TOR VIEW

Mathematics Long Term Mapping
KEY STAGE FOUR

TOR VIEW

		WEEKLY CURRICULUM COVERAGE					
		Week 1	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**
Autumn	**1**	NUMBER *Place Value*				NUMBER *Addition & Subtraction*	
	2	NUMBER *Addition & Subtraction*	MEASUREMENT *Length & Perimeter*		NUMBER *Multiplication & Division*		
Spring	**1**	NUMBER *Multiplication & Division*			MEASUREMENT *Area*	NUMBER *Fractions*	
	2	NUMBER *Fractions*		NUMBER *Decimals*			
Summer	**1**	NUMBER *Decimals*		MEASUREMENT *Money*		MEASUREMENT *Time*	
	2	STATISTICS		GEOMETRY *Properties of Shape*			GEOMETRY *Position & Direction*

Key Stage Four Mapping
AUTUMN 1 MEDIUM-TERM PLANNING

Aspiration for Life	Differentiated, aspirational targets dependent on pupil needs.	***Language for Life***	Explicit teaching/ exposure to new and know vocabulary.	***Learning for Life***	Opportunities to develop cross curricular skills e.g. drama

MATHEMATICS

INTENT

At Tor View School, we aim to instil in our students a fundamental understanding of how Mathematics links to the wider world. Mathematics equips students with a uniquely powerful set of tools to understand and change the world in which they live. Learning basic principles of maths is essential to functioning independently within the world. In everyday life we are faced with numbers, from getting the right bus, counting money in a shop to employment. Students understand and make connections in different areas of maths so they can apply skills to solve problems in a range of contexts.

NUMBER

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Place Value				**Addition & Subtraction**	
Partitioning 1's, 10's, 100's and 1000's	**Counting** multiples up to 1000 Numberlines to 10,000 inc. Negative Numbers	**Rounding** to the nearest 10, 100 and 1000	**Ordering** Numbers **Comparing** Numbers	**Adding** 1's, 10's, 100's and 1000's	**Subtracting** 1's, 10's, 100's and 1000's
ORAL/MENTAL STARTERS *(Topic from the previous week is repeated[1])*					
Partition these numbers… Which number have I partitioned? How can I partition *x* in 3 different ways? What is the value of digit *x*?	Partition these numbers… Which number have I partitioned? How can I partition *x* in 3 different ways? What is the value of digit *x*?	Place *x* number on the number line. Can you find x on the number line?	Which number has been rounded to x? Which number is closest to x?	Which number is larger/more? Which number is less? Can you order these numbers? Which number sentence is correct/incorrect?	Which number is 1/10/100/1000 more than x? Can you add 1/10/100/1000 to x?
VOCABULARY					
Partition One, Ten, Hundred, Thousand Place Value Value	Count Thousand Negative numbers Minus Below Zero / Temperature	Rounding Five Round up/down More/Less Place Value	More / Greater / Less than Inequality Equal Value	Add Sum More 1, 10, 100, 1000	Take away Subtract Minus 1, 10, 100, 1000 Less
IMPLEMENTATION: CONCRETE | PICTORIAL | ABSTRACT REPRESENTATION					
Base 10 / Dienes Place Value Cards Place Value grids □ = 100, / = 10, ● = 1 300 + 20 + 1 = 321	Counters / bricks Number Lines Base 10 / Dienes Thermometers	Counters Base 10 / Dienes Bar Modelling Number lines	Counters Base 10 / Dienes Comparative weighing scales Dots under numbers to represent	Counters / bricks Base 10 / Dienes □ = 100, / = 10, ● = 1 300 + 20 + 1 = 321	Counters / bricks Base 10 / Dienes □ = 100, / = 10, ● = 1 300 + 20 + 1 = 321
IMPACT: SUGGESTED FUNCTIONAL / PROBLEM SOLVING ACTIVITIES					
How many ways can 23 be partitioned? Which number is represented by…	Reading thermometers Reading scales (baggage weights) Newton Meters etc. Which number is missing? Which number is on the number line incorrectly?	Rounding weights Rounding prices Comparing/rounding weights Which number have I rounded to 260?	I have to bake 7 cakes, which tray should I use? How much does this parcel weigh to the nearest kg? Who has the most money? Which is the cheapest item in the shop? Comparing times.	Adding money Working out how many coins to give for multiple items. I have planted 7 plants, and my friend planted 10, how many have we planted?	Providing change from money. I have 25 seeds. I planted 14, how many do I have left?

Key Stage Four Mapping
AUTUMN 2 MEDIUM-TERM PLANNING

Aspiration for Life	Differentiated, aspirational targets dependent on pupil needs.	***Language for Life***	Explicit teaching/ exposure to new and know vocabulary.	***Learning for Life***	Opportunities to develop cross curricular skills e.g. drama

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NUMBER	**MEASUREMENT**		**NUMBER**		
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Addition & Subtraction	**Length & Perimeter**		**Multiplication & Division**		
Checking addition and subtraction calculations using the inverse	**Measuring length** Kilometres	**Perimeter** of rectilinear shapes	**Times tables** (multiplication and division facts) 6x, 7x and 9x	**Multiplying** by 10 and 100	
ORAL/MENTAL STARTERS ***(Topic from the previous week is repeated[1])***					
Find the number which is 1 / 10 / 100 / 1000 less than *x*.	Find the incorrect answer.	Which line is the longest? Which line is 7cm long?	Which quadrilateral has a perimeter of 12cm?	Time tables 6x, 7x and 9x	
VOCABULARY					
Add Subtract Check Inverse Opposite	mm, cm, m, km Length Measure(ment) Ruler Long	Perimeter Border Measure(ment) mm, cm, m, km	Times tables Multiply Groups / lots of Divide Share	Times tables Multiply Place Value Left	
IMPLEMENTATION: CONCRETE | PICTORIAL | ABSTRACT REPRESENTATION					
Counters / bricks Base 10 / Dienes □ = 100, / = 10, ● = 1 300 + 20 + 1 = 321 Calculators Calculation grids for formatting Bar models	Rulers Masking tape on the floor Grid / Squared paper Abstract measurements (i.e. How many hands tall am I?) Trundle wheel Playground markings (use chalk) Maps	Peg boards 2-D Shapes Diagrams Rulers Masking tape on the floor Grid / Squared paper	Base-10 / Dienes Arrays Multi-link bricks	Based-10 / Dienes Place value grid Art Straws Number machines	
IMPACT: SUGGESTED FUNCTIONAL / PROBLEM SOLVING ACTIVITIES					
Complete the missing digits Did you get the correct change? Which answer is correct? Find the wrong answer.	Complete the bar model: 800m + ? = 1km Put the lines in order of length Which line is 3cm longer than line b? Which lengths are less than 500m? How far is it to x?	How many fence panels do I need to fit around this garden? Which is the biggest pitch? Designing a house	I have bought 3 boxes of 6 eggs – how many eggs have I bought? Seeds come in packs of 9. I need 54 seeds for my allotment – how many packs do I need?	This recipe serves 4 people – I am throwing a party for 40. What are quantities of ingredients I need? This model is 1/100 of the size – how tall will it be really?	

Key Stage Four Mapping
SPRING 1 MEDIUM-TERM PLANNING

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Learning for Life	Opportunities to develop cross curricular skills e.g. drama		

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NUMBER			**MEASUREMENT**	**NUMBER**	
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Multiplication & Division			**Area**	**Fractions**	
Dividing by 10 and 100		**Written** methods Efficient multiplication	**What is area?** Counting squares	**What is a fraction?** Finding fractions	**Fractions of quantities**
ORAL/MENTAL STARTERS ***(Topic from the previous week is repeated[1])***					
Which number is 10 times bigger than 3?		70 is 10 times smaller than which number?	Which array shows 3 x 15?	Calculate the area of this quadrilateral.	This pizza is cut in to 6 pieces – how many pieces is half?
VOCABULARY					
Times tables Divide Share Place Value Right		Multiply Grid method Arrays	Area Space Squared Multiply	Fraction Numerator Denominator Amount ½ , 1/3, ¼ , ¾	Fraction Numerator Denominator Amount ½ , 1/3, ¼ , ¾
IMPLEMENTATION: CONCRETE | PICTORIAL | ABSTRACT REPRESENTATION					
Based-10 / Dienes Place value grid Art Straws Number machines		Counters Arrays Calculation tables Base-10 / Dienes	Multi-link Squared paper/grid paper Base-10/Dienes Arrays	Squared paper Squared shapes for counting Arrays Counters Base1- / Dienes Sweets Chocolate / Cake / Pizza Fraction Tables	Squared paper Squared shapes for counting Arrays Counters Base-10 / Dienes Number Lines Art straws Fraction Tables
IMPACT: SUGGESTED FUNCTIONAL / PROBLEM SOLVING ACTIVITIES					
This recipe serves 500 people. I need to feed just 5. What are the quantities of ingredients I need? I'm making a model of this house – it needs to be 1/10 of the size. How tall will it be?		Ben says that 2 x 2 x 2 = the same as 2 x 4. Is he right? How do you know? Ben has found a quick way to calculate 12 x 6 = What could it be? I am making a cake for 12 people. The recipe I have serves 4 and uses 2 eggs. How many eggs do I need?	Which shape has an area of *x* cm^2 Which pitch is the largest? Which picture is the biggest? How many carpet tiles do I need to	I have got to share my 10 sweets with my friend. How many sweets will I have? My recipe serves 4 people, but I only have 2 people for dinner – what are the new quantities that I need? Who has more? 2/4, ¾ or ½?	The full cost of this jumper is £10 but there is a ½ price sale on – how much is the jumper now? The ½ price sale means that this coat is £4 – how much is the full price?

Key Stage Four Mapping
SPRING 2 MEDIUM-TERM PLANNING

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NUMBER					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Fractions		**Decimals**			
Adding Fractions with the same denominator	**Subtracting** fractions with the same denominator	**Recognising** Tenths as fractions	Tenths on a **numberline** Tenths on a **place value grid**	**Dividing** 2-digits by 10	**Dividing** 2-digits by 100
ORAL/MENTAL STARTERS ***(Topic from the previous week is repeated[1])***					
Which value is half of 10?	½ + 2/2 = ? 3 + ?/4 = 4 1/4	¾ - ¼ = ? ?/3 – 4/3 = 1 or 3/3	Which shape shows 3/10 of 100?	Where is 7/10 on this number line?	Which number is 34 divided by 10?
VOCABULARY					
Add Fraction Denominator Numerator Part Equals	Subtract Fraction Denominator Numerator Part Equals	Fraction Tenth Number line Part Divide Ten Place Value	Fraction Tenth Number line Part Divide Ten Place Value	Fraction Tenth Number line Part Divide Ten Place Value	Fraction Hundredth Number line Part Divide Hundred Place Value
IMPLEMENTATION: CONCRETE | PICTORIAL | ABSTRACT REPRESENTATION					
Chocolate / Cake / Pizza Arrays Counters Base-10 / Dienes Number Lines Fraction tables Fraction strips Bar models	Chocolate / Cake / Pizza Arrays Counters Base-10 / Dienes Art straws Fraction tables Fraction strips Bar models	Fraction Table Number line Place value grid Base-10 / Dienes Counters Arrays (100 dots [10x10])	Fraction Table Number line Place value grid Base-10 / Dienes Counters Arrays (100 dots [10x10])	Fraction Table Number line Place value grid Base-10 / Dienes Counters Arrays (100 dots [10x10]) Place Value grid Function Machine	Fraction Table Number line Place value grid Base-10 / Dienes Counters Arrays (100 dots [10x10]) Place Value grid Function Machine
IMPACT: SUGGESTED FUNCTIONAL / PROBLEM SOLVING ACTIVITIES					
If I have a pizza and I cut it in to 1/6's. I eat 2/6 and my friend eats 3/6 – how much have we eaten? My chocolate is in 1/32's. I eat 4/32 each day for 1 week. How much do I eat that week? Consider making pizzas	If I have a pizza and I cut it in to 1/6's. I eat 2/6 and my friend eats 3/6 - How much is left? My chocolate is in 1/32's. I eat 4/32 each day for 1 week. How much is left?	10 boys share 3 pizzas equally. What fraction does each boy eat? Which cake is cut in to tenths? Which pizza has had 6/10 eaten?	Metre ruler measurements – the shelf has to be 3/10 of a meter away from the window. Where will it need to be?	True or False: 75mm = 0.75cm In the Olympics there is a race event called 1500m. How many kilometres is this?	I can jump 202cm. A spider can jump 0.45m. How far would the spider travel if he jumped 100 times? I am travelling 2.5km, how many metres is this?

Key Stage Four Mapping
SUMMER 1 MEDIUM-TERM PLANNING

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MEASUREMENT				**STATISTICS**	
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Decimals		**Money**		**Time**	
Make a **whole** Finding the **difference**	**Rounding** Decimals	**Recognising** £ and p **Ordering** Money	**Adding** money	**Ordering** Years, Months, Weeks & Days	**Measuring** hours, minutes & seconds.
ORAL/MENTAL STARTERS ***(Topic from the previous week is repeated[1])***					
Which number is 27 divided by 100?	Find the difference between 3.1 and 3.7.	Which item's price is closest to £3?	Find the pile of coins that totals 84p	How much do these two items cost together?	Put these months in to order (remove some months)
VOCABULARY					
Whole Fraction Decimal Difference Subtract	Rounding Five Round up/down More/Less Place Value	£ and p Pound(s) Pence Money Value	£ and p Pound(s) Pence Money Value	Years Months (names) Weeks Days (names) Order – oldest / earliest / recent / First / Last	Hours Minutes Seconds Measure Time Fast(er/est) / Slow(er/est)
IMPLEMENTATION: CONCRETE | PICTORIAL | ABSTRACT REPRESENTATION					
Numberlines Base-10 / Dienes Counters Decimal cards Art straws Cuisinaire rods	Numberlines Base-10 / Dienes Counters Decimal cards Art straws Cuisinaire rods	Coins Notes Different items to 'buy'	Coins Notes Different items to 'buy'	Calendars Diaries Month names Day names Timetables Dates Timelines	Clocks Stop watch Timelines Egg timers Sand timers
IMPACT: SUGGESTED FUNCTIONAL / PROBLEM SOLVING ACTIVITIES					
How much more money is needed to make £1? I paid £1 for a bag of sweets which cost 60p. How much change do I need?	The cost of diesel is 109.9p per litre. What would you use to pay for one litre? Amir is 125.5cm tall – how tall is he to the nearest cm?	Can you match the coin to the value? Can you make the value out of a number of coins? Can you make the value using the smallest number of coins? Which is the cheapest item? Which is the most expensive item? Which item is the best value?	How much would the shopping list cost? (this can be prices that are just pennies) Which shopping list is the cheapest? Which items have the value of 23p when added together? *Utilise this opportunity to develop understanding of decimals for those that it is appropriate to do so.*	Whose birthday is first in the year? Who is the oldest/youngest? Which day do we have Maths on?	Who can do difference exercises the fastest? Cooking meals (boiling eggs) Who won the race? How long does it take to complete a task?

Key Stage Four Mapping
SUMMER 2 MEDIUM-TERM PLANNING

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NUMBER		**GEOMETRY**			
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
		Properties of Shape			**Position & Direction**
Interpreting Charts	**Comparing** data	Symmetrical figures Lines of **Symmetry**	**Identifying** Angles	**Comparing** and **ordering** angles	**Describing Position** **Describing Movement**
ORAL/MENTAL STARTERS ***(Topic from the previous week is repeated[1])***					
Match the tasks to the approximate time.	Which day was the most popular day for a visit to the zoo?	Which survey collected the most data?	Which picture shows a symmetrical figure?	Which angle is acute, obtuse, reflex?	Order these angles from smallest to greatest
VOCABULARY					
Bar chart Line graphs Pictograms Surveys / Tally Charts	Bar chart Line graphs Pictograms Surveys / Tally Charts Compare Difference / Sum	Symmetry Mirror image Same Mirror	Angle Obtuse Right Angle Acute Reflect Straight Line	Angle Obtuse Right Angle Acute Reflect Straight Line Greater / Less than Greatest / Least	Underneath/On top of Opposite/Next to Behind/In front of Forwards/Backwards Left/Right Up/Down Coordinates *Consider Key Word Level*
IMPLEMENTATION: CONCRETE | PICTORIAL | ABSTRACT REPRESENTATION					
Multi-link / Counting blocks Counters Base-10 / Dienes Tape on the floor for axis	Multi-link / Counting blocks Counters Base-10 / Dienes Tape on the floor for axis	Mirror Paper Coloured counting blocks (multi-link)	2-D Shapes Angle 'eaters' Protractors Angles drawn on a page Angles in the environment	2-D Shapes Angle 'eaters' Protractors Angles drawn on a page	Maps Bricks Items around the classroom
IMPACT: SUGGESTED FUNCTIONAL / PROBLEM SOLVING ACTIVITIES					
Conduct a survey. How many people liked…? How long did it take to get from point A to B? How many people took part in the survey? Which eye colour appears least frequently?	Which film should I go to see at the cinema? Use star ratings. Which two choices, when added together had the sum of 8? Who scored the most goals for the team?	Designing wallpaper (tessellation) Repeating patterns (beginnings of algebra) Architecture – can you design a symmetrical house? Which road signs have lines of symmetry? Grouping shapes	Designing models. Following directions (on a map) Following instructions to navigate a room Measure angles of a ladder on a lego model. What angle does the ladder need to be to reach the top? Finding angles in the environment	Order these angles from smallest to biggest. Which of these shapes has the greatest internal angle? What is the angle shown on the clock?	Where is the church on the map? What is behind the shop? What are the coordinates of the cinema on the map? Describe the journey from the house to the shop.