Chandag Infant School

CHANDAG
INFANT SCHOOL
Be the best you can be!

Maths Policy 2016-17

Rationale: Mathematical skills are essential in everyday life and at Chandag Infant School we aim to maximise the individual potential of children's knowledge and understanding in mathematics and teach them transferable skills for life. We firmly believe in 'Every Child Matters' and 'Every Child has a right to Learn' (UNICEF) and we aim to deliver a curriculum where we can unlock the potential in all children in our school. We believe that children should be active participants in their learning and have abundant opportunities to explore the maths for themselves in order to make the maths learning transparent. In adopting the New National Curriculum (2014), we aim to develop fluency in mathematics; mathematical reasoning and adopt a mastery curriculum where children can deepen and embed the concepts taught and apply to a variety of situations.

Aims:

- Have a deep, embedded understanding of mathematical concepts which are transferable in different situations and scenarios.
- To adopt a practical / investigative approach to mathematical learning where possible, in order to strengthen children's understanding of patterns and relationships.
- Follow a Concrete-Pictorial-Abstract approach to learning, by providing a range of concrete, pictorial and abstract representations in all year groups and for all abilities to improve learning.
- Develop mathematical language and encourage all children to 'talk like a mathematician' by explaining their work and sharing their ideas and findings and reason about maths.
- Use mathematics to explore everyday problems and scenarios which may arise.

- Develop skills of mental arithmetic in mental orals, the main lesson and in 'Monkey maths' lessons in order to aid mathematical fluency and speed up calculations.
- Develop a sense of pride in the presentation of work.
- Develop skills in other areas through the teaching of maths, such as ICT, scientific reasoning and reading skills.
- Make cross-curricular links, where possible.

Learning within the classrooms:

Reception Year:

In the EYFS children will acquire number knowledge, develop calculation skills and learn about Shape, Space and Measures. The majority of learning will take place in play-based situations, where adults teach mathematical skills in purposeful contexts and scaffold children in their play to allow them abundant opportunities to explore maths learning and to reason and problem solve. Some mathematical concepts will be introduced as an adult-led 'carpet time' session and the learning environment will be carefully resourced to allow children to explore the concepts further through play and this will be evident in the EYFS continuous provision planning. Adults will ask purposeful, open-ended questions to draw out the maths learning and to build upon children's prior knowledge. On-going daily formative assessments of children will inform the practitioners in the EYFS setting of children's next steps. These assessments will inform planning and practitioners will then teach, impart and scaffold new learning in play.

In KS1, mathematics is taught daily and lessons will range from 35 minutes to 60 minutes. Occasionally, teachers may decide to have a lengthier maths lesson one day, and not a lesson the following day.

The lessons will generally start with a **mental oral starter**, to revise and practice mathematical concepts and skills that have previously been taught. The main teaching part of the lesson will follow. This will be to introduce a new concept, to build upon previous learning or to open up an investigative open-ended problem. In the **main part** of the lesson, children will have the opportunity to 'do the maths'. Children will have regular opportunities to work

in mixed-ability pairs where they are encouraged to talk and share the learning. In addition, children may work on their own, in small groups or as a whole class.

Mini-plenaries are used in each maths session to gauge children's comprehension of the mathematical concept and to challenge and dispel any misconceptions which may have arisen. Children will be asked about the learning zone they are in – comfort, challenge or danger zone - and support and further challenge will be offered according to their responses.

The **plenary** will be used to expose the learning and children will be encouraged to talk and share the learning. Questions such as "What have you learnt today?" and "Can you tell us about what you found out?" are key to draw out children's mathematical understandings.

Methods of teaching and learning

In order to successfully adopt a Mastery Curriculum, the following teaching and learning methods will be adopted:

- An interactive approach, with opportunities to exchange ideas, questions and explanations.
- Purposeful and investigative questioning and activities are employed, using real life problems where possible, where children problem-solve, reason and conjecture.
- A range of representations / structures / resources will be presented so children can 'see the mathematics'.
- All children will use concrete objects to 'do the maths', then move towards pictorial and abstract representations.
- There will be an emphasis on explicitly teaching and developing skills of mental calculation, drawing upon recall of facts as well as a range of strategies.
- Children will take part in self- assessment and reflective and responsive marking by ragging their work at the end of the maths session. Teachers and teaching assistants will rag the WALT to demonstrate children's

understanding. Discussions will take place between adults and children about their learning and next-steps.

Planning

Long Term Planning

In the EYFS, *The Curriculum Guidance for The Foundation Stage* will be used as their long term planning document. Teachers will also refer to the non-statutory document *Development Matters in the Early Years Foundation Stage* to ensure they achieve 'enabling environments' and 'positive relationships' when planning mathematics. They may also use the development statements to identify areas to extend and challenge children's current learning and development. They may use this document to successfully plan for effective, active, creative and critical learners in mathematics. The document *Numbers and Patterns: laying the foundations in Maths* – The National Strategies (2009) may be referenced when planning, in particular for the sections which discuss learning and teaching approaches and potential misconceptions when teaching new concepts. In addition, teachers will share CPD ideas and up-to-date innovations from attending maths courses and by making links with other settings and will be willing to trial / adopt these ideas where deemed appropriate in their setting.

In KS1, teachers will use the White Rose Maths Hub yearly overview grid as their **long-term planning document**, which outlines the blocks that should be covered throughout the year. Teachers may adjust this plan slightly to introduce new concepts a little earlier than stated, for example, money and measures may be moved to Spring Term in Year One. Teachers will be highly responsive to the children's learning needs and may also want to spend slightly longer on some concepts which are deemed the building blocks to other mathematical concepts e.g place value.

Medium Term Planning

Drawing upon the White Rose Maths Hub yearly overview grid, KS1 teachers will identify the objectives for each unit of work, ensuring every objective is

covered at least once throughout the year, with particular emphasis on key objectives.

Short Term Planning

Planning is done on a weekly basis and is discussed and drafted as a skeleton plan during Preparation, Planning and Assessment times within year groups. Teachers will 'do the maths' as part of the planning process to expose potential misconceptions and difficulties with the concept(s) to be taught.

In the **EYFS**, the majority of maths learning will take place through a play-based curriculum and planning will be objective-led. Weekly plans will clearly show the learning objectives in mathematics for the week and children's next steps. There will be some evidence of adult-led teaching and learning included in weekly plans as a carpet time session. The continuous provision plan will clearly demonstrate an enabling maths environment and the adults' role in moving children's learning forward. Weekly planning will be annotated to reveal the maths learning that has taken place that week in play-based situations, through children's own interests and enquiries.

In **KS1**, teachers will use the agreed planning format, which includes the learning objective (WALT); mental oral task; use of representations / resources to be used; differentiated levels - bronze, silver (gold, platinum); open-ended, higher-order questions; plenary. A clear teaching progression can be seen by the steps of learning. Plans will be annotated daily and AfL will inform the next teaching session.

Developing Cross Curricular Links:

Children in the EYFS and KS1 are given opportunities to explore mathematics in other curriculum areas, such as ICT, Science, Music, History and Geography. Children will learn that mathematics is a transferable skill which will help them solve problems they come across in everyday life.

Assessment:

In the EYFS, observations will be made of children's learning in mathematics through play and during adult-led sessions. Formative assessment is on-going and informs the adults of the children's next steps, which are then carefully planned for. Adults will upload the data into School Pupil Tracker Online at least three times a year. From this data, vulnerable learners will be identified and these children will be raised at Pupil Progress Meetings to ensure they receive additional support. In June, the EYFS profile will be completed and submitted to the LA. Teachers will use the EYFS profile handbook to make accurate judgements of children's attainment in mathematics. They will also moderate their judgements across the team and at local moderation meetings.

In KS1, marking is carried out on a daily basis and this informs planning for the next session. Children's understanding of concepts will be clearly shown on planning, through annotations, and the next steps planned for. Planning is done in steps, rather than day-to-day, and time allocation is flexible to ensure that all children are secure on a concept before moving them on. Children will generally record their maths learning in their maths books or on sheets, which will then be stuck into the maths books in date order. Some lessons may be entirely of a practical nature and children will not always be expected to record their work. In these lessons, teachers and teaching assistants will annotate planning to record children's understanding.

KS1 teachers will use the NCETM Assessment materials at the end of each term to gauge children's understanding and application of maths concepts. The findings from the assessments will be used to inform future planning and possible intervention groups.

Children in year 2 will take practice SATS papers in the Spring term in preparation for the end of year Standard Attainment Tests (SATs). Findings from these practice papers will inform future planning and possible intervention groups.

Monitoring:

Planning will be monitored by the Maths Leader at least twice a year, against the agreed steps. Maths book scrutiny will take place at least twice a year and

this will be carried out by the Maths Leader and the School Leader Team. This will focus on curriculum coverage, the implementation of a mastery curriculum, marking, children's responses, presentation and consistency between parallel classes. Staff will be have immediate feedback on the findings from the planning and book scrutiny. Feedback will focus on 'What is going well' and 'Even better ifs'.

Data will be monitored by the Maths Leader and Assessment Leader three times a year for accuracy and consistency. Teachers will be encouraged to moderate within year groups and attend outside moderation meetings before submitting their data onto School Pupil Tracker Online. The Maths Leader will write a report / summary for the School Leadership Team and the Governors three times a year, which will detail the percentage of children who are under-achieving / off-track to meet end-of-year expectations and the percentage of children who are on-track and exceeding expectations. The Maths Leader will discuss vulnerable learners with the class teachers, who will raise these pupils at the next Pupil Progress Meeting.

The Maths Leader will discuss maths with pupils from each year group as part of the Pupil Voice monitoring. Children will be asked how they feel about maths and will talk about their experiences of maths within the classroom.

The Maths Leader will meet at least twice a year with the Maths Link School Governor to discuss data and the school's current aims and innovations in maths. An annual report will be written to the Governors.

Inclusion:

At Chandag School we believe that maths is an essential skill for everyday life and all children are entitled to receive quality first teaching and access to a challenging maths curriculum. The National Curriculum states that '*The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace'* and we believe that the mastery curriculum allows most children to access the same learning. However, it is accepted that some children may not be able to access the curriculum at the same level as the majority of the class and additional support must be offered to these children to allow them to access the curriculum at their own pace. These children are closely monitored by the SENCo and the Maths Leader will analyse

the progress made by these children. SEN children will receive extra support as part of support plans or PPM identification.

Home-School Links.

At Chandag Infant School, education is seen as a two-way process between school and home. We strongly believe that parents should be informed of their child's learning and be involved in their education. Teachers adopt an open-door policy where parents are welcomed to discuss their child's learning.

Teachers will meet with parents to discuss maths learning three times a year as part of parents' evenings. Parents will be informed of their child's next steps and how they can support maths learning at home.

Teachers will meet with parents of children raised at Pupil Progress Meetings to discuss their child's learning and how they can further support their child at home.

Parents of Key Stage One children will be asked to support their children in learning and recalling calculation facts at home and will provided with feedback from Monkey's Mental Maths sessions.

Parents of children in the EYFS, will be invited to a Mathematics information evening, where they will learn more about the foundations of mathematics in Reception Year. Parents will be provided with ideas of games and websites that they can access at home to support the learning that takes place in school. Parents will have access to their child's learning journey online and will be able to make further comments about their child's mathematical learning outside of school.

All parents will receive an end-of-year report and the opportunity to discuss the contents within two weeks of receiving their child's report.

Date report written: 7.2.16

The Governing Body agreed this policy on:

Signed:

Date to be reviewed: