

To start...

What does OFSTED stand for?

Only **F**antastic **S**pecimens **T**ranslate **E**ducational **D**ogma

Obviously **F**utile **S**chool **T**eachers **E**xpect **D**ismissal

Office **F**or **S**tandards in **E**ducation

The Power of Collaboration in Maths

Secondary Ofsted

Thursday 6th July 2023
2:30pm - 3:15pm

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NCETM

NATIONAL CENTRE FOR EXCELLENCE
IN THE TEACHING OF MATHEMATICS

A bit about me

- Head of Maths and Associate Assistant Headteacher at Merstham Park School.
- Assistant Maths Hub Lead - Secondary at NEHS Maths Hub.
- 26 years teaching experience
- Examiner for AQA

A bit about Merstham Park School

- Free School
- Opened in 2018
- 530 students on role
- 33% PP
- Most deprived ward of Surrey
- First year of GCSE
- OFSTED rated 'Good' October 2022



How OFSTED See Their New Curriculum 'DEEP-DIVES'



How TEACHERS See New Curriculum 'DEEP-DIVES'

What is the purpose of a Deep Dive in Maths:

1. To gather evidence on the intent, implementation and impact of the curriculum.
2. To explore whether pupils have been taught and have learned the curriculum content they need to achieve the goals that schools have for their education.

What does your website say about you?

Mathematics

Our Maths subject specific curriculum intent can be seen below:

Mathematics Curriculum Intent



At MPS, the Mathematics curriculum:

provides a coherent journey of mathematical learning, recognising the fact that every student can learn mathematics and setting high expectations for every child.

recognises and acknowledges prior attainment. Understands the importance of small steps in learning and appreciates the value of interleaving by revisiting topics within new contexts.

emphasises number, calculator skills and estimation throughout owing to the fact that students who are successful with number and arithmetic are more confident mathematicians

provides a foundation for understanding the world, and an appreciation of the beauty and power of mathematics and a sense of enjoyment and curiosity about the subject.

develops fluency, reasoning and problem solving through quality first teaching, encouraging students to think like mathematicians.

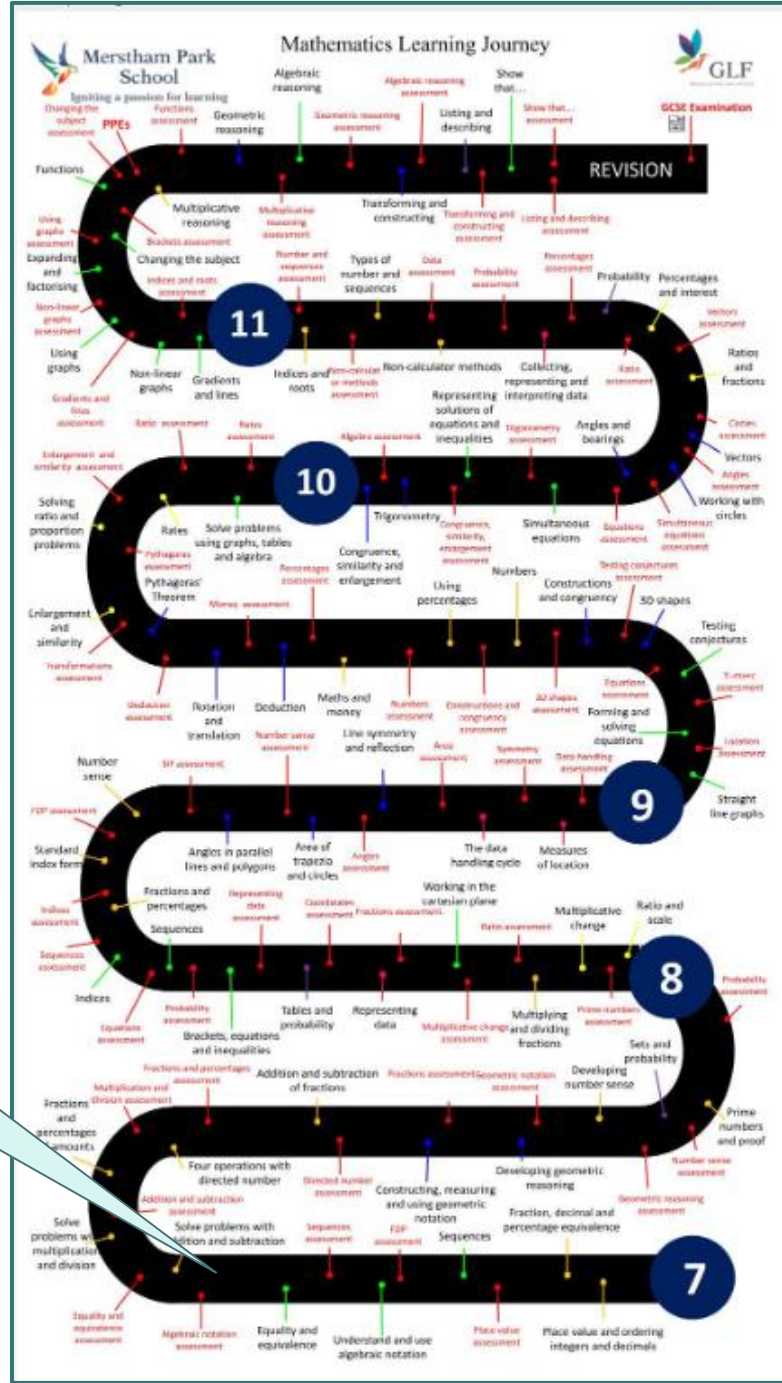
INCLUSION

COLLABORATION

RESILIENCE

RESPECT

SUCCESS



“Looking at your learning journey, I can see that Year 7 are currently here”.

“So am I going to see lessons on Equality and Equivalence being taught?”.

The inspector had all documentation related to our curriculum sequencing and curriculum intent that we had published on our website, printed out and made reference to them numerous times.

Be prepared to justify why you are not where you should be, if necessary.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
	7 lessons per fortnight across the year					
Year 7	Sequences. Understand and use algebraic notation. Equality and equivalence.	Place value and ordering integers and decimals. Fraction, decimal and percentage equivalence.	Solving problems with addition and subtraction. Solving problems with multiplication & division. Fractions & percentages of amounts.	Operations and equations with directed number. Addition and subtraction of fractions.	Constructing, measuring and using geometric notation. Developing geometric reasoning.	Developing number sense. Sets and probability. Prime numbers and proof.
Why we sequence the scheme of work this way	This content will be new for most learners. The objectives are crucial foundations to later algebra learning. Use of a calculator will be encouraged so that any lack of confidence with number is not a barrier to this new learning.	Place value will have been studied up to 10 million at Key Stage 2. This unit is an opportunity to revisit prior learning and strengthen understanding as well as extending existing skills and introducing new content.	Students will have studied formal and written methods for addition, subtraction, multiplication and division at KS2. The focus here is on consolidating those skills as well as knowing which is the most appropriate method to use and when. Attention will be paid to core skills and the use of a calculator.	While students will have been introduced to directed number at Key Stage 2, the four operations will not have been covered so this unit will have a lot of new learning. Fractions feature heavily at Key Stage 2 but this is often a sticking point for many students and as a crucial foundation for future learning it is important that time is attributed to this again at Key Stage 3.	This content will introduce new content for the majority of learners. Understanding and using angle notation and convention is a key skill and will be used consistently in all shape units after this block.	Opportunity to revisit topics covered earlier in the year. The focus here is on choosing the most efficient method to complete a calculation and provide students with mental strategies that can be used to 'sense check' answers in any context. The probability content is new learning for all students and will afford the opportunity to revisit fractions, decimals, percentages and statistical diagrams.
Assessment	End of Unit Assessments 2 x Exit Tickets per Unit. 1) Mid-unit 2) End of unit	End of Unit Assessments 2 x Exit Tickets per Unit. 1) Mid-unit 2) End of unit End of Term Assessment Autumn Term Curriculum Content	End of Unit Assessments 2 x Exit Tickets per Unit. 1) Mid-unit 2) End of unit	End of Unit Assessments 2 x Exit Tickets per Unit. 1) Mid-unit 2) End of unit End of Term Assessment Autumn & Spring Term Curriculum Content	End of Unit Assessments 2 x Exit Tickets per Unit. 1) Mid-unit 2) End of unit	End of Unit Assessments 2 x Exit Tickets per Unit. 1) Mid-unit 2) End of unit End of Term Assessment Yr 7 Curriculum Content

What will happen in a Deep Dive in Maths:

1. Meeting with the Head of Department
2. Learning walk of the department
3. Student voice - students taken from the lesson being observed
4. Meeting with the Maths Team without the Head of Department

Meeting with the Head of Department:

- What is the intent of your curriculum?
- Explain why you have sequenced the KS3 curriculum the way you have.
- How are lessons planned and implemented?
- How can you guarantee consistency?
- How do you know what is being taught in all lessons?
- How do you ensure that your team follow the scheme of work?
- How do you and your teachers know when to move on?
- How do you use spaced/retrieval practice?

Meeting with the Head of Department:

- How often do you QA your team?
- Which teachers, in your department, would you be worried about HMI observing? What have you done about it?
- Can you give a concrete example of how you use department time to impact teaching and learning in maths?
- How familiar are you with your students as an experienced teacher? How familiar will your less experienced teachers be and how do you know?

Meeting with the Head of Department:

- How do you ensure your students commit the learning to their long-term memory?
- Do your students enjoy maths?
- How do you support your SEND students to ensure they learn?

Meeting with the Head of Department:

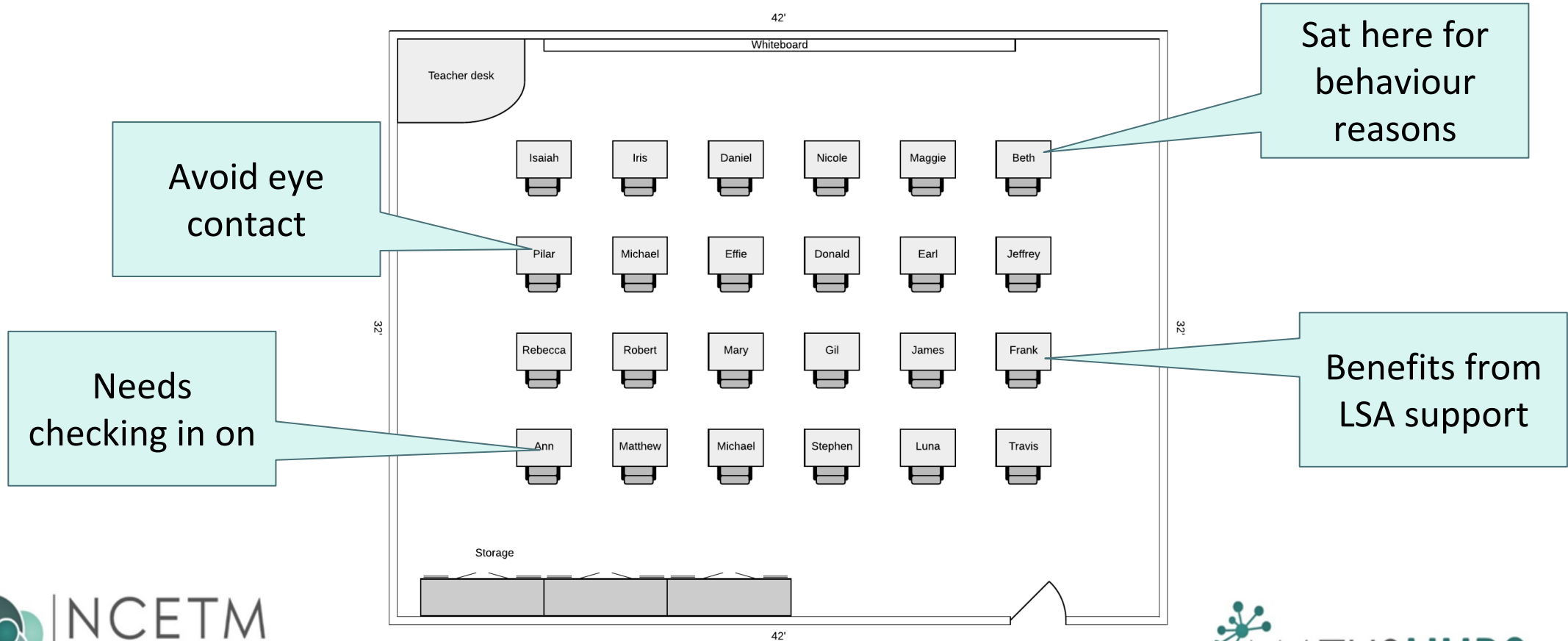
- What is your understanding of assessment and the purpose of it in maths?
- How do you use formative/summative assessment?
- How many Grade 9s will you get?
- How do you use assessment data?
- How do you plan intervention?

Meeting with the Head of Department:

- How much do you collaborate with other departments and do you actually do it?
- What cross-curricular opportunities are there in your curriculum?
- What safeguarding training have you received to date?
- How do you collaborate with your primary schools?

Learning Walk of the Department:

Seating Plans and Student Data



Learning Walk of the Department:

- With the Head of Department or a member of SLT.
- Will ask you what you are expecting to see in each classroom.
- Will speak directly to students.
- Will remove a group of students, at random for the student voice.
- Will notice everything.

Student Voice:

- What are you learning?
- Why are you learning this?
- What learning took place before this?
- What will this lead to?
- How do you know you are making progress?
- What do you need to work on?
- What is the difference between a linear and a non-linear sequence?

Meeting with the Maths Team:

- What is your curriculum intent?
- How do you know when to move on?
- Where does this topic fit into the bigger picture?
- What enrichment do you provide?
- What personal development opportunities do you get?
- How do you ensure students have resilience?
- How do you implement mathematical reasoning in lessons?

Meeting with the Maths Team:

- What does Mastery look like in lessons?
- What do you do beyond the classroom?
- How do you know that students are retrieving their knowledge?
- Books are very neat - is that detrimental to the lesson?

What you can do to prepare:

One page summary

MPS Mathematics 2022 - 23

MPS Mathematics 2022 - 23

Mathematics Curriculum Intent

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- INCLUSION
- COLLABORATION
- PERSISTENCE
- RESPECT
- SUCCESS

Curriculum Intent

- Mastery curriculum across KS3 & KS4 - White Rose
- Mixed ability setting at KS3 - Not capping learning for any student
- Set at KS4 - Higher/Foundation - AQA GCSE
- Department focus on communication - written & oral
- Vocabulary central to all lessons - keywords, glossary
- Quality first teaching - lessons centrally planned
- Exit Tickets & DIRT for timely Wave 1 intervention
- End of Term Assessments for Wave 2 & 3 intervention
- Misconceptions discussed & planned for in Dept. CPD
- COVID considerations
- Do Now, Get Ready Questions

Why White Rose?

- Used at KS1/2
- Acknowledges
- 5 Year SoL/Sp
- Scaffolded & c
- Interleaving top
- Contextual
- Assessments p
- Used across th
- CPA Approach

Curriculum Impact

Exit Tickets:

- Formative
- Mid unit - assess current understanding before moving on
- Informs Wave 1 intervention
- End of unit - Challenge
- DIRT - immediate

Students know what to expect and what is expected of them in every lesson. B4L is good.

Curriculum Implementation

COVID Considerations:

- Greatest impact on Y9 & Y10 - Sequencing adjusted
- Y7 & Y8 Adjusted as we go - Mastery!!!
- Google Classroom

Centrally planned lessons:

- Consistent, fair, good quality
- High expectations
- Agreed approaches - now a MAT discussion
- Planning time spent on questions & addressing misconceptions

KPIs in stu books allow to keep track learning and on missed l

End of Term Assessment:

- Summative
- Moderation & Standardisation
- QLAs completed
- Informs Wave 2/3 intervention

Homework

Hegarty Maths:

- Homework books
- High expectations
- 1 QLA informed, 1 current
- Independence/revision

Strengths:

- Curriculum planning
- B4L
- Consistency
- Team
- Literacy/Oracy

Strengths & Areas for Development

Areas for Development:

- Intervention
- Questioning
- Low prior attainers
- Team development

2. Questioning

- Inexperience
- Mastery
- Misconceptions
- Learning Questions
- Department CPD

SPARX:

- In line with MAT
- Personalised learning
- Maps with SoW

1. Intervention

- Using QLAs effectively to identify gaps
- Selecting the right students
- Measuring the impact

3. Low prior attainers

- Mixed ability setting
- Seating plans
- Setting at KS4
- Manipulatives

SEND

- LSAs
- CPD for LSAs
- Seating plans
- Setting
- Modelling
- Cognitive load
- Learning Plans

4. Team Development

- MAT CPD
- White Rose CPD
- Maths Hub CPD

Cross-Curricular Links

- MAT Focus - Meridian
- Science - Solving equations
- English - academic literacy
- Numeracy

Knowledge organisers, independent study slide with video & worksheet for live lessons, cover, catch up or R2L

Spring 22 L&T Survey

What activities do you enjoy in your confident computing in class?	No.	%
Group work	27	100%
Practical activities	27	100%
Hands-on	14	45%
Interactive activities	14	45%
Discussions	10	35%
Role-play	10	35%
Presentations	8	25%
Self-reflection	7	23%
Peer-review	5	15%
Self-reflection	5	15%
Interactive activities	5	15%
Independent work	5	15%
Reading	5	15%
Peer activities	4	12%
Research	4	12%

SMSC & CIAG

- Contextual questions
- Collaboration
- Oracy
- Positive environment
- UKMT
- NSPCC Number Day
- Pi Day
- MPS Learner lessons

What you can do to prepare:

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
F			3F-1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.			6F-1 Recognise when fractions can be simplified, and use common factors to simplify fractions.
			3F-2 Find unit fractions of quantities using known division facts (multiplication tables fluency). →		5F-1 Find non-unit fractions of quantities.	6F-2 Express fractions in a common denominator and use this to compare fractions that are similar in value.
			3F-3 Reason about the location of any fraction within 1 in the linear number system. →	4F-1 Reason about the location of mixed numbers in the linear number system.		6F-3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denominator as a comparison strategy.
				4F-2 Convert mixed numbers to improper fractions and vice versa.	5F-2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	
			3F-4 Add and subtract fractions with the same denominator, within 1. →	4F-3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.	5F-3 Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.	

In a department meeting, ask the following questions:

- When did students first get introduced to this skill?
- What prerequisite knowledge do you expect them to have?
- How does what you are teaching prepare them for the next Key Stage?

What you can do to prepare:

Spring	Plotting coordinates	4.2.1^s	Connect coordinates, equations and graphs (p7)
	Perimeter and area	6.2.1^s	Understand the concept of perimeter and use it in a range of problem-solving situations (p9)
		6.2.2^s	Understand the concept of area and use it in a range of problem-solving situations (p11)
	Arithmetic procedures including fractions	1.3.1	Work interchangeably with terminating decimals and their corresponding fractions (p6)
		1.3.2	Compare and order positive and negative integers, decimals and fractions (p7)
2.1.3		Know, understand and use fluently a range of calculation strategies for addition and subtraction of fractions (p11)	
2.1.4		Know, understand and use fluently a range of calculation strategies for multiplication and division of fractions (p11)	
Summer	Understanding multiplicative relationships: fractions and ratio	3.1.1	Understand the concept of multiplicative relationships (p5)
		3.1.2^s	Understand that multiplicative relationships can be represented in a number of ways and connect and move between those different representations (p5)
		3.1.3	Understand that fractions are an example of a multiplicative relationship and apply this understanding to a range of contexts (p5)
		3.1.4	Understand that ratios are an example of a multiplicative relationship and apply this understanding to a range of contexts (p6)

N1

Basic foundation content	Additional foundation content	Higher content only
order positive and negative integers, decimals and fractions		
use the symbols =, ≠, <, >, ≤, ≥		

Higher content only

calculate with fractional indices

Notes: including use of a number line. See also A22

N2

Basic foundation content	Additional foundation content	Higher content only
apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative		
understand and use place value (eg when working with very large or very small numbers, and when calculating with decimals)		

Higher content only

change recurring decimals into their corresponding fractions and vice versa

Map a key skill

Top Tips:

1. Make sure the information on your website is accurate
2. Have a vision, share it with your team
3. Map what you are currently teaching on its journey from KS1/2 into KS3/4 and beyond
4. Create a one-page document to take into the meeting with you
5. Print and annotate your seating plans
6. Give examples for everything. Examples, examples, examples!
7. Prep your students.
8. Don't be put off if they cut you off.

Ofsted: "We want to help reduce
teacher workload."

Ofsted introduce "deep dives"

Teachers everywhere:



Thank You.

Enjoy the rest of the afternoon

[Evaluation Link](#)

