Our Computing curriculum supports and supplements the delivery of the national curriculum which caters to staff and pupils who are linked to many parts of the digital world. Children will gain the knowledge and skills that we believe will support them to make sense of, and contribute to, their world. Increasingly, this requires the use and understanding of computers.

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology

Through our Computing curriculum we:

Teach the skills of:

- Programming

- Internet safety

- Data processing

- Calculating algorithms

- Logical reasoning

- Navigating the World Wide Web

- Technical vocabulary

Ensure that children will learn about:

Programming - Designing, writing and debugging programmes that accomplish specific goals. Using sequences, selection and repetition in programs.

Computer network - Opportunities for communicating, researching and collaborating.

Internet safety- Recognising acceptable/unacceptable behaviour and knowing how to report concerns about content and contact.

Logical Reasoning – explaining and detecting errors in algorithms.

Software – Using a range of digital devices to accomplish given goals including collecting, analysing, evaluating and presenting data and information across subjects.

Subject content

All areas of Computing will be taught within a context for learning established by the drivers within our curriculum. The unit is designed to facilitate a progression of skills throughout Year 1 to Year 6. This will enable the children to master core skills of reasoning and analytical thinking, enabling them to solve problems creatively and confidently.

Units by Year Group – Mixed Age Classes

Theme Key:

🟥	Coding and Computational thinking	🟦	Spreadsheets	🟩	Internet and Email	🟧	Art and Design	🟨 Music
🟪	Databases and graphing	🟥(pink)	Writing and Presenting	⬜	Communication and networks			

In Year 1 and 2 coding, the lessons need to be taught in sequence as each lesson introduces skills that are consolidated and developed in the next lesson. Therefore, it is proposed to teach coding for 11 weeks in Cycle A and none in Cycle B. It is also beneficial for all children to recap unit 1.1 in both cycles as this introduces children new to the class with key skills needed to make the most of Purple Mash.

YEAR 1 & 2 – CYCLE A

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
	Unit 1.1 Online Safety & Exploring Purple Mash — Weeks – 4 — Programs – Various				Unit 2.5 Effective Searching — Weeks – 3 — Programs – Browser			Unit 1.4 Lego Builders — Weeks – 3 — Programs – 2DIY			Unit 1.9 Technology outside school — Weeks – 2 — Programs – Various		Unit 1.2 Grouping & Sorting — Weeks – 2 — Programs – 2DIY		Unit 2.6 Creating Pictures — Weeks – 5 — Programs – 2PaintAPicture					Unit 1.8 Spreadsheets — Weeks – 3 — Programs – 2Calculate			Unit 1.7 Coding — Weeks – 6 — Programs – 2Code						Unit 2.1 Coding — Weeks – 5 — Programs – 2Code				

YEAR 1 & 2 – CYCLE B

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
	Unit 1.1 Online Safety & Exploring Purple Mash — Weeks – 4 — Programs – Various				Unit 1.5 Maze Explorers — Weeks – 3 — Programs – 2Go			Unit 2.4 Questioning — Weeks – 5 — Programs – 2Question, 2Investigate					Unit 2.2 Online Safety — Weeks – 3 — Programs – Various			Unit 1.6 Animated Story Books — Weeks – 5 — Programs – 2Create A Story					Unit 2.7 Making Music — Weeks – 3 — Programs – 2Sequence			Unit 2.3 Spreadsheets — Weeks – 4 — Programs – 2Calculate				Unit 1.3 Pictograms — Weeks – 3 — Programs – 2Count			Unit 2.8 Presenting Ideas — Weeks – 4 — Programs – Various			

Year 3 & 4 Cycle A

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Coding
Number of Weeks – 6
Main Programs – 2Code
See table below for breakdown

Unit 3.2 Online safety
Weeks – 3
Programs – Various

Unit 3.3 Spreadsheets
Weeks – 3
Programs – 2Calculate

Unit 3.4 Touch Typing
Weeks – 4
Programs – 2Type

Unit 3.5 Email (including email safety)
Weeks – 6
Programs – 2Email, 2Connect, 2DIY

Unit 3.6 Branching Databases
Weeks – 4
Programs – 2Question

Unit 3.7 Simulations
Weeks – 3
Programs – 2Simulate, 2Publish

Unit 3.8 Graphing
Weeks – 3
Programs – 2Graph

Year 3 & 4 Cycle B

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33

Coding
Number of Weeks – 6
Main Programs – 2Code
See table below for breakdown

Unit 4.2 Online safety
Weeks – 4
Programs – Various

Unit 4.3 Spreadsheets
Weeks – 6
Programs – 2Calculate

Unit 4.4 Writing for different audiences
Weeks – 5
Programs – 2Email, 2Connect, 2DIY

Unit 4.5 Logo
Weeks – 4
Programs – Logo

Unit 4.6 Animation
Weeks – 3
Programs – 2Animate

Unit 4.7 Effective Search
Weeks – 3
Programs – Browser

Unit 4.8 Hardware Investigators
Weeks – 2

Coding Breakdown

YEAR 3 & 4 CYCLE A	Accomplishing a goal in a program – Year 3 Lesson 1	Accomplishing a goal in a program – Year 4 Lesson 1	Simulating a physical system – Year 3 Lesson 2	Making a control simulation – Year 4 Lesson 6	Debugging – Year 3 Lesson 5	Debugging – Year 4 Lesson 4
YEAR 3 & 4 CYCLE B	Introducing 'If' statements – Year 3 Lesson 4	Variables and 'if/else' statements – Year 4 Lesson 2	Repetition using a timer and repeat commands – Year 3 Lesson 3	Repetition and user input – Year 4 Lesson 3	Variables – Year 3 Lesson 6	Variables – Year 4 Lesson 5

Year 5 & 6 Cycle A*

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Unit 5.1 Coding
Number of Weeks – 6
Main Programs – 2Code

Unit 5.2 Online safety
Weeks – 3
Programs - Various

Unit 3.3 Spreadsheets
Weeks – 6
Programs – 2Calculate

Unit 5.4 Databases
Weeks – 4
Programs – 2Question, 2Investigate

Unit 5.5 Game Creator
Weeks – 5
Programs – 2DIY 3D

Unit 5.6 3D Modelling
Weeks – 4
Programs – 2Design and Make

Unit 5.7 Concept Maps
Weeks – 4
Programs – 2Connect

Year 5 & 6 Cycle B*

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Unit 6.1 Coding
Number of Weeks – 6
Main Programs – 2Code

Unit 6.2 Online safety
Weeks – 3
Programs - Various

Unit 6.3 Spreadsheets
Weeks – 5
Programs – 2Calculate

Unit 6.4 Blogging
Weeks – 5
Programs – 2Blog

Unit 6.5 Text Adventures
Weeks – 5
Programs – 2Code, 2Connect

Unit 6.6 Networks
Weeks – 3

Unit 6.7 Quizzing
Weeks – 6
Programs – 2Quiz, 2DIY, Text Toolkit, 2Investigate

* There is an optional unit 6.8 – Understanding Binary that can be used in addition to the above units. It is a four week unit.

Coding Breakdown

YEAR 5 & 6 CYCLE A	Accomplishing a goal in a program – Year 5 Lesson 1	Simulating a physical system – Year 5 Lesson 2	Creating a game with a score and timer – Year 5 Lessons 4 and 5	Using buttons to showcase work – Year 6 Lesson 5	Internet safety – Year 5 Lesson 6
YEAR 5 & 6 CYCLE B	Designing and writing a more complex program – Year 6 Lessons 1 and 2		Introducing text variables – Year 5 Lesson 3	Introducing Functions – Year 6 Lesson 3	Text Adventure – Year 6 Lesson 6	Vocabulary review and quizzes – Year 6 Lesson 4

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 new national curriculum September 2014, but will be challenged to achieve greater than this.
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 Computers, learning, gain in confidence and sharing ideas with each other.

Assessment of computing

The assessment tool will allow teachers to accurately assess
Assessment is recorded onto a recording sheet which highlights the attainment of pupils in a year group.
 A range of assessment evidence will be collected to support teacher's judgement and will include:

- Photographs
- Presentations
- Programme outcomes
- Editing outcomes
- Ongoing assessment tasks
- Pupils' discussion and consultation

Key questions to ask pupils

- How can you keep yourself safe online?
- Can you develop a set of e-safety rules for the class or for your family?
- What does algorithm mean?
- Can you make repeated instructions?
- How can we solve this problem?
- Explain how this works?
- How do you know the information you have found is from a trusted source? / is factually correct?

E-Safety

At Essendine we take every opportunity to ensure the safety of pupils is part of everything we do which supports safeguarding in our school.
This starts with providing secure cloud storage for all our school's resources and activities and continues by providing online safety resources and guidance.

We will:
- create simple and safe logins and passwords for all the children
- Individual logins allow the children to have their own folder to save their work into. Only the pupil and teacher, can access this.

Monitoring

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

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.
- Assist colleagues so that assessment procedures are called out with clarity and consistency
Governors will liaise with the Subject Leader to support improvement planning processes and be aware of standards.

Partnerships

Parents

Essendine we believe that student success is a combination of support from school and home. The digital age offers a wide variety of tools to allow parents to connect with our school and teachers.

Secondary partners

We will work proactively with our secondary partners to ensure that when our children leave Essendine they are confident in the use of IT, can keep them safe and have the necessary skills and attitudes to be secondary ready for the Key Stage 3 curriculum requirements and expectations.