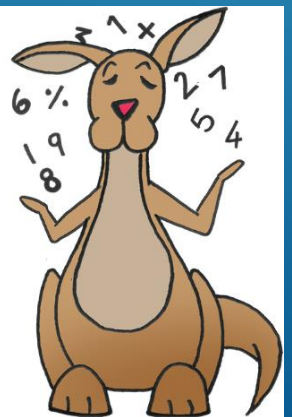
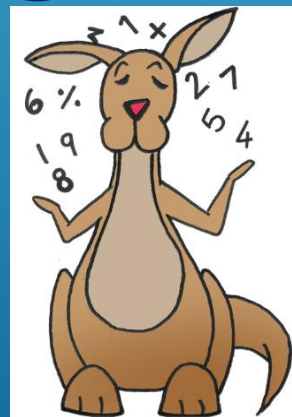
PROGRESSION IN MATHEMATICS AND NUMERACY: LLANRHIDIAN PRIMARY SCHOOL



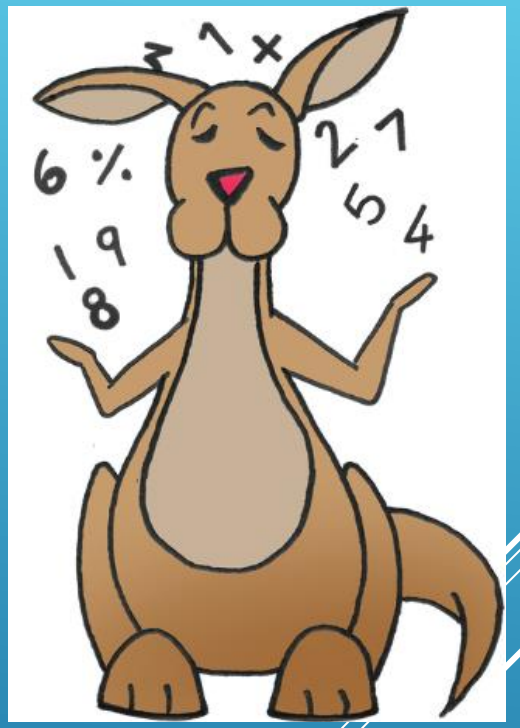


Policy and Practice at Llanrhidian Primary School

MATHEMATICS AND NUMERACY IN LLANRHIDIAN

In Llanrhidian, we encourage pupils to explore links with mathematics and numeracy across all areas of learning and in the real world. Embedded provision to develop the appropriate skills and knowledge and experiences for Mathematics and Numeracy includes:

- **Chunky mathematics spotlight lessons.**
- **Numeracy links in IQ tasks**
- **Numeracy intervention for identified pupils**
- **Chilli Challenges**
- **TTRS (online platforms)**
- **Weekly Chilli Assessments**
- **The concrete to visual to abstract approach**
- **Numicon and Target Maths**
- **Plus 1 and Plus 2 interventions**
- **Flip learning lessons and resources available digitally**



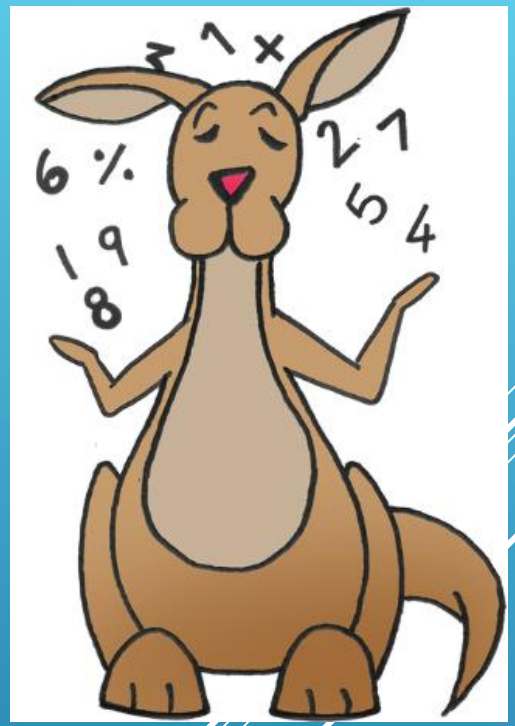
OVERALL AIM OF THE POLICY

This policy has been produced to ensure consistency and progression in teaching throughout the school. It aims to give an overview of the key steps that can be made from concrete, to pictorial, to abstract recording strategies and how they can be taught in any year group. The policy aims to identify the progression for each pupil.

OVERALL AIM FOR THE PUPILS

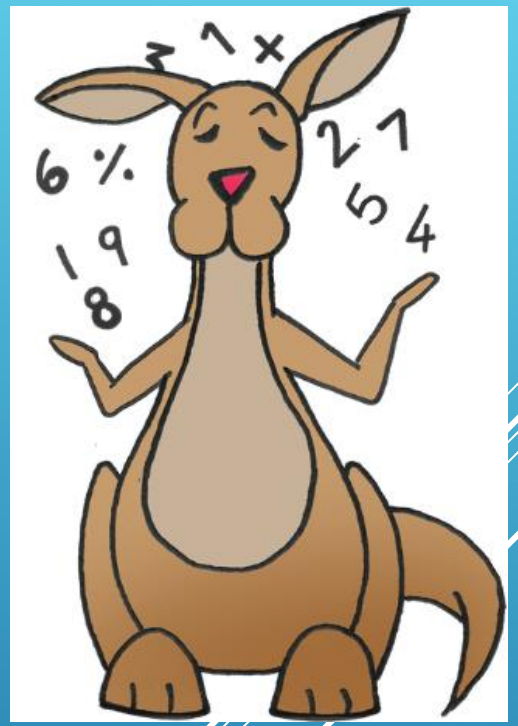
The overall aim is that when our pupils leave Llanrhidian, they:

- **have a secure knowledge of number facts and a confident understanding of the four operations.**
- **can transfer mathematical skills to a variety of contexts and everyday situations and can identify the appropriate steps and information needed to complete a task or reach a solution.**
- **are able to use their schema and understanding to carry out calculations mentally and be able to apply appropriate strategies when using larger numbers.**
- **have an efficient, reliable method for calculation of each operation that pupils can apply with confidence when undertaking calculations that they cannot carry out mentally.**

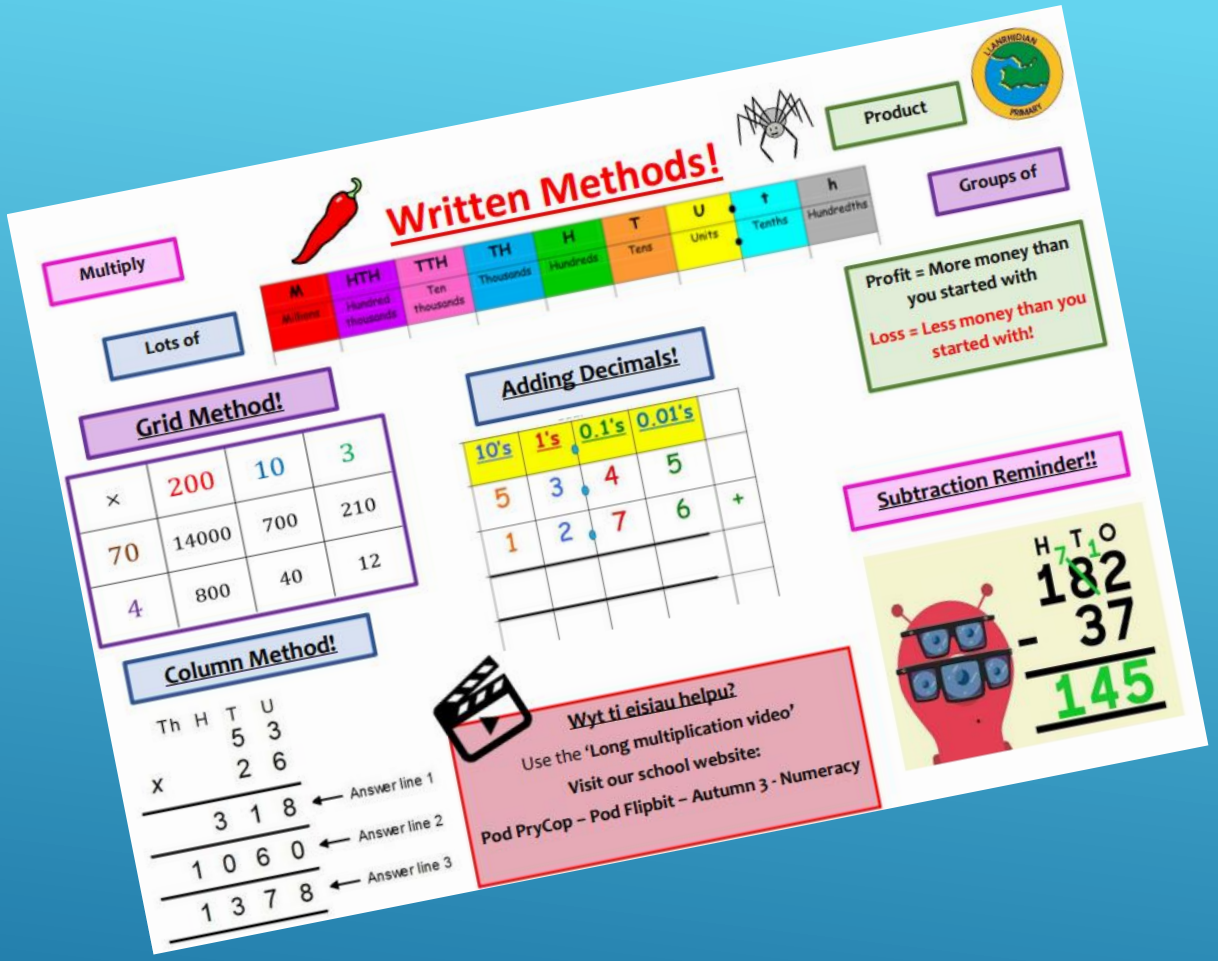


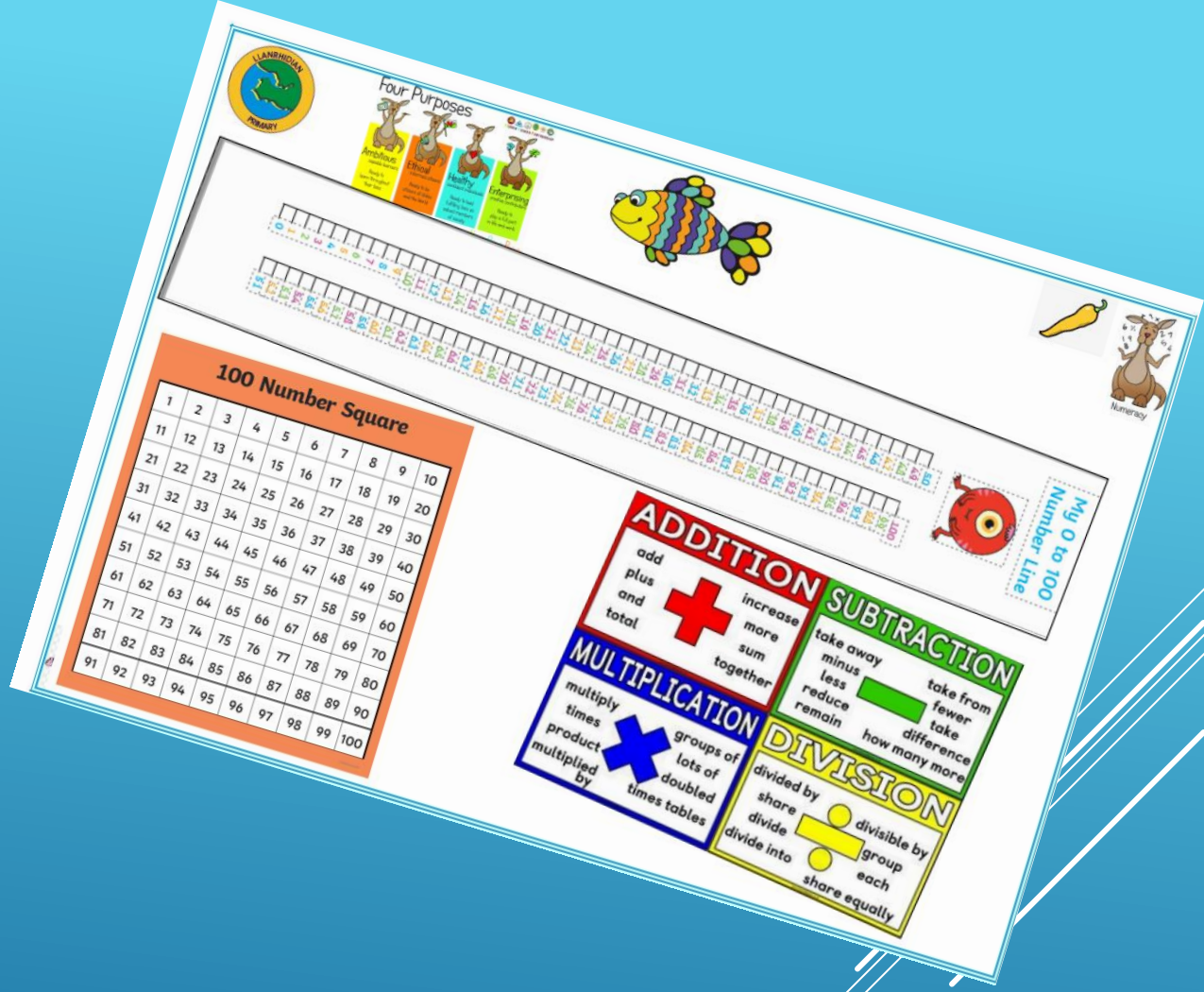
RESOURCES

Each classroom will be resourced with materials to support the delivery of Maths; such items might include number lines, multiplication tables, 100 squares, 2D and 3D shapes, multilink cubes, dice and other smaller items.



Our pupils should be encouraged to use whatever resources are available to them in the classroom and which they feel would be beneficial to help them when completing Maths work.



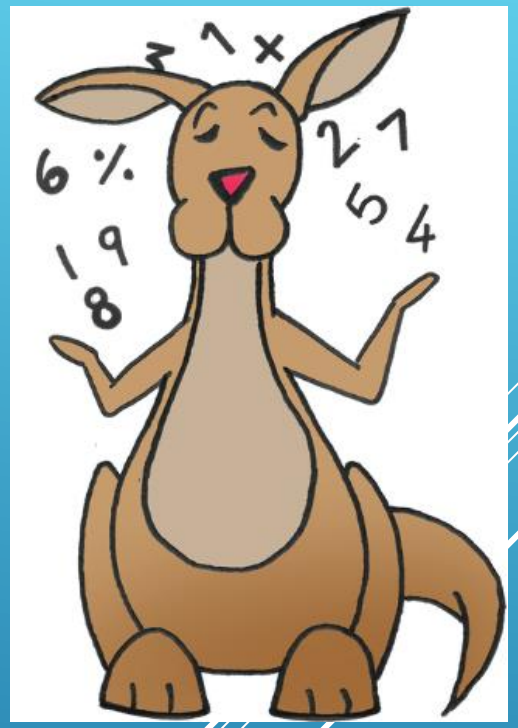


RESOURCES - PLACEMATS

RESOURCES TO SUPPORT

We have got a range of resources to support our learners to consolidate the 4 main operations.

- All classes have links to numeracy websites on their class web pages that are age appropriate and support the learning needs of the pupils
- Pod Pila Pala launch the Numicon scheme to support the concrete learning of the 4 operations. This resource then carries on through the school as and when required to support all learners.
- Pod Pila Pala and Pengwin have Numbots through J2E in HWB for tailored maths games. This can also be accessed by all pupils if it is still deemed as an appropriate support resource
- From Pod Pysgodyn onwards pupils have access to Times Table Rock Stars (TTRS) which is a great online platform for practising and learning rapid recall of your times table and division facts.
- KS2 class pages have links to bar modelling strategies to help visual learners practise reasoning problems that involve the 4 operations using pictorial methods
- The whole school has access to the Plus of 1 and Plus of 2 scheme available to them that has lesson ideas and resources for the 4 operations for each year group across a full academic year



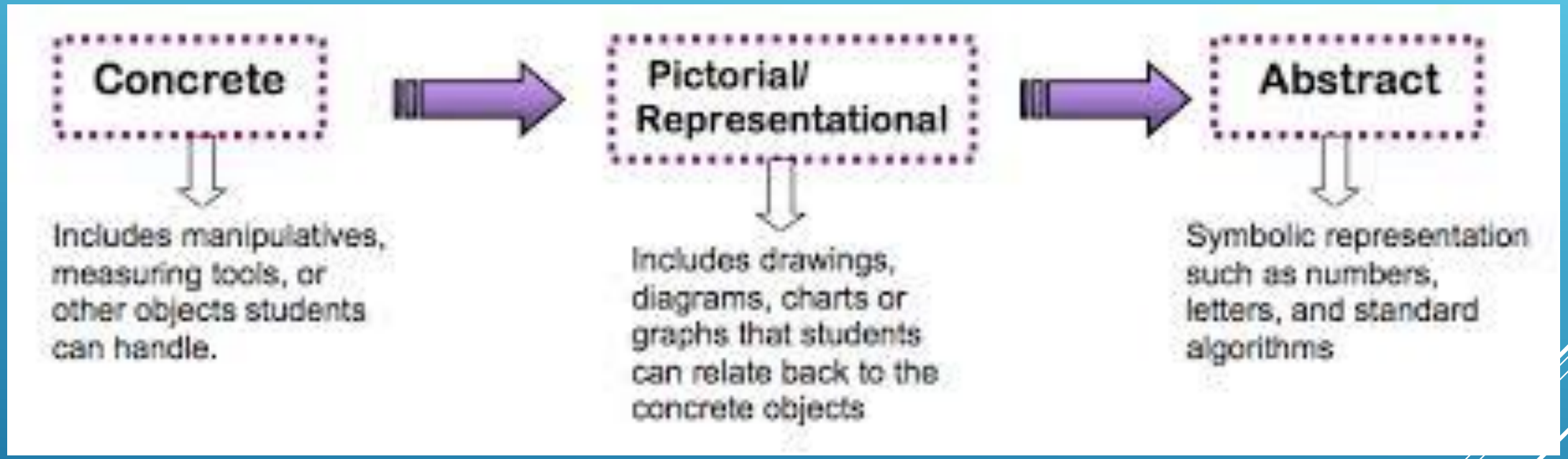
The model of progression is based on the develop of five interdependent proficiencies, outlines below. This model of progression can be considered as both longitudinal and cross-sectional. To ensure progress in any mathematics learning, proficiencies should be developed and connected in time and should also develop over time.

- **Conceptual understanding.**
- **Communication using symbols**
- **Fluency**
- **Logical reasoning**
- **Strategic competence.**

- Principles of Progression

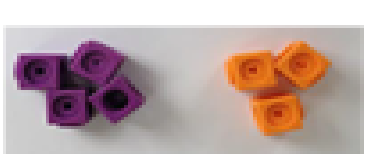
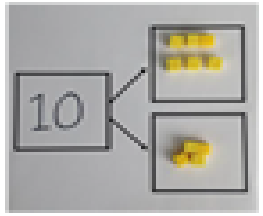
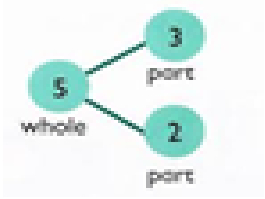
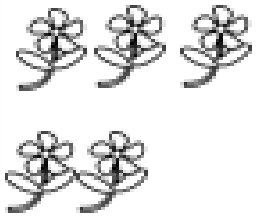
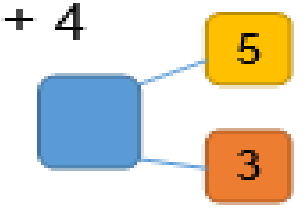
PROGRESSION IN MATHEMATICS AND NUMERACY

At Llanrhidian, we recognise the importance of building on pupil's prior knowledge (their schema) to help them make maximum progress in the subject. So, when it comes to the journey from concrete, to pictorial, to abstract, we are consistent in our approach.



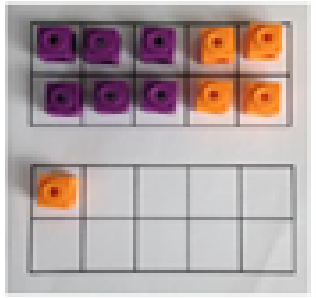
CONCRETE, PICTORIAL TO ABSTRACT APPROACH

Addition

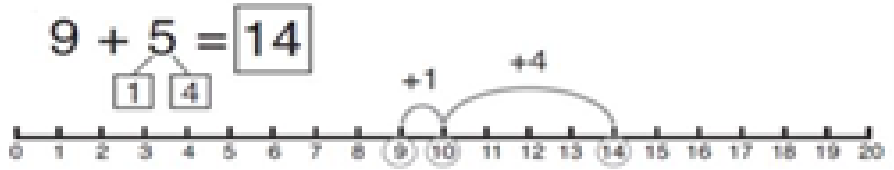
Objective and Strategies	Concrete	Pictorial	Abstract
Combining two parts to make a whole: part-whole model	   Use cubes to add two numbers together as a group or in a bar. 	   Use pictures to add two numbers together as a group or in a bar. 	4 + 3 = 7 10= 6 + 4  Use the part-part whole diagram as shown above to move into the abstract.
Starting at the bigger number and counting on	 Start with the larger number on the bead string and then count on to the smaller number 1 by 1 to find the answer.	12 + 5 = 17  Start at the larger number on the number line and count on in ones or in one jump to find the answer.	5 + 12 = 17 Place the larger number in your head and count on the smaller number to find your answer.
Regrouping to make 10.		Use pictures or a number line. Regroup or partition the smaller number to make 10.	7 + 4= 11 If I am at seven, how many more do I need to make 10. How many more do I add on now?

Regrouping to make 10.

6 + 5 = 11



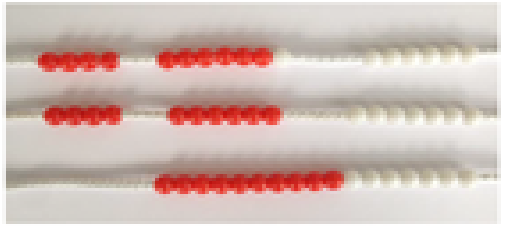
Start with the bigger number and use the smaller number to make 10.



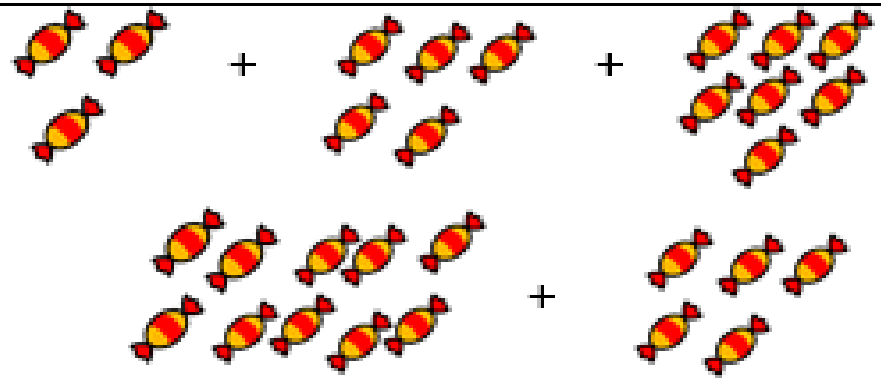
Adding three single digits

4 + 7 + 6= 17

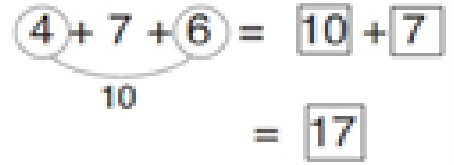
Put 4 and 6 together to make 10. Add on 7.



Following on from making 10, make 10 with 2 of the digits (if possible) then add on the third digit.



Add together three groups of objects.
Draw a picture to recombine the groups

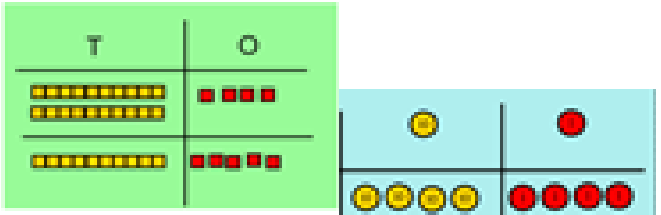


Combine the two numbers that make 10 and then add on the remainder.

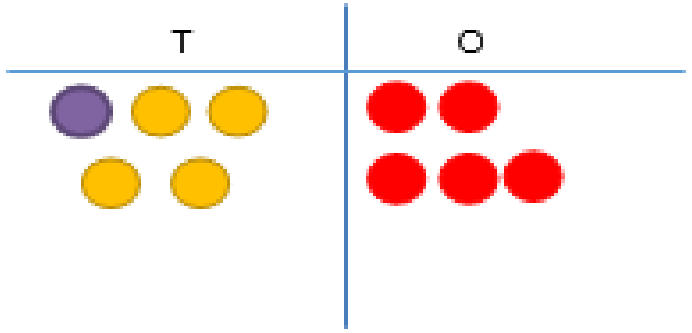
Column method- no regrouping

24 + 15=

Add together the ones first then add the tens. Use the Base 10 blocks first before moving onto place value counters.



After practically using the base 10 blocks and place value counters, children can draw the counters to help them to solve additions.



Calculations

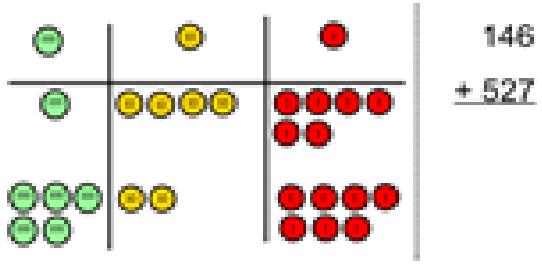
21 + 42 =

21

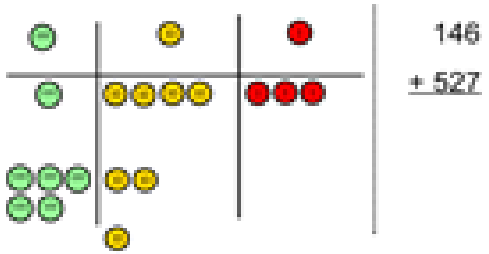
+ 42

Column method- regrouping

Make both numbers on a place value grid.



Add up the units and exchange 10 ones for one 10.

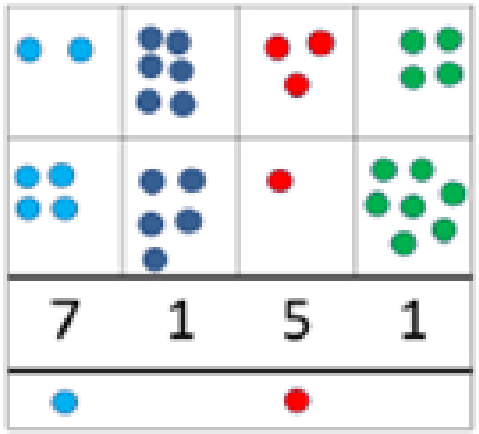


Add up the rest of the columns, exchanging the 10 counters from one column for the next place value column until every column has been added.

This can also be done with Base 10 to help children clearly see that 10 ones equal 1 ten and 10 tens equal 100.

As children move on to decimals, money and decimal place value counters can be used to support learning.

Children can draw a pictoral representation of the columns and place value counters to further support their learning and understanding.



Start by partitioning the numbers before moving on to clearly show the exchange below the addition.

$$\begin{array}{rcrl} 20 & + & 5 & \\ \underline{40} & + & \underline{8} & \\ 60 & + & 13 & = 73 \end{array}$$

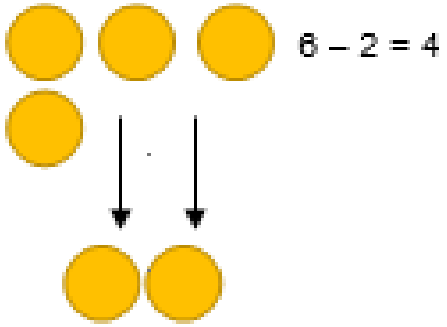
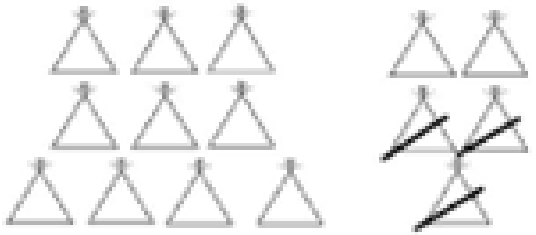
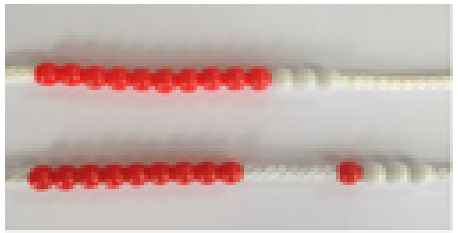
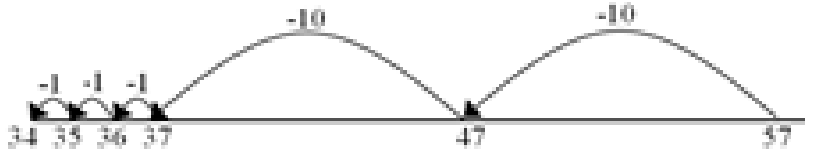
As the children move on, introduce decimals with the same number of decimal places and different. Money can be used here.

$$\begin{array}{r} 536 \\ +\ 85 \\ \hline 621 \\ \hline 1\ 1 \end{array}$$

$$\begin{array}{r} 72.8 \\ +\ 54.6 \\ \hline 127.4 \\ \hline 1\ 1 \end{array}$$

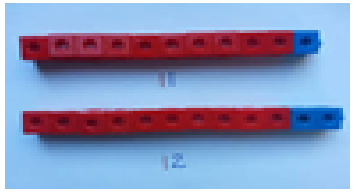
$$\begin{array}{rrcrrr} 2 & 3 & . & 3 & 6 & 1 \\ & 9 & . & 0 & 8 & 0 \\ 5 & 9 & . & 7 & 7 & 0 \\ + & 1 & . & 3 & 0 & 0 \\ \hline 9 & 3 & . & 5 & 1 & 1 \\ \hline 2 & 1 & & 2 & & \end{array}$$

Subtraction

Objective and Strategies	Concrete	Pictorial	Abstract
Taking away ones	Use physical objects, counters, cubes etc. to show how objects can be taken away.  6 – 2 = 4  4 – 2 = 2	Cross out drawn objects to show what has been taken away.  15 – 3 = 12	18 -3= 15 8 – 2 = 6
Counting back	Make the larger number in your subtraction. Move the beads along your bead string as you count backwards in ones.  13 – 4 Use counters and move them away from the group as you take them away counting backwards as you go. 	Count back on a number line or number track  9 10 11 12 13 14 15 Start at the bigger number and count back the smaller number showing the jumps on the number line.  -10 -10 -1 -1 -1 34 35 36 37 47 57 This can progress all the way to counting back using two 2 digit numbers.	Put 13 in your head, count back 4. What number are you at? Use your fingers to help.

Find the difference

Compare amounts and objects to find the difference.

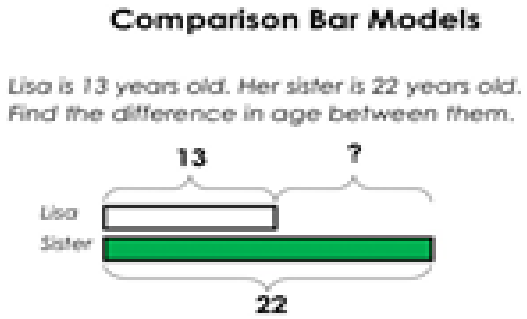


Use cubes to build towers or make bars to find the difference

Use basic bar models with items to find the difference

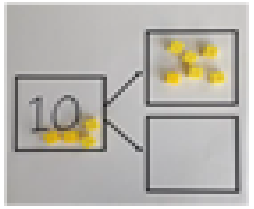
Count on to find the difference.

Draw bars to find the difference between 2 numbers.



Hannah has 23 sandwiches; Helen has 15 sandwiches. Find the difference between the number of sandwiches.

Part-Part Whole Model

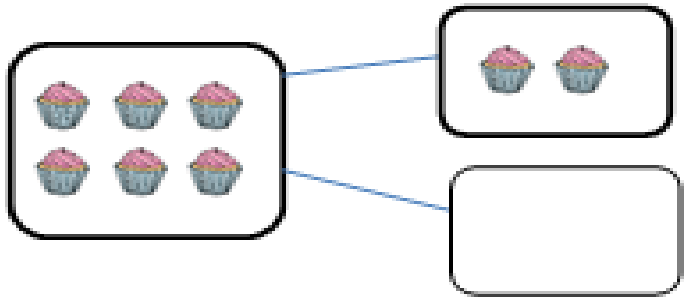


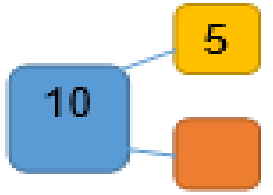
Link to addition- use the part whole model to help explain the inverse between addition and subtraction.

If 10 is the whole and 6 is one of the parts. What is the other part?

10 - 6 =

Use a pictorial representation of objects to show the part part whole model.

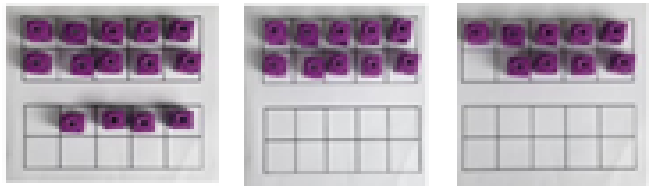




Move to using numbers within the part whole model.

Make 10

14 – 9 =



Make 14 on the ten frame. Takeaway the 4 first to make 10, then takeaway one more so you have taken away 5. You are left with the answer of 9.

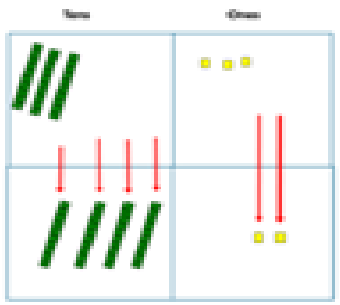
Start at 13. Take away 3 to reach 10. Then take away the remaining 4 so you have taken away 7 altogether. You have reached your answer.

16 – 8=

How many do we take off to reach the next 10?

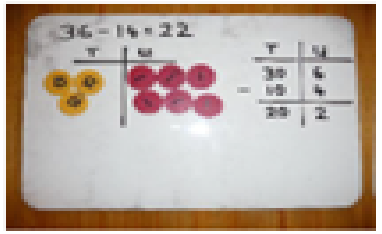
How many do we have left to take off?

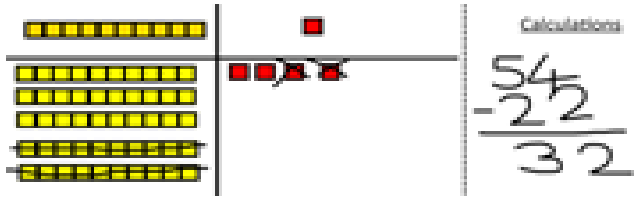
Column method without regrouping



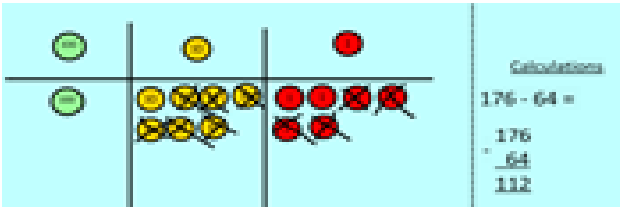
Use Base 10 to make the bigger number then take the smaller number away.

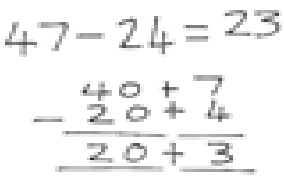
Show how you partition numbers to subtract. Again make the larger number first.



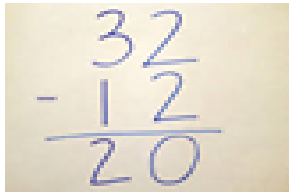


Draw the Base 10 or place value counters alongside the written calculation to help to show working.





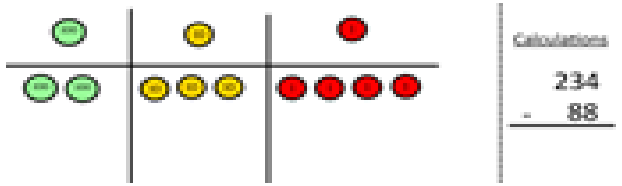
This will lead to a clear written column subtraction.



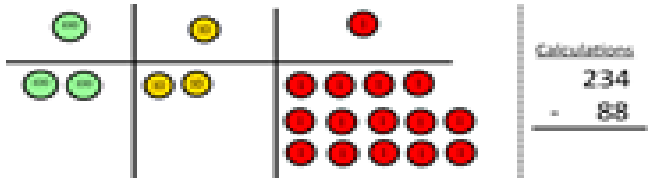
Column method with regrouping

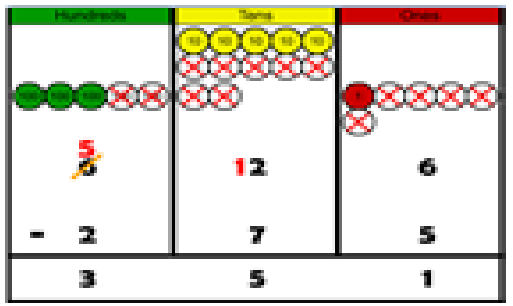
Use Base 10 to start with before moving on to place value counters. Start with one exchange before moving onto subtractions with 2 exchanges.

Make the larger number with the place value counters

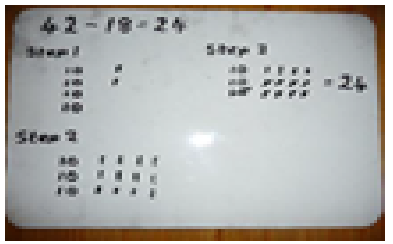


Start with the ones, can I take away 8 from 4 easily? I need to exchange one of my tens for ten ones.



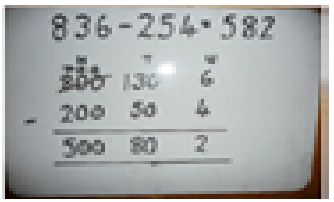


Draw the counters onto a place value grid and show what you have taken away by crossing the counters out as well as clearly showing the exchanges you make.

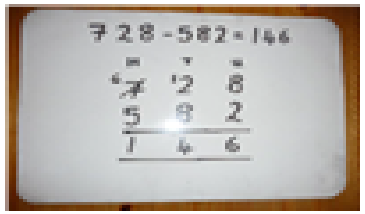


When confident, children can find their own way to record the exchange/regrouping.

Just writing the numbers as shown here shows that the child understands the method and knows when to exchange/regroup.



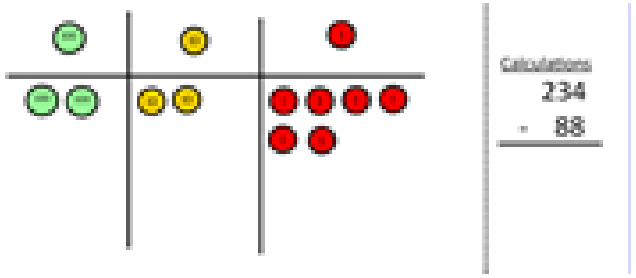
Children can start their formal written method by partitioning the number into clear place value columns.



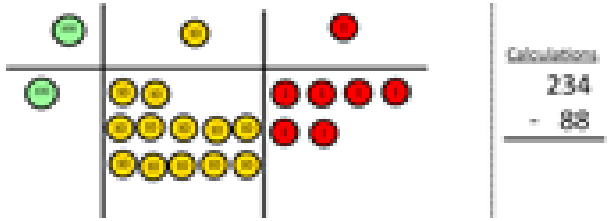
Moving forward the children use a more compact method.

Now I can subtract my ones.

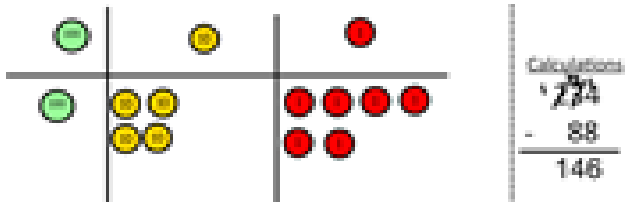
Now look at the tens, can I take away 8 tens easily? I need to exchange one hundred for ten tens.



Now I can take away eight tens and complete my subtraction



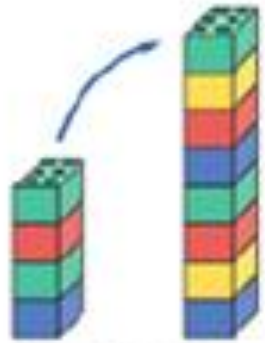
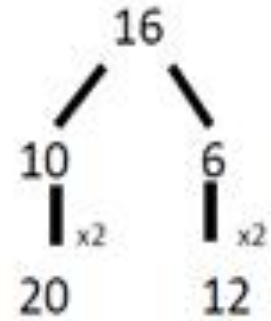
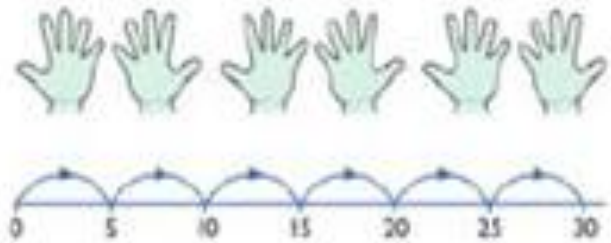
Show children how the concrete method links to the written method alongside your working. Cross out the numbers when exchanging and show where we write our new amount.



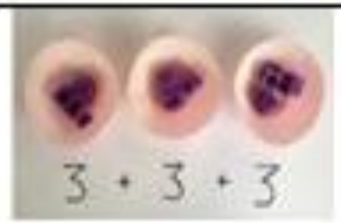
This will lead to an understanding of subtracting any number including decimals.

$$\begin{array}{r} \ 2\ \ 5\ 12\ .\ 1 \\ -\ \ 2\ \ 6\ \ 3\ .\ 0 \\ \hline 2\ \ 3\ \ 6\ .\ 5 \end{array}$$

Multiplication

Objective and Strategies	Concrete	Pictorial	Abstract
Doubling	Use practical activities to show how to double a number.  double 4 is 8 $4 \times 2 = 8$	Draw pictures to show how to double a number. Double 4 is 8 	 Partition a number and then double each part before recombining it back together.
Counting in multiples	 Count in multiples supported by concrete objects in equal groups.	 Use a number line or pictures to continue support in counting in multiples.	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25, 30

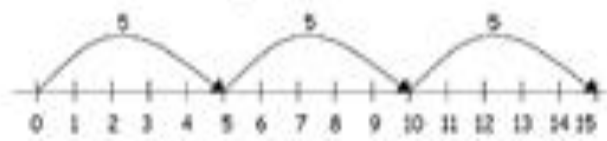
Repeated addition



Use different objects to add equal

There are 3 plates. Each plate has 2 star biscuits on. How many biscuits are there?

2 add 2 add 2 equals 6



5 + 5 + 5 = 15

Write addition sentences to describe objects and pictures.

Arrays, showing commutative multiplication

Create arrays using counters/ cubes to show multiplication sentences.

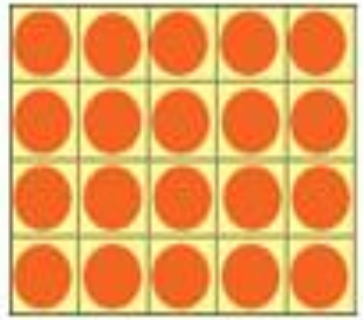
Draw arrays in different rotations to find **commutative** multiplication sentences.

4 × 2 = 8

2 × 4 = 8

2 × 4 = 8

4 × 2 = 8



Link arrays to area of rectangles.

Use an array to write multiplication sentences and reinforce repeated addition.

5 + 5 + 5 = 15

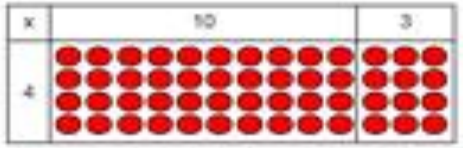
3 + 3 + 3 + 3 + 3 = 15

5 x 3 = 15

3 x 5 = 15

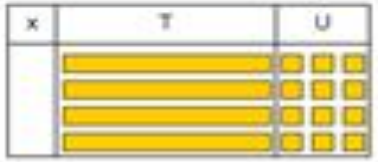
Grid Method

Show the link with arrays to first introduce the grid method.



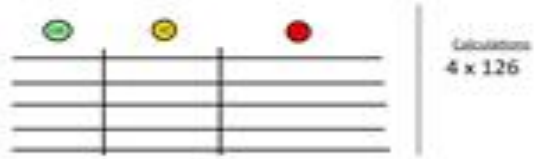
4 rows of 10
4 rows of 3

Move on to using Base 10 to move towards a more compact method.

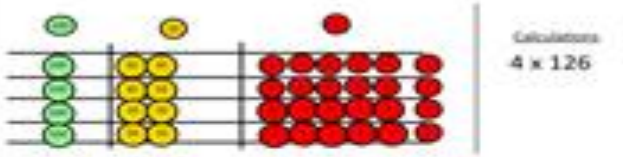


4 rows of 13

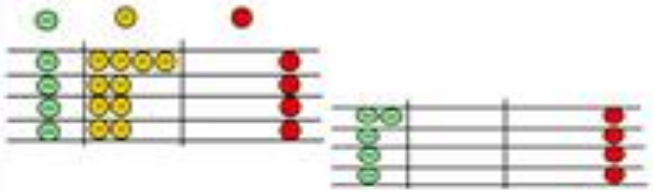
Move on to place value counters to show how we are finding groups of a number.We are multiplying by 4 so we need 4 rows.



Fill each row with 126.

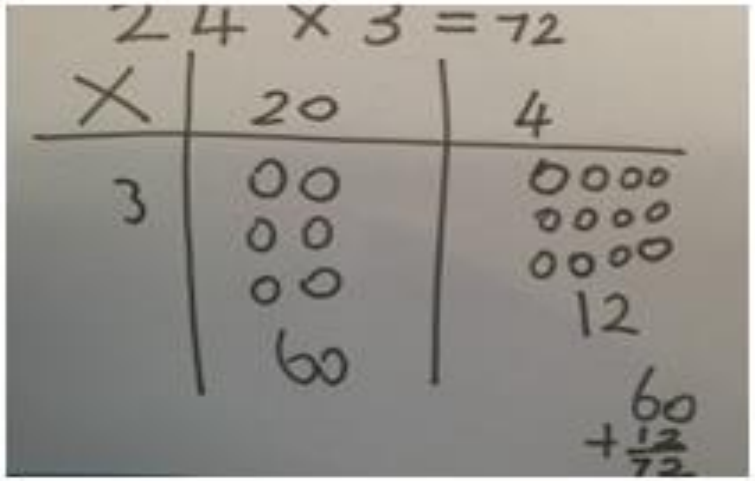


Add up each column, starting with the ones making any exchanges needed.



Children can represent the work they have done with place value counters in a way that they understand.

They can draw the counters, using colours to show different amounts or just use circles in the different columns to show their thinking as shown below.



Start with multiplying by one digit numbers and showing the clear addition alongside the grid.

×	30	5
7	210	35

210 + 35 = 245

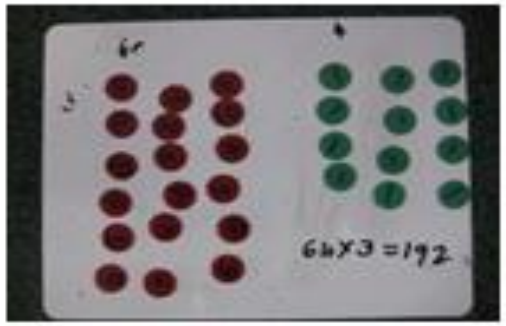
Moving forward, multiply by a 2 digit number showing the different rows within the grid method.

	10	8
10	100	80
3	30	24

x	1000	300	40	2
10	10000	3000	400	20
8	8000	2400	320	16

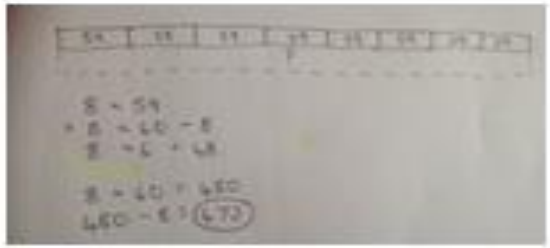
Column multiplication

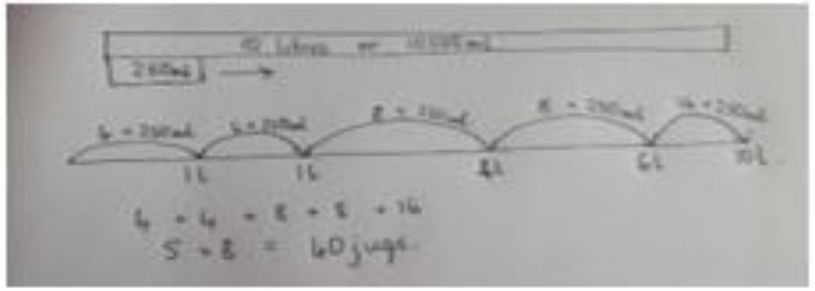
Children can continue to be supported by place value counters at the stage of multiplication.



It is important at this stage that they always multiply the ones first and note down their answer followed by the tens which they note below.

Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.





Start with long multiplication, reminding the children about lining up their numbers clearly in columns.

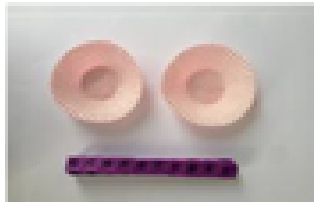
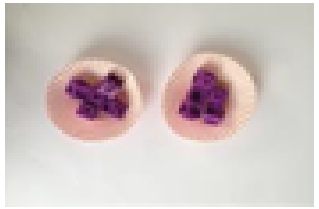
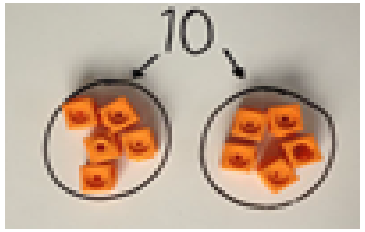
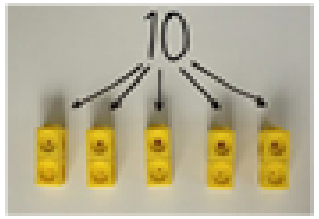
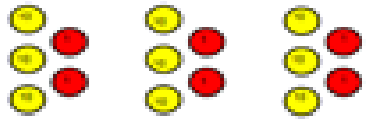
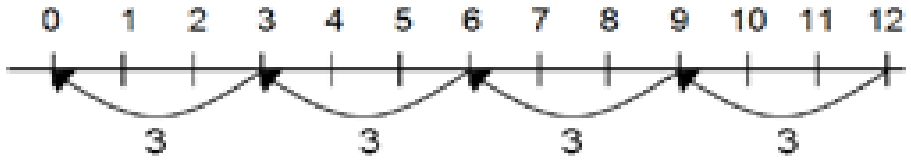
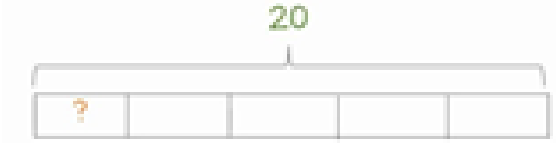
If it helps, children can write out what they are solving next to their answer.

```
  32
x 24
   8   (4 x 2)
 120   (4 x 30)
  40   (20 x 2)
 600   (20 x 30)
 768
```

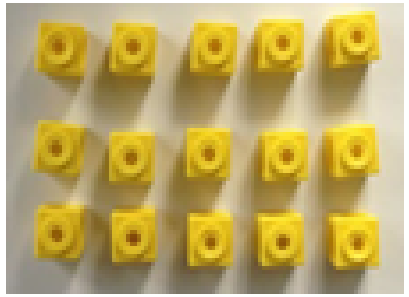
This moves to the more compact method.

```
  1342
x   18
 13420
 10736
 24156
```

Division

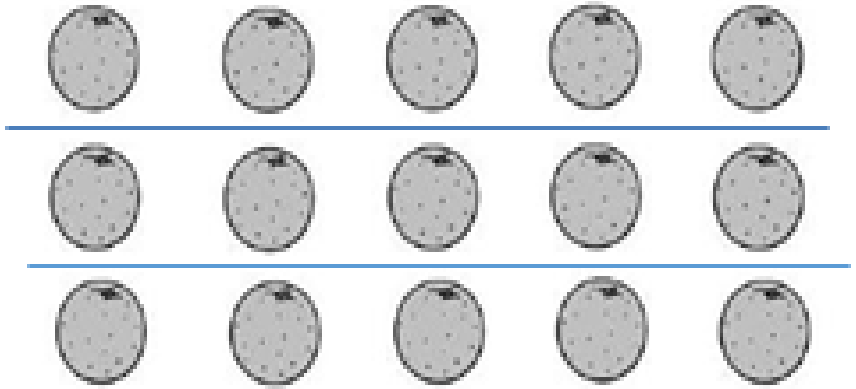
Objective and Strategies	Concrete	Pictorial	Abstract
Sharing objects into groups	   I have 10 cubes, can you share them equally in 2 groups?	Children use pictures or shapes to share quantities.  $8 \div 2 = 4$	Share 9 buns between three people. $9 \div 3 = 3$
Division as grouping	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.   $96 \div 3 = 32$ 	Use a number line to show jumps in groups. The number of jumps equals the number of groups.  Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group.  $20 \div 5 = ?$ $5 \times ? = 20$	$28 \div 7 = 4$ Divide 28 into 7 groups. How many are in each group?

Division within arrays



Link division to multiplication by creating an array and thinking about the number sentences that can be created.

Eg 15 ÷ 3 = 5 5 x 3 = 15
15 ÷ 5 = 3 3 x 5 = 15



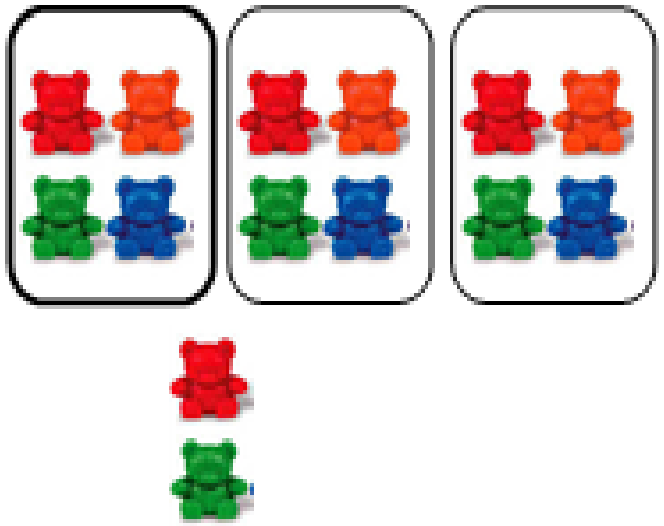
Draw an array and use lines to split the array into groups to make multiplication and division sentences.

Find the inverse of multiplication and division sentences by creating four linking number sentences.

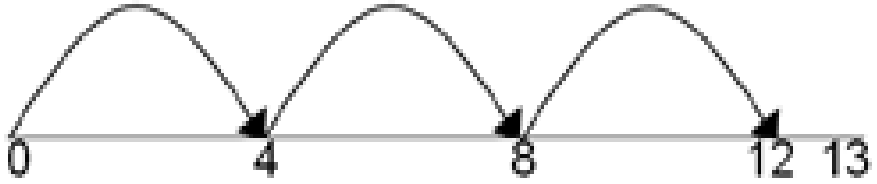
7 x 4 = 28
4 x 7 = 28
28 ÷ 7 = 4
28 ÷ 4 = 7

Division with a remainder

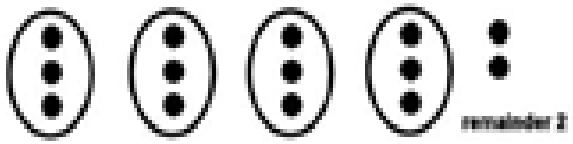
14 ÷ 3 =
Divide objects between groups and see how much is left over



Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder.



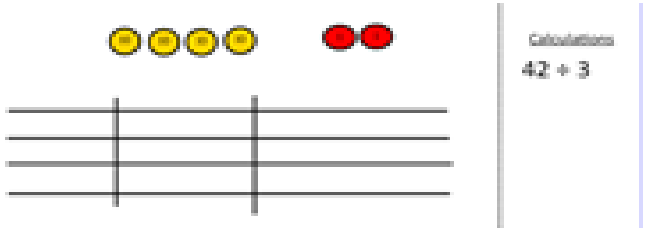
Draw dots and group them to divide an amount and clearly show a remainder.



Complete written divisions and show the remainder using r.

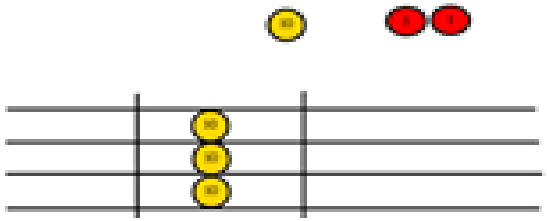
Short division

Use place value counters to divide using the bus stop method alongside

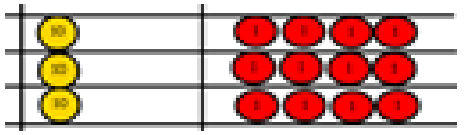


42 ÷ 3=

Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over.

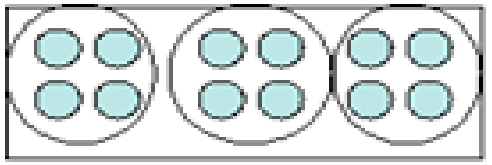


We exchange this ten for ten ones and then share the ones equally among the groups.



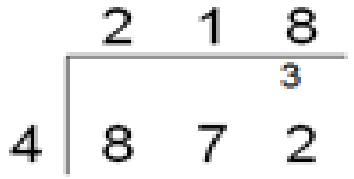
We look how much in 1 group so the answer is 14.

Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.



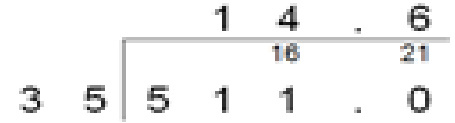
Encourage them to move towards counting in multiples to divide more efficiently.

Begin with divisions that divide equally with no remainder.

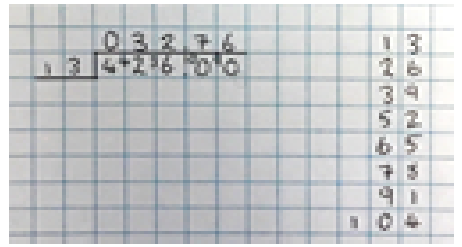


Move onto divisions with a remainder.

Finally move into decimal places to divide the total accurately.



Children need to write their times table out on the right hand side of the page to support their calculations too.



Number and calculation skills are the foundations that becoming numerate are built from. pupils are taught to value a range of different strategies to work out number sentences and problems.
Through partner talk, questioning and discussion we would encourage pupils to find efficient methods.
There are countless mental strategies to use so throughout our teaching we are always asking pupils:

How did you work that at? What strategy did you use?
Explain how you worked that out?
Show me another way to work it out.
Who found a different way to work it out?
Which method would be the most efficient?
I wonder what would happen if…?
Prove it.

WM 1 – THE NUMBER SYSTEM IS USED TO REPRESENT AND COMPARE RELATIONSHIPS BETWEEN NUMBERS AND QUANTITIES

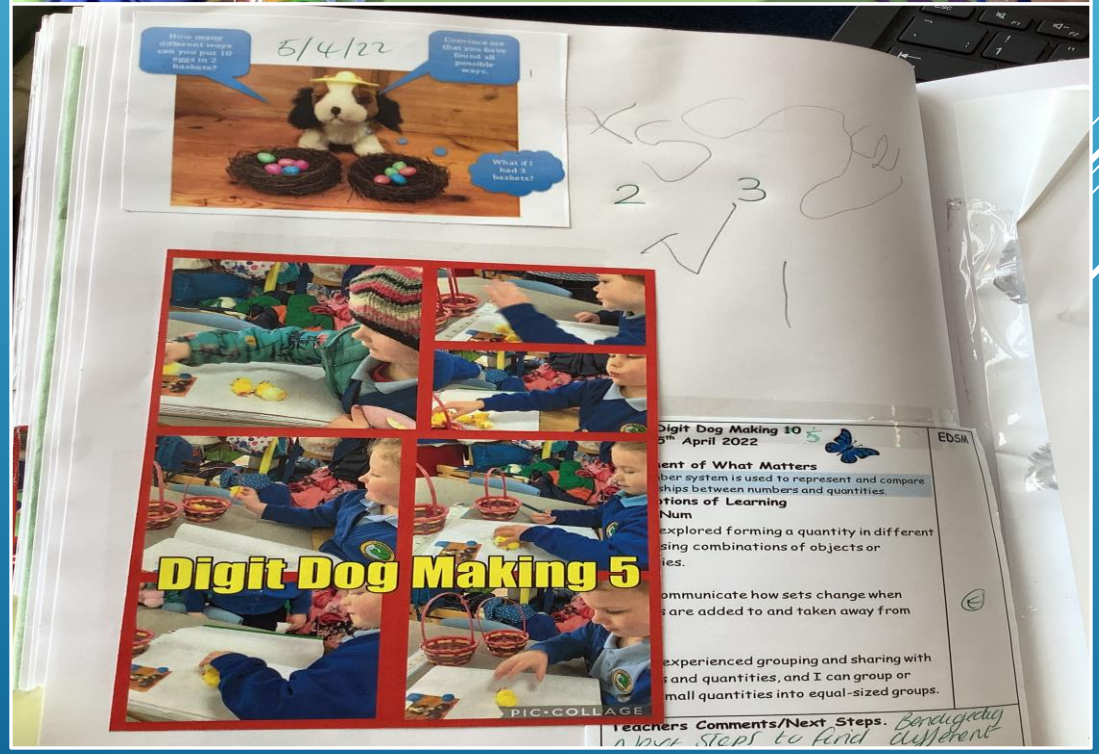
Informal written recording will still take place regularly through methods.These are an important part of learning and understanding, where lots of discussion can occur around strategies being used and identify misconceptions and highlighting them at an early stage. More formal abstract methods follow only when the child is able to use a wide range of mental calculation strategies. The emphasis of our teaching will always be to facilitate understanding and not simply to arrive at a correct answer.

Pupils will always be encouraged to look at a calculation/problem and then decide, what is the best method to choose to solve the question? Our aim is for pupils to be able to select an efficient method of their choice (whether this be concrete, pictorial or abstract) that is appropriate for a given task. They will do this by asking themselves:

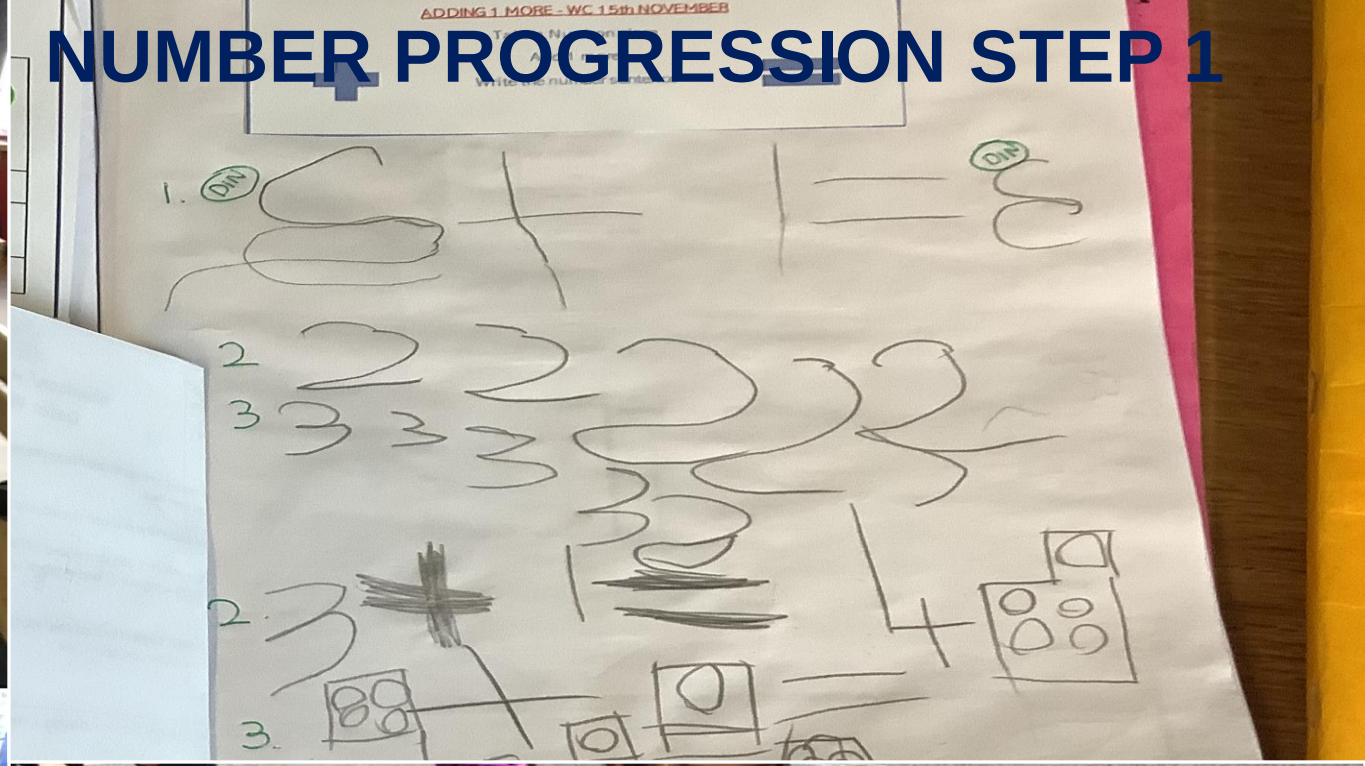
- **Can I do this in my head? What facts do I need to use?**
- **What resources (concrete) in our learning environment might help me get to the answer?**
- **What pictures or drawings (pictorial) could I use to help see the 'maths journey'?**
- **What formal strategy (abstract) can I use to solve this?**
- **Will a calculator support this type of question better?**

WM 1 – THE NUMBER SYSTEM IS USED TO REPRESENT AND COMPARE RELATIONSHIPS BETWEEN NUMBERS AND QUANTITIES

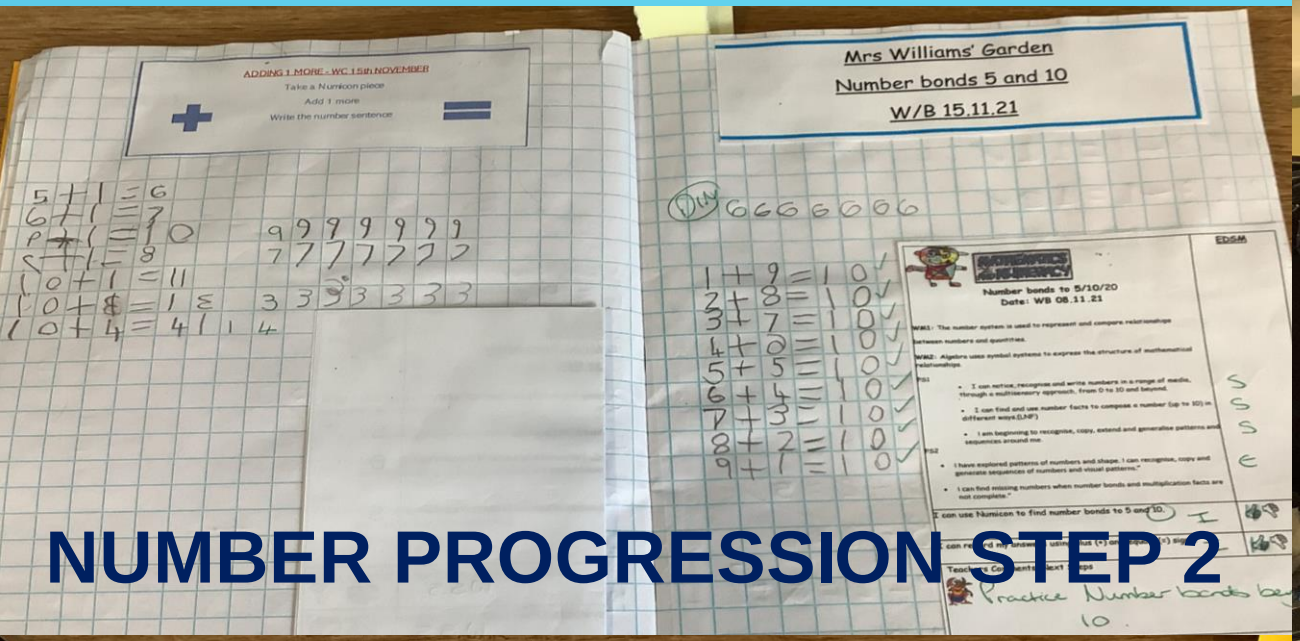
NUMBER PROGRESSION STEP 1

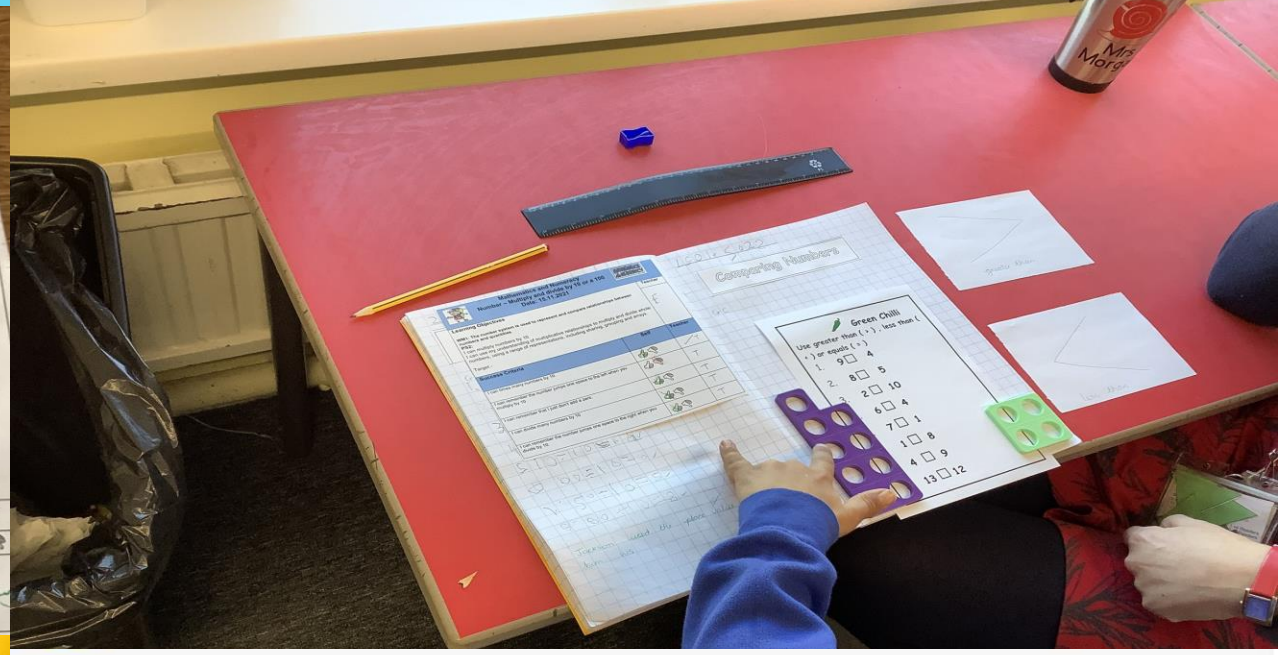


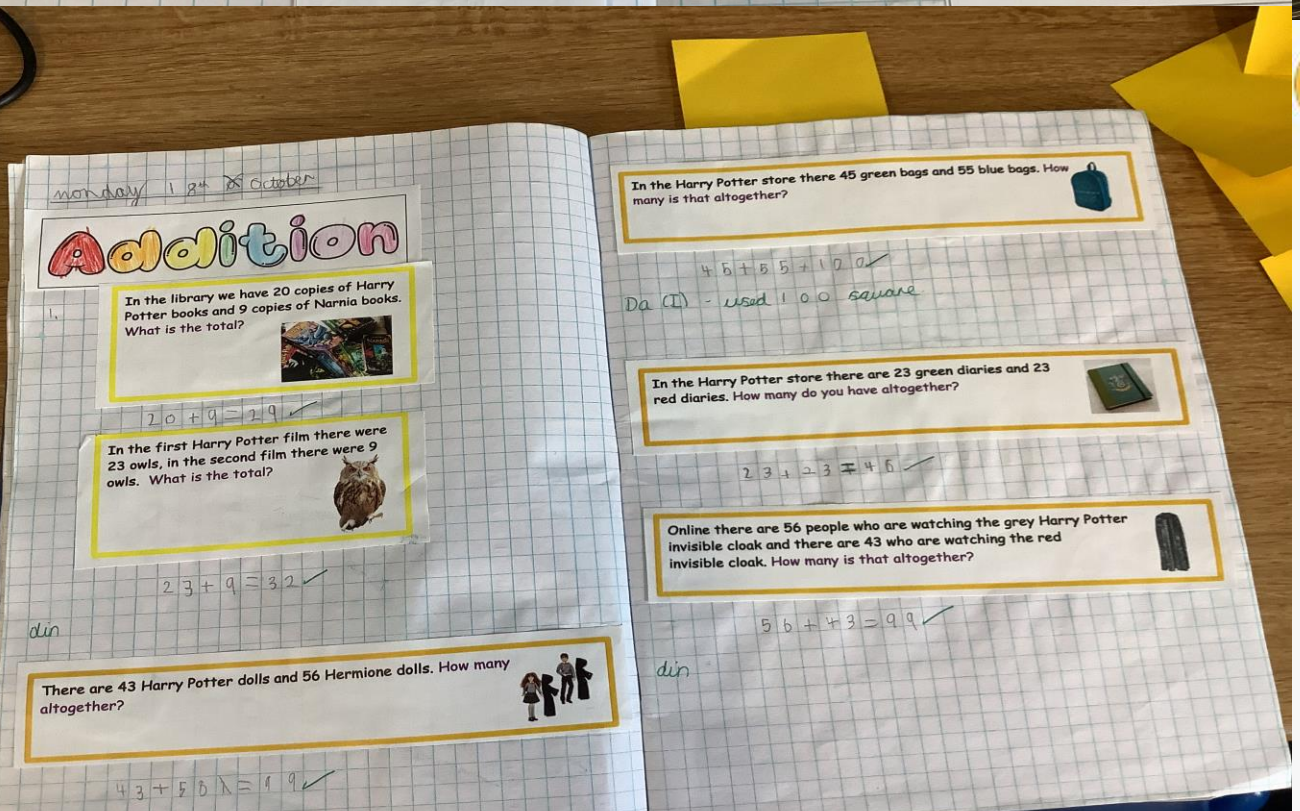
NUMBER PROGRESSION STEP 1

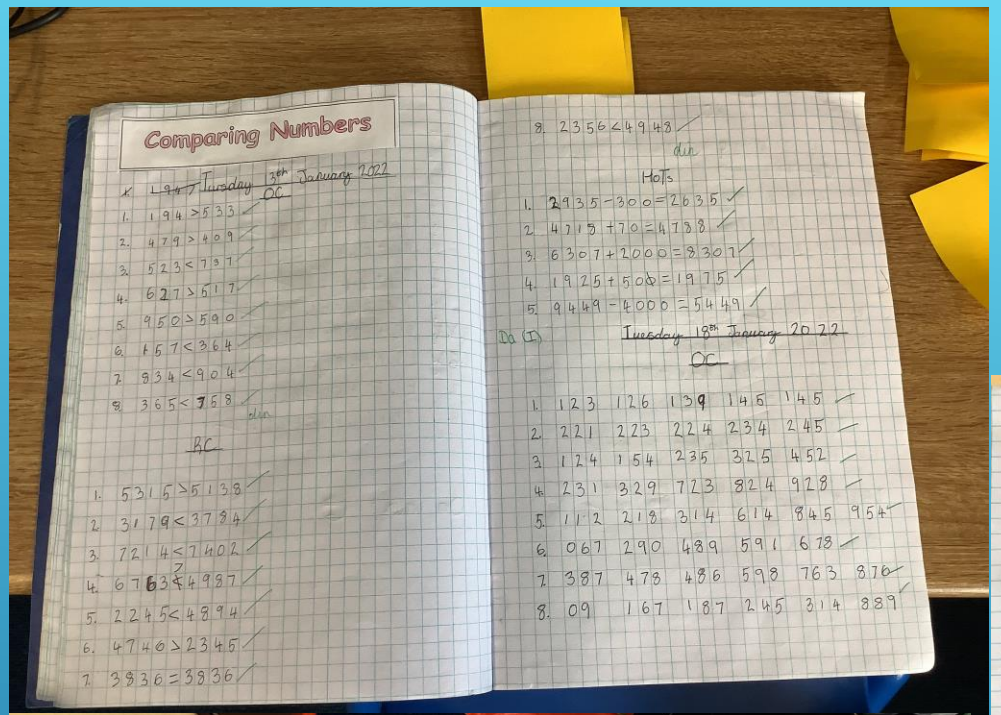


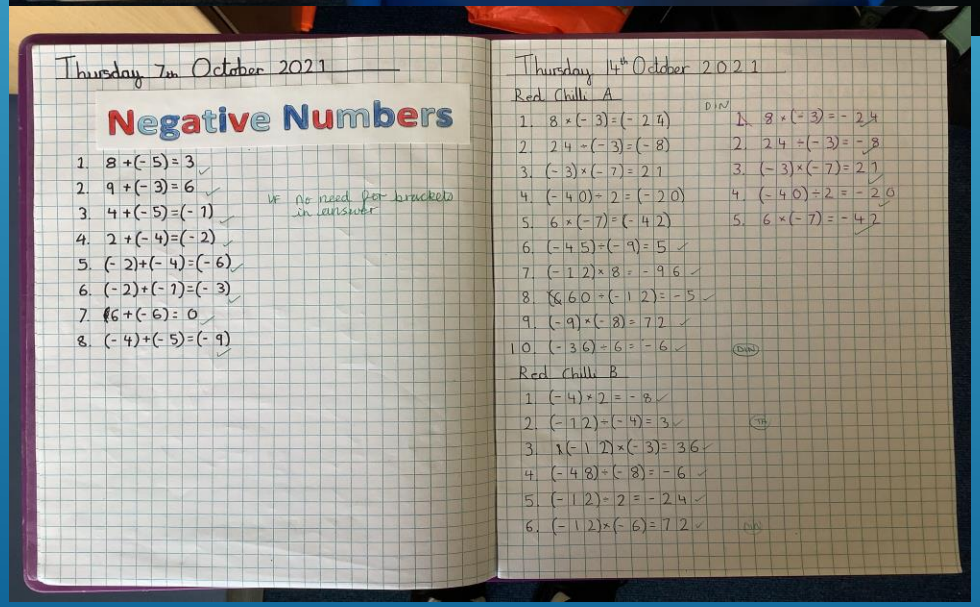
NUMBER PROGRESSION STEP 2

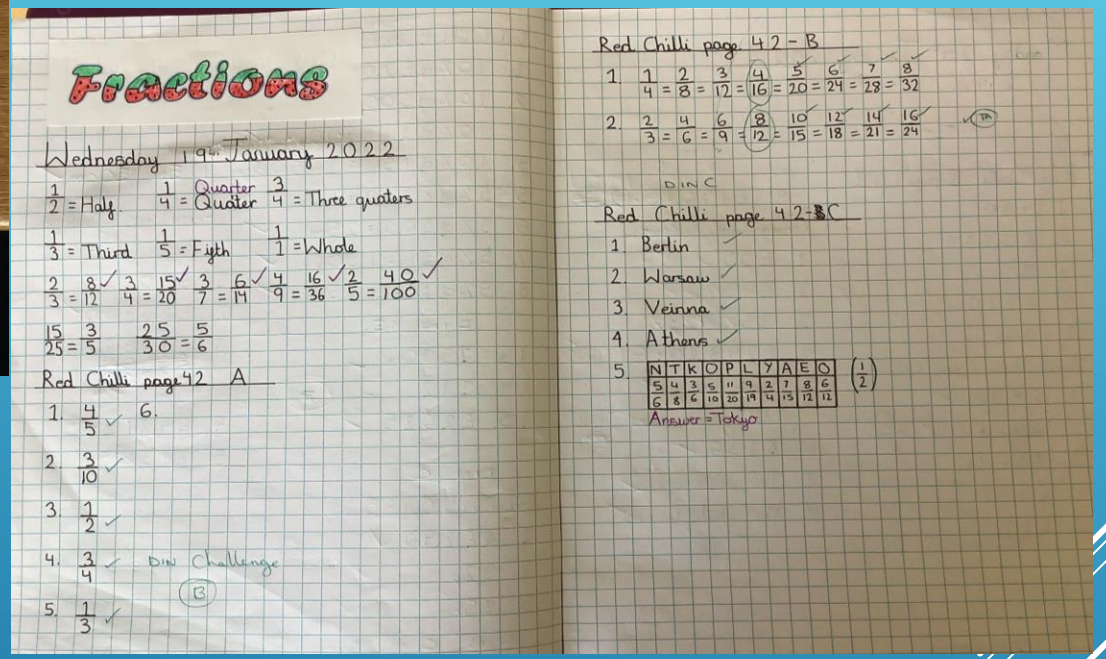










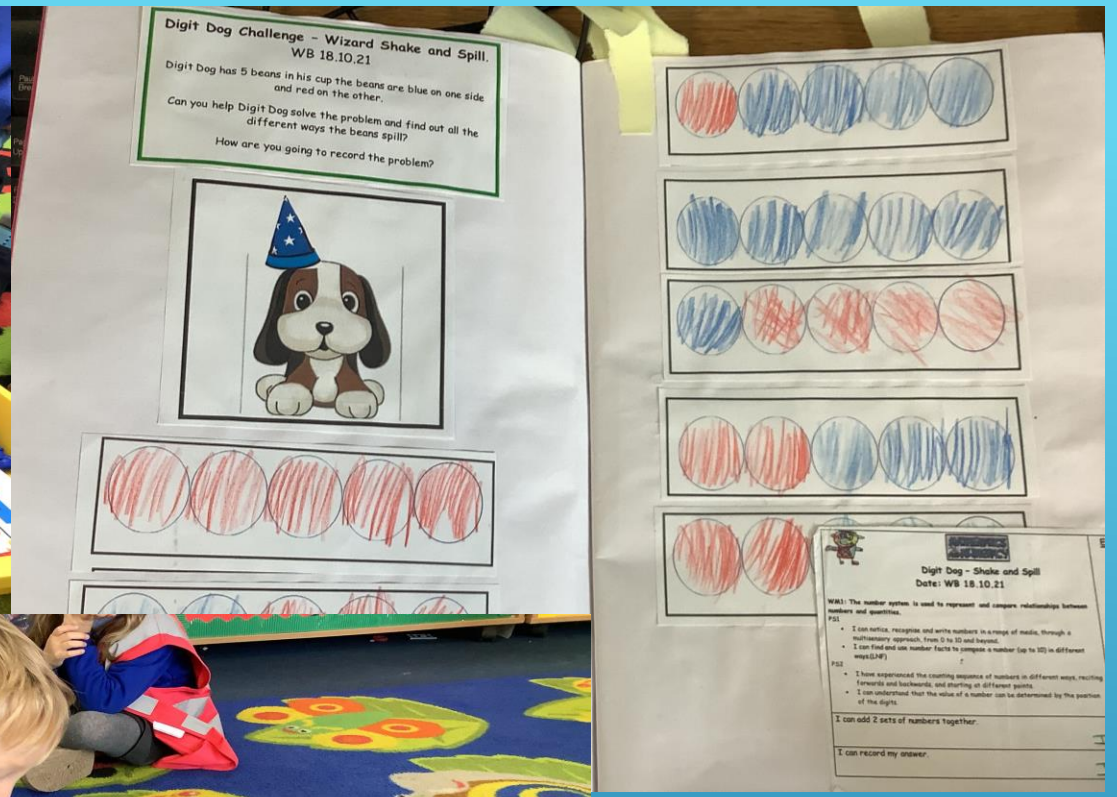


NUMBER PROGRESSION STEP 3

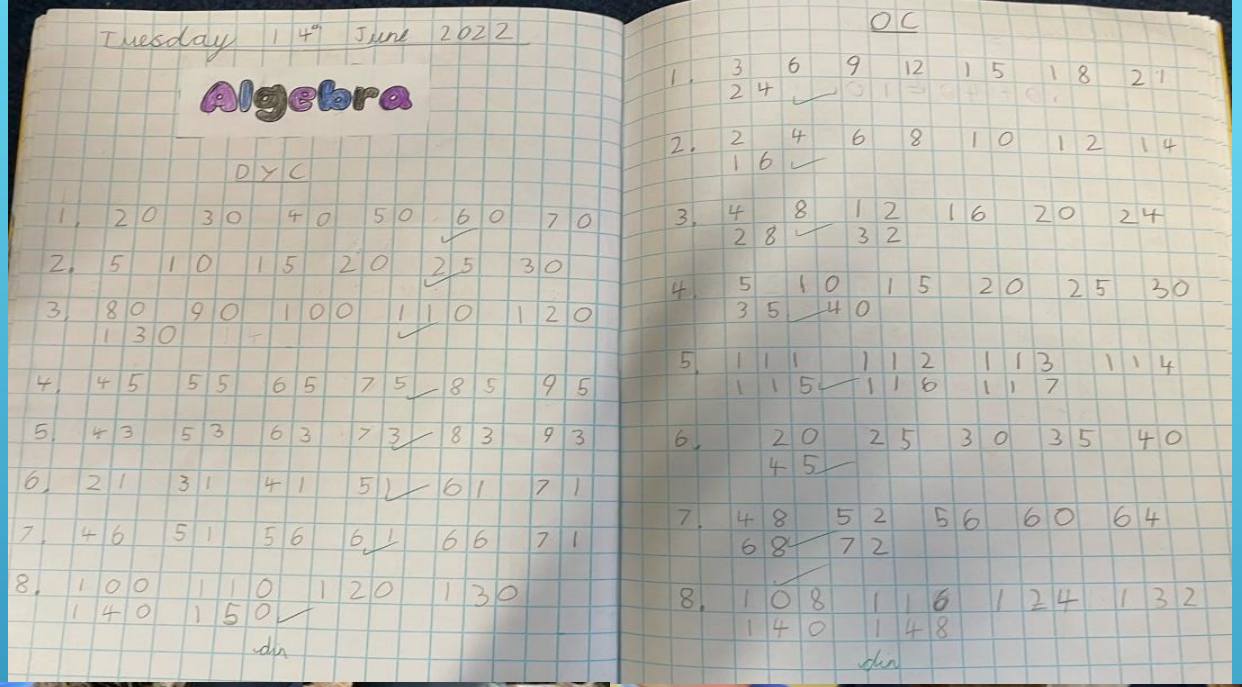
In Llanrhidian algebra is the study of structures abstracted from computations and relations, and provides a way to make generalisations. Algebraic thinking moves away from context to structure and relationships. This powerful approach provides our learners with the means to abstract important features and to detect and express mathematical structures of situations in order to solve problems. Algebra is a unifying thread running through the fabric of mathematics and numeracy.

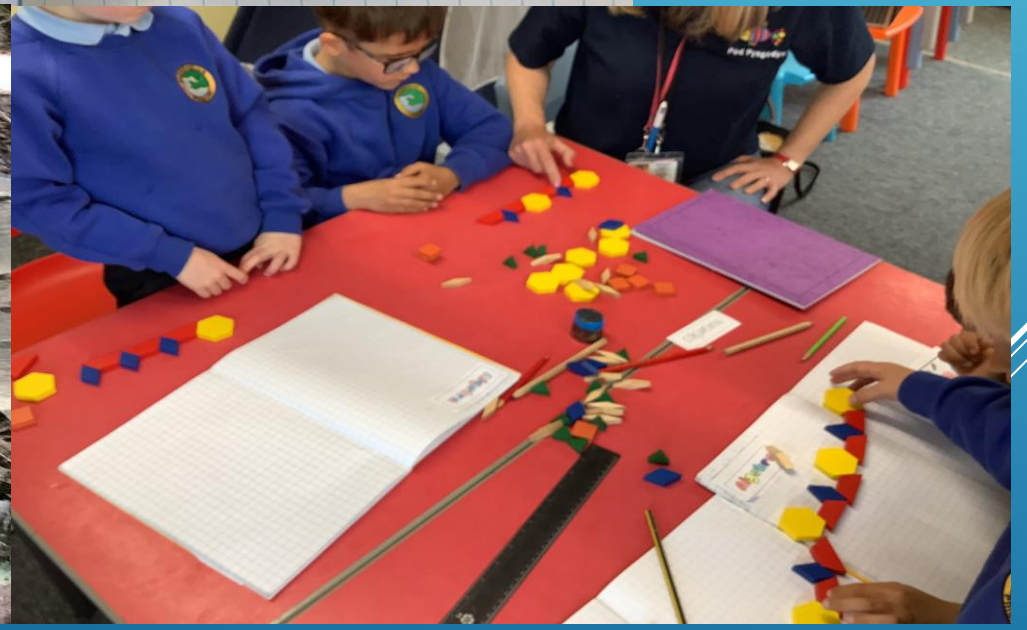
Algebraic thinking is essential for reasoning, modelling and solving problems in mathematics and in a wide range of real-world contexts, including technology and finance. Making connections between arithmetic and algebra develops skills for abstract reasoning from as early as Pod Pila Pala.

ALGEBRA IN LLANRHIDIAN

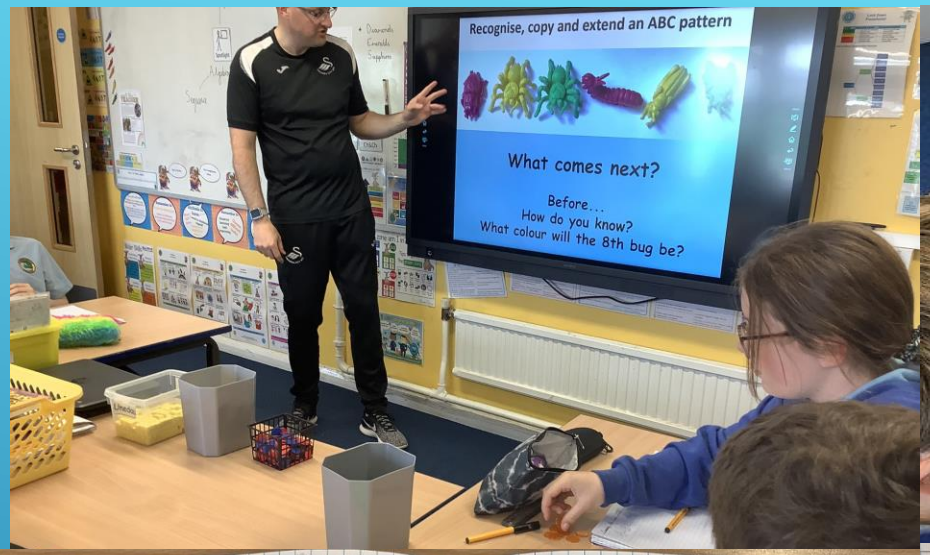


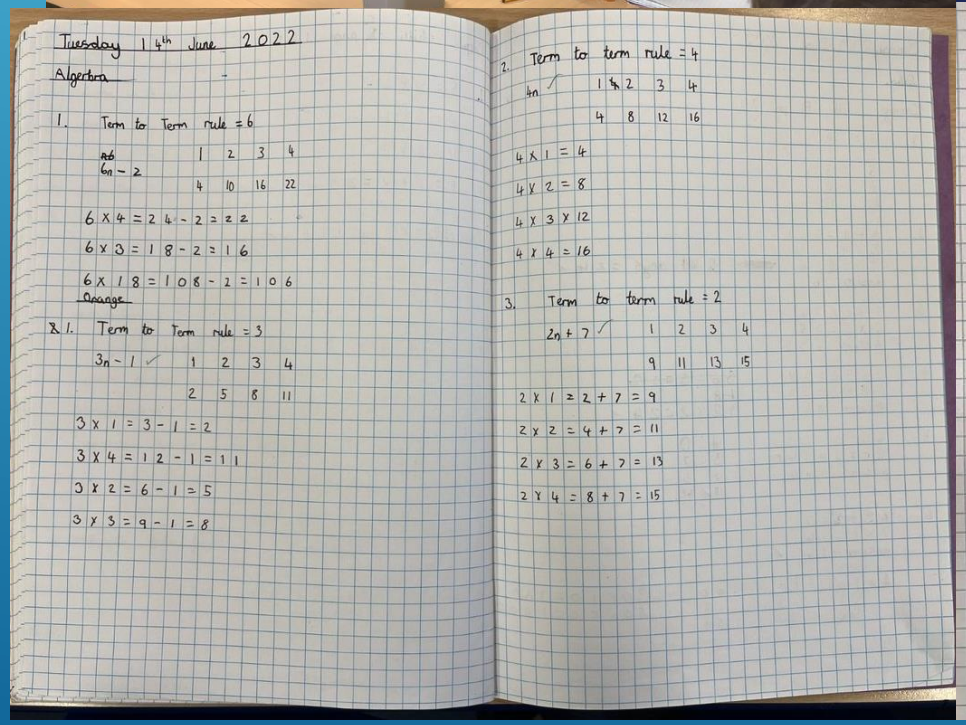
ALGEBRA IN PROGRESSION STEP 1

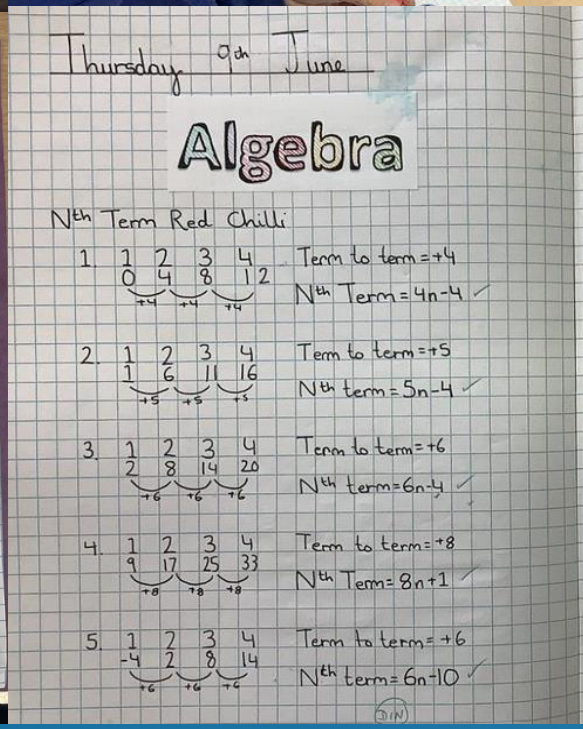


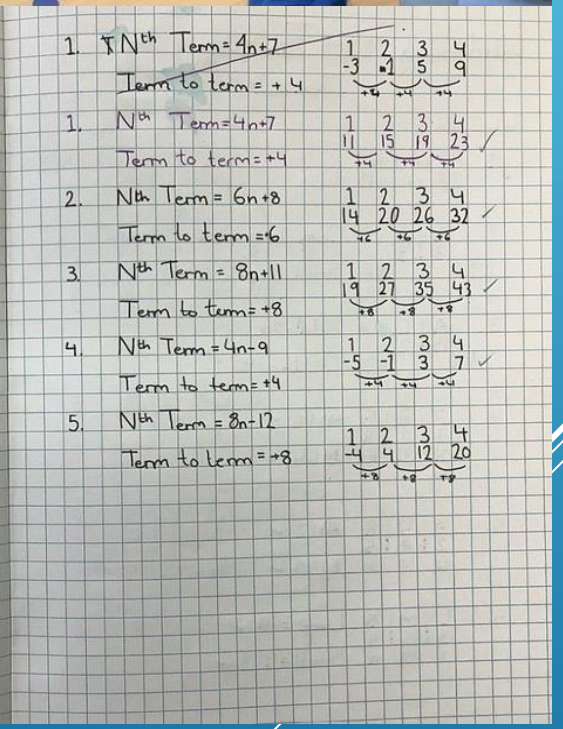


ALGEBRA IN PROGRESSION STEP 2







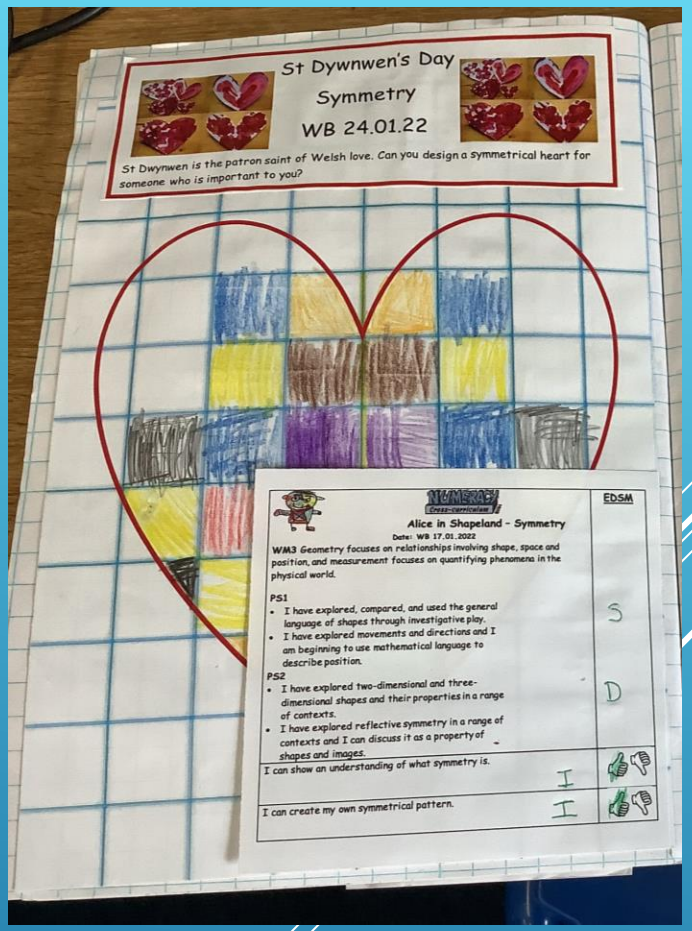


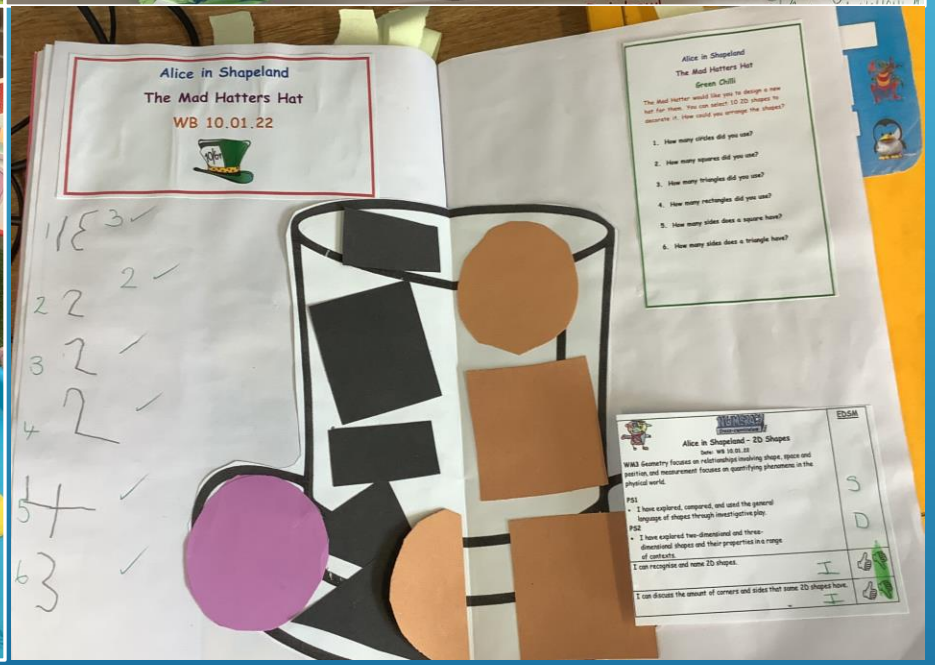
ALGEBRA IN PROGRESSION STEP 3

In Llanrhidian geometry involves playing with, manipulating, comparing, naming and classifying shapes and structures. The study of geometry encourages the development and use of conjecture, deductive reasoning and proof. Measurement allows the magnitude of spatial and abstract features to be quantified, using a variety of standard and non-standard units. It can also support the development of numerical reasoning for our learners.

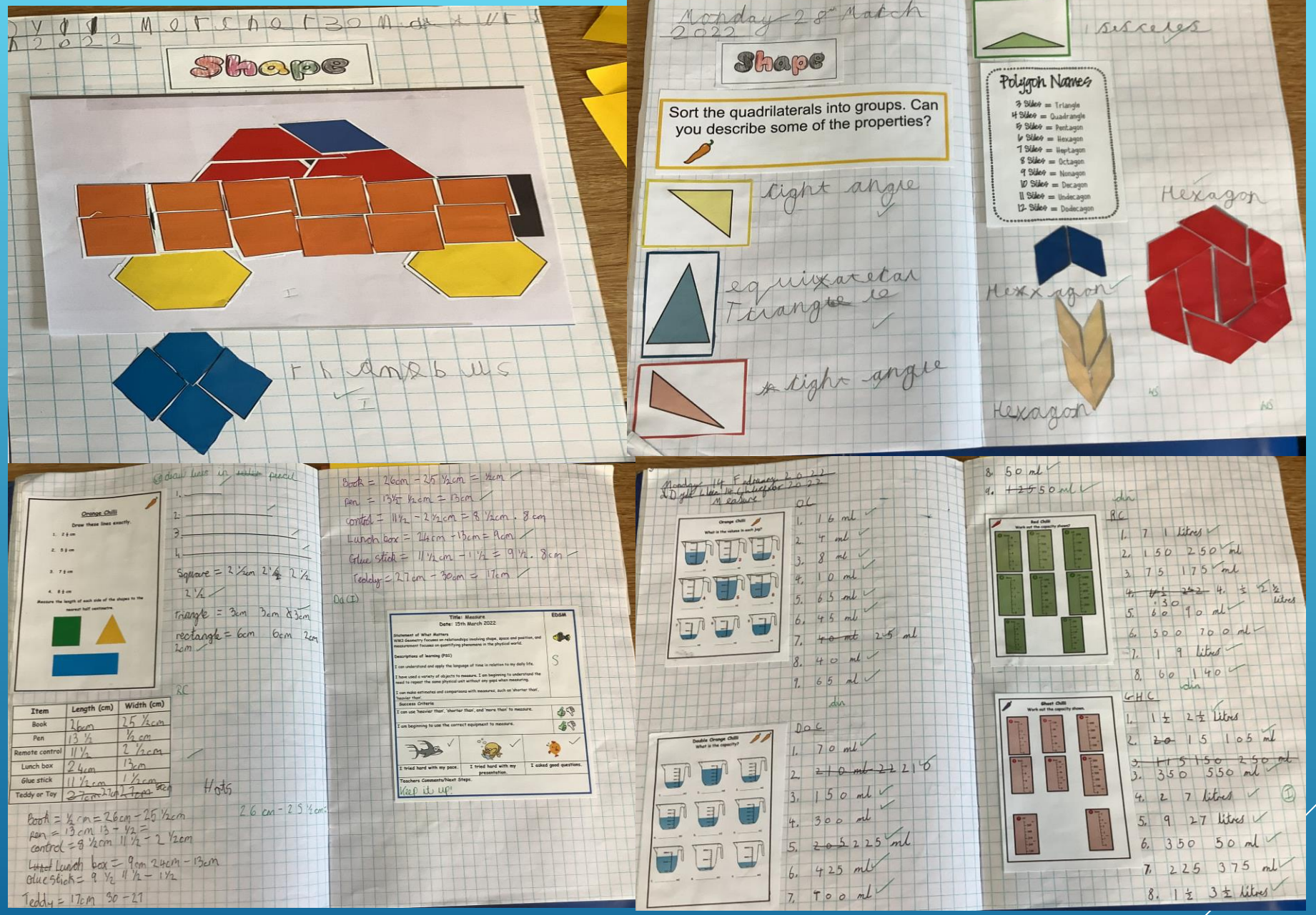
We value the importance of reasoning in Llanrhidian, reasoning about the sizes and properties of shapes and their surrounding spaces helps our learners to make sense of the physical world and the world of mathematical shapes. Geometry and measurement have applications in many fields, including art, construction, science and technology, engineering, and astronomy.

GEOMETRY IN LLANRHIDIAN

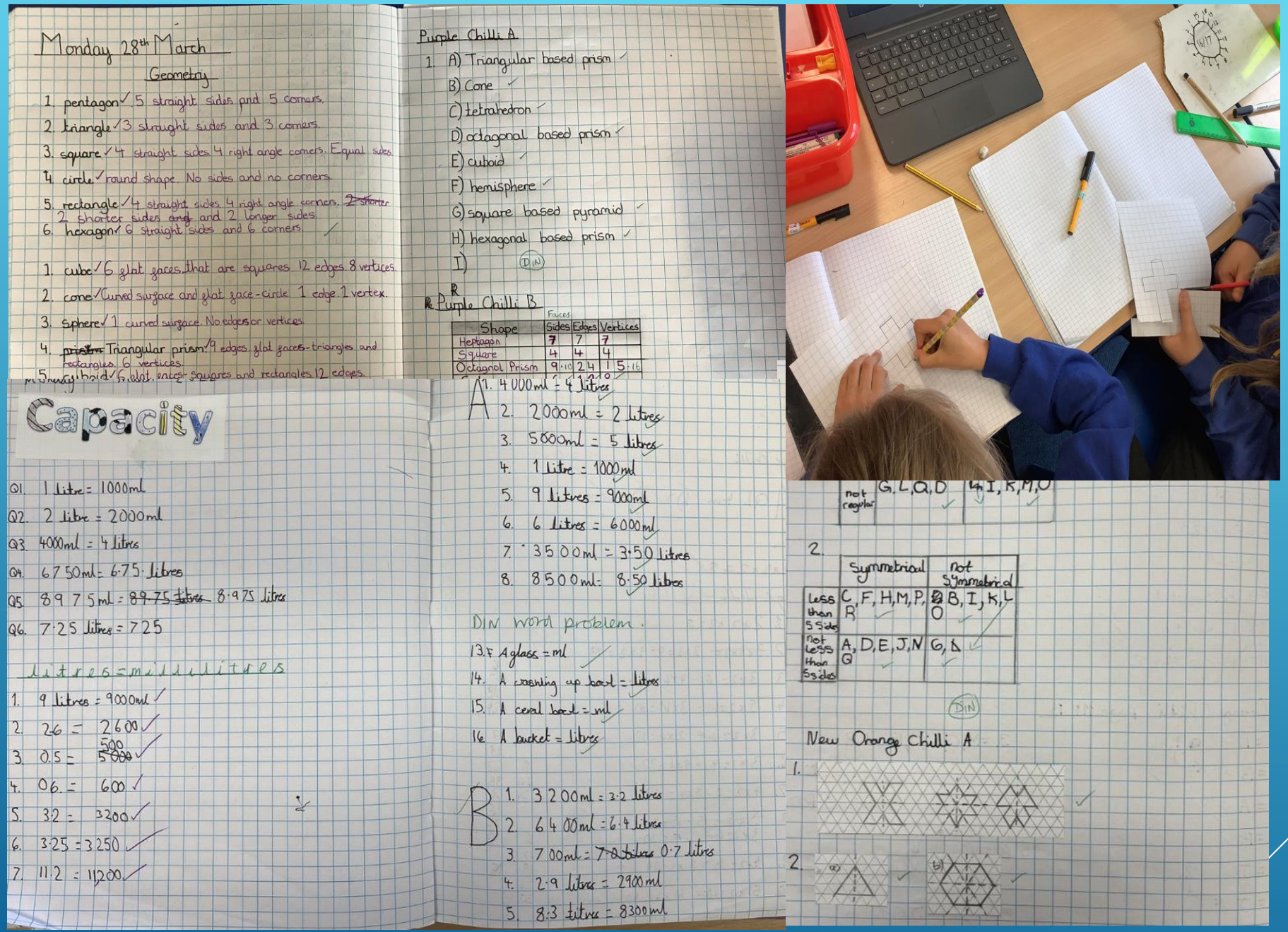




GEOMETRY IN PROGRESSION 1



GEOMETRY IN PROGRESSION 2



Monday 28th March

Geometry

1. pentagon ✓ 5 straight sides and 5 corners.
2. triangle ✓ 3 straight sides and 3 corners.
3. square ✓ 4 straight sides 4 right angle corners. Equal sides.
4. circle ✓ round shape. No sides and no corners.
5. rectangle ✓ 4 straight sides 4 right angle corners. ~~2 shorter~~ 2 shorter sides ~~and~~ and 2 longer sides.
6. hexagon ✓ 6 straight sides and 6 corners.

1. cube ✓ 6 flat faces that are squares. 12 edges. 8 vertices.
2. cone ✓ Curved surface and flat face - circle. 1 edge 1 vertex.
3. sphere ✓ 1 curved surface. No edges or vertices.
4. ~~prism~~ Triangular prism ✓ 9 edges, flat faces - triangles and rectangles. 6 vertices.
5. Cuboid ✓ 6 flat faces - squares and rectangles. 12 edges.

Purple Chilli A

1. A) Triangular based prism ✓
   B) Cone ✓
   C) tetrahedron ✓
   D) octagonal based prism ✓
   E) cuboid ✓
   F) hemisphere ✓
   G) square based pyramid ✓
   H) hexagonal based prism ✓
   I) DIN

Purple Chilli B

Shape	Faces	Sides	Edges	Vertices
Heptagon		7	7	7
Square		4	4	4
Octagonal Prism	9·10	24	1	5·16

Capacity

Q1. 1 litre = 1000ml
Q2. 2 litre = 2000ml
Q3. 4000ml = 4 litres
Q4. 6750ml = 6·75 litres
Q5. 8975ml = 8975 ~~litres~~ 8·975 litres
Q6. 7·25 litres = 725

Litres = millilitres

1. 9 litres = 9000ml ✓
2. 26 = 2600 ✓
3. 0.5 = 500 5000 ✓
4. 06. = 600 ✓
5. 32 = 3200 ✓
6. 3·25 = 3250 ✓
7. 11.2 = 11,200 ✓

A
1. 4000ml = 4 litres
2. 2000ml = 2 litres
3. 5000ml = 5 litres
4. 1 litre = 1000ml
5. 9 litres = 9000ml
6. 6 litres = 6000ml
7. 3500ml = 3·50 litres
8. 8500ml = 8·50 litres

DIN word problem.

13. A glass = ml
14. A washing up bowl = litres
15. A cereal bowl = ml
16. A bucket = litres

B
1. 3200ml = 3·2 litres
2. 6400ml = 6·4 litres
3. 700ml = 7·0 ~~litres~~ 0·7 litres
4. 2·9 litres = 2900ml
5. 8·3 litres = 8300ml

	Symmetrical	Not Symmetrical
Less than 5 sides	C, F, H, M, P, R	B, I, K, L, O
not less than 5 sides	A, D, E, J, N, Q	G, S

DIN

New Orange Chilli A

1.

2. a) b)

GEOMETRY IN PROGRESSION 3

STATISTICS AND DATA IN LLANRHIDIAN

In Llanrhidian statistics is the practice of collecting, manipulating and analysing data, allowing representation and generalisation of information. Probability is the mathematical study of chance, enabling predictions of the likelihood of events occurring. Statistics and probability rely on the application and manipulation of number and algebra. The process of reasoning with statistics and probability, and evaluating their reliability, develops critical thinking and analytical skills that are fundamental to enabling our learners to make ethical and informed decisions.

Data

In Llanrhidian managing data and representing information effectively provide our learners with the means to test hypotheses, draw conclusions and make predictions.

- Describing data – Reading data from graphs, tables, lists
- Organising data – Ordering, grouping, summarising
- Representing data – Labelling, scaling
- Analysing data – Making inferences, predictions, interpreting patterns and trends

In Llanrhidian there is a progression of graphs, which includes:

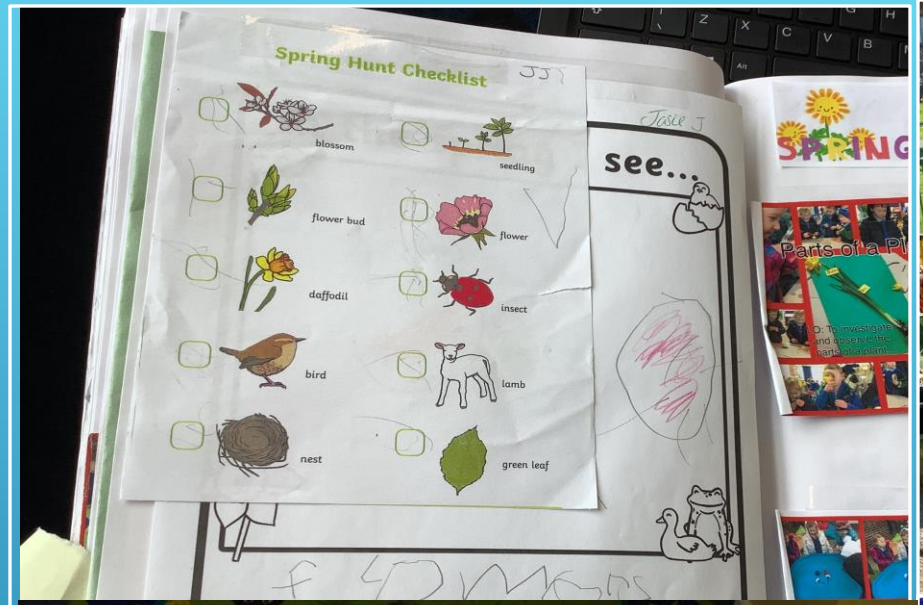
Real graphs – object graphs – a small step from classification.

Picture graphs – pictograms – The picture can represent one piece of data

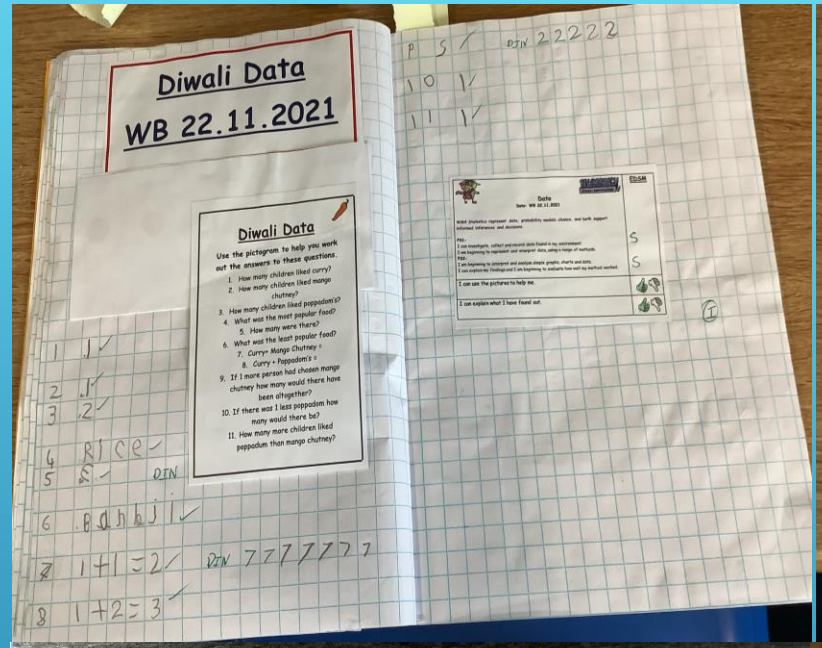
Symbolic graphs – bar charts and line graphs.

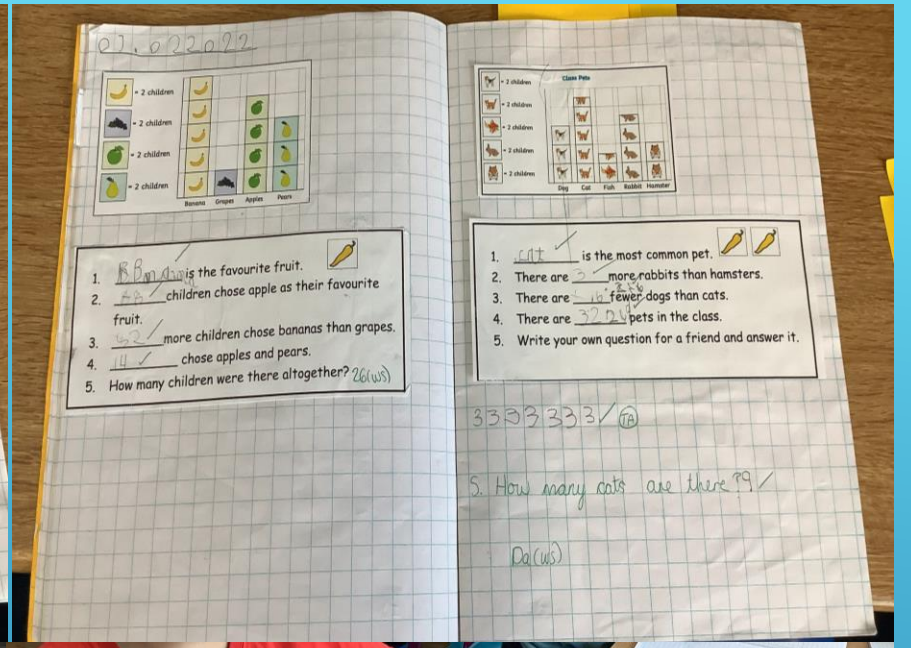
Classification

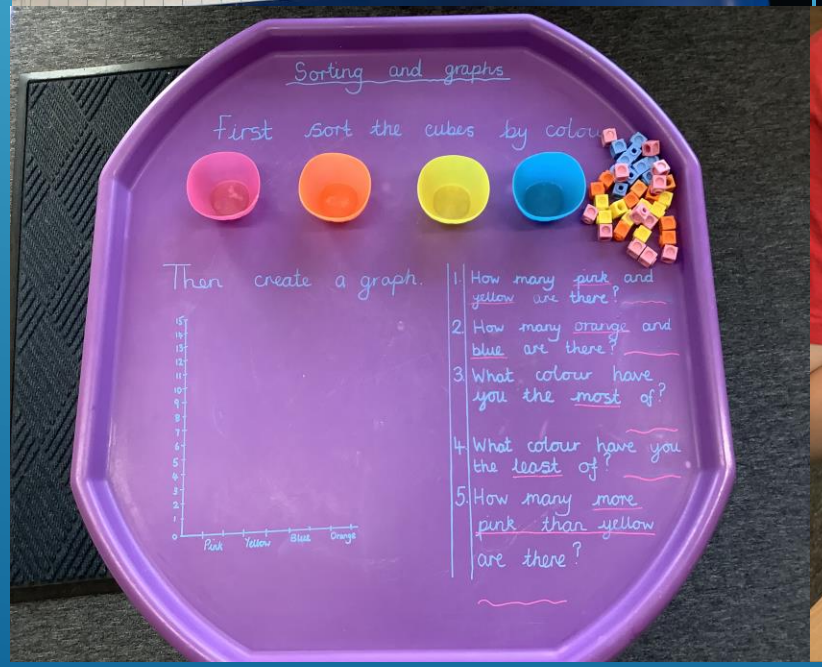
Classification happens right from Pila – Pala to Pry Cop. In Llanrhidian in order to formulate questions and decide how to represent data that has been gathered, decisions must be made about how things might be categorised. Our learners have lots of varied opportunities to sort and classify and talk about how they have done this i.e. sorting shapes, sorting hair colour and eye colour or sorting responses to big questions.

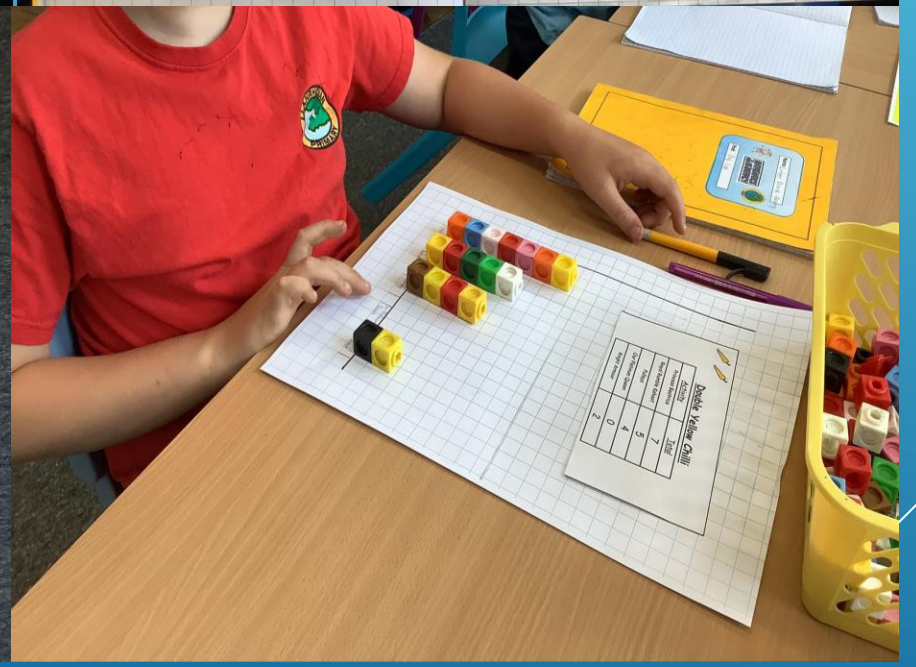


DATA HANDLING IN PROGRESSION 1









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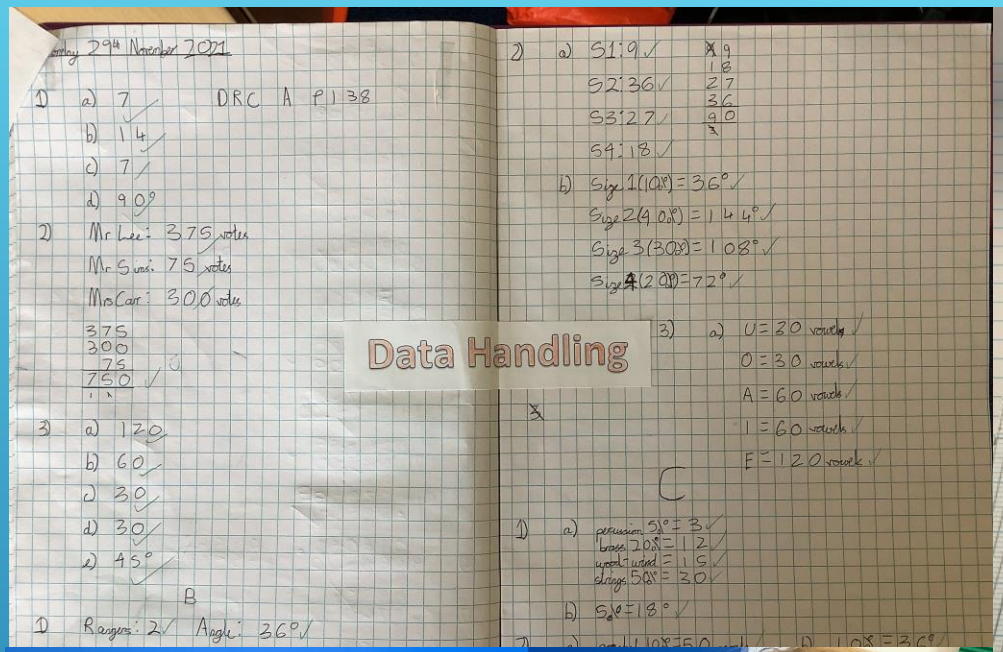

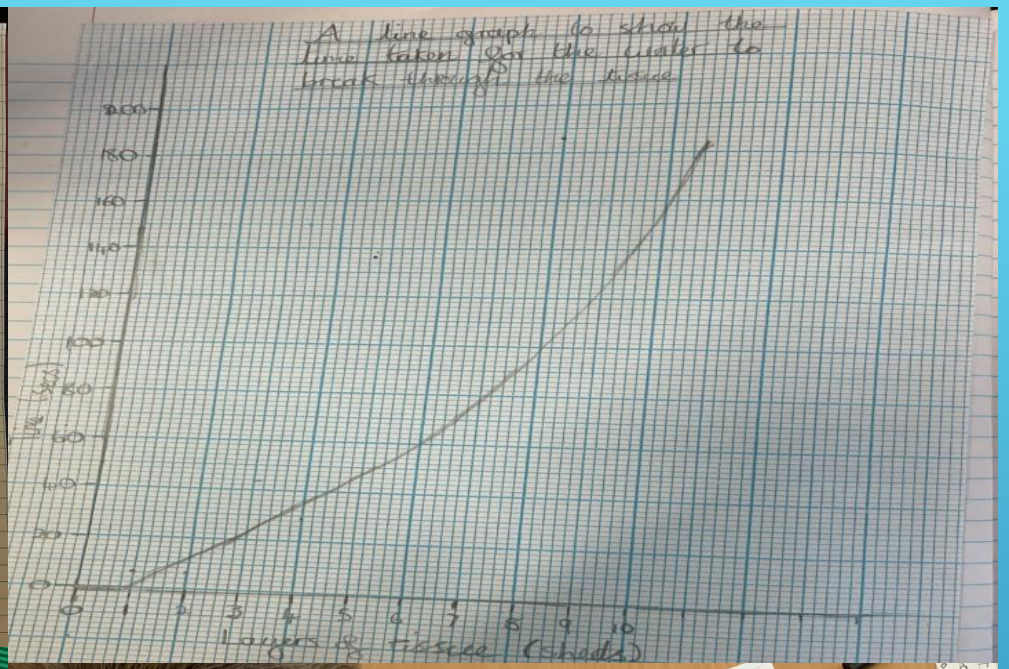

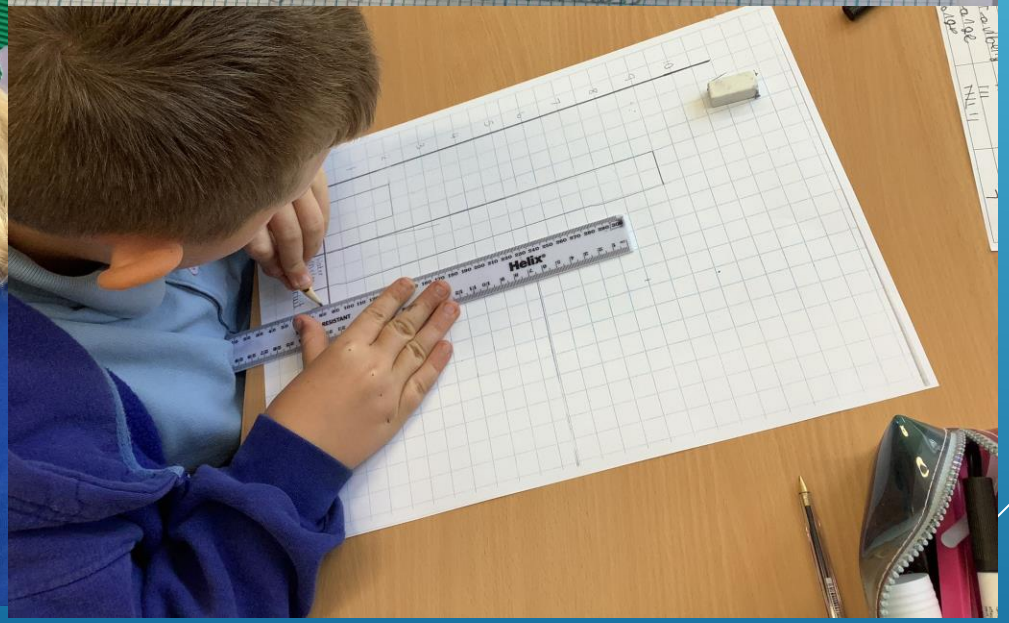

DATA HANDLING IN PROGRESSION 3