Mathematics and Numeracy Policy

Date	Review Date	Co-ordinator	Nominated Governor
October 2021	October 2024	Mrs. Wendy Mitchell	Mr M Dixon

United Nations Convention on the Rights of the Child

At Llangewydd Junior School, we put the United Nations Convention on the Rights of the Child (UNCRC) at the heart of our school's planning, policies, practice and ethos. We are a Rights-Respecting School and teach about children's rights - modelling rights and respect in all our relationships: between teachers/adults and our learners.

The UNCRC underpins our school vision and aims. We encourage our children to:

- listen to others and respect their ideas.
- learn about their rights, respect the rights of others and to inform others of children's rights.

Introduction

This Mathematics and Numeracy policy outlines the purpose and organisation of teaching and learning in Mathematics and Numeracy at Llangewydd Junior School. Mathematics equips pupils with an uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in an abstract way. Mathematics is important in everyday life. It is integral to all aspects of life and, with this in mind, we endeavour to ensure that our children develop a healthy and enthusiastic attitude towards Mathematics that will stay with them.

Our Mathematics and Numeracy provision currently adheres to the statutory requirements of the National Curriculum as we simultaneously develop high-level curriculum design in preparation for implementation of the Curriculum for Wales 2022. Llangewydd Junior School prides itself in the knowledge that we are enabling learners to build on skills they have previously acquired. As teachers, we motivate our learners to progress significantly whilst extending their mathematical thinking in a happy and secure environment. In designing and continuously refining our provision in Mathematics and Numeracy, we are committed to providing our learners with a broad and balanced curriculum that enables them to realise the four purposes and equips them for ongoing learning, work and life.

Principles

At Llangewydd Junior School we endeavour to deliver a curriculum for Mathematics and Numeracy that is full of experiences that are as engaging, exciting and accessible as possible for our learners, and that are geared towards ensuring that learners develop mathematical resilience.

We believe that learners need to have opportunities to work both independently and collaboratively to build on the foundations established in the early years. Knowledge of, and competence in number and quantities are fundamental to learners' confident participation in the world, and provide a foundation for further study and for employment. Computational fluency is essential for problem-solving and progressing in all areas of learning and experience. Fluency is developed through using the four basic arithmetic operations and acquiring an understanding of the relationship between them. This leads to preparing the way for using algebraic symbolisation successfully. Algebraic thinking is essential for reasoning, modelling and solving problems in Mathematics and in a wide range of real-world contexts including technology and finance. We understand how making connections between arithmetic and algebra develops skills for abstract reasoning from an early age. Our school acknowledges that Geometry lessons that involve playing with, manipulating, comparing, naming and classifying shapes and structures encourage the development and use of conjecture, deductive reasoning and *proof*. We also realise that they can support the development of numerical reasoning. We recognise how the sizes and properties of shapes and their surrounding spaces helps learners to make sense of the physical world and the world of mathematical shapes. Our school appreciates that geometry and measurement have applications in many fields, including art, construction, science and technology, engineering, and astronomy and through our Mathematics and Numeracy curriculum, we hope to expand our learners' range of interests, activities and knowledge for the future.

Our school acknowledges that from the early stages onwards, children and young people should experience success in Mathematics and develop the confidence to take risks, ask questions and explore alternative solutions without fear of being wrong. We want them to enjoy exploring and applying mathematical concepts, to understand and solve problems, explaining their thinking and presenting their solutions to others in a variety of ways. At all stages, an emphasis on collaborative learning will be encouraged so learners become confident at reasoning logically and creatively through discussion of mathematical ideas and concepts. Through their use of effective questioning and discussion, our teachers will use misconceptions and wrong answers as opportunities to improve and deepen children's understanding of mathematical concepts. Planned experiences and their outcomes encourage learning and teaching approaches that challenge and stimulate children and young people and promote their enjoyment of Mathematics. To achieve this, our teachers will use a range of approaches, including:

• planned learning which provides opportunities to observe, explore, investigate, experiment, play, discuss & reflect

• modelling and scaffolding the development of mathematical thinking skills

• learning collaboratively and independently

• opportunities for discussion, communication and explanation of thinking

• developing mental agility

• using relevant contexts and experiences familiar to young people

• making links across the curriculum to show how mathematical concepts are applied in a wide range of contexts, such as those provided by science and social studies

• using technology in appropriate and effective ways

• building on the principles of Assessment for Learning, ensuring that young people understand the purpose and relevance of what they are learning

• developing problem-solving capabilities and critical thinking skills.

At Llangewydd we understand that Mathematics is at its most powerful when the knowledge and understanding that have been developed are used to solve problems. Problem solving is at the heart of all our learning and teaching. Our learners are regularly encouraged to explore different options: 'What would happen if...?', 'Why?' Fundamental questions for teachers and learners to ask as mathematical thinking develops.

In the Mathematics and Numeracy Area of Learning and Experience, the model of progression is based on the development of five interdependent proficiencies:

Conceptual understanding

Mathematical concepts and ideas should be built on, deepened and connected as learners experience increasingly complex mathematical ideas. Learners demonstrate conceptual understanding through being able to explain and express concepts, find examples (or non-examples) and by being able to represent a concept in different ways, flowing between different representations including verbal, concrete, visual, digital and abstract. An increasing breadth of knowledge is achieved through the learners being introduced to new mathematical concepts, and depth of knowledge is achieved through learners being able to represent, connect and apply a concept in different ways and in different situations.

Communication using symbols

Learners should understand that the symbols they are using are abstract representations and should develop greater flexibility with the application and manipulation of an increasing range of symbols, understanding the conventions of the symbols they are using. The introduction and application of a new concept will involve developing an understanding of how symbols or expressions are abstract representations that succinctly describe a range of situations, thus contributing to a growing understanding of the nature of Mathematics. The introduction of new symbols will add to the breadth of knowledge and the communication with symbols will contribute to refinement and growing sophistication in the use and application of skills.

Fluency

As learners experience, understand and effectively apply increasingly complex concepts and relationships, fluency in remembering facts, relationships and techniques should grow, meaning that facts, relationships and techniques learned previously should become firmly established, memorable and usable. Development of fluency and accuracy reflects the refinement and a growing sophistication in the use and application of skills.

Logical reasoning

As learners experience increasingly complex concepts, they should also develop an understanding of the relationships between and within these concepts. They should apply logical reasoning about these relationships and be able to justify and prove them. Justifications and *proof* should become increasingly abstract, moving from verbal explanations, visual or concrete representations to abstract representations involving symbols and conventions.

Refinement and growing sophistication in the use and application of skills will be demonstrated through the application of increasingly sophisticated logical reasoning. The development of an understanding of relationships between mathematical concepts and the development of justifications and proofs, leads to a growing understanding of the nature of Mathematics and helps learners make connections and transfer learning into new contexts. The development of justifications and proof help support the increasing effectiveness of learners.

Strategic competence

Learners should become increasingly independent in recognising and applying the underlying mathematical structures and ideas within a problem, in order to develop strategies to be able to solve them.

Recognising mathematical structure within a problem and formulating problems mathematically in order to be able to solve them relies on an understanding of the ideas and disciplines within areas of learning and experience alongside a depth of knowledge. It also supports making connections and transferring learning into new contexts and developing increasing effectiveness as a learner. The recognition of the power of Mathematics in enabling the representation of situations should lead to a growing appreciation of the usefulness of Mathematics.

Aims

Our Mathematics and Numeracy curriculum provision addresses fundamental aspects of human communication. It aims to support learning across the whole curriculum and to enable our learners to gain knowledge and skills in Mathematics and Numeracy. We adopt a holistic approach so that all our children show progression, are confident and competent learners. Our aim is that by the end of Year 6, most of our learners will be able:

- to use the number system to compare and describe quantities within Mathematics using appropriate notation, symbols and units of measurement.
- to transfer mathematical skills to a variety of contexts and everyday situations.
- to use the four basic arithmetic operations and acquire an understanding of the relationship between them to develop children's computational fluency.
- to read and write numbers to 1 million and numbers to 3 decimal places.
- to use mental strategies to recall multiplication tables up to 10 x 10 and use to solve division problems and multiply numbers and decimals by a multiple of 10, e.g. 15 x 30, 1.4cm x 20.
- to calculate percentages of quantities.
- to understand equivalencies between fractions, decimals and percentages.
- to choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
- to abstract important features and to detect and express mathematical structures of situations in order to solve problems.
- to be able to play with, manipulate, compare, name and classify shapes and structures.
- to calculate the area of squares and rectangles.
- to use grid references to specify location.
- to select and use suitable instruments and standard units of measurement.
- to estimate and visualize size.
- to collect, manipulate and analyse data, allowing representation and generalisation of information.
- to recognise that some conclusions drawn from data may be misleading or uncertain.
- to make predictions of the likelihood of events occurring using ratio as the expression.
- to be able to test hypotheses, draw conclusions and make predictions using the correct mathematical language.
- to calculate the mean, median, range and mode of a set of data.
- to refine informal methods of recording written calculations, moving to formal methods of calculation.
- to select from an increasing range of checking strategies to decide if answers are reasonable.
- to understand the advantages and disadvantages of using bank accounts and be able to calculate profit and loss.
- to make comparisons between prices and understand which is best value for money.

Curriculum Organisation – Mathematics and Numeracy

(See Curriculum Policy)

The school's curriculum follows the statutory requirements of the National Curriculum which identifies three core subjects:

- English
- **Mathematics**
- Science

and eight foundation subjects:

- Welsh Second Language
- Information and Communication Technology (ICT)
- Design and Technology (DT)
- History
- Geography
- Art and Design
- Music
- Physical Education (PE)
- RE

Literacy, Numeracy and Digital Competency are central to the curriculum and are planned, taught, monitored and assessed through all areas of learning. We value the Curriculum Cymreig and our children are given opportunities across the curriculum to develop and apply their knowledge and understanding of the cultural, economic, environmental, historical and linguistic characteristics of Wales.

At Llangewydd Junior School, Mathematics is primarily taught through daily discrete lessons which take place predominantly during the morning sessions. Numeracy is taught through cross-curricular, topic-based learning that blends the NC subjects. Our thematic approach is shaped by the four purposes, responsive to Pupil Voice and informed by pedagogical principles. Through 'Pupil Voice' exercises, teachers plan with the children aspects of a topic that they would like to explore and this evolves during the course of a topic. This approach invests the children with ownership of their learning, making it more engaging and purposeful for them. Each half term, topics with a specific AoLE bias are chosen and a balance between the AoLEs is achieved throughout the academic year although Language, Literacy and Communication informs **all** our topics:

Autumn Term	Humanities Topic (History bias)
Spring Term 1	Science and Technology driven topic
Spring Term 2	Health and Well-being driven topic
Summer Term 1	Expressive Arts driven topic
Summer Term 2	Humanities Topic (Geography bias)
Numeracy is taught throughout all our topics.	

Each topic is launched with a 'Super Start' - immersion activities or experiences to engage the children's interest and enthusiasm for their anticipated learning. Similarly, each topic culminates with a 'Fabulous Finish' event to celebrate or showcase the learning that has taken place with parents, governors and other stakeholders.

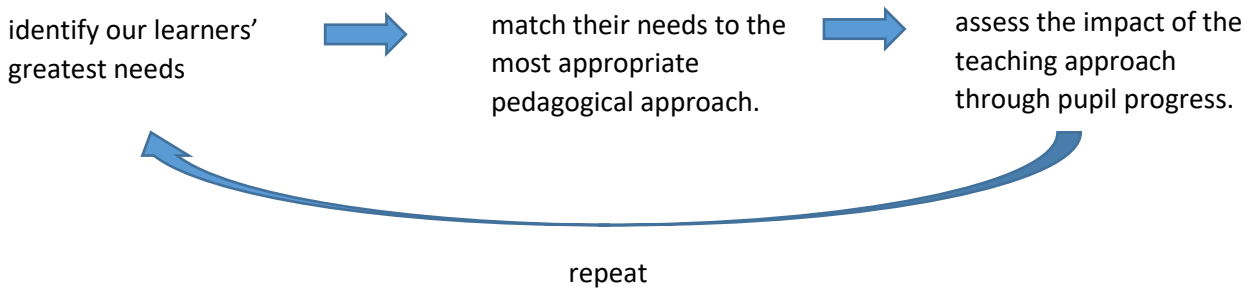
- Literacy, Numeracy and digital competency skills are taught throughout **all** our topics.

We implement a fluid, flexible timetable structure where sequential lessons build cumulatively and activities may be sustained over a series of lessons in order to secure quality outcomes (See Appendix 1).

Teaching Approaches

(See Teaching and Learning Policy)

In shaping our Mathematics and Numeracy curriculum, we do not place an emphasis on any particular teaching approach, understanding that decisions about teaching and learning are very context and purpose specific, and are best taken by our teachers themselves. Teaching and classroom support staff use different teaching styles such as direct instruction, inquiry-based learning and collaborative learning to suit the ability and learning styles of our learners in a wide variety of teaching and learning contexts in Mathematics and Numeracy. We:



Within our Mathematics and Numeracy provision, our teaching approaches are informed by pedagogical principles that we view as having integrity depending on the learners and their specific contexts. These include:

- creating authentic contexts for learning.
- encouraging learners to take responsibility for their own learning.
- supporting social and emotional development and positive relationships.
- encouraging collaboration.
- promoting sustained pupil effort to reach high but achievable targets.
- employing a broad repertoire of teaching approaches.
- promoting problem solving, creative and critical thinking.
- building on previous knowledge and experience to engage interest.
- focusing on the four purposes.
- using Assessment for Learning to accelerate progress.
- making connections within and across Areas of Learning and Experience.
- reinforcing cross-curricular responsibilities in literacy, numeracy and digital competence.

It may be appropriate to implement the teaching and learning of Mathematics and Numeracy as:

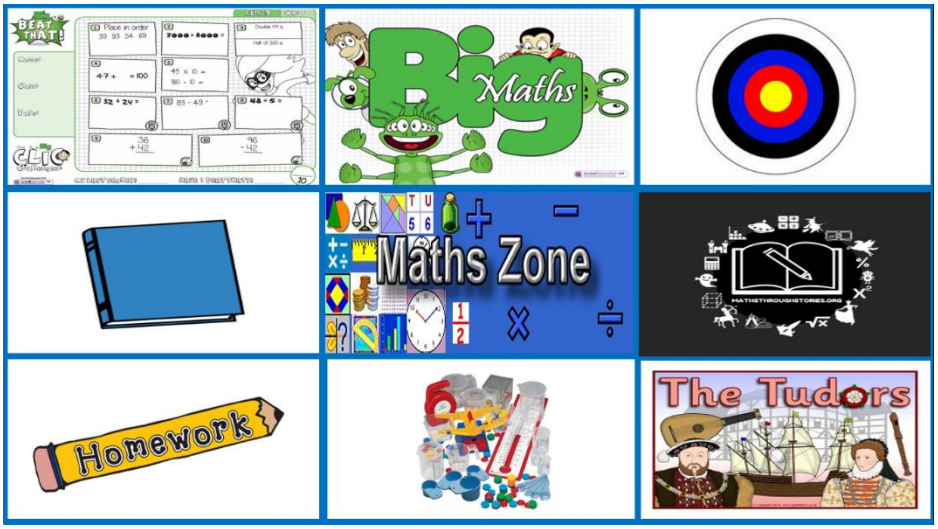
- a whole class – whole class teaching and learning is differentiated appropriately.
- in groups
- with individual learners.

Classroom support staff are used effectively throughout the school to provide additional support for groups of learners and individuals who have specific learning difficulties, weaknesses or barriers to learning. They also work with focused groups to help challenge and extend our more able learners. Our support staff provide additional support for groups or individuals, targeting specific Big Maths learning gaps that have been identified during the learners' online weekly CLIC/SAFE assessments.

At our school, a balance and variety of approaches to teaching Mathematics and Numeracy are used.

"So, what should Mathematics look like at Llangewydd? What should be going on in and outside the classroom?"

We have decided upon 9 elements that we believe should be evident during an average working week, which we call our 'Numeracy's Nine'.



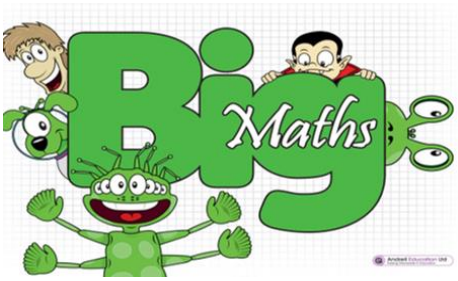
These 9 elements are:

- A Mathematics lesson every day
- Daily CLIC/SAFE sessions
- Maths Targets displayed in the classroom
- Time given to practice and work towards achieving their maths targets
- Maths Zone
- Maths homework
- Outdoor/practical maths and Logical Reasoning sessions
- Planned Numeracy lessons across the curriculum
- Maths through storybooks

Daily Mathematics Lesson

An hour's maths lesson every day, usually taking place in the morning between 9:30-10:30am. It should comprise of two parts;

1. A CLIC session
2. The delivery of exciting, well planned lessons. Using the Big Maths planning format (copy of lesson plan- see Appendix 1). These lessons follow the guidelines set out in our Big Maths overviews. Each year group has an overview explaining what needs to be taught in specific terms. Highlighted on these sheets are topics that need to be prioritised so that topics can revisit numeracy skills as opposed to introducing new numeracy skills (copy of overview - see Appendix 6).



3. Lesson objectives should focus on plugging learning gaps identified using the Big Maths online resource.
4. Resources required to facilitate lessons should not be limited to Big Maths resources. Abacus, Heinemann, Collins, online interactive resources and teacher-produced resources etc. can and should be used.
5. CLIC/SAFE weekly assessments/practice sessions should be used to identify and plug learning gaps.

A CLIC/SAFE session

C.. Counting

L.. Learn Its

I.. Its Nothing New

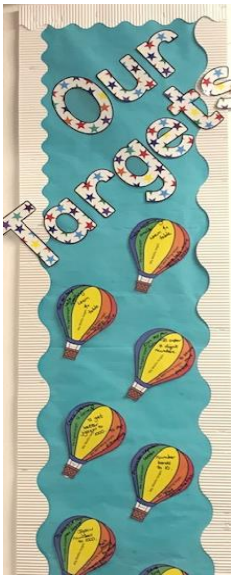
C.. Calculations

A CLIC session will take place at the start of every maths session. This session can last from 5 minutes to 20 minutes. An assessment of CLIC/SAFE should take place once a fortnight using the other week to revise/revisit any misconceptions/problem areas.

The booklet 'Big Maths online – A step by step guide for using CLIC scores to inform planning' (see Appendix 5) explains how CLIC informs our planning process. This booklet focuses on:

- Tracking progress (inc. Attainment doughnuts)
- Interpreting CLIC/SAFE scores
- Explaining BMBT levels
- Manually Promoting
- Learning Gaps

Maths Targets displayed in the classroom



Maths targets are displayed clearly in everyone's classrooms. Most children should be able to talk about their target when asked. ALN or BEL learners might not be able to do so but should know exactly where their target is and be able to point to it on the wall.

All targets should be current. Examples of suitable Maths targets include:

- To learn my 4x table
- To improve my understanding of jigsaw numbers to 1000
- To use my knowledge of partitioning to now partition 4 digit numbers

Time given to practise and work towards achieving their maths targets

Maths targets are written in our 'blue books' and children are able to access them easily during the day. If a child has finished their work, they may be directed to work independently on their targets in their blue book.

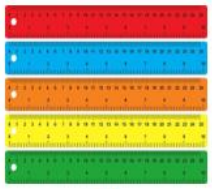
Maths activities in our blue books may include;

- Photocopies of CLIC/SAFE assessments to practise
- Repeat/Revisit/Real-life worksheets
- Times tables practice
- Number formation practice
- Sums/problems (written by teacher) to solve.

All classes have their own Maths Zone

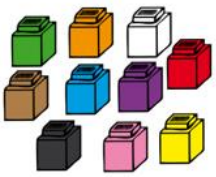
Maths Zones are for continuous provision as well as a tool for Mathematics lessons and numeracy across the curriculum lessons. Resources in our maths zones include;


calculators


rulers

times-table flash cards


100 squares


unifix cubes


money


CLIC/SAFE sheets


clocks

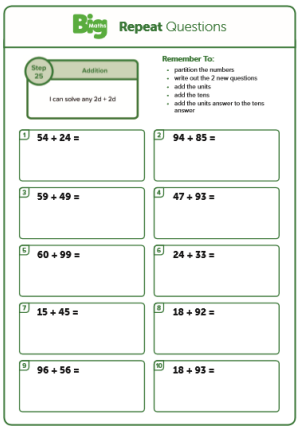

Repeat/Revisit worksheets

As well as these resources, all classes should have access to Maths story books. These books can be used independently or as part as our 'Maths through storybooks' teaching approach. (see page 13) These books encourage the language of Numeracy and help put maths into every day, real life authentic contexts.

Maths Homework/Blended Learning

We believe that Maths homework should not be onerous. It should not be another piece of work to mark and assess. It should be an activity to engage parents alongside their child; an activity that shows parents which areas their child may be struggling with; an activity that helps parents to understand what their child is currently learning at school. Homework consists of:

- one homework task every week. All homework tasks are relevant to and meaningful in the context of the current topic. The nature of these tasks will vary e.g. inquiry-based research, problem-solving, applying literacy, Numeracy or other skills taught, investigations, practical tasks such as model-making.
- practice of specific levelled CLIC/SAFE assessments.
- practising of specific 'Learn Its' multiplication tables.
- another Numeracy activity we use as homework is the Repeat, Revisit and Real-Maths worksheets. Again this allows children to revise their classwork and gives parents the opportunity to see what their child is currently working on.


Repeat Questions

Remember To:
- partition the numbers
- write out the 2 new questions
- add the units
- add the tens
- add the units answer to the tens answer

Addition
I can solve any 2d + 2d

1) 54 + 24 =
2) 94 + 85 =
3) 59 + 49 =
4) 47 + 93 =
5) 60 + 99 =
6) 24 + 33 =
7) 15 + 45 =
8) 18 + 92 =
9) 96 + 56 =
10) 18 + 93 =


Real Life Maths Questions

Addition
I can solve any 2d + 2d

Remember to:
- partition the numbers
- write out the 2 new questions
- add the ones (units)
- add the tens
- add the units answer to the tens answer

1) Pom is 56cm tall. Pim is 26cm tall. How tall are they together?
2) Mutiy went to the shop and bought toys for £27 and stationery for £15. How much did it cost altogether?
3) Pim made a pile of 77 cookies. He put 59 more cookies in the pile. How many are in the pile now?
4) Pim has 45ml of Coca Cola in a jug. He adds 47ml more. How much liquid is in the jug?
5) What is 92 add 67?

Outdoor/practical maths sessions and Logical Reasoning.

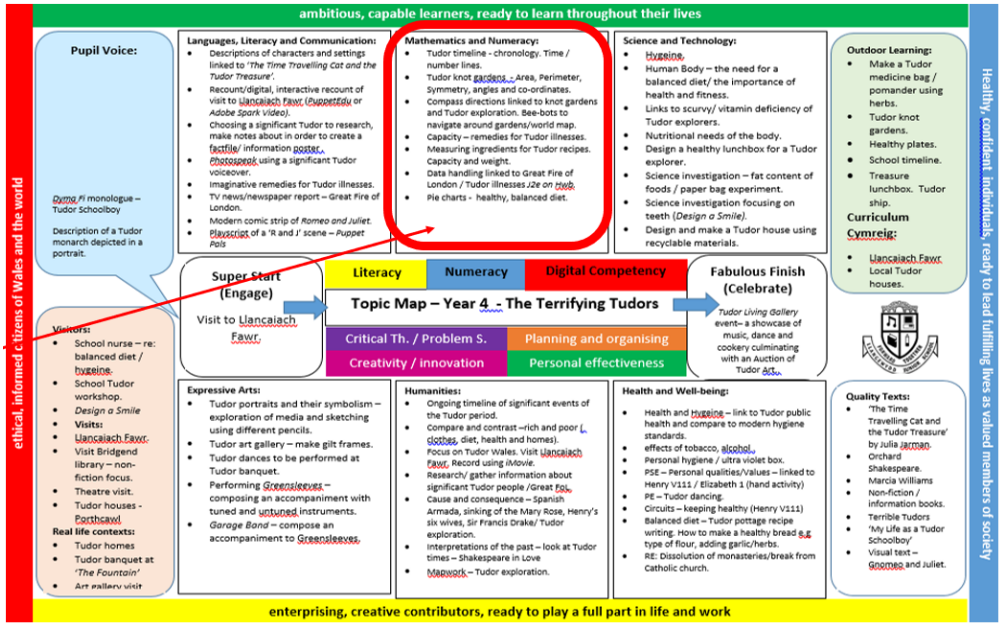
Our school acknowledges that Mathematics should not just be sums in books. It should be group work, whiteboard work, practical work and, if possible, it should not be confined to the classroom. At our school we have a kitchen, an eco-classroom, two halls and vast amounts of outdoor space which we take into consideration when planning our lessons.

At Llangewydd we also recognise the importance of Logical Reasoning. We understand that it is the key to children's understanding of mathematical relationships and concepts. Logical reasoning sessions at Llangewydd enable children to develop an understanding of the nature of mathematics, to make connections and to transfer their learning into different areas of the curriculum. This lesson may be a discrete logical reasoning lesson, a logical reasoning lesson based on the week's maths topic or a logical reasoning lesson related to the termly topic. There are a wide range of resources that can be used, for example, Badger Maths problem solving and online HWB resources.

Planned Numeracy lessons across the curriculum

During our medium term planning meetings, our teachers work closely with the Assistant Headteacher to ensure that Numeracy across the curriculum is carefully planned throughout every half term topic.

Here you can see the Maths and Numeracy elements to be revisited through our Tudors topic.



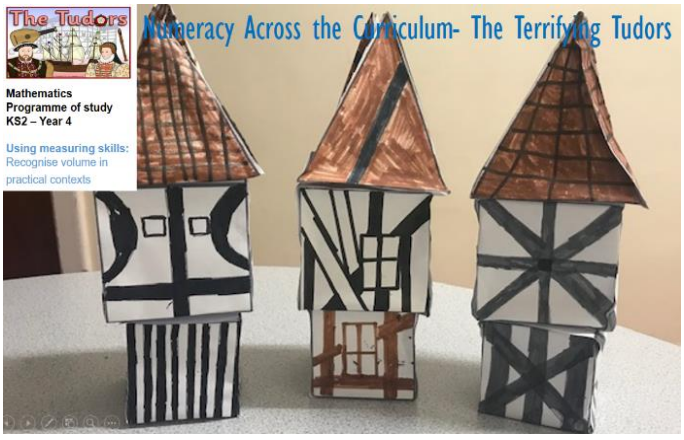
Below is a copy of a Year 4 Term 1 overview. Our teachers carefully highlight the skills that need prioritising so that they can be reinforced, applied and extended within the thematic planning. The Mathematics skills are taught discretely during maths lessons and are then reinforced/revisited during future topic lessons.

Year 4 Term 1 **Outer Numeracy** **Planning Overview**

S	A	F	E
Shape	**Amounts**	**Fractions**	**Explaining Data**
Explore and Draw 20. I Can find symmetry when shapes are in different orientations 2D Shapes 21. I know 'The Triangle Family'	Amounts of Distance 19. I can calculate to find the perimeter 20. I can find the perimeter in a variety of 2D shapes 21. I know my kilometre Learn It: 1km = 1000m 22. I can convert kilometres to metres Amounts of Mass 15. I can measure and record mass to the nearest 5kg 16. I can convert kilograms to grams Amounts of Money 15. I can use decimal notation for money Amounts of Space 15. I can understand that the area is the amount of space inside a 2D shape and I can count the squares to find it 16. I can find the area of different shapes by counting squares 17. I can compare the areas of different shapes by accurately counting squares and part squares Amounts of Time 23. I can calculate the number of days 24. I can convert periods of time Amounts of Time: Telling the Time 16. I can convert time from 24-hour clock to analogue Amounts of Turn 15. I can compare, order and sort angles	Fractions: of a whole 16. I can use equivalent fractions to find any simple fraction Fractions: It's Nothing New 5. I can add and subtract fractions with the same denominator (beyond 1) Fractions: Calculations 4. I can use my calculation skills to add/subtract fractions that make a whole number	Children should know these... Diagrams and Tables 20. I can read timetables Bar Charts 9. I can compare subsets and explain what this tells us Line Graphs 2. I can track my own Big Maths Beat That! Scores with a line graph

highlighted text- These skills will need to be taught during maths lessons in the morning so the thematic planning for Autumn Term can go ahead.

Examples of numeracy across the curriculum activities and where they fit into the programme of study for KS2.



Maths Through Storybooks

One of our teaching approaches for teaching Mathematics and Numeracy across the curriculum is centred around the use of storybooks. In Llangewydd Junior School we believe this approach blends literacy and numeracy seamlessly and complements our holistic New Curriculum approach. We are constantly working hard to discover new and worthwhile methods for teaching Mathematics and we believe 'Maths through Storybooks' teaches and reinforces mathematical concepts while using a unique and creative approach.

At our school we have resources/stories available for our teachers to use with their classes when introducing and consolidating mathematics topics e.g. The HSBC Fairy Tales resources written by the award winning children's author Emma Dodd help children to understand money and build financial confidence which is an essential part of their education. At Llangewydd we acknowledge that financial behaviours begin to develop from around the age of 7. By using our 'Maths through Storybooks' resources our teachers give our children a head start on building financial sense that will last them a lifetime.

The book twists the traditional fairy tales of Cinderella, Sleeping Beauty and Rapunzel so that the princesses no longer rely on Prince Charming to save them. Instead, it's their financial acumen that gets them through, setting a positive example for both young girls and boys about the potential of women and girls to achieve their financial goals themselves.

Engagement with parents via Twitter

At our school, we also believe that there is nothing better to boost parents' perceptions of maths than sharing photos of their children enjoying themselves and having fun whilst learning new mathematical concepts. We use Twitter as a social media platform to interact with and engage our parents in their child's learning.

Pupil Voice and how it co-constructs our Mathematics and Numeracy curriculum

Our curriculum is co-constructed and shaped by Pupil Voice processes. Our Pupil Voice Committees have been created to allow all our learners to have a voice that is heard and acted upon. Children from all our classes are represented in our Pupil Voice Committees and have responsibility for discussing and making decisions about different aspects of school life including our Mathematics and Numeracy curriculum. Our eight Pupil Voice Committees are:

Pupil Voice Committee

(consisting of the Head/Deputy Head Boy and Girl and a representative from each of the Pupil Voice committees below. These give feedback about the outcomes of the other committees. This committee has overarching responsibilities.)

Teaching and Learning Committee Criw Cymraeg Digital Leaders
Playground Wellbeing Committee Outdoor Sports Committee
Eco Committee Rights Ambassadors

Before every topic, through designated 'Pupil Voice' time, teachers plan with the children aspects of a topic that they would like to explore and this evolves during the course of a topic. This approach invests the children with ownership of their learning, making it more engaging and purposeful for them.

We encourage our children to take responsibility for their own learning in Mathematics and Numeracy and to assume ownership of the learning process as much as possible through:

- creating opportunities to initiate and influence teaching and learning in Mathematics and Numeracy e.g. through class planning sessions.
- creating opportunities for learners to make personal choices and to follow their interests in Mathematics and Numeracy activities.
- our Assessment for Learning (AfL) processes.
- ensuring that status is given to 'thinking time'.
- sharing and negotiating learning objectives (our WALTs) and our 'Q' – what is needed for quality outcomes.
- placing an emphasis on modelling.
- involving our learners in setting their own targets in Numeracy.
- celebrating children's positive attitudes and efforts.
- providing high quality feedback to children regarding their learning in Mathematics and Numeracy.
- encouraging and facilitating self- and peer-support and assessment in Mathematics and Numeracy.
- recognising and celebrating children's achievements in Mathematics and Numeracy.

Planning

Planning is carried out in three phases (long-term, medium-term and short-term). As our preparations for Curriculum for Wales 2022 progress, we are currently in a period of transition where our teaching staff are encouraged to explore new ideas and approaches through a collaborative process in order to inform planning for the future. Our current planning processes are as follows:

- **Medium-Term Planning.**

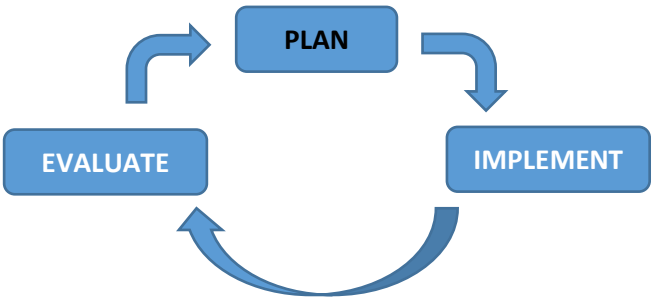
Prior to each half term, year group teams meet with the Assistant Headteacher, collaborating on medium term topic plans that are driven by Pupil Voice. Each half term, medium term planning with a specific AoLE bias is undertaken although an emphasis is placed on blending AoLEs (only when links have integrity) within the context of topics. Our medium-term planning ensures an appropriate balance of learning across the AoLEs is achieved throughout the academic year.

- **Long-Term Planning.**

Once a year's cycle of medium term planning has been completed and mapped in terms of Curriculum for Wales 2022 coverage and progression of skills, AoLE teams will develop long-term plans that map out opportunities for developing learners' skills/covering curriculum content within their respective AoLEs in each year group throughout the school. It is anticipated that these long term plans will provide an overview of coverage and progression in learning as opposed to being detailed Schemes of Work and that they will be adapted regularly to acknowledge a fluidity in medium term topic plans resulting from a responsiveness to Pupil Voice and real life local, national and global events.

- **Short-Term Planning.**

Teachers plan and organise their teaching based on the termly overviews given to them by the Numeracy Co-ordinator. The overviews are based on the Big Maths scheme of work and the planning is completed online using the Big Maths website on a weekly basis. They display the areas of learning that need to be taught that term within the CLIC and SAFE areas. These overviews also highlight mathematical skills that need to be prioritised and taught before those skills can be revisited, reinforced and extended during topic-based Numeracy lessons. Weekly, short term plans are completed by individual teachers (or collaboratively in year group teams). These plans are specific to individual classes and are always informed by an evaluation of pupil progress in learning. Teachers determine particular activities and the nature of those activities to support and challenge the specific needs of the pupils in their classes within the context of themes jointly shared by classes. Teaching plans are refined and adapted on a day-to-day basis according to teachers' evaluations of pupils' learning within their classes:



The level of detail in teachers' short term planning varies according to the preferences of individual teachers although all lesson plans include;

- The learning objective or **WALT** (We are learning to…)
- An outline of lesson structure – CLIC session, main activity and plenary
- Interactive links to online **resources** that need to be accessed during the lesson; PowerPoints, Repeat worksheets, Revisit worksheets, Real-Life Maths worksheets, Prove It cards etc.
- Notes about **differentiation** for specific groups of learners and/or individual learners, learners who may be on different steps of the progress drive.
- Key teaching points – 'how' learners will achieve outcomes – **Quality Work** (our 'Q'). What teachers can do to plug the 'learning gaps' that have been identified during the weekly CLIC and SAFE online assessments.

Assessment and Feedback in Mathematics and Numeracy

(See Assessment and Feedback Policy)

Formative Assessment - Assessment for Learning

At Llangewydd Junior School, we recognise the status of Assessment for Learning as an integral and omnipresent part of our teaching and learning in Mathematics and Numeracy. We are committed to providing high-quality feedback that comes from good formative assessment – assessment for the purpose of informing the next steps in teaching and learning by identifying whether our children are progressing as intended. We aim to secure effective formative assessment in Mathematics and Numeracy at our school through:

- Questioning
- Feedback
- Self-and Peer Assessment
- Formative use of summative assessments.

(Appendix 3 – Pupil Entitlement – Assessment for Learning)

Summative Assessment – Assessment of Learning

Our school uses summative assessments as an important part of our overall assessment arrangements but recognises the limitations of these in covering the full range of desired learning. We use school summative assessments and external, standardised summative assessments in combination with teacher assessment to provide assessment information about attainment in Mathematics and Numeracy.

Summative Assessments in Mathematics and Numeracy at our School

Statutory Nationally Standardised Summative Assessments:
Online National Numeracy Personalised Assessment (to be completed twice by Year 3 - once in September as a baseline assessment and once later in the year. Years 4, 5 and 6 complete the Personalised Assessments once later in the year.)

Non-statutory Tests:
Learn Its Challenges – focus on learning and recalling times tables, basic calculations and number bonds.
CLIC Challenges – focus on core Numeracy skills.
SAFE Challenges – focus on outer Numeracy skills: shape, amounts, fractions and explaining data.
These online assessments are completed by learners once a week.

These assessments are designed to track progress and attainment for individual learners, groups and/or classes in core and outer Numeracy skills. These assessments identify learning gaps which inform Maths planning.

LRC/CARE base assessments:
B Squared – half termly assessments in Maths.

End of Year Teacher Assessments

As part of our *Target Setting* process, in October, teachers make end-of-year projections for learners' attainment in Mathematics. In July, teachers assess learners' actual attainments in these NC subject using a range of pieces of work and responses. These actual attainment levels are recorded using the SIMS Assessment Marksheet.

End of Key Stage Teacher Assessments

In June, Year 6 teachers assess learners' actual attainments in Mathematics using a range of pieces of work and responses as evidence. These include a level for each attainment target and an overall level for each subject. These actual attainment levels are submitted to WG and are recorded using the SIMS Assessment Marksheet.

School-based standardisation and moderation

Each term summative assessments are undertaken in the context of internal standardisation and moderation meetings (whole staff meetings and year group triads). Throughout the year, our teachers apply the concept of best-fit judgements to learners' work in relation to the National Curriculum level descriptions in Mathematics. This process allows our teachers, within each subject, to confirm a shared understanding of National Curriculum standards, based on an agreed selection of learners' work and supporting teacher commentaries that show links to the level descriptions. Teachers moderate end of key stage assessments and Year 6 teachers apply the outcomes from this internal moderation prior to finalising all learners' end of key stage attainment.

Key Stages 2 and 3 Cluster Moderation

Summative assessments are undertaken in the context of cluster group meetings for Key Stages 2 and 3. These take place in May and include robust arrangements for moderation of examples of Year 6 and Year 9 learner portfolios of work in Mathematics. This process allows cluster teachers, within each subject, to confirm a shared understanding of National Curriculum standards based on an agreed selection of learners' work and supporting teacher commentaries that show links to the level descriptions. Our teacher representatives share the outcomes of the cluster group meetings with other staff. Agreed decisions and outcomes from cluster group meetings are implemented by all relevant staff within our own school prior to end of key stage teacher assessment.

Target Setting

At our school we make full use of all assessment information in setting targets. In October, each teacher sets targets for the learners in their classes, giving end of year National Curriculum level projections for their attainment in Mathematics. Assessment information provides the teachers with the information necessary to ensure that the targets set are challenging yet realistic, taking into account the previous attainment of our learners. In July, these forecasts are reviewed and learners' actual attainment is recorded on our SIMS Assessment Marksheet.

In addition, our learners are set individual targets in Numeracy based on their current academic performance. These are discussed, negotiated and agreed with our learners in order to provide a motivation for improving their work. These targets are displayed in the classroom and are regularly reviewed and updated with new personalised targets being set.

Feedback

(See Assessment and Feedback Policy)

Llangewydd Junior School is committed to providing effective feedback to our learners in Mathematics and Numeracy. By giving focused and timely feedback to our learners through marking and reviewing work, we activate a constructive, formative dialogue with a view to ensuring that all our learners make as much progress as possible. Our feedback focuses on children's successes and areas for improvement in relation to our learning objectives and 'Q' criteria. It promotes a self-evaluative culture within our school, helping our children to become reflective learners and to close the gap between their current and aspirational performance.

Feedback Strategies

We give feedback to our children in a number of ways during the teaching and learning of Mathematics and Numeracy at Llangewydd. Teachers will choose the most appropriate feedback strategy for specific learning contexts and pieces of work. We aim to give prompt feedback, acknowledging that children make the greatest progress in their learning when they have immediate feedback to their work and have the opportunity to respond in the same lesson or as soon as is reasonably practicable. We do this through:

- **Teachers' well considered, real time interventions.**
- **'Light Touch' marking of work.**
- **In-depth, Quality Feedback and Feed-forward Marking**
- **Self- and Peer- Assessment**

(See Assessment and Feedback Policy)

Our Expectations for Marking in Mathematics and Numeracy

(See Assessment and Feedback Policy)

- Our 'Marking Code' is followed in all cases (See Appendix).
- All learners' work including homework/blended learning and any work assessed by the learners themselves is to be at least 'light' marked by a teacher or support staff. No work should be unmarked.
- There should be regular evidence of in-depth, quality Feedback and Feed-forward marking. In-depth marking in Mathematics and Numeracy would involve a teacher modelling a correct method in a child's maths book so that the child can see where they have gone wrong. This method should be clearly annotated and further examples of similar problems should be included in the feedback for the child to work through once their book is returned to them.
- Frequently, word problems and questions should be included in the Mathematics and Numeracy feedback to learners to generate an interactive line of communication between the teacher and the learner. The learner is encouraged to solve these problems/questions and to write the answer to these challenges in their maths book for the teacher to monitor.
- An appropriate amount of time is allocated for learners to respond to teacher comments and Feed-forward tasks.
- Teachers or classroom support staff will indicate whether work has been completed with support and the nature of that support e.g. '*Small group with teacher support*'.
- Correct number formation feedback, correct use of units of measure feedback and correct use of operational signs (+/-) feedback will be given attention appropriate to the stage of development of individual learners and strategies used to support their development. Periodically, as work develops and when work is completed, however, our learners are encouraged to proof-read their maths work to consider such aspects before editing it accordingly.

Our Teaching and Learning Environment

At Llangewydd, we perpetually strive to improve our teaching and learning environments, believing that a carefully planned environment sets the climate for effective teaching and learning. In recent years, we have created zones both within and adjoining our classrooms to promote independent use of resources and high-quality work by the children. Our classrooms are organised to enhance and facilitate effective teaching and learning in Mathematics and Numeracy. They have:

- a Numeracy area – 'Maths Zone'- well-stocked with purposeful equipment to aid learning; 100 squares, rulers, clocks, calculators, protractors, number lines, unifix cubes, times tables flash cards, Repeat/Revisit worksheets, CLIC/SAFE practice worksheets.
- a 'Q Quarter' – where the children are encouraged to check their work for quality e.g. accurate answers, methods are correctly followed, all steps are listed, workings out are carefully calculated, numbers are written correctly, times tables are correctly remembered.
- classroom furniture that can be easily moved to facilitate paired work, group work, class work & individual work.
- a variety of papers (lined, plain, squared, graph, isometric).
- stationery items e.g. rulers, erasers, sharpeners, pens, pencils, crayons, scissors, glue sticks, protractors.
- IT resources – iPads, Lenovo tablets, access to Chromebooks, voice recorders.
- Differentiated resources to serve the Mathematics and Numeracy curriculum e.g. number lines with different scales, number flashcards, 100 squares.

Our classroom displays reflect the topics being studied by the children. We believe that our learners are entitled to learn in an inclusive classroom/learning environment where everyone's quality Mathematics and Numeracy work is celebrated in attractive displays. Our classroom displays:

- support and challenge the children in their learning e.g. through use of questions and prompts that encourage them to interact with display content.
- include a 'Targets' display to remind the children of targets they are working on in Numeracy (as well as literacy and well-being).
- include a 'Working Wall' that reflects current learning.

We have also developed teaching and learning areas beyond the classroom that support our Mathematics and Numeracy provision including our 'Reading Rainforest' school library, two computer suites, pop-up green screen studios, an outdoor classroom, a kitchen for measuring and cooking, two indoor halls for carrying out shape, space and measure based activities and a variety of outdoor learning areas. These are used effectively to promote independent learning in Mathematics and Numeracy.

Differentiation

All learners have equal access to our Mathematics and Numeracy curriculum. It is differentiated appropriately so that all learners are challenged and supported in their learning in order to achieve maximum educational and personal benefit. Our methods of differentiation include differentiation:

- by task.
- by grouping.
- by resource.
- by support.
- by outcome.
- by questioning.
- by assessment and feedback.
- by teaching style.

Additional Learning Needs

If a child has an additional learning need, our school does all it can to meet these individual needs. At present we comply with the requirements set out in the SEN Code of Practice in providing for pupils with additional learning needs as we prepare for the new ALN Code 2021. A range of assessment strategies are utilised to help identify particular difficulties and external agencies can be involved in order to provide more specialist assessments and support.

The school provides a 'child-friendly' Individual Educational Plan (IEP) for each pupil on the Additional Learning Needs register. This sets out the nature of any needs, and outlines how the school and parents should aim to address them. It also sets out SMART targets for improvement so that we can review and monitor the progress of each pupil at regular intervals. This document is shared, discussed and reviewed with parents and outside agencies (when required) biannually. It is a working document and targets can change and be revisited when deemed appropriate.

Our CARE base and LRC children will often have more reviews due to the nature of their need and if they have a statement. We have an outside line directly to the bases and parents can contact staff whenever they need to.

Some of our learners need more support in Mathematics and Numeracy than that provided by differentiated tasks in the normal classroom context. Individual programmes of work are devised and interventions put in place to meet the needs of these children. These include:

- LLC support / one to one support with teacher/classroom support staff i.e. orange book work – to meet specific needs. Types of activities include sequencing, counting, number formation, reciting tables, focusing on learning gaps identified using Big Maths data.

More able children are taught with their own class and their learning extended through differentiated group work, extra challenges and opportunities for independent learning. Where appropriate, special arrangements are made for an exceptionally gifted child e.g. an individualised programme with more challenging learning, attending MAT masterclasses.

Equal Opportunities

All learners regardless of ability, gender, religion, social background, disability and race will have access to our Mathematics and Numeracy curriculum provision. All activities are planned in such a way as to encourage full and active participation by all learners so that they can develop their skills, knowledge, confidence and enjoyment of learning. Every child is valued and perceived as unique. We aim to ensure that our Mathematics and Numeracy curriculum responds to the learning needs of the individual pupil, challenging them to the full extent of their capabilities and providing them with opportunities to demonstrate fully what they know, understand and can do. Our children's well-being is always central to everything we do.

Disability

In accordance with the statutory requirements, our school aims to make the curriculum accessible to all pupils as far as is reasonably practicable. The school has an Accessibility Plan that is available to parents on request.

This policy should be read in conjunction with the following policies:

- Curriculum Policy
- Teaching and Learning Policy
- Assessment and Feedback Policy
- ALN Policy
- AoLE policies
- Literacy across the Curriculum Policy

- Numeracy across the Curriculum Policy
- ICT, DCF &e-safety policies
- MAT Policy

Monitoring and Review

Monitoring

Monitoring of the Mathematics and Numeracy curriculum – planning, coverage and standards of teaching and learning, may be conducted by the Headteacher, Deputy Headteacher, Assistant Headteacher or Mathematics and Numeracy AoLE leader. This is done in several ways including:

- book scrutinies
- monitoring planning
- analysing assessment data
- monitoring targets
- lesson observations
- learning walks
- Listening to Learners
- looking at displays
- informal discussions with staff

Review

As we prepare for implementation of Curriculum for Wales 2022, we are aware of the need to monitor our Mathematics and Numeracy Policy, and to review it regularly so that we can take account of new initiatives and research, Curriculum for Wales guidance, developments in technology and changes to the physical environment of the school. Our Mathematics and Numeracy Policy will be reviewed bi-annually (or sooner as necessary) by the Mathematics and Numeracy AoLE leader, the Assistant Headteacher, the Headteacher and the nominated governor. The necessary recommendations for improvement will be made to the Governors.

Signed by the Chair of Governors on behalf of the Governing Body: ……

Date approved: ……12/10/2021…… (by full Governing Body)

Signed by Headteacher: …… ……..

Appendices

Appendix 1 – Example of Weekly Lesson Planning

Appendix 2 – School Marking and Feedback Code

Appendix 3 – Pupil Entitlement – Assessment for Learning

Appendix 4 – Step by step guide to using BigMaths online

Appendix 5 – Step by step guide to using CLIC scores

Appendix 6 – Example of a Termly Overview

Appendix 1 – Example of Weekly Lesson Planning

My Lesson Plan: Monday 22nd March 2021

Andrell Education

Section	Step	Groups	Resources	Notes
C	Count Along in 4 Ways: Step 5 Tenths / Fifths / Halves / Quarters	• Below Expected Level • On target • Above Expected Level	• Lesson Powerpoint - Counting - Count Along in 4 Ways - Step 5 (Tenths) • Repeat 10 Questions Set 2 Count Along in 4 Ways Step 5 (Tenths)	Count in tenths.
L	Learn Its: Step 15 x: 12x table	• Below Expected Level • On target • Above Expected Level	• Lesson Powerpoint - Learn Its - Step 15	Children learn their 12 x table. This is the last times table that needs to be learnt. The children follow and take part of the presentation.
I	Halving with Pim: Step 4 I know half of 3, 5, 7, 9 as decimals	• Below Expected Level • On target • Above Expected Level	• Repeat 10 Questions Set 1 Halving With Pim Step 4 • Repeat 10 Questions Set 2 Halving With Pim Step 4	Explain during your Its Nothing New Session that they probably are good at halving 2,4,6,8,10 etc. Even numbers. But the are probably unsure when having 3,5,7,9. Tell them that these are harder as they are odd. Tell them that every odd number is 1 bigger than an even number 3 = 2 + 1 5 = 4 + 1 7 = 6 +1 9 = 8 +1 Tell them the easiest way to half odd numbers is to split them into the 2 numbers and half each one; half of 3 = half 2 = 1, then remember that half of 1 = 0.5 Answer = 1.5 half of 15 = half 14, then add .5 = 7.5 Do lots of whiteboard work
F	Fractions of a Whole: Step 15 I can use equivalence to show any simple fraction	• On target • Above Expected Level	• Mini Step 1 - Set 1 (Shade and Write the Equivalent Fraction Sentence Unit) • Mini Step 1 - Set 2 (Shade and Write the Equivalent Fraction Sentence Unit) • Mini Step 2 - Set 1 (Shade and Write the Equivalent Fraction Sentence Non Unit) • Mini Step 2 - Set 2 (Shade and Write the Equivalent Fraction Sentence Non Unit)	Children learn that 2/4 is the same size and be written as one half (1/2) Children learn that they must look carefully at the denominator of the fraction you have to shade see the shape equally divided in this way shade the correct fraction carefully record the equivalent fraction from the pre-divided shap

Appendix 1 – Example of Weekly Lesson Planning

My Lesson Plan: Tuesday 23rd March 2021

Andrell Education

Section	Step	Groups	Resources	Notes
C	Count Along in 4 Ways: Step 5 Tenths / Fifths / Halves / Quarters	• Below Expected Level • On target • Above Expected Level	• Lesson Powerpoint - Counting - Count Along in 4 Ways - Step 5 (Fifths) • Repeat 10 Questions Set 2 Count Along in 4 Ways Step 5 (Fifths)	Count in fifths
L	Learn Its: Step 15 x: 12x table	• Below Expected Level • Above Expected Level • On target	• Lesson Powerpoint - Learn Its - Step 15	Children learn their 12 x table. This is the last times table that needs to be learnt. The children follow and take part of the presentation.
I	INN: Number Bonds to 10: Step 3 I can find the missing piece to 100	• Below Expected Level • On target	• Revisit 10 Questions Set 1 INN Number Bonds to 10 Step 3 • Revisit 10 Questions Set 2 INN Number Bonds to 10 Step 3	Children revisit jigsaw numbers to 100 and 1000. They need to learn that they need to make sure the units column adds to 10 and the other columns (tens/hundreds column) add to 9.
I	INN: Number Bonds to 10: Step 4 I can find the missing piece to 1000	• On target • Above Expected Level	• Revisit 10 Questions Set 1 INN Number Bonds to 10 Step 4 • Revisit 10 Questions Set 2 INN Number Bonds to 10 Step 4	Children revisit jigsaw numbers to 100 and 1000. They need to learn that they need to make sure the units column adds to 10 and the other columns (tens/hundreds column) add to 9.
F	Fractions: Counting: Step 4 I can count in quarters	• Below Expected Level • On target • Above Expected Level	• Lesson Powerpoint - Fractions Counting - Step 4 • Mini Step 1 - Set 1 (Write As an Improper Fraction and a Mixed Number) • Mini Step 1 - Set 2 (Write As an Improper Fraction and a Mixed Number) • Mini Step 2 - Set 1 (Improper Fractions to Whole Numbers) • Mini Step 2 - Set 2 (Improper Fractions to Whole Numbers)	Children learn how to count in quarters initially and learn how to record using mixed fraction and as an improper fraction, example one quarter, two quarters, three quarters, four quarters, five quarters, etc. They will then learn to write 5/4 (5 quarters) = 1 1/4

Appendix 1 – Example of Weekly Lesson Planning

My Lesson Plan: Wednesday 24th March 2021

Andrell Education Ltd

Section	Step	Groups	Resources	Notes
L	Learn Its: Step 15 x: 12x table			Wednesday's lesson will be spent completing online CLIC, Learn it challenges and also completing paper copies of the SAFE challenge. Safe challenge results must be put into BigMaths online ASAP after completing and marking challenges Any spare time children can be shown the Prove it cards/moments to discuss and think

Appendix 1 – Example of Weekly Lesson Planning

My Lesson Plan: Thursday 25th March 2021

Andrell Education

Section	Step	Groups	Resources	Notes
C	Count Along in 4 Ways: Step 5 Tenths / Fifths / Halves / Quarters	• Below Expected Level • On target • Above Expected Level	• Lesson Powerpoint - Counting - Count Along in 4 Ways - Step 5 (Halves) • Repeat 10 Questions Set 2 Count Along in 4 Ways Step 5 (Halves)	Count in halves.
L	Learn Its: Step 15 x: 12x table	• Below Expected Level • On target • Above Expected Level	• Lesson Powerpoint - Learn Its - Step 15	Children learn their 12 x table. This is the last times table that needs to be learnt. The children follow and take part of the presentation.
I	INN: Number Bonds to 10: Step 3 I can find the missing piece to 100	• Below Expected Level • On target	• Revisit 10 Questions Set 1 INN Number Bonds to 10 Step 3 • Revisit 10 Questions Set 2 INN Number Bonds to 10 Step 3	Children revisit jigsaw numbers to 100 and 1000. They need to learn that they need to make sure the units column adds to 10 and the other columns (tens/hundreds column) add to 9.
I	INN: Number Bonds to 10: Step 4 I can find the missing piece to 1000	• On target • Above Expected Level	• Revisit 10 Questions Set 1 INN Number Bonds to 10 Step 4 • Revisit 10 Questions Set 2 INN Number Bonds to 10 Step 4	Children revisit jigsaw numbers to 100 and 1000. They need to learn that they need to make sure the units column adds to 10 and the other columns (tens/hundreds column) add to 9.
F	Fractions: Counting: Step 4 I can count in quarters	• Below Expected Level • On target • Above Expected Level	• Lesson Powerpoint - Fractions Counting - Step 4 • Mini Step 1 - Set 1 (Write As an Improper Fraction and a Mixed Number) • Mini Step 1 - Set 2 (Write As an Improper Fraction and a Mixed Number) • Mini Step 2 - Set 1 (Improper Fractions to Whole Numbers) • Mini Step 2 - Set 2 (Improper Fractions to Whole Numbers)	Children learn how to count in quarters initially and learn how to record using mixed fraction and as an improper fraction, example one quarter, two quarters, three quarters, four quarters, five quarters, etc. They will then learn to write 5/4 (5 quarters) = 1 1/4

Appendix 1 – Example of Weekly Lesson Planning

My Lesson Plan: Friday 26th March 2021

Andrell Education

Section	Step	Groups	Resources	Notes
C	Count Along in 4 Ways: Step 5 Tenths / Fifths / Halves / Quarters	• Below Expected Level • On target • Above Expected Level	• Repeat 10 Questions Set 2 Count Along in 4 Ways Step 5 (Quarters) • Lesson Powerpoint - Counting - Count Along in 4 Ways - Step 5 (Quarters)	Count in quarters
L	Learn Its: Step 15 x: 12x table	• Below Expected Level • On target • Above Expected Level	• Lesson Powerpoint - Learn Its - Step 15	Children learn their 12 x table. This is the last times table that needs to be learnt. The children follow and take part of the presentation.
I	INN: Number Bonds to 10: Step 3 I can find the missing piece to 100	• Below Expected Level • On target	• Revisit 10 Questions Set 1 INN Number Bonds to 10 Step 3 • Revisit 10 Questions Set 2 INN Number Bonds to 10 Step 3	Children revisit jigsaw numbers to 100 and 1000. They need to learn that they need to make sure the units column adds to 10 and the other columns (tens/hundreds column) add to 9.
I	INN: Number Bonds to 10: Step 4 I can find the missing piece to 1000	• On target • Above Expected Level	• Revisit 10 Questions Set 1 INN Number Bonds to 10 Step 4 • Revisit 10 Questions Set 2 INN Number Bonds to 10 Step 4	Children revisit jigsaw numbers to 100 and 1000. They need to learn that they need to make sure the units column adds to 10 and the other columns (tens/hundreds column) add to 9.
F	Fractions: It's Nothing New: Step 4 I can add and subtract fractions with the same denominator (within 1)	• Below Expected Level • On target • Above Expected Level	• Mini Step 1 - Set 1 (Denominators Less Than 10) • Mini Step 1 - Set 2 (Denominators Less Than 10) • Mini Step 2 - Set 1 (Denominators More Than 10) • Mini Step 2 - Set 2 (Denominators More Than 10)	Children learn; check that the denominators are the same check what the thing (fraction) is being added/subtracted use your addition and subtraction Learn Its find the final amount of fifths/sixths/ sevenths etc.

Appendix 2 – School Marking and Feedback Code

Llangewydd Junior School

Our Marking and Feedback Code

We will use the following codes when we mark your work.

They will help you to understand what you have done well and what the next steps in your learning are.

Code	What it means
	celebrates what you have done well.
	suggests how you can improve – your next steps.
✓ ✓	excellent work linked to our 'Q'
✓	correct or good work linked to our 'Q'
X	incorrect
	underlined error - missing capital letter, full stop, comma or other punctuation
*	new paragraph needed here
?	Check that this makes sense.
∧	missing word
mistake mistaik	Spelling The mis-spelt part of a word is underlined and the correct spelling is written above the word.
	indentation needed
V.F.	Your teacher has talked to you about your work.
initials e.g. D.E.	Someone other than your class teacher has marked your work.

Pupil Entitlement – Assessment for Learning

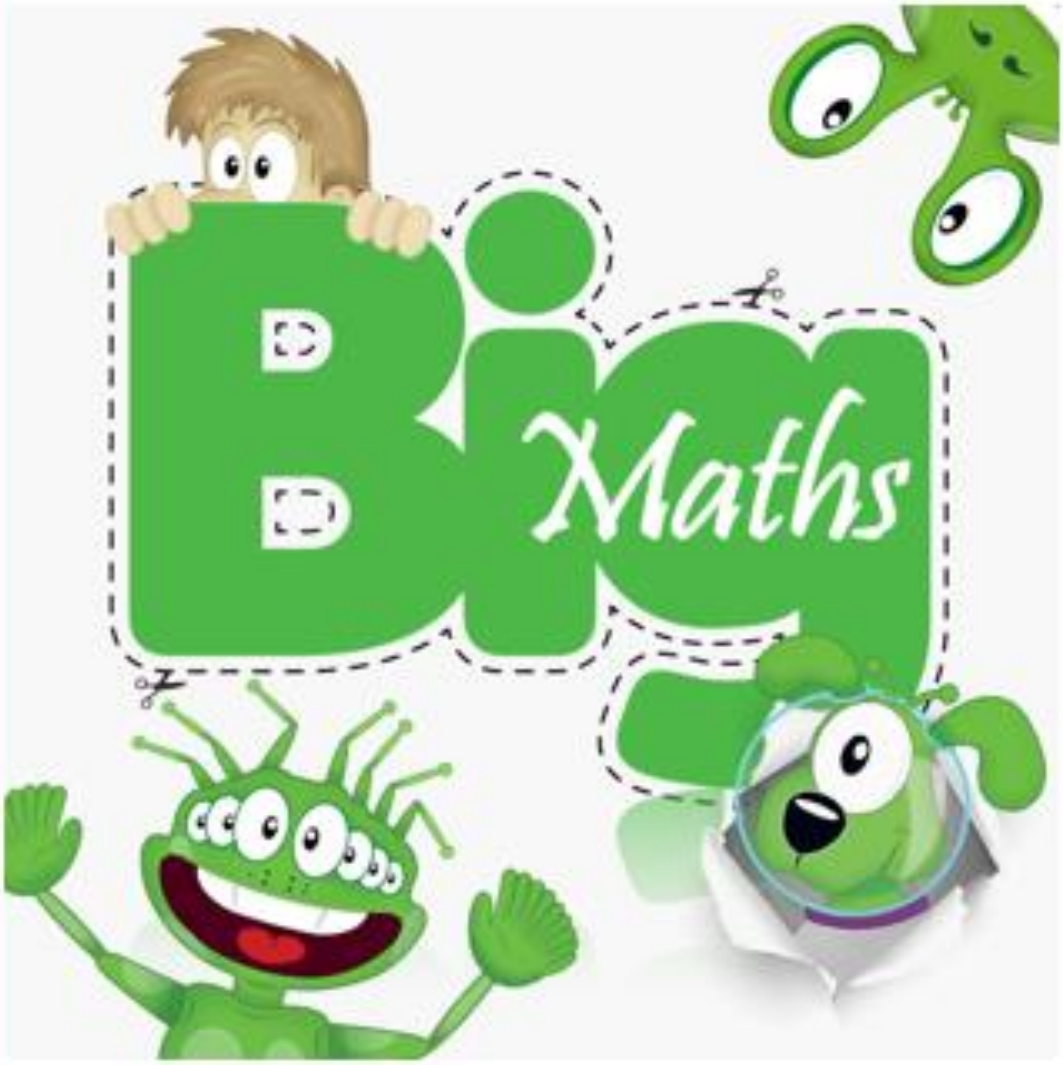
Expectation – I am entitled to…	RAYG Rating			Way Forward
	Aut	Spr	Sum	
Questioning				
be given time to think about questions that I am asked.				
be given time to think about questions that are asked and to discuss my ideas with a partner before a class discussion (Think, Pair, Share).				
be sometimes asked 'closed' questions that require specific answers.				
be asked 'open' questions that require more detailed, carefully thought-out answers.				
be asked a sequence of questions that build on each other and gradually need more careful thought.				
sometimes write down my answers to questions on a mini-whiteboard.				
sometimes be asked to explain my opinions and ideas in more detail.				
be comfortable sharing my ideas and am not afraid of answering some questions 'wrongly'. I understand that it is okay to make mistakes and that we can all learn from our own and others' mistakes.				
Feedback				
discuss with my teacher where I am in my learning, where I want to be and how I am going to get there.				
have our WALT displayed, shared and discussed.				
have our 'Q' displayed, shared and discussed so that I know what I need to do to produce a quality piece of work.				
sometimes look at examples/models to think about 'Q' – what makes it or could make it a 'quality' piece of work.				
be set targets that are SMART – small, manageable and realistic.				
teacher comments about my work – praising what I have done well (linked to our 'Q') and setting me SMART targets as part of my 'Next Steps'.				

Pupil Entitlement – Assessment for Learning (cont'd)

Expectation – I am entitled to…	RAYG Rating			Way Forward
	Aut	Spr	Sum	
respond to SMART targets in my books by signing, responding with a comment or completing a task set by my teacher.				
some teacher comments with 'Two Stars and a Next Step' – praising what I have done well (linked to our 'Q') and setting me a SMART target to help me improve.				
talk to my teacher about what I am doing well and how I can improve e.g. during discussions, group work or whilst talking to me on my own.				
think about whether we have achieved our WALT, how we have achieved our WALT and the next steps in our learning throughout and at the end of our lessons.				
have a discussion with my class teacher in which we agree my targets for improvement in Literacy, Numeracy and Wellbeing.				
have my targets in Literacy, Numeracy and Wellbeing on display in my classroom.				
review my targets with my teacher regularly.				
tell my teacher when I think that I have achieved any of my targets.				
have new targets set in Literacy, Numeracy and Wellbeing when my teacher and I agree that I have achieved my current targets.				
discuss some test results with my teacher so that I understand what I have done well and what the next steps in my learning are.				
Peer and Self-Assessment				
regularly think about my own work/learning in terms of our 'Q' and WALT.				
regularly set my own SMART targets for improvement ('Next Steps') in class during self-assessment activities.				
regularly think about a partner's work/learning in terms of our 'Q' and WALT.				
regularly set SMART targets for improvement ('Next Steps') for a partner in class during peer-assessment activities.				
take part in different self- and peer-assessment activities e.g. traffic light activities, 'Two Stars and a Next Step', Thumbs up Thumbs, Post-It note activities, KWHL grids, self-marking work, peer-marking work, talking partners.				

Appendix 4 – Step by step guide to using BigMaths online.

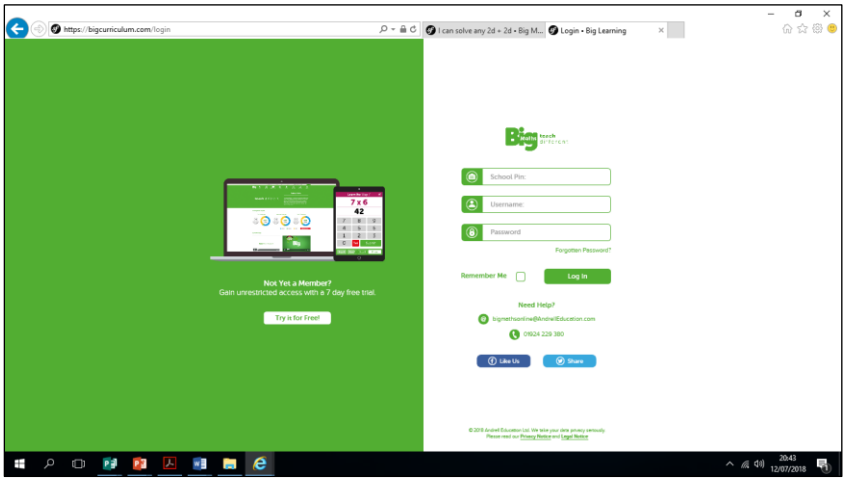
Big Maths Online
Step by Step Guide to Planning
September 2019



Step by step guide to planning on BigMaths

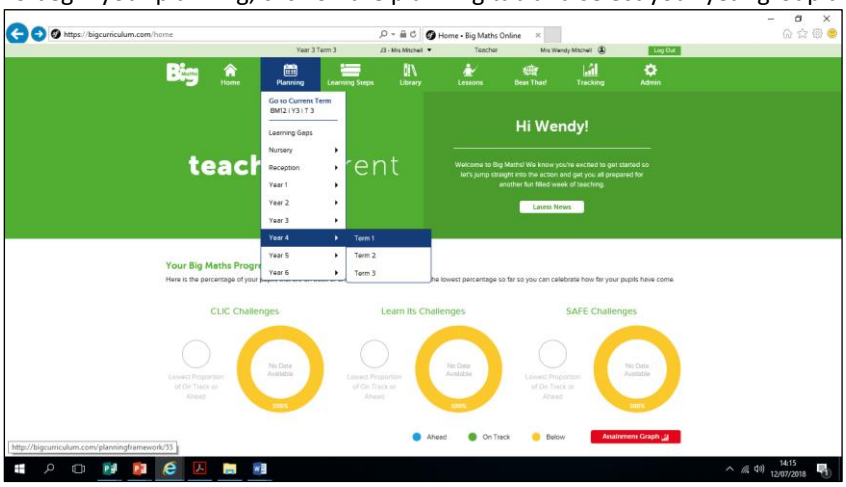
Step 1.

First thing log onto Big Maths Online. Remember your passwords;
School Pin: 0557
Username: firstname.lastname (wendy.mitchell)
Password: LlanWM1 (your initials in capital letters)



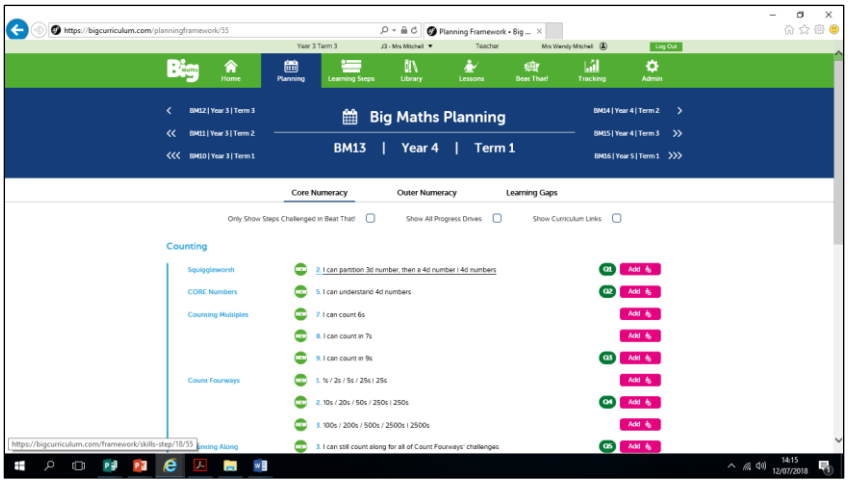
Step 2

To begin your planning, click on the planning tab and select your year group and term. (Year 4, Term 1)



Step 3.

You will be presented with all the CLIC progress drives. SAFE progress drives can be seen if you click the Outer Numeracy tab. Look at the Planning Overview sheet for your year group and decide which progress drive for Counting you want to start on. I would recommend working down the list from top to bottom. Once decided click on the link; *'Squiggleworth: 2. I can partition 3d number, then a 4d number'*

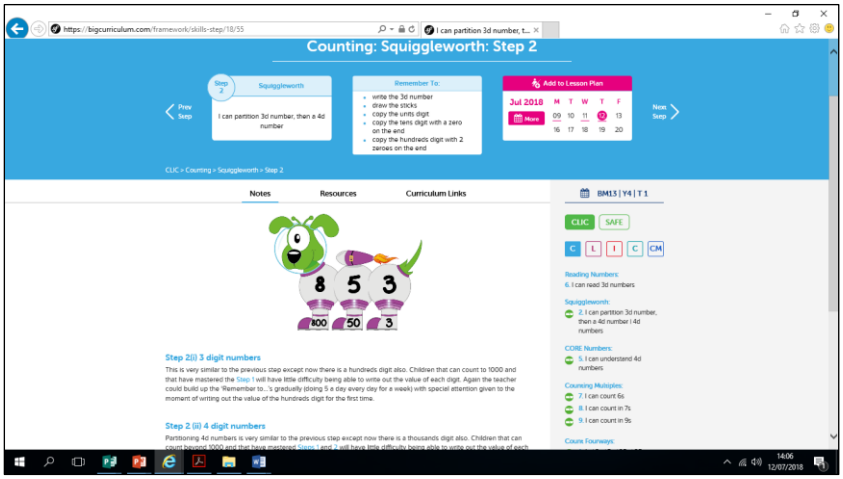


Step 4

Once you have decided to use '*Squiggleworth: 2. I can partition 3d number, then a 4d number*' for your Counting, you will then need to decide whether you are on the correct step. Use the left/right arrows (prev step/next step) to find the best step for your learners. You can choose more than one to go into your planning to cater for all ability groups. (This will be explained in a later step)

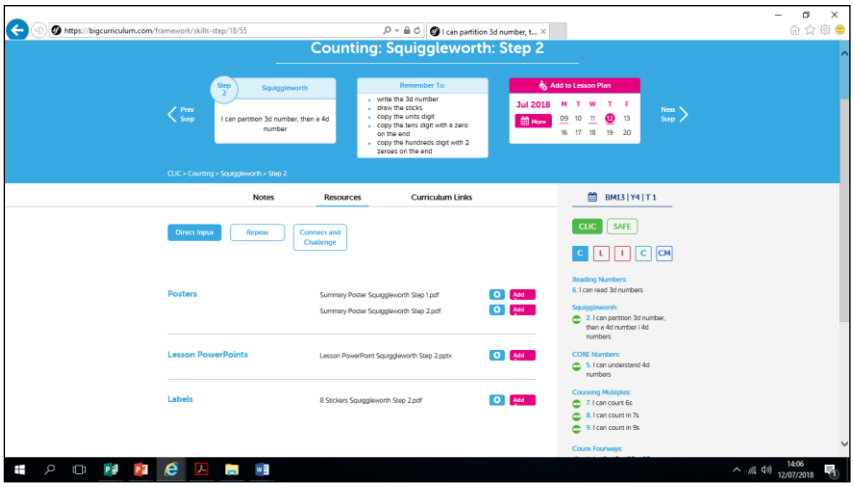
In this example we have decided to use 'I can partition 3d number, then a 4d number' for my 'On Target' and 'More Able' learners.

Have a read through the notes to get familiar with the concept.



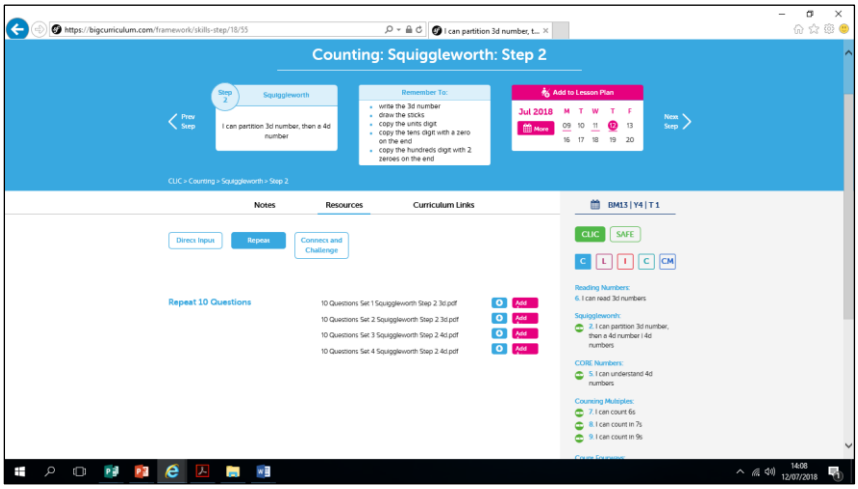
Step 5

After reading through the notes, click on the resources tab and look at the resources that are available under the 'direct input' tab. To open the resources, click on the blue arrow. Do not just add straight into your planning without looking at the resource first.



Step 6

Have a look at all resources 'Direct Input, Repeat, Connect and Challenge'.



Click on the blue arrow button to open the resource. Note down on paper which ones you think best suit your lessons.

I have decided that these resources best suit my 'On Target' and 'More Able' group of learners.

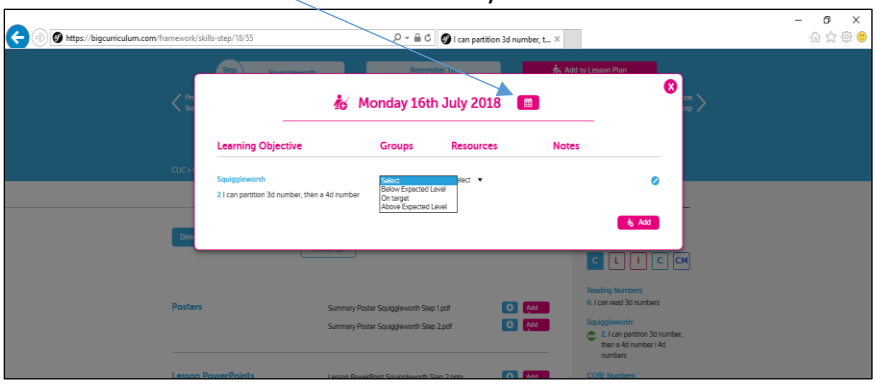
At this point you will need to decide which resources you are going to use each day, for example;

Monday:	Counting -	Lesson PowerPoint Squiggleworth step 2
		10 Questions Set 1 Squiggleworth Step
Tuesday:	Counting -	10 Questions Set 1 Squiggleworth Step 2
Wednesday:	Counting -	10 Questions Set 1 Squiggleworth Step 3
Thursday:	Counting -	10 Questions Set 1 Squiggleworth Step 4

Step 7.

Once you have decided what resources you are going to use you can click add to planning by pressing the red arrow button. When you click 'Add' you will see this screen. You now need to choose the correct date by clicking the calendar button, then choose the appropriate ability group from the drop down menu and then choose your resources from the resources drop down menu.

*Remember to add resources to each day as stated above.

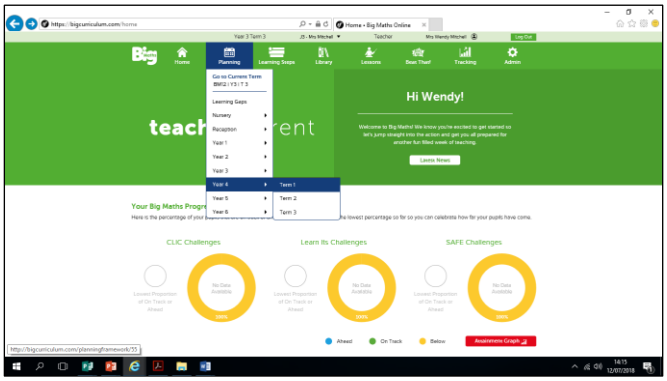


Once you have clicked 'Add' these resources will be added to your planning.

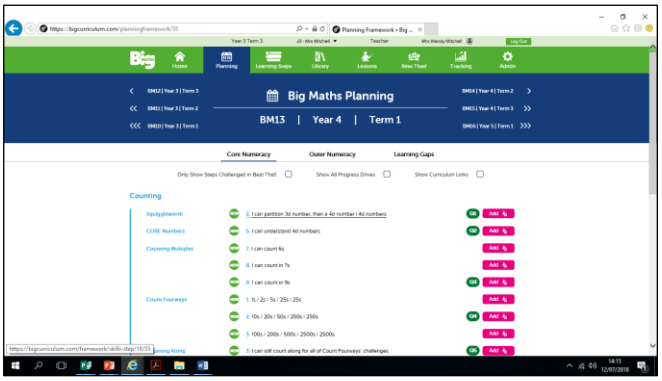
Step 8

Once you have chosen your resources for your On Target and More Able group of learners. You will need to choose your Squiggleworth step for your 'Below Expected Level' group of learners.

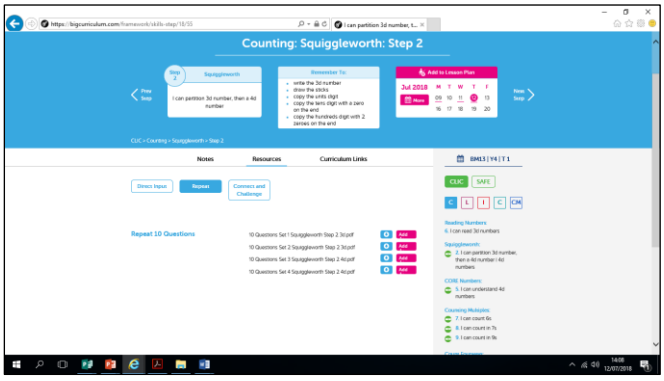
The quickest way is to go to back to the Planning tab and click on Year 4 Term 1 again...



Then choose the Squiggleworth step again....



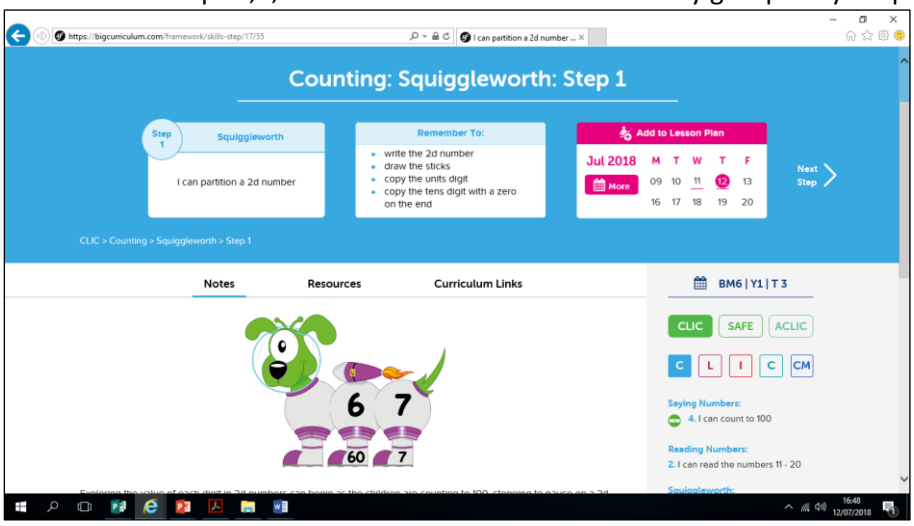
But this time you will choose the prev step.....



Keep pressing 'prev step' until happy that your 'Below Expected Level' learners are being catered for. In this case 'Step 1: I can partition a 2d number' is more appropriate than Step 2. (Partitioning 3d and 4d numbers)

Step 9

Please follow steps 5,6,7 to allocate resources for all ability groups to your planning.



Please repeat the same process (step 2- step 7) to add Learn Its and Its Nothing New to your planning. Remember to choose the appropriate step for your ability groups.

Don't be scared to click on the previous step once, twice……

Finally….. but most important bit…. The main body of your lesson - The Calculations / SAFE aspect.

Step 10

Counting, Learn Its and Its Nothing New should take between 10-15 minutes unless children are struggling with a concept and then as teachers it's up to you to adapt your planning accordingly and fill in the learning gaps.
The remainder of the lesson then (approx. 45mins) should be focused on either Calculations from CLIC or either Shape, Amounts, Fractions or Explaining Data from SAFE.
In this example I have chosen to focus on 'Addition Step 25: I can solve any 2d + 2d' for my On target and More Able. I have decided on this step as it is stated on my planning overview for Year 4 Term 1.

Year 4 Term 1 Core Numeracy

Planning Overview

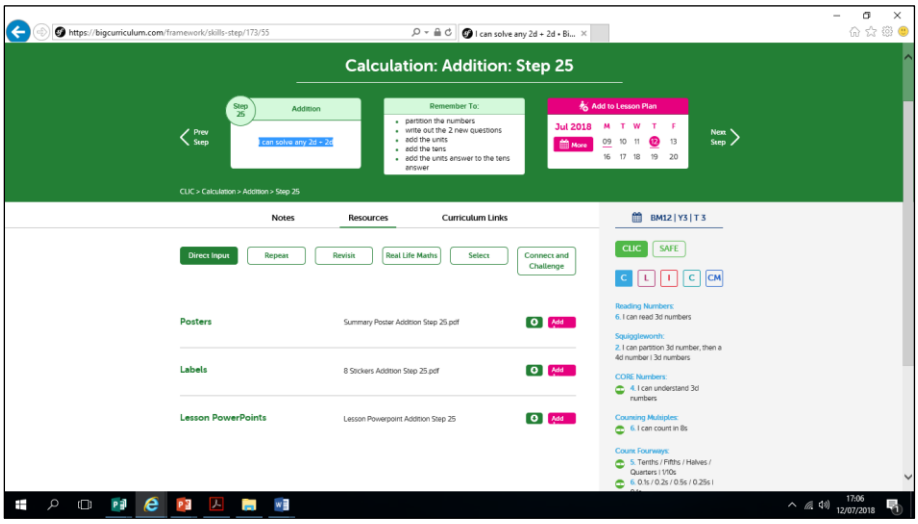
C	L	I	C
Counting	Learn Its	It's Nothing New	Calculations
Squiggleworth 2. I can partition 3d number, then a 4d number CORE Numbers 5. I can understand 4d numbers Counting Multiples 7. I can count in 6s 8. I can count in 7s 9. I can count in 9s Count Fourways 1. 1s/2s/5s/25s 2. 10s/ 20s/ 50s/ 250s 3. 100s/ 200s/ 500s/ 2500s Counting Along 3. I can still count along for all of Count Fourways' challenges	Learn Its 13. The 6 Fact Challenge	Jigsaw Numbers 4. I can find the missing piece to 1000 Dividing by 10 1. I can divide multiples of 10 by 10 Multiplying by 10 2. I can multiply whole numbers by 100 Coin Multiplication 1. I can complete a 1, 10 card 2. I can complete a 1,2, 5, 10 card Fact Families 4. I know the Fact Families for 1d x 1d facts 5. I know Smile Multiplication Fact Families	Addition 24. I can add a 2d number + 2d number 25. I can solve any 2d + 2d Addition - Column Methods 1. I can solve a 2d + 2d Subtraction - Column Methods 2. I can solve any 2d - 2d

highlighted text- These skills will need to be taught during maths lessons in the morning so the thematic planning for Autumn Term can go ahead.

So like you've done before with Counting, Learn Its and Its Nothing New you need to click on the Planning tab and follow steps 2 and 3, scroll down to the Calculations progress drive and click on 'Addition Step 25: I can solve any 2d + 2d'.

Step 11

Exactly like you did with Counting, Learn Its and Its Nothing New you now need to click on the Resources tab to display the resources and be able to add to planning. Read through notes and click on Resources tab..



You will see that 6 tabs are shown; '*Direct Input', 'Repeat', 'Revise', 'Real Life Maths', 'Select' and 'Connect and Challenge'*. It is at this stage of our planning where our 'reasoning' or as we will call it from now on, 'Real Life Maths' will fit into our Maths curriculum.

Direct Input: Monday/ First day of topic resources

Repeat: Tuesday/Wednesday resources

Real Life Maths: Thursday resources

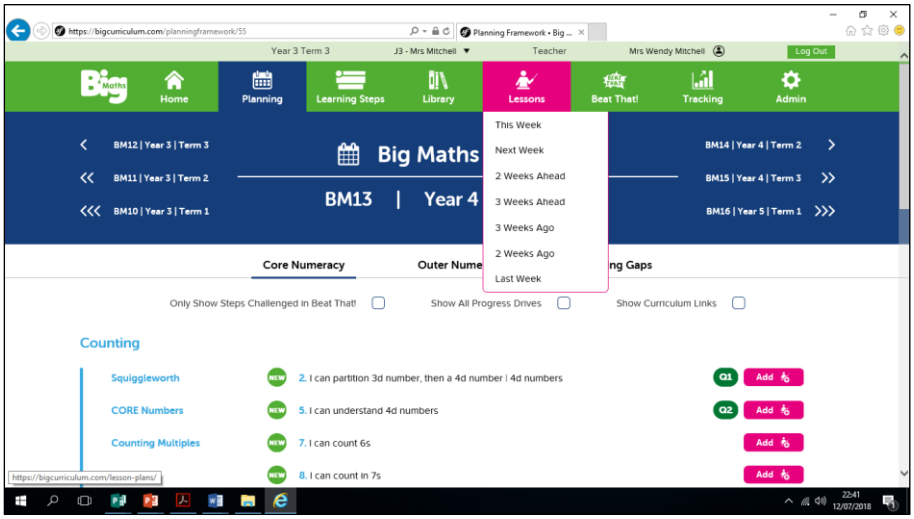
Select: Friday Resources

'Revisit' and 'Challenge and Connect' resources can be used within the week but it would be good practice to use these resources in your numeracy areas. These resources can be then used to revisit and reinforce the concepts previously taught. I imagine these resources in numeracy areas 1-2 weeks after the week 'Direct Input' was given. These resources can then be switched for others as the term unfolds.

Do not discard them as they can be used in numeracy areas during the following two terms.

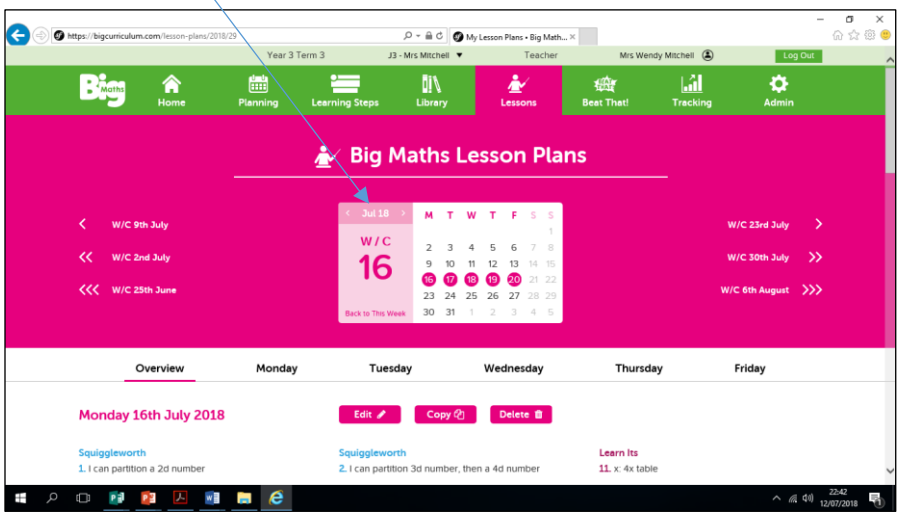
Step 12

Once you have added all your CLIC or SAFE resources to your planning you now need to view your planning so you can open the resources ready to teach your lesson. To view planning, click on the Lessons tab at the top of the screen.



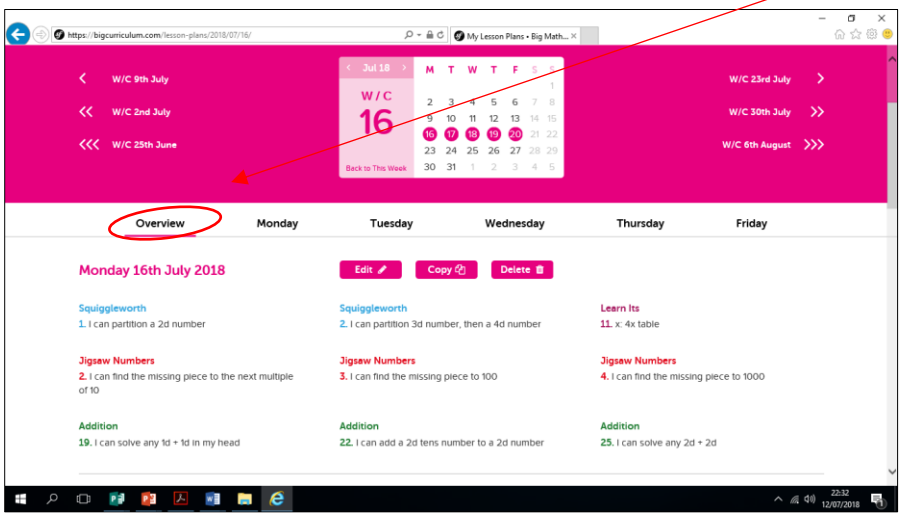
Step 13

You may need to change the date if you want to look at future planning. You can change the date by pressing on the calendar arrows.



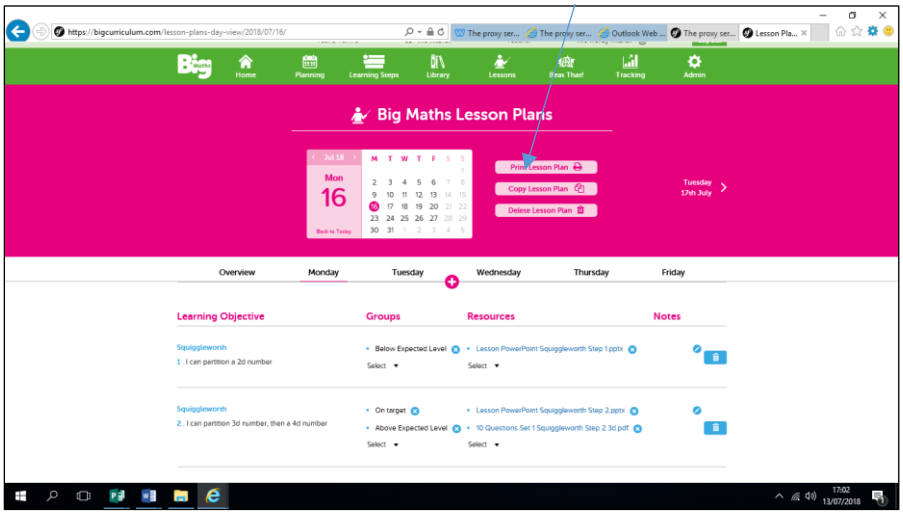
Step 14

Once on the correct date you will be presented with this screen. This is the overview view of your week's planning with all other days listed below.



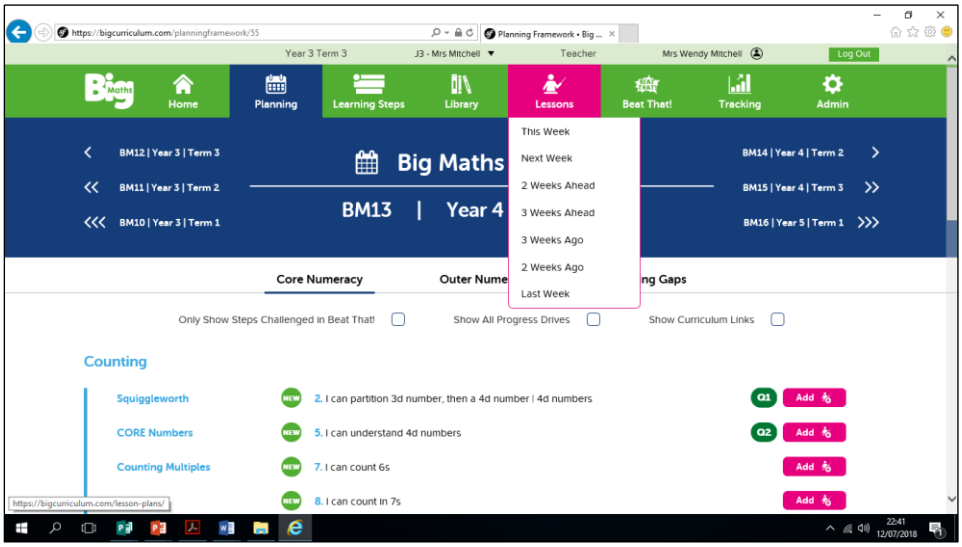
Step 14

(If you prefer you can also click on each day to see a more detailed plan which includes the ability group names, resources and notes if you want to add commentary. To do this just press on the day you wish to view).
You also have the opportunity to print your planning whilst on the daily plans page (Monday in this example) if you would prefer a paper copy.
(*The only negative is the plans can only be printed daily rather than weekly*).
If you want to print your planning, click 'Print lesson Plan' tab next to calendar. (See handout for example printouts).

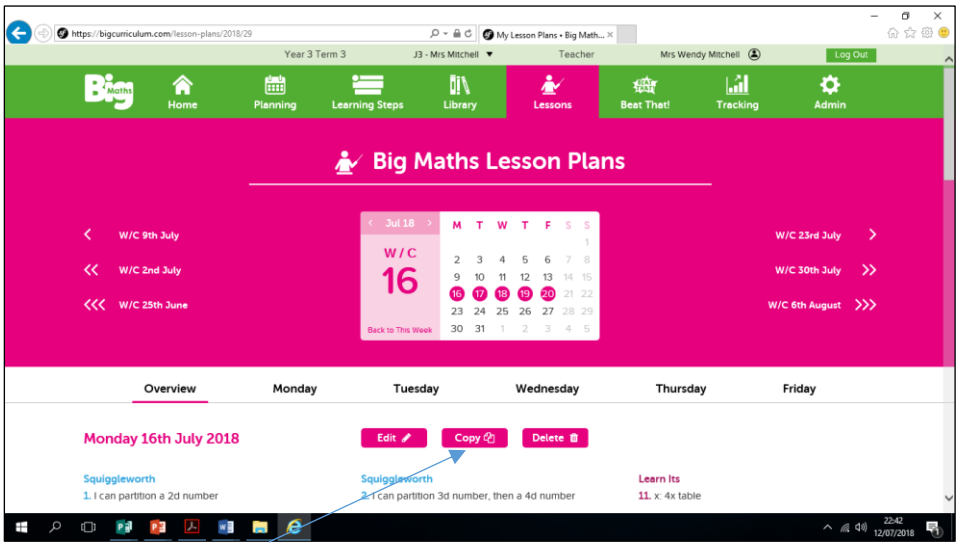


Little extras to help you plan

During the planning stages you may feel like you would like to use the same plan and the same resources for a couple of days. This is perfectly acceptable especially when introducing a new topic.
This can be easily done without having to click on everything twice for two separate days. Once you have planned a whole day including resources and ability groups, click on the Lessons tab at the top of the screen.

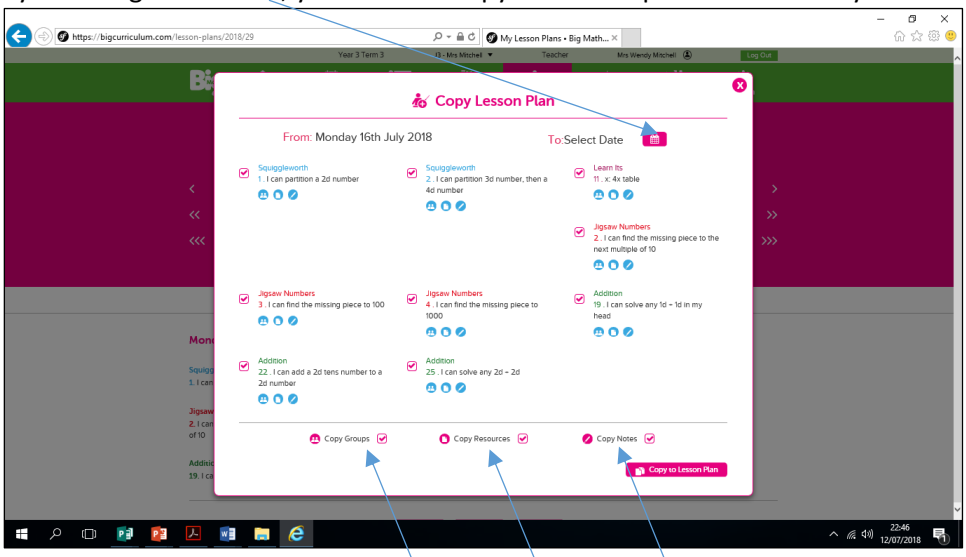


Remember to find the correct date for your planning (July 16th)



Then click the Copy tab next to the date you wish copy in order to copy the daily plan.

By selecting a new date, you can now copy the whole plan from Monday to another day/s.



You also have the choice to copy groups, resources and notes.

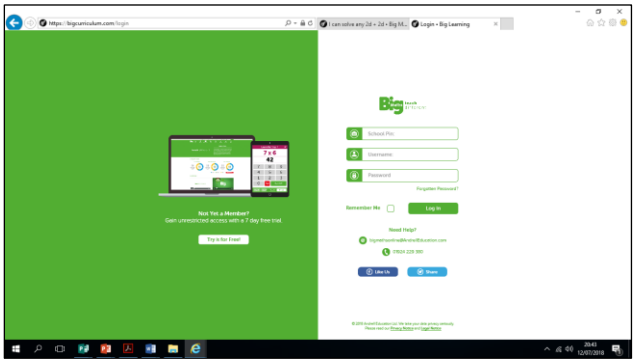
Appendix 5 – Step by step guide to using CLIC scores

Big Maths Online
Step by Step Guide for using CLIC scores to inform planning
September 2019

Step by step guide for using CLIC scores to inform short term planning

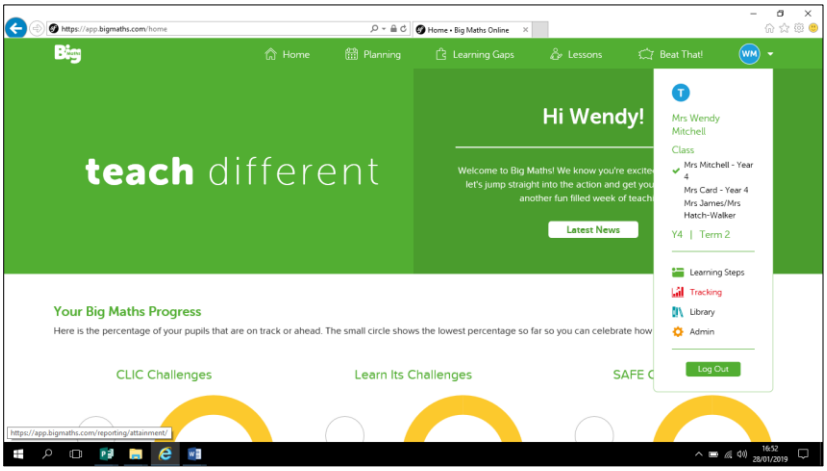
Step 1.

First thing log onto Big Maths Online. Remember your passwords;
School Pin: 0557
Username: firstname.lastname (wendy.mitchell)
Password: LlanWM1 (your initials in capital letters)



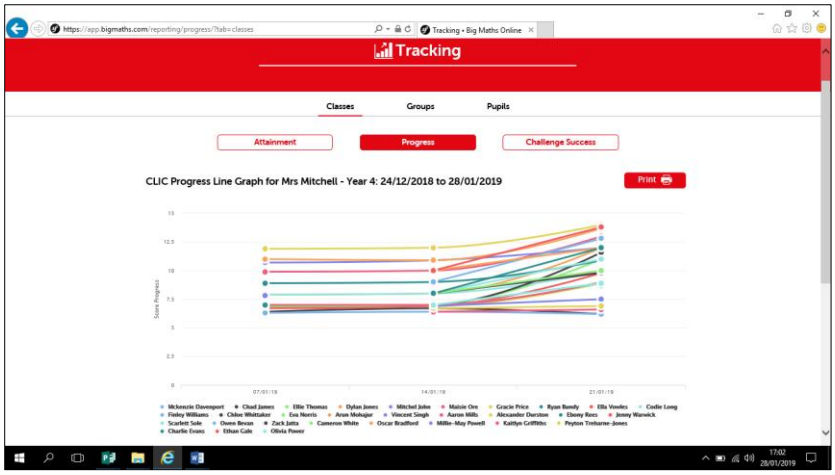
Step 2

To begin your progress review, click on the arrow next to your initials (WM) and click on Tracking.

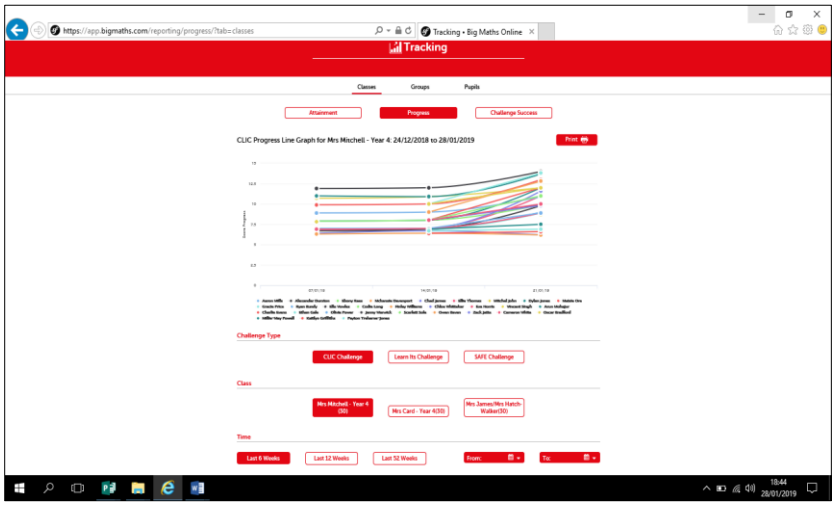


Step 3.

Once you have clicked on the tracking option you will be presented with a new screen that will give you three options; Attainment, Progress and Challenge Success. Click on the Progress tab. Once you have clicked on the progress tab you will be presented with a graph showing the CLIC Progress for your class. If you scroll towards the bottom of the screen you can adjust the view to show last 6 weeks, last 12 weeks or the last 52 weeks. It will also give you the option to view your SAFE Progress.

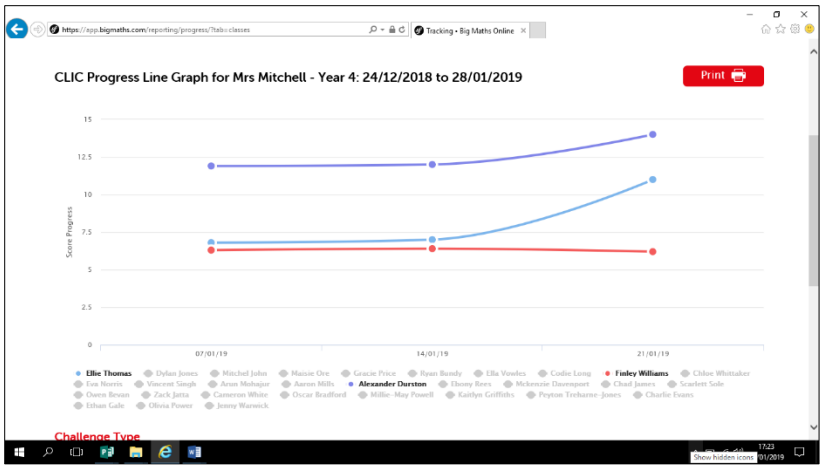


Here you can see I have clicked on CLIC Progress over the past 6 weeks. It also allows you to click on SAFE, CLIC or Learn Its challenges. The other classes in your year group will be accessible at this point.



<u>Step 4</u>

Once you have clicked on the whole class data you will see the list of your class below the graph. In order to track the progress of each child to check that they are all on the correct CLIC/SAFE levels you will need to focus on a child at a time. This can only be done by clicking on each name in the list below the graph, this action removes their data from the graph. In the graph below I have removed everyone except Alex, Chloe and Finley you can see that Alex is making good progress through higher levels, Ellie is making excellent progress although not as high as Alex and Finley is still on CLIC 6 and is not showing any progress in his CLIC levels.



Alex has scored 11.9, 12, 14
Ellie has scored 6.8, 7, 11
Finley has scored 6.3, 6.4, 6.2

After looking at your class' scores it is then down to you as class teachers to assess whether a child needs to be promoted manually – this really needs to happen if a child is bouncing around the same level scoring 9s and 10s even if they do not achieve three tens in a row. During my evaluation of whole school progress in CLIC some classes were promoting manually and others were waiting for the computer to promote. This can lead to an unrealistic picture of the progress being achieved across the 11 classes.
If the child is not at the required level for their year group but scoring highly on challenges even though they may not be achieving three tens in a row, teachers must promote children to a more appropriate level.

CLIC Levels
Year 1 = Levels 4, 5, 6
Year 2 = Levels 7, 8, 9
Year 3 = Levels 10, 11, 12
Year 4 = Levels 13, 14, 15
Year 5 = Levels 16, 17, 18
Year 6 = Levels 19, 20

A child is progressing at the correct rate if they are increasing by a level a term.

Step 5
Understanding the scores - **The 1st number means CLIC level, 2nd number means score out of 10**

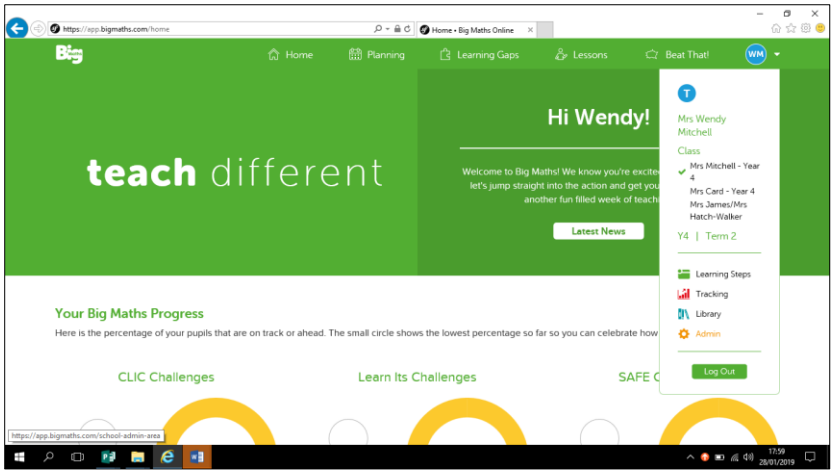
Alex has scored
11.9 = 9/10 on CLIC Level 11
12 = 10/10 on CLIC Level 11
14 = 10/10 on CLIC Level 13 (After being manually promoted by myself to Level 13)

Ellie has scored
6.8 = 9/10 on CLIC Level 6
7 = 10/10 on CLIC Level 6
11 = 10/10 on CLIC Level 10 (After being manually promoted by myself to Level 13)

Finley has scored
6.3 = 3/10 on CLIC Level 6
6.4 = 4/10 on CLIC Level 6
6.2 = 2/10 on CLIC Level 6

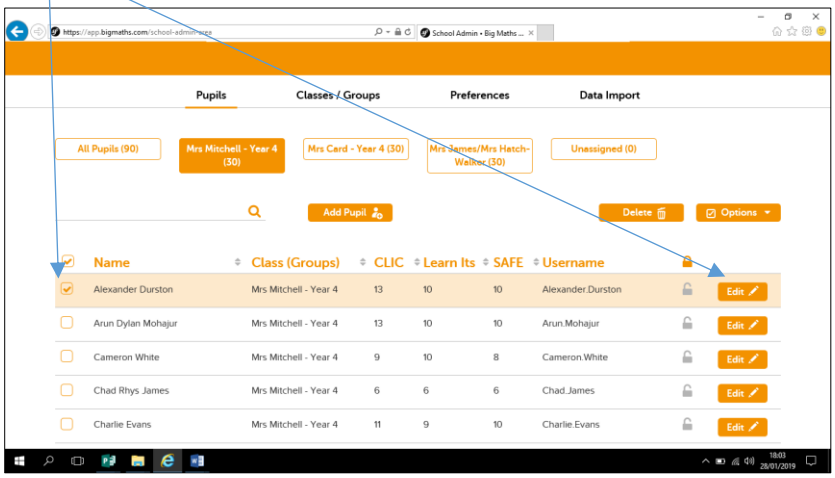
If a child seems to be flatlining like Finley appears to be doing it is then your job as teachers that his shortcomings/misconceptions inform short term planning and are addressed quickly. This could be the focus for your LSO during assembly time or during class sessions, you may find a group of children need to work on a learning gap that is stopping them progressing to the next level.

Step 6 – Manually Promoting
If you do wish to promote your learners manually, click on the arrow next to your initials (WM) and click on admin.



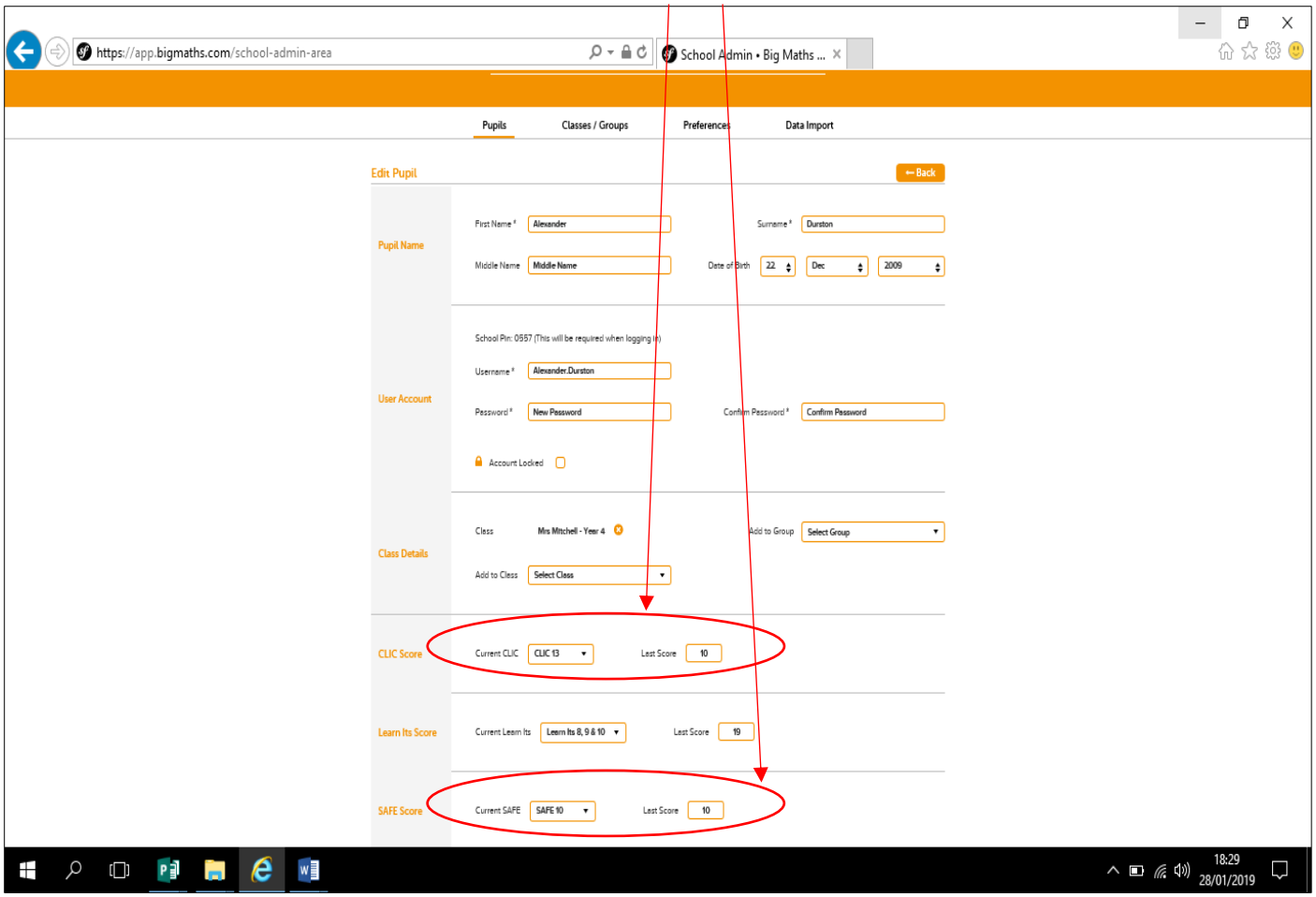
Step 7.

Once you have clicked admin, the screen will display your class list. Click any children you wish to edit and then click edit…



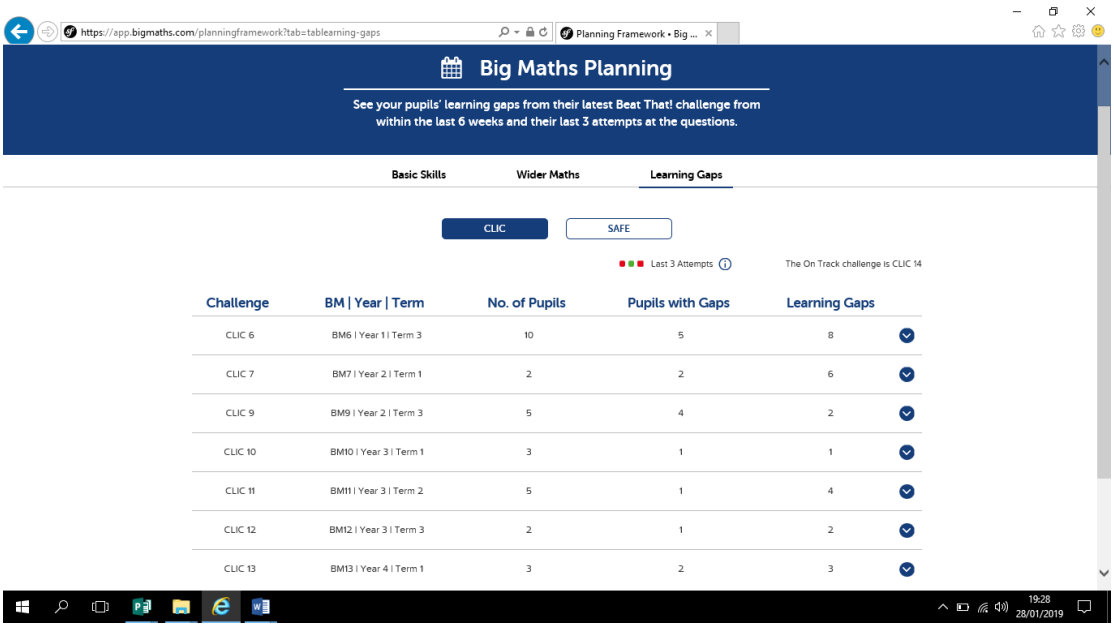
Step 8

Once you have clicked on a child to edit this screen will appear. You will be able to see the score of their last challenge and make any changes to levels whether it be CLIC/SAFE/Learn Its.

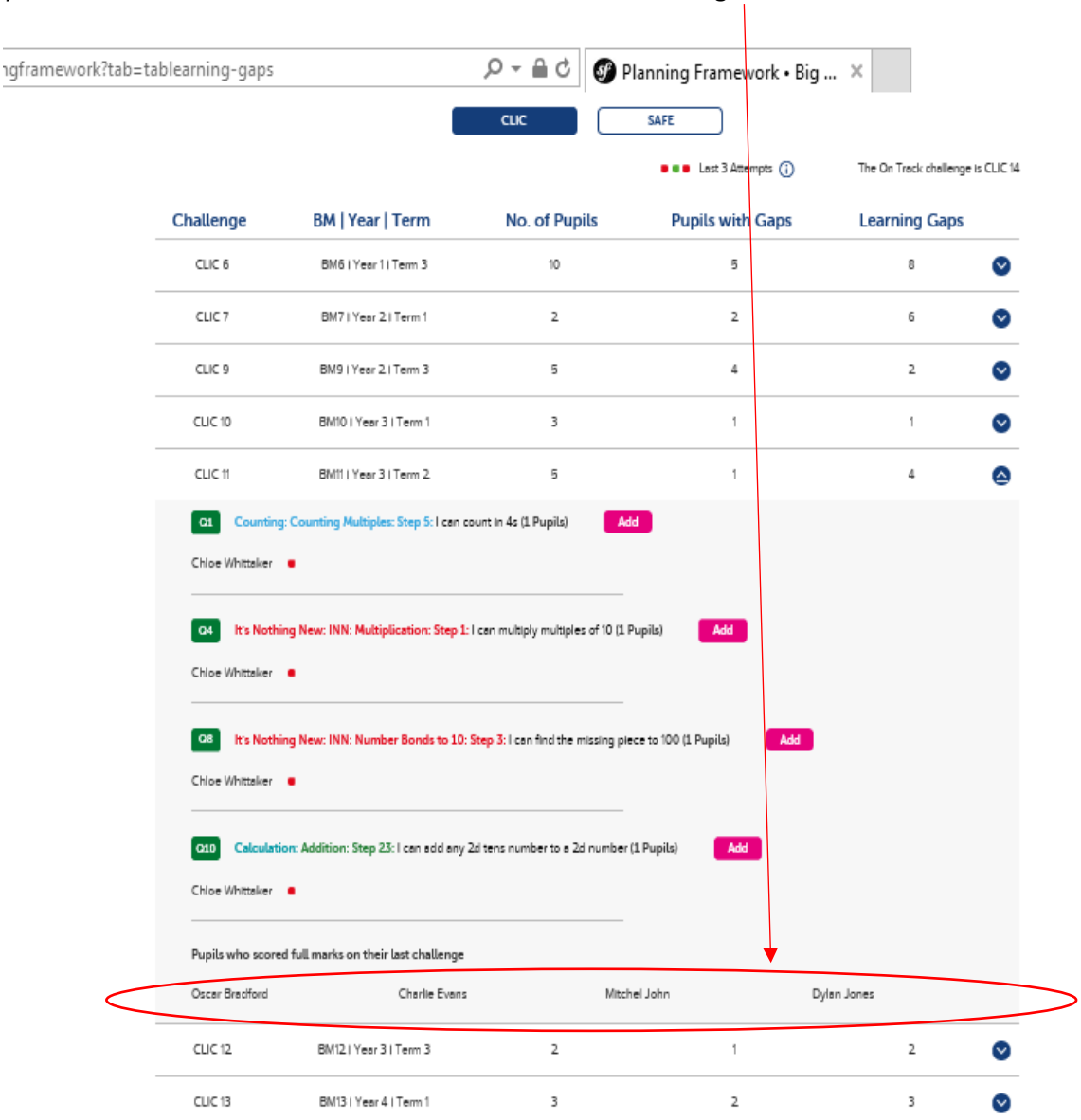


Before changing levels, I recommend that you familiarise yourself with the CLIC/SAFE challenges associated with that level so you can be confident that the new level best suits the learners' needs. These can be found on the server.

Another way of tracking to see if any groups of learners have learning gaps is to click on Learning Gaps on the home page. Here you will see a list of learning gaps and a list of the pupils who have gaps. In this example you can see in CLIC 6 there are 8 learning gaps but only 5 children with gaps.



When you click on the drop down menu it will show you what steps they are getting wrong, the screen will show you their scores of the last 3 attempts. As well as show you learning gaps and the pupils who have them it also shows you a list of children who scored full marks on their last challenge.



Above you can see that the 4 learning gaps are all linked to one child. Chloe has recently been manually promoted, however she has also been away from school during our 'jigsaw numbers topic' it is obvious she has gaps in her learning that will need to be plugged soon as I do not think that this level is too high for her.

Appendix 6 – Example of a Termly Overview

Year 4 Term 1 — Core Numeracy — Planning Overview

C	L	I	C
Counting	**Learn Its**	**It's Nothing New**	**Calculations**
Squiggleworth 2. I can partition 3d number, then a 4d number CORE Numbers 5. I can understand 4d numbers Counting Multiples 7. I can count in 6s 8. I can count in 7s 9. I can count in 9s Count Fourways 1. 1s/2s/5s/25s 2. 10s/ 20s/ 50s/ 250s 3. 100s/ 200s/ 500s/ 2500s Counting Along 3. I can still count along for all of Count Fourways' challenges	Learn Its 13. The 6 Fact Challenge	Jigsaw Numbers 4. I can find the missing piece to 1000 Dividing by 10 1. I can divide multiples of 10 by 10 Multiplying by 10 2. I can multiply whole numbers by 100 Coin Multiplication 1. I can complete a 1, 10 card 2. I can complete a 1,2, 5, 10 card Fact Families 4. I know the Fact Families for 1d x 1d facts 5. I know Smile Multiplication Fact Families	Addition 24. I can add a 2d number + 2d number 25. I can solve any 2d + 2d Addition - Column Methods 1. I can solve a 2d + 2d Subtraction - Column Methods 2. I can solve any 2d - 2d

highlighted text- These skills will need to be taught during maths lessons in the morning so the thematic planning for Autumn Term can go ahead.

Year 4 Term 1 — Outer Numeracy — Planning Overview

S	A	F	E
Shape	**Amounts**	**Fractions**	**Explaining Data**
Explore and Draw 20. I Can find symmetry when shapes are in different orientations 2D Shapes 21. I know 'The Triangle Family'	Amounts of Distance 19. I can calculate to find the perimeter 20. I can find the perimeter in a variety of 2D shapes 21. I know my kilometre Learn It: 1km = 1000m 22. I can convert kilometres to metres Amounts of Mass 15. I can measure and record mass to the nearest 5kg 16. I can convert kilograms to grams Amounts of Money 15. I can use decimal notation for money Amounts of Space 15. I can understand that the area is the amount of space inside a 2D shape and I can count the squares to find it 16. I can find the area of different shapes by counting squares 17. I can compare the areas of different shapes by accurately counting squares and part squares Amounts of Time 23. I can calculate the number of days 24. I can convert periods of time Amounts of Time: Telling the Time 16. I can convert time from 24-hour clock to analogue Amounts of Turn 15. I can compare, order and sort angles	Fractions: of a whole 16. I can use equivalent fractions to find any simple fraction Fractions: It's Nothing New 5. I can add and subtract fractions with the same denominator (beyond 1) Fractions: Calculations 4. I can use my calculation skills to add/subtract fractions that make a whole number	Children should know these... Diagrams and Tables 20. I can read timetables Bar Charts 9. I can compare subsets and explain what this tells us Line Graphs 2. I can track my own Big Maths Beat That! Scores with a line graph

highlighted text- These skills will need to be taught during maths lessons in the morning so the thematic planning for Autumn Term can go ahead.