



Clara Grant

Key Knowledge, Skills and Understanding

COMPUTING

Computing Teaching in Clara Grant Primary school is based on the National Curriculum and aims to build our children's knowledge of how digital systems work, and how to put this knowledge to work through programming.

- We want our children to use information technology to create programmes, systems and content.
- We are teaching them to be digitally literate, to be able to use and express themselves and develop their ideas through information and communication technology.
- We are preparing them for the future workplace and as active members and participants in a digital world.

We follow the 3 strands as set out by The Chartered Institute for IT and the Department for Education in 2014:

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

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation (**Computer science**)
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems (**Computer science**)
- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems (**Information technology**)
- Are responsible, competent, confident and creative users of information and communication technology. (**Digital literacy**)”

Source: Barefoot.com in association with BT : <https://www.barefootcomputing.org/my-barefoot-my-curriculum>

Knowledge, Skills and Understanding breakdown for Computing

EYFS “Understanding the World”

Characteristics of Effective Learning (Skills)	Knowledge and Interpretation	Early Learning Goal
<p>Playing and exploring – engagement</p> <ul style="list-style-type: none"> • Finding out and exploring • Playing with what they know • Being willing to 'have a go' <p>Active learning – motivation</p> <ul style="list-style-type: none"> • Being involved and concentrating • Keeping trying • Enjoying achieving what they set out to do <p>Creating and thinking critically – thinking</p> <ul style="list-style-type: none"> • Having their own ideas • Making links • Choosing ways to do things 	<ul style="list-style-type: none"> • Children know how to operate simple equipment, e.g. turns on CD player and uses remote control. • They show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. • They show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. • Children know that information can be retrieved from computers. • Children can complete a simple program on a computer. • Can use ICT hardware to interact with age-appropriate computer software. 	<p>Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.</p>

Knowledge, Skills and Understanding breakdown for Computing

Year 1

Computer science

- I know what an algorithm is.
- I can program a Bee Bot using the arrow keys.
- I can see how a product changes when I change instructions.
- I can check my work for mistakes to debug a program.
- I can evaluate and improve my sequence.

Information technology

- I can use a computer program to make a poster.
- I can create shapes and fill areas.
- I can add text to a painting.
- I can make changes to improve my work.

Digital literacy

- I know to speak to a trusted adult if I see, hear or read something online that upsets me.
- I can explain what each letter of SMART stands for.
- I can make links between the offline and online world.
- I can use my online safety knowledge to decide what to do in different situations.

Knowledge, Skills and Understanding breakdown for Computing

Year 2

Computer science

- I can give and follow an algorithm to turn: right and left; half and quarter turns; and turns of 90 degrees.
- I can give clear, accurate instructions in order.
- I can use abbreviations (code).
- I can check an algorithm.
- I can create , test and debug an algorithm.

Information technology

- I can identify the main features of a presentation.
- I can organise my presentation into main ideas.
- I can add a new slide and edit it.
- I can insert a text box and an image.
- I can use different options to present.

Digital literacy

- I can explain how a digital footprint contains information about a person.
- I can think about how to identify possible dangers or things which might make me uncomfortable online.
- I can explain what I like or dislike about a website.
- I can choose a sensible course of action if I feel uncomfortable online.

Knowledge, Skills and Understanding breakdown for Computing: Year 3

Computer science	Information technology	Digital literacy
<ul style="list-style-type: none"> • I can write commands in the right order. • I can use the commands fd, bk, lt, rt or rotate the turtle. • I can use the repeat command. • I can correct my mistakes. • I can create algorithms that draw regular polygons. 	<ul style="list-style-type: none"> • I can use two hands for typing. • I can use <Shift> , <Caps lock> , and <space bar> correctly. • I can edit using <Backspace>, <Delete>, arrow keys, undo and redo. • I can select and format text. • I can insert a text box. • I can format how text boxes are laid out. 	<ul style="list-style-type: none"> • I can identify a safe person to tell if I encounter cyberbullying. • I can create a strong password. • I can explain what privacy settings are. • I can discuss email as a form of communication and know the rules to safely send and receive one. • I can discuss the difference between communication in real life and online. • I can discuss what I have learned about online safety.

Knowledge, Skills and Understanding breakdown for Computing: Year 4

Computer science	Information technology	Digital literacy
<ul style="list-style-type: none"> • I can write and debug a program using scratch. • I can use repetition to create an effect. • I can program a variable for a sprite. • I can use variables to change a backdrop in a quiz. • I can select when to change the variable in a program sequence. • I can write a program with a scoring system. • I can create a variable scoring system using Scratch. 	<ul style="list-style-type: none"> • I can write commands in the correct order. • I can write procedures. • I can correct mistakes. • I can move the turtle using “setpos” commands. • I can set the pen colour and pen size. • I can fill an area with colour. • I can write text using the label command. • I can draw an arc. 	<ul style="list-style-type: none"> • I can say how I should respond to a hurtful message online. • I can use strategies which improve my results when searching online. • I understand the word “plagiarism” and how to avoid it. • I can explain what a citation is. • I can identify the information that I shouldn’t share online and why it could be dangerous. • I understand why some websites ask for registration information. • I can explain how to be a good citizen in real life and online.

Knowledge, Skills and Understanding breakdown for Computing: Year 5

Computer science	Information technology	Digital literacy
<ul style="list-style-type: none"> • I can design and program a character game. • I can program consequences for specific actions. • I can test and debug a program after making changes. • I can plan sequences of instructions (an algorithm). • I can translate logical instructions into coding language (blocks). • I can use code to increase the value of a variable. • I can add messages that are linked to a final value. 	<ul style="list-style-type: none"> • I can evaluate a webpage. • I can use the advanced features of Google's web search. • I can add text to a webpage. • I can format text on a web page. • I can search for an appropriate image and add it to a webpage. • I can add hyperlinks into a webpage • I can publish and share my webpage. • I understand the different share settings of Google sites. 	<ul style="list-style-type: none"> • I can take steps to avoid receiving spam, and know what to do with it if I do. • I can explain why it is important to cite a source. • I can follow citations to access an online source. • I can explain why having a strong password is important. • I understand that not everything that I see online is true. • I can explain how to apply online safety rules to a given scenario. • I can give examples of unsafe online behaviour and their possible consequences.

Knowledge, Skills and Understanding breakdown for Computing: Year 6

Computer science	Information technology	Digital literacy
<ul style="list-style-type: none"> • I can create animations in scratch. • I can structure and control the timing of events. • I can control when objects need to be visible. • I can sequence events to create a story narrative. • I can add voice sounds to enhance an animated story. • I can match character expressions with speech. • I can add interactive user features to a scene or story. • I can control the timing of interactive features. 	<ul style="list-style-type: none"> • I can enter data and formulas into a spreadsheet. • I can order and present data based on calculations. • I can insert and format aspects of a bar or column graph. • I can add, edit and calculate data. • I can use a spreadsheet to solve problems. • I can replicate formulas over several cells. • I can check calculations for errors. • I can interpret data and make comparisons. • I can calculate a running total. • I can calculate an amount remaining from a budget. • I can design a spreadsheet for a specific purpose. • I can create a range of suitable formulas for a purpose. 	<ul style="list-style-type: none"> • I can identify good strategies to deal with cyberbullying. • I can suggest ways in which people could deal with cyberbullying. • I can identify secure websites by identifying privacy seals of approval. • I can identify the lock symbol on the address bar. • I can find a link to a privacy policy. • I can identify warning signs that a website might not be secure. • I can explain what to do if I am asked or told something online which makes me uncomfortable. • I can explain some of the dangers of revealing personal information to an online friend. • I can identify a gender stereotype in a media message. • I can use my knowledge of online safety to teach others.