

PRIMARY SUBJECT LEADERS

# Mathematics

Name: \_\_\_\_\_

School: \_\_\_\_\_

LA/Trust: \_\_\_\_\_

Date: \_\_\_\_\_



Hounslow  
Education  
Partnership

# Mathematics:

## Mathematics Subject Leaders (Sept 2021)

This workbook has been designed specifically to support the work of subject leaders in primary schools as they keep a record of both their actions and the outcomes of these actions.

This Maths Subject Leaders Workbook is the companion document to the Maths Subject Leaders Resource File.

There are subject leaders resource files & workbooks for the following subjects:

- Art & Design
- Computing
- English
- Design & Technology
- Geography
- History
- Maths
- MfL
- Music
- PE
- PSHE
- Science

The structure of each workbook follows the same format:

Part A: Subject leader audit questions	<b>Page 3</b>
Part B: Snapshot <i>www/ebi*</i> for Maths	<b>Page 6</b>
Part C: Statement of curriculum intent	<b>Page 7</b>
Part D: Maths & cultural capital	<b>Page 8</b>
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Part I: Subject leaders development plan	<b>Page 32</b>

(\***www** – what went well; **ebi** – even better if)

## Part A: Subject leader audit questions

TASK	NOTES	COMPLETED	DATE
Am I clear about the NC Aims for Mathematics?			
Have I checked out the subject association website to identify resources for: * Me, as the subject leader * Teachers/assistants			
Have I completed an audit of my own knowledge, skills & understanding against these aims?			
Have I identified sources to support me in my own subject knowledge?			
Have I written a Statement of Intent for Mathematics?			
In writing the Statement of Intent, did I refer to paragraph 179 of Deep Dive Resource 1?			
Re: Para: 179, do I have a written response for each of the five bullet points?			
Has this statement been approved by HT/SLT/all staff?			
Have I developed a monitoring calendar so that I am able to build up an accurate and up-to-date overview of the www/ebi in Teaching, Learning & Assessment (TLA) for Mathematics?			

# Mathematics:

Have I clarified with my line manager what good or better TLA in Mathematics 'looks' like? (and hence what is not yet 'good' enough)			
<b>Supplementary questions:</b>			
How long have I been the subject leader for Mathematics, and what support (CPD) have I received either internally or externally?			
What resources do I use to support me as a subject leader?			
<b>How have I designed the Mathematics curriculum?</b>			
What am I trying to achieve through the Mathematics curriculum?			
What scheme of learning does the school follow (published or your own)?			
How is this subject taught, and why?			
How do children progress in this subject from one year to the next? (Remember that progress is knowing more, remembering more and being able to do more.)			
How do I ensure that pupils retain their subject knowledge?			
How do I ensure that pupils with SEND (as well as those entitled to Pupil Premium) benefit from the curriculum in this subject?			

## Mathematics:

What would I expect an inspector to see when they visit Mathematics lessons and speak to the pupils?			
<b>How do teachers clarify any misconceptions by pupils?</b>			
What links are made between Mathematics and other subjects – can I give an example of where this works particularly well?			
Can I tell of any examples where I have supported other teachers/assistants in Mathematics and the impact that this has had on their teaching/pupils' learning?			

## Part B: Snapshot [www/ebi](http://www/ebi) for Mathematics

### THE KEY STRENGTHS IN:

Teaching, learning & assessment in Mathematics are:

The Mathematics curriculum are:

### THE MAIN AREAS WE NEED TO DEVELOP IN:

Teaching, learning & assessment in Mathematics are:

The Mathematics curriculum are:

# Mathematics:

## Part C: Statement of curriculum intent

### From the Ofsted Education Inspection Framework (EIF)

#### *Intent*

#### **Para: 196.**

In evaluating the school's educational intent, inspectors will primarily consider the curriculum leadership provided by school, subject and curriculum leaders.

#### **Para: 197.**

The judgement focuses on factors that both research and inspection evidence indicate contribute most strongly to an effective education and pupils achieve highly. These factors are listed below.

- The school's curriculum is rooted in the solid consensus of the school's leaders about the knowledge and skills that pupils need in order to take advantage of opportunities, responsibilities and experiences of later life. In this way, it can powerfully address social disadvantage.
- It is clear what end points the curriculum is building towards and what pupils need to know and be able to do to reach those end points.
- The school's curriculum is planned and sequenced so that new knowledge and skills build on what has been taught before and towards its clearly defined end points.
- The curriculum reflects the school's local context by addressing typical gaps in pupils' knowledge and skills.

### Mathematics: Statement of Intent (School name):

Write your Statement of Intent here:

# Mathematics:

## Part D: Mathematics & cultural capital

### From the Ofsted Education Inspection Framework (EIF)

#### *Cultural capital*

#### **Para: 203.**

As part of making the judgement about the quality of education, inspectors will consider the extent to which schools are equipping pupils with the knowledge and cultural capital they need to succeed in life. Our understanding of 'knowledge and cultural capital' is derived from the following wording in the national curriculum:

'It (cultural capital) is the essential knowledge that pupils need to be educated citizens, introducing them to the best that has been thought and said and helping to engender an appreciation of human creativity and achievement.'

How Mathematics at (School x) contributes to the development of pupils' cultural capital:



## Mathematics:

### Part E: Subject leaders response to the Ofsted June 2021, research report into Mathematics

<https://www.gov.uk/government/publications/research-review-series-mathematics/research-review-series-mathematics>

High-quality Mathematics education may have the following features:

#### Curriculum progression: the planned and purposeful journey to expertise

Main findings	My commentary
Successful curriculum progression is planned from the beginning of a pupil's education through focusing on core content, to develop pupils' motivation and to allow more breadth and depth later.	
The planned curriculum details the core facts, concepts, methods and strategies that give pupils the best chance of developing proficiency in the subject.	
The teaching of linked facts and methods is sequenced to take advantage of the way that knowing facts helps pupils to learn methods and vice versa.	
Sequences of learning allow pupils to access their familiarity with the facts and methods they need in order to learn strategies for solving problem types.	
<b>What do I need to do next</b>	

#### Curriculum sequencing: declarative knowledge

Main findings	My commentary

## Mathematics:

Teachers engineer the best possible start for pupils by closing the school-entry gap in knowledge of the early mathematical code: facts, concepts, vocabulary and symbols.	
Pupils are taught core facts, formulae and concepts that are useful now and in the next stage of education.	
Teachers help pupils develop their automatic recall of core declarative knowledge, rather than rely on derivation, guesswork or casting around for clues.	
<b>What do I need to do next</b>	

### Curriculum sequencing: procedural knowledge

Main findings	My commentary
Teachers teach younger pupils non-distracting and accurate mathematical methods that encourage them to use recall over derivation.	
Teachers plan to teach older pupils efficient, systematic and accurate mathematical methods that they can use for more complex calculations and in their next stage of learning.	
Teachers help pupils to use these methods to see new connections of number, geometry and time.	
Teachers encourage pupils to use core mathematical methods rather than resort to guesswork, cast around for clues or use unstructured trial and error.	
<b>What do I need to do next</b>	

## Curriculum sequencing: procedural knowledge

Main findings	My commentary
Teachers teach useful, topic-specific strategies to pupils, as well as how to match them to types of problems.	
Pupils are confident using linked facts and methods that are the building blocks of strategies, before strategies are taught.	
Teachers encourage pupils to use core, systematic strategies rather than resorting to guesswork or unstructured trial and error.	
<b>What do I need to do next</b>	

## Curriculum sequencing: meeting pupils needs

Main findings	My commentary
New content draws on and makes links with the content that pupils have previously acquired.	
Curriculum progression is by intelligent design rather than by choice or chance.	
Rehearsal sequences align with curriculum sequences.	
Pupils who are more likely to struggle or who are at risk of falling behind are given more time to complete tasks, rather than different tasks or curriculums, so that they can commit core facts and methods to long-term memory.	
<b>What do I need to do next</b>	

## Pedagogy: new learning

Main findings	My commentary
Teachers remember that it is not possible for pupils to develop proficiency by emulating expertise, but by emulating the journey to expertise.	
Systematic instructional approaches to engineer success in learning are incorporated into all stages and phases.	
Teachers aim to impart core content in alignment with the detail and sequence of the planned curriculum.	
Teachers help pupils to avoid relying on guesswork or unstructured trial and error.	
<b>What do I need to do next</b>	

## Pedagogy: consolidating learning

Main findings	My commentary
Educators plan to give pupils opportunities to consolidate learning that: <ul style="list-style-type: none"> <li>● go beyond immediately answering questions correctly</li> </ul>	
<ul style="list-style-type: none"> <li>● involve overlearning</li> </ul>	
<ul style="list-style-type: none"> <li>● align with the detail and sequence of the curriculum</li> </ul>	
<ul style="list-style-type: none"> <li>● are free of distraction and disruption</li> </ul>	
<ul style="list-style-type: none"> <li>● strike a balance between type 1 and type 2 practices</li> </ul>	
<ul style="list-style-type: none"> <li>● avoid creating a reliance on outsourced memory aids or physical resources</li> </ul>	

- help pupils to avoid relying on guesswork, casting around for clues or the use of unstructured trial and error

**What do I need to do next**

## Assessment

Main findings	My commentary
Pupils are well prepared for assessments through having learned all the facts, methods and strategies that are likely to be tested.	
Teachers plan frequent, low-stakes testing to help pupils to remember content.	
Lessons incorporate timed testing to help pupils learn maths facts to automaticity.	
<b>What do I need to do next</b>	

## Systems at the school level

Main findings	My commentary
School-wide approaches to calculation and presentation in pupils' books.	
School-wide approaches to providing time and resources for teachers to develop subject knowledge and to learn valuable ways of teaching from each other.	
<b>What do I need to do next</b>	

## Part F: Annual monitoring calendar

- 1) Exemplar calendar
- 2) Your version
- 3) Checklist: groups
- 4) Annual overview
- 5) Evidence collected against NC Aims

## Exemplar calendar

Month	Learning Observation	Pupil Voice * suggest doing this at the same time as 'pupil work'	Pupil Work	Any Other Activity
September	xxx	week 3/4: talk to pupils about experiences in subject last year	if new to post, search out pupils' work from previous year to get an overview of learning against the subject's NC Aims	meet with teachers to clarify 'understanding' of NC Aim/expectations for end of topic 'goals'
October	learning walk in EY/KS1/L & U KS2 (eg – visits to YN, Y2, 4 & 6)	talk to pupils* in those classes you've visited	* always try to talk to pupils with 'samples' of their learning with them	always feedback the www/ebi from any monitoring/review activities
November	learning observations in EY/KS1/L & U KS2 (eg – a selection of YR, 1, 3 & 5)	talk to pupils* in those classes you've visited	* always try to talk to pupils with 'samples' of their learning with them	always feedback the www/ebi from any monitoring/review activities
December	xxx			Gather feedback from teachers from term 1 (re: www/ebi) Prepare termly update of www/ebis (for feeding back to HT/SLT – and possibly linked Governing Body (GB) representative)
January	xxx	talk to pupils about experiences in subject last term		meet with teachers to clarify 'understanding' of NC Aims/expectations for end of topic 'goals'

February	learning walk in EY/KS1/L & U KS2 (eg – visits to YR, Y1, 3 & 5) ( <i>check whether the www/ebis from term 1 are the same/improving ...</i> )	talk to pupils* in those classes you've visited	* always try to talk to pupils with 'samples' of their learning with them	
March	learning observations in EY/KS1/L & U KS2 (eg – a selection of YN, 2, 4 & 6) ( <i>check whether the www/ebis from term 1 are the same/improving ...</i> )	talk to pupils* in those classes you've visited	* always try to talk to pupils with 'samples' of their learning with them	
April				Gather feedback from teachers from term 2 (re: www/ebi) Prepare termly update of www/ebis
May	follow-up learning observations/walks to assess whether the wwws are still wwws and whether any ebis have moved in the direction of a www	talk to pupils* in those classes you've visited	* always try to talk to pupils with 'samples' of their learning with them	
June	follow-up learning observations/walks to assess whether the wwws are still wwws and whether any ebis have moved in the direction of a www	talk to pupils* in those classes you've visited	* always try to talk to pupils with 'samples' of their learning with them	Gather feedback from teachers from terms 1-3 (re: www/ebi)
July				Gather feedback from teachers from terms 1-3 (re: www/ebi) Complete subject self-evaluation report/action plan for the next academic year ( <i>share with HT/SLT – and possibly also linked GB representative</i> )

# Mathematics:

## Your version

Month	Learning Observation	Pupil Voice * suggest doing this at the same time as 'pupil work'	Pupil Work	Any Other Activity
September				
October				
November				
December				



# Mathematics:

January				
February				
March				

# Mathematics:

April				
May				
June				
July				

# Mathematics:

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## Mathematics:

Checklist: Have I included as many as possible of the following 'groups' of pupils?

Group	When	Who
EYFS		
KS1		
KS2 (Lower)		
KS2 (Upper)		
Lower/Middle/Upper Ability pupils		
Disadvantaged/Non-disadvantaged pupils		
Pupils with SEND		
EAL pupils		
(What other 'groups' do you need to focus on?)		

## Annual overview

Month	Learning Observation	Pupil Voice	Pupil Work	Any Other Activity
September				
October				
November				
December				
January				
February				
March				
April				
May				
June				
July				

## Evidence collected against NC Aims

NC Aims	Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time ...	Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language	Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions
Yr N www			
Yr N ebi			
Yr R www			
Yr R ebi			
Yr 1 www			
Yr 1 ebi			
Yr 2 www			
Yr 2 ebi			
Yr 3 www			
Yr 3 ebi			
Yr 4 www			
Yr 4 ebi			
Yr 5 www			

## Mathematics:

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Yr 5 ebi			
Yr 6 www			
Yr 6 ebi			

## Monitoring Calendar B (Summary)

Yr N			
Yr R			
Yr 1			
Yr 2			
Yr 3			
Yr 4			
Yr 5			
Yr 6			



## Overall Summary

<b>NC Aims</b>	Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time ...	Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language	Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions
www			
ebi			

## Part G: Mathematics self-evaluation report

This is the author's initial interpretation of a best-fit between the previous subject criteria and the current (2021) Quality of Education (QoE) criteria. (See Subject Leaders Resource File for this information).

INTENT		
NEW HANDBOOK	EVIDENCE	OLD SUBJECT CRITERIA
Leaders adopt or construct a curriculum that is ambitious and designed to give all pupils, particularly disadvantaged pupils and including pupils with SEND, the knowledge and cultural capital they need to succeed in life. This is either the national curriculum or a curriculum of comparable breadth and ambition. <i>[If this is not yet fully the case, it is clear from leaders' actions that they are in the process of bringing this about.]</i>		The curriculum is broad, balanced and well informed by current initiatives in the subject. It is designed to match a range of pupils' needs and interests, and ensure effective continuity and progression in their learning in the subject and in the qualification pathways they follow, including into further study. Leaders demonstrate good subject expertise and are well informed by current developments in mathematics education.
The school's curriculum is coherently planned and sequenced towards cumulatively sufficient knowledge and skills for future learning and employment. <i>[If this is not yet fully the case, it is clear from leaders' actions that they are in the process of bringing this about.]</i>		All pupils have opportunities to solve problems and investigate although the extent to which these are integral to their learning may vary. Links with other subjects in the school strengthen pupils' learning in mathematics.
The curriculum is successfully adapted, designed or developed to be ambitious and meet the needs of pupils with SEND, developing their knowledge, skills and abilities to apply what they know and can do with increasing fluency and independence. <i>[If this is not yet fully the case, it is clear from leaders' actions that they are in the process of bringing this about.]</i>		Intervention and support are focused on pupils' individual needs so that they make good progress.

IMPLEMENTATION		
NEW HANDBOOK	EVIDENCE	OLD SUBJECT CRITERIA
<p>Teachers have good knowledge of the subject(s) and courses they teach. Leaders provide effective support for those teaching outside their main areas of expertise.</p>		<p>Leaders demonstrate good subject expertise and are well informed by current developments in mathematics education.</p>
<p>Teachers present subject matter clearly, promoting appropriate discussion about the subject matter being taught. They check pupils' understanding systematically, identify misconceptions accurately and provide clear, direct feedback. In so doing, they respond and adapt their teaching as necessary without unnecessarily elaborate or individualised approaches.</p>		<p>Intervention and support are focused on pupils' individual needs so that they make good progress. A sense of common purpose is shared among those involved in teaching mathematics. Opportunities to share practice and access subject training are good. Appropriate support and guidance on teaching and the curriculum is provided for the teachers.</p>
<p>Over the course of study, teaching is designed to help pupils to remember long term the content they have been taught and to integrate new knowledge into larger ideas.</p>		<p>Teaching helps pupils to see that topics are connected and form a 'big picture'.</p>
<p>Teachers and leaders use assessment well, for example to help pupils embed and use knowledge fluently, or to check understanding and inform teaching. Leaders understand the limitations of assessment and do not use it in a way that creates unnecessary burdens on staff or pupils.</p>		<p>Barriers to learning and misconceptions are tackled well. Teachers have a good level of specialist expertise which they use well in planning and teaching mathematics. Marking identifies errors and misunderstanding and helps pupils to overcome difficulties</p>
<p>Teachers create an environment that focuses on pupils. The textbooks and other teaching materials that teachers select – in a way that does not create unnecessary workload for staff – reflect the school's</p>		<p>They use an appropriate range of resources and teaching strategies, including practical activities and, where appropriate, the outdoor environment.</p>

<p>ambitious intentions for the course of study. These materials clearly support the intent of a coherently planned curriculum, sequenced towards cumulatively sufficient knowledge and skills for future learning and employment.</p>		
<p>The work given to pupils is demanding and matches the aims of the curriculum in being coherently planned and sequenced towards cumulatively sufficient knowledge.</p>		<p>Teaching develops pupils' understanding of important concepts as well as their proficiency in techniques and recall of knowledge, equipping pupils to work independently.</p> <p>They use an appropriate range of resources and teaching strategies, including practical activities and, where appropriate, the outdoor environment.</p>
<p>Reading is prioritised to allow pupils to access the full curriculum offer.</p>		
<p>A rigorous and sequential approach to the reading curriculum develops pupils' fluency, confidence and enjoyment in reading. At all stages, reading attainment is assessed and gaps are addressed quickly and effectively for all pupils. Reading books connect closely to the phonics knowledge pupils are taught when they are learning to read.</p>		
<p>The sharp focus on ensuring that younger children gain phonics knowledge and language comprehension necessary to read, and the skills to communicate, gives them the foundations for future learning.</p>		
<p>Teachers ensure that their own speaking, listening, writing and reading of English support pupils in developing their language and vocabulary well.</p>		

IMPACT		
NEW HANDBOOK	EVIDENCE	OLD SUBJECT CRITERIA
<p>Pupils develop detailed knowledge and skills across the curriculum and, as a result, achieve well. This is reflected in results from national tests and examinations that meet government expectations, or in the qualifications obtained.</p>		<p>Pupils understand some important concepts and make some connections within mathematics. When investigating mathematically, most pupils are able to reason, generalise, and make sense of solutions.</p>
<p>Pupils are ready for the next stage of education, employment or training. They have the knowledge and skills they need and, where relevant, they gain qualifications that allow them to go on to destinations that meet their interests and aspirations and the intention of their course of study. Pupils with SEND achieve the best possible outcomes.</p>		<p>Pupils develop a range of skills in using and applying mathematics. They are able to work independently, and sometimes take the initiative in solving problems in various contexts.</p> <p>Pupils are generally fluent in performing written and mental calculations and mathematical techniques. The use of mathematical language and symbols is mostly accurate in the presentation of pupils' work and in discussions.</p>
<p>Pupils' work across the curriculum is of good quality.</p>		<p>Many pupils show a developing ability to think for themselves, and are willing to try when faced with challenges.</p> <p>Pupils are willing to learn from mistakes and false starts.</p>
<p>Pupils read widely and often, with fluency and comprehension appropriate to their age. They are able to apply mathematical knowledge, concepts and procedures appropriately for their age.</p>		<p>Pupils enjoy the subject and can explain its value.</p>

## Part H: CPD Log

- 1) CPD I have attended
- 2) CPD I have delivered

### CPD I have attended

Date	Title	Provider	Actions

# Mathematics:

CPD I have delivered

Date	Title	Who to	Impact/feedback

# Mathematics:

## Part I: Subject leader development plan

Subject: \_\_\_\_\_

Subject Leader: \_\_\_\_\_

Academic year: \_\_\_\_\_

Date	Target	Record of actions taken	Impact/evaluation	Target achieved (& date)
Autumn Term				
Spring Term				
Summer Term				
End of year summary				