What does Maths look like at Bolshaw?

1.The Curriculum: What do we teach, when and how?

Mathematics is a key development priority at Bolshaw. There is a maths focus each day in all classes.

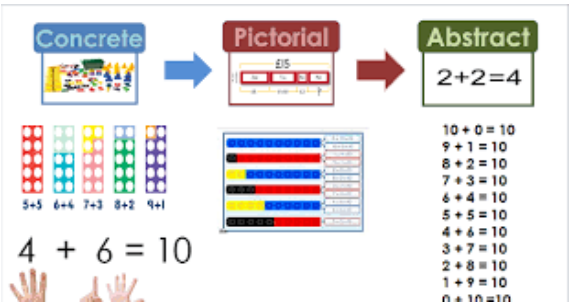
We have adopted the concrete, pictorial, abstract model throughout school, with manipulatives available for every class. The concrete stage enables children to gain a physical understanding of the concepts being taught.

They are then encouraged to draw their own pictorial representations of their calculations which allows them to be creative, supporting understanding and guides them to progressing to using the abstract.

All children have access to the manipulatives and a full range of resources. They are challenged to make their own decisions and choices on how to calculate the answers to the problems that they have to solve.

They are regularly provided with a range of open-ended problems that require the children to investigate and come up with a number of solutions to a problem. There is always a mathematics focus for the children in regards to homework.
In EYFS the children have focused lessons that provide them with the skills that they need to complete individual learning tasks and challenges in the provision areas.

Our planning utilises the White Rose Scheme for our framework; we also incorporate 'I See Maths', NCETM, nrich and Maths No Problem to provide



depth to our curriculum.

EYFS and Y1 may also use BBC Numberblocks as recommended by NCETM. In EYFS number challenges and activities are accessible in the provision areas. Y1 progress to the National Curriculum once they have met the Early Learning Goals.

The children in EYFS- Year 2, in 2022 - 2023 will begin to follow the 'Fluency to 20' initiative from Gareth Metcalfe.

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

Fluency in Additive Reasoning, 1-20

Skill	Ideas, Representations and I See Maths Resources
Subitize 1-3 objects in any arrangement	Fingers, dots, quantities 1-3 in children's real-world **ISM Resources:** *Dot Patterns Cards 1-3*
Count in the range 2-6, count to compare quantities	Count objects in different arrangements; count objects that can't be moved; count in non-physical contexts e.g. claps. Include perceptually misleading counting contexts.
Relate count sequences to one more/less	Order Numicon; identify one more/less with number cards.
Recognise quantities 4-9 in regular arrangements	10-frames, Numicon, base-5 abacus. **ISM Resources:** *5-frame and 10-frame cards*
Count on to add two sets	Combine two sets where one set is hidden. **ISM Resources:** *Count On Races*
Recognise sub-groups within a quantity	Subitize quantities 4 and 5 in irregular arrangements; 2-colour counters; pictures with two groups e.g. boys and girls, different types of flowers **ISM Resources:** *Dot pattern cards 4-6, 2-colour cards*
Recall addition number bond facts for 3→10	Use 2-colour visuals and resources to build recall of bond facts up to 10. **ISM Resources:** *2-colour cards, Sum Connect 4, Make 6 → Make10, Bonds to 6 → Bonds to 9*
Reason with addition facts within 10, relate to subtraction	'How many hiding' game, compare Numicon to show the difference, know that adding and subtracting the same amount doesn't change the quantity. Derive facts, use 10-frames to model: 4+4=8 so 4+5=9 5+3 = 4+4 **ISM Resources:** *Sum/Difference Connect 4*
Know that one 10 = ten 1s, use to recognise >10	Recognise quantities beyond 10 by counting 10s and 1s. Use 10-frames, Numicon, base-5 abacus.
Use number bonds facts within 10 to know related facts up to 20 *Examples: 13+5 13+___ = 20*	Represent calculation facts within 10 (10-frames and base-5 abacus), show related calculations. Example: 7+___ = 10 linked to 7+___ = 20
Numbers can be changed to make calculation easier	Three numbers can be added in any order, e.g. 7+6+3, or number can be changed e.g. 9+5 is the same as 10+4
Use non-counting strategies for addition calculations that border 10	10-frames and base-5 abacus used to represent doubles facts and near doubles facts, e.g. 7+6. 10-frame and number line used to represent 'make 10' calculations e.g. 7+4.
Use non-counting strategies for subtraction calculations that border 10	Children choose whether to count back, find the difference (count up) or use number bond facts, e.g. for 14-3, 13-8, 9-5. Calculations represented by 10-frames and 'tens and ones' cubes.

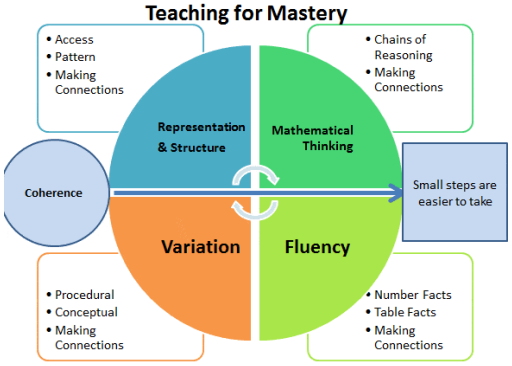
2. Creativity & Challenge in Maths

At Bolshaw we believe that maths should be fun and provide the children with problem solving opportunities. We believe that mathematics is essential to everyday life, critical to science and engineering, managing finances and most forms of employment.

We aim to provide a high quality mathematics education, teaching for mastery , so that all children:

- become fluent in their understanding of mathematics
- develop their skills as problem solvers through applying their mathematics
- reason mathematically

We endeavour to make our work engaging for all learners and use a 'small steps' approach.



3. SEND & Inclusion

At Bolshaw, we believe that children have the right to become confident learners in Mathematics. We recognise that in Mathematics everybody has to be allowed to learn at their own pace but have an understanding of the key concepts.

Teaching for mastery enables all learners to access the lessons using the strategies and equipment that they are confident using. The children learn all of the key concepts with adaptations being made to the numbers which progress as their confidence grows. Manipulatives are available in all lessons and children are encouraged or directed to use them.

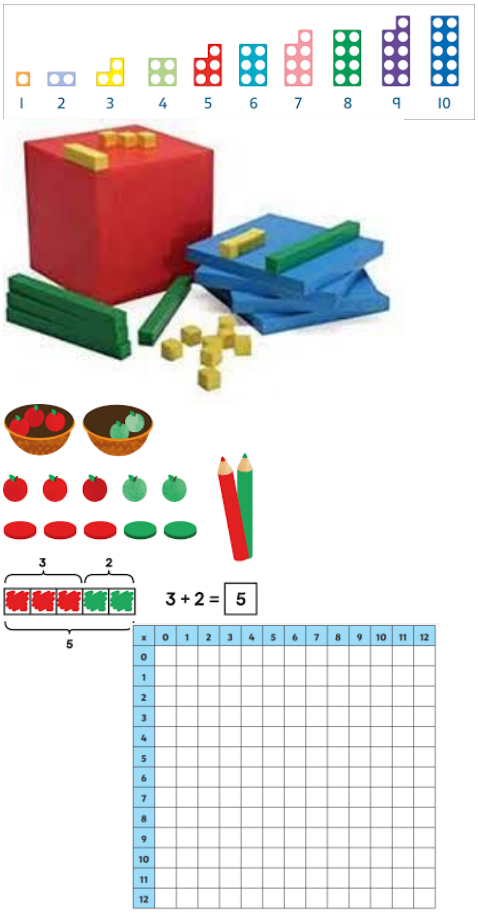
4. What would you see in the classroom?

There is a mathematics working wall/display in all classrooms that supports the learning focus. The display often demonstrates how to use the manipulatives or an example of a pictorial representation that could be used. Manipulatives are easily accessible for children.

The children complete basic skills or flashback activities each week which revisit prior learning The children in Key stage 2 also complete Times Tables Rockstars activities each week. They also complete the times tables grid every six weeks to assess their learning.

In lessons you will see individual work and paired work. You will see children taking part in directed teaching. Mostly teachers will model to the children, then support, working towards independent activity.

Children can be seen working collaboratively with manipulatives and then progressing to using pictures. When they are secure using these strategies the children can then be seen completing calculations in abstract form.



5. How much, how often?

At Bolshaw, the children have a daily maths focus which may be counting or similar, in addition there will be regular lessons through the week, normally between 45 - 60 minutes by Key Stage 2.

In EYFS you would expect to see shorter group lessons but lots of individual learning within continuous provision There are also booster sessions for some of the older children in school.

6. How do we know how children are doing? How do they know themselves?

At the beginning of each unit of work, children (from Y2 upwards) undertake the White Rose Assessment from the previous year. Alternatively, Learning By Questions may be utilised to provide the teacher with a clear starting point in KS2.

We do not group children according to ability, nor do we provide completely different tasks. Our groups are mixed ability and we adapt our activity to suit the needs of all learners within the lesson.

At the end of a unit there is a summative assessment from White Rose, in addition to formative assessment throughout.

In KS2 teachers will regularly mark with the children, after the first few calculations have been completed, to enable them to focus their attention on those children who may require more support. This instant feedback allows children to see how well they are progressing and misconceptions can be addressed at this point.

Teachers will use this information to adapt the next lesson where appropriate and/or to build an activity into Basic Skills Sessions.

In KS2, termly summative assessments are undertaken and results shared with parents and carers at Parents and Carers' Evenings or via annual reports (Summer Term).

7. Cross-curricular Links and Enrichment

The enjoyment of mathematics can be seen throughout school. The children at Bolshaw have a feeling of success with mathematics and their confidence is constantly growing. The skills learnt in mathematics can be used in science, design and technology, and art .

We have regular 'Battle of the Bands' competitions between classes on Times Tables Rockstars.

We have appointed Maths Ambassadors from Y2 - Y6. These children are involved in helping to look after maths equipment, working towards producing a maths newsletter and supporting other children with their maths.