The Gates Primary School Westhoughton

Maths Stay and Learn Workshop

14.11.24

Why is Maths important?

- Maths helps make sense of the numbers, patterns and shapes they see in the world around them, offers ways of handling data in an increasingly digital world and makes a crucial contribution to their development as successful learners.
- <u>In the wider world it helps:</u>

- Children to understand the world around them and develop life skills.
- Develop critical thinking and problem solving skills.
- Boosts self confidence.

- Improving memory, concentration and overall cognitive development.

Maths at The Gates

- White Rose Maths across school – sequence of learning
- Maths mastery – opportunities to develop a deep understanding of Maths rather than memorising key concepts.
- Learning by questions (LBQ) understanding > fluency > problem solving
- Focus on fluency > Times tables underpin so much of mathematical understanding. Alongside number bonds, they are crucial.

White Rose Maths

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

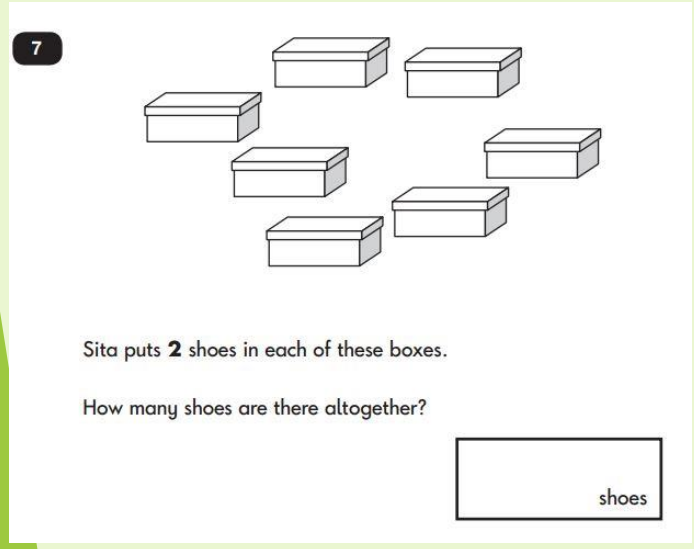
Learning by Questions

Key Assessments Points

KS1 SATs – at the end of Year 2

Paper 1: arithmetic - children answer 25 questions to test their fluency with number and calculation skills. 20 minutes

Paper 2: reasoning - questions to test their understanding of number, measures, geometry and statistics. 30 mins

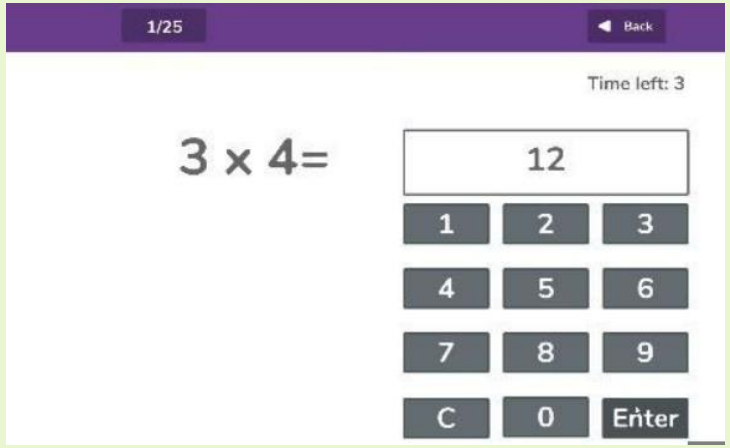


Year 4 – times tables check

The purpose is to determine whether your child can fluently recall their times tables up to 12, which is essential for future success in mathematics.

25 questions with 6 seconds response time

There is no pass mark.



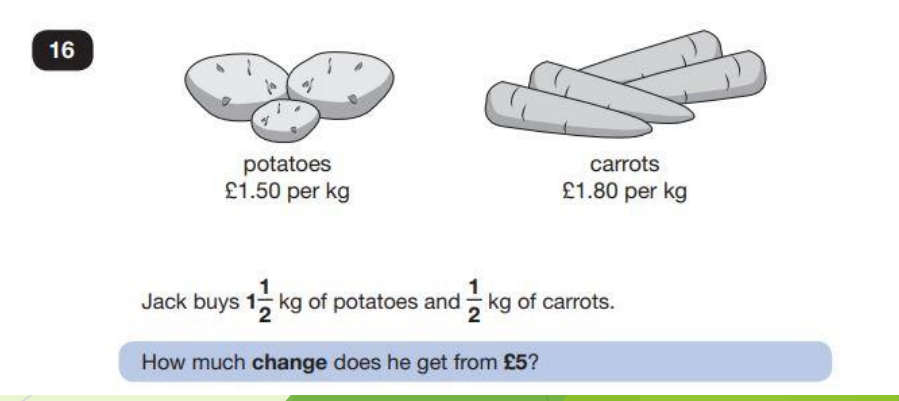
KS2 SATs – end of Year 6

Arithmetic – 40 marks available (some 2 mark questions), 30 mins

Reasoning 1 – 35 marks, 40 mins

Reasoning 2 – 35 marks, 40 mins

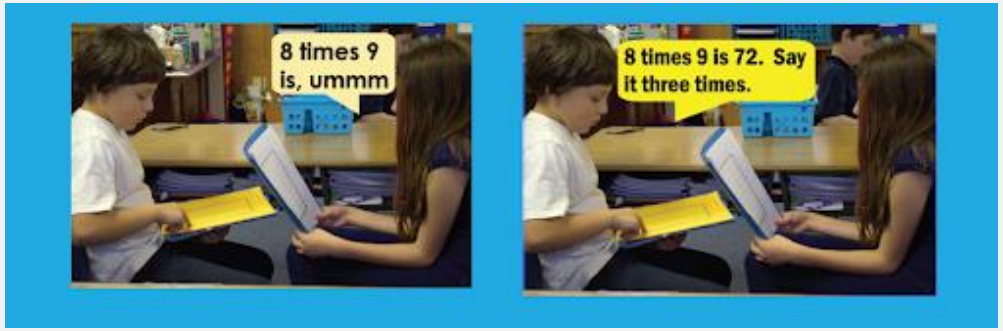
Over the two reasoning papers they will cover: Number, place value, calculations, fractions, decimals and percentages, ratio and proportion, algebra, measurement, geometry (properties of shapes, position and direction), statistics



	Aut 1	Aut 2	Spr1	Spr2	Su1	Su2
1	**Number:** Place value within 10 Addition within 10	Addition and subtraction within 10 **Geometry:** Shape – recognising and sorting 2-D and 3-D shapes Shape patterns	**Number:** Place value within 20 Addition and subtraction within 20	**Number:** Place Value within 50 **Measurement:** Length and Height, Mass and volume	**Number:** Multiplication and Division, Fractions **Measurement:** Position and direction	**Number:** Place value within 100 Measurement: Money, Time
	Children will work towards being able to confidently recite numbers in a sequence of 2's, 5's and 10's, recall at speed number bonds to 10 and recall doubles and halves to 20.					
2	**Number:** Place Value, Partitioning numbers to 100 Addition and Subtraction **Geometry:** Shape	**Number:** Addition and Subtraction, Multiplication, Fractions **Geometry:** Shape	**Number:** Multiplication and Division, Fractions **Geometry:** Shape	**Number:** Addition and subtraction, Multiplication and Division **Measurement:** Money	**Number:** Fractions Statistics **Measurement:** Mass, Capacity and Temperature, Position and direction	**Number:** Multiplication and division **Measurement:** Time Money Consolidation
	Children will work towards the swift recall of 2, 5, 10 and 3 times tables					
3	**Number:** Place Value, Addition and Subtraction	**Number:** Addition and Subtraction, Multiplication and Division	**Number:** Multiplication and Division **Measurement:** Length and Perimeter	**Number:** Fractions, Mass and Capacity	**Number:** Fractions **Measurement:** Money, Time	**Measurement**: Time **Geometry:** Shape Statistics Consolidation
	Children will work towards the swift recall of number bonds to 20 and 100, doubles to 20 and 50, halves to 40 and 100 and 2, 5, 3, 6, 4, 8 and 9 times tables.					
4	**Number:** Place value Addition and Subtraction	**Number:** Addition and subtraction Multiplication and division **Measurement:** Area	**Number:** Multiplication and Division Fractions **Measurement:** Length and Perimeter	**Number:** Fractions, Decimals	**Number:** Decimals, **Measurement:** Money, Time	**Number:** Consolidation **Geometry:** Shape, Position and Direction Statistics
	Children will work towards the swift recall of number bonds to 60 and 100, doubles to 50 and halves to 100 and 2, 5, 3, 6, 4, 8, 9, 11, 7, 12 times tables					
5	**Number:** Place Value	**Number:** Addition and Subtraction,	**Number:** Multiplication and Division, Fractions,	**Number:** Decimals and Percentages	**Geometry:** Shape, Position and Direction	**Number:** Decimals, Negative Numbers
		Multiplication and Division	Decimals and Percentages	**Measurements:** Perimeter and Area Statistics	**Number:** Decimals	**Measurement:** Converting Units, Volume
	Children will work towards the swift recall of number bonds to 100, doubles to 50, halves to 100, quarters of even numbers to 100, 2-12 times tables and some related division facts					
6	**Number:** Place Value, Addition and Subtraction, Multiplication and Division	**Number:** Addition and Subtraction, Multiplication and Division, Fractions **Measurement:** Converting Units	Ratio Algebra **Number:** Decimals	**Number:** Fractions, Decimals and Percentages **Measurement:** Area, Perimeter and Volume Statistics	**Number:** Consolidations of Arithmetic Skills **Geometry:** Shape, Position and Direction	Consolidation and Problem solving
	Children will work towards the swift recall of number bonds to 100, double and halves to 100 (including .5), quarters of numbers to 100, 2-12 times tables and related division facts and percentages of multiples of 10					

WHAT IS FLUENCY? WHY IS FLUENCY IMPORTANT?

- Fluency in maths is about developing number sense and being able to the most appropriate method for the task at hand; to be able to apply a skill to multiple contexts. The National Curriculum states that pupils should become fluent in the fundamentals of mathematics through varied and frequent practice.
- **<u>There are three elements to fluency:</u>**
- - **Efficiency** (using the most suitable method)
- - **Accuracy** (being correct)
- - **<u>Flexibility</u>** (having a tool kit of different methods) –



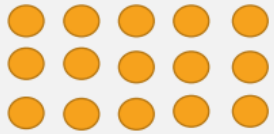
Children who are fluent in maths are: - Less anxious about mathematics - Able to make connections - Able to problem solve

What we do at The Gates to develop fluency:

- Overlearning core skills – time allocated for children each day to do so.
- Teaching and assessing of times tables and number bonds weekly – Times Tables Buddies.
- Times tables and number bonds cards to fluency of each child.
- Each class uses knowledge organisers for their year groups to help direct the teaching of fluency
- Manipulatives (physical items) and visuals used to develop understanding.

- Learning table facts is often mistaken for rote-learning (memorising)
- Children need to understand what a multiplication sentence means

E.g. 3 x 4 = 12



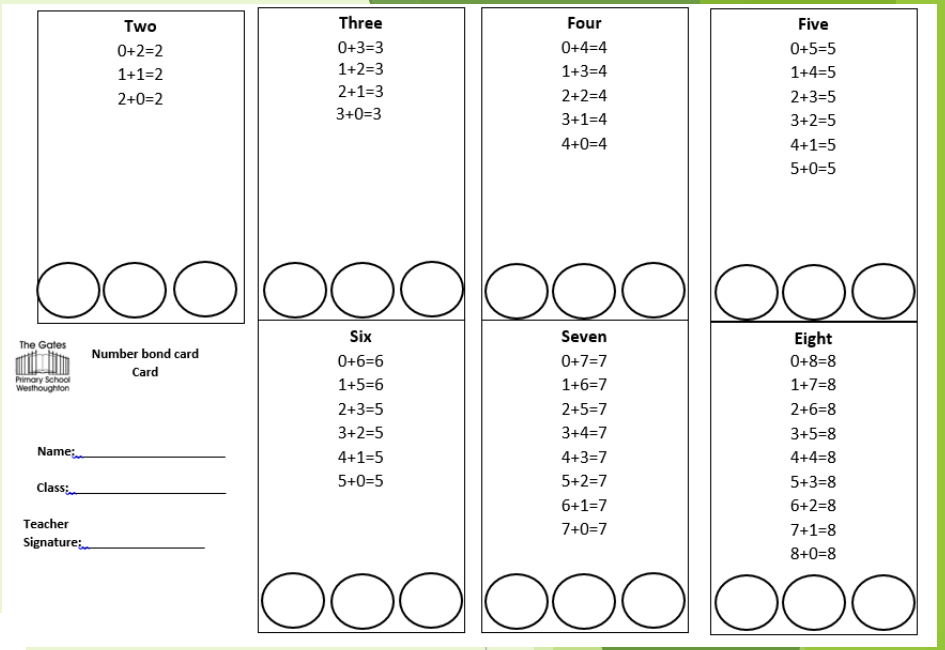
3 groups of 4

If I know 3 x 4 = 12, I know 3 x 5 = 15 because it is one more 'group' of three

Year 1

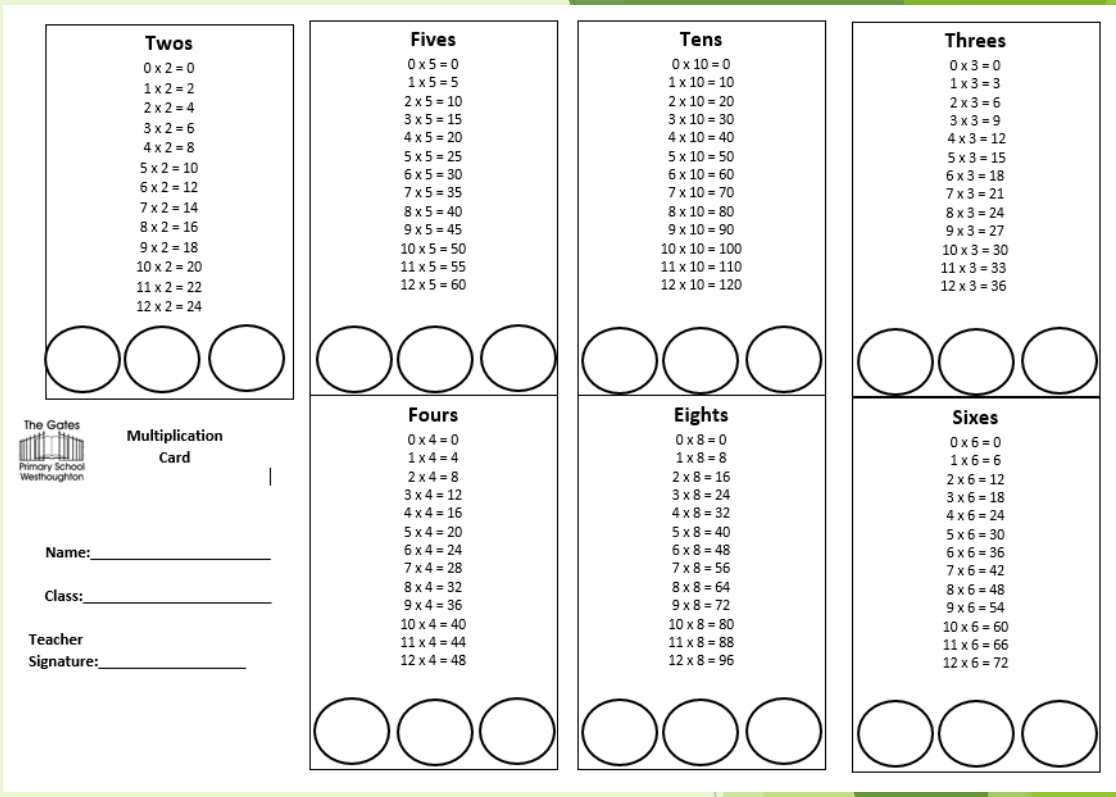
- Number Bonds:
  - Understanding all the different ways of making numbers up to 10.
  - Quick recall
  - Related subtraction facts
  - Maths targets

- Ways to help at home:



Year 2

- Children will be able to swiftly recall the 2, 5, 10 and 3 timetables.
- Related division facts.
- Taught in school through LBQ, practical activities, Times Table Rockstars and through Maths target work.



Twos

0 x 2 = 0
1 x 2 = 2
2 x 2 = 4
3 x 2 = 6
4 x 2 = 8
5 x 2 = 10
6 x 2 = 12
7 x 2 = 14
8 x 2 = 16
9 x 2 = 18
10 x 2 = 20
11 x 2 = 22
12 x 2 = 24

Fives

0 x 5 = 0
1 x 5 = 5
2 x 5 = 10
3 x 5 = 15
4 x 5 = 20
5 x 5 = 25
6 x 5 = 30
7 x 5 = 35
8 x 5 = 40
9 x 5 = 45
10 x 5 = 50
11 x 5 = 55
12 x 5 = 60

Tens

0 x 10 = 0
1 x 10 = 10
2 x 10 = 20
3 x 10 = 30
4 x 10 = 40
5 x 10 = 50
6 x 10 = 60
7 x 10 = 70
8 x 10 = 80
9 x 10 = 90
10 x 10 = 100
11 x 10 = 110
12 x 10 = 120

Threes

0 x 3 = 0
1 x 3 = 3
2 x 3 = 6
3 x 3 = 9
4 x 3 = 12
5 x 3 = 15
6 x 3 = 18
7 x 3 = 21
8 x 3 = 24
9 x 3 = 27
10 x 3 = 30
11 x 3 = 33
12 x 3 = 36

The Gates Primary School Westhoughton

Multiplication Card

Name:_____

Class:_____

Teacher Signature:_____

Fours

0 x 4 = 0
1 x 4 = 4
2 x 4 = 8
3 x 4 = 12
4 x 4 = 16
5 x 4 = 20
6 x 4 = 24
7 x 4 = 28
8 x 4 = 32
9 x 4 = 36
10 x 4 = 40
11 x 4 = 44
12 x 4 = 48

Eights

0 x 8 = 0
1 x 8 = 8
2 x 8 = 16
3 x 8 = 24
4 x 8 = 32
5 x 8 = 40
6 x 8 = 48
7 x 8 = 56
8 x 8 = 64
9 x 8 = 72
10 x 8 = 80
11 x 8 = 88
12 x 8 = 96

Sixes

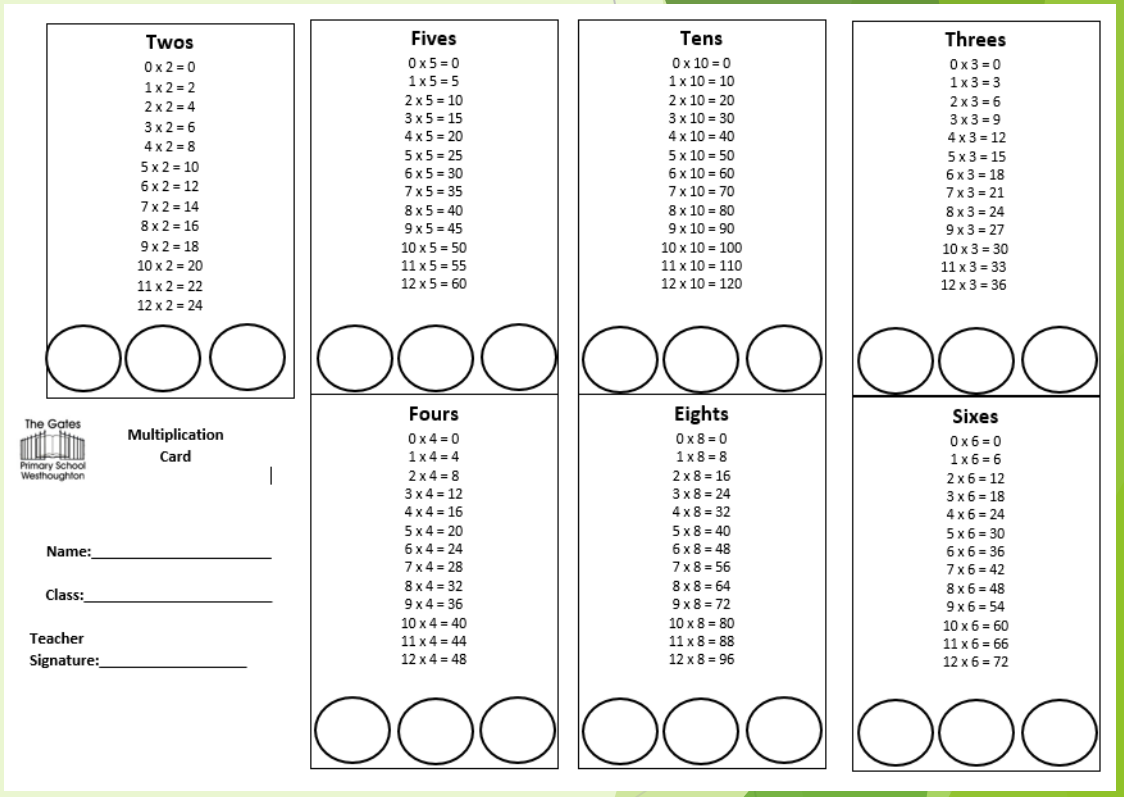
0 x 6 = 0
1 x 6 = 6
2 x 6 = 12
3 x 6 = 18
4 x 6 = 24
5 x 6 = 30
6 x 6 = 36
7 x 6 = 42
8 x 6 = 48
9 x 6 = 54
10 x 6 = 60
11 x 6 = 66
12 x 6 = 72

- How can you help at home:
  - Daily practise of times table (Times Table Rockstars)
  - Maths shed
  - Sing songs
  - Play games - bingo

Year 3

- Children will be able to swiftly recall – x2,5,10,3,4,8 times tables.
- Related division facts – 12 divided by 4 = 3
- In school – daily chanting, group games (e.g times tables bingo), times tables and number bonds buddies, interactive apps on iPads for daily practise.

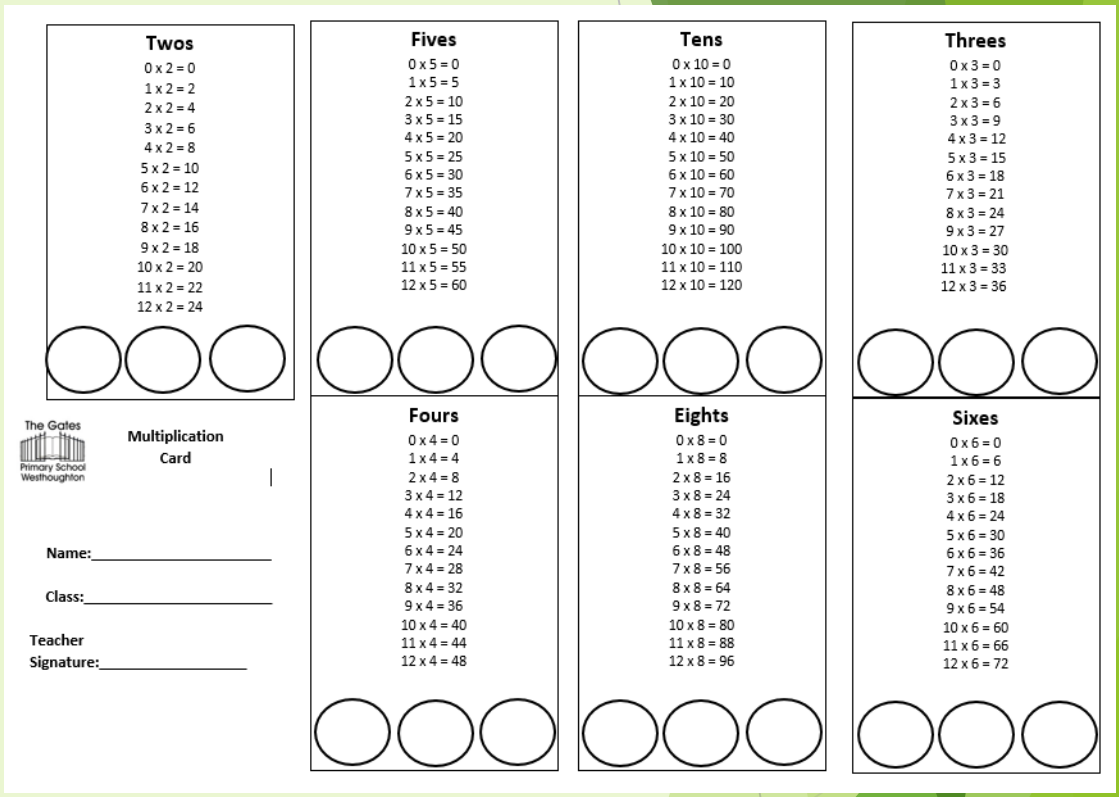
- How can you help at home:
  - Daily practise of times table – verbal chanting is effective
  - Times Table Rockstars daily.
  - Quick fire questions.
  - Experience telling the time.
  - Experience handling money.



Year 4

- Children will be able to swiftly recall ALL times tables up to 12 x 12 =
- Related division facts – 12 divided by 4 = 3
- In school – daily chanting, group games (e.g times tables bingo), times tables and number bonds buddies, interactive apps on iPads for daily practise.

- How can you help at home:
  - Daily practise of times table – verbal chanting is effective
  - Times Table Rockstars daily.
  - Quick fire questions.
  - Experience handling money – how much change?
  - Experience telling the time – analogue, digital, 12hr, 24hr.
  - Using different measurements - cooking, baking etc.



Year 5 and 6

- It is still important for children to continue regular practise.
- Children will be able to use times tables to solve related calculations including decimals (see below).
- Multiplying by 10,100,1000.

EXPECTATIONS IN YEAR 6

- Read, write order and compare numbers to 10,000,000 and determine the value of each digit.
- Rounding numbers up to 1,000,000
- Use negative numbers in context
- Use estimation to check calculations
- Use common factors to simplify fractions
- Use common multiples to find equivalents
- Find percentages of amounts
- Convert units of measure (multiplying and dividing 10, 100 and 1000)

- Ask your child if they know 4 x 8 = 32
- What else do they know if they know 4 x 8 = 32?
  - 40 x 8 = 320
  - 4 x 80 = 320
  - 40 x 80 = 3200
  - 32 ÷ 4 = 8
  - 3.2 ÷ 4 = 0.8
  - 320 ÷ 4 = 80

EXAMPLES OF ARITHMETICAL FLUENCY QUESTIONS

132 ÷ 12 =

4 × 110 =

8 × 6 =

480 ÷ 4 =

54 ÷ 6 =

7,200 ÷ 80 =

MATHS GAMES AND RESOURCES

- A great app for your child's phone is 'Combine 4' – Your child will have to use all four numbers to make the number 24 (using either x, ÷, + or -)
- https://www.coolmathgames.com/0-make-24
- Curious Maths
- https://www.topmarks.co.uk/maths-games/hit-the-button
- https://www.topmarks.co.uk/
- https://www.bbc.co.uk/bitesize
- www.ttrockstars.com
- https://www.themathsfactor.com/times-tables-check/pinpoint/#/
- https://whiterosemaths.com/parent-workbooks/

Classroom visits

- The session will finish at 3.10 to give time to get ready for home time. There should be a bell to indicate this.
- Exit through the classroom fire exits.
- Children will be dismissed at usual time.
- If you have children in different classes in school, you can move through school to move between classes. There will be staff in the corridors to direct you.

Thank you!