

# **Lenham Primary School**

Take Pride; Be Proud

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# **Calculation Policy**

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Document history:		
Written by Lou Culver		
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Signed:		July 2022
Cainory		
	Chair of Governors	

## **Calculation Policy**

## Aims of the policy:

- To ensure consistency and progression in our approach to calculation and enable a smooth transition between year groups and phases.
- To ensure that children develop an efficient, reliable, formal written method of calculation for all operations.
- To ensure that children can use these methods accurately with confidence and understanding
- To ensure pupils understand important concepts and make connections within mathematics.
- To ensure pupils show high levels of fluency in performing written and mental calculations.
- To ensure that pupils are ready for the next stage of learning and have been given strong foundations in mental methods, the use of practical equipemtn, allowed to explore jottings in a range of forms and then move onto more formal recording using a strong knowledge of place value, number lines labelled or blank, partitioning before eventually using compact written methods.
- To ensure that pupils are competent in fluency, reasoning and problem solving and can make informed and appropriate choices about the methods they wish to use (mental or written) to solve mathematical problems efficiently and effectively.

#### Introduction:

The 2014 National Curriculum provides a structured and systematic approach to the teaching of calculation. The aim is for mental calculations and written procedures to be performed efficiently, fluently, and accurately with understanding. Procedures and understanding are to be developed in tandem. End of key stage expectations are explicit in the programme of study.

At Lenham Primary School, we have a consistent approach to the teaching of written calculation methods in order to ensure continuity and progression across the school.

## Age related expectations:

This calculation policy is organised according to age appropriate expectations as set out in the National Curriculum 2014, however it may be more appropriate for pupils to work at a lower stage, if necessary, until they are secure enough to move on.

## Providing a context for calculation:

It is important that any type of calculation is given a real life context or problem solving approach to help build children's understanding of the purpose of calculation, and to help them recognise when to use certain operations and methods. It is also important for children to be confident to use mental and written strategies to explain their thinking. This must be a priority within calculation lessons. Written methods need to be viewed as tools to enable children to solve problems and record their thinking in an organised way.

#### Aims:

Children should be able to use an efficient method, mental or written appropriate to the given task, with understanding. By the end of year 6, children will have been taught, and be secure with, a compact standard method for each operation.

## To develop efficient written calculation strategies children need:

- Secure mental methods which are developed from early years
- A solid understanding of the number system
- Practical hands on experience including a range of manipulatives
- Visual models and images including number lines and arrays
- Experience of expanded methods to develop understanding and avoid rote learning
- Secure understanding of each stage before moving onto the next.

### Before carrying out a calculation, children will be encouraged to consider:

- Can I do it in my head? (using rounding, adjustment)
- The size of an approximate answer (estimation)
- Could I use jottings to keep track of the calculation?
- Do I need to use an expanded or compact written method?

#### Pre requisite skills for written calculations

#### Addition and subtraction:

- Do they know all the addition and subtraction facts for all numbers to 20?
- Do they understand place value and can they partition and then re-partition numbers?
- Can they add three single digit numbers mentally?
- Can they add and subtract any pair of two digit numbers mentally?
- Can they explain their mental strategies orally and record them using informal jottings?

## **Multiplication and Division:**

- Do they know the 2, 5 and 10 times tables and corresponding division facts?
- Do they know the result of multiplying by 1 and 0?
- Do they understand 0 as a place holder?
- Can they multiply two and three digit numbers by 10 and 100?
- Can they double and halve two digit numbers mentally?
- Can they use multiplication and division facts they know to derive mentally other multiplication and division facts that they do not know?
- Can they explain their mental strategies orally and record them using informal jottings?

These lists are not exhaustive but are a guide for the teacher as they structure the move from informal to formal methods of calculation. It is vitally important that children's mental methods of calculation continued to be practised and secured alongside their learning and use of an efficient written method for each operation.

## A pathway to teaching calculation methods:

Expanded methods should be viewed as steps towards a standard method and not as methods in themselves.

Before beginning to record in a more refined written format children must have had significant practical work reinforced with appropriate manipulative, models and images.

Teachers will guide pupils to refine their written methods of recording by modelling and asking questions such as "What is the same? What's different?" Learning will be planned to ensure pupil are encouraged to use and apply what they have learnt to problem solving tasks.

The pathway shown below is for *guidance*. As children move along the pathway it is vital that they practice, reinforce, consolidate, use and apply it to mathematical learning and NOT simply move onto the next step.

	EYFS/Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Combining two parts to make a whole: part whole model	Adding three single digits	Column method – regrouping	Column method – regrouping.	Column method – regrouping	Column method – regrouping.
Addition	Starting at the bigger number and counting on – using cubes	Use of Base 10 to combine two numbers	Using place value counters (up to 3 digits)	Using place value counters (up to 4 digits)	Use of place value counters for adding decimals	Abstract methods.  Place value counters to be used for adding
	Regrouping to make 10 using ten frame					decimal numbers.
	Take away ones	Counting back	Column method with	Column method with	Column method with	Column method with
	Counting back	Find the difference	regrouping.	regrouping	regrouping.	regrouping.
ction	Find the difference	Part whole model	(up to 3 digits using place value counters)	(up to 4 digits)	Abstract for whole numbers.	Abstract methods.
Subtraction	Part whole model	Make 10			Start with place value counters for decimals	Place value counters for decimals – with different amounts of
	Make 10 using the ten frame	Use Base 10			- with the same amount of decimal places.	decimal places.
	Recognising and	Arrays – showing	Arrays	Column	Column	Column
_	making equal groups.	commutative multiplication.	2 digit x 1 digit using	multiplication – introduced with place	multiplication	multiplication
licatio	Doubling.	marupiication.	base 10	value counters.	Abstract only but might need a repeat	Abstract methods (multi-digit up to 4
Multiplication	Counting in multiples. Use cubes, Numicon and other objects in			(2 and 3 digit multiplied by 1 digit)	of year 4 first (up to 4 digit numbers multiplied by 1 or 2	digits by a 2 digit number)
	the classroom.				digits)	

	Sharing objects into	Division as grouping.	Division with a	Division with a	Short division	Short division
	groups.		remainder – using	remainder		
		Division within arrays	lolly sticks, times		(up to 4 digits by a 1	Long division with
	Division as grouping	– linking to	table facts and	Short division (up to	digit number	place value counters
_	e.g. I have 12 sweets	multiplication	repeated subtraction.	3 digits by 1 digit –	including remainders)	(up to 4 digits by a 2
Division	and put them in			concrete and		digit number)
iž	groups of 3, how	Repeated subtraction	2 digit divided by 1	pictorial)		
	many groups?		digit using Base 10 or			Children should
			place value counters.			exchange into the
	Use cubes and draw					tenths and
	round 3 cubes at a					hundredths column
	time.					too.

# PLEASE look at the LIVE padlet which explains our Maths Knowledge Organiser @ Lenham Primary

https://padlet.com/lculver4/rcur7eys6cqqgrbo

Below is a photo of the padlet.

As a separate document there is a PDF of the padlet which can be downloaded.

Maths Knowledge O	rganiser @ Lenham Primi	ary					
Manufacture Annal Anna	grassana ase ase anna	Addition		Times Tables	A STATE OF THE PARTY OF THE PAR	Division	
Address Address	Representations and Manipulatives	YEAR I	Subtraction VEAR 1	VEAR 2	Multiplication YEAR 1/2	YEAR 1/2	
A number to be without to another	Part Part Whole This part whole recold apports chicker in the understanding of aggregation and partitioning	SAEL Add 1-digit numbers within 10	Skill Subtract 1 digit numbers within 10	1222	SASS Solve 1 uteg problems using multiplication Children represent multiplication as repeated addition accuracy different	Skill Salve I other problems using multiplication (whering) Childres colver problems by whering server to the report groups.	
Aggregation	obtacking and for going	When adding numbers to 15, shidner can explain took aggregation and augmentation.	Fart whole models, but models, see flumes and number shapes support partitioning	Disk: 2 dense tolds brownings daily counting in multiplies bett forwards and backwards. This can be supported using a number fine or a hundred 1900m.	resp.	encent morping groups	
condicing two or more quantities or measures to find a total	the whole is empty, children use appropriate to will the parts	The part whele received confidence	Ten frames, number tracks, simple frameworks and based strings support reduction.		In Your 1, children are concents and patients representations to selve positions. They are not expected to record multiplication formally.	In Year 1, children use processe and pricinal representatives to solve problems. This was not expended to moved division formally.	
Acres	When the parts are complete and the effects in empty, of distinct use appropriate to add the parts inspection to did the parts inspection to did the total. When the whole is complete and at least one of the parts in the did to a simple di	shapes and ten frame support approprian		table, using conceive mange. African to capport Notice have all the numbers are even and there is a pattern in the ones.	ncord multiplication formally in Year II, children are introduced for	or Year 2, children are impoduced to the division symbol	
An ondered collection of counters subset of other forms in revisional solutions	making part	The combination but model, can be not been shift part number that all support augmentation.	Cales and be models with two here can support hiding the officered	The different models to denoting	The multiplication symbol.		
Augmentation	In KS2, whither can apply their understanding of part whole medial its odd and subtract fractions, decirals and participage.	. <del></del>	2 - See	H1111	Season and	Terror El anni digetor Najva destrojat konomina	
ample formals provided in Emply in community		des in the		3333 000	0200	00000 HARDHAD	
Contradative	0 0 6	0.	01	mmmmm.	01	YEAR 1/2	
numbers can be added or	133 133 A B	YEAR 2	VEAR 1/2 Skill Subtract 1 and 2-digit numbers to 20	VEAR 2	SMI Multiply 2-digit numbers by 1-digit numbers	Skill: Safet 1 step problems suing division (prouping) Children safet problems by	
Complement		Shill Add three 1 digit numbers  After siding three 1-digit numbers, children should be encouraged to look for number bonds to 10 or should not a plot for searcher should not not put for number should not not put for numbers around efficients.	members to 20) When outstacting one-digit numbers that cross (0,0 is emportant to highlight the importance of ten coops equaling som ten.	VEAR 2 Self: 5 three table Encourage date or counting or multiples tests horsewise and testswelfs. This can be expected using a rentitier fine or arbanded source.	VSARSON  SIM Multiply 2 duple workers by 1 slight workers  The workers are presented to feel book as the equanted column method.  Interviews may appear to the actions and the equanted column method.  The place value in the actions  The place value contress of evaluation exact to export the understanding of the method column days support the understanding of the method column days supporting the invaluations on support the understanding of the method column days supporting the invaluations on supporting the invaluations of the control of the support of the supporting the invaluations of the support of the support of the column days  of the support of the column days  or the support of the colu	FEAR 1/2  Self. Eafor 1 mine problems using distance framework produces to be ground as solar problems for groups of containing the monitors of groups and containing the monitors of groups. Groupsing encourages children to yourself on Authorities and finds to represent authorities and finds to represent authorities from Engineers and time in final groups and time in review in require solar, final groups and time in review in require solar, final groups and time in review in require solar, final groups and time in review in require solar, final groups and time in review in require solar, final groups and time in review in require solar, final groups and time in the final between	
in addition a samble and its sumplement male a facel e.g. 908 is the complement to 760 to make 1000	Bu mobilitates	took for regration bonds to 10 or doubles to add the regrations recent afficiently.	important to highlight the importance of ten code equaling con ton	using a runther line or arbundled review.	The place value counters should be used to appoint the understanding of the method solver than	reprotect fire. They can use concrete representations in fixed proops such as number shapes which	
X000	The origin bar model is another lippe of a particuloid model that can appoint distinct to representing colorations to help their unjoint the structure.	The supports children in their anderstanding of commutativity.	Children should be encouraged to find the number band to 10 when	Look for patients in the five times table, easing concents manipulations to support. Notice the patient in the sined as well as folylighting the orderven, odd, even patient.	aupporting the multiplication, as d'Albert should use times table breveledge.	multiplication and division.	
Difference	colculation to help them unpick the structure.	Managulatives that highlight author lands to 12 are effective when adding time 1 days authors.	Children should be encouraged to find the number land to 10 when partitioning the authorized number. Ten former, number shopes and number here are particularly useful for fine.	ones as well as highlighting the obstever, told, even pattern.	jasto0)	A CONTRACTOR	
The current of difference between two outsides in fused by comparing the quantity in each group	Cubes and counters can be used in a fire access as a commite impresentation of the barmodel		0, = 3	****	34×6+00	Front of Section 2.	
Distant	Citatives have exclude are a good starting point with annulus numbers. Each loss represents are	7+6+3+16	HH W-1-1	Control Control		O:	
In division, the number that is:	2006		T-00	0.	YEAR3/4	YEAR 1/2 Skill Shade 2 digits by 1 digit (Manta with an archaece)	
Dielegy	The continuation barmended can support children to calculate by counting an from the larger number. It is a good steeping stores towards the continuous has market.	YEAR 1/2	VEAR 2	VEAR 2 SAR: 19 Sines table Decorates shift country in	VEAR-344 SARI Meditory 3 degle murehers by 3 shipt murehers When vessely to 3 shipt has 7 shipt randiplication; secondary or shipt has 7 shipt to recover towards the shipt of formal to recover towards the shipt of glories value considers continue to sequent that or market continue to sequent that or market continue to sequent that or shipt of the vertical rechards Limit the murehers of services and sequential that the superior of the vertical rechards the superior of the vertical that the sequent of the sequential that the sequent of the vertical that the vertical that the sequent of the vertical that the vertical that the sequent of the vertical that the sequent of the vertical that the ve	Gall Shedo 2 digits by 1 digit (chants) with ne enchange) When desting larger survives, children can use transpulations that allow them to partition transmit	
In discuss, the number of selection proofeer to disolated	renter it is a good stagging intre- towers the continuous bee model.	Shift Add 1 and 2 slight resistent to 20 When adding one-digit mandans	Skills Subtraum 1 and 2-digit reunbers to 108	SUE: 17 Smes table Decorage daily counting in multiplication forwards and Backwards. This can be expected using a residue fire or a handled	to recent towards the stort, formal senten method. Date 10 and place	and ones.	
Di Eschange	Continuous har recidels are usually for a sange of volume. Each rectangle inspresents a number. The quantities may kindustes the volume to be found.	TEAM TO BE A WAY A WAY TO THE TEAM TO BE A WAY A	At the stage encourage children is use forest column method when colouteting alongwide entown, base		the understanding of the selften method 1,000 the number of exchanges coeded in the questions	Stopers, More 10 and phone value countries can all be used to share numbers into equal 20 sups.	
Change a number or expression for enoting of an impail value			All this plage amountings children in use formed obtains meltiac other calculating altergrade ensure, base 18 or plates make consens. As numbers become larger, chause become less efficient.	Look for patherns in the law times table, samp concrete manipulations to support, liebon the pathern in time digits—the areas pre-alongs (I, and the table increase by 1 south time.	and move children away from reasoness when realizating larger frametics.	Remarks and position of the control	
Factor	in KSO, children can use flar models to represent farger continus, decimals and fractions.	potenti i shippularen sa sa se used to representitio acchange. Use controlle resources shippula sumbri times to eugent d'abben in undendanding how to partition. Euro props.	Children can also use a blank number les sociaux acros facilités difference. Ensurage themsopung turnufigles et fil le become more efficient.	montenant (community)	100	1 1 9, 9,	
A number that multiples with another to make a product		α° min # ■	to multiples of 10 to become more efficient.	0000	265-4-900		
Minand	COMP.	77.67.57	6 1110 - 11111 6 1110 - 11111	iiii		0 m-2-3	
A quantity or number Asymmetric another is subtracted.		O 2	1100 W W W W	YEAR 2	VEAR'S	YEAR 1/4	
Matpleand	01	YEAR 2/2	01	Skill 3 Simus tables Encourage table counting in multiples both horsests and taskeard. This can be apported using a resident fire or a handred upute.	YUAKS  Edit Multiply 4 digit murbers by  1 digit murbers  Une multiplying 6 digit numbers, place solve counters are the best manipulative to least support  children in their unchardending of	John Dead 7 digits by 1-digit (shading with exchange) When dividing numbers involving	
to multiplication, a careful to be multiplied by another	Bar Model (multiple) The multiple has model to a good way to compare quantities while est arguing the structure.	Soft: Add 1 - dight and 2 - dight numbers to 190 More adding angle right to a two	VEAR 3 Skit Subsect numbers with up to 3 digits			10 and place value opuriors to michange one ben'to far-pine. Children should start with the	
Partitioning	A CONTRACTOR OF THE PARTY OF TH	When adding single digits to a two- digit runder, children should be enchanged to court on from the larger runder.		Look for mattern in the Breakings	to stress recent motion in children are substituted plager surrieurs and struggling with their takes tables, encourage the use of multiplication prits as children can facus on the use of this written restrict.	TEAR 1/4 Bill bleak 3 slights by 1 slight lighway with sealmangs (show orling numbers more) filled or orling numbers and light to encountry the continents orienting one ten for senses. Challes should not with the reported contains the place show orienting and the filled makes the seal of the contains the properties contains the place show or of contains the place show or or originally between the trues.	
Spitting a number tolor for complement jums	Two or mount had a sain be down, with a lineatest fideling the whole previoused on the right hand safe of the bass. Smaller removes can be represented with a discusse bay model white conditions had models are more effective for larger numbers.	They should also apply their scools to sall more efficiently a.g. (i + E + 12 au 20 + 2 - 42	State 11 and place value counters are the roots effective computative when subtracting numbers with up to 2 digits.	table, using concrete manipularities to support. Notice the edit, over, sold, even-patter's using surder shapes to support. Highlight the patters in the ones using a hundred.		Planting partitioning or a particular	
Product The result of multiplying one months by another	represente vitt a disconsituer needel white conditions has needed are more effective for		times (Milder wife set their calculation alongsold any carcinta resource) or they can see the links to the entransistance reshot.			0 9-44	
number by another	MARGINEROS	Hundred oppores and strans con suggest shilder to find the number boad to 13.	to the setten column method.  Floor counters on a place value got on also be used to expect	AAAA	1636 - 3 - 6479	00 1	
Quarterst The result of dission	MARgin for models can also be used to represent the difference in subtraction an array can be used to model the difference	α <sub>6</sub>			1	01	
Belacton	When working with smaller numbers, utilities can use nubes and a decree in year to the otherwork. This supports shiften is see how counting on our help when finding the difference.	m=-11.	8 =====================================	YEAR 2	-	YEAR 4/3 Skill Deade 2 digits by 1 digit (grouping)	
Editorito so lafo emp	is see hos counting or can help when finding the difference	00	600 - 274 - 300 200 - 274 - 300	Skill: 4 desse table Encourage daily coording in multiples, supported by a number tion or a humbled equate conductor patterns and the four times table, soming manipulations to support. Make links to the 3 times table,	2-digit numbers the multiplying a multi-digit number by 2-date, one for one		
Demoister		VEAR 2/2 SAE: Add two 2 digit numbers to too	Q1	justices in the four times table, using manipulations to support.	model to help understand the size of the numbers they are paing. This links to finding the seas of a	What using the short division mathod, children use grouping Starting with the largest alress value, they group by the climes	
The personal left-over when a division where the division to not a Section of the division of		At this utage, electropy children to you formal column method when	YEAR 4 Self-Subsect numbers with up to 4 digins	Parlam Seize Sangton II Se	rectangle by finding the opace covered by the Base 10. The grat method matches the area model as	Language to important here. Onlines about consider from many groups of 4 fames one we make?" and fitnes many groups of 4 unes can be make?"	
O1 Scaling	7-3-4 (Ma-104-100)	As this stage, excusing abilities to use forms column method when columning alongside strees, have No males abilities constrain. As wanters abilities constrain. As wanters below though, shown became long officient.	Save 18 and place value counters are the recel effective manipulatives when poblescling numbers with up to 4 digits.	ores within each group of five multiples, nightight that at the multiples are wise suring number shapes to support	VGARS Shift Madigin 2 oligit mombers by 2-dupl mombers the mombers them modifying a mobility randmet by 2-duply, use the area modifying a mobility randmet by 2-duply, use the area model to belay anisomed the area model to belay anisomed the area modifying a modifying anisomed area modifying the belancy the modifying anisomed area modifying anisomed anisomed anisomed modifying mod		
Enlarging or reducing a number by a grief account; safed the accide Social	-		numbers with as to 4 digits.	CHITTETTO		theranders are also be seen as they are left angraped	
Datrice	Bar Model (Walkplication and Division) Outdoorsessor to single her	Children cary after use a Monk, number line to cours on to find the total. Excussing them to jump to wurkgine of 10 to become effected.	Ensure children with out their calculation alongside any cancerte immovmos as they cost one the links to the settles method:			00 00 pm	
scounty recognise the number of objects in a small group without resulting to count	On teaching On the more used the shight had readed to represent or multiplication on represent distribution. They could not occurrent, other or other within the had readed to support calculation before moving on 35 priceing digital into the had readed to represent the multiplication.	æ ~	Place countiers on a place value god can also be used to napport	D. LILITATION	B+30-60	8-1-0	
01	the bar model to support calculation before moving on to placing digits into the bar model is:		8==	YEAR 4 BUT 8 brown radio	YEAR'S SMIT Multiply 3-digit numbers by	O s	
Subtrahend  A number to be authorised from souther	Division can be represented by showing the total of the bar medial and then brinding the bar medial and open groups.	PD: D		INDEX 6  INDEX 8 terms table  Encourage daily counting or  multiplies, supported by a marrier  ties or a fundred opport, Look for patterns or the eight times table.	WEARS Sall Madalay 2 digit numbers by Indigit members Children and continue to use the axis model of an instituting in digitality of depth of the relate continue become more officiality in	TRAFF Decide 3-digitarity 1-digits (sharing)	
OI Sun	and then dividing the bermodel into equal groups	YEARS		patters in the logic times specification of the company of the com	counters become more efficient to one buildings III combit condits highlight the size of numbers.	Ordines can continue to complete value counters to share 3 digit numbers into equal groups.	
The result of an addition	It is important other solving word positions that the bar madel represents the problem.	Sulf-Add nambers with up to 3 digits	YEAR S.V.	padanes or the eight times sold, away memphisme to report. Make times to the 4 times ratio, prendy have each multiple is disclaim. the fours, fedical the pattern or the serve within each group of the multiple registry's that all the multiple registry's that all the multiple registry's early service.	common become most efficient to commonthese III commiss coed for legislate the size of autobios Exchange shallows to move towards the Formal witteen method, saving this finds with the grid method.	Odder con-notition in overplane value constructs obtain 5-digit minimar into repair graps. Odders should crart with the replacent consist the place rideo grid before sharing the hundreds, term and once repairly fermions the rows. The referred case also help to highlight remainders.	
Tated The approprie or the aum Sound by	Sometimes, children may look at scaling problems, in this case,	Base 10 and place raise counters, are the most effective manipulatives when adding numbers with up to 3 dayle.	Skill Subtract numbers with more than 4 digits	studigles are even using number of eigen to respect	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	term and coop equally between the rows. This method can also field to highlight remainders. Flexible partitioning in a partirehole.	
adello:	Sometimes, children may look at soating problems, in this same, roose than one has escaled a sortful to represent that type of problems is giften as a 3 gift in a group. There are 3 times manufaces than gifts. How many boys are there? The multiple has readed provides as	Ensure shifteen with out their customer program any concern to they can use the links to the writes column mathod.	Place value counters or place counters on a place reduce grid are the mant effective counter resource where self-mare than 4 digits.	A444	0 0 0 000 0000		
	opportunity to compare the	to the writer column method	numbers with more than 4 digits.  At this chaps, shidlen whealt be	[Alalalala]	28 (20 (388) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	peperagona	to the writer column method.  Flum country on a place valve grid set also be a set to support learning.	At the stage, children should be encouraged to wisk in the abstract, using culture method to subment larger numbers efficiently.	71111111111111111111111111111111111111	YEAR 516 Skill Multiply 4-digit numbers by	999 11	
		<b>0</b> €	Q min	YEAR 6 DAT 6 Street 1964s	2-digit methers tribus multiplying 4-digits by 2- digits, children should be cardidate in the writen method.	YEAR S	
	2 17117777 notes	(M-M-M)	O O	Trecomperially according to multiples, supported by a sustrian tion for a hundred appears cost for parkers in the six Shore Solida, yearing manipulations to support. Water less to the 3 lines salety.	in the vertex method. If they are still struggling with times	SAR SHOW 2-digits by 1-digit (grouping)	
	~ (3) (1) = (1) (3)	01	This is the second	ide or a funded aques. Look for partners in the six times toble, yang mangulatines to support.	If they are self alruggling with times taking, provide multiplication pink to support when they are focusing on the use of the method.	Ordiner can continue to over grouping to support their understanding of about division	
	The second secon	YEAR 4 Skill Add curstoms with up to 4 digits	01	opening to the 1 three talls, opening how each autigate to double the threet. Notice the patters in the ones within each group of the multiples.	Consider whose contamped digits are placed and make sure this is consideral.	gruping to support their understanding of short division when dividing a 3-digit sumber by a 3-digit number	
	Number shapes can be useful to support children to sobilize numbers so well do explore appropriate, park timeng and number blands.	Base 32 and place rates sources are the most effective	Number Shapes (Multiplication and Oblision) Number shapes support children understanding of multiplication on repeated addition.	materia.		Maco varies overhers or plant courters can be used on a place value good to support this understanding. Children can also	
	appropries, pat Busing and runiter bonds.	Fungulation when adding surdens with up to 6 digits	represent a different.  Children can be before the difference or the difference of the difference or t		0 0	understanding. Onlines can also does that own counters and group does through a more potential method.	
	When adding numbers, children can see how the parts power together making a whole. As shiften soo making a whole. As shiften soo making shiften soon that, they can also start to authors the total ships of each number.	Crown children with out fram calculation dangeds are concede recovers to they can use the links to the written column method.	Children can build mudiplications in a non-valing the number shapes. Were sering odd murshers, encourage children to intention the shapes so there are no gapes the raw. They can then use the tase.	***************************************	1/8-38-NAI		
	can was start to author the total tips to their familiarity with the shape of each number	Plain counters an a place value grid	thisper on them sen on gaps in the row. They can their use the time number shapes along with other	TEM 4			
		Consider for sand-to-support Secretary	this Play can their say the beer number shopes along with other necessary shapes over the top of the row to check the total cloning the marker shapes in multiplication are support classifier multiplication are support classifier multiplication are support classifier			O1	
	When subtraining rundless, children can start with the whole and then place constitute participating of the whole to see what participating.	CATH LINE LAND	multiplication e.g. odd x odd + men, add x men + odd, men x men	can be supported using a number time or a hundred opums. Look for patterns in the serie times halfer.		YEAR 5 Skill Decks 6 eligits by 1-eligit	
	Onlither can also work system who also for all a mandre bords. As they invised one random by 1, they can see that the other number document by 1 to. Including the prosoble number bords for a works.	<b>V</b> OLUE		20.17. 5 Seven blobs finocarpie delley oceaning multiples toch foresette and basilesette. This can be appointed using a temple to the appointed using a temple to or a featively regions. (and for packets in the serie frees failed, using oceaning measurabilities to exposed Satisfact the pattern on the times and disease, using the feativele spaces to appoint as well as noting the control of the control of the control packet to appoint as well as noting		(proping)	
	other number decreases by 1 to. Tend all the possible number bonds. For a number.	U-0 YEAR SIG		the cold, even pattern within the multiplies.		Miss value commen or plant courses can be used on a place value god to support children to disse 4-bight to 1-bight. Disblore can also flow that over counters and goog then through a man.	
	<u>a</u> a a	Diff: Add nambers with races than 4 digits	****			pictorial inviticat. Ordiflers about the encouraged ha	
		Place value counters or plain counters on a place value gold are the regal effective covered a treasures when adding exercises with more train 6 digits.	5 5 5 5 01	**************************************		more pays from the protocol when dealing numbers with multiple michanges.	
		tessuries when adding overbers with recent year & digits.	YEAR 5 Thill Subsect with up to 7 decised	111111111111111111111111111111111111111		HER	
	544 363 SE2 SM	At the stage, children should be encouraged to work in the electric, streng the column method to self larger-sembers effectively.	Places of a place selection and place of a place selection of a place selection pril are	YEAR & Skill 7 Street table		<b>I</b>	
	Number Shapes (Multiplication and Division)	A	Place value counters and plain counters on a place value grid are the most effective managealastic when subtracting decrease with 1, 3 and 3 decreasy places.	Encourage daily counting in multiples both forwards and backwards, supported by a number		689+7+498 ©1	
	Number shapes trapport children's understanding of multiplication as repeated addition.	04.10 - 67.70 - 66.00	Cenury children have proportions of subtracting decimals with a rankety of documal places. The archides pulling this into contact other subtracting review and atther contracts.	Security of the security of th		15AR 6 Skill blocks multi digita by 2 digits (short distance)	
	Children can bold multiplications in a time carry the number shapes. When some odd earthous, according shallows are no page to the one. They can their use the tests.	0)		in the numbers, foreign they shready from several facts of set to commissioning. Children can still see the cell, even pattern in the multiples using number shapes to support.			
	encourage children to interface the shapes so there are no gaps in the one. They can then use the tens	YEAR S DAR Add with up to 3 decimal	8 11.11	August using resident shapes to		When children began to divide up he didgle by 2 cligible, with the medically became the most accusate as constraint and potential representations but one has	
	number shapes stong with the offer recessory shapes over the top of the so to check the total	place	0000 200 200 200 000 I			representations deprise has affective. Orders can write and multiples to expent their considerers with larger revenances Children with also color positiones. with remarkation where the appoint can be remarked a appropriate.	
	one. They can then use the next number disigned stong with the other receives pringers over the top of them the observable to the blancy the washers always in multiplication can support of others in discovering partners of multiplication in a position and in multiplication in a position and in multiplication in a position and in man will be seen in odd, area is even above.	Place raise counters and plans counters on a place value gold on the world effective resemblishes when adding decembs with 1, 2 and 3 decimal places.	01	11111111111111111111111111111111111111		with remainders where the quotient can be recorded as appropriate.	
		Ensure children have requirence of		00		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	When plinting austiler shapes support children's understanding of director as grouping. Children make	Ensure children have unpertense of adding decimals with a variety of decimals places. The trebudes puring the sea control when alling transposed soft other measures.		YEAR 6 SMR: YT times table (incoming clary contains in		(100 - 10 - 10   10   10   10   10   10	
	When dividing durable shapes appoint distinct understanding of distance as grouping. Distinct make the supplier they are dividing and those place for aurable shape for an advantage they are dividing by one the say of the number to find bow many groups of the number to find bow many groups of	8==		50.6: 11 times table findowage risky continue or multiples both Covards and tackwards. This can be supported using a number fine or a handled record.		Q1	
	There are 1 groups of 3 in 18.	M1-24-404		Look for patterns on the alexen Since Salite, using concents		YEAR E Skill books multi-dight by 2 dights Sing diseases)	
		ene se		Look for patterns on the allows Street Salle, using committee energodenies to support. Notice the pattern in the sale and ones owny the handled square to support. After consider the pattern		Ordines can also divide by Ordige numbers using long division	
	<b>*********</b> 1213			and committee of		Ordifies can entire out multiplies to support (their calculations with larger remainables.	
	(S1515)			00 88 00		District will also solve problems with remisorders where the quotient can be rounded as appropriate.	
	Cubes			-   -   -   -   -   -   -   -   -   -			
	Outer can be exelled to support obtains with the withtran and subtraction of one-digit numbers.			0.		49-9-96	
	When adding numbers, children can see him the parts corns topoffer is			YEAR 6 SUR: 12 times fable		(100 - N - AM)	