Amberley Parochial School

Providing the rich soil that enables
our children to develop deep roots and flourish.

Immersion Curriculum: Year 3/4
Cycle B

At Amberley, each unit of Computing aims to give our pupils the life-skills that will enable them to embrace and utilise new technology in a socially responsible and safe way in order to flourish.

Intent:

For our pupils to gain the skills to:

- be able to operate in the 21st century workplace and to know the career opportunities that will be open to them if they study computing
- to become autonomous, independent and safe users of computing technologies, gaining confidence and enjoyment from their activities
- to support learning across the entire curriculum and ensure that our curriculum is accessible to every child
- to develop creativity, resilience and problem-solving and critical thinking skills

Curriculum Impact

The Amberley children will develop to be responsible, competent, confident and creative users of technology. They will be able to understand and apply concepts of computer science and use technology to gain and evaluate information, thinking and acting logically.

Focus	Milestone for end of Lower Key Stage 2 (Year 4)	National Curriculum Objectives: By the end of the Key Stage 2
Computing Systems and Networks Connecting Computers	• Explain how digital devices function. • Identify input and output devices. • Recognise how digital devices can change the way we work. • Explain how a computer network can be used to share information. • Recognise the physical components of a network. • Explore and describe how networks physically connect to other networks. • Recognise how networked devices make up the internet. • Understand how content can be added and accessed on the world wide web. • Recognise that www content is created by people and evaluate the consequences of unreliable content. **Ongoing**: Managing Online Information • Use key phrases in search engines. • Explain what autocomplete is and how to choose the best suggestion. • Explain how the internet can be used to sell and buy things • Explain the difference between a 'belief', an 'opinion' and a 'fact'. • Analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. • Describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). • Describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. • Explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. • Explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true Privacy and Security • Give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. • Understand and can give reasons why passwords are important. • Describe simple strategies for creating and keeping passwords private. • Describe how connected devices can collect and share my information with others. • Explain what a strong password is. • Describe strategies for keeping my personal information private, depending on context. • Explain that others online can pretend to be me or other people, including my friends; suggest reasons why they might do this. • Explain how internet use can be monitored. Copyright and Ownership • Explain why copying someone else's work from the internet without permission can cause problems. • Give examples of what those problems might be. • Explain why I need to consider who owns content on the internet and whether I have the right to reuse it; give some simple examples.	Pupils should be taught to: • Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration. **Education for a Connected World**: (non-statutory guidance) Self-Image and Identity • Explain what is meant by the term 'identity'. • Explain how I can represent myself in different ways online. • Explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an avatar; social media). • Explain how my online identity can be different to the identity I present in 'real life' • Describe the right decisions about how I interact with others and how others perceive me.

Duration	Cycle
Term 1	B

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Key Vocabulary:
digital devices, input, output, process, network, information, connection, message, network switch, server, wireless access point.
Appropriate vocabulary will be selected from this list based on content.

Focus	Milestone for end of Lower Key Stage 2 (Year 4)	National Curriculum Objectives: By the end of the Key Stage 2
Creating Media Stop Frame Animation	• **Explain** that animation is a sequence of drawings or photographs. • Relate animated movement with a sequence of images. • Plan an animation. • Identify the need to work consistently and carefully. • Review and improve an animation. • Evaluate the impact of adding other media **to an animation.**	Pupils should be taught to: • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Duration	**Cycle**	**Ongoing:** Managing Online Information • Use key phrases in search engines. • Explain what autocomplete is and how to choose the best suggestion. • Explain how the internet can be used to sell and buy things • Explain the difference between a 'belief', an 'opinion' and a 'fact'. • Analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. • Describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). • Describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. • Explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. • Explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true	**Education for a Connected World:** (non-statutory guidance) Online Relationships • Describe ways people who have similar likes and interests can get together online. • Give examples of technology-specific forms of communication (e.g. emojis, acronyms, text speak). • Explain some risks of communicating online with others I don't know well. • Explain how my and other people's feelings can be hurt by what is said or written online. • Explain why I should be careful who I trust online and what information I can trust them with. I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried.
Term 2	**B**		

Focus continued (left column):
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Milestone continued (middle column):
Privacy and Security
• Give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult.
• Understand and can give reasons why passwords are important.
• Describe simple strategies for creating and keeping passwords private.
• Describe how connected devices can collect and share my information with others.
• Explain what a strong password is.
• Describe strategies for keeping my personal information private, depending on context.
• Explain that others online can pretend to be me or other people, including my friends; suggest reasons why they might do this.
• Explain how internet use can be monitored.
Copyright and Ownership
• Explain why copying someone else's work from the internet without permission can cause problems.
• Give examples of what those problems might be.
• Explain why I need to consider who owns content on the internet and whether I have the right to reuse it; give some simple examples.

NC objectives continued (right column):
• Explain what it means to 'know someone' online and why this might be different from knowing someone in real life.
• Explain what is meant by 'trusting someone online'; explain why this is different from 'liking someone online'.
• Describe strategies for safe and fun experiences in a range of online social environments
• Give examples of how to be respectful to others online

Key Vocabulary:
animation, animated movement, sequence, image, frame, setting, event, storyboard, onion skin, media, evaluate.
Appropriate vocabulary will be selected from this list based on content.

Focus	Milestone for end of Lower Key Stage 2 (Year 4)	National Curriculum Objectives: By the end of the Key Stage 2
Creating media Desktop publishing	- Recognise how text and images convey information. - Recognise that text and layout can be edited. - Choose appropriate page settings. - Add content to a desktop publishing publication. - Consider how different layouts can suit different purposes. - Consider the benefits of desktop publishing.	Pupils should be taught to: Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information.

Duration — Term 3 | **Cycle** — B

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Ongoing:

Managing Online Information
- Use key phrases in search engines.
- Explain what autocomplete is and how to choose the best suggestion.
- Explain how the internet can be used to sell and buy things
- Explain the difference between a 'belief', an 'opinion' and a 'fact'.
- Analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'.
- Describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites).
- Describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online.
- Explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people.
- Explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true

Privacy and Security
- Give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult.
- Understand and can give reasons why passwords are important.
- Describe simple strategies for creating and keeping passwords private.
- Describe how connected devices can collect and share my information with others.
- Explain what a strong password is.
- Describe strategies for keeping my personal information private, depending on context.
- Explain that others online can pretend to be me or other people, including my friends; suggest reasons why they might do this.
- Explain how internet use can be monitored.

Copyright and Ownership
- Explain why copying someone else's work from the internet without permission can cause problems.
- Give examples of what those problems might be.
- Explain why I need to consider who owns content on the internet and whether I have the right to reuse it; give some simple examples.

Education for a Connected World:
(non-statutory guidance)
Online Bullying

- Explain what bullying is and can describe how people may bully others.
- Describe rules about how to behave online and how I follow them.
- Identify some online technologies where bullying might take place.
- Describe ways people can be bullied through a range of media (e.g. image, video, text, chat).
- Explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation)

Key Vocabulary:
desktop publishing, text, image, communicate, layout, edit, font style, size, colour, purpose, page orientation, portrait, landscape, placeholder, template, purpose, publication, content, highlight, cut, paste, copy, location.

Appropriate vocabulary will be selected from this list based on content.

Focus	Milestone for end of Lower Key Stage 2 (Year 4)	National Curriculum Objectives: By the end of the Key Stage 2
Programming A Sequence in music	• Explore a new programming environment. • Recognise that commands in Scratch are represented as blocks. • Identify that each sprite is controlled by the commands I choose. • Explain that a program has a start. • Recognise that a sequence of commands can have an order. • Change the appearance of my project. • Create a project from a task description. **Ongoing:** Managing Online Information • Use key phrases in search engines. • Explain what autocomplete is and how to choose the best suggestion. • Explain how the internet can be used to sell and buy things • Explain the difference between a 'belief', an 'opinion' and a 'fact'. • Analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. • Describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). • Describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. • Explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. • Explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true Privacy and Security • Give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. • Understand and can give reasons why passwords are important. • Describe simple strategies for creating and keeping passwords private. • Describe how connected devices can collect and share my information with others. • Explain what a strong password is. • Describe strategies for keeping my personal information private, depending on context. • Explain that others online can pretend to be me or other people, including my friends; suggest reasons why they might do this. • Explain how internet use can be monitored. Copyright and Ownership • Explain why copying someone else's work from the internet without permission can cause problems. • Give examples of what those problems might be. • Explain why I need to consider who owns content on the internet and whether I have the right to reuse it; give some simple examples.	Pupils should be taught to: • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work, and to detect and correct errors in algorithms and programs. **Education for a Connected World**: (non-statutory guidance) Health, Well-Being and Lifestyle • Explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos). • Explain how using technology can distract me from other things I might do or should be doing. • Identify times or situations when I might need to limit the amount of time I use technology. • Suggest strategies to help me limit this time.

Duration	Cycle
Term 4	B

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Key Vocabulary:
programming, program, project, object, sprite, backdrop, attribute, layout, command, block, design, control, start/execute, sequence, respond, code, motion, appearance, combine, order, action, costume, copy, algorithm, debug

Appropriate vocabulary will be selected from this list based on content.

Focus	Milestone for end of Lower Key Stage 2 (Year 4)	National Curriculum Objectives: By the end of the Key Stage 2
Data and Information Branching Databases	• Use branching database to identify objects. • Create a branching database having identify object attributes needed to collect relevant data. • Explain why it is helpful for a database to be well structured. • Make comparisons between information in pictograms and branching databases. **Ongoing:** Managing Online Information • Use key phrases in search engines. • Explain what autocomplete is and how to choose the best suggestion. • Explain how the internet can be used to sell and buy things • Explain the difference between a 'belief', an 'opinion' and a 'fact'. • Analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. • Describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). • Describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. • Explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. • Explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true Privacy and Security • Give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. • Understand and can give reasons why passwords are important. • Describe simple strategies for creating and keeping passwords private. • Describe how connected devices can collect and share my information with others. • Explain what a strong password is. • Describe strategies for keeping my personal information private, depending on context. • Explain that others online can pretend to be me or other people, including my friends; suggest reasons why they might do this. • Explain how internet use can be monitored. Copyright and Ownership • Explain why copying someone else's work from the internet without permission can cause problems. • Give examples of what those problems might be. • Explain why I need to consider who owns content on the internet and whether I have the right to reuse it; give some simple examples.	Pupils should be taught to: • Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. • Use technology safely, respectfully, and responsibly. **Education for a Connected World:** (non-statutory guidance) Online Reputation • Search for information about myself online. • Recognise I need to be careful before I share anything about myself or others online. • Know who I should ask if I am not sure if I should put something online. • Describe how others can find out information about me by looking online. • Explain ways that some of the information about me online could have been created, copied or shared by others. **Key Vocabulary:** attribute, value, questions, table, objects, branching database, database, equal, even, separate, compare, order, organise, data, selecting, pictogram, information, decision tree Appropriate vocabulary will be selected from this list based on content.

Duration	Cycle
Term 5	**B**

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Focus	Milestone for end of Lower Key Stage 2 (Year 4)	National Curriculum Objectives: By the end of the Key Stage 2
Programming B Events and actions	- Create a program in a text-based language. - Modify a count-controlled loop to produce a given outcome. - Decompose a program into parts. - Create a program that uses count-controlled loops to produce a given outcome. - Develop the use of count-controlled loops in a different programming environment. - Understand infinite loops and count controlled loops. - Develop a design which includes two or more loops which run at the same time. - Modify an infinite loop in a given program. - Design and create a project that includes repetition. **Ongoing:** Managing Online Information - Use key phrases in search engines. - Explain what autocomplete is and how to choose the best suggestion. - Explain how the internet can be used to sell and buy things - Explain the difference between a 'belief', an 'opinion' and a 'fact'. - Analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. - Describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). - Describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. - Explain that some people I 'meet online' (e.g. social media) may be computer programmes pretending to be real people. - Explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true Privacy and Security - Give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. - Understand and can give reasons why passwords are important. - Describe simple strategies for creating and keeping passwords private. - Describe how connected devices can collect and share my information with others. - Explain what a strong password is. - Describe strategies for keeping my personal information private, depending on context. - Explain that others online can pretend to be me or other people, including my friends; suggest reasons why they might do this. - Explain how internet use can be monitored. Copyright and Ownership - Explain why copying someone else's work from the internet without permission can cause problems. - Give examples of what those problems might be. - Explain why I need to consider who owns content on the internet and whether I have the right to reuse it; give some simple examples.	Pupils should be taught to: - Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. - Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. - Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Consolidation of Digital Literacy content from **Education for a Connected World:** (non-statutory guidance)

Duration	Cycle
Term 6	**B**

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Key Vocabulary:
motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, design, action, errors, code, test, debug, actions, Appropriate vocabulary will be selected from this list based on content.