



Maths Policy

Written: March 2019

Approved by Governors on: 28.3.19

Review Date: March 2023

Signed by Chair.....

Maths Policy

MISSION STATEMENT

'Believe and Achieve'

To provide a fun, stimulating and excellent education which enables each child to achieve their full potential, academically, spiritually, emotionally and socially in a safe, Christian environment.

Healthy School

St. Mary's is a Healthy School with healthy attitudes embedded in the curriculum and extra-curricular activities. Children are encouraged to be active and maintain healthy relationships with their peers and adults as well as making other choices about healthy lifestyles.

Building Learning Power Statement

At St. Mary's, we encourage all pupils to build their own learning power. Building Learning Power emphasizes the development of lifelong learning values and skills. We aim to ensure that all children develop persistence and curiosity for learning and become adventurous risk takers who are not afraid of the 'don't know' state of mind. At St. Mary's, children will develop the ability to take responsibility for their own learning and self assess and be able to articulate themselves as a learner. They will have the opportunity to develop the ability to know what's worth learning, know how to face confusion and know the best learning tool for the job.

Introduction

Maths is a tool for everyday life. Whichever path an individual takes in life; they will require mathematical skills. The learning that children experience in maths at St. Mary's School will allow them to gain the knowledge and understanding and skills that are necessary in many aspects of life.

Aims/Objectives

The aims at St. Mary's School are:

- To develop an enjoyment of maths for all children.
- To enable children to become independent, confident and logical thinkers.
- To enable children to acquire number fluency.
- For children to have a positive attitude to maths.
- To build confidence and competence with numbers, geometry, measures, statistics and problem solving.
- To equip children with the skills necessary to solve mathematical problems
- To develop children's ability to reason about mathematics
- To allow children to apply mathematical knowledge and skills to everyday life

The National Curriculum

Reception

Teachers use the Maths section of the 'Early Years Foundation Stage Curriculum' document to deliver maths to children in the Reception Class.

Years 1 to 6

Teachers use the year group objectives from the maths section of the 2014 National Curriculum.

Breadth of Study

Children are offered opportunities to develop mathematical skills and knowledge in daily maths lessons and also in other subjects, for example, science, geography and ICT. Links are made to work undertaken in maths lessons so that children can apply skills and knowledge and realise the importance of maths in the wider world.

Through careful planning we aim to ensure that children are given opportunities for:

- Open- ended and closed tasks.
- Individual, paired, group or whole class discussions and activities.
- Activities that cater for different learning styles, so that children can maintain a positive attitude to maths.
- Calculating using practical apparatus, pencil and paper procedures and formal written methods appropriate to the age of the child.
- Learning and using number facts.
- Reasoning and problem solving.
- Using IT as a mathematical tool.

Scheme of work

Year group objectives for Number, Measures, Geometry and Statistics are listed in the Maths section of the 2014 National Curriculum.

Class teachers base their daily lesson plans on the objectives for their year group.

Calculation is taught in progressive steps which are detailed in the St. Mary's Calculation Policy. (Appendix 1).

Teaching and Learning

All children will have a daily maths lesson with a main learning challenge. Most lessons will have opportunities for children to count, learn or rehearse using number facts, calculate, reason and solve problems. Children may also carry out additional maths activities outside the daily maths lesson.

Direct teaching is a major part of lessons where new learning challenges are being taught. This will be interactive and involve all children. When rehearsing and applying learning, children have the opportunity to learn in a variety of ways. The learning challenge is shared with the children at the beginning of each lesson. 'Remember Tos' (success criteria) are shared with the children and displayed in lessons, to ensure that children know the steps required to achieve the learning challenge. They are also used to self and peer assess at the end of a lesson.

Where possible, the teaching of new concepts follows the 'Concrete- Pictorial- Abstract' model, to enable children to understand, remember and apply what has been taught. The use of bar modelling for the teaching of number facts, the understanding of operations and problem solving is an effective strategy which is used throughout the school. Please see the White Rose IWB resources for the different units of work. An example of the concrete teaching Numicon is the key resource used from Early years through to Y3 and for SEND as needed.

Inclusion

All children receive quality first mathematics teaching on a daily basis and children are given support where necessary. In addition, where identified pupils are considered to require targeted support to enable them to work towards age appropriate objectives, intervention programmes are implemented. Class teachers, SENDCo and Pupil Progress Meetings help to inform which intervention programmes, i.e. second wave support, will be used.

Teachers and teaching assistants plan programmes together and monitor progress of these pupils. There will be a third wave of support for pupils who have an EHC plan. The needs of children with English as an additional language will be met through planning and support. This is supported by our equal opportunities policy.

Cross Curricular Opportunities

Teachers take the opportunity to promote and extend mathematical understanding across the curriculum.

Planning and Organisation

Foundation stage

Long Term Planning

Key objectives are taken from the Early Learning Goals. The Little Big Maths scheme of work will be used in conjunction with the calculation policy to support the teaching of number.

Medium Term Planning

Teachers use the Maths mastery termly plans from the Maths Hub for Reception, where the objectives are blocked into units of learning. These are located within the Maths 2014 folder in 'First Class' on St. Marys conference.

Short Term Planning

Weekly plans are recorded on the school weekly planning sheet. These reflect the objectives from the medium-term plans.

In the Foundation Stage maths, a whole class numeracy input is taught daily. Adult led maths activities are provided alongside other curriculum activities and children complete these on a rota basis. Maths learning also takes place throughout the continuous provision, both inside and outside the classroom, where children can choose to access play-based activities and learn independently.

Years 1 - 6

Long Term Planning

Teachers will plan from the year group objectives for Number, Measures, Geometry and Statistics which are listed in the Maths section of the 2014 National Curriculum. These objectives are blocked for the year in the White Rose Maths yearly overview.

Medium Term Planning

Teachers use the termly plans from White Rose Maths for their year group. The maths objectives are blocked into units of work which range between 1 and 4 weeks in length. These termly plans are located within the Maths 2017 folder in 'First Class' on the St. Marys conference.

Teachers will plan lessons using resources from a variety of sources rather than one particular Scheme, in particular links to the Big Maths scheme of work.

Short Term Planning

Weekly plans are recorded on the school weekly planning sheet. These reflect the objectives from the medium-term plans.

The learning challenge, activities and level of support will be included in the lesson plans. Teachers evaluate each lesson and use this to plan future lessons.

Teaching of Multiplication Tables

All children from Y3- Y5 will complete a minimum of 2 studio sessions on Times Tables Rockstars each week (one for homework and a minimum of one per week in school). Year 2 will introduce this in the summer term. Reward with certificates in class and a pencil when completed their year group challenge.

The teaching of specific tables will be taught as stated in the National Curriculum (Y2: x2, x5, x10; Y3: X3, X4, X8 ; Y4: X6, x7, x9, x11, x12). The understanding of these multiplication tables will involve concrete and visual representations, problem solving, vocabulary and the learning of facts.

In addition to specific teaching of times tables, regular practice will be done weekly e.g. reciting tables, learning specific tricky facts, maths sphere grids, Beat That tests. Mymaths Tables Boosters.

Children's ability to recall multiplication and division facts will be tested three times per year during assessment week - all Y2(Spring and Summer), Y3,Y4 and children in Y5 and Y6 who are not secure.

The 'Heat Maps' on TT Rockstars show specific facts which each child is not confident of. This information can be shared with parents, TAs and parent helpers to enable 1:1 practice of specific facts. Additional practice can also be set on Mymaths Tables Boosters.

Maths Resources

ICT

White Rose interactive whiteboard Notebook files resources

www.mymaths.com

www.snappymaths.com

<https://mathsbot.com/starter>

Gordon's ITPs

Each class has some resources that are kept in individual classrooms:

Abacus Scheme Teacher Resources
Abacus Text Books (KS2)
Maths Whizz CD Roms
Target Maths Textbooks (Y3-6)
Collins Textbooks (Y3 - Y6)
Collins Workbooks (Reception, Year 1, Year 2)
100 Maths Lessons book
Aids for counting and calculating e.g. 100 squares, multiplication grids, cubes, number lines
Rulers
Money
Dice and counters
Maths games

Larger and less frequently used resources are kept in the cupboard in the Key Stage 2 central area:

Metre sticks and trundle wheels
Weights, scales and balances
3D and 2D Shapes
Mirrors
Set squares, protractors
Capacity materials
Time materials

Assessment, Recording and Reporting

Foundation Stage

Assessments are recorded during teacher led activities. Short incidental observations are recorded on going. All information and evidence gathered is used to inform future planning and make judgements against the Foundation Stage Profile. The profiles are updated termly.

Years 1 -6

Children will undertake formal assessments throughout the year. The Autumn Term White Rose assessments are used in October and the mid- year Testbase tests are used in February (Y1 - Y6). These assessments have an arithmetic paper and a problem solving and reasoning test. In May, the Testbase end of year tests are used in Year 3,4, and 5. Year 2 and Year 6 will undertake the national SATs so will not complete the Testbase assessments in May.

All children will complete regular arithmetic tests (See assessment timetable). In addition 'Beat That' tests are used from Reception to Year 4.

The Assessment Timetable 2019 can be found in Appendix 2 and on the St. Mary's conference.

Assessing Pupils Progress

Teachers will assess the learning of children in the daily maths lessons. This will enable them to plan for future lessons and address any misconceptions. Progress in the knowledge of addition and multiplication facts and calculation methods will be assessed using the 'Big Maths Beat That' and 'CLIC' tests which are undertaken at least fortnightly (Reception - Year 3).

Children will be formally assessed to determine if they are developing, achieving or exceeding expectations for their year group. The tracking grid for each year group will be completed after each termly assessment in accordance with the school's assessment and tracking system.

Where children are working below their year group their progress will be tracked using the maths year group criteria. In addition these may also be used to assist external moderation.

Reporting to Parents

Teachers will discuss children's progress at parent's evenings in the Autumn and Spring terms.

The end of year report sent to parents will indicate whether the child is developing, has achieved or is exceeding the year group expectations. It will also indicate children's progress and understanding in different areas of maths and state targets for the future.

Parents have the opportunity to discuss their child's end of year report with the teacher in July.

Monitoring and Evaluation

The policy and practice will be monitored and evaluated by the maths subject leader.

The subject leader will manage resources and will update and advise staff on maths related issues.

The subject leader will analyse data to identify strengths and weaknesses in maths and will liaise with SLT and Governors on priorities going forward.

SLT and LMF analyse maths attainment and achievement using Analysing School Performance (ASP).

The Head teacher, Deputy Head teacher and Class teacher monitor the progress of individuals each term.

The subject leader will analyse cohort and gender strengths and weaknesses, which will be reported to SLT and Link Governor.

The Governors Standards Committee monitor progress of all pupils termly with SLT.

The inclusion manager will analyse the progress of SEND pupils annually and report to the head teacher and Governors.

18.0 GDPR/ Data Protection

All documents stored are in accordance with legal requirements where appropriate, and guidance from the Records Management Toolkit for Schools.

- a) All assessments are kept on Google Docs, which can only be accessed by St Mary's staff and is password protected.
- b) All paper copies of assessments are kept securely and then shredded 12 months after a pupils has left the school.

This policy:

Has Few / No Data Compliance Requirements	Has A Moderate Level of Data Compliance Requirements	Has a High Level Of Data Compliance Requirements
	✓	

Appendices

Appendix 1: Calculation Policy

Appendix 2: Assessment Timetable

This policy will be reviewed in line with the Policy Management cycle.

Appendix 1: Calculation Policy

Teaching calculation at St. Mary's Primary School

Efficient calculation methods are essential to learning in maths. It is important that children are taught consistent methods of calculation and can use the four number operations with confidence. This knowledge can then be used and applied to other areas of maths, such as problem solving and fractions.

For each of the four operations, children will work on the objectives for their year group. It may be necessary for some children to work on objectives from a different year group if their level of understanding requires it.

Methods of calculation are taught using Big Maths, which teaches calculation methods systematically through a series of Progress Drives for each of the four operations. In line with the Big Maths philosophy, children are given the opportunity to calculate daily - this will sometimes be the main learning challenge of the lesson or may be a part of the lesson.

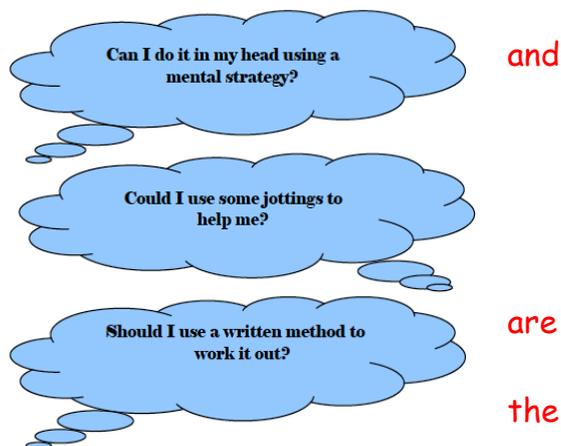
Layout of calculations

In Key Stage 1, written calculations will be set out horizontally. At the end of Key Stage 1, children will be introduced to the column layout for addition and subtraction in readiness for learning in Key Stage 2.

In Key Stage 2 the progress drives and informal jottings exemplified in the Big Maths folder will be used to aid children's understanding of calculation and help develop mental maths skills. The formal methods will begin in Year 3 and will be used routinely by Upper Key Stage 2. As a guide, formal methods should be taught after PD 24, Subtraction PD 27, Multiplication PD 11 and Division PD 19.

The Progress Drives (PD) for the formal methods are referred to in the sections for each year group. Staff should refer to the Big Maths folder for further exemplification of the progress drives.

NB: Teachers should use the layout of division subtraction calculations exemplified in the "Big Maths The Column Methods" document. However, the layout of addition and multiplication agreed by staff differ from the examples in the "Big Maths The Column Methods" document. The position of digits that carried over in multiplication and addition calculations should reflect the examples given in St. Mary's Calculation Policy.



Children should be encouraged to select the most efficient way of solving a calculation using the model illustrated.

ADDITION Reception

Children will engage in a wide variety of songs, games and activities. Through practical activities and discussion, children will begin to use the vocabulary of addition. The stages of progression and exemplification of activities for the teaching of addition are listed in "Little Big Maths: The A-CLIC Book".

ADDITION Year 1

Number facts

- *Identify one less than a given number.
- *Represent and use number bonds and related subtraction facts within 20
e.g. $9+7=16$, $16-7=9$, $7=16-9$

Mental

- *Add one-digit and two-digit numbers to 20, including zero
- *Read, write and interpret mathematical statements involving addition and equals signs.

Written

- *Read, write and interpret mathematical statements involving addition and equals signs.

Problem Solving

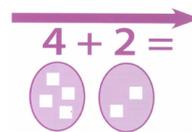
- *Solve one-step problems that involve addition, using concrete objects and pictorial representations and arrays with the support of the teacher, and missing number problems such as $7 = \square + 3$
- *Use practical contexts and associated terms

Steps of progression:

- *Read an addition number sentence. (PD6)



- *Arrange a number sentence using objects. (PD7)

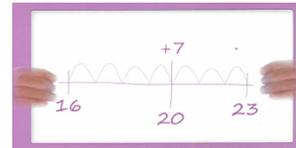


- * Solve an addition number sentence (numbers up to 10) using objects. (PD8)
- * Solve an addition number sentence (numbers up to 10) by drawing e.g. dots. (PD8)
- * Solve an addition number sentence (numbers up to 10) by counting on from the larger number. (PD8)
- * Solve addition by counting along a number line (with the biggest number) (PD 9)



(starting

- * Solve addition by drawing a number line. (PD 9)
- * Solve addition by counting on in head. (PD 9)
- * Add 1 to a number up to 20 using a number line or first 2 rows of 100 square, e.g. $16 + 1 = 17$ (PD10)
- * Add 1 to a number up to 20 using knowledge of numbers (PD10)
- * Add 2 or 3 to a number up to 20 using a number line or first 2 rows of 100 square, e.g. $16 + 3 = 19$ (PD 11)
- * Add 2 or 3 to a number up to 20 by counting on. (PD 11)
- * Add any 1-digit number to a number to 20 using a number line and then counting mentally. (PD 12)



ADDITION Year 2

Number facts

- * Use place value and number facts to solve problems recall and use addition facts to 20 fluently
- * Derive and use related facts up to 100 e.g. $3+7=10$ so $30+70=100$

Mental

- * Add numbers using concrete objects, pictorial representations, and mentally, including: TU+U, TU+T, TU+TU and U+U+U (with number lines or jottings)
- * Show that addition of two numbers can be done in any order (commutative) e.g. $5+2+1=2+1+5$

Written

- * Write addition calculations horizontally for TU+U, TU+T, TU+TU and U+U+U.
- * Begin column addition for 2-digit numbers (without carrying).

Problem Solving

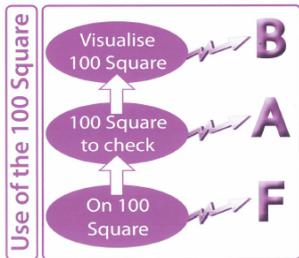
- * Solve problems with addition, using concrete, pictorial and abstract representations
- * Apply increasing knowledge of mental and written methods.

Inverse operations, estimating and checking answers

*Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Steps of progression:

The FAB 100 square is used to develop understanding of the size of numbers and what the operations 'look like'. It is used to help develop children's mental maths ability.



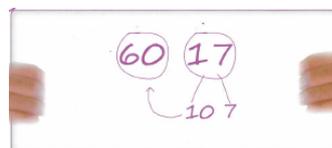
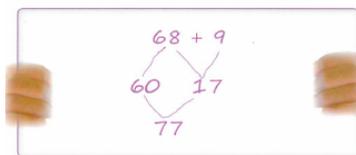
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Full: Children use a pen to jump along numbers and find the answer.

Abridged: Children use the 100 square as a visual prompt.

Brain: Children do the calculation mentally, visualising the 100 square of necessary.

- * Add 1 to a 2-digit number by finding the number on a 100 square, progressing to mentally adding 1. (PD 13)
- * Add 10 to a 2-digit tens number. (PD 14) FAB 100 square
- * Add 10 to any 2-digit number. (PD 15) FAB 100 square
- * Add a 1-digit number to a 2-digit tens number. (PD 16) FAB 100 square
- * Add 1-digit number to any 2-digit number by counting on. (PD 17) FAB 100 square
- * Add a 2-digit tens number to another one. (PD 18) FAB 100 square
- * Add a 1-digit number to any 2-digit number. (PD 20). Children partition the number, add the units together and then add the tens.

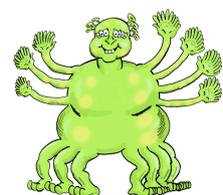


* Add any 2d tens number to another one (PD 21)

E.g. $80 + 90 = 9 \text{ tens} + 8 \text{ tens}$. Use Pim's Principle 'It's nothing new!' $8 + 9 = 17$ so $8 \text{ tens} + 9 \text{ tens} = 17 \text{ tens} = 170$

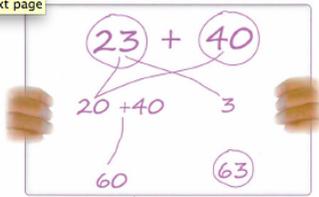
*Add a 2-digit tens number to a 2-digit number (PD 22)

Partition the numbers. Add the tens together. Add on the units.

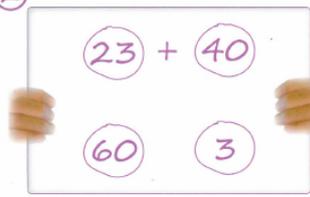


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* I can add a 2-digit number to a 2-digit number (digit total < 10)

Column method

* Solve 2d + 2d (no carrying) (PD 1)

$$\begin{array}{r} 36 \\ + 42 \\ \hline 78 \end{array}$$

ADDITION Year 3

Number facts

* Complements to 100 e.g. $34 + 66 = 100$

Mental

* Add numbers mentally, including

HTU+U

HTU+T

HTU+H

Written

* Add numbers with up to three digits, using formal written methods including expanded method of columnar addition

Problem Solving

* solve problems, including missing number problems, using number facts, place value, and more complex addition.

Inverse operations, estimating and checking answers

* Estimate the answer to a calculation and use inverse operations to check answers

Steps of progression:

* Add any 2-digit number to another 2-digit number. (PD25)

* Add a 3-digit number to a 2-digit number (digit total < 10) (PD 26)

* Add any 3-digit number to a 2-digit number (PD 26)

$$\begin{array}{r} 76 \\ + 48 \\ \hline 124 \end{array}$$

Column method

* Solve **any** $2d + 2d$
(PD 2)

* Solve a $3d + 2d$ (no carrying)
(PD 3)

$$\begin{array}{r} 442 \\ + 36 \\ \hline 478 \end{array}$$

* Solve **any** $3d + 2d$ (PD 4)

$$\begin{array}{r} 547 \\ + 94 \\ \hline 641 \end{array}$$

* Solve $3d + 3d$ (no carrying) (PD 5)

$$\begin{array}{r} 636 \\ + 242 \\ \hline 878 \end{array}$$

* Solve **any** $3d + 3d$ (PD 6)

$$\begin{array}{r} 686 \\ + 549 \\ \hline 1235 \end{array}$$

ADDITION Year 4

Number facts

*Complements to 1000

Mental

*Continue to add mentally, using jottings if appropriate.

Written

* Add numbers with up to 4 digits using the formal written methods of column addition (+ money/decimals), where appropriate

Problem Solving

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

Inverse operations, estimating and checking answers

* Estimate and use inverse operations to check answers to a calculation

Steps of progression:

- * Solve any 4d + 3d or 2d (PD 7)

$$\begin{array}{r} 6549 \\ + 686 \\ \hline 7235 \end{array}$$

- * Solve any 4d + 4d (PD 8)

$$\begin{array}{r} 8686 \\ + 6549 \\ \hline 15235 \end{array}$$

ADDITION Year 5

Number facts

- * Complements of decimals to one whole

Mental

- * Add mentally with increasingly large numbers

Written

- * Add whole numbers with more than 4 digits (and decimals up to 3DP), including using formal written methods (columnar addition)

Problem Solving

- * Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why (including decimals)

Inverse operations, estimating and checking answers

- * Use rounding to check answers to calculations and determine, in the context of the problem, levels of accuracy.

Steps of progression:

- * Use column addition for several numbers (PD 9)

$$\begin{array}{r} 868 \\ 582 \\ + 654 \\ \hline 2104 \end{array}$$

- * Use column addition for any 5d + 5d (PD 10)

$$\begin{array}{r} 81686 \\ + 66549 \\ \hline 148235 \end{array}$$

ADDITION Year 6

Number facts

- * Complements to 100 to 2d.p

Mental

- * Perform mental calculations, including with mixed operations and large numbers

* Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Written

* Add any set of whole numbers and decimals using appropriate written methods.

Problem Solving

* Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why (including fractions, decimals and percentages)

* Solve problems involving addition

Inverse operations, estimating and checking answers

* use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Steps of progression:

* Add numbers with 1 decimal place (PD 11)

$$\begin{array}{r} 18.7 \\ + 56.4 \\ \hline 75.1 \end{array}$$

* Add numbers with 2 decimal places (PD 12)

$$\begin{array}{r} 8.68 \\ + 6.54 \\ \hline 15.22 \end{array}$$

* Add numbers with 3 decimal places (PD 13)

$$\begin{array}{r} 8.686 \\ + 6.549 \\ \hline 15.235 \end{array}$$

* Add numbers with mixed amounts of decimal places (PD 14)

$$\begin{array}{r} 8.689 \\ + 6.54 \\ \hline 15.229 \end{array}$$

SUBTRACTION Reception

Children will engage in a wide variety of songs, games and activities. Through practical activities and discussion, children will begin to use the vocabulary of subtraction. The stages of progression and exemplification of activities for the teaching of subtraction are listed in "Little Big Maths: The A-CLIC Book".

SUBTRACTION Year 1

Number facts

*Represent and use number bonds and related subtraction facts within 20
e.g. $9+7=16$, $16-7=9$, $7 = 16 -9$

Mental

- * Subtract one-digit and two-digit numbers to 20, including zero
- *Read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs
- *Establish that - means subtract (take away is method).
- *Understand concept of difference.
- *Understand the effect of subtracting zero.

Written

- *Read, write and interpret mathematical statements involving, subtraction (-) and equals (=) signs
- *Establish that - means subtract (take away is method).
- *Use inverse to establish link between addition and subtraction.
- *Understand concept of difference.
- *Understand the effect of adding or subtracting zero.

Problem Solving

- *Solve one-step problems that involve subtraction, using concrete objects and pictorial representations and arrays with the support of the teacher, and missing number problems such as $7 = \square - 9$
- *Use practical contexts and associated terms

Inverse operations, estimating and checking answers

- *Use inverse to establish link between addition and subtraction

Steps of progression:

- * Take away numbers of objects to 10 (PD5)
- * Read a subtraction sentence (PD 6)
- * Arrange a subtraction sentence using objects (PD 7)
- * Solve a subtraction number sentence using objects (PD 8)
- * Solve a subtraction sentence by counting back along a number line (PD 9).
F- draw each jump on number line
A- look at number line
B- count back in head or know fact.
- *Take 1 from a number to 20 using a number line or first 2 rows of 100 square FAB (PD 10)
- *Take 2 or 3 from a number to 20 (PD 11) FAB
- *Take a 1-digit number from a number to 20 (PD 12)

SUBTRACTION Year 2

Number facts

*Use place value and number facts to solve problems recall and use addition facts to 20 fluently

*Derive and use related facts up to 100 e.g. $7 - 4 = 3$ so $70 - 40 = 30$

Mental

*Subtract numbers using concrete objects, pictorial representations, and mentally, including: TU-U, TU-T, TU-TU (with number lines or jottings)

*Show that subtraction of two numbers cannot be done in any order (not commutative)

Written

Problem Solving

*Solve problems with subtraction, using concrete, pictorial and abstract representations

*Apply increasing knowledge of mental and written methods.

Inverse operations, estimating and checking answers

*Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Steps of progression:

*Take 10 from a multiple of 10 (PD 13)

*Take 10 from a 2-digit number (PD14)

* Take a multiple of 10 from a multiple of 10 (PD 15)

* Take a 1-digit number from a multiple of 10 (PD16)

* Solve 2d - 1d without crossing the ten (PD 17) e.g. $48 - 5 =$

* Solve *any* 2d - 1d (PD 18) e.g. $48 - 7 =$

* Solve *any* 3d - 1d (PD 19) e.g. $343 - 7 =$

N.B: After this stage, children will subtract by finding the difference, so will count on rather than back. They will understand that the gap between the numbers in the subtraction is the difference. However, it is important that when subtracting mentally, children start to use the most appropriate method e.g. to solve $56 - 3$ the child should count back, not forwards.

* Know the gap to the next multiple of 10 (PD 22) e.g. $80 - 73 =$

*Know the digit gap from a multiple of 10 (PD 23) e.g. $84 - 80 =$

*Take a multiple of 10 from *any* 2-d number (PD 25)

* Find the gap in a 2d - 2d question (PD 26)

* Solve *any* 2d -2d (PD 27)

The first stage of column
the end of Year 2:

$$\begin{array}{r} 96 \\ - 42 \\ \hline 54 \end{array}$$

subtraction will be introduced at

* Solve 2d - 2d (PD 1)

SUBTRACTION Year 3

Number facts

*Complements to 100 e.g. $100 - 55 = 45$

Mental

*Subtract numbers mentally, including:

* HTU-U

* HTU-T

* HTU-H

Written

*Subtract numbers with up to three digits, using formal written methods of columnar subtraction

Problem Solving

*Solve problems, including missing number problems, using number facts, place value, and more complex subtraction.

Inverse operations, estimating and checking answers

*Estimate the answer to a calculation and use inverse operations to check answer

Steps of progression:

* Take any 2-d number from 100 (PD 28)

* Take 100 from any 3-d number (PD 29) e.g. $682 - 100 =$

Column methods:

* Solve *any* 2d - 2d (PD 2)

$$\begin{array}{r} 6\cancel{0}^1 \\ - 48 \\ \hline 28 \end{array}$$

* Solve 3d - 2d (no carrying)
(PD 3)

$$\begin{array}{r} 986 \\ - 42 \\ \hline 944 \end{array}$$

* Solve *any* 3d - 2d (PD 4)

$$\begin{array}{r} 8\cancel{0}^{12} \\ - 82 \\ \hline 849 \end{array}$$

* Solve *any* 3d - 3d (PD 5)

$$\begin{array}{r} 8 \text{ } 17 \text{ } 1 \\ 985 \\ - 596 \\ \hline 389 \end{array}$$

SUBTRACTION Year 4

Number facts

*Complements to 1000

Mental

*Continue to add mentally, using jottings if appropriate.

Written

*Add numbers with up to 4 digits using the formal written methods of column addition (+ money/decimals), where appropriate

Problem Solving

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

Inverse operations, estimating and checking answers

* Estimate and use inverse operations to check answers to a calculation.

Steps of progression:

* Solve any 3d - 2d (PD 30) e.g. $682 - 35 =$

Column Method

* Solve any 4d - 3d or 2d (PD 6)

$$\begin{array}{r} 4 \text{ } 1 \text{ } 7 \text{ } 1 \\ 5686 \\ - 749 \\ \hline 4937 \end{array}$$

* Solve any 4d - 4d (PD 7)

$$\begin{array}{r} 4 \text{ } 1 \text{ } 7 \text{ } 1 \\ 5686 \\ - 4749 \\ \hline 937 \end{array}$$

SUBTRACTION Year 5

Number facts

*Complements of decimals to one whole

Mental

*Subtract mentally with increasingly large numbers

Written

*Subtract whole numbers with more than 4 digits (and decimals up to 3DP), including using formal written methods (columnar subtraction)

Problem Solving

*Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why (including decimals)

Inverse operations, estimating and checking answers

Use rounding to check answers to calculations and determine, in the context of the problem, levels of accuracy.

Steps of progression:

Column method

* Solve any 5d - 5d (PD 8)

$$\begin{array}{r} 4,1 \quad 7,1 \\ 956\cancel{6} \\ - 54749 \\ \hline 40937 \end{array}$$

SUBTRACTION Year 6

Number facts

Complements to 100 to 2d. p

Mental

*Perform mental calculations, including with mixed operations and large numbers

*Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Written

Subtract any set of whole numbers and decimals using an appropriate written method.

Problem Solving

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why (including fractions, decimals and percentages)

Solve problems involving subtraction.

Inverse operations, estimating and checking answers

Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Steps of progression:

* Subtract numbers with 1 decimal place (PD 9)

$$\begin{array}{r} 7 \text{ } 1 \\ 8.6 \\ - 4.9 \\ \hline 3.7 \end{array}$$

* Subtract numbers with 2 decimal places (PD 10)

$$\begin{array}{r} 7 \text{ } 1 \\ 8.67 \\ - 4.91 \\ \hline 3.76 \end{array}$$

* Subtract numbers with 3 decimal places (PD 11)

$$\begin{array}{r} 7 \text{ } 1 \text{ } 1 \text{ } 1 \\ 8.675 \\ - 4.908 \\ \hline 3.767 \end{array}$$

* Subtract numbers with mixed amount of decimal places (PD 12)

$$\begin{array}{r} 7 \text{ } 1 \\ 8.625 \\ - 4.8 \\ \hline 3.825 \end{array}$$

MULTIPLICATION Reception

Children will engage in a wide variety of songs, games and activities. Through practical activities and discussion, children will begin to use the vocabulary of multiplication. The stages of progression and exemplification of activities for the teaching of multiplication are listed in "Little Big Maths: The A-CLIC Book".

MULTIPLICATION Year 1

Number facts

* Doubling numbers 1-10

* Counting in twos, fives and tens.

Problem Solving

- *Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- *Practical grouping.
- *Make connections between arrays, number patterns, and counting in twos, fives and tens.

Steps

- *Set out groups of blocks. (PD 3)
- *Find the total amount of blocks (PD 4)
- * Draw out groups of dots (PD 5)
- *Find the total (PD 6)

MULTIPLICATION Year 2

Number facts

- *Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- *Doubling numbers 1-20
- *Counting in 2s, 3s, and 5s

Mental

- *Calculate mathematical statements for multiplication
- *Show that multiplication of two numbers can be done in any order (commutative) e.g. $3 \times 5 = 5 \times 3$ and division of one number by another cannot e.g. $15/3$ does not = $3/15$

Written

- *Calculate mathematical statements for multiplication and division **grouping** within the multiplication tables and write them using the multiplication (\times) and equals (=) signs

Problem Solving

- *Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

Inverse operations, estimating and checking answers

- *Begin to relate multiplication and division to fractions e.g. $\frac{1}{2}$ is the same as divide by 2

Steps:

- * Write a repeated addition e.g. $3 + 3 + 3 + 3 = 4 \times 3$ (PD 7)

- * Solve a repeated addition (PD 8) e.g. $3 + 3 + 3 + 3 = 12$
- * Solve 1 d x 1 d (PD 9)

MULTIPLICATION Year 3

Number facts

- * Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- * Doubling facts of multiples of 10 up to double 100
- * Counting in multiples of 4, 8, 50 and 100
- * Connect 2, 4 and 8x tables through doubling

Mental

- * Write, estimate and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental methods.

Written

- * Write, **estimate** and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers.

Problem Solving

- * Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.
- * Understand scaling a number by a scale factor of 3 as making the number (or measurement) 3 times larger.
- * Link scaling to the understanding of multiplication e.g. $6 + 6 + 6 = 6 \times 3$

Inverse operations, estimating and checking answers

- * Estimate the answer to a calculation and use inverse operations to check answers

Steps:

- * Multiply a 2d multiple of 10 by 2, x3, x4, x5 (smile multiplication) (PD 10)
- * Multiply 1d x 2d (PD 11)

Column method

- * Solve 2d x 1d (PD 1)

$$\begin{array}{r} 35 \\ \times 25 \\ \hline 175 \end{array}$$

MULTIPLICATION Year 4

Number facts

- *Count in multiples of 6,7, 9, 25 and 1000
- *Recall multiplication facts for multiplication tables up to 12 x 12
- *Halving facts of multiples of 100/1000
- *Halving multiples of 10 beyond 100

Mental

- *Use place value, known and derived facts to multiply mentally, including: multiplying by 0 and 1; multiplying together three numbers
- *Recognise and use factor pairs and commutativity in mental calculations
e.g. $18 \times 6 = 2 \times 9 \times 2 \times 3 = 9 \times 3 \times 2 \times 2 = 108$
- *Use mental arithmetic strategies when appropriate e.g. partitioning, chunking and jottings
- *Doubling numbers 1-100 as a strategy
- *Multiply whole numbers and decimals by 10 and 100

Written

- *Estimate and multiply two-digit and three-digit numbers by a one-digit number using formal written layout, including grid method if appropriate

Problem Solving

- *Solve problems involving multiplying, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Inverse operations, estimating and checking answers

- *Estimate the answer to a calculation and use inverse operations to check answers.

Steps:

- * Solve any 1d x 1d (PD 12)
- * Solve any smile multiplication (PD 13)
- * Solve any 1d x 2d (PD 14)

Column method

- * Solve *any* 2d x 1d (PD 2)

$$\begin{array}{r} 85 \\ \times 36 \\ \hline 510 \end{array}$$

- * Solve *any* 3d x 1d (PD 3)

$$\begin{array}{r} 385 \\ \times 536 \\ \hline 2310 \end{array}$$

Number facts

- *Count forwards and backwards in steps of powers of 10 for any given number up to 1 000 000.
- *Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- *Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- *Establish whether a number up to 100 is prime and recall prime numbers up to 19.

Mental

- *Multiply numbers mentally drawing upon known facts.
- *Multiply whole numbers and those involving decimals by 10, 100 and 1000

Written

- *Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method (including grid), including long multiplication for two-digit numbers

Problem Solving

- *Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.
- *Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- *Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Steps:

- * Solve 3d x 1d (PD 15)
- * Solve 2d x 2d (PD 16)

Column method

- * Solve *any* 2d x 2d (PD 4)

$$\begin{array}{r} 85 \\ \times 16 \\ \hline 510 \\ 850 \\ \hline 1360 \end{array}$$

- * Solve any 3d x 2d (PD 5)

$$\begin{array}{r} 485 \\ \times 16 \\ \hline 2910 \\ 4850 \\ \hline 7760 \end{array}$$

$$\begin{array}{r} 8152 \\ \times 316 \\ \hline 48912 \end{array}$$

* Solve any 4d x 1d (PD 6)

MULTIPLICATION Year 6

Number facts

*Identify common factors, common multiples and prime numbers, finding prime factors of 2-digit numbers, and testing for prime numbers beyond 100.

Mental

*Perform mental calculations, including with mixed operations and large numbers.

Written

*Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.

Problem Solving

*Solve problems involving addition, subtraction, multiplication and division.

*Solve problems involving similar shapes where the scale factor is known or can be found.

Inverse operations, estimating and checking answers

*Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

*Use their knowledge of the order of operations to carry out calculations involving the four operations

(introduce brackets and how this affects calculations)

*Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Steps

* Multiply tenths (PD 17) e.g. $4 \times 0.3 =$

- do tables, then make answer 10 times smaller

* Multiply hundredths (PD 18) e.g. $6 \times 0.07 =$

- do tables, then make answer 100 times smaller

Column method

* Solve any 4d x 2d (PD 7)

$$\begin{array}{r} 3123 \\ \times 22 \\ \hline 6246 \\ 62460 \\ \hline 68706 \end{array}$$

* Solve any 1d.1dp x 1d (PD 8)

$$\begin{array}{r} 5.6 \\ \times 4 \\ \hline 22.4 \end{array}$$

* Solve any 1d.2dp x 1d (PD 9)

$$\begin{array}{r} 5.24 \\ \times 6 \\ \hline 31.44 \end{array}$$

* Solve any 1d.1dp x 2d (PD 10)

$$\begin{array}{r} 5.2 \\ \times 36 \\ \hline 31.2 \\ 156.0 \\ \hline 187.2 \end{array}$$

* Solve any 1d.2dp x 2d (PD 11)

$$\begin{array}{r} 5.24 \\ \times 26 \\ \hline 31.44 \\ 104.80 \\ \hline 136.24 \end{array}$$

DIVISION Reception

Children will engage in a wide variety of songs, games and activities. Through practical activities and discussion, children will begin to use the vocabulary of division. The stages of progression and exemplification of activities for the teaching of division are listed in "Little Big Maths: The A-CLIC Book".

DIVISION Year 1

Number facts

*Halving numbers 1-10

*Counting in twos, fives and tens.

Problem Solving

* Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

*Recognise operation signs \div and $=$

*Practical application of grouping and sharing to find simple fractions of objects, numbers and quantities e.g. $\frac{1}{2}$ and $\frac{1}{4}$

*Make connections between arrays, number patterns, and counting in twos, fives and tens.

Steps of Progression

*Share objects between people and into groups (PD 5 - 12)

DIVISION Year 2

Number facts

- * Recall and use division facts for the 2, 5 and 10 multiplication tables.
- * Halving numbers 1-20
- * Counting back in 3's, 4's, 8's

Mental

- * Calculate mathematical statements for division (**grouping**) within the multiplication tables
- * Show that division of one number by another cannot be done in any order (non-commutative) e.g. $15/3$ does not = $3/15$

Written

- * Calculate mathematical statements for division (**grouping**) within the multiplication tables and write them using the division (\div) and equals ($=$) signs

Problem Solving

- * Solve problems involving division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts
- * Begin to relate multiplication and division to fractions e.g. $\frac{1}{2}$ is the same as divide by 2

Inverse operations, estimating and checking answers

- * Begin to relate multiplication and division to fractions e.g. $\frac{1}{2}$ is the same as divide by 2

Steps

- * Arrange and solve number division sentence with objects (PD 13,14)
- * Solve a number division sentence using objects (with remainders) (PD 15)
- * Use tables to find a division fact (PD 16)
- * Use tables to find a division fact with remainders (PD 17)

DIVISION Year 3

Number facts

- * Recall and use division facts for the 3, 4 and 8 multiplication tables
- * Halving facts of multiples of 10 up to double 100
- * Counting in 6s, 7s, 9s, 11s, 12s

Mental

- * Write, estimate and calculate mathematical statements for division using the multiplication tables that they know, using mental methods

Written

*Write, **estimate** and calculate mathematical statements for division using the multiplication tables that they know.

Problem Solving

*Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

*Understand scaling a number by a scale factor of 3 as making the number (or measurement) 3 times larger.

*Link scaling to the understanding of multiplication e.g $6+6+6 = 6 \times 3$

*Understand remainders in the context of division

Inverse operations, estimating and checking answers

*Estimate the answer to a calculation and use inverse operations to check answers

Steps

* Use tables to find a division fact with remainders (PD 17)

$$65 \div 5 = 13$$

* Combine 2 or more tables to find a division fact (PD 18) e.g.

$\times 5$	65	
10	50	$\rightarrow 15$
3	15	
13		

* Combine 2 or more tables to find a division fact with remainders (PD 19)

$$69 \div 5 = 13r4$$

$\times 5$	69	
10	50	$\rightarrow 19$
3	15	$\rightarrow 4$
13		

Column methods

* Solve $2d \div 1d$ (using $\times 2, \times 3, \times 4, \times 5$)

No remainders (PD 1)

	23
3	$\overline{)69}$

DIVISION Year 4

Number facts

*Recall division facts for multiplication tables up to 12×12

*Halving facts of multiples of 100/1000

*Halving multiples of 10 beyond 100

Mental

*Use place value, known and derived facts to divide mentally, including: dividing by 1

*Interpret remainders, rounding up or down depending on context

- *Use mental arithmetic strategies when appropriate e.g., partitioning, chunking and jottings
- *Divide whole numbers and decimals by 10 and 100
- *Recognise and use factor pairs and commutativity in mental calculations.

Written

- *Short division of $TU \div U$ and $HTU \div U$

Problem Solving

- *Solve problems involving multiplying, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Inverse operations, estimating and checking answers

- *Estimate the answer to a calculation and use inverse operations to check answers

Steps

Column Methods

- * Solve $2d \div 1d$ (using $\times 2, \times 3, \times 4, \times 5$)
- No remainders (PD 2)

$$\begin{array}{r} 27 \\ 3 \overline{) 81} \end{array}$$

- * Solve $2d \div 1d$ (using any table)
- No remainders (PD 3)

$$\begin{array}{r} 14 \\ 6 \overline{) 84} \end{array}$$

- * Solve $3d \div 1d$ (using any table)
- No remainders (PD 4)

$$\begin{array}{r} 42 \\ 7 \overline{) 294} \end{array}$$

- * Solve $4d \div 1d$ (using any table)
- No remainders (PD 5)

$$\begin{array}{r} 406 \\ 9 \overline{) 3654} \end{array}$$

DIVISION Year 5

Number facts

- *Count forwards and backwards in steps of powers of 10 for any given number up to 1 000 000.
- *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.

Mental

- *Divide numbers mentally drawing upon known facts.
- *Divide whole numbers and those involving decimals by 10, 100 and 1000

Written

- *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.
- *Express remainders in different ways e.g. $98/4 = 24r2 = 24.5$

Problem Solving

- *Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.
- *Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
- *Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Steps

- * Solve any $2d \div 1d$ and $3d \div 1d$ with remainders (PD 6)
- * Solve any $4d \div 1d$ and interpret context of remainder (PD 7)

$$\begin{array}{r} 83 \text{ r}5 \\ 6 \overline{) 503} \end{array}$$

$$\begin{array}{r} 666 \text{ r}4 \\ 6 \overline{) 4000} \end{array}$$

DIVISION Year 6

Number facts

- *Identify common factors, common multiples and prime numbers, finding prime factors of 2-digit numbers, and testing for prime numbers beyond 100

Mental

- *Perform mental calculations, including with mixed operations and large numbers.
- *Associate a fraction with a division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $3/8$)

Written

- *Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
- *Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to context

*Use written division methods in cases where the answer has up to 2 decimal places.

Problem Solving

*Solve problems involving addition, subtraction, multiplication and division

*Solve problems involving similar shapes where the scale factor is known or can be found.

Inverse operations, order of operations, estimating and checking answers

*Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

*Use their knowledge of the order of operations to carry out calculations involving the four operations

(introduce brackets and how this affects calculations)

*Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Steps

When children divide by a 2-digit number, they should write out a coin card to help them find the biggest multiple (refer to "Big Maths" and "Big Maths: The Column Methods")

* Solve any $3d \div 2d$ (PD 8)

$$\begin{array}{r}
 28 \text{ r}1 \\
 23 \overline{) 545} \\
 \underline{- 46} \\
 185 \\
 \underline{- 184} \\
 1
 \end{array}$$

x23	
1	23
2	46
3	69
4	92
5	115
6	138
7	161
8	184
9	207
10	230

* Solve any $4d \div 2d$ and show remainder as a fraction (PD 9)

$$\begin{array}{r}
 280 \text{ r}12 \\
 23 \overline{) 5452} \\
 \underline{- 46} \\
 185 \\
 \underline{- 184} \\
 12
 \end{array}$$

x23	
1	23
2	46
3	69
4	92
5	115
6	138

x22	
1	22
2	44
3	66
4	88
5	110
6	132
7	154
8	176
9	198
10	220

* Solve division with decimal places in the

answer (PD 10)

$$\begin{array}{r} 22 \overline{) 6721.0} \\ \underline{66} \\ 121 \\ \underline{110} \\ 110 \\ \underline{110} \\ 0 \end{array}$$

Appendix 2 Assessment

	Autumn 1 Sept	Autumn 2 Oct	Spring 1 Feb	Spring 2	Summer 1 May	Summer 2 July
Reception						
Profile	Baseline And Enter Baseline on school tracker and Target tracker	Update Profile all prime areas and Literacy and Maths	Update Profile all prime areas and Literacy and Maths	Update Profile For all other aspects of learning	Letter Update Profile all prime areas and Literacy and Maths	Finalise profile (June) Enter on target tracker and school tracker
Maths		Update Maths Criteria Sheets		Update Maths Criteria Sheets	Update Maths Criteria Sheets	
Writing	<p>WRITING IS ONGOING FOLLOWING THE TWO WEEKLY WRITING CYCLE. BELOW ARE WHERE FORMAL TEACHER ASSESSMENTS USING THE TWO WEEKLY CYCLE EVIDENCE NEEDS TO BE ENTERED ON THE TRACKERS AND MUST REPRESENT FICTION AND NON FICTION INDEPENDENT WRITING</p>					
Writing		Writing assessment enter on school tracker and target tracker	Writing assessment enter on school tracker and target tracker		Writing assessment enter on school tracker and target tracker	Complete Cohort tracker for writing
Reading		Reading Teacher Assessment using Guided reading, phonics phase, book bands, HFW		Reading Teacher Assessment using Guided reading, phonics phase, book bands, HFW	Reading Teacher Assessment using Guided reading, phonics phase, book bands, HFW	Complete Cohort tracker for reading
Yr 1,						
Writing	<p>WRITING IS ONGOING FOLLOWING THE TWO WEEKLY WRITING CYCLE. BELOW ARE WHERE FORMAL TEACHER ASSESSMENTS USING THE TWO WEEKLY CYCLE EVIDENCE NEEDS TO BE ENTERED ON THE TRACKERS AND MUST REPRESENT FICTION AND NON FICTION INDEPENDENT WRITING</p>					
Writing		Writing assessment Update Individual pupil trackers and cohort	Writing assessment Update Individual pupil trackers and cohort		Writing assessment Update Individual pupil trackers and cohort	Complete Cohort tracker for writing

Appendix 2 Assessment

		tracker	tracker		tracker	
Maths		Teacher Assessment – Use Maths Criteria Sheets	White Rose Maths Spring Year 1 Reasoning and Arithmetic		Testbase End of Year 1 Reasoning and Arithmetic	Complete Cohort tracker for maths
	End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)
Reading		Reading Teacher Assessment using Guided reading, phonics phase, book bands, HFW	ReadingTeacher Assessment using Guided reading, phonics phase, book bands, HFW Scholastic reading comprehension		Reading Old level 2 SAT Paper Apart from SEND then Teacher assess using Guided reading, phonics phase, book bands, HFW	Complete Cohort tracker for reading
Phonics			Phonics Assessment – previous two Years test		Phonics Assessment – previous years test	Statutory Phonics Screening for all pupils
SPaG		Teacher Assessment Using Spelling Tests HFW, Writing Criteria Sheets	SPaG Twinkl Test 4		Testbase End of Year 1 Spelling and SPaG	Complete Cohort tracker for SPaG
Science		Science – Rising Stars and update cohort tracker		Science – Rising Stars and update cohort tracker		Science – Rising Stars and update cohort tracker
Yr 2						
Writing	WRITING IS ONGOING FOLLOWING THE TWO WEEKLY WRITING CYCLE. BELOW ARE WHERE FORMAL TEACHER ASSESSMENTS USING THE TWO WEEKLY CYCLE EVIDENCE NEEDS TO BE ENTERED ON THE TRACKERS AND MUST REPRESENT FICTION AND NON FICTION INDEPENDENT WRITING					
Writing		Writing assessment Update Individual pupil trackers and cohort tracker	Writing assessment Update Individual pupil trackers and cohort tracker		Writing assessment Update Individual pupil trackers and cohort tracker	Complete Cohort tracker for writing
Maths		White Rose Maths Autumn Year 2 Reasoning and Arithmetic	Two Years previous SAT Paper with Arithmetic	Previous Years Maths SAT Paper with Arithmetic	SAT	Complete Cohort tracker for maths
Maths			Times tables test 2,5,10 X		Times tables test 2,5,10 X	

Appendix 2 Assessment

Maths	End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 1 - 3 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 4,5, 6, 7, 8, End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 9,10 End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)
Reading		Pre 2016 Reading SAT Paper	Two Years previous Reading SAT Paper	Previous Years Reading SAT Paper	SAT	Complete Cohort tracker for reading
Phonics			Phonics Assessment – previous Years test			Phonics Screening for those who have not passed
SPaG		Sample SPaG SAT Paper	Two Years previous SPaG SAT	Previous Years SPaG SAT Paper	SAT	Complete Cohort tracker for SPaG
Science					Science – Rising Stars and update cohort tracker	Science – Rising Stars and Final TA update tracker
Yr 3						
Writing	WRITING IS ONGOING FOLLOWING THE TWO WEEKLY WRITING CYCLE. BELOW ARE WHERE FORMAL TEACHER ASSESSMENTS USING THE TWO WEEKLY CYCLE EVIDENCE NEEDS TO BE ENTERED ON THE TRACKERS AND MUST REPRESENT FICTION AND NON FICTION INDEPENDENT WRITING					
Writing		Writing assessment Update Individual pupil trackers and cohort tracker	Writing assessment Update Individual pupil trackers and cohort tracker		Writing assessment Update Individual pupil trackers and cohort tracker	Complete Cohort tracker for writing
Maths		White Rose Maths Autumn Year 3 Reasoning and Arithmetic	Testbase Mid Year Spring Year 3 Reasoning and Arithmetic		Testbase End of Year Reasoning and Arithmetic	Complete Cohort tracker for maths
Maths		Times Tables Test	Times Tables Test		Times Tables Test	
Maths	Testbase Arithmetic Test 1 and 2 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 3 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 4 and 5 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test , 6, 7, 8, End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 9,10 End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)
Reading		Twinkl Reading	Reading		Reading	Complete Cohort

Appendix 2 Assessment

		Assessment	Mid Year Testbase Y3		End of Year Testbase Y3	tracker for reading
SPaG		SPaG and Spelling Year 2 SAT from that year	SPaG and Spelling Mid Year Testbase Y3		SPaG and Spelling End of Year Testbase Y3	Complete Cohort tracker for SPaG
Science		Science – Rising Stars and update cohort tracker		Science – Rising Stars and update cohort tracker		Science – Rising Stars and update cohort tracker
Yr 4						
Writing	WRITING IS ONGOING FOLLOWING THE TWO WEEKLY WRITING CYCLE. BELOW ARE WHERE FORMAL TEACHER ASSESSMENTS USING THE TWO WEEKLY CYCLE EVIDENCE NEEDS TO BE ENTERED ON THE TRACKERS AND MUST REPRESENT FICTION AND NON FICTION INDEPENDENT WRITING					
Writing		Writing assessment Update Individual pupil trackers and cohort tracker	Writing assessment Update Individual pupil trackers and cohort tracker		Writing assessment Update Individual pupil trackers and cohort tracker	Complete Cohort tracker for writing
Maths		White Rose Maths Autumn Year 4 Reasoning and Arithmetic	Testbase Mid Year 4 Reasoning and Arithmetic		Testbase End of Year Reasoning and Arithmetic	Complete Cohort tracker for maths
Maths		Times Tables Test	Times Tables Test		Times Tables Test	
Maths	Testbase Arithmetic Test 1 and 2 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 3 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 4 and 5 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test , 6, 7, 8, End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 9,10 End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)
Reading		Twinkl Reading Assessment	Reading Mid Year Testbase Y4		Reading End of Year Testbase Y4	Complete Cohort tracker for reading
SPaG		SPaG and Spelling Testbase End of Year 3 Summer	SPaG and Spelling Mid Year Testbase Y4		SPaG and Spelling End of Year Testbase Y4	Complete Cohort tracker for SPaG
Science		Science – Rising Stars and update cohort tracker				Science – Rising Stars and update cohort tracker

Appendix 2 Assessment

Yr 5						
Writing	WRITING IS ONGOING FOLLOWING THE TWO WEEKLY WRITING CYCLE. BELOW ARE WHERE FORMAL TEACHER ASSESSMENTS USING THE TWO WEEKLY CYCLE EVIDENCE NEEDS TO BE ENTERED ON THE TRACKERS AND MUST REPRESENT FICTION AND NON FICTION INDEPENDENT WRITING					
Writing		Writing assessment Update Individual pupil trackers and cohort tracker	Writing assessment Update Individual pupil trackers and cohort tracker		Writing assessment Update Individual pupil trackers and cohort tracker	Complete Cohort tracker for writing
Maths		White Rose Maths Autumn Year 5 Reasoning and Arithmetic	Testbase Mid Year 5 Reasoning and Arithmetic		Testbase End of Year Reasoning and Arithmetic	Complete Cohort tracker for maths
Maths		Times Tables Test for anyone not passed	Times Tables Test for anyone not passed		Times Tables Test for anyone not passed	
Maths	Testbase Arithmetic Test 1 and 2 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 3 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 4 and 5 End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test , 6, 7, 8, End of Unit White Rose Maths Test (use in a lesson)	Testbase Arithmetic Test 9,10 End of Unit White Rose Maths Test (use in a lesson)	End of Unit White Rose Maths Test (use in a lesson)
Reading		Old Style Y6 Reading SAT 2012	Reading Mid Year Testbase Y5		Reading End of Year Testbase Y5	Complete Cohort tracker for reading
SPaG		SPaG and Spelling Testbase End of Year 4 Summer	SPaG and Spelling Mid Year Testbase Y5		SPaG and Spelling End of Year Testbase Y5	Complete Cohort tracker for SPaG
Science		Science – Rising Stars and update cohort tracker		Science – Rising Stars and update cohort tracker		Science – Rising Stars and update cohort tracker
Yr 6						
Writing	WRITING IS ONGOING FOLLOWING THE TWO WEEKLY WRITING CYCLE . BELOW ARE WHERE FORMAL TEACHER ASSESSMENTS USING THE TWO WEEKLY CYCLE EVIDENCE NEEDS TO BE ENTERED ON THE TRACKERS AND MUST REPRESENT FICTION AND NON FICTION INDEPENDENT WRITING					

Appendix 2 Assessment

Writing		Writing assessment Update Individual pupil trackers and cohort tracker	Writing assessment Update Individual pupil trackers and cohort tracker		Writing assessment Update Individual pupil trackers and cohort tracker	Complete Cohort tracker for writing
Maths		2016 Maths SAT Paper with Arithmetic	Two Years previous SAT Paper with Arithmetic	Previous Years Maths SAT Paper with Arithmetic	SAT	Complete Cohort tracker for maths
Maths		Times Tables Test for anyone not passed	Times Tables Test for anyone not passed		Times Tables Test for anyone not passed	
Maths	Testbase Arithmetic Test 1 and 2	Testbase Arithmetic Test 3 Boosters and additional SAT papers	Testbase Arithmetic Test 4 and 5 Boosters and additional SAT papers	Testbase Arithmetic Test , 6, 7, 8, Boosters and additional SAT papers	Testbase Arithmetic Test 9,10 Boosters and additional SAT papers	
Reading		Pre 2016 Reading SAT Paper	Two Years previous Reading SAT Paper	Previous Years Reading SAT Paper	SAT	Complete Cohort tracker for reading
SPaG		2016 SPaG SAT Paper	Two Years previous SPaG SAT	Previous Years SPaG SAT Paper	SAT	Complete Cohort tracker for SPaG
Science		Science – Rising Stars and update cohort tracker		Science – Rising Stars and update cohort tracker		Final Science TA

Appendix 2 Assessment