Mathematics

How we teach Maths at Ellenbrook

Ellenbrook
COMMUNITY PRIMARY SCHOOL

- Parents Meeting
- Wednesday 2nd October 2025 6pm
- Hosted by Mrs. Harrison

Aims

To have a better understanding of:

- How Maths is planned and taught at Ellenbrook
- Key mathematical assessments and tests
- The types of manipulatives we use to support mathematical understanding in Early Years, Infants (KS1) and Junior Classes (KS2)
- How using TTRs (Times Table Rockstars/ NumberBots) can support learning at home

EYFS

MATHS

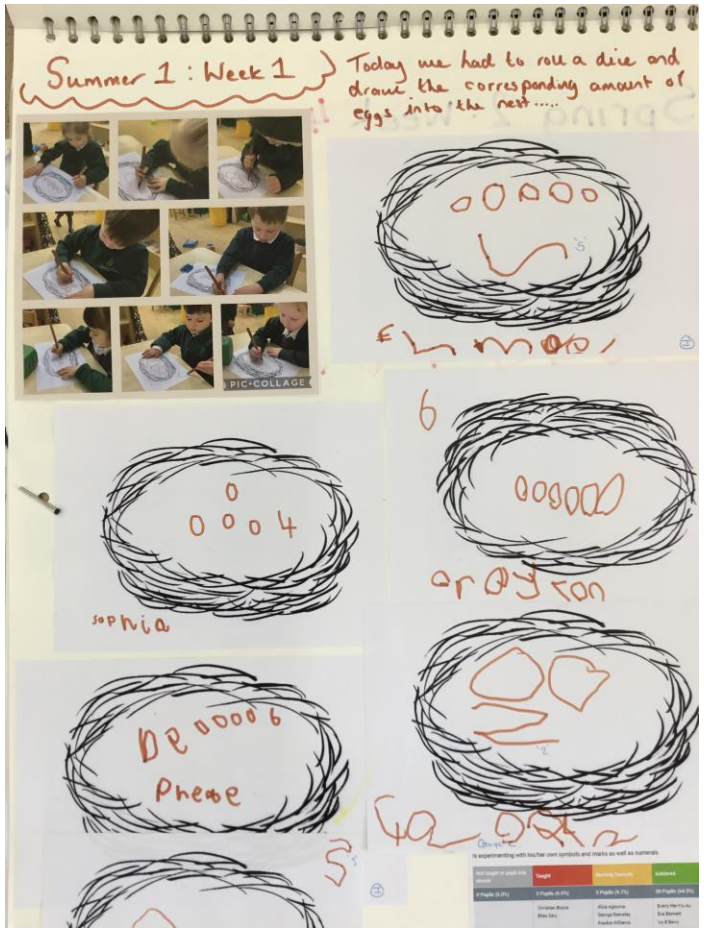
Involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces and measures.

What mathematical learning looks like in the Early Years:

- Daily Maths carpet sessions for whole class teaching. This is supported by the NCETM *Mastery Materials* for teaching and assessment and *The Mastering Number at Reception and KS1*
- Daily counting songs and finger counting games
- Adult led tasks and a weekly floor book focus taught by teachers to small groups of children
- Continuous provision enables constant access to Maths and number resources (e.g. Numicon, tens frames, Rekenreks, jigsaws, counting and sorting objects) Independent mathematical challenges planned daily.
- Visual aids in all classrooms– including number lines and pictorial representations of numbers
- Maths resources are a key part of our outdoor provision – numerals, weighing scales, objects for counting, sequencing and sorting

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

Examples of children's independent recording in the EYFS phase.



EYFS Floor books

KS1 (Years 1 and 2)

National curriculum in England: primary curriculum - GOV.UK (www.gov.uk) and refer to our school website for our own curriculum planning.

Main Aims at this phase of learning are for the children:

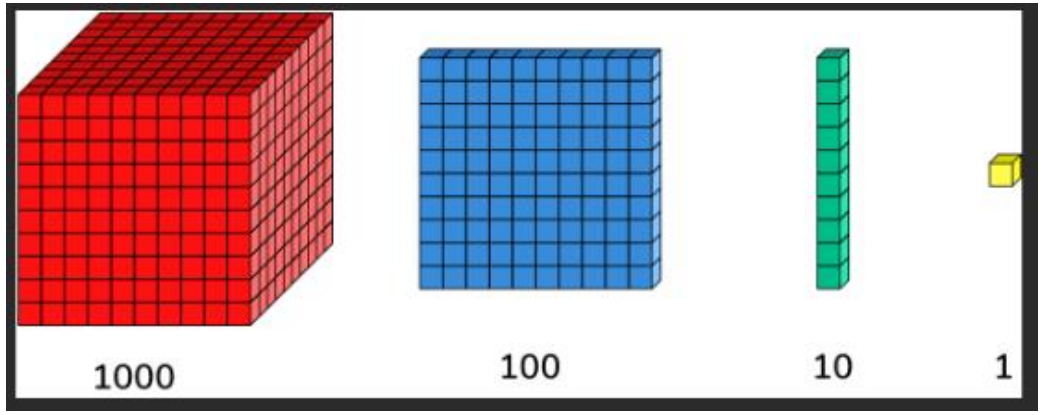
- **To develop fluency, reason mathematically and solve problems**

We know that a pupil really understands a mathematical concept, idea or technique if he or she can:

- describe it in his or her own words
- represent it in a variety of ways (e.g. using concrete materials, pictures and symbols)
- explain it to someone else
- make up his or her own examples (and nonexamples) of it
- see connections between it and other facts or ideas e.g. commutative rule and inverse for addition is subtraction
- recognise it in new situations and contexts
- make use of it to solve new problems

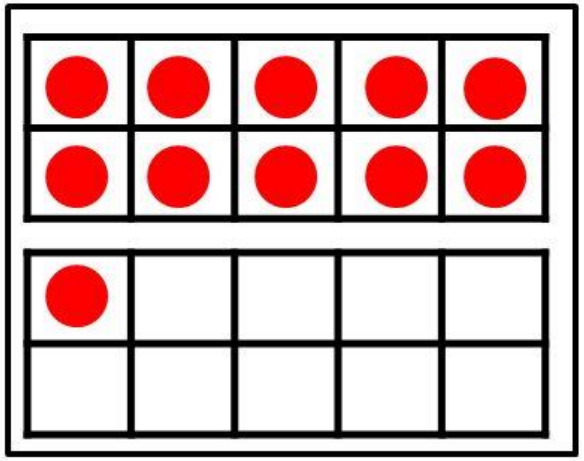
Manipulatives to represent and develop a secure understanding of number

Dienes/ Base Ten

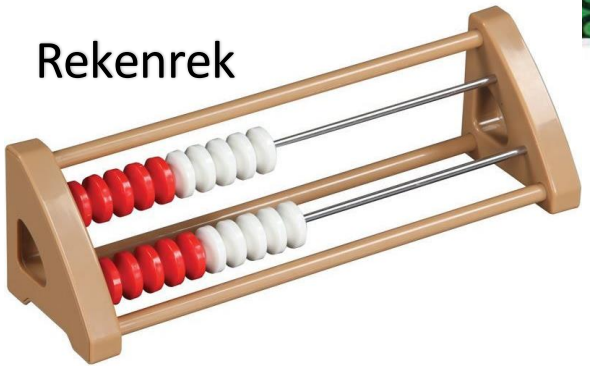


Place Value Counters

Arrow cards



Rekenrek

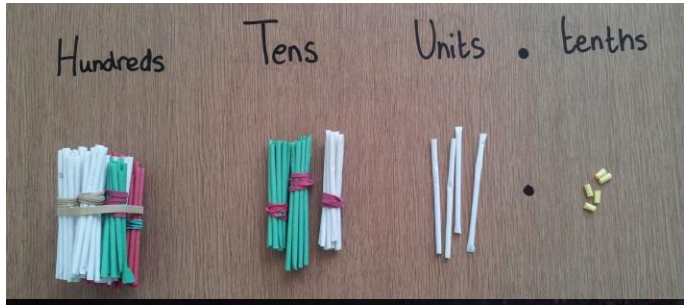


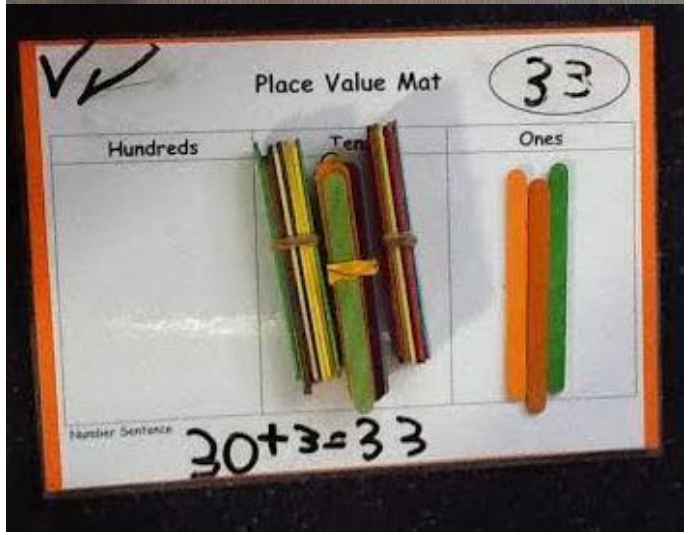
Numicon

Tens Frames

100 square

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





KS2 (Years 3 to 6)

National curriculum in England: primary curriculum - GOV.UK (www.gov.uk)

and refer to our school website for our own curriculum planning.

Main Aims continue to be, **fluency, reason mathematically and solve problems** by applying knowledge in ever more accurate and sophisticated ways. At this stage, Fluency demands quick and efficient recall of facts and procedures to avoid cognitive overload when solving more complex problems.

For a Year 5/ 6 child this means secure recall of:

- Place Value facts for all numbers to 10,000,000
- All times tables facts and corresponding division facts up to 12 X 12 in order to maintain mathematical fluency

In order to:

- Carry out calculations using the 4 operations
- multiply 4-digits by 2-digits
- Divide 4-digits by 2-digits
- Identify common factors, common multiples and prime numbers
- Simplify fractions
- Multiply and divide proper fractions and decimal numbers
- Calculate area and volume …

Red Rose Mastery Scheme

We are now in our 2nd year of using this in Years 1-6.
We chose it because it is a Mastery Scheme and Problem-solving is at the heart of this scheme

What do we mean by *mastery*?

The essential idea behind mastery is that all children need a deep understanding of the mathematics they are learning so that:

- future mathematical learning is built on solid foundations which do not need to be re-taught
- children are taught in a way that promotes deep and secure understanding, and not learning by rule

This includes a belief that all pupils are capable of understanding and doing mathematics, given sufficient time. Pupils are neither 'born with the maths gene' nor 'just no good at maths'. With good teaching, appropriate resources, effort and a 'can do' attitude **all** children can achieve in and enjoy mathematics. Growth Mindset= The harder I work, the better I will do!
It also supports a belief that there is no such thing as 'special needs mathematics' or 'gifted and talented mathematics'. Mathematics is mathematics and the key ideas and building blocks are important for everyone. Mastery teaching keeps the whole class working together on the same topic. Challenge is provided by going deeper rather than accelerating into new.

Red Rose Mastery Scheme

Year 1 Mathematics Yearly Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Week 1	Number and Place value	Sequencing and Sorting	Number and Place value	Length and Mass/weight	Number and Place value	Time
Week 2	Number and Place value	Fractions	Mass/weight	Addition and Subtraction	Addition and Subtraction	Multiplication and Division
Week 3	Length and Mass/weight	Fractions Capacity and Volume	2-D and 3-D Shape	Fractions	Capacity and Volume	Subtraction - difference
Week 4	Addition and Subtraction	Money	Counting and Money	Position and Direction	Fractions	Measurement
Week 5	Addition and Subtraction	Time	Multiplication	Time	Position and Direction Time	Sorting
Week 6	2-D and 3-D shape	Assess and review week	Division	Assess and review week	2-D and 3-D shape	Assess and review week

Year 4 Mathematics Yearly Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Week 1	Place value	Mental multiplication incl. 6x and 9x tables	Place value Roman numerals Counting incl. negative numbers	Mental multiplication and written division incl. 7x and 11x tables	Counting and sequences (statistics)	Place value
Week 2	Place value - decimals	Mental division	Fractions and decimals	Place value	Fractions and decimals (measures)	Statistics
Week 3	Written addition and subtraction	Written multiplication	Fractions, decimals and division	Written multiplication	Fractions and written division	Addition and subtraction (statistics)
Week 4	Written addition and subtraction (problems and inverse)	Length incl. perimeter	Position and direction	2D shape and position	Measures Volume/capacity and mass	Multiplication and division
Week 5	2D shape	Statistics	Area	Addition and subtraction (statistics)	Position and area	Shape
Week 6	Time	Assess and review week	Addition (statistics, measures, money)	Assess and review week	Multiplication facts incl. 12x table and time	Assess and review week

Year 6 Mathematics Yearly Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Week 1	Place value incl. decimals	Fractions	Place value, sequences and coordinates	Mental and written addition and subtraction	Place value, decimals and fractions	Measurement – mass and volume / capacity
Week 2	Mental and written addition	Fractions, percentages, ratio and proportion	2D shape, coordinates, translation and reflection	Measurement, ratio and proportion	Mental and written calculation	Mental and written calculations
Week 3	Mental and written multiplication (time)	Geometry - angles Statistics – pie charts	Measurement – temperature, mean	2D and 3D shape	Calculating fractions, ratio and proportion	Fractions
Week 4	2D and 3D shape	Measurement – length, including perimeter and mass	Calculating with fractions	Area, perimeter and volume of shapes	Coordinates, translation and reflection	Place value and decimals
Week 5	Mental and written subtraction	Measurement – area and volume	Mental and written division	Statistics – line graphs and pie charts	Algebra and sequences	2D and 3D shape
Week 6	Mental and written division	Assess and review week	Mental and written multiplication	Assess and review week	Measurement (length and time) and statistics - mean	Assess and review week

Daily Maths Lesson (1 hour)

Set structure:

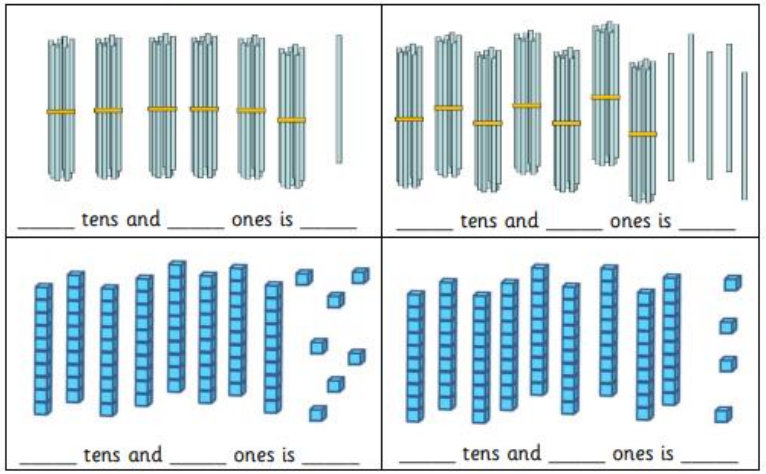
- starter activity
- initial problem
- guided learning tasks
- independent learning
- deeper learning challenges

During the meeting, we looked at an actual lesson using the online teaching resources to illustrate how lessons are developed and embedded over a planned unit. We also discussed how the level of challenge for the children was an integral part of the Red Rose scheme. In place of this, I have tried to illustrate with examples of sequential lessons over the next 3 slides. Slide 12 shows lessons leading up to the focus lesson 5, with slide 14 showing how this learning is developed next.

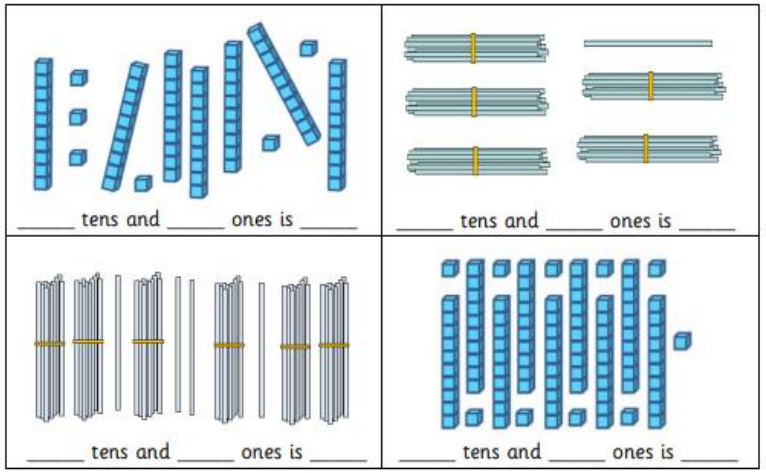
Year 2 Unit 1 Place Value

Unit 1: Lesson 2 **Name**_____

Guided Learning Task 1 (fill in the blanks)

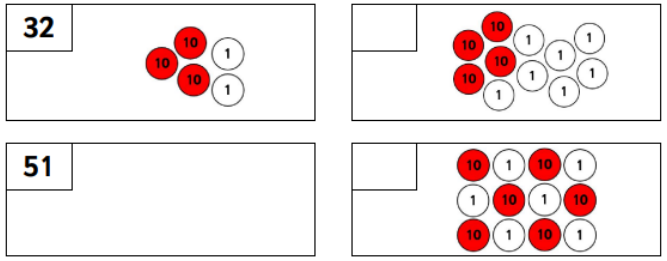


Independent Learning Tasks

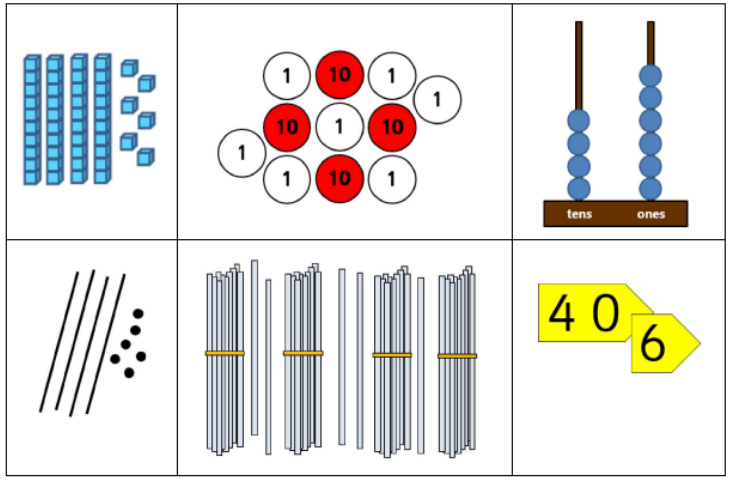


Unit 1: Lesson 3 **Name**_____

Guided Learning Task 1 (Represent the numbers using place value counters).



Guided Learning Task 2 (Tick the representations of 46)

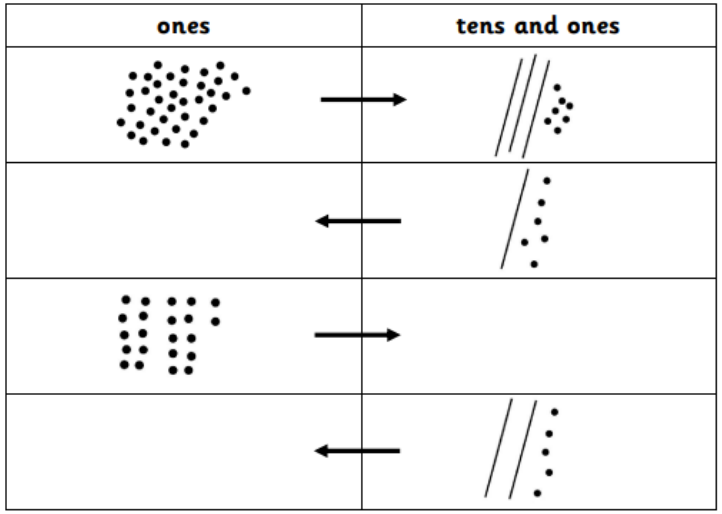


Unit 1: Lesson 4 **Name**_____

Guided Learning Task 1 (Represent the numbers using jottings).

29	54
83	71

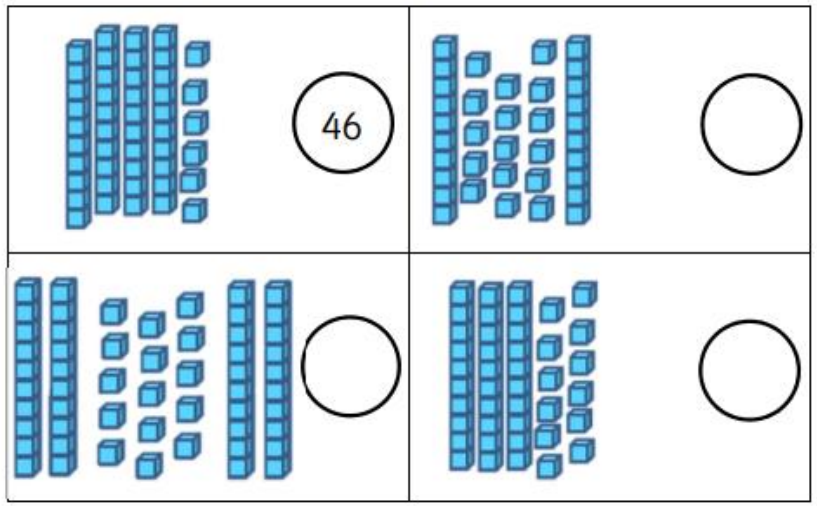
Guided Learning Task 2 (Exchanging ones for tens and tens for ones (cross out ten before exchanging!)



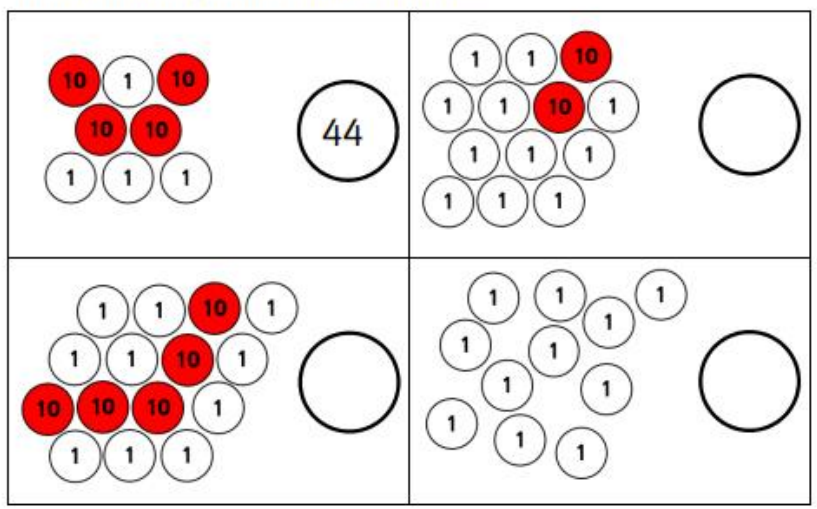
Year 2 Unit 1 Lesson 5
Place Value

Unit 1: Lesson 5 **Name**_____

Guided Learning Task 1 (write the number)

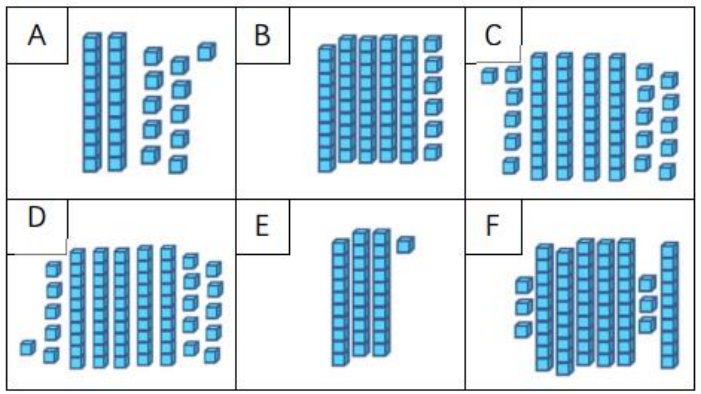


Guided Learning Task 2 (write the number)



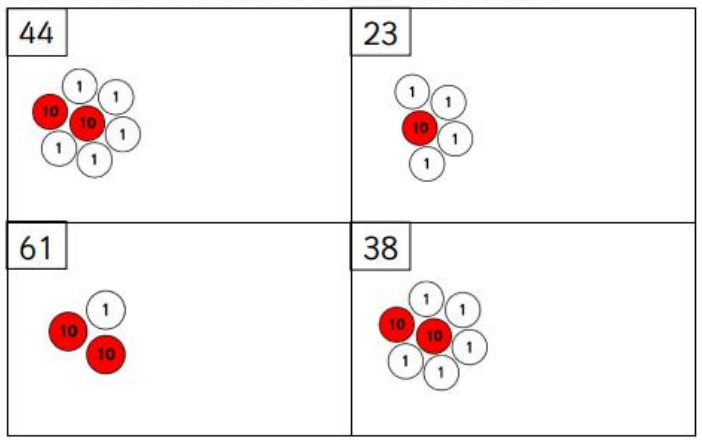
Independent Learning Tasks

Match the pairs.



____ and ____	____and ____	____ and ____

Draw more place value counters to complete the representation.



Unit 1: Lesson 6 **Name**_____

Guided Learning Task 1 (fill in the blanks)

41 is 4 tens and 1 ones

58 is _____ tens and _____ ones

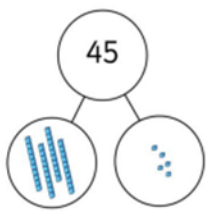
20 is _____ tens and _____ ones

7 is _____ tens and _____ ones

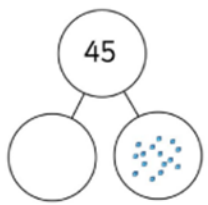
_____ is 3 tens and 2 ones

_____ is 5 tens and 0 ones

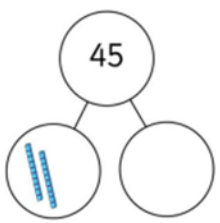
Guided Learning Task 2 (complete the partitioning).



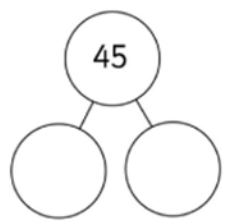
45 is ____ tens and ____ ones



45 is ____ tens and ____ ones



45 is ____ tens and ____ ones



45 is ____ tens and ____ ones

Independent Learning Tasks

Partition these numbers.

17 is 1 tens and _____ ones

25 is _____ tens and 5 ones

92 is _____ tens and _____ ones

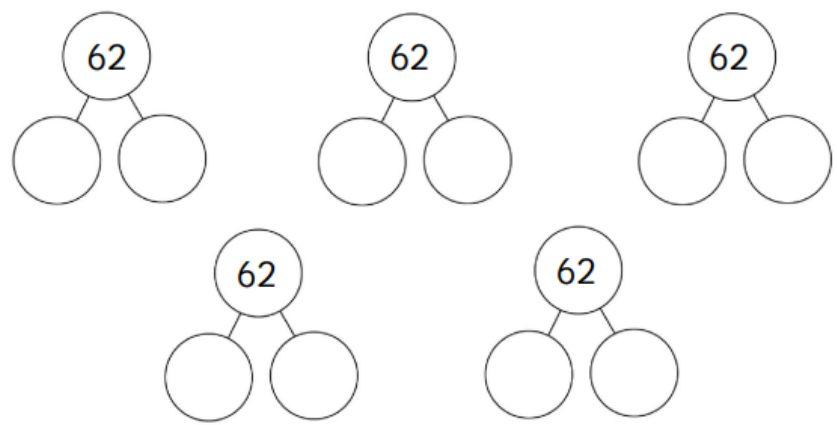
48 is _____ ones and _____ tens

_____ is 5 tens and 3 ones

Circle the correct partitioned parts that make each number:

84	(4)	8	40	50	(80)
47	4	7	17	40	70
51	1	5	10	20	50
17	1	7	10	12	70

Partition the number 62 in five different ways. Make one of your numbers a multiple of ten.



What assessments will my child undertake?

Reception Baseline Assessments

From September 2021 Children in state-funded primary and infant schools now take a new statutory baseline assessment within the first six weeks of entering Reception class. This focuses on **maths**, language, communication and literacy. The results will be used as the starting point to assess how much progress schools are making with their pupils.

Assessment at the end of the EYFS- The Early Years Foundation Stage

Often referred to as The Early Learning Goals, Maths is a specific area of these assessments which are made in the summer term of Reception and include: counting confidently to 10 and developing a deep understanding of the numbers to 10, including decomposition; shape, space and measures.

SATs, or National Curriculum Assessments

SATs, or National Curriculum Assessments, are assessments of primary pupils' progress and attainment.
Until 2023, they were completed at the end of KS1 (end of infant phase/ Year 2) and KS2 (end of junior phase/ Year 6).
KS1 SATs are no longer statutory but **Key stage two SATs are still statutory and will continue**. SATs assess learning in the core subjects : English, **Maths**, and Science. Please see next slides for example questions on previous maths papers.

Multiplication Tables Check in Year 4

Since 2021/22 the government has administered an online tables check for children in Year 4 (June). The Multiplication Times Tables Check is an online test where the pupils are asked 25 questions on times tables to 12 x 12. For every question, you have 6 seconds to answer, and in between the questions, there is a 3-second rest. Questions about the 6, 7, 8, 9, and 12 times tables come up more often.

School's standardised assessment tests (NTS) Termly Assessment Week

Each term, Year 1 to Year 6 children complete a set of standardised tests, including one for maths. These tests show progress and help to identify groups of learners who may need additional support to reach ARE. From this data, teachers also complete gap analysis to identify strengths and areas for development to inform future planning, teaching and learning for the whole class.

Example KS1 SAT questions

3 $4 \times 2 =$ ☐ (1 mark)

4 $55 + 5 + 5 =$ ☐

5 $30 + 40 =$ ☐ (1 mark)

6 $30 + 10 + 50 =$ ☐

9 $78 + 5 =$ ☐ (1 mark)

10 $59 - 6 =$ ☐

Paper 1 Arithmetic

15 $\frac{1}{2}$ of 24 = ☐ (1 mark)

16 $44 + 26 =$ ☐

17 $77 - 65 =$ ☐ (1 mark)

18 $98 - 37 =$ ☐

22 $\frac{1}{2}$ of 50 = ☐

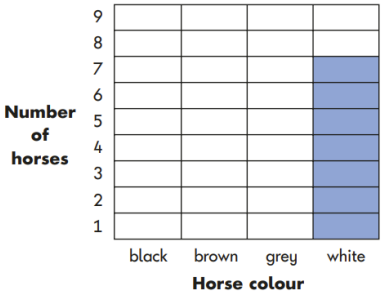
Paper 2 Reasoning

This table shows the different colours of horses on a farm.

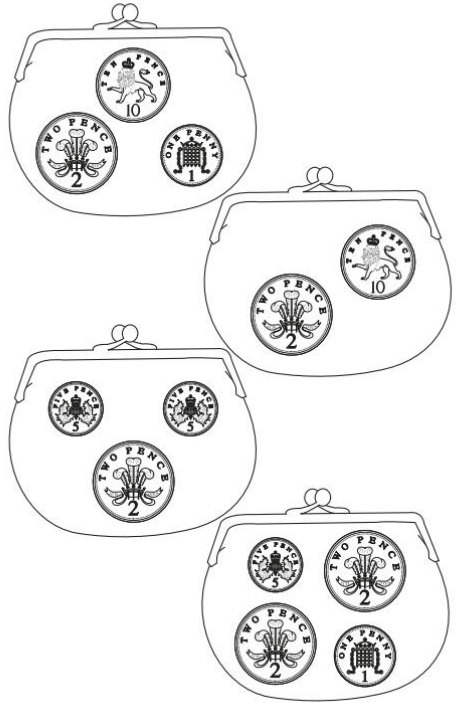
Horse colour	Number of horses
black	2
brown	0
grey	4
white	7

Use the table to complete the graph below.

One is done for you.



14 Tick **two** purses with the **same** amount of money.



(1 mark)

Write the missing numbers in this pattern.

		71		73	74

(1 mark)

Sam has **90** marbles.

He gives **50** marbles to Ben.

How many marbles does Sam have left?

☐ marbles

These Assessments are taken at the end of Year 2, typically in the month of June.

[Optional key stage 1 tests: 2025 mathematics test materials - GOV.UK]

Example KS2 SAT questions Paper 1 Arithmetic

1 689 + 38 = ☐ 1 mark

2 72 ÷ 3 = ☐ 1 mark

3 23 × 6 =

4 4,532 – 19 = ☐ 1 mark

5 3 × 391 = ☐ 1 mark

6 ☐ = 9,171 – 530

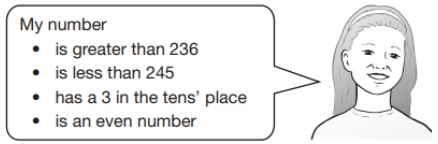
13 561 ÷ 3 =

14 $\frac{4}{6} \times \frac{1}{8}$ =

15 ☐ = 630 ÷ 7

Paper 2 Reasoning

Olivia is thinking of a number.



What number is Olivia thinking of?

☐ 1 mark

A box holds 40 packets of envelopes.

Each packet holds 25 envelopes.

How many **envelopes** does the box hold?

Write a **whole number** in each box to make the statements correct.

One has been done for you.

18 rounded to the nearest **ten** is 20

☐ rounded to the nearest **thousand** is 4,000

☐ rounded to the nearest **ten thousand** is 820,000

1 mark

Here is a number.

9,658,214

Tick the statements that are **true**.

- The digit 5 represents 50,000 ☐
- The value of the digit 9 is nine hundred thousands. ☐
- The digit 6 represents 6 millions. ☐
- The value of the digit 2 is twenty tens. ☐

2 marks

These Assessments are taken at the end of Year 6, typically May/ June time.

[Key stage 2 tests: 2025 mathematics test materials - GOV.UK]

Home work- Times Table Rockstars!

https://youtu.be/-ZxZbRVvbYM

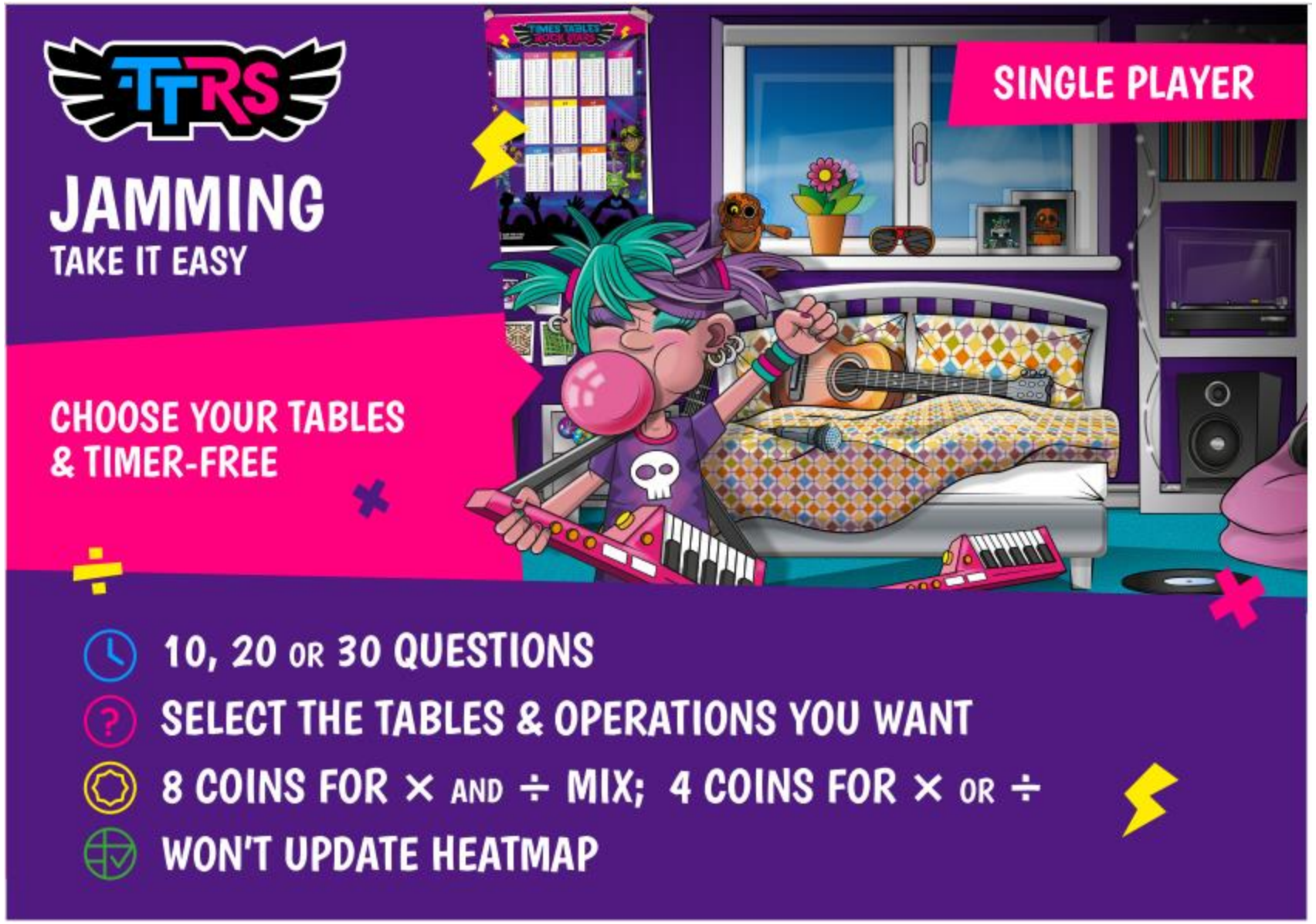
Times Table Rockstars (TTR) including NumberBots is our whole school platform to reinforce times tables. Children have their own unique password and login details and can access this at any time from home and school. As you are aware we are currently relaunching this in school with fresh displays, motivational awards and higher levels of engagement in school and home. It is a highly motivational tool and the children are challenged to recall multiplication and division facts at increasingly quicker speeds. They can challenge class friends to games and Staff will regularly set competitions between Year group classes.

Each Friday pupils will be awarded certificates for effort, fluency, engagement or progress in classes. Overall winners and classes will be celebrated in our whole school Friday assemblies.

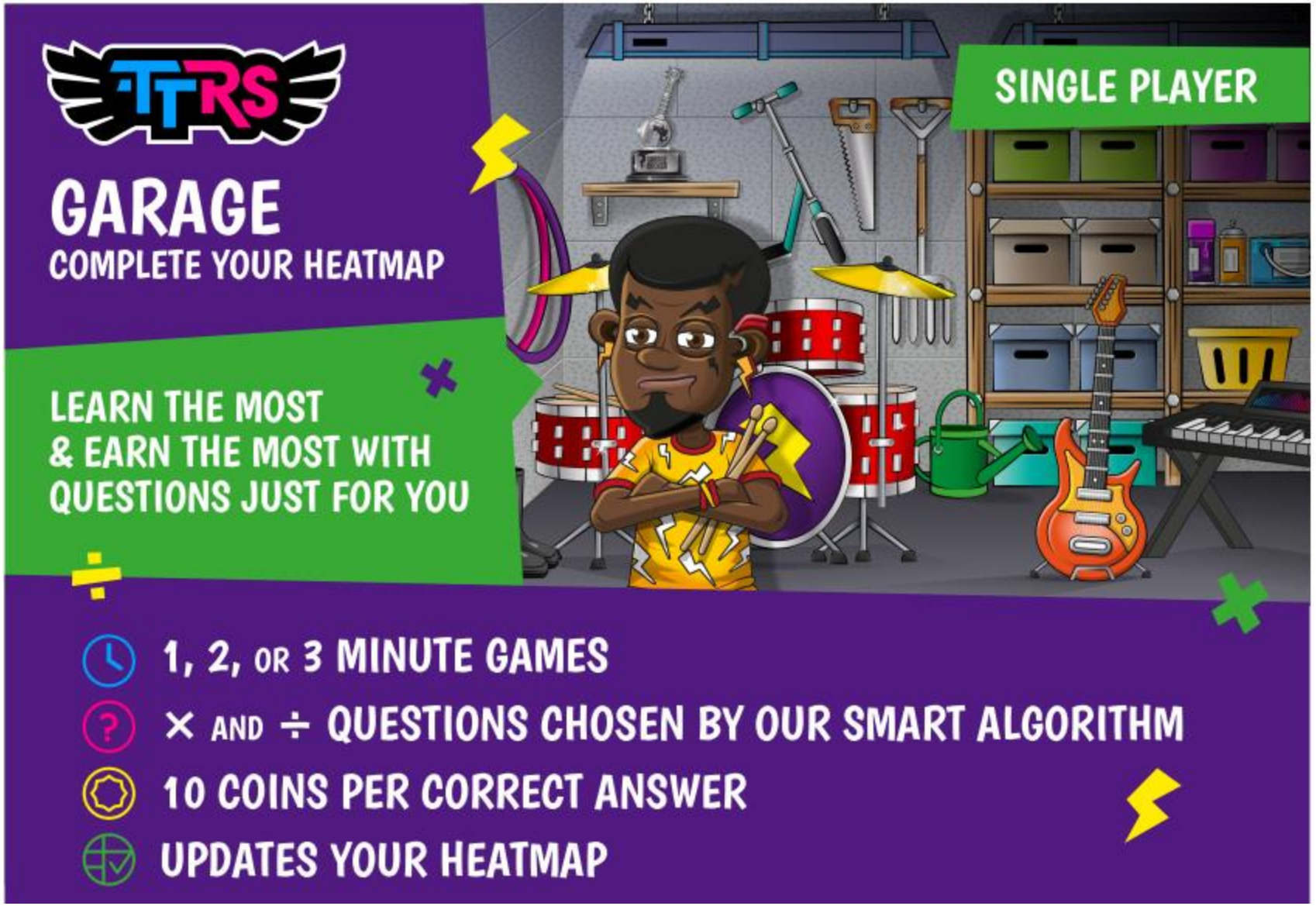
GAME MODE GUIDE

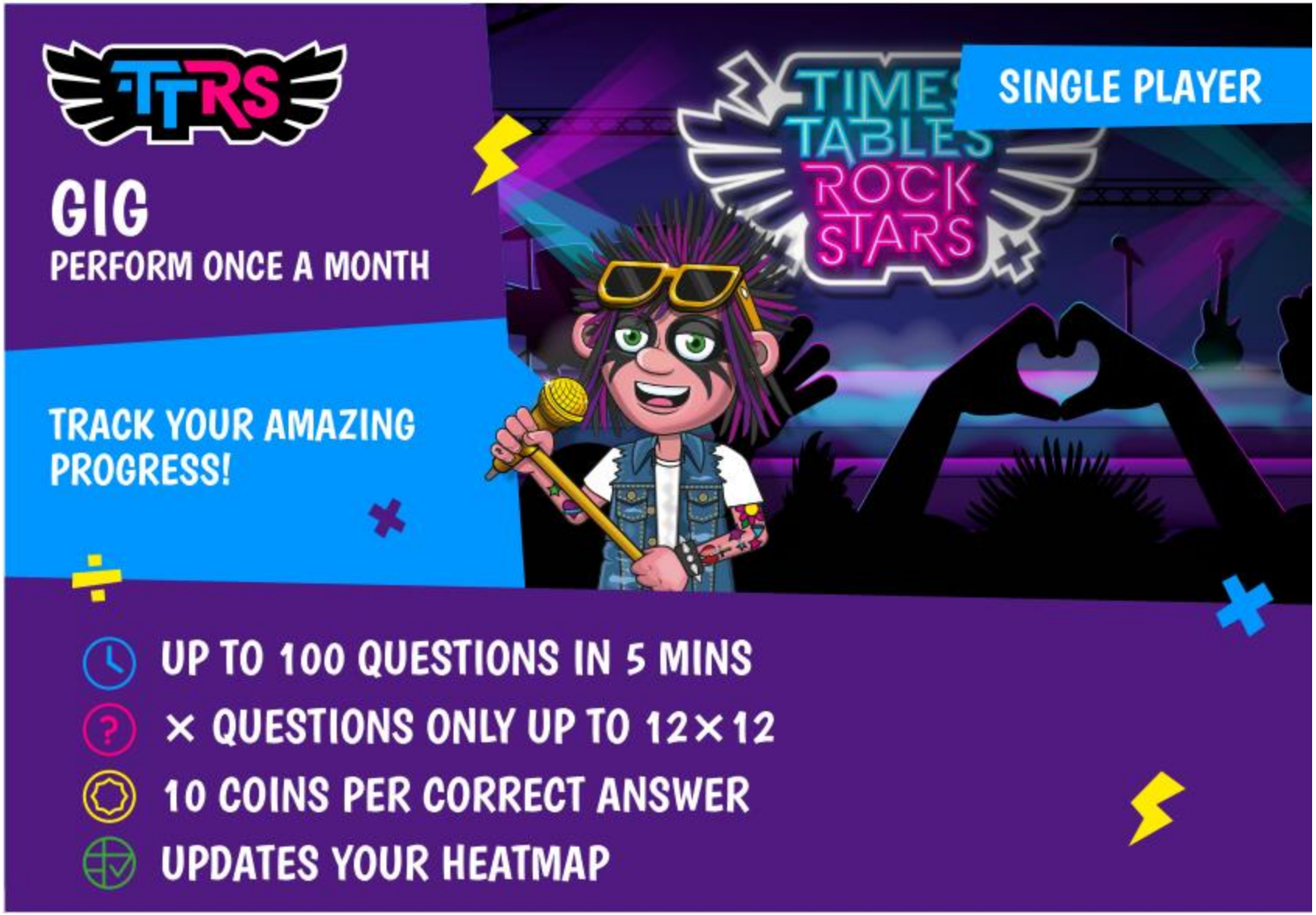
		GAME FORMAT	QUESTION TYPE	COINS	HEATMAP
SINGLE	JAMMING	10, 20 or 30 questions	Select the tables and operations you want	8 coins for × ÷ mix 4 coins for × OR ÷	✗
	GARAGE	1, 2, or 3 minute games	× and ÷ questions chosen just for you	10 coins per correct answer	✓
	GIG	Up to 100 questions in 5 mins	× questions only up to 12×12	10 coins per correct answer	✓
	STUDIO	1 minute games	× and ÷ questions up to 12×12	1 coin per correct answer	✓
	SOUNDCHECK	25 questions, 6 seconds each	× questions only up to 12×12	5 coins per correct answer	✓
MULTI	FESTIVAL	1 minute games	× and ÷ questions up to 12×12	1 coin per correct answer	✓
	ARENA	1 minute games	× and ÷ questions chosen just for you	1 coin per correct answer	✓
	ROCK SLAM	1 minute games	× and ÷ questions up to 12×12	1 coin per correct answer	✓

Best for developing confidence



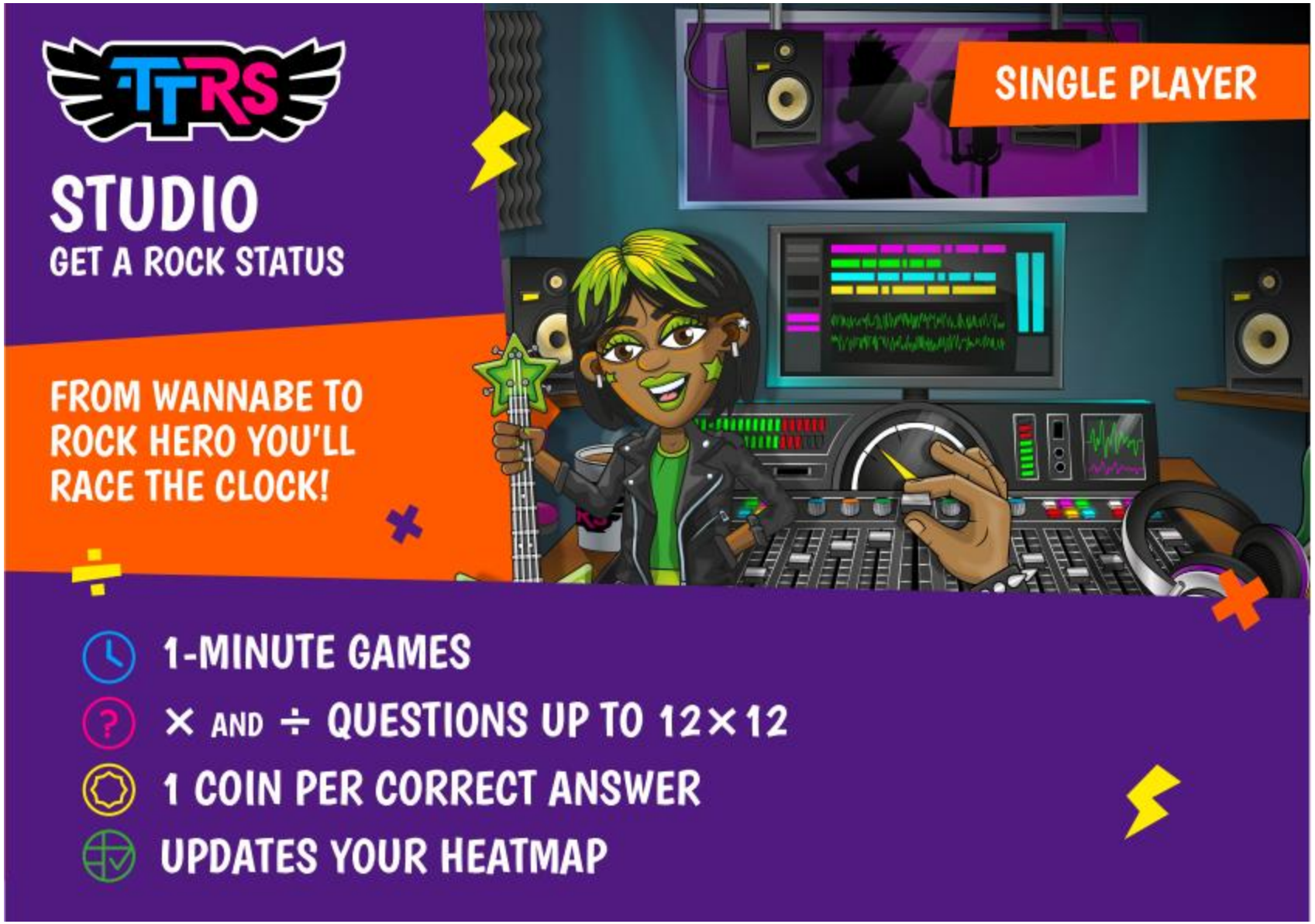
Personalised practice



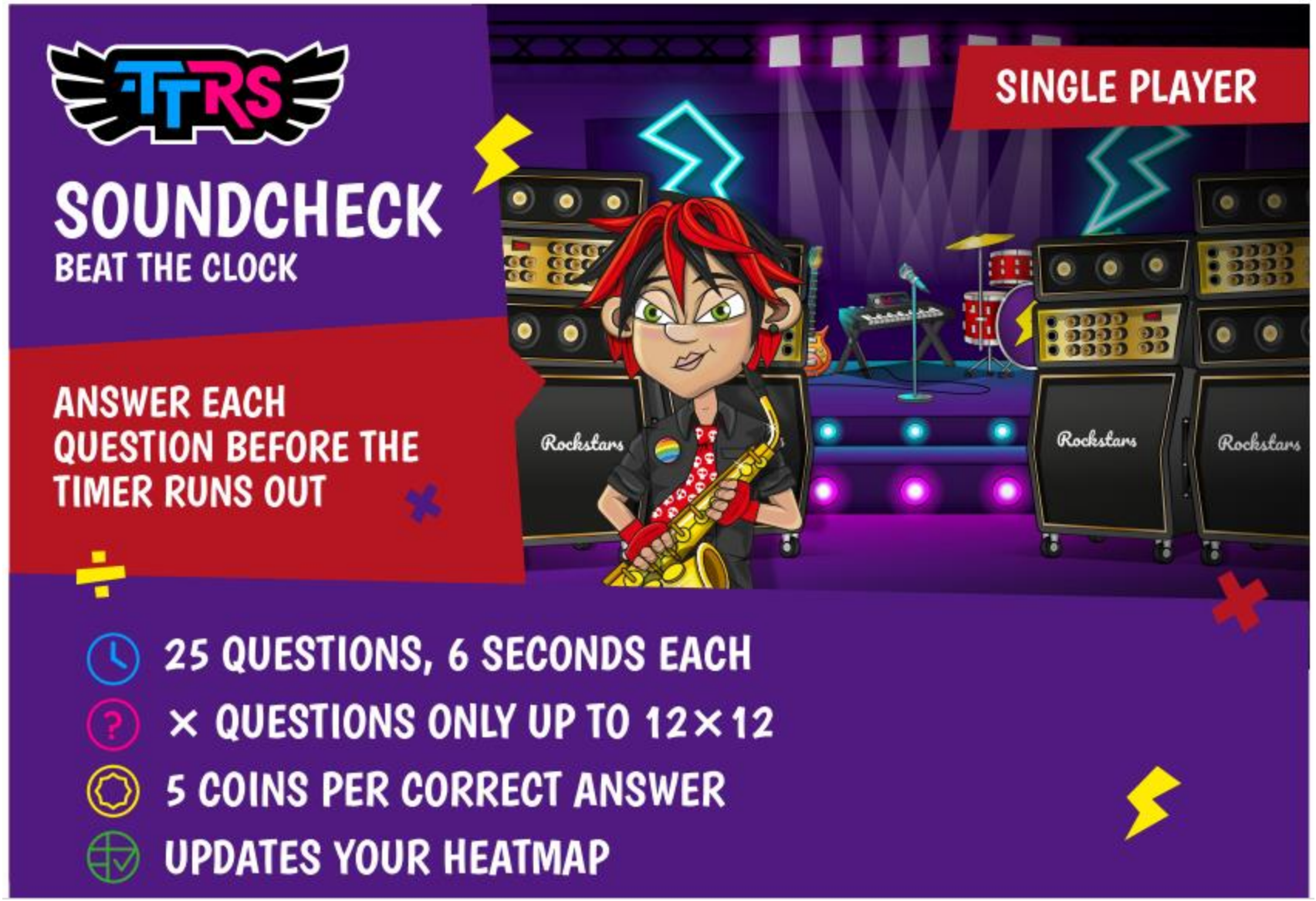


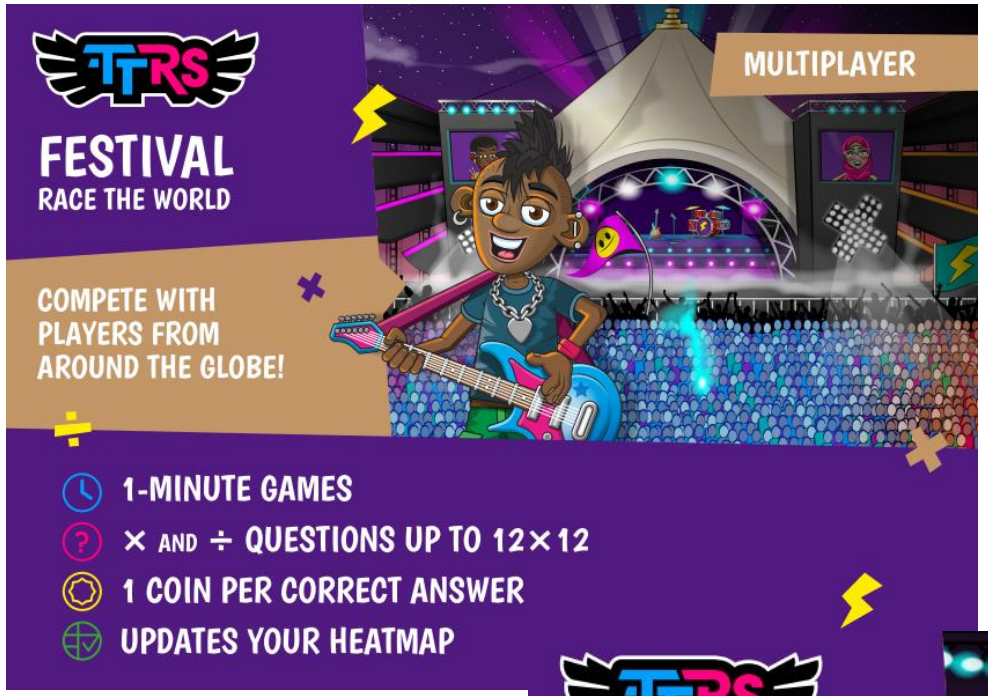
Please do not use Gig at home as we are using this game mode monthly to update heatmaps in schools

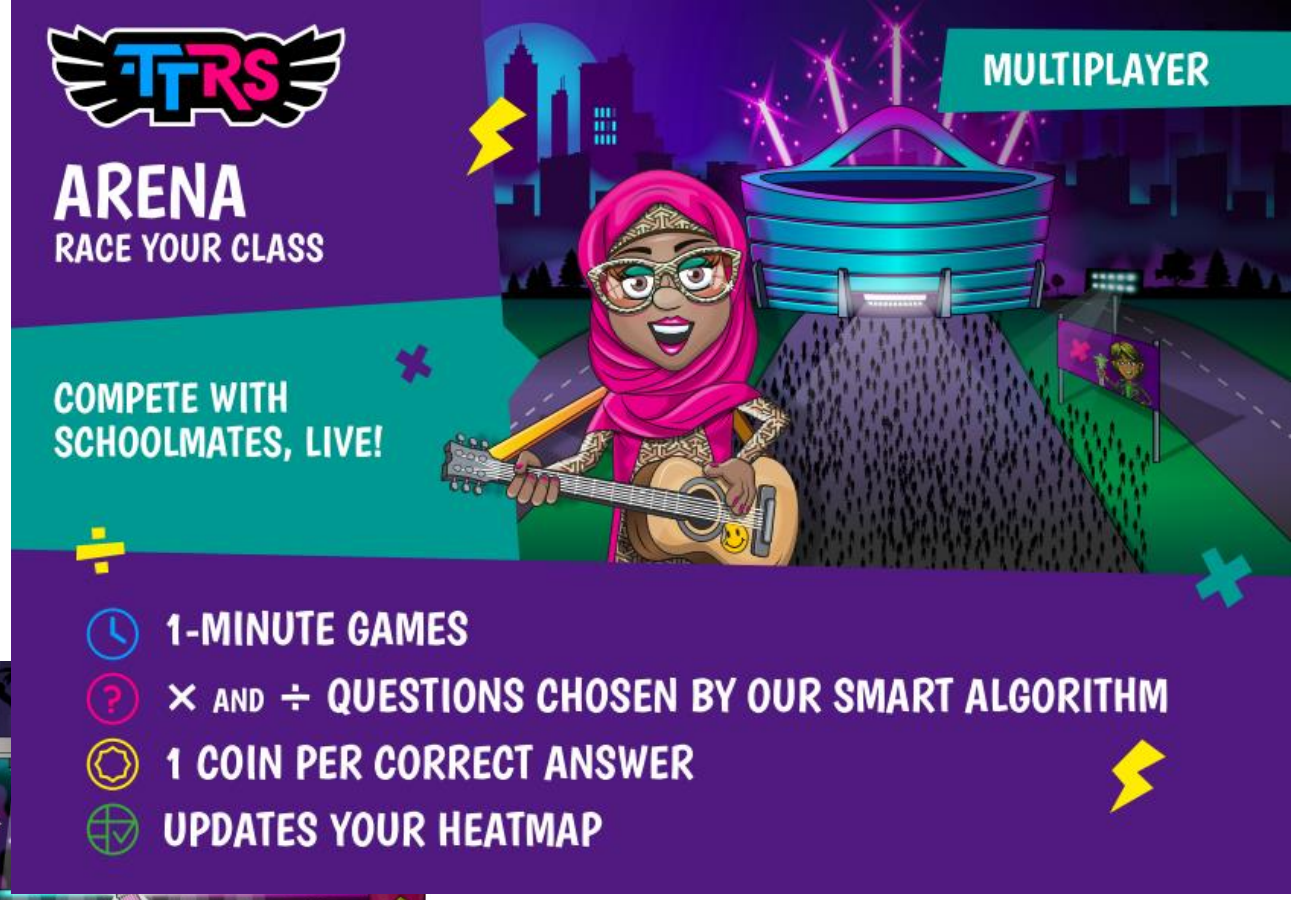
Engagement and motivation

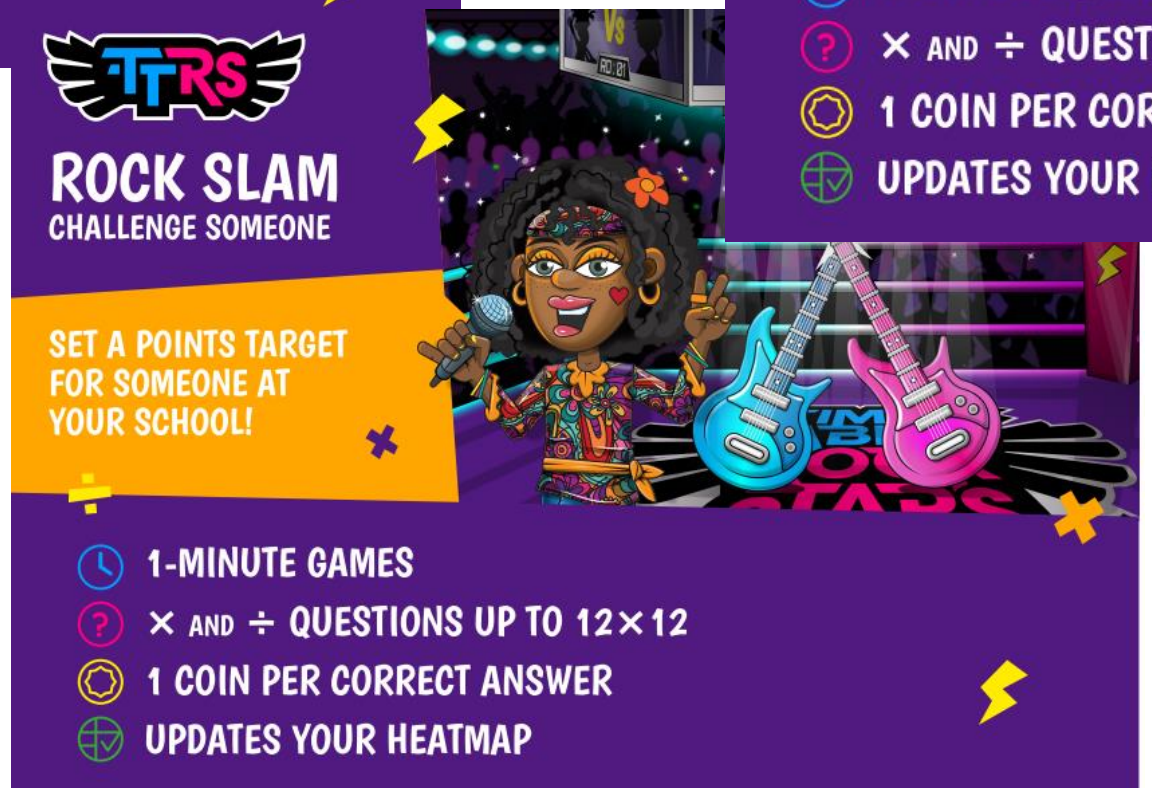


MTC emulator







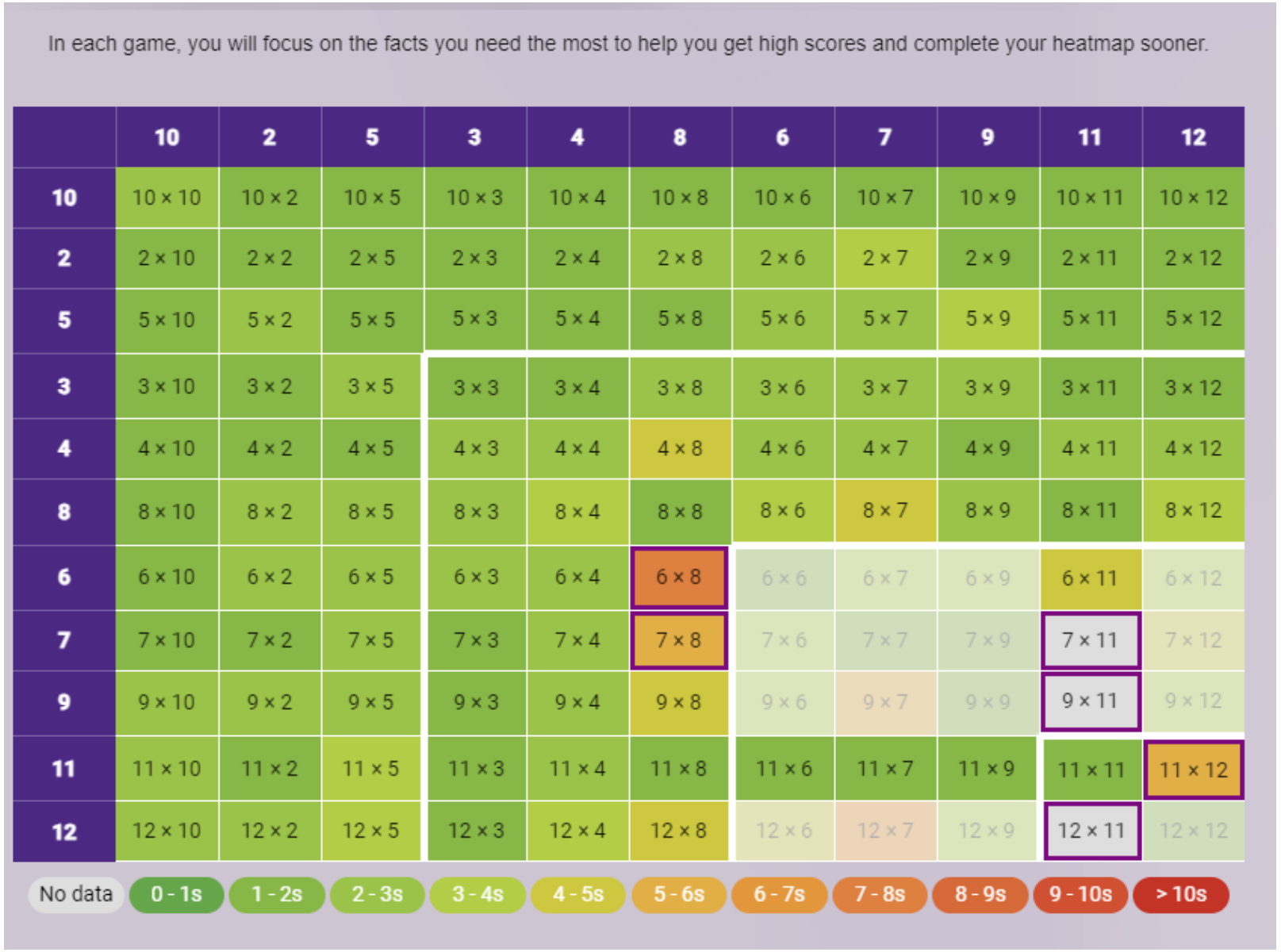


Engagement and motivation

All of the games except **Jamming** on TTRs contributes to a unique heatmap for each child.
This shows which times tables your child is able to recall at speed and which s/he is less secure recalling. TTRs will automatically target these and focus on them in all game modes.

All class teachers regularly look at these heatmaps to support their planning and teaching in class.

Please note, homework in Year 1 will focus on using NumberBots for the majority of the year to support an understanding of number. However, in the Summer Term Year 1 classes will start to use TTRs once multiplication has been taught in class.



What else can you do at home….

Celebrate number!

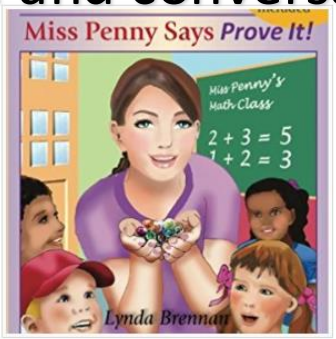
Spot numbers together in your environment – reading numbers, comparing numbers.

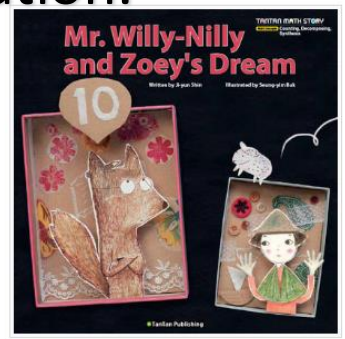
Oral counting and number songs for EYFS and KS1 children.

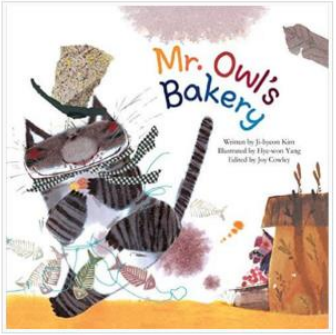
Timetables games and quizzes. Rewarding effort on TTRs.

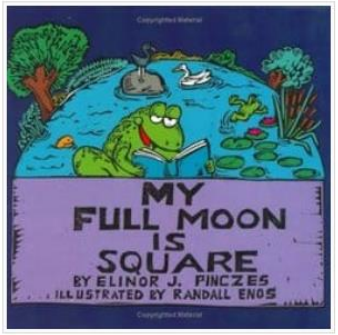
Promoting a ‘Can do’ attitude to maths at home.

Sharing Stories at home that promote mathematical language and conversation.









[BOOK REVIEWS - MathsThroughStories.org]

[Counting songs - BBC Teach]

[Times tables games and songs 1-12 - BBC Bitesize]

[Learn to Count with fun Counting Games for KS1 Children]

[Maths at home - Primary | NRICH]

[Home - Times Tables Rock Stars]

Parent Information

For greater details on what is taught in each year group please see the Medium Term Planning section on the school website which will detail what aspects of Maths are being taught when.

Further details of the EYFS, KS1 and KS2 curriculum can be found by viewing the Primary National Curriculum on the government website:
National curriculum - GOV.UK (www.gov.uk)

Thank you for your time ☺