



PARENTS EVENING MATHS PACK

YEAR 6

In this pack you will find:

- An explanation of the Power Maths approach, which we use to teach our daily maths lessons in school.
- A list of the topics your child will cover in Power Maths.
- A copy of the basic skills objectives your child will cover this year.
- A copy of the calculation policy, demonstrating the calculation methods your child will be using in class.
- An explanation of why we use Times Tables Rockstars and how to login at home and use it.
- A brief summary of the maths SATs papers should the pupils sit the tests in Summer Term.



Dear parents,

We use a maths scheme called *Power Maths* to support our daily teaching of maths.

What is *Power Maths*?

Power Maths is a resource that has been designed for UK schools based on research and extensive experience of teaching and learning around the world and here in the UK. It has been designed to support and challenge all pupils, and is built on the belief that EVERYONE can learn maths successfully.

How does this support our approach to teaching?

The philosophy behind *Power Maths* is that being successful in maths is not just about rote-learning procedures and methods, but is instead about problem solving, thinking and discussing. It is about learning a range of methods to solve one problem, and about picking the most efficient method. Many people feel they were taught maths in a way that was about memorising formulas and calculation methods, then having to apply them without any real understanding of what or how these methods actually work. *Power Maths* includes practice questions to help children develop fluent recall and develop their conceptual understanding. *Power Maths* uses growth mindset characters to prompt, encourage and question children. They spark curiosity, engage reasoning, secure understanding and deepen learning for all.

How will the lessons work?

Each lesson has a progression, with a central flow that draws the main learning into focus. There are different elements, informed by research into best practice in maths teaching, that bring the lessons to life:

- **Basic skills**- the children revisit a topic they have been studying previously. The concept will be modelled to them and they will answer some questions relating to it.
- **Discover** – each lesson begins with a problem to solve, often a real-life example, sometimes a puzzle or a game. These are engaging and fun, and designed to get all children thinking.
- **Share** – the class shares their ideas and compares different ways to solve the problem, explaining their reasoning with hands-on resources and drawings to make their ideas clear. Children are able to develop their understanding of the concept with input from the teacher.
- **Think together** – the next part of the lesson is a journey through the concept, digging deeper and deeper so that each child builds on secure foundations

while being challenged to apply their understanding in different ways and with increasing independence.

- **Practice** – now children practice individually or in small groups, rehearsing and developing their skills to build fluency, understanding of the concept and confidence.
- **Reflect** – finally, children are prompted to reflect on and record their learning from each session and show how they have grasped the concept explored in the lesson.

What if my child needs a confidence boost, or wants to be challenged further?

Power Maths is based on a 'small-steps' approach, sometimes called a mastery approach. This means that the concepts are broken down so that your child can master one idea without moving on too quickly or feeling over-whelmed. There are a range of fluency, reasoning and problem solving questions in each lesson that are designed to support the different needs and confidence levels within a class, while at the same time fostering a spirit of working and learning together. Each lesson includes a challenge question for those children who can delve deeper into a concept.

How are we approaching the catch up curriculum after the extended 2020 and 2021 lockdowns?

This year, we have introduced basic skills sessions three days a week to address any mathematical gaps the pupils may be facing. A basic skills session is a fifteen minute mini lesson that comes before the main maths lesson. It comprises of counting, modelling and practice of a key mathematical skill. These sessions will allow repeated modelling and practice of the mathematical facts and the pictorial, mental and written calculation methods that the pupils need to feel confident with to be able to fully access the rest of the maths curriculum.

To further boost pupils' arithmetic skills, we have purchased a scheme of arithmetic questions for each year group and the pupils will also be working on these questions one day a week before their maths lesson to boost their confidence with calculations. As a school, we are also having a focus on times tables recall. We have completed a baseline assessment of the children's times tables recall and will be using some of our maths lesson time, possibly alongside small-group interventions, to teach the times tables that pupils are less confident with. Teachers will alter TT Rockstars throughout the year to support your child with practising their target times tables at home.

Please do not hesitate to contact me through the school office if you have any questions about maths at Booker.

Best wishes,
Mrs Moody, Maths Lead.

Power maths topics Year 6:

Textbook	Strand	Unit		Number of Lessons
Textbook A / Practice Book A (Term 1)	Number – number and place value	1	Place value within 10,000,000	7
	Number – addition, subtraction, multiplication and division	2	Four operations (1)	10
	Number – addition, subtraction, multiplication and division	2	Four operations (2)	9
	Number – fractions	4	Fractions (1)	11
	Number – fractions	5	Fractions (2)	9
	Geometry – position and direction	6	Geometry – position and direction	4
Textbook B / Practice Book B (Term 2)	Number – fractions (including decimals and percentages)	7	Decimals	9
	Number – fractions (including decimals and percentages)	8	Percentages	9
	Algebra	9	Algebra	11
	Measurement	10	Measure – imperial and metric measures	5
	Measurement	11	Measure – perimeter, area and volume	11
	Ratio and proportion	12	Ratio and proportion	9
Textbook C / Practice Book C (Term 3)	Geometry – properties of shapes	13	Geometry – properties of shapes	12
	Number – number and place value	14	Problem solving	14
	Statistics	15	Statistics	10

Basic Skills Objectives Year 6:

Year 6 basic skills

- Count forward and backwards in steps of power of 10 for any given number up to 10, 000, 000
- Count forwards and backwards with positive and negative whole numbers including zero and calculate intervals across zero
- Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit
- Partition numbers into place value columns
- Partition numbers in different ways
- Round any whole number to a required degree of accuracy
- Use rounding to support estimation and calculation
- Use knowledge of place value to derive new addition and subtraction facts
- Recognise and use square and cube numbers
- Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- Establish whether a number up to 100 is prime and recall prime numbers up to 19
- Double any number between 1 and 1000 and find all corresponding halves
- Add and subtract mentally with jottings with increasingly large numbers to aid fluency e.g. HthTthTHTU \pm TthTHTU, TthTHTU \pm THTU, HTU.t \pm TU.t
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 giving answers up to 3 decimal places
- Perform mental calculations including with mixed operations
- Count up and down in tenths, hundredths and thousandths in decimals and fractions including bridging zero for example on a number line
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Use factors to simplify fractions
- Compare and order decimals and fractions including fractions >1
- Calculate simple percentages of amounts
- Recognise mixed numbers and improper fractions and convert from one form to another and write mathematical statements >1 as a mixed number
- Derive decimal complements to 1 working with decimals up to 3 decimal places
- Recall and derive equivalences between fractions, decimals and percentages
- Convert between money and measures including time



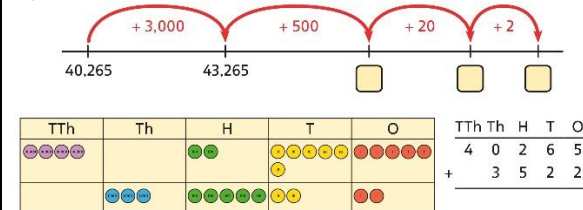
Power Maths calculation policy, UPPER KS2

Column addition with whole numbers and decimals

Represent 7-digit numbers on a place value grid, and use this to support thinking and mental methods.

M	HTh	TTh	Th	H	T	O
●●	●●●●	●	●	●●●		●

Look at different methods: number line, place value counters, column addition. Choose efficient methods based on the specific calculation.



Use column addition where mental methods are not efficient. Recognise common errors with column addition.

$$32,145 + 4,302 = ?$$

TTh	Th	H	T	O
3	2	1	4	5
+	4	3	0	2
<hr/>				
3	6	4	4	7

TTh	Th	H	T	O
3	2	1	4	5
+	4	3	0	2
<hr/>				
7	5	1	6	5

Column methods are also used for decimal additions where mental methods are not efficient.

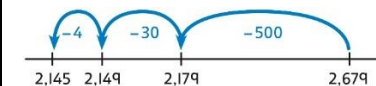
H	T	O	Tth	Hth
1	4	0	0	9
+	4	9	8	9
<hr/>				
1	8	9	8	8

Column subtraction with whole numbers and decimals

Use counters on a place value grid to represent subtractions of larger numbers.

Th	H	T	O
●●	●●●●●	●●●●●	●●●●●

Look at number line, place value and column methods. Choose efficient methods based on the specific calculation.



Th	H	T	O
●●	●●●●●	●●●●●	●●●●●

Th	H	T	O
2	6	7	9
-	5	3	4
<hr/>			
2	1	4	5

Compare and select methods. Use column subtraction when mental methods are not efficient. Use two different methods for one calculation as a checking strategy.

Th	H	T	O
1	5	5	8
-	1	5	8
<hr/>			
3	9	4	

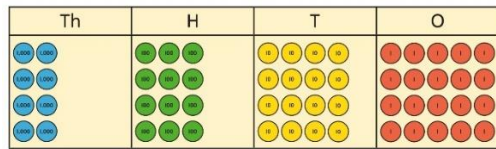
Number line: $1,558 - 400 = 1,158$; $1,158 + 6 = 1,564$

Use column subtraction for decimal problems, including in the context of measure.

H	T	O	Tth	Hth
3	0	9	6	0
-	2	0	6	4
<hr/>				
1	0	3	2	0

Multiplying up to 4-digit numbers by a single digit

Use equipment to explore multiplications.



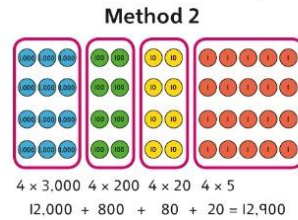
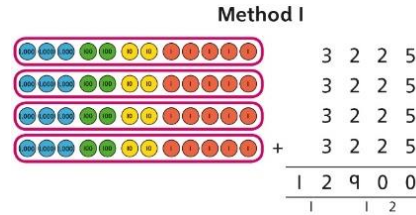
4 groups of 2,345

This is a multiplication:

$$4 \times 2,345$$

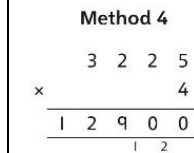
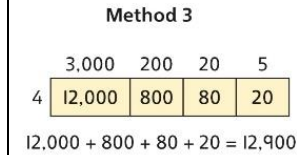
$$2,345 \times 4$$

Use place value equipment to compare methods.



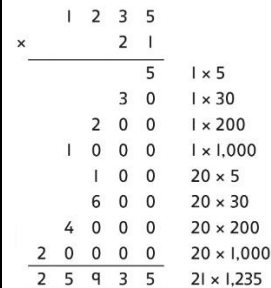
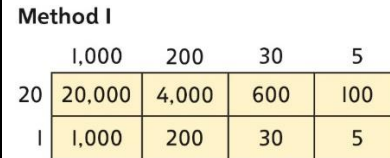
Understand area model (model 3) and short multiplication.

Compare and select appropriate methods for specific multiplications.

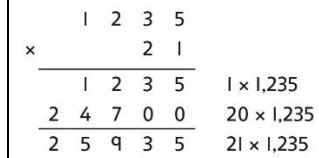


Multiplying up to a 4-digit number by a 2-digit number

Use an area model alongside written multiplication.

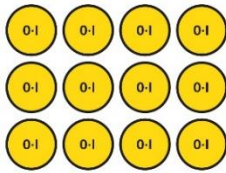


Use compact column multiplication with understanding of place value at all stages.

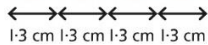
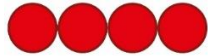


Multiplying decimals

Explore decimal multiplications using place value equipment and in the context of measures.



3 groups of 4 tenths is 12 tenths.
4 groups of 3 tenths is 12 tenths.



$$4 \times 1 \text{ cm} = 4 \text{ cm}$$

$$4 \times 0.3 \text{ cm} = 1.2 \text{ cm}$$

$$4 \times 1.3 = 4 + 1.2 = 5.2 \text{ cm}$$

Represent calculations on a place value grid.

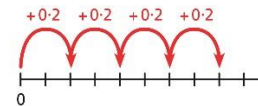
$$3 \times 3 = 9$$

$$3 \times 0.3 = 0.9$$

T	O	•	Tth

Understand the link between multiplying decimals and repeated addition.

T	O	•	Tth



Use known facts to multiply decimals.

$$4 \times 3 = 12$$

$$4 \times 0.3 = 1.2$$

$$4 \times 0.03 = 0.12$$

$$20 \times 5 = 100$$

$$20 \times 0.5 = 10$$

$$20 \times 0.05 = 1$$

Find families of facts from a known multiplication.

I know that $18 \times 4 = 72$.

This can help me work out:

$$1.8 \times 4 = ?$$

$$18 \times 0.4 = ?$$

$$180 \times 0.04 = ?$$

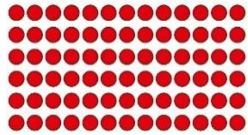
$$18 \times 0.04 = ?$$

Use a place value grid to understand the effects of multiplying decimals.

	H	T	O	•	Tth	Hth
2×3			6	•		
0.2×3			0	•	6	
0.02×3				•		

Dividing by a single digit

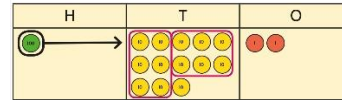
Use equipment to make groups from a total.



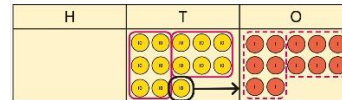
There are 78 in total.
There are 6 groups of 13.
There are 13 groups of 6.



How many groups of 6 are in 100?
 $6 \overline{) 1 \ 3 \ 2}$



How many groups of 6 are in 13 tens?
 $6 \overline{) 0 \ 2}$



How many groups of 6 are in 12 ones?
 $6 \overline{) 0 \ 2 \ 2}$

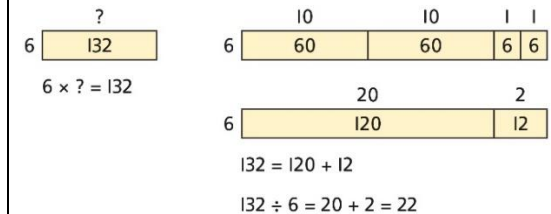
Use short division to divide by a single digit.

$$6 \overline{) 1 \ 3 \ 2}$$

$$6 \overline{) 0 \ 2}$$

$$6 \overline{) 0 \ 2 \ 2}$$

Use an area model to link multiplication and division.

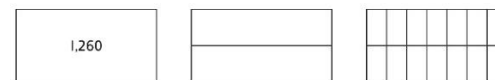


Dividing by a 2-digit number using factors

Understand that division by factors can be used when dividing by a number that is not prime.

Use factors and repeated division.

$$1,260 \div 14 = ?$$



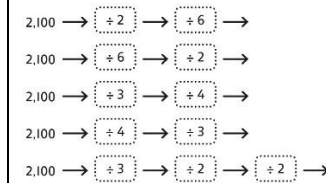
$$1,260 \div 2 = 630$$

$$630 \div 7 = 90$$

$$1,260 \div 14 = 90$$

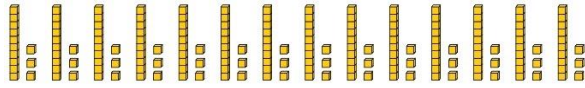
Use factors and repeated division where appropriate.

$$2,100 \div 12 = ?$$



Dividing by a 2-digit number using long division

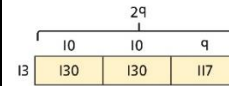
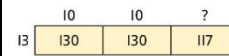
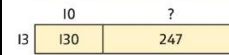
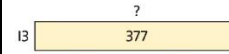
Use equipment to build numbers from groups.



*182 divided into groups of 13.
There are 14 groups.*

Use an area model alongside written division to model the process.

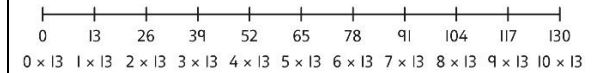
$$377 \div 13 = ?$$



$$377 \div 13 = 29$$

Use long division where factors are not useful (for example, when dividing by a 2-digit prime number). Write the required multiples to support the division process.

$$377 \div 13 = ?$$



$$\begin{array}{r}
 13 \overline{) 377} \\
 - 130 \quad 10 \\
 \hline
 247 \\
 - 130 \quad 10 \\
 \hline
 117 \\
 - 117 \quad 9 \\
 \hline
 0 \quad 29
 \end{array}$$

$$377 \div 13 = 29$$

A slightly different layout may be used, with the division completed above rather than at the side.

$$\begin{array}{r}
 3 \\
 21 \overline{) 798} \\
 - 630 \\
 \hline
 168
 \end{array}$$

$$\begin{array}{r}
 38 \\
 21 \overline{) 798} \\
 - 630 \\
 \hline
 168 \\
 - 168 \\
 \hline
 0
 \end{array}$$

TIMES TABLES ROCKSTARS

Your child should have a code to login to Times Tables Rockstars at home. This tool will help them with their times tables.

Goal

When it comes to times tables, speed AND accuracy are important – the more facts your child remembers, the easier it is for them to do harder calculations.

Times Table Rock Stars is a fun and challenging programme designed to help students master the times tables!

To be a Times Table Rock Star you need to answer any multiplication fact up to 12×12 in less than 3 seconds!

Logging in to Times Tables Rock Stars

1

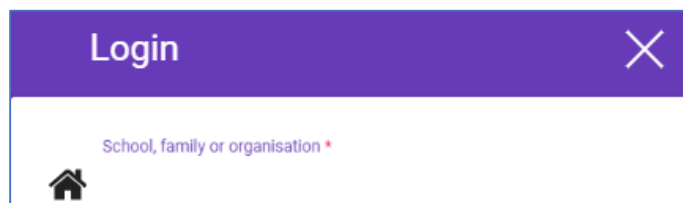
Type **play.ttrockstars.com** into your browser's address bar.

2

Click Login! > School > Student

3

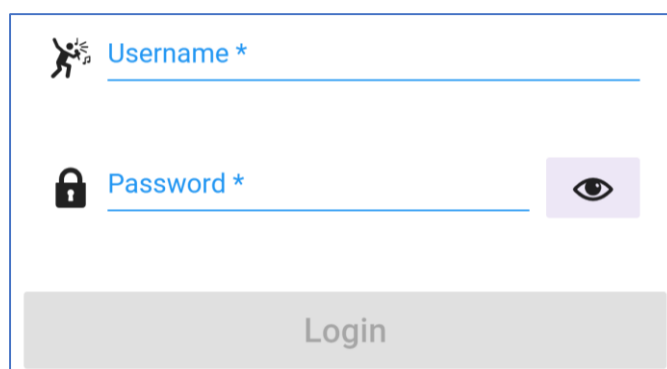
Enter the School Name.



The screenshot shows a purple header with the word 'Login' and a close button (X). Below the header is a text input field with a home icon on the left and the placeholder text 'School, family or organisation *'.

4

Enter your child's username and password.



The screenshot shows two input fields: 'Username *' with a rockstar icon and 'Password *' with a lock icon. To the right of the password field is a toggle button with an eye icon. Below the fields is a grey 'Login' button.

Game Modes

Single Player

Garage - the questions will only come from the times tables the teacher has set for the week. It will include multiplication *and* division questions.

As pupils start to answer questions, TT Rock Stars works out which facts they take longer on and will give them more of these questions to answer. The Garage is best for getting quicker at a few facts. Players get 10 coins per question.

Studio - the questions in the Studio can be anything from 1×1 up to 12×12 .

TT Rock Stars calculates the mean response time from their last 10 games in the Studio and translates that time into a Rock Status.

≤ 1 sec/qu = **Rock Hero**

≤ 2 secs/qu = **Rock Legend**

≤ 3 secs/qu = **Rock Star**

≤ 4 secs = **Headliner**

≤ 5 secs/qu = **Support Act**

≤ 6 secs/qu = **Breakthrough Artist**

≤ 7 secs/qu = **Unsigned Act**

≤ 8 secs/qu = **Gigger**

≤ 9 secs/qu = **Busker**

≤ 10 secs/qu = **Garage Rocker**

> 10 secs/qu = **Wannabe**

If you don't play in the Studio you don't get a Rock Status.

Players earn 1 coin per question and the Studio is the place for them to set their best time across all the tables.

Soundcheck – When you play Soundcheck, you get 20 questions each with a 5-second time limit. The questions are multiplication only and evenly weighted in terms of difficulty each time you play. Players earn 5 coins per correct answer.

Multiplayer

Rock Arena - The Arena allows players to compete against all other members of their Band (their Bandmates would need to join the same game in order to compete together).

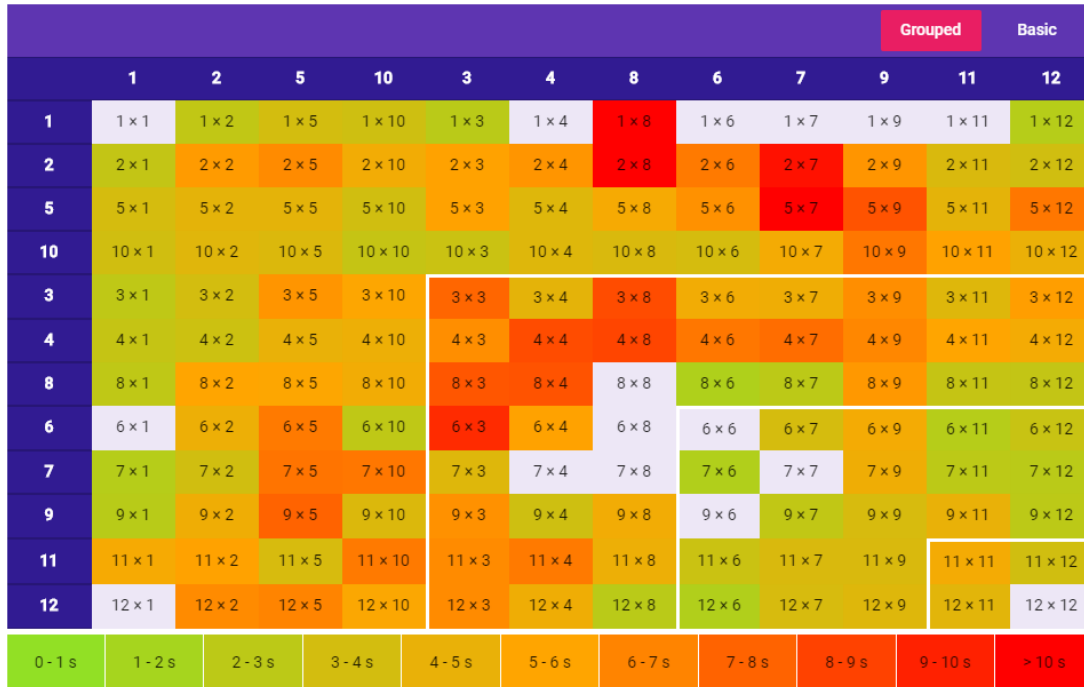
A new Arena game starts every 15 seconds and once the clock starts they race to answer more questions than the others. In the Arena, questions will only come from the times tables the teacher has set for the week, similar to the Garage. They earn 1 coin per correct answer.

Rock Festival - The Rock Festival games are open to players from around the world. Like the Arena, there is no limit to the number of players who can join a game; however, unlike the Arena, questions are selected at random from 1×1 to 12×12 .

Pupils might choose the Rock Festival if they were playing at home (and therefore couldn't easily synchronise playing against a classmate) or wanted to compete against others not in their Band. They earn 1 coin per correct answer.

Stats

If you click on your avatar icon in the top right of the screen and then click My Stats, a heatmap like the one below will load. It shows how successful your child is at each of the facts.



Contact Mrs Moody or your child's teacher if...

- You have username or password issues
- Something isn't working or you're not sure how it works
- You have a complaint or a suggestion
- You have something nice to say about ttockstars.com!

End of Key Stage 2 Maths SATs Tests

It is not yet clear what the government's plan will be with regards to Year 6 SATs tests this Summer. However, Year 6 children will be preparing as usual in class for the eventuality that the SATs do go ahead. Preparation involves their daily Power Maths lessons, alongside the completion of SATs test questions for homework and occasional mock tests in class.

The notes below will help you understand the maths parts of the SATs tests should the children sit them in Summer 2022.

The SATs Maths Papers

The Maths test comprises of three different papers.

Paper 1 is the Arithmetic Paper; the children are allowed 30 minutes to complete it and it is out of a total of 40 marks. It usually includes around 35 questions. The Arithmetic Paper assesses pupil's confidence with the range of mathematical operations. It requires the pupils to answer a 'straight forward' calculations using a specific method. It will include questions about addition, subtraction, division, multiplication, fractions, bidmas and percentages.

Papers 2 and 3 are Reasoning Papers; the children will have 40 minutes to answer a total of around 20 questions, with the paper being out of 35 marks. There are a total of 110 marks. Paper 2 and Paper 3 test the children's ability to apply the mathematical operations they have learnt to problems. These can be based on real life situations and include questions about geometry and statistics too. It is these two papers that the children will find most challenging. They need to practise reading the question extremely carefully, pick out the key words and choose which operations they should use. Once they have completed the question, it is vital that the children check their answer by using an alternative method or the inverse and check that their final answer 'makes sense'. Children must also show any working out that they may have done as this is a requirement to get the mark - especially with 2 mark questions.

How are the tests scored?

Since May 2016, children have **not** be given a level and are given a **scaled score** instead.

What are scaled scores?

Scaled scores are simply a different way of reporting your child's exam marks. Instead of being given their "raw score" of 84/110, your child's raw score will be moderated (alongside everyone else's exam marks) and converted into a scaled score out of 100.

The interpretation of these scores is as follows:

- **Below 100**: Those that score below 100 will have not reached the nationally set "expected standard" and will need further support and development before and indeed at secondary school.
- **Within close proximity of 100**: Those that get 100 will have reached the national standard that's expected of them.
- **Above 100**: Those that score significantly higher than 100 will have exceeded the standard that's expected of them.