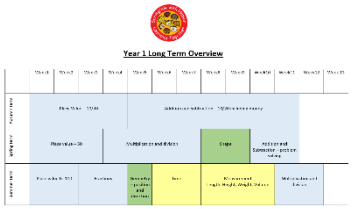
Year 5 Long Term Overview

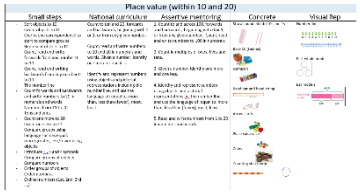
<table>
<tr><th></th><th>Week1</th><th>Week2</th><th>Week3</th><th>Week4</th><th>Week5</th><th>Week6</th><th>Week7</th><th>Week8</th><th>Week9</th><th>Week10</th><th>Week11</th><th>Week12</th><th>Week 13</th></tr>
<tr><td>Autumn term</td><td colspan="9"><u>Number – Place Value and Decimals</u>
- Numbers up to 1 million using place value charts and place value counters
- Numbers lines
- Rounding using number lines
- Decimal numbers up to 3 d.p using place value charts and place value counters
- M + D 10, 100 and 1000 using place value charts linked to measurement
- Part part whole models and bar models</td><td colspan="3"><u>Addition and Subtraction including decimals</u>
- Column method (- with and without zeros) dienes and place value charts
- Bar models and part part whole models
- Missing numbers
- Decimals
- Worded problems
- Money
- Conversions
- Misconceptions</td><td></td></tr>
<tr><td>Spring term</td><td colspan="3"><u>Multiplication and division</u>
- Factors, primes, prime factors, multiples using 100 squares
- Bar models and part part whole
- M (Expanded and column using 3 / 4 x 1 , 3 / 4 x 2)
- D (Short division using 3 / 4 divided by 1
- Missing numbers
- Worded problems</td><td colspan="2"><u>Area and Perimeter</u>
- Perimeter (count squares and use a ruler)
- Area (Squares, estimated, irregular estimating)
- Link to real life why?</td><td colspan="5"><u>Fractions including Decimals and Percentages</u>
- Compare and order the same denominator and different multiples
- Add and Subtract the same denominator and different multiples
- Equivalent fractions to hundredths
- Convert between mixed and improper fractions
- Multiple fractions by whole numbers
- FDP convert between them all</td><td colspan="2"></td></tr>
<tr><td>Summer term</td><td colspan="2"><u>Measurement – converting units</u>
- MM CM M KM
- Mg g kg
- Ml L
- Imperial units
- Inclu order and comparing</td><td><u>Volume</u>
- Count cubes
- Calculate volume
- Estimate volume incl Cap</td><td><u>Position and direction</u>
- Reflection
- Translation
- Move on the X and y axis</td><td colspan="3"><u>Properties of shapes</u>
- Know 2d and 3d shapes
- Difference between reg / irreg
- Angles on a straight line – 180
- Angles around a point – 360
- Acute / Right Angles / Obtuse / Reflex</td><td colspan="2"><u>Statistics</u>
- Tables and timetables
- Line graphs
- Discrete and continuous data</td><td></td><td></td></tr>
</table>

Daily Maths lessons at Hamer

Structure of a lesson

- Counting forwards and backwards (2 minutes)
- 6 a day arithmetic and revision question alternate days (5mins answer – recorded in books) 6 a day – give them the answers/ go over one question, revision question discuss with the children – during the revision question any misconceptions from children on the 6 a day can be targeted
- Vocabulary – including the my turn your turn approach or synonyms for other words eg add. This may be a retrieval based on the previous day.
- Main body of the lesson
- Independent work





When planning for learning:

- Start with the new long term overview
- Use the same document that breaks this down into a medium term plan
- Use the small steps on the medium term plan to support planning
- Go to the White Rose documents on the O drive under – Updated Maths – 00 Maths – Deeping Materials – White Rose Hub – New White Rose – find your year group
- When designing the lesson, consider the following: What is the start point? What existing skills and knowledge may they have or need to revisit? What Concrete resources may you need? What Visual representations may you want use? What is the key learning in the lesson? What language do you need to model? Are there any sentence stems? Are there any key words the children need to know the definitions of? What is the end point?
- For support with designing questions for appropriate activities for independent learning please use the following
    - White Rose (On the O Drive follow above)
    - I See reasoning and problem solving (On the O Drive follow above)
    - Maths Hub – teaching for mastery (On the O Drive follow above)
    - NCTEM (On the O Drive follow above)
    - Classroom secrets
    - Nrich
- Remember the three key elements of Maths – Fluency, Reasoning and Problem Solving (There needs to be a balance between all three of them for children to develop a deep secure understanding and mastery of the curriculum)

	Counting (Forwards and Backwards)	Times tables (Forwards and Backwards)	Resources to support
Nursery	Number rhymes Movement counting Environmental counting Touch counting Counting up to 10		Counting sticks Counting hoops Number lines Hundred squares Multiplication squares Numicon Meter ruler Bead strings Straws Competitions/races/games around tables etc Count me in Clap and count Sensory equipment (eg, use of a bouncing ball, dropping marbles in a jar) Killer 15 21 Fizz Buzz Around the world Clapping and chanting BBC super movers (Goes forwards and backwards) Number fun songs
Reception	Counting to 10 and 20 Counting in 1's from different starting points up to 20 Counting in 2's from different starting points up to 20 Counting in 10s from different starting points up to 100 How many? Subitising – looking at patterns and pictures up to 10 Counting rhymes eg, five little speckled frogs	Counting in 2s, 5s and 10s	
Year 1	Counting to 10 and 20 Counting in 1's from different starting points crossing over 50 Counting in 2's from different starting points crossing over 50 Counting in odd and even numbers Counting in coins (1p, 2p, 5p, 10p, £1, £2, £5, £10) Counting in units of measures (cm)	2, 5 and 10	
Year 2	Revision from Year 1 Counting in 10s from different starting points up to 100 Counting in 2's from different starting points up to 100 Counting in odd and even numbers Counting in coins (1p, 2p, 5p, 10p, 20p, £1, £2, £5, £10) Counting in fractions (halves, quarters and thirds from any number to 10) – using pictures/resources to support Counting in different unit of measures (mm, cm, m) Counting in different times intervals	2, 3, 4, 5 and 10	
Year 3	Revision from Year 2 Counting in 50s/100s from different starting points Counting in 1000s from different starting points Counting in fractions (halves, thirds, quarters, fifths, eighths and tens) – using pictures/resources to support Counting in coins (1p, 2p, 5p, 10p, 20p. 50p, £1, £2, £5, £10) Counting in different unit of measures (mm, cm, m) Counting in different time intervals	2, 3, 4, 5, 6, 8 and 10	
Year 4	Revision from Year 3 Counting in 10's, 25s, 50's, 100s, 1000s from different starting points to 10,000 Counting in 10,000's from any start point Counting in square numbers Counting in coins in any amount (eg, 20p, 30p, 50p) Counting in unit fractions simplifying along the way (Eg ¼. ½. 3/4 , 1) Counting in decimals (tenths and hundredths) Counting in degrees (90, 180, 270 etc) Counting in different unit of measures (mm, cm, m, km) Counting in different time intervals	2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12	
Year 5	Revision from Year 4 Count in 10s, 25s, 50s, 100s, 1000s, 10000s, 100000s from different starting points to a million Counting in different units of measures Counting in prime numbers and cube numbers Counting below zero Counting in non-unit fractions (eg, 3/4)	2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12	
Year 6	Revision from Year 5 Counting in 10s, 25s, 50s, 100s, 1000s, 10000s, 100000s, 1000000s, from different starting points to ten million Counting in squared numbers to 20 Counting in decimals to 2 decimal places (including going below zero)	Times tables up to 15	

Place value including decimals

Small steps

- Roman numerals to 1,000
- Number to 10,000
- Number to 100,000
- Compare numbers to 100,000
- Order numbers to 100,000
- Number lines
- Round numbers to 10, 100, 1000
- Round to 10,000
- Round numbers within 100,000
- Number lines to a million
- Compare numbers to 1 million
- Order numbers to a million
- Counting in 10s, 100s, 1,000s, 10,000s and 100,000s
- Round numbers to a million
- Negative numbers incl temperature
- Negative number – Horizontal and vertical
- Negative numbers – worded eg 2 – 7 =
- Decimals up to 2 d.p (Tenths and hundredths)
- Understand thousandths
- Thousandths as decimals
- Order decimals
- Compare decimals
- Decimal sequences
- Rounding decimals
- Multiply by 10, 100 incl decimals
- Multiply by 1000 incl decimals
- Divide by 10, 100 incl decimals
- Divide by 1,000 incl decimals
- Link to measurement

National curriculum

Read, write, order and compare numbers to at least 1000000 and determine the value of each digit.

Count forwards or backwards in steps of powers of 10 for any given number up to 1000000.

Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero.

Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000

Solve number problems and practical problems that involve all of the above.

Read Roman numerals to 1000 (M) and recognise years written in Roman numerals

Multiply and divide whole numbers by 10, 100 and 1000 incl decimals

Read, write, order and compare numbers with up to three decimal places.

Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.

Round decimals with two decimal places to the nearest whole number and to one decimal place.

Solve problems involving number up to three decimal places.

Assertive mentoring

1.Read, write, order & compare numbers to at least 1 000 000 and determine the value of each digit.

2. Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000

3. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

4. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals

11. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

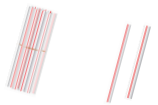
17. Round decimals with two decimal places to the nearest whole number and to one decimal place.

18. Read, write, order and compare numbers with up to three decimal places. Solve problems involving number up to three decimal places.

14. Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.

Concrete

Straws bundled into 10s and 1s



Base 10 (Dienes)



Numicon



Place value counters



Bead bar and bead string





Arrow cards



Place value dice



Coins



Counting stick/hoop



Metre stick



Arrow cards



Visual Rep

Place value charts

100s	10s	1s

100 square

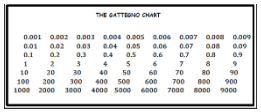
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Number lines





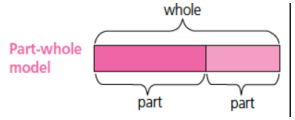
Gattegno chart



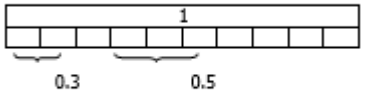
Part whole model



Bar models



Bar model



0.3 + 0.5 = 0.8

Addition and subtraction including decimals

Small steps

Inverse operations throughout

- Add whole numbers with more than 4-digits (column method) incl carrying
- Add whole numbers with missing numbers incl carrying
- Add decimals –cross the whole incl carrying
- Add decimals within 1 incl carrying
- Add numbers with the same number of decimal places incl carrying
- Add numbers with different numbers of decimal places incl carrying

Through Arithmetic see if chn need different lessons on decimals or group

- Multi-step addition problems (Money and measurement)
- Subtract whole numbers with more than 4-digits with no zeros (column method) incl exchanging
- Subtract whole numbers with zeros incl exchanging
- Subtract with missing numbers incl exchanging
- Subtract decimals with the same amount of decimals places incl exchanging
- Subtract decimals with different amount of decimal places incl exchanging
- Multi-step subtraction problems with addition (Money and measurement)
- Round to estimate and approximate

National curriculum

Add and subtract numbers mentally with increasingly large numbers.

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling..

Assertive mentoring

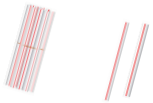
5. Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).

6. Add and subtract numbers mentally with increasingly large numbers. Use rounding to check answers to calculations and levels of accuracy.

7. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Concrete

Straws bundled into 10s and 1s



Base 10 (Dienes)



Numicon



Place value counters

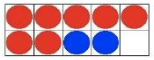


Bead bar and bead string





Tens frames



Discreet sets of objects e.g. counters, multilink





Money



Cuisenaire number rods



Visual Rep

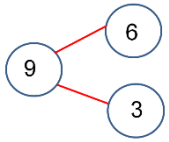
Calculation mat

100s	10s	1s

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

Part whole models



Number lines



Bar models

16	25
41	

16 + 25 = 41

28	
10	18

28 – 10 = 18

- Using column method (Using expanded where needed when multiplying by 2 digits) and short division

Multiplication and Division

Small steps

- Multiples
- Factors
- Common factors
- Prime numbers
- Prime factors

Move chn from expanded or grid to formal column

- Multiply 4-digits by 1-digit
- Multiply 2-digits
- Multiply 2-digits by 2-digits
- Multiply 3-digits by 2-digits
- Multiply 4-digits by 2-digits
- Divide 4-digits by 1-digit
- Divide with remainders as decimals, remainders and fractions straight away x2 lessons

AM lessons / 6 a day

- Square numbers
- Cube numbers

National curriculum

Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.

Recognise and use square numbers and cube numbers and the notation for squared (2) and cubed (3)

Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.

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

Multiply and divide numbers mentally drawing upon known facts. Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers.

Divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context.

Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign

Assertive mentoring

8. Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.

9. 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.

10. Multiply numbers up to 4 digits by a 1- or 2-digit number using a formal written method. Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division.

12. Recognise and use square numbers and cube numbers, and the notation for squared and cubed

Concrete

Base 10 (Dienes)



Numicon



Place value counters



Bead bar and bead string





Discreet sets of objects e.g. counters, multilink to group and share





Money





Arrays







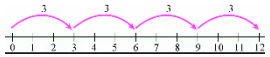
Cuisenaire number rods

Visual Rep

Multiplication grid



Number lines



Bar models

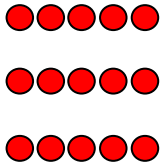
7	7	7
21		

7 x 3 = 21

24		
8	8	8

24 ÷ 8 = 3

Arrays



5 x 3 = 15

15 ÷ 5 = 3

Measurement (Area and Perimeter)

Small steps	National curriculum	Assertive mentoring	Concrete	Visual Rep
- Measure perimeter - Find unknown lengths - Calculate perimeter - Area of rectangles - Area of compound shapes - Estimate and approximate area	Measure and calculate the perimeter of composite rectilinear shapes in cm and m. Calculate and compare the area of rectangles (including squares), and including using standard units, cm2,m2 estimate the area of irregular shapes.	21. Measure & calculate the perimeter of composite rectilinear shapes in cm/m. Calculate the area of squares/rectangles using standard units, square cm/m and estimate the area of irregular shapes	Ruler  Meter stick  Link to real life objects eg, pencils, books, tables Multi link strips with a split pin	2d shapes 

Fractions including decimals and percentages

Small steps

- Equivalent fractions
- Improper fractions to mixed numbers
- Mixed numbers to improper fractions
- Number sequences
- Compare less than 1
- Order fractions less than
- Compare greater than 1
- Order greater than 1
- Adding fractions within one
- Adding three fractions
- Adding fractions
  -Adding improper fractions and mixed numbers
- Subtract fractions
- Subtract mixed numbers and improper fractions
- Subtract 2 mixed numbers (Convert to improper 1st)
- Multiply unit fractions by an integer
- Multiply non-unit fractions by an integer
- Multiply mixed numbers by integers
- Fraction of an amount
- How to find a decimal as a fraction?
- Decimals as fractions (1)
- Decimals as fractions (2)
- Understand percentages
- Percentages as fractions and decimals
- Equivalent F.D.P

National curriculum

Compare and order fractions whose denominators are multiples of the same number.

Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.

Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number

Add and subtract fractions with the same denominator and denominators that are multiples of the same number.

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

Read and write decimal numbers as fractions

Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.

Solve problems which require knowing percentage and decimal equivalents of) ",) %,) #, " #, % #and those fractions with a denominator of a multiple of 10 or 25.

Assertive mentoring

13. Compare and order fractions whose denominators are all multiples of the same number. Add and subtract fractions with the same denominator and multiples of the same number.

14. Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.

15. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number.

16. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

17. Read and write decimal numbers as fractions (e.g. 0.72 = $^{72}/_{100}$).

19. Write percentages as a fraction. Solve problems which require knowing percentage and decimal equivalents of ½, ¼, ⅕, ⅖, ⅘ and those with a denominator of a multiple of 10 or 25.

Concrete

Cuisenaire number rods



Numicon



Discreet sets of objects e.g. counters, multilink





Paper strips

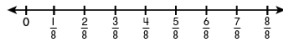


Fraction tiles

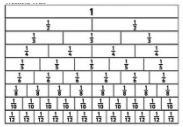


Visual Rep

Fraction number lines



Fraction wall



Bar models

12			
3	3	3	3

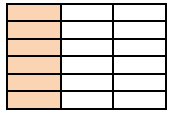
?

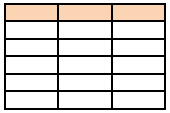
¼ of 12 = 3

1					
1/6	1/6	1/6	1/6	1/6	1/6

$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$

Arrays/area model





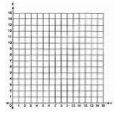
$\frac{1}{3} + \frac{1}{6}$

$\frac{6}{18} + \frac{3}{18} = \frac{9}{18} = \frac{1}{2}$

Measurement (Converting units)

Small steps	National curriculum	Assertive mentoring	Concrete	Visual Rep
- Multiplying and dividing by 10, 100 and 1000 - Mm, Cm, M and km - Comparing and order mm, cm, m and km - Ml and L - Compare and order Ml / L - G and Kg - Mg, G and Kg - Compare and order Mg, G and Kg - Imperial units - Convert units of time - Timetables	Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml] Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Solve problems involving converting between units of time.	20. Convert between different units of metric measure (e.g. km & m; cm & m; cm & mm; g & kg; l & ml). Use approx. equivalences between metric and imperial units (e.g. inches, pounds & pints). 23. Solve probs involving converting between units of time. Use all four operations to solve probs involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.	Reading different scales 	Number lines 

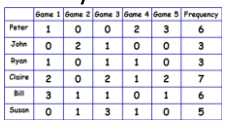
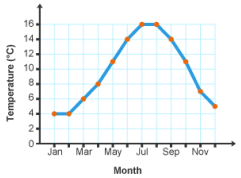
Measurement (Volume)				
Small steps	National curriculum	Assertive mentoring	Concrete	Visual Rep
- What is volume? - Counting squares - Calculate with and without squares - Estimate volume - Estimate capacity	Estimate volume [for example using 1cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] Use all four operations to solve problems involving measure.	22. Estimate volume (e.g. using 1 cm blocks to build cubes/cuboids) and capacity (e.g. using water).	Cubes  Looking at different containers  Children knowing and understanding the actually size of different objects eg money box, set of 4 draws and cereal box	Using cubes 

Geometry (Position and direction)				
Small steps	National curriculum	Assertive mentoring	Concrete	Visual Rep
- Position in the first quadrant - Reflection - Reflection with coordinates - Translation - Translation with coordinates	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	28. Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	Using your hands – Making a L with your thumb and index finger Mirrors 	2d grid in the first quadrant  Using 2d shapes on the grids

Geometry (Properties of shapes)

Small steps	National curriculum	Assertive mentoring	Concrete	Visual Rep
- Measure angles in degrees - Measure with a protractor (1) - Measure with a protractor (2) - Draw lines and angles accurately - Calculate angles on a straight line - Calculate angles around a point - Calculate lengths in rectangles - Calculate angles in rectangles - Regular and irregular polygons - Reasoning about 3D shapes	Identify 3D shapes, including cubes and other cuboids, from 2D representations. Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees (o) Identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line and ½ a turn (total 180o) other multiples of 90o	24. Identify 3D shapes, including cubes and other cuboids, from 2D representations. 25. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees. 26. Identify: angles at a point and one whole turn (total 360^o); angles at a point on a straight line and ½ a turn (total 180^o); other multiples of 90^o. 27. Use the properties of rectangles to deduce related facts and find missing lengths and angles	Links to real life objects Eg, Pringles tin, Balls, Cereal packets 2d shapes – including quadrilaterals and polygons  3d shapes – cuboids, prisms and cones  Making shapes 2D and 3D including drawing Peg boards  Protractor  Ruler 	2d representations of 3d shapes 

Statistics

Small steps	National curriculum	Assertive mentoring	Concrete	Visual Rep
- Read and interpret line graphs - Draw line graphs - Use line graphs to solve problems - Read and interpret tables - Two way tables - Timetables	Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables.	29. Solve comparison, sum and difference problems using information presented in a line graph. 30. Complete, read and interpret information in tables, including timetables	Ruler 	Variety of tables  Line graphs 

	Game 1	Game 2	Game 3	Game 4	Game 5	Frequency
Peter	1	0	0	2	3	6
John	0	2	1	0	0	3
Ryan	1	0	1	1	0	3
Claire	2	0	2	1	2	7
Bill	3	1	1	0	1	6
Susan	0	1	3	1	0	5