

Maths at Bromley Heath Junior School



Implementation (how we do it!)

**One hour and 20 minutes of
maths daily**

**- 20 minute arithmetic
session**

- 1 hour maths lesson

Arithmetic

Arithmetic is a type of Maths which deals with the properties of numbers, and manipulates them using the four operations.

The four operations are addition, subtraction, multiplication and division.

It includes mental and formal written methods of calculation.

Numbers include positive and negative numbers; whole numbers and fractions, decimals and percentages

5 times a week

Same questions every day for week - different numbers and an extension for those that finish

Arithmetic - Monday 4th April

1.
$$\begin{array}{r} \square \\ 68 \overline{) 2516} \\ \square \\ \square \\ \square \\ \square \end{array}$$

2. $28\% \text{ of } 850 = \square$

3.
$$\begin{array}{r} 1592 \\ \times 96 \\ \hline \square \\ \square \\ \hline \square \end{array}$$

4. $35\% \text{ of } 560 = \square$

5. $\frac{1}{7} + \frac{3}{4} = \square$

6. $6 - 3.75 = \square$

7. $70\% \text{ of } 5,000 = \square$

8. $20 \times (40 - 32) = \square$

9. $903 - \square = 896$

10. $909 \times 0 = \square$

11. $3.19 + 2.267 = \square$

12. $592 = 500 + \square + 2$

Extension: Find 2 ways to solve numbers 2
Challenge

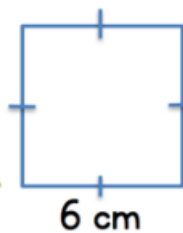
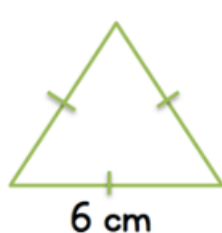
- 1 Henry buys 2.5 kg of potatoes.

He uses $\frac{4}{5}$ kg to make some mash.

What is the mass of potatoes he has left?



- 2 What is the mean perimeter of the shapes below?



- 3 A rectangle is cut into two pieces.



The area of A is $\frac{5}{8}$ of the area of the rectangle.

The area of A is 28 cm^2 greater than the area of B.

What is the area of the rectangle?



With guidance from a scheme, White Rose, the curriculum is taught in blocks across the year.

Year 3

All

FILTER

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 term	Number Place value VIEW			Number Addition & subtraction VIEW				Number Multiplication & division VIEW			
	Number Multiplication & division VIEW			Measurement Money VIEW	Statistics VIEW		Measurement Length & perimeter VIEW		Number Fractions VIEW		Consolidation
Spring term	Number Fractions VIEW			Measurement Time VIEW		Geometry Properties of shape VIEW		Measurement Mass & capacity VIEW		Consolidation	

Year 5

All

FILTER

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 term	Number Place value VIEW			Number Additiion & subtraction VIEW		Statistics VIEW		Number Multiplication & division VIEW		Measurement Perimeter & area VIEW	
	Spring term	Number Multiplication & division VIEW		Number Fractions VIEW					Number Decimals & percentages VIEW		Consolidation
Summer term		Consolidation	Number Decimals VIEW		Geometry Properties of shape VIEW		Geometry Position & direction VIEW		Measurement Converting units VIEW		

Each block is broken down into small steps. These may be taught as one per lesson but can take longer or shorter.

Details of upcoming blocks for your child's class are included on the parent information overview sent out via email termly which are also available on our website.



Telling the time to 5 minutes



Telling the time to the minute



Using a.m. and p.m.



24-hour clock



Hours, minutes and seconds



Years, months, weeks and days



Analogue to digital – 12 hour



Analogue to digital – 24 hour

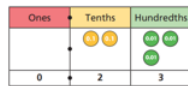
- Lessons typically include a starter as a refresher of prior learning; whole class teaching time, interspersed with children having a go on their whiteboards; finishing with an independent task – with different types of questions aimed at securing understanding of that objective in a way appropriate to each child.

11.0: To revise decimal place value to 2dp

Fluency with reasoning

Step 1

1. a) What number is represented on the place value chart?



Complete the sentences.

There are ones, tenths and hundredths.

The number is .

- b) Which number is represented on the place value chart?



There are ones, tenths and hundredths.

The number is .

2. Represent the numbers on a place value chart and complete the stem sentences.

0.28 0.65 0.07 1.26

Step 2

1. Complete the sentences.

a) 0.56
There are ones, tenths and hundredths.

b) 0.08
There are ones, tenths and hundredths.

c) 1.48
There is one, tenths and hundredths.

d) 2.67
There are ones, tenths and hundredths.

2. What is the value of the digit 4 in each of these numbers?

a) 14.8 d) 42.03

b) 13.74 e) 106.48

c) 8.04 f) 176.4

3. Complete the calculations.

a) $0.64 = 0.6 + \square$ d) $0.3 + 0.05 = \square$

b) $0.53 = 0.5 + \square$ e) $0.06 + 0.8 = \square$

Problem solving and reasoning

Step 3

1. a) Circle two numbers that add together to equal 0.25

0.05 0.23 0.2 0.5

- b) Circle two numbers which add to make 0.12

0.1 0.5 0.05 0.7 0.07 0.2

2. Write in the missing number.

$$8.5 + 14.7 = 10.2 + \square$$

3. Match each description to the correct number.

My number has the same amount of tens and tenths.
Teddy

My number has one decimal place.
Amir

My number has two hundredths.
Rosie

My number has six tenths.
Eva

46.2 2.64 46.02 40.46

4. Alex is thinking of a number.

My number has 3 digits, is greater than 1 but less than 2 and has 3 tenths.

- a) What number could Alex be thinking of?

Talk about it with a partner.

- b) Write all the possible numbers Alex could be thinking of.

- c) Write another clue that would mean Alex's number is 1.34

5. Circle two decimals that have a difference of 0.5

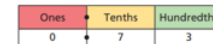
0.2 0.25 0.4 0.45 0.6 0.75

6. Rosie is finding different ways to partition 0.73

$$0.73 = 0.7 + 0.03$$

$$\text{or } 0.3 + 0.43$$

In what other ways can 0.73 be partitioned?
List as many ways as you can.



7. Annie has three digit cards.

0 2 5

Are the statements true or false? Explain your answers.

- a) The largest number Annie can make is 5.02
b) The smallest number Annie can make is 0.25
c) Annie can make six different numbers.

• Assessment in maths

- Formative assessment – on-going process of evaluating children's knowledge as they learn (through different means e.g. questioning, discussion and low stakes quizzing)
- Summative assessment – White Rose
- Arithmetic Paper & White Rose Reasoning
- Paper (Autumn, Spring and Summer for
- year 3 – 5). Year 6 complete previous SATS
- papers Arithmetic and 2 x Reasoning termly
- -End of Unit White Rose Tests

Spring Progress Check

Year 5

Mathematics

Paper 1: arithmetic

First name					
Middle name					
Last name					
Date of birth	Day		Month		Year
Teacher					

These assessments have been designed by White Rose Maths. For more information, please visit www.whiterosemaths.com

White Rose Maths

1 $807 - 100 =$

1 mark

2 $99 + 485 =$

1 mark

Year 5

Fractions

Name _____

1 Use the diagram to help you complete the equivalent fraction.

$\frac{1}{2} = \frac{\square}{6}$

2 Use the diagram to show that $\frac{3}{5}$ is equal to $\frac{6}{10}$

3 Complete.

$\frac{10}{35} = \frac{\square}{7}$ $\frac{\square}{27} = \frac{2}{3}$

$\frac{3}{5} = \frac{9}{\square} = \frac{\square}{35}$

4 Jack uses a bar model to convert $\frac{5}{3}$ to a mixed number.

1 mark

5 Convert $2\frac{3}{5}$ to an improper fraction. Use the diagram to help you.

1 mark

6 Complete.

$13\frac{7}{10} = \frac{\square}{10}$ $\frac{\square}{3} = \frac{20}{3}$

2 marks

Parental support

- By the end of Year 4 we would expect children to have learnt their times tables up to 12 x 12 with rapid recall.

What is homework set and what is expected?

	Spelling/Phonics	Reading	Times Tables Rock Stars/ Mental Arithmetic	Topic based
Year 3	3 x 5min each week (Set termly and tested on a Friday)	5 x 10 min each week	5 x 5 min each week	Choose 2 tasks from the 'Home Learning Menu' on Google Classroom to complete anytime during the term. This learning can be uploaded, along with any photos or videos, to Google Classroom. The learning will be looked at by the class teacher during the last week of each term and shared with the class where possible.
Year 4				
Year 5		5 x 20 min each week	5 x 10 min each week	
Year 6 *				



Parental support

Knowing key facts by rote is essential to free up working memory as maths becomes more complex.

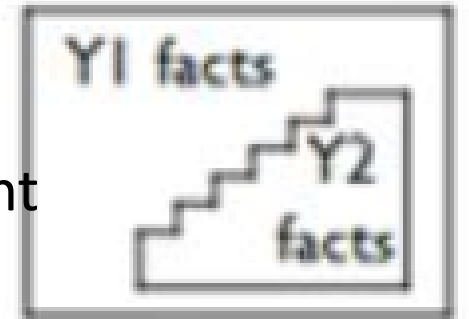
As adults we can underestimate the importance of overlearning; children should practise these facts regularly – we are aiming for them to find it impossible to get it wrong. If we allow children to stop practising as soon as they have been successful, their recall of these facts lessens.

Number Bond Grid

By the end of Year 4 we would expect children to have learnt their times tables up to 12×12 with rapid recall.

	Adding 1		Bonds to 10		Adding 10		Bridging/compensating		Near doubles		
	Adding 2	Adding 5	Adding 10	Doubles	Adding 10	Doubles	Adding 10	Doubles	Adding 10	Doubles	
+	0	1	2	3	4	5	6	7	8	9	10
0	$0+0$	$0+1$	$0+2$	$0+3$	$0+4$	$0+5$	$0+6$	$0+7$	$0+8$	$0+9$	$0+10$
1	$1+0$	$1+1$	$1+2$	$1+3$	$1+4$	$1+5$	$1+6$	$1+7$	$1+8$	$1+9$	$1+10$
2	$2+0$	$2+1$	$2+2$	$2+3$	$2+4$	$2+5$	$2+6$	$2+7$	$2+8$	$2+9$	$2+10$
3	$3+0$	$3+1$	$3+2$	$3+3$	$3+4$	$3+5$	$3+6$	$3+7$	$3+8$	$3+9$	$3+10$
4	$4+0$	$4+1$	$4+2$	$4+3$	$4+4$	$4+5$	$4+6$	$4+7$	$4+8$	$4+9$	$4+10$
5	$5+0$	$5+1$	$5+2$	$5+3$	$5+4$	$5+5$	$5+6$	$5+7$	$5+8$	$5+9$	$5+10$
6	$6+0$	$6+1$	$6+2$	$6+3$	$6+4$	$6+5$	$6+6$	$6+7$	$6+8$	$6+9$	$6+10$
7	$7+0$	$7+1$	$7+2$	$7+3$	$7+4$	$7+5$	$7+6$	$7+7$	$7+8$	$7+9$	$7+10$
8	$8+0$	$8+1$	$8+2$	$8+3$	$8+4$	$8+5$	$8+6$	$8+7$	$8+8$	$8+9$	$8+10$
9	$9+0$	$9+1$	$9+2$	$9+3$	$9+4$	$9+5$	$9+6$	$9+7$	$9+8$	$9+9$	$9+10$
10	$10+0$	$10+1$	$10+2$	$10+3$	$10+4$	$10+5$	$10+6$	$10+7$	$10+8$	$10+9$	$10+10$

Singing/chanting
Random questioning
Other websites e.g. hit the button



Freeing up
working
memory ...

19

$$\frac{2}{3} + \frac{4}{5} =$$

1 mark

20

$$\begin{array}{r} 6312 \\ \times 14 \\ \hline \end{array}$$

Show
your
method

2 marks

Freeing up working memory ...

28

[illegible]

A 20x10 grid with a blue rectangle in the bottom right corner. The rectangle is 4 units wide and 2 units high, spanning from column 16 to 20 and row 8 to 10.

This table shows the number of children and adults at a childcare centre.

Complete the table to make it correct.

The first row has been done for you.

Age in years	Number of children	Number of adults	Number of children per adult
1 and under	12	4	3
2 or 3	20		4
4 or 5		3	8

1 mark

Parent Guide



We recommend a "little and often" approach; 3 minutes practice a day, 4 or 5 times a week is a good target.

What are the different Game Modes?

Single Player

Garage 10 coins per correct answer	Players answer the tables selected by their teacher or by TTRS' Auto trainer. Important: if you feel your child is overwhelmed by the number of tables they're practising, please speak to their teacher. We suggest to teachers to select one table per week with small combinations every third or fourth week. If your child is on Auto, they will practise the one table chosen for them* in small chunks of 4 questions at a time. Our algorithm selects the table after a Gig game.
Gig 10 coins per correct answer	If your child is on Auto training they will periodically play Gig games to assess which table is best for them to practise in the Garage. Important: players must give each Gig performance their full concentration to demonstrate their tables skills. They may be returned to an earlier table if not.
Jamming 4 or 8 coins/correct answer	The only game mode without a timer, your child choses the table and the operation ($\times$ or $\div$ or both) they want to practise. Answer 10, 20 or 30 questions.
Studio 1 coin per correct answer	Here your child earns their Rock Status, which is based on their Studio Speed. The faster they are the better their status. Studio Speed is the average of their most recent 10 Studio games. Suitable for confident players.
Soundcheck 5 coins per correct answer	Soundcheck games ask 25 multiplication questions (up to 12×12), allowing 6 seconds for each question. Suitable for confident players.

Multi Player

Festival 1 coin per correct answer	Children compete against others from around the world, with their identities protected behind their rock names. Suitable for confident players.
Arena 1 coin per correct answer	Children race against other members of their class who are logged in and choose the same arena name at the same time. Like Garage, Arena games ask questions that are either set by the teacher or by TTRS' Auto trainer.
Rock Slam 1 coin per correct answer	Players challenge their classmates or teachers to answer as many questions as they can in 60 seconds, setting a score for the <u>challengee</u> to beat. Pupils don't need to be online at the same time.
Tournaments	Battle of the Bands – groups of children within the same school (usually classes, year groups or teams) compete to have the highest average score per player. Important: Each correct answer (in any game mode) earns 1 point towards the team's total in addition to the coins earned. For example, in Garage games each correct answer is worth 1 point for the team and 10 coins for the player.
	Top of the Rocks – think of this as a Battle of the Bands <i>between</i> schools. The winning class or school is the one with the most correct answers per person. Players' identities are always protected behind their "Rock Names."



How can I hide the timer?	Start a game and press ⚙️ > Hide Practice Clock. You could also play a game in Jamming.
How can I increase the length of Garage games?	Single player > Garage > press the little arrow below “play solo” > choose 1, 2 or 3 minutes.
The tables are too hard	Make sure your child is playing in Garage or Arena game modes. If this does not resolve the issue, please speak to your child’s teacher. Remember that Jamming mode allows the child to choose the tables themselves.
My child gets anxious	Try the three above plus: setting mini goals (e.g. complete 2 minutes today, get 1 more point in the next game, pass 1 level); having a break from online play (come back in a couple of days); and reminding them of Baz’s words: “A good rock star stays chillaxed by accepting they make mistakes.”



Ways to help

- Positive mindset – use positive language when talking about maths
- Use maths talk in everyday life
- Play games
- Learn the maths methods used in school
- Practise reading the time on analogue clocks
- Use fractions in daily life
- Involve in problem solving – which is best deal etc.?
- Use technology – online games in short bursts
- If you need a challenge - NRICH (<http://nrich.maths.org/>) or Transum (<http://www.transum.org/>).

Websites

- <https://trockstars.com/home>
- <https://www.transum.org/>
- <https://nrich.maths.org/>
- <https://www.topmarks.co.uk/>
- <https://www.topmarks.co.uk/maths-games/hit-the-button>
- <https://thirdspacelearning.com/blog/home-learning-resources/>
- <https://www.bbc.co.uk/bitesize/subjects/z826n39>
- <https://www.primarygames.co.uk/index.html>
- <https://www.mathsisfun.com/worksheets/index.php>
- <http://www.primaryresources.co.uk/maths/maths.htm>
- <https://mathszone.co.uk/>
- <https://www.ashcott.somerset.sch.uk/classes/maths-homework/homework>
- <https://corbettmathsprimary.com/content/>