**Computing Curriculum Intent – EYFS, KS1 & KS2**

Developed by:  **A.Phillips** Compiled: **November 2022**

**National Curriculum Aims for Computing:**

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.

**Reception**

Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. EY Development Matters from 2012 (now removed from the Revised Early Years Framework).

**By the end of Reception, children at Stoneydelph should be able to:**

* Know how to switch on a computer (Using Technology purposefully)
* Know how to use a mouse, touch screen or stylus to select options on a screen.
* Know how to take a photograph, record film or sound and see or play these back.
* Know how to type letters using a keyboard (hardware or touch screen).
* Know how to input a simple sequence of commands (with support) into digital device. (Coding)
* Know who to speak to if someone makes me feel upset online. (E-Safety and Digital Citizenship)
* Know that the internet can be used to find out information.
* Know simple rules to keep them safe and healthy online.

**National Curriculum Subject Content for KS1:**

Pupils should be taught to:

* understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
* create and debug simple programs
* use logical reasoning to predict the behaviour of simple programs
* use technology purposefully to create, organise, store, manipulate and retrieve digital content
* recognise common uses of information technology beyond school
* use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

**National Curriculum Subject Content for KS2:**

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
* 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
* use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
* 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; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

This has been simplified for coverage to the following:

1 – Coding. Including designing, writing and debugging using programming software and hardware such as Scratch, Spheros and Robot Pets.

2 – Input and output variables. This includes using hardware such as visual or audio recording equipment and then editing the outcomes.

3 – World Wide Web. Looking at working collaboratively and sharing files etc, as well as web design and content creation.

4 – Combined Information Technology. This includes the termly change between word processing, presentation software and spreadsheet software.

5 – Animation. Using various software and hardware to animate and digitalise materials. Stop Motion Animation and looking at Augmented Reality.

6 – Photo Editing. Using cameras and digital image capture hardware and then manipulating the image either in hardware or through digital software.

7 – E-safety and Digital Citizenship.

**Cycle A – Academic Year 2022-2023**

**Reception**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2**  | **Summer 1** | **Summer 2** |
| No discrete computing to allow for children to settle into school routines. |  |  |  |  |
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**Year 1 / 2**

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| --- | --- | --- | --- | --- | --- |
| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2**  | **Summer 1** | **Summer 2** |
| DL – Information Technology Focus on Word Processing | DL – Information Technology Focus on Presentation Software | Unplugged Computer Science Project. | DL – Information Technology Focus on Data Handling | Creative Media Project |
| Staff developed planning with links to Teach Computing Year 1, Unit 1: Technology Around Us. | Staff developed planning.  | Teach Computing Year 1, Unit 3: Programming A: Moving A Robot | Staff developed planning with links to Teach Computing Year 2, Unit 4: Pictograms. | Teach Computing Year 1, Unit 2: Digital Painting |
| * use technology purposefully to create, organise, store, manipulate and retrieve digital content
* recognise common uses of information technology beyond school
* use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
 | * use technology purposefully to create, organise, store, manipulate and retrieve digital content
* recognise common uses of information technology beyond school
 | * understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
* create and debug simple programs
* use logical reasoning to predict the behaviour of simple programs
* recognise common uses of information technology beyond school
 | * use technology purposefully to create, organise, store, manipulate and retrieve digital content
* use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
 | * use technology purposefully to create, organise, store, manipulate and retrieve digital content
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**Year 3 / 4**

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| --- | --- | --- | --- | --- | --- |
| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2**  | **Summer 1** | **Summer 2** |
| DL – Information Technology Focus on Word Processing | Creative Media Project | DL – Information Technology Focus on Presentation Software | Creative Media Project | DL – Information Technology Focus on Data Handling | Computer Science Project. |
| Staff developed planning. | Teach Computing Year 3, Unit 2: Stop Frame Animation | Staff developed planning with links to Teach Computing Year 3, Unit 5: Desktop Publishing | Teach Computing Year 4, Unit 2: Audio Production | Staff developed planning with links to Teach Computing Year 3, Unit 4: Branching Databases | Teach Computing Year 3, Unit 3: Programming A: Sequencing Sounds |
| * 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
 | * 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; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
 | * use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
* 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
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 | * 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
 | * 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
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**Year 5 / 6**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2**  | **Summer 1** | **Summer 2** |
| DL – Information Technology Focus on Word Processing | Computer Science Project | DL – Information Technology Focus on Presentation Software | Creative Media Project | DL – Information Technology Focus on Data Handling | Creative Media Project |
| Staff developed planning. | Teach Computing Year 5, Unit 6: Programming B: Selection in Quizzes | Staff developed planning. | Teach Computing Year 6, Unit 5: 3D Modelling | Staff developed planning with links to Teach Computing Year 6, Unit 4: Introduction to Spreadsheets | Teach Computing Year 5, Unit 2: Video Production |
| * 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
 | * 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
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 | * 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
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**Cycle B – Academic Year 2023-2024**

**Reception**

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| --- | --- | --- | --- | --- | --- |
| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2**  | **Summer 1** | **Summer 2** |
| No discrete computing to allow for children to settle into school routines. |  |  |  |  |
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**Year 1 / 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2**  | **Summer 1** | **Summer 2** |
| DL – Information Technology Focus on Word Processing | Unplugged Computer Science Project. | DL – Information Technology Focus on Presentation Software | Creative Media Project | DL – Information Technology Focus on Data Handling | Computer Science Project |
| Staff developed planning with links to Teach Computing Year 1, Unit 5: Digital Writing. | Teach Computing Year 1, Unit 6: Programming B: Programming Animations | Staff Developed Planning | Teach Computing Year 2, Unit 2: Digital Photography | Staff developed planning with links to Teach Computing Year 1, Unit 4: Grouping Data | Teach Computing Year 2, Unit 6: Programming B: Programming Quizzes |
| * use technology purposefully to create, organise, store, manipulate and retrieve digital content
* use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
 | * understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
* create and debug simple programs
* use logical reasoning to predict the behaviour of simple programs
* use technology purposefully to create, organise, store, manipulate and retrieve digital content
 | * use technology purposefully to create, organise, store, manipulate and retrieve digital content
* recognise common uses of information technology beyond school
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* use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
 | * use technology purposefully to create, organise, store, manipulate and retrieve digital content
* use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
 | * understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
* create and debug simple programs
* use logical reasoning to predict the behaviour of simple programs
 |

**Year 3 / 4**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2**  | **Summer 1** | **Summer 2** |
| DL – Information Technology Focus on Word Processing | Computer Science Project | DL – Information Technology Focus on Presentation Software | Computer Science Project | DL – Information Technology Focus on Data Handling | Creative Media Project |
| Staff Developed Planning | Teach Computing Year 3, Unit 6: Programming B: Events and Actions In Programs | Staff Developed Planning | Teach Computing Year 4, Unit 6: Programming B: Repetition in Games | Staff developed planning with links to Teach Computing Year 4, Unit 4: Data Logging | Teach Computing Year 4, Unit 5: Photo Editing |
| * 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
 | * design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
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* use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
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**Year 5 / 6**

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| --- | --- | --- | --- | --- | --- |
| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2**  | **Summer 1** | **Summer 2** |
| DL – Information Technology Focus on Word Processing | Computer Science Project | DL – Information Technology Focus on Presentation Software | Creative Media Project | DL – Information Technology Focus on Data Handling | Computer Science Project |
| Staff developed planning. | Teach Computing Year 6, Unit 3: Programming A: Variables in Games | Staff developed planning with links to Teach Computing Year 6, Unit 2: Web-Page Creation | Teach Computing Year 5, Unit 5: Vector Graphics | Teach Computing Year 5, Unit 4: Flat File Databases | Teach Computing Year 6, Unit 6: Programming B: Sensing Movement |
| * 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
 | * design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
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**Computing Theme Week – Taking place in Cycle B – Academic Year 2023-2024**

**The computing theme week plans to take place once every two years. The following overview aims to look at the concepts of computing which includes where computing and technology has come from, how it’s used now and what the future of computing may be.**

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| --- | --- | --- | --- |
| **Reception** | **Year 1 / 2** | **Year 3 / 4** | **Year 5 / 6**  |
| **Looking at Photography (old and new)** | **Looking at Robotics and Future AI (Artificial Intelligence)** | **Looking at WWW and digital mapping, considering privacy (some geography links)** | **Looking at Computing as a means of communication and collaboration as well as code breaking. (Also look at censorship, permissions and digital privacy re Social Media etc).** |
|  |  |  | Potential Trip to The Computing Museum and Bletchley Park. |
|  | Links to Teach Computing Year 2, Unit 1: IT Around Us. | Links to Teach Computing Year 4, Unit 1: The Internet | Links to Teach Computing Year 6, Unit 1: Communication and Collaboration |
|  | * use technology purposefully to create, organise, store, manipulate and retrieve digital content
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 | * 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
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**Curriculum Coverage Tally (per half term coverage across a two-year cycle)**

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| --- | --- | --- | --- | --- |
| **National Curriculum Objective** | **Year 1 / 2** | **Year 3 / 4** | **Year 5 / 6** | **Total** |
| * understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
 | **||| (3)** |  |  | **3** |
| * create and debug simple programs
 | **||| (3)** |  |  | **3** |
| * use logical reasoning to predict the behaviour of simple programs
 | **||| (3)** |  |  | **3** |
| * use technology purposefully to create, organise, store, manipulate and retrieve digital content
 | **|||||||||| (10)** |  |  | **10** |
| * recognise common uses of information technology beyond school
 | **|||||| (6)** |  |  | **6** |
| * use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
 | **|||||| (6)** |  |  | **6** |
| * design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
 |  | **||| (3)** | **||| (3)** | **6** |
| * use sequence, selection, and repetition in programs; work with variables and various forms of input and output
 |  | **|||| (4)** | **||| (3)** | **7** |
| * use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
 |  | **||| (3)** | **||| (3)** | **6** |
| * 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
 |  | **| (1)** | **| (1)** | **2** |
| * use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
 |  | **||| (3)** | **||| (3)** | **6** |
| * 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
 |  | **||||||||||| (11)** | **|||||||||||| (12)** | **23** |
| * use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
 |  | **|||| (4)** | **||||| (5)** | **9** |