



## Chandag Infant School - Computing Scheme of Work

**A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems.**

### EYFS

Elements of computing can be taught through the Prime and Specific areas of learning and their associated Early Learning Goals.

**Area of Computing:** Use of Technology

#### **Relevant ELGs:**

**13 People and communities:** children talk about past and present events in their own lives and in the lives of family members. They know that other children don't always enjoy the same things, and are sensitive to this. They know about similarities and differences between themselves and others, and among families, communities and traditions.

**15 Technology:** children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.

**Area of Computing:** Programming

#### **Relevant ELGs:**

**02 Understanding:** children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events.

**04 Moving and handling:** children show good control and co-ordination in large and small movements. They move confidently in a range of ways, safely negotiating space.

**Area of Computing:** Digital Literacy

#### **Relevant ELGs:**

**16 Exploring and using media and materials:** children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

**17 Being imaginative:** children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories.

*NB: Aspects of almost all of the other ELGs could be enhanced or evidenced through the use of technology e.g. ELGs 01, 02, 09 and 10 would all benefit from the use of*



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*eBooks and recording devices.*

**Area of Computing:** E-Safety

**Relevant ELGs:**

**06 Self-confidence and self-awareness:** children are confident to try new activities, and say why they like some activities more than others. They are confident to speak in a familiar group, will talk about their ideas, and will choose the resources they need for their chosen activities. They say when they do or don't need help.

**07 Managing feelings and behaviour:** children talk about how they and others show feelings, talk about their own and others' behaviour, and its consequences, and know that some behaviour is unacceptable. They work as part of a group or class, and understand and follow the rules. They adjust their behaviour to different situations, and take changes of routine in their stride.

In **Years 1 and 2** pupils are 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.

The **National Curriculum for Computing key stage 1** 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.

<u>Y1 Skills</u>	<u>Topics and Learning Activities in Year 1 (please see detailed Computing Scheme of work April 2018)</u>
<ul style="list-style-type: none"> <li>• Students will spend time learning about simple</li> </ul>	<b>Autumn 1</b> Superheroes: Superhero captions, Superhero Selfies, Digital effects selfie. From Computing SoW:



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<p>Algorithms, Key learning point: The idea that you can write “programs” to complete tasks.</p> <ul style="list-style-type: none"> <li>• Students will use the basic scratch like interface at <a href="http://designblocksjs.appspot.com/">http://designblocksjs.appspot.com/</a> to create simple graphical images.</li> <li>• Use <a href="http://www.silveos.com/">http://www.silveos.com/</a> to explain what an operating system is and the types of software included in it. All software runs on top of an Operating system.</li> <li>• Controlling a truck - Simple flash program written. Students have the program create the program as they move it. Then pass the program to a friend. Introduces algorithms and programs.</li> <li>• What is the Internet; students gain a better understanding of the internet and how to use it.</li> <li>• Children will use a series of simple simulations to introduce them to the idea that computers can represent real and imaginary situations. They will explore what happens when different choices are made and begin to record the choices made and the resulting affects.</li> </ul>	<p>Lego Builders</p> <p><b>Autumn 2</b> Celebrations and Seasons: De-bugging simple programme, Use Beebots – make maps for them to travel (STEM Exploring using Beebots). From Computing SoW: Programming Shapes</p> <p><b>Spring 1</b> Go Wild: animals: Animal facts, How can I create text and add basic effects – font style, size and colour? How can I save and print my work? From Computing SoW: Operating Systems Builders</p> <p><b>Spring 2</b> Once upon a time: Basic IT skills – creating text, Beebots, Decoding From Computing SoW: Virtual Trucking</p> <p><b>Summer 1</b> Into the woods: Modelling and Simulations</p> <p>Explore how a computer can be used to represent real or fantasy situations</p> <p>Beebots. From Computing SoW: Internet Explorers</p> <p><b>Summer 2</b> Beside the sea: Create and debug simple programs – expresso coding, To use ICT purposefully to create, organise, store, manipulate and retrieve digital content: ‘holiday photo album’, under the sea composition. From Computing SoW: Simulators</p>
<p><u>Y2 Skills</u></p>	<p><u>Topics and Learning Activities in Year 2</u></p>



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<ul style="list-style-type: none"> <li>• Programming using scratch Jr (1.4)</li> <li>• Programming bee-bot, students will program a bee-bot to complete a series of tasks.</li> <li>• Children will use a search engine in order to answer a question or find information. They will also learn how to retrieve webpages or sites from the Favourites folder and begin to understand why the Favourites folder is used.</li> <li>• Children will re-cap on how to stay safe when using the Internet.</li> <li>• Children will create a presentation combining text, images, video and sound and present to an audience.</li> </ul>	<p><b>Autumn 1:</b> Wow science! Healthy living/Food: Digital images- be your selfie, Google maps. From Computing SoW: Real World Modelling</p> <p><b>Autumn 2:</b> Rain Underwater: Google maps, Digital content. From Computing SoW: How to train your Robot.</p> <p><b>Spring 1:</b> Space: To infinity and beyond!: Technology beyond school, E safety, Coding. From Computing SoW: Programming Blocks</p> <p><b>Spring 2:</b> Once upon a time: Coding. From Computing SoW: Maze Explorers 1</p> <p><b>Summer 1:</b> Tiddalik/Australia; Coding – creating and improving algorithms, <i>Google maps – looking at Australia, uk and local.</i> From Computing SoW: Information Collectors</p> <p><b>Summer 2:</b> Animals, life cycles and habitats: <i>Beebots, Controllable toys – programming.</i> From Computing SoW: Presenting My Ideas.</p>
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