



Mathematics

POLICY



Key Staff:

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How Mathematics is aligned to the School Vision and Aims:

In Mathematics we strive for our children to be 'Fit for the Future'. Our goal is to provide high-level learning through the teaching in the classroom. We aim for children to make good progress; we do this by ensuring they have resources to scaffold their learning and understanding using Maths No Problem alongside the CPA (Concrete, Pictorial and Abstract) approach. We want the children at d'Auvergne to be confident with a wide vocabulary, therefore we encourage the children to coach their peers and explain their understanding using mathematical vocabulary. We have multiple online resources including Maths Tutor, Timetables Rockstars and Mathletics to enhance the children's learning at home.

How Mathematics supports the Rights of the Child:

Every child has the right to be educated therefore we teach a wide variety of methods using various resources to support every child's learning. We take time to ensure the teaching is personalised for each child and class using Maths No Problem to guide the lessons.

Key points regarding our Maths Curriculum:

- It is a current, highly effective approach based heavily on research and evidence.
- Builds children's mathematical fluency.
- Introduces new concepts using Bruner's Concrete Pictorial Abstract (CPA) approach.
- Children learn to think mathematically as opposed to reciting formulas they don't understand, whilst using independence and increasing problem solving skills.
- Provides children with mental strategies to solve problems.

How Mathematics is organised across the school:

Children access Maths for a minimum of 4 hours a week.

At d'Auvergne we use the Maths No Problem framework building upon the philosophy and approach of Singapore Mathematics pedagogy. We believe every child can master an understanding and love of Maths with the right teaching and support. When taught to master Maths, children develop their mathematical fluency without resorting to rote learning and



can solve non-routine Maths problems without having to memorise procedures. It is our ambition to create confident, free-thinking mathematicians. The scheme that we use at d'Auvergne (Maths No Problem) is in line with the Jersey Curriculum for Mathematics.

A successful Maths classroom has key words on display and has current learning created by the children and teacher around the classroom (these are often on whiteboards). These displays should be constantly changing, and reflect the concept of 'working walls', where learning is constantly updated. A successful Mathematics classroom should have all of the resources / manipulatives readily available for the children to use at any given time during a lesson.

Curriculum Planning (LTP, MTP, STP):

Planning is mapped out clearly over the year to show the full Mathematics Curriculum being covered in each Year and across the whole school. Planning is also heavily centred around Rick DuFour's 4 Critical Questions:

- 1. What do we want our children to learn? (Expectations)**
- 2. How will we know they are learning? (Assessment.** Formative assessment, talk partners, listening for responses in discussion, observing closely what the children are doing, marking in the moment, questioning. A BUSY TEACHER but keep in mind the specific focus of the lesson).
- 3. What if they are not learning? (Intervention)** - What is up your sleeve if they stop learning? Have you planned for a circumstance when a child stops learning?
- 4. What if they already know it? (Challenge)** - What questions and ideas have you planned for or can think of to challenge children that say, 'I'm done'.

Teachers are not expected to know the answers to all these questions - but they have a professional responsibility to ask if they do not know.

An example of the d'Auvergne Mathematics Long Term plan for Year 1 is shown below:



Year Group	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1	Number and place value: Numbers to 10	Geometry – Position and Direction	Geometry – Properties of Shape: Shapes and Patterns	Numbers and Place Value: Numbers to 40	Calculations: Multiplication	Number and Place Value to 100
					Calculations: Division	
	Calculations: Addition and Subtraction	Number and Place Value: Numbers to 20	Measurement: Length and Height	Calculations: Addition and Subtraction	Fractions	Measurement: Time, Money, Volume and Capacity, Mass
		Calculations: Addition and Subtraction within 20				Geometry: Position and Direction: Space

An example of the d’Auvergne Mathematics Medium Term plan for Year 6 is shown below:

Year 6 Maths Planning



Chapter	Lesson	Lesson question	Lesson Priority	Journaling opportunity / Intervention / Challenge / Oracy						
Chapter 3 – Fractions	Lesson 1 – Simplifying Fractions Using Common Factors.	Can I use common factors to simplify fractions?	Key Lesson	<p>Descriptive Journaling: How to simply fractions using common factors (step by step guide).</p> <p>Guided Practice in Journals.</p> <p>Intervention: use physical fraction wall / cut up strips of paper.</p> <p>Challenge:</p> <table border="1"> <tr> <td>7a. Find two different ways to compare these simplified fractions and identify the biggest common factor used.</td> <td>7b. Find two different ways to compare these simplified fractions and identify the biggest common factor used.</td> </tr> <tr> <td> $A. \frac{4}{\square} = \frac{\square}{3}$ $B. \frac{4}{\square} = \frac{\square}{8}$ </td> <td> $A. \frac{12}{\square} = \frac{\square}{25}$ $B. \frac{24}{\square} = \frac{\square}{9}$ </td> </tr> <tr> <td>8a. There are 42 red and blue balls in a bag. 21 of them are blue. Express this as a simplified fraction. What fraction of the balls are red?</td> <td>8b. There are 75 blue and yellow bougles in a bag. 18 of them are yellow. Express this as a simplified fraction. What fraction of bougles are blue?</td> </tr> </table>	7a. Find two different ways to compare these simplified fractions and identify the biggest common factor used.	7b. Find two different ways to compare these simplified fractions and identify the biggest common factor used.	$A. \frac{4}{\square} = \frac{\square}{3}$ $B. \frac{4}{\square} = \frac{\square}{8}$	$A. \frac{12}{\square} = \frac{\square}{25}$ $B. \frac{24}{\square} = \frac{\square}{9}$	8a. There are 42 red and blue balls in a bag. 21 of them are blue. Express this as a simplified fraction. What fraction of the balls are red?	8b. There are 75 blue and yellow bougles in a bag. 18 of them are yellow. Express this as a simplified fraction. What fraction of bougles are blue?
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			<p> </p> <p> Oracy: Pairs Talk to your partner. </p>
<p>Lesson 2 – Simplifying Fractions Using Common Factors.</p>	<p>Can I use common factors to simplify fractions?</p>	<p>Key Lesson</p>	<p> Investigative Journaling: Can you only simplify fractions if both numerator and denominator are both even or odd? E.g. $2/4$ or $3/9$. </p> <p> Extension: come up with fractions that cannot be simplified, where the numerator is greater than 1. </p> <p> Guided Practice in Journals. </p> <p> Intervention: For struggling learners, it is important that they can draw the fraction and have paper to fold and manipulate to create fractions. </p> <p> Challenge: </p> <p> 1. Paul is simplifying fractions but he has got a bit over his work. </p> <p> </p> <p> Investigate what the missing numbers could be. </p> <p> 2. Investigate which fractions below can be simplified. </p> <p> </p> <p> For any fractions that can't be simplified, explore alternative numerators so that the fractions could be simplified. </p> <p> Oracy: Nest Stand apart from each other and whisper your ideas to your neighbour. </p>

Assessment, Recording and Reporting:

At the end of each half term, teachers record each child’s level of attainment on a cohort class and year group tracker. At the end of the year, all staff enter final levels on SIMS. Results are analysed half termly and used to track progress.

PUMA is used to assess children’s learning in Mathematics, these assessments are carried out 3 times a year in Autumn 2, Spring 2 and Summer 2 for Years 1–6. These results are then shared with parents at parent consultations and on the children’s reports. The Age Standardised Scores attained in these papers are also recorded on a progress tracker by class teachers. Any misconceptions or gaps in learning are addressed through the use of



SHINE interventions, which each Year group are responsible for planning into their weekly timetables.

Every 2 weeks mental maths test are completed by the children which assess their understanding of quick maths.

Staff have the opportunity to regularly assess different pieces of Maths including journaling and workbooks with colleagues, including with the Subject Coordinator during focus groups and phase meetings.

Maths is reported by the teacher in parent consultations twice a year and then in a final Summer report. This will give the parents an understanding of where the child is at compared to the Curriculum Year group they are working on, and next steps will be given.

Teaching and Learning Styles in Mathematics:

Mathematics is taught using the 3 key approaches: concrete, pictorial and abstract. These are used throughout a lesson of Maths No Problem to support fluency, problem solving and reasoning.

Lessons typically are broken into the following parts:

1. **Explore / Master** - Whole class approach with opportunities for talk (Oracy). First chance of formative assessment - are we listening to the conversations for prerequisite skills children need to complete the lesson successfully? Are the children in your class ready for the next section of the lesson?
2. **Guided Practice** - Pairs - Time for the children to use the textbook to help with the Guided Practice. Support in the room:
 - a. Teacher
 - b. Textbook
 - c. Resources / manipulatives
 - d. Learning partners

Less time of the teacher talking and more time for children to get stuck in and have a go! Are they learning what they need to in that lesson? Focus on just that.

3. **Look at the first question in the workbook** - A mini-plenary opportunity. The Guided Practice will support the children to answer questions in the workbook. You don't have to complete the full question with an answer unless the children need it. Going through the first question familiarises the children with the workbook - it avoids the transition of 'I don't know what to do'. If a child can't do a question in the workbook - can they make it or show it in pictures? Go back to the fundamentals of concrete and pictorial.
4. **Workbook** - Independent. If the children get it, what have you planned to extend them? Challenge doesn't always come from new questions or resources. Can they expand and develop on the questions they have done already? Can they create REASONABLE/REALISTIC word problems for the questions they have done? Inverse operations? Could this be a journaling opportunity?



Journaling

The purpose of journaling is to allow children an opportunity to communicate ideas to themselves that makes sense to them. Maths No Problem Journaling develops an understanding of the concept the children are learning about and is a process of developing metacognition. Journaling is a time to consolidate ideas, but also provides a purple pen opportunity to go back through and evaluate.

Journaling for the younger children can be done as simple drawings, if children are able to talk about them. However, this may need a teacher comment about what the child has said.

Provision for Groups of Children in Mathematics:

Children with additional learning needs are monitored carefully using the mathematics curriculum and lessons are differentiated using concrete, pictorial and abstract methods. This is then enhanced through use of the White Rose Hub and Nrich to support children's understanding further.

Children who are identified as having special educational needs will be carefully planned for with individual programmes to suit the need of the child. These programmes will be drawn up by a combination of the class teacher, the SENDCo and support staff. We aim to ensure that children are challenged and given the opportunity to excel. This may be through additional targeted support, focus group additional lessons, differentiation within class and extended home learning tasks.

Equal Opportunities:

Children are given equal opportunities through the mastery approach. Throughout a typical lesson, children are sat in mixed attainment pairs and are encouraged to use talk and manipulatives to support their own and others learning.

Health and Safety:

Risk assessments/DPIAs are completed for online learning, which includes Complete Maths Tutor, TTRockstars and Mathletics.

Community Involvement:

The subject leader attends regular meetings with the CYPES Maths Team and other primary maths leads around the Island to ensure up to date information is shared.

Parents play a vital role in the development of Maths skills. We aim to foster a strong home-school partnership and promote a positive partnership in the following ways:



- Using home learning diaries as a tool for communication between school and home, as well as face to face meetings, phone calls and emails.
- Sharing information through newsletters and parents' leaflets.
- Celebrations such as special events (World Maths Day), TT Rockstars competitions and Athletics Certificates.
- Inviting parents in for workshops and to see / join in with class teaching and learning.

Resources:

All classes have a wide variety of mathematical resources that the children can easily access throughout every lesson. These resources are used to enhance and support the children understanding across the mathematics curriculum.

See below for an example of resources you would find in a Year 6 classroom.

Resource
Place value counters
Place value charts
Place value discs
1-9 digit cards
Blank number line
Counters
Six-sided dice
Operation cards
Square coloured tiles
Fraction strips
Circular representations of fractions
Pattern blocks
Base 10 materials
0-3 digit cards
String
Calculators
0,2,3,9-digit cards
Linking cubes
Bar model strips
1-12 digit cards
Match sticks
Paper parallelograms
Paper mixed triangles
Paper scalene triangles
Centimetre cubes



Protractor
Squared paper
3D shapes
Demonstration
Mirrors
Thermometers

The subject lead has the responsibility to audit resources when needed.

Monitoring and Evaluating:

A key aspect of the subject leader’s role is to monitor, evaluate and review the teaching and learning of Maths throughout the school. This is achieved in a variety of ways including reviewing planning, scrutinising work, discussions with staff and pupils, observing in lessons, providing appropriate and high-quality resources.

See below for the monitoring and evaluating timetable.

Monitoring and Reporting 2023 – 2024

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
SIMS updated	Reading, Writing, Maths updated minimum x 1 termly					
School Data Analysis	RWinc Reading Writing Maths EAL	RWinc Reading Writing Maths PE	RWinc Reading Writing Maths PE	RWinc Reading Writing Maths Science	RWinc Reading Writing Maths Computing	RWinc Reading Writing Maths French
Reports		Interim Reports		Interim Reports		Full School Reports
Book Looks	Writing, Reading	Reading, Maths, Science	Writing, Topic, EAL	Writing, Reading, PSHE, RE	Writing, Maths, Science	Reading, Topic, EAL
Drop-ins and observations	RWinc (Rec) Reading (Y5 & Y6) Computing (KSI)	Writing (Y6) Reading (Y4) Maths (KSI)	RWinc (Y2) Writing (Y4 & Y5) Science (WS)	Maths (KS2) Writing (Y3) PSHE (WS) Computing (KS2)	RWinc (Y1) Reading (Y3) Writing (Y2)	
Teacher Voice	Computing (KSI) Reading (Y5 & Y6) Writing (Y3 & Y4)	History (WS) RWinc (WS) RE (WS)	Geography (WS) Writing (Y5 & Y6)	Music (WS) Maths (WS)	PSHE (WS) Computing (KS2)	Art (WS) Reading (Y3 & Y4)
Pupil Voice	Computing (KSI) Reading (Y5 & Y6) Writing (Y3 & Y4)	History (WS) RWinc (WS) RE (WS)	Geography (WS) Writing (Y5 & Y6)	Music (WS) Maths (WS)	PSHE (WS) Computing (KS2)	Art (WS) Reading (Y3 & Y4)
Parent Voice	Reading, Writing, Maths (Leads to arrange timings)		Foundation Subjects (Leads to arrange timings)		Computing	

Other policies that should be read with this:

Other Policies this should be read in conjunction with:

- Teaching and Learning
- Equal Opportunities
- SEN
- EAL
- Marking and Feedback
- Home Learning