



Holywell Church of England Primary School

Mathematics Policy

Updated: February 2021

Review Date:

1. Rationale

At Holywell C of E Primary School, high quality teaching and learning is at the very heart of our mission. This is because high quality teaching and learning transforms lives, opens doors and provides opportunities. The purpose of this policy is to promote the best possible teaching and learning strategies and outcomes in mathematics for our pupils. We recognise that mathematics increasingly underpins all aspects of modern life and technology, and that in order to succeed in the 21st century, children need to be confident and competent mathematicians.

2. Aims

Our aims for mathematics are based on those in The National Curriculum (2014), which sets out three key aims. At Holywell, we link this to our '*Flowing, Strengthening, Deepening*' vision by articulating these aims in the following way:

- **Flowing:** To become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **Strengthening:** To **reason** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- **Deepening:** To 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.

At Holywell, our mathematics policy, and the teaching and learning that stems from it, is designed to ensure the children confidently meet these aims. In addition, we expect all children to develop an appreciation for the increasing importance of mathematics in modern life by identifying real-world applications of taught mathematical principles.

The aim of our mathematics policy is to help shape our young people into confident and competent mathematicians by:

- Promoting the best possible teaching and learning strategies.
- Being grounded in evidence.
- Being a useful reference document for class teachers.
- Being helpful in explaining our approach to other stakeholders.
- Underpinning our monitoring and CPD activities.

3. Teaching

3.1 – What we teach

At Holywell, teachers are encouraged to follow the White Rose Maths (WRM) schemes of work to support their teaching. Following this scheme is designed to ensure that all maths teaching at Holywell is consistent and of a high-quality by providing a solid base of teaching resources and questions, linked to each year group’s curriculum expectations, for teachers to use and adapt as necessary. We supplement this scheme using other resources such as NRICH and the NCETM mastery resources.

3.2 – Who we teach

At Holywell, we believe that all children are entitled to the same high quality teaching and it is therefore our expectation that all children move through the schemes of work at the same pace. However, we recognise that some children need additional scaffolds and support to achieve the same objectives, and other children may need additional challenge to deepen their understanding further.

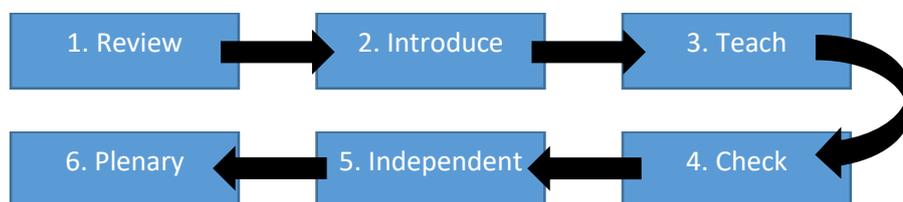
Additional support could come in the form of practical resources, visual frames, targeted group work within lessons and pre-teaching and targeted intervention outside of lessons for some children. This is not an exhaustive list, and the exact form that additional support might take is left to teachers’ professional judgement.

For some particularly more confident mathematicians, for whom the schemes of work do not provide sufficient stimulation, we provide additional challenge by exposing them to deeper reasoning and problem solving questions and targeted teaching within lessons.

3.3 – How we teach

At Holywell, we use the long and medium-term plans from WRM to structure our units (click [here](#)), which all teachers are expected to follow to ensure full coverage of the curriculum, adapting as necessary. See [Appendix A](#) for WRM yearly overviews.

At Holywell, our mathematics lessons follow the following structure which is consistent with the structure in our Teaching, Learning, Feedback and Marking Policy and the WRM scheme of work:



1. Review → Each lesson starts with review of previous learning. This might be an activity such as ‘*Last Lesson, Last Week, Last Term, Last Year*’, or the ‘*Get Ready*’ slides from the WRM scheme, or both. This is because constantly being required to recall prior learning means it is more likely to be transferred to our long term memory.

2. Introduce → After the review, the learning objective for the lesson is introduced, drawn from the WRM scheme of work, and teachers make explicit links to previous learning where they would have encountered similar concepts, for example in previous year groups.

3. Teach → During the 'teach' section of the lesson, teachers use the WRM slides to structure high quality inputs, supplementing the slides and videos with additional modelling and examples to ensure understanding.

4. Check → Following the initial input, children are provided with some initial questions based on the material just introduced to work through with a learning partner in their books. As a class, the teacher would then work through the answers to these initial questions, asking children to participate through high quality questioning and whiteboard work, to ensure understanding. Children who might need additional support during the lesson are identified at this point. At this point in the lesson, the more confident mathematicians may move away from the rest of the classes' learning and access work with a deeper level of challenge.

5. Independent Activity → Following the 'check' additional teaching is undertaken to introduce the children to their independent learning activities, with a particular focus on reasoning and problem solving questions. Children are then expected to complete these independently to ensure individual accountability and learning.

6. Plenary → Plenaries are used as an opportunity to reflect and summarise the key learning once more, as well as to self- and peer-assess the work. Teachers would be expected to go through the answers with the class, and children would correct their work if necessary using a purple pen, following explicit teacher modelling of the question.

3.4 – Arithmetic Sessions

In addition to mathematics lessons, Key Stage Two have discrete, daily 20-minute arithmetic sessions timetabled to ensure constant practice leads to fluency in key arithmetic methods. During these sessions, children completed arithmetic question independently, before they are marked as a whole class. The teacher will then model a selection of questions linked to how well the majority of the class answered them. The questions are linked to each year group's expectations, and the units that have been taught to date. The number of questions is left to the discretion of each teacher, with older children completing more than younger ones, but the expectation is that at least fifteen questions are completed in this session. See [Appendix B](#) for example arithmetic quiz.

In Key Stage One, daily 'fluent in five' practice is built into the timetable. This is an opportunity to practice key number facts that the children need to be able to recall fluently and quickly. See [Appendix C](#) for example Fluent in 5 slides.

3.5 – Times Table Rock Stars

In order to develop rapid recall of multiplication and division facts, each maths lesson in KS2 is preceded by a multiplication and division test which is marked as a whole class using Times Table Rock Stars. This is also used to track performance and average speed. The

children are encouraged to use the app for additional practice at home to increase their average time per question. See [Appendix D](#) for example TTRS quiz.

3.X – When we teach

As a core subject, maths is taught daily. Each key stage is expected to timetable the following:

Key Stage One

- Daily hour long maths lesson.
- Daily fluent in five.

Key Stage Two

- Daily hour long maths lesson.
- Daily 20-minute, discrete arithmetic session.
- Daily TTRS practice (5 minutes).

4. Feedback and Marking

4.1 General Principles

Our Teaching, Learning, Feedback and Marking Policy sets out our approach to feedback and marking as a school. The following sections of this policy detail how this policy applies to maths lesson in particular.

4.2 Live Marking

During the independent learning phase of a lesson, the teacher will circulate the class and provide high quality verbal feedback as the children are completing their work. Since teachers are speaking to pupils during the lesson, this enables feedback to be both clear and precise. Teachers would live mark and point out any mistakes and children would be expected to correct them with a purple pen following additional modelling.

4.3 Whole Class Feedback

As teachers are circulating, it might be the case that common misconceptions are identified, at which point these would be addressed whole class using mini-plenaries. Additionally, during a post-lesson review of books, the teacher will identify common misconceptions or general points for improvement relevant to groups of children or the whole class. They will then address these whole-class, before the start of the next lesson.

4.4 Self- and Peer- and Shared Marking

Self- and peer-marking take place during the 'check' part of the lesson for initial questions, and at the end of the lesson during the plenary. Teachers may provide the answers for students to check mark themselves using a purple pen. They may then be encouraged to

work with a partner to correct any mistakes, and additional teacher modelling used to support if necessary.

4.6 School Marking Code

During live marking, teachers would be expected to apply the school's marking code as follows:

*	Excellent feature
____t	Incorrect tense
____sp	Incorrect spelling
O	Change case of letter or punctuation mark
_	Punctuation mark missing
^	Missing word
()?	This doesn't make sense
/	New line needed
//	New paragraph needed
✓	Correct response (maths)
•	Incorrect response (maths)
• ✓	Corrected response (maths)

5. Assessment

5.1 General Principles

5.2 Formative Assessment

5.3 Summative Assessment

At the end of each unit, children sit the WRM end of unit assessments. Based on the results of these assessments, children are targeted for additional teaching if their score is not satisfactory. In addition these end of unit assessments are used to inform the 'review' section of the lesson, with concepts that are not as secure revisited more frequently. See [Appendix E](#) for example end of unit assessment.

On a termly basis the children sit NFER tests during an 'assessment week'. These tests inform our judgements of the children's level of attainment, and the results of Summer

Term assessments are reported to parents in the annual report, with the exception of Y6 and Y2 in Summer Term who use the SATs assessment and do not completed Summer Term NfER tests. Following each termly assessment week, the results of these tests are used to identify children who, based on their prior attainment, are not achieving in-line with our expectations. Follow on pupil progress meetings are held so that the children are identified and quickly and promptly targeted for additional support.

Appendix

[Appendix A:](#) **White Rose Maths Yearly Overviews**

[Appendix B:](#) **Example Arithmetic Quiz Template (KS2)**

[Appendix C:](#) **Example Fluent in 5 (KS1)**

[Appendix D:](#) **Example TTRS Quiz**

[Appendix E:](#) **Example End of Unit Assessment (WWRM)**

Appendix A: White Rose Maths Yearly Overviews

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6						
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value (within 10)			Number: Addition and Subtraction (within 10)						Geometry: Shape	Number: Place Value (within 20)	
Spring	Consolidation	Number: Addition and Subtraction (within 20)		Number: Place Value (within 50)			Measurement: Length and Height		Measurement: Weight and Volume		Consolidation	
Summer	Consolidation	Number: Multiplication and Division		Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time		

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6						
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition and Subtraction					Measurement: Money		Number: Multiplication and Division	Consolidation	
Spring	Number: Multiplication and Division			Statistics		Geometry: Properties of Shape			Number: Fractions			
Summer	Measurement: Length and Height	Geometry: Position and Direction		Consolidation and problem solving		Measurement: Time		Measurement: Mass, Capacity and Temperature		Consolidation		

Year 1 Year 2 **Year 3** Year 4 Year 5 Year 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition and Subtraction					Number: Multiplication and Division				
Spring	Number: Multiplication and Division		Measurement: Money	Statistics		Measurement: Length and Perimeter			Number: Fractions		Consolidation	
Summer	Number: Fractions		Measurement: Time			Geometry: Properties of Shape		Measurement: Mass and Capacity			Consolidation	

Year 1 Year 2 Year 3 **Year 4** Year 5 Year 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction			Measurement: Length and Perimeter		Number: Multiplication and Division			
Spring	Number: Multiplication and Division		Measurement: Area	Number: Fractions				Number: Decimals			Consolidation	
Summer	Number: Decimals	Measurement: Money		Measurement: Time		Statistics	Geometry: Properties of Shape		Geometry: Position and Direction		Consolidation	

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction		Statistics		Number: Multiplication and Division			Measurement: Perimeter and Area	
Spring	Number: Multiplication and Division			Number: Fractions						Number: Decimals and Percentages		Consolidation
Summer	Consolidation	Number: Decimals			Geometry: Properties of Shape			Geometry: Position and Direction		Measurement: Converting Units		Measurement: Volume

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value	Number: Addition, Subtraction, Multiplication and Division						Number: Fractions				Geometry: Position and Direction
Spring	Number: Decimals	Number: Percentages		Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio		Statistics	
Summer	Geometry: Properties of Shape		Consolidation or SATs preparation		Consolidation, investigations and preparations for KS3							

Appendix B: Example Arithmetic Quiz Template (KS2)

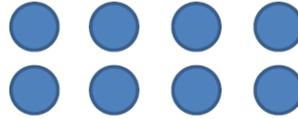
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Appendix C: Example Fluent in 5 (KS1)



Year 1
Week 2 – Day 3

1. Half of 8 = ?



2. $6 + 4 = ?$

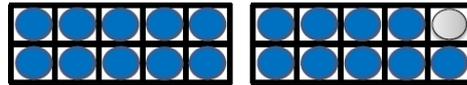
Use...



Number shapes

...to help you

3. $20 - 1 = ?$



Fluent in Five - Year 2
Week 5 - Day 1

Name.....
Date..... School.....
Class..... Score.....

Fluent in Five - Year 2
Week 5 - Day 1

1	$42 + 22 =$ <input type="text"/>	<input type="checkbox"/>
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3	$40 -$ <input type="text"/> $= 20$	<input type="checkbox"/>
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2	$3 + 7 =$ <input type="text"/>	<input type="checkbox"/>
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Appendix D: Example TTRS Quiz

Name: _____

Week 1 Session 1

2020-21

3s 4s and 8s

5 a week

Times Tables Rock Stars

3 Times Tables

Licensed to Holywell CofE Primary School, St Ives

1	$3 \times 12 =$ _____	21	$3 \times 10 =$ _____	41	$4 \times 3 =$ _____
2	$3 \times 1 =$ _____	22	$3 \times 12 =$ _____	42	$9 \times 3 =$ _____
3	$3 \times 12 =$ _____	23	$3 \times 2 =$ _____	43	$8 \times 3 =$ _____
4	$3 \times 4 =$ _____	24	$3 \times 6 =$ _____	44	$1 \times 3 =$ _____
5	$3 \times 2 =$ _____	25	$3 \times 3 =$ _____	45	$12 \times 3 =$ _____
6	$3 \times 10 =$ _____	26	$3 \times 8 =$ _____	46	$11 \times 3 =$ _____
7	$3 \times 10 =$ _____	27	$3 \times 7 =$ _____	47	$2 \times 3 =$ _____
8	$3 \times 5 =$ _____	28	$3 \times 3 =$ _____	48	$7 \times 3 =$ _____
9	$3 \times 12 =$ _____	29	$3 \times 5 =$ _____	49	$3 \times 3 =$ _____
10	$3 \times 5 =$ _____	30	$3 \times 2 =$ _____	50	$1 \times 3 =$ _____
11	$3 \times 4 =$ _____	31	$3 \times 3 =$ _____	51	$9 \times 3 =$ _____
12	$3 \times 5 =$ _____	32	$1 \times 3 =$ _____	52	$7 \times 3 =$ _____
13	$3 \times 9 =$ _____	33	$8 \times 3 =$ _____	53	$1 \times 3 =$ _____
14	$3 \times 6 =$ _____	34	$3 \times 3 =$ _____	54	$6 \times 3 =$ _____
15	$3 \times 6 =$ _____	35	$8 \times 3 =$ _____	55	$4 \times 3 =$ _____
16	$3 \times 5 =$ _____	36	$2 \times 3 =$ _____	56	$10 \times 3 =$ _____
17	$3 \times 7 =$ _____	37	$6 \times 3 =$ _____	57	$7 \times 3 =$ _____
18	$3 \times 10 =$ _____	38	$9 \times 3 =$ _____	58	$7 \times 3 =$ _____
19	$3 \times 9 =$ _____	39	$7 \times 3 =$ _____	59	$10 \times 3 =$ _____
20	$3 \times 12 =$ _____	40	$3 \times 3 =$ _____	60	$11 \times 3 =$ _____

Time taken

:

⌚ 3 minute time limit ⌚

Score

60

What's your rock status?

WANNABE

< 18 correct in 3 mins

GARAGE ROCKER

18-19 correct in 3 mins

BUSKER

20-21 correct in 3 mins

GIGGER

22-24 correct in 3 mins

UNSIGNED ACT

25-29 correct in 3 mins

BREAKTHROUGH ARTIST

30-35 correct in 3 mins

SUPPORT ACT

36-44 correct in 3 mins

HEADLINER

45-59 correct in 3 mins

ROCK STAR

All correct in ≤ 3mins

ROCK LEGEND

All correct in ≤ 2min

ROCK HERO

All correct in ≤ 1 min

**TIMES TABLES
ROCK STARS**

