

# Maths at Hujjat Primary School

# WHAT DID THE TRIANGLE SAY TO THE CIRCLE?



Not all math jokes are bad. Just sum.



## What this session covers:



**Our Vision** 

What the children think a mathematician looks like

What maths looks like at HPS

National Curriculum expectations

Concrete Resources

School assessments

> How to support your child at home

# **Mathematics Vision**

We encourage children to see the importance of mathematics in everyday life, as well as the extraordinary influence it has on our world.

Mathematics is fun, meaningful and purposeful and we aim to inspire the next generation of mathematicians.

At the centre of the HPS' mastery approach is the belief that all children have the potential to succeed.

We want to inspire everyone to believe in themselves and to have the confidence and strategies to be able to become independent mathematicians.





#### **How we learn Mathematics**

By making our curriculum meaningful, all children will have a thirst for their maths learning and want to be lifelong learners.

Our lessons create an excitement where all children feel supported and challenged so that they can problem-solve and reason. They will be proud of their mathematical successes and achievements.



# What our children believe a mathematician looks like...



## Maths at HPS

Our curriculum for mathematics ensures children develop a deep and secure understanding of mathematics. Teachers plan using a variety of resources, as we believe that we provide a bespoke teaching and learning experience that is designed to interest, inform and inspire our children. Daily mathematics lessons include fluency, reasoning and problem solving for all learners.

Concrete manipulatives and pictorial representations are used to support conceptual understanding and to help children make links across topics.

Review lessons are used to revisit previous learning and ensure mathematics skills are embedded



# What does Maths look like in EYFS?





- Learning through play.
- Outdoor activities.
- Counting, counting and more counting!
- Pattern spotting
- Number recognition and ordering beyond 10.
- Learning numbers bond up to 10.
- Shape recognition, 2D and 3D.
- Addition and subtraction using single digit numbers.



## What does Maths look like in Year 1?

Number bonds to 10 and within 10.





Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.

Read, write and interpret equations containing +, - and = symbols.





To double numbers





#### Year 1

#### Learning Sequence 17



## What does Maths look like in Year 2?

Add and subtract within 100 by applying one-digit addition and subtraction facts. To add and subtract any 2 two-digit numbers.





To read the time to the nearest five minutes

To describe the properties of 2D and 3D shapes and compare shapes by their properties

Recognise the subtraction structure of 'difference' and answer questions such as "How many more...?" Practical learning using a variety of resources.





Recognise the place value of each digit in two-digit numbers.

Length and Height Mass, Capacity and Temperature.

# Year 2 Summer Term

# Solve problems – multiplication and division



 a) Erik buys four snorkel and mask sets. What is the total cost?

b) Six beach balls cost £12. How much do three beach balls cost?





#### Fractions in Year 2 Summer Term

Half





Now make up your own.

#### Fractions in Year 2

#### Half

Link into finding half of amounts of money, using prepared bar models for them to share coins into.



Now make up your own.

Fraction come from the Latin word fraction, which means to break.

We get other words from fraction. Can you think of one? A fraction is a whole broken into equal parts.

These whole shapes have been broken into two equal parts.



#### Wholes and unequal parts



## Wholes and unequal parts



Whole:

Parts:

Whole:



Whole:

Parts:

**Parts:** 

### Wholes and equal parts

How many equal parts in each shape? Let's count them!





Fractions in Years 2 and 3



#### How many equal parts? How many are shaded?





3 parts.2 shaded.2 out of 3 are shaded.

4 parts. 3 shaded. 3 out of 4 are shaded. 8 parts.6 shaded.6 out of 8 are shaded.

#### Half







Which triangle shows quarters / fourths?





#### Half

What do you notice? What else?

Use two strips of paper to make this fraction wall. Label each part.

Which is greater  $\frac{1}{2}$  or 1 whole?

$$\frac{1}{2} < 1 \qquad 1 > \frac{1}{2}$$

$$0 \qquad \frac{1}{2} \qquad 1$$

 $\begin{array}{c|c} 1 \\ \hline 1 \\ \hline 2 \\ \end{array} \begin{array}{c} 1 \\ \hline 2 \\ \end{array}$ 

 $\frac{1}{2} + \frac{1}{2} = \frac{2}{2}$ 

 $\frac{2}{2}$  = 1 whole

R	Fraction Wall														
1 whole															
1 2 1 2															
	13						- 100	ļ					0.00010010	<u>1</u> 3	
	<u>1</u> 4				<u>1</u> 4					<u>1</u> 4				<u>1</u> 4	
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16			16			<u>1</u> 6		$\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$					<u>1</u> 6		
1 7		17			17		117	1 17					17		1 7
1 8		18		18		18			18		18		18		1 8
1 9	1	1		19	19		19	1	100	19	0	19	19		1 9
1 10	1		1 10		1	1	ō	1	ō	1	5	1 10		1 10	1 10
111	111	-	1	1		1	ī	1	1	ī	1/11	1	ī	111	1 11
$\frac{1}{12}$	1 12	1/12	į	1 12	1 12	ī	1	1/12	2	1 12	1	2 3	1	1 12	1 12





How many fourths are equivalent to 1 whole?



#### Fourth / quarter



Spot the mistake!

<u>1</u> 4	<	<u>1</u> 2	<u>1</u> 2	=	<u>3</u> 4	<u>2</u> 4	<	<u>3</u> 4
<u>3</u> 4	>	$\frac{1}{4}$	<u>3</u> 4	>	<u>1</u> 2	<u>2</u> 4	=	<u>1</u> 2

Ser la	Fraction Wall										
	1 whole										
	1 2 1 2										
	<u>1</u> 3					1				<u>1</u> 3	
	<u>1</u> 4			1/4			<u>1</u> 4			14	
1 5			<u>1</u> 5		15		$\frac{1}{5}$ $\frac{1}{5}$				<u>1</u> 5
1 6			16		<u>1</u> 6	$\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$					
1 7		1 7		1 7	1.11.2	1 7			1 7		1 7
1 8		1 8	1 8		18			18		18	1 8
1 9	19		1 9	19	10	i.	1 9	19		1 9	1 9
1 10	1 10	1	Ō	110	1 10	1 10	1	5	1 10	1 10	1 10
1 11	1 11	111	111	1	1 1	1	111	1 11	1 11	111	1 11
1/12	1 12	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	112	2 12	$\frac{1}{12}$

#### Fractions in Year 3

3 + 4 = 7 SO... 3 tens add 4 tens = 7 tens3 apples add 4 apples = 7 apples £3 + £4 = £7Therefore...  $(3 \times 5) + (4 \times 5) = 7 \times 5$  $\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$ 7 - 4 = 3 SO... 7 tens subtract 4 tens = 3 tens 7 apples subtract 4 apples = 3 apples Therefore...  $fightree{2}{1}$ 7 - 4 = 3 $(7 \times 5) - (4 \times 5) = 7 \times 3$ 8 8 8

There are 80 flowers.

 $\frac{1}{4}$  of the flowers are red roses.

 $\frac{3}{10}$  of the remaining flowers are yellow roses.

The rest of the flowers are white roses.

How many of each type of flower are there?

I wonder if I can use one fraction strip to find the solution. I will work out how many red roses there are and then how many are not red.



## \* What does Maths look like in Year 3?

Fractions, Money, Time

To recognise the place value of each digit in a three-digit number (hundreds, tens and ones)

To read and write numbers up to 1,000

**Shape Statistics** 



To use choose strategies to help me answer questions such as partitioning, number lines, counting on, counting back, bar models and eventually formal methods such as the column method.

To identify angles greater than or less than a right angle

To recall my 2, 5, 10s, 3, 4- and 8-times tables and related division facts.

To understand the inverse relationship between add and subtract

To solve number and practical problems, including reasoning using my number knowledge.



(1) Which of these fractions is equivalent to  $\frac{2}{3}$ ?



2 Look at these equivalent fractions. Which number is **not** used to complete them?



Which fraction	<b>cannot</b> go into a	ny of these fracti	on sentences?
$\frac{3}{5} + \frac{1}{1} = 1$	$\frac{7}{10} +  = 1$	$\frac{1}{8}$ + $\frac{1}{8}$ = 1	
$\begin{bmatrix} \mathbf{A} \end{bmatrix} \frac{3}{5}$	B 7/8	$\frac{2}{5}$	$\Box \frac{3}{10}$
5 Which arrow is	pointing to $\frac{1}{6}$ ?		
A B ↓ ↓ 0	+ + +	c ↓ I I I	
6 Which number	could <b>not</b> be the	missing numerat	or?
$\frac{5}{8} > \frac{1}{5}$			40
A I B 2	C 3 D 4	$\begin{array}{c c} \frac{1}{8} & \frac{1}{8} & \frac{1}{8} \\ \hline \frac{1}{5} & \frac{1}{5} \\ \end{array}$	$ \frac{1}{8} \frac{1}{8} \frac{1}{8} \frac{1}{8} \frac{1}{8} \frac{1}{8} $ $ \frac{1}{5} \frac{1}{5} \frac{1}{5} \frac{1}{5} $
<b>7</b> Write these frac $\frac{1}{2}$ $\frac{1}{9}$	tions in order, sto 2 <u>3  </u> 3 4  2	arting with the sr	nallest.

## What does Maths look like in Year 6?

Rapid and accurate recall of ALL times tables

Find equivalent fractions, decimals and percentages

Solve problems involving ratio relationships

Draw, compose and decompose shapes according to given properties, including dimensions, angles and area

To consolidate the formal written methods and use alongside efficient mental strategies

Algebra

Working with numbers beyond 6 and 7 digits

Systematic and methodical workings Solve multi-step word problems

Use common factors and multiples to simplify fractions. To securely use all four operations when calculating with fractions (+ - x ÷)

Draw upon a variety of mental maths strategies to support arithmetic skills



Resources we use at this school...





1:: 6+4=10 ··. ... 3+



	10	10	9	8	7	6	5	4	3	2	1
6	20	20	19	18	17	16	15	14	13	12	11
e	30	30	29	28	27	26	25	24	23	22	21
6	40	40	39	38	37	36	35	34	33	32	31
	50	50	49	48	47	46	45	44	43	42	41
	60	60	59	58	57	56	55	54	53	52	51
	70	70	69	68	67	66	65	64	63	62	61
0	80	80	79	78	77	76	75	74	73	72	71
0	90	90	89	88	87	86	85	84	83	82	81
0 8	100	100	99	98	97	96	95	94	93	92	91
•		100									
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0	3	ns	Ter				5	dred	Hun		
0	3	ns	Ter				5	dred	Hun		
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0	3	ns	Ter				5	dred	Hun		
0	3	ns	Ter				5	dred	Hun		
0	5	ns	Ter				5	dred	Hun		
0	3	ns	Ter				5	dred	Hun		
•	3	ns	Ter				5	dred	Hun		

1es

3





Power maths have an end of unit which children complete.

NFER Tests have been introduced this year and are done at the end of every term. NFER Tests are standardized assessments used in primary schools in the UK to monitor student attainment and progress in core subjects like reading, maths, and grammar. They provide teachers with independent data to track students' performance against a national sample and inform teaching and learning.

**Example Arithmetic Materials – Year 5** 

End of unit check	Write <b>65%</b> as a fraction.							1	Calculate the total area of this shape.						
<ul> <li>It takes Alex 180 seconds to run around the school field.</li> <li>What is another way of writing this time?</li> <li>A 30 minutes</li> <li>B 7,200 minutes</li> <li>C 3 seconds</li> </ul>									) mark			4	cm	2 cm	
<ul> <li>2 How could you find out the number of days in 2I weeks?</li> <li>A Multiply 2I by 7.</li> <li>B Divide 2I by 7.</li> <li>C Change the units to 2I days.</li> <li>D Subtract 7 from 2I.</li> </ul>	2	Divide 28 4 Write your	423 by 1 r answer	00 as a dec	cimal nu	mber.			Unark			2 cm	4 cm	(not to scale)	
Which time is not the same as the others?	11 3	5	5 8 4	3 6 1 5	4 2							cm <sup>2</sup>			1
										2	Write in the mi	issing decir	nal to com 9	plete the number sentence.	(

# Year 4 Multiplication check

The multiplication tables check (MTC) is **statutory** for all year 4 pupils registered at state-funded maintained schools in England. **There are twenty-five questions and children have six seconds to answer each question and three seconds between questions.** 

The purpose of the MTC is to determine whether pupils can recall their times tables fluently, which is essential for future success in mathematics. The test helps schools to identify pupils who have not yet mastered their times tables, so that additional support can be provided.

https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-Check





	plication Tables	Check	Time	e left: 2
	3 x 8 =	24		
		1	2	3
	Play game	4	5	6
		7	8	9
Time allowed: 6 seconds Tables selected: All		$\boxtimes$	0	ENTER
Question 1 of 25	MATHSFRAME			

## Statutory School Assessments



The statutory Reception Baseline Assessment (RBA) is an age-appropriate assessment of early mathematics and early literacy, communication and language. The assessment is delivered in English and is administered within the first 6 weeks of a pupil starting reception. Children are defined as having reached a Good Level of Development (GLD) at the end of the EYFS if they have achieved the expected level for the ELGs in the prime areas of learning (which are: communication and language; personal, social and emotional development; and physical development) and the specific areas of mathematics and literacy.

Year 2 SATs, also known as Key Stage 1 (KS1) SATs, are a series of assessments in Reading and Maths that are taken at the end of Year 2, as part of the national curriculum in England. While not mandatory, Hujjat Primary School administers these tests to gauge children's progress and development.

Year 6 SATs (Standard Assessment Tests) are compulsory standardized tests administered to assess the academic progress of students in their final year of primary school. These tests, also known as Key Stage 2 (KS2) SATs, are conducted in May and assess skills in English (reading, grammar, punctuation, spelling) and mathematics. The tests are designed to evaluate a child's progress against national curriculum standards and provide a snapshot of their learning.







Having a secure understanding of the times tables facts and related division calculations up to 12x12 aids children in their mathematical learning within a wide range of different concepts.

Times Table Rock Stars is an exciting game which helps children to learn and practise their times tables. Through a "little and often" approach, children secure their times table knowledge whilst having fun! We recommend approximately 5 minutes practice a day, 4 or 5 times a week



# Checking your child's progress

Checking your child's progress is easy:

When your child has logged in, select their avatar in the top right-hand corner and then select the 'My Stats' option.

In the effort tab, you can see how many minutes the children have played.

Under fluency, you can see how quickly your child is able to answer each question and how confident they are with their individual times table knowledge.



## How to support your child at home?

Take away their fear.

Reassure and praise whenever possible. Positive mindset...

Let them see you using Maths in your everyday routines – portioning meals between the family, chopping vegetables into halves and quarters etc. Measuring ingredients and calculating the price of shopping.

Play with numbers and shapes through games.

Seeing mistakes as an opportunity to learn and using them as a discussion point.

Recognising the importance and value of maths in our everyday lives e.g. managing money and telling the time.





# Everyday Maths opportunities for your child



Practice spotting and recognising numbers in the environment. Add/multiply/subtracy divide door numbers, numbers on car registration plates, road signs and at the shop.

Use food packaging to discuss the weight.

Measuring up for new furniture. These are really good opportunities to encourage your child to see the value of careful measuring skills in everyday life.

Practice telling the time with your child.

Can they read both the digital and analogue clock?

Can they readily convert between the two and use the 24-hour clock?

Can they also recognise Roman Numeral representations of the time too?

Board Games supply endless opportunities for Maths – Snakes and Ladders, Monopoly, Connect Four, Battle Ships etc.

# Websites to support children's Maths skills

- <u>CBeebies</u> have lots of fun and interactive games and activities to help get our younger children excited about Maths
- https://www.math-salamanders.com/
- <u>I See Maths</u> a useful site with a plethora of ideas for fun games that all the family
- <u>https://www.primarygames.com/math/eastercountlinkpuzzle/</u> It is a free website that encourages children to play online maths games linked to their home learning. It breaks the games down into concepts which is helpful.
- <u>Hit the Button</u> children love this game as it helps to increase confidence through practising times tables and number bonds.
- <u>BBC Bitesize</u> lots of information alongside short videos help to make the learning enjoyable and accessible for all children.



