

How we teach Maths

Introduction

At Kilnhurst Primary School we teach Maths through the mastery approach as set out in the NCETM's document, 'The Essence of Maths Teaching for Mastery'.

Planning

Teachers are to plan using Powerpoint and it should include a whole learning journey process as highlighted in Medium Term Planning (e.g. Mental and written methods for addition). This powerpoint is to be saved in the shared area on the staff server prior to the teaching sequence. This bank of resources will be available for use by future year groups or other year groups as part of pre-learning prior to the related teaching sequence. If this planning is tweaked as the journey progresses, teachers are to ensure, at the end of the journey, that the final presentation is saved in the folder on the staff site, replacing the original file. Planning must follow the [PUMA curriculum maps](#) to ensure accuracy of assessments when using the standardised tests.

Things that must be included within the planning:

- The first slide of the powerpoint to list the learning objectives for the journey.
- The second slide of the powerpoint should list concrete or pictorial resources required for the journey along with ICT links e.g. MyMaths.
- The learning objective should be used as a title on each page of the presentation.
- Success Criteria are to be put in bold and red on each relevant slide.
- Teacher's modelled examples are to be included as are children's practice questions to aid discussion after their completion.
- Key questions for assessment for learning are included where appropriate.

Structure of lesson

Parts of the lesson	Features of the part of the lesson	Timing
Revisit prior learning	At the start of the lesson, children are to revisit learning from the previous day by attempting a maximum of 3 similar questions. This will occur each lesson unless the teacher is beginning a new learning journey. The class teacher will then work through each of those questions, encouraging verbal reasoning from the children and providing them with instant feedback. TAs will assess children's understanding during this time and feedback to the teacher.	Up to 10 mins Up to 10 mins
Introduction of new learning	Teacher to intro LO. Teacher models an example, including vocabulary, concrete, pictorial or abstract representations as appropriate. Share/identify SC with children. Children to practise up to 3 similar questions in their book. Teacher to work through modelling (with aid of children) the questions the children have just done. Teacher to use professional judgement to maintain the pace of the lesson throughout.	Max 5 mins Up to 10 mins Up to 10 mins
Progress into... next step of learning	Repeat above process for new learning.	25 mins
greater depth	If guided, the children are to attempt the initial question either independently or in pairs. The teacher will then discuss and model the solution. The children are to then do further greater depth questions independently. If the children are not being guided and it's being used as a further challenge, the children are to work independently and the teacher may discuss their answers at the end if appropriate.	25 mins
further practice	If when the teacher has worked through the previous 3 questions alongside children they discover misconceptions or those that are struggling, revisit process again and set a further 3 questions for children to do independently. (Adults to support those identified as struggling).	25 mins

Questioning

Children's practice questions are to be carefully chosen by the teacher (for intelligent practice). Each question builds slightly on the previous one, becoming more challenging. There may be a challenge question included on the practice slides to encourage deeper thinking.

Key teacher questions are planned before the journey and aim to improve verbal reasoning and to further develop children's thinking and understanding. They are to be included in the powerpoint slides and these key questions could be verbally asked by the teacher or posed as a challenge during independent practice to extend children to greater depth.

All adults within the lesson will also ask probing or challenging questions at appropriate points during the lesson.

Expectations for books

- Teachers will have high expectations of presentation of books.
- Learning objectives are to be written in books by the children (from Y2 up). These will be highlighted in accordance with the Marking and Feedback Policy.
- Daily evidence of work that includes a revisit (unless starting new learning journey) and practise from the session.
- Differentiation seen through books (adult support, greater depth questions, success of children).
- Any practical sessions have photographic evidence of the lesson in each child's book.
- Books are to be marked during the lesson to provide instant feedback and an opportunity for the children to act upon it. It will be seen in green if the children have marked it following teacher-class discussion and it will be seen in blue if an adult has marked it.
- All corrections are to be done in green to show feedback has been acted upon.

Assessment

- Learning objectives are to be taken from the Emags.
- Assessments to be made against the learning objective and success criteria for the session.
- All adults are to be involved in making assessment notes and gathering evidence on the iPad.
- Teachers (or teaching assistants if instructed by the teacher) are to input assessment data on the same day as the teaching took place.
- Children's understanding of the learning objective and success criteria are to be assessed throughout the session, including self or peer assessment where appropriate.
- These assessments will be used to identify children who require same day intervention, ensuring they are prepared for the following day's lesson.
- Following assessments at the end of the session, teachers may adapt the teaching sequence accordingly.
- Termly Standardised Tests (PUMA) are to be completed to support teacher assessment judgements.

Role of teacher

- To plan and deliver engaging and stimulating Maths lessons that challenge and interest the children.
- Teacher to use professional judgement to maintain the pace of the lesson throughout. This may include altering the planned number of questions worked through with the children and the amount of examples the teacher will model.
- To use concrete, pictorial and abstract representations to secure understanding of specific concepts.
- To organise the classroom to ensure all children can take part in back and forth interaction with the teacher.
- To use reasoning and problem solving to deepen learning at every available opportunity.
- To ensure all children have the opportunity to work on the same objective (no fixed groupings).
- The teacher will be responsible for planning the series of lessons within the learning journey.
- The teachers will work at pace within the learning journey, ensuring appropriate amount of teacher talk and pupil practise.
- Teachers will follow the school's marking and feedback policy.
- The teacher will make the overall decision on who will require same day intervention based on discussion with all adults, marking and children's self-assessment.
- Where same day intervention is required, this will be delivered by the teacher (on most occasions) during the afternoon activity.
- Teachers will ensure assessments are carried out by all adults in the room and the Emags are updated accordingly.
- Teachers will deliver arithmetic sessions every day between 1pm and 1:30pm (unless the class has PE and then it will follow the PE session).

Role of teaching assistant

- During teacher modelling, teaching assistants will identify children who may need further modelling.
- They will ensure all children are on task.
- They will offer support to children that they or the class teacher identify to be struggling and provide timely and incisive feedback (differentiation through support).
- They will ask probing or challenging questions at appropriate points during the lesson.
- They will make assessment notes, which they will feed back to the teacher when appropriate.
- They will collect evidence (e.g. photographs, overhearing pupil discussion and recording it for input into the Emag).
- They will add evidence to the Emag under the direction of the teacher.
- There may be occasions where the teaching assistant will benefit from listening to the teacher input. In these situations they will make notes to support the children during their practice time.
- When covering, teaching assistants will deliver arithmetic sessions every day between 1pm and 1:30pm (unless the class has PE and then it will follow the PE sessions). On most occasions, the teacher will resource this; however, should it be needed for the teaching assistant to do this, they will be given time to plan and resource it.

Supports for Teachers

- Where to save the planning: MTP (staff- 2017-2018 PLANNING- medium term plans- your year group) then save it based on half term e.g. **Autumn 1 Maths MTP**
: Learning journey / weekly planning (Staff- 2017-2018 PLANNING- Maths- year group) should be titled with the focus and the week to be taught e.g. **wc4.9.17PlaceValue.**
- Useful websites:

NCETM- 'Progression in Reasoning',

'Essence of Maths teaching for mastery'

'Assessment in Mastery' documents.

Testbase (Username: 411475_54, Password: BB641)

MyMaths

- Calculation Policy (See staff- 2017-2018 PLANNING- Maths- Policies and supportive documents)
- Emags
- White Rose Maths Hub – Schemes of work
- [PUMA curriculum maps](#)

To be reviewed annually.

Next review July 2018.