

Policy for Mathematics at Castleford Park Junior Academy
Written by Liam Booth (November 2016) - 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 but most often, is best taught discretely, 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 new National Curriculum 2014-2015, 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 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 help children understand the importance of mathematics in everyday life and help them to manage their 'maths' after their school life ends.

Leadership and Management

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 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.

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 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 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

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.

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 2014-2015. By using the NCETM Progression maps, a clear progression of skills is visible, providing an overview of skills. This coverage is reviewed by class teachers half termly 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, 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.

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 recently introduced the Same Day Intervention model. From Monday - Wednesday, 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 and identify a group 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 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.

ICT

Information and Communication Technology can enhance the teaching of mathematics significantly. It has ways of impacting on learning that are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. A range of software and resources are available to support ICT based maths work. School subscribes to 'Mathletics' and 'Times Table Rockstars' which can be used to enhance the development and progression of our pupils through consolidation and extension of mathematical concepts. It can also feed into homework.

Through the use of ICT, AfL techniques should also be used to aid effective teaching by making use of the Visualiser, IPAD's and Apple TV when appropriate.

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', 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 annotate 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. The mathematics subject leader keeps samples of moderated children's work in a portfolio. 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

Assertive Maths Test will be used to test pupils against ARE every six weeks. 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), as well as updating the 'Steps' tracker during the 6 week assessment cycle.

Monitoring and Evaluation

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.

A named member of the governing body (*currently Mrs S Churm*) oversees the teaching and learning of mathematics. The maths governor meets regularly with the subject leader to review progress.

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.

There are various plans in place to engage parents in Maths this year, including Inspire days, calculation evenings and adult workshops.

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 may need to be provided for pupils who do not have access to a computer at home, possibly during break times or lunchtime, or even as an after school club.

See calculations policy for further detail.

Adopted on _____

To be reviewed again September 2017

Last review - 12.1.2016

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