



**CASTLEFORD
PARK JUNIOR ACADEMY**

Maths Policy

Castleford Park Junior Academy

February 2021

Review date: February 2022

Policy for Mathematics at Castleford Park Junior Academy

Written by Liam Booth (February 2021 - for staff discussion and governors ratification)

Rationale

The purpose of this policy is to ensure that all staff are able to implement the teaching of maths to a high standard in order for our pupils to achieve to the best of their abilities, ensuring consistency.

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate reason and solve problems. It is a core subject with a range of cross-curricular links using opportunities from other subjects to rehearse skills in a context. Maths involves developing confidence and competence in; number work; shape, space and measure; handling data and the using and applying of these skills. We aim to support children in achieving economic well-being by equipping children with a range of computational skills and the ability to solve problems in a variety of contexts using the National Curriculum, in order to guide planning within Key Stage 2.

Our objectives in the teaching of mathematics are:

- to become fluent in the fundamentals of mathematics;
- to make links and connections across concepts, being flexible in using and applying a range of methods
- to reason mathematically;
- to solve problems by applying their mathematical understanding;
- to promote enjoyment of learning through practical activity, exploration and discussion;
- to develop confidence and competence with numbers and the number system;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to develop problem solving strategies which can be transferred across the curriculum
- to help children understand the importance of mathematics in everyday life and help them to manage their 'maths' after their school life ends.

National Curriculum

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects. We aim to fulfil the requirements set out in the National Curriculum (2014-2015) for Key Stage 2, adopting this as our 'Long Term Plan' to ensure that coverage is met. We also ensure that we use the DFE non-statutory Key Stage One and Two maths guidance to help us with planning and adapting our long term plan when circumstances mean that we need to prioritise what is taught in each year group. We then use formative assessment to ensure the lesson is individually tailored to pupil need.

It is also good practice to make use of cross curricular links, wherever possible, to enable children to use their learning in a real life context. Therefore, pupils should be given plenty of opportunities within sessions to use and apply the mathematical skills and concepts they have learned. Indeed, the new curriculum expresses the need for all lessons to include 'Using and Applying' within a meaningful context and it is our intentions here at CPJA, that all lessons taught will focus, at some point, on this area - whether through deepening understanding with thought provoking questions, or applying learnt skills to a relevant problem.

Entitlement

At Castleford Park Junior Academy, we believe **all** children can achieve in mathematics and our lessons focus on developing children's conceptual understanding and their ability to reason and explain, making links where appropriate. Using Same Day Intervention and incorporating a 'learning pit stop,' whereby teachers have time to assess the children's progress so far, we ensure that misconceptions are identified and teacher intervention and support can be put in place immediately. Similarly, the 'learning pit stop' allows the children who have good conceptual understanding to be further challenged in their learning through reasoning and problem solving in order to gain a deeper understanding, either independently, or as part of an adult-led task.

Once children secure fluency in mathematical concepts, they are further challenged in their learning through reasoning and problem solving in order to gain a deeper understanding. We aim to provide all children with full access to the curriculum, enabling them to achieve confidence and competence in mathematics, rather than many following a set of rules, failing to develop the mathematical skills they need for the future.

Key features of our Mathematics curriculum include:

- High expectations for every child
- Fewer topics, greater depth
- Number sense and place value
- Objects and pictures to represent numbers
- Problem solving and reasoning
- Calculate with confidence- understand why it works
- Same Day intervention - every child **can**

We focus on all children achieving what is expected of their age group and not going beyond this; instead we look to deepen their understanding by making links across concepts and providing opportunities to deepen their learning. Evidence shows that children need to be able to understand a concept, apply it in a range of situations and then be creative to really understand it. Simply going beyond their age group does not guarantee they understand something, it just means they have heard it.

At Castleford Park Junior Academy, no child will be taught content from the year group above them, unless ratified by the staff; they will spend time becoming true masters of content, applying and being creative with new knowledge and skills in multiple ways. In short, this means working towards:

- Teach less, learn more- less teacher talk and more evidencing learning and progress

- No child left behind
- Space and time to experience and apply, with all children entitled to additional support to ensure they do not fall behind or to go deeper
- Understanding real life applications wherever possible to make learning relevant and not abstract.

All of this means that there is a change in the way we teach and assess children, most notably in how we organise the children's learning and how we report their progress to parents.

We will be doing more of this:

- Teaching all children in class, together, most of the time
- Verbal feedback during lessons, the use of marking codes, shortened comments with higher impact in assessing and moving the learning forward
- Spending longer on one idea, developing a greater understanding
- Providing children, where necessary, with additional support and/or time to understand a concept

Pre-teaching concepts and vocabulary to promote success for all

Daily reviews of learning, recapping concepts the children have experienced throughout their KS2 journey, embedding Bruner's idea of the spiral curriculum.

And less of this:

- Formal marking with lots of written feedback and highlighting
- Formal, long term interventions to boost them out of class
- Separating children into ability groups

This approach is seen as good practice. It is promoted by the government and research published by the EEF which is seen as the best way to deliver the national curriculum.

Approach to teaching mathematics at CPJA

We believe in activating prior knowledge by reviewing material previously taught, using spaced retrieval to recap learning from: last lesson; last week; last term and last year. This is part of our retrieval practice in school. Following this, we will then share the learning objective, which has been broken down in to small, coherent stepssuccess criteria (the skills needed to be successful - not a checklist) and key vocabulary.

Teachers will provide worked examples and shared examples, using models and images where appropriate, depending on the concept taught and age and stage of the child. Teachers will explicitly teach the skill using key vocabulary, providing a commentary (dual coding). The children will have the opportunity to practise this skill independently and alongside their peers, discussing their ideas and worked examples. During this point, teaching staff will observe and facilitate the learning, using this time to address misconceptions and provide further support/challenge where necessary.

After independent and shared practise, a review of the learning is essential; children will then be able to select their starting point and support (if needed) and begin to practise the skill independently, wherever possible. Finally, children will reflect on the learning so far using the success criteria, identifying their strengths and next steps, as will the teaching staff; this will inform for future planning.

Leadership and Management

Leadership in maths focuses on raising attainment and improving the provision in the subject. Through links to other areas of the curriculum the subject engages pupils and staff so that learning develops and improves. The subject leader's role is to enthuse and empower colleagues to teach maths to a high standard and support staff in the following ways:

- By keeping up to date on current issues; disseminating relevant information and providing training for staff members (either directly or through other professionals)
- Leading by example / modelling lessons or styles of teaching
- Having a secure knowledge of the quality of mathematics provision across the school and helping develop strategies that could be used to raise attainment.
- Identifying and acting on development needs of staff members
- Monitoring expectations, provision and attainment across the school and providing feedback to develop practice further in order to raise standards.
- Providing necessary equipment and maintaining it to a high standard.

Special Educational Needs

All children will have their specific needs met through differentiated work in conjunction with targets on One Page Profiles where appropriate. LSA and Teacher support time is planned for and provided in relation to identified needs for individuals and groups. The development of independence and resilience is fundamental. We aim to instil this in to our children by setting appropriate work in addition to well-thought out prompts and manipulatives which support their mathematical thinking while building independence.

Inclusion

The daily mathematics lesson is appropriate for all pupils. Teachers will involve all pupils through differentiation.

Pupils with special educational needs and individual education plans:

- Within the daily mathematics lesson teachers provide activities to support children who find mathematics difficult. Children with SEN are taught within the daily mathematics lesson and are able to take part at their level through the support of a Teaching Assistant and appropriate activities and resources.
- Where applicable children's OPPs incorporate suitable objectives from the Numeracy Framework.
- Intervention Groups will take place at times throughout the year, in order to give further support to children working below national expectations.

Implementation

We carry out curriculum planning in mathematics in three phases: long-term, medium-term and short-term. The current mathematics curriculum is delivered primarily using the new National Curriculum. By using the S plan as a planning format, supported by the NCETM Progression maps and guidance published by WRMHa clear progression of skills is visible, providing an overview of skills which is taught using Bruner's spiral curriculum model, ensuring concepts are revisited and built upon. This coverage is reviewed by the maths leader, the maths team and class teachers regularly and planning is adjusted for the subsequent term accordingly to ensure appropriate coverage of all mathematical strands.

The three main aims of the new maths curriculum are to become fluent in the fundamentals of mathematics, reason mathematically and solve problems by applying their mathematics. To achieve this we aim for: fluency, reasoning and problem solving being evident in each lesson wherever possible, using the White Rose Maths Hub, NCETM Mastery document, Nrich and the Lancashire Maths Scheme as a planning tool. These act as tools to ensure appropriate pace, progression and coverage of the subject. Other planning resources may be used for intervention or supporting pupils working at lower levels such as Big Maths, P-levels, Wave Materials, Numicon planning and 1st Class @ Number, White Rose Maths Hub Intervention Programme and Success@arithmetic

In the National curriculum, it states the 'expectation is that the majority of pupils will move through the programmes of study at broadly the same pace'. In order to achieve this, after reflecting on our previous practice, we have introduced the Same Day Intervention model. The lesson will be split in to two sections, with a learning pit-stop allowing the teacher to assess the children's understanding, ensuring that all children who are able develop a better understanding of age related concepts. This will allow teachers to plan and direct pupils on their next steps -whether consolidating the objective being taught or being challenged to deepen their understanding; and identify groups of children who require teacher intervention to achieve the ARE and/or address misconceptions.

Resources

Resources are generally kept centrally outside the staffroom on the corridor although we have invested heavily in resources to be kept within the classroom so that resources can be easily accessed by both children and staff such as: 100 squares, numicon etc. Each Year group class has access to the same, high-quality resources. **ALL STAFF** are responsible for the organisation and good order of Maths resources.

Health and Safety

Equipment will be used safely and appropriately. Specifically:

- Short pencils on compasses
- Pupils will not lift heavy objects or multiple weights in excess of 5kg to avoid strain to back muscles.
- Food products will be in date.

Assessment and Recording

Assessment for Learning is fundamental to raising standards and enabling children to reach their potential. Assessment in mathematics takes place daily using a range of strategies such as marking and feedback during work time, using verbal feedback, questioning to raise

discussion and fluid differentiation. Marking should inform next steps and also help to support subsequent planning. Staff use an agreed marking policy for Maths. (See Appendices). Marking should be timely and specific; it may also include modelled examples or prompts in order to move children forwards in their learning with pace. Pupils are expected to respond to marking using 'Purple Pens Of Progress' where appropriate, this may be within lessons or indeed at the start of the next session, in order to demonstrate how their learning has developed or how their thinking has changed due to peer or adult discussion or support.

Staff are actively encouraged to reflect on, and adapt, daily planning. These daily adaptations provide relevant feedback and aid planning for next steps or consolidation work.

Pupil attainment targets are set at the beginning of each year and progress towards them is regularly reviewed in six week cycles. Records are saved onto 'electronic Class Trackers' and this data is discussed at Pupil Progress Meetings, to inform future planning and support for pupils who are not on target. Individual pupil targets are also used throughout the year, these change regularly according to individual pupils' progress. These may relate to specific multiplication facts or focus on other specifics a child has to learn relating to particular NC objectives.

Moderation of work takes place regularly, to verify and ratify standards within year groups, classes or sets. Staff meet regularly to review individual samples of work and to moderate judgements. This demonstrates work at various levels of achievement in mathematics from across the school to help support teacher's in making their own judgements and ensure they are teaching at an appropriate pitch.

Summative & Formative Assessment

A standardised test will be used to test pupils against ARE every term. The aim of these tests are to provide a summative judgement against the ARE criteria but they also provide staff with the necessary formative information for succession planning, identifying the gaps in the children's learning, as individuals and groups, so that 'learning gaps' can be planned for and addressed.

Staff also use Target Tracker to track the progress of individual pupils on a regular basis by updating the Target Tracker statements (which match National Curriculum 2014), as well as updating the 'Steps' tracker during the 6 week assessment cycle.

Monitoring and Evaluation

This will be undertaken by the Subject Leader and other members of SLT.

Areas to be monitored will be decided at the beginning of each term and will be recorded on the Monitoring calendar so that staff are informed. Results of any monitoring will be fed back to staff quickly and to SLT at their meetings so that any action required can be carried out effectively.

The quality of teaching and learning is monitored as part of the appraisal process through lesson observations, as well as monitoring progress and the achievement of pupils working towards end of year targets. In addition, continuity and progression across the school is

monitored by the maths subject leader, as is the implementation and impact of Assessment for Learning. Actions identified in the SEF and Maths Action Plan intended to raise standards are also monitored for both implementation and impact.

The Maths Subject Leader will also provide a termly summary report to the Head Teacher in which they evaluate the strengths and weaknesses in mathematics, and indicates areas for further improvement.

Assessment will be ongoing throughout the school year. Staff will use Target Tracker to assess half termly and additional support or challenge will be identified early by class teachers and the SLT. Marking is in line with the school's Marking and Feedback Policy.

Partnerships with parents

Parents are informed of curriculum coverage through the half-termly topic webs which are sent out at the end of each first week back. Staff also write an end of year report, outlining the child's progress against NC expectations. We report whether a child is working below/at/above Age Related Expectations and a maths target is also set for individuals.

School plans various events to engage parents throughout the year, including Inspire days, calculation evenings and adult workshops. Teachers also provide parents and pupils with a video demonstration of the most important concept that will be taught in the upcoming week - using the 'flipping the learning' method to allow children to practise and evaluate their skills before the lessons begin; and allowing them to discuss it with their parents. This has three purposes: to allow children to consider their strengths and weaknesses to help them operate as independent learners in the next week of maths lessons; to promote mathematical discussion and reasoning at home; and also to support parents in understanding the most important methods that we teach using.

Maths homework is used to assess the children's understanding at ARE. Weekly skills checks are sent home alongside a Prompt sheet, in order for adults to support such work. Teachers may also make use of ICT based learning and set up homework tasks using 'Mathletics' and 'Times Table Rockstars'. Pupils will have their log-ins provided, in order to do this. Extra ICT time is provided for pupils who do not have access to a computer at home, during break times or lunchtime, or even as an after school club.

See calculations policy for further detail.

Monitoring and Review:

Signed L.Booth
Mr L. Booth Maths Lead/Assistant Headteacher

Date: Feb 2021



Signed
Miss K. Law Headteacher

Date: Feb 2021



Signed
Mrs L Simpson - Chair of Governors

Date: Feb 2021

Next Review: February 2022