AYCLIFFE DRIVE PRIMARY SCHOOL

MATHEMATICS POLICY

Curriculum Committee

Updated January 2023
To be reviewed 2025

Staff Responsible

Mrs M Green	Head Teacher
Mr M Green	Maths Leader
Mr I Jarman	Maths Leader
Mr S Preston	Governor

Introduction and Aims of the policy

At Aycliffe Drive School, we believe that mathematics provides an effective way of building mental discipline and encourages logical reasoning and mental rigor, both required to succeed in the modern world. It is a crucial attribute to living more effective lives as constructive, concerned and reflective citizens. In addition, mathematical knowledge plays a crucial role in understanding the contents of other curriculum subjects such as science, music, art and economy.

Expectations

- By the time our pupils leave FS the majority of pupils will have achieved the Mathematics Early Learning Goals.
- By the time our pupils leave KS1 the majority of pupils will be working at National Expectations with a small minority working at greater depth.
- By the end of Lower KS2 the majority of pupils will be working at National Expectations with an increased percentage working at greater depth.
- By the end of Upper KS2 the majority of pupils will be working at National Expectations, will have made appropriate progress between key stages and will have ben taught the skills to enable the most able to be working at greater depth.

Teaching and Learning

Planning

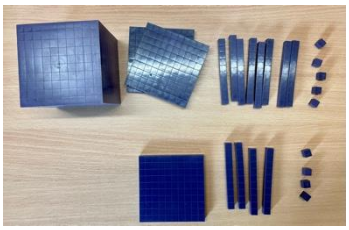
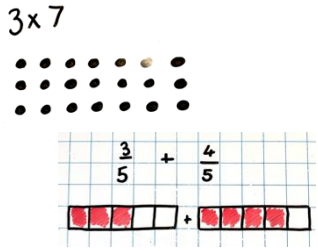
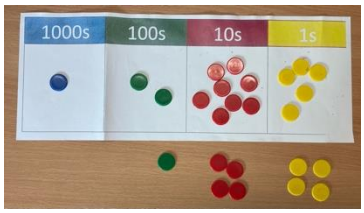
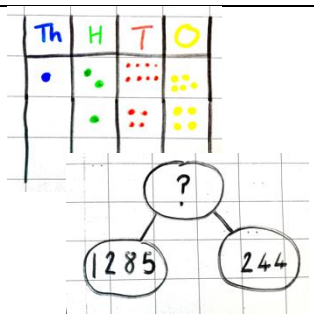
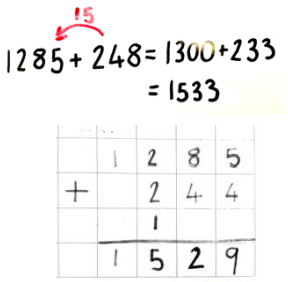
At Aycliffe Drive we all follow Essential Maths Planning (which is in line with 2014 National Curriculum). Long term planning is reviewed on a termly basis when all teachers spend two days designing the curriculum together for the following term. Decisions are made within each Key Stage as to whether to follow straight or split planning. This is necessary as our school is one and half form entry meaning that within Key Stage 1, Lower Key Stage 2 and Upper Key Stage 2 there are mixed year groups. Small changes may be made on a class by class, year by year to the ordering of the curriculum units but generally the order is followed to provide equable teaching and learning for the pupils in straight and mixed classes.

When supplying practice questions for pupils it is our policy to allow individual teachers the autonomy to draw them from which ever sources they judge to be most appropriate.

Some of the sources, but not all, are shown below:

Aycliffe Drive Mathematics Pedagogy

Maths teaching at Aycliffe Drive is centred around the learning theory of a Concrete – Pictoral – Abstract progression. To help with the fundamentally abstract nature of maths, all new learning and when building further on learnt concepts, learning will be scaffolded with the effective use of concrete manipulatives. This allows the children to form the language needed to communicate concepts and ideas, allows teachers to gain a greater understanding of where misconceptions lie and the depth of understanding a child exhibits and allows pupils to develop their ability to communicate mathematically and to reason. A second pictorial stage then bridges between the concrete and the abstract and helps to value a child's own recordings and help make cognitive links. Finally the maths learning is represented symbolically with abstract words and icons, which is only viable when building on the understanding developed in the previous two stages. This method should be employed all the way through the school when introducing a new concept.

	Concrete	Pictoral	Abstract
1:1 correspondence			
Non 1:1 correspondence			

At Aycliffe Drive School when teaching mathematics we focus on modelling, constructing practice and building pupil independence. We use the following model:

- Model
- Guide/support
- Question/prompt but avoid telling
- Observe and only intervene if needed
- Step away and return after a few minutes

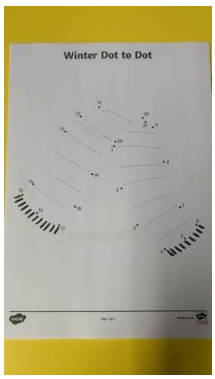
Pupils are more likely to remember when they have reached independence. When providing practice material our aim is to only complete enough examples to provide the evidence that the child understands the concept and is ready for the next step.

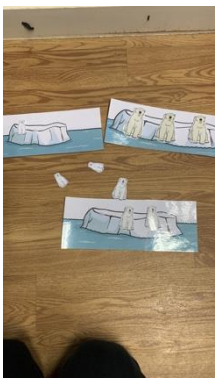
Early Years mathematical teaching and learning

Pupils follow Essential maths curriculum, and the subject is taught every day.
The environment in the classrooms is carefully constructed to provide rich opportunities for mathematical learning. Activities in the maths area generally focus on whatever has been taught the week before providing children with the opportunities to practice independently and to develop their skills.



In addition opportunities to practice maths appear in all of the six areas of learning. For example, the role play area may contain measuring activities, dot to dot, number sorting and matching, a number line with subitising and ordering activities. Snowflakes can be counted in the Forest School area and maths vocabulary and resources investigated in the Curiosity Box.




Assessment and Analysis

Each term the maths leaders collect important data. Class teachers are asked to indicate the areas that:

- They have covered but not sufficiently or that the class demonstrate significant gaps in understanding. (Rag rate red)
- There have covered but the class or several individuals still demonstrate gaps and some misconceptions (Rag rate amber)
- Covered and most of then class are secure in their understanding (Rag rate green)

The rag rated information is then used for next steps. If red, booster will be added for all appropriate children. If amber, this will be added to fluency and small group intervention outside of the lesson, noting when this area of learning is next covered. If green the teacher judges whether this still needs

to move into fluency later. Class teachers and the maths leaders then look at the outcomes of termly diagnostic tasks that pupils complete to see if the rag rating matches, if there are any gaps to do with presentation or using and applying skills over number skills. In addition, maths book monitoring should also confirm the above findings.

Data also indicates the children in lowest 20% in each class and how different groups are performing. This data can be appropriately used by the individual teachers. In addition, all children should know what they need to do to improve through feedback

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Children judged to work significantly below their key stage expectations will be provided with an individualised curriculum. Year 6 pupils have termly assessments using past SATs papers and the teachers use the outcomes to inform their teaching and to judge how close pupils are to greater depth or national expectations. Booster group adjustments are made through ongoing formative assessment.

Mathematics Fluency

Mathematics Fluency forms a very important part of the teaching of maths at Aycliffe Drive School. The purpose of maths fluency sessions are to allow for the rehearsal of core knowledge and skills, in short bursts, to improve pupils' fluency.
For maximum impact fluency is taught:

- As whole class
- Broadly pitched at age related expectations
- Daily or three to four times weekly
- 10-20 minutes
- In addition to the maths lesson
- Rehearsing the five key areas, based on skills and previously taught material.
- Five slides used to build up to seven at the point that the teacher is ready to swap one.

In the autumn term it is likely that fluency sessions will focus on:

- Rehearsing and securing learning from the previous year, then building up to the age-related expectations
- Number and place value, including magnitude and sense of the number system
- Core facts for fluency, e.g., number facts and number bonds, multiplication tables knowledge, as appropriate to the age group.