundred squares, shapes, etc., are located in the classrooms. They are accessible to all pupils, who should be encouraged to be responsible for their use. Further resources (often larger items shared by the whole school) are located in the Upper Resource Area and the Maths Lead’s classroom. The use of manipulatives is integral to the CPA approach and thus planned into our learning and teaching.

The approach to teaching is to deliver a dedicated mathematics lesson every day (approximately 75 minutes) based on the CPA approach; the initial part of the session (10-15 minutes) consists of arithmetic (four operations), reasoning and/or multiplication activities.

High-quality direct teaching is oral, interactive and lively. It is a two-way process in which children are expected to play an active part by answering questions, contributing points to discussions, and explaining and demonstrating their methods to the class.

The structure of the lesson is:

- Explore - a problem to initiate thinking and discussion; a time to experiment and explore an anchor task independent of the teacher. (A low threshold, high ceiling task.)
- Structure – learning is guided by the teacher, taking feedback on methods used, discussing efficient methods and maybe asking deeper questions.
- Reflect – ‘Master’ – children try to explain how someone else solved the problem and discuss how these methods are similar or different to their own.
- Journal – provides the children with the opportunity to document their learning. Some days the teacher chooses; other days, the child.
- Practise – Guided practise - children undertake some similar problems, under the close guidance of the teacher.
- Apply – Children have independent practise in their workbooks.

Special Educational Needs and Disabilities

Through the assessment systems teachers identify children who are experiencing difficulties in mathematics and with the Mathematics Subject Leader and the Special Educational Needs and Disabilities Co-ordinator (SENDCo), a decision is made as to the appropriate support. They may decide to place the child on the SEND register.

Teaching Assistants also provide additional support in groups where there are a larger number of struggling learners. Those pupils with significant needs in mathematics have specific mathematical targets set when their IIPs are produced. Intervention groups take place outside of the main mathematics lesson and where possible are delivered by the class teacher to ensure quality first teaching.

Inclusion

The school provides a broad and balanced mathematics curriculum, for all pupils, with relevant and appropriately challenging work throughout the key stage. In cases of physical or sensory disability the school endeavours to provide specialist approaches, so that the child has full access. ‘Maths – No Problem!’ shows positive images of the various groups in society. We seek to celebrate the mathematical heritage of all cultures.

Visible Learning

Visible Learning in school emphasises the importance of making learning explicit and measurable in every curriculum subject. By focusing on evidence-based teaching strategies, Visible Learning encourages staff to highlight learning intentions, set clear success criteria, and regularly assess student progress. This approach helps pupils become more aware of their own learning journey, fosters a deeper understanding of the content, and empowers them to take ownership of their learning. Through Visible Learning in mathematics both teachers and students

can track growth and identify areas for improvement, ultimately enhancing outcomes in the subject.

Continuity and Progression

Full implementation of the 'Maths – No Problem!' scheme ensures continuity and progression throughout the key stage. The assessment and tracking systems inform the planning.

The consistent use of the NCETM 'Mastering Number @KS2' programmes ensure that there is a whole-school focus on developing fluency and ensuring progression in the multiplicative relationships of number. The KS1 programme can also be accessed for intervention sessions if required.

Cross-Curricular Links

Mathematics contributes to many subjects in the primary curriculum, often in practical ways. It is important that children are given time, in other subjects, to develop and apply their mathematical skills. Teachers look for opportunities to draw mathematical experiences out of a wide range of children's activities.

Record of Progression

A record of each child's progress in mathematics is kept by means of the following:

- mathematics workbooks, journals and homework
- tracking of objectives through the use of a 'GoogleDrive' document
- Review and Revision assessments in Maths – No Problem!
- record of test scores (NFER, Year 6 practice SATs papers)
- Mid-year report and annual report to parents/carers

IMPACT

Assessment

There are a number of different components to the assessment package that is carried out in St. Bede's Catholic Junior School.

- (i) Assessment for Learning is part of the daily lesson. These judgements confirm that children have grasped the main points of the lesson, or identify misconceptions that need to be addressed. They feed forward to the next lesson.
- (ii) Periodic assessments are carried out at the end of each topic, and more comprehensive revisions during the year, at a distance from the teaching, to review the progress that the children are making in relation to the key objectives. They are used to inform the planning for the next term.
- (iii) Transitional assessments (NFER tests) are carried out annually. We administer them in May.

Early in the autumn term of Year 3, the Key Stage 1 National Curriculum Tests from the previous term are administered again to the children to establish a baseline. These results are viewed and considered alongside those that accompanied the children from the Infant School.

A summary report is sent to parents/carers at February half-term and a full report at the end of the summer term.

Monitoring

The class teachers, the Mathematics Subject Leader and the Headteacher monitor the approaches detailed in this policy. The Subject Leader scrutinises a selection of workbooks/journals from each group on a termly basis.

Effective Feedback

In line with the school policy, the teacher, following self-marking, peer marking or discussion in groups, makes notes to 'Feed Forward' to children in the next session.

Review

The Mathematics Policy will be reviewed by the Mathematics Subject Leader in the light of guidance, training, change in legislation or at the request of a member of the school community. Any amendments will be agreed by the staff and the Governing Body.

NB. To show integrity to the 'Maths No-Problem!' programme, we use the 'Calculations Policy' produced by 'Maths No - Problem!' to guide the structure and progress of calculations across the school.