



## Subject Philosophy: Maths and Numeracy



Our Numeracy and Mathematics curriculum supports and supplements the delivery of the national curriculum, by providing a bespoke enquiry led context for learning, which provides meaningful links in learning following a theme based approach. Children receive a broad and balanced coverage across a range of subjects with purposeful experiences that bring learning alive through visits and visitors. Essendine teachers and leaders respond to the needs and interests of our pupils through a local, national or international dimension that responds to the continually evolving educational perspective.

We intend our Numeracy and Mathematics curriculum to develop the whole child by encouraging the attitudes for learning that are displayed through:

- resilience and resourcefulness in learning, where all children are confident to make mistakes and try new approaches
- active contribution in lessons, by posing questions, evaluating their findings and sharing resources, ideas and thoughts
- respect and consideration towards others and their learning environment
- working happily and productively on their own, or with wider pupil groups

Through teaching and learning opportunities, we want to:

- provide a foundation for understanding the world, the ability to reason mathematically, and a sense of enjoyment and curiosity about the subject
- inspire all pupils to appreciate the challenges of mathematics
- ensure all pupils are fluent in the fundamentals of mathematics
- encourage children to initiate their own learning and research
- provide opportunity to use and apply knowledge and skills in practical investigations and problem solving exercises
- ensure children are able to pursue investigational lines of enquiry, to develop an argument using mathematical language
- support and further learning through appropriate use of I.C.T.

Teaching strategies

- Daily mathematics lesson
- Year 1 to Year 6 minimum of 45 minutes that includes mental arithmetic.
- Basic skills, 'I can do Maths' Monday to Friday, 8.45 -9.15.
- Ongoing interventions – Deployment of key support staff.
- Year 6 ability sets.
- Reduced class size for all year groups.
- Agreed mental strategies and calculation documentation in place and consistently applied.
- Shared planning time for teachers.



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- Assertive mentoring – targets set for all pupils.
- Quality marking for next steps in learning.
- All classes display a maths learning wall with age and topic appropriate material.
- All classes equipped with high quality resources to scaffold and support pupils learning.

Through our mathematics curriculum we:

Teach the skills of:

- calculation - being able to add, subtract, multiply and divide with increasing efficiency
- Classification - Sorting shapes and numbers using their properties
- Communication - Including recording following the calculation policy and presenting findings
- Problem solving - Using appropriate strategies of increasing sophistication
- Interpreting and presenting data - Including surveying
- Reasoning – Following a line of enquiry to justify findings
- Questioning – To pose mathematical questions.

Ensure that children will learn about:

#### **Key Stage 1: Year 1 and Year 2**

Number (Place value)	Number (Calculation)	Number (Fractions)	Measurement	Geometry	Statistics
<ul style="list-style-type: none"> <li>- 0 - 100 read and write numbers</li> <li>- Comparing 2 digit numbers, using <math>\leq</math> <math>\geq</math></li> </ul>	<ul style="list-style-type: none"> <li>- Addition and subtraction within 100</li> <li>- Practical problems with multiplication and division</li> <li>- 2,5,10 x tables</li> </ul>	<ul style="list-style-type: none"> <li>- Read, write and recognise <math>\frac{1}{4}</math>, <math>\frac{3}{4}</math>, <math>\frac{1}{3}</math></li> <li>- simple equivalence</li> </ul>	<ul style="list-style-type: none"> <li>- measuring beginning to use standard units</li> <li>- ordering and comparing</li> </ul>	<ul style="list-style-type: none"> <li>- Properties of shape 2D &amp; 3D shape</li> <li>- Language of position and direction</li> </ul>	<ul style="list-style-type: none"> <li>- interpreting and constructing simple data</li> </ul>



## Subject Philosophy: Maths and Numeracy



### Lower Key stage 2: Year 3 Year 4

Number (Place value)	Number (Calculation)	Number (Fractions)	Measurement	Geometry	Statistics
<ul style="list-style-type: none"> <li>- up to 1000</li> <li>- beyond 1000</li> <li>- Roman numerals up to 100</li> <li>- negative numbers</li> </ul>	<ul style="list-style-type: none"> <li>- Addition subtraction – 3 and 4 digit numbers</li> <li>- Multiplication division – up to 12x 12x tables</li> <li>- x 2 digit and 3 digit number by 1 digit Number</li> </ul>	<ul style="list-style-type: none"> <li>- reading, writing fractions</li> <li>- equivalence</li> <li>- <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math> <math>\frac{3}{4}</math> as decimals</li> </ul>	<ul style="list-style-type: none"> <li>- adding and subtracting area conversion</li> </ul>	<ul style="list-style-type: none"> <li>- Properties of shape – introduction of turns and angles</li> <li>- Position and direction – coordinates and translation</li> </ul>	<ul style="list-style-type: none"> <li>- interpret and present discrete and continuous data</li> <li>- answer one and two step problems</li> </ul>

### Upper Key stage 2: Year 5 and Year 6

Number (Place value)	Number (Calculation)	Number (Fractions)	Measurement	Geometry	Statistics
<ul style="list-style-type: none"> <li>- up to 10,000,000</li> <li>- Roman numerals up to 1000</li> <li>- negative numbers</li> </ul>	<ul style="list-style-type: none"> <li>- Addition subtraction – more than 4 digits</li> <li>- Multiplication division – multi step problems including division of a 4 digit by 2 digit number.</li> <li>- factors, multiples and prime numbers</li> <li>- algebra</li> </ul>	<ul style="list-style-type: none"> <li>- fractions, percentage and decimals</li> <li>- <math>+</math> <math>-</math> <math>\times</math> <math>\div</math></li> </ul>	<ul style="list-style-type: none"> <li>- Equivalence: metric and imperial</li> <li>- Scaling</li> <li>- formulae</li> </ul>	<ul style="list-style-type: none"> <li>- Measuring angles</li> <li>- Reflection and translation</li> <li>- 4 quadrants</li> </ul>	<ul style="list-style-type: none"> <li>- complete read and interpret information in tables, including timetables</li> <li>- pie charts</li> <li>- Ratio and proportion</li> </ul>



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### **Assessment and expectation**

We are committed to the belief that the nature of open ended tasks allows pupils to be driven by their own curiosity, deepens their understanding and enables all children to fulfil their potential leading to greater performance.

At Essendine, our expectation is that all pupils will at least meet age related expectations as prescribed in the national curriculum September 2014, but will be challenged to achieve greater outcomes.

Where pupils are falling behind, work will be undertaken to close the gap including differentiation in planning, use of key/target questioning, small group work and teacher intervention. These strategies encourage all pupils to have access to learning, gain in confidence and sharing ideas with each other.

### **Assessment of Mathematics**

A range of assessment evidence will be collected to support teacher's judgement and will include:

- Pupils' discussion and consultation. - Work scrutiny. - Photographs. - Role play. - Termly assessment tasks. - Summarise assessments SATs.

### **Monitoring**

The Phase leader will liaise with the subject leader to ensure monitoring is being undertaken and recorded.

The Subject leader will:

- Monitor books, provide feedback and support
- Provide training sessions to ensure subject knowledge is accurate
- Attend CPD courses
- Monitor the budget and order resources where required
- Ensure teaching of maths is good across the school by supporting new staff where appropriate

Governors will liaise with the subject leader to support improvement planning processes and be aware of standards.

Subject Leaders – 2019



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### **Parents**

Essendine positively promotes and encourages parents to support the work of the school in developing a love of mathematics. This can be done by inviting parents into Maths Days and family learning opportunities. An outline of the maths to be studied in a term is also detailed in the Parent's Information meeting.

### **Enrichment**

We aim to promote maths as part of everyday working life through visits from professionals who apply maths skills in their career.