

Dean Field School

Computing Policy



Name of Policy Writer/Amendments	Date Written/Amended	Next Review Date
AHume	September 2019	July 2020
HMcKnight	July 2020	July 2021
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Klopuszniak	July 2026	July 2027

Introduction

This document is a statement of the aims, principles and strategies for the teaching, learning and assessment of Computing at Dean Field Community Primary School.

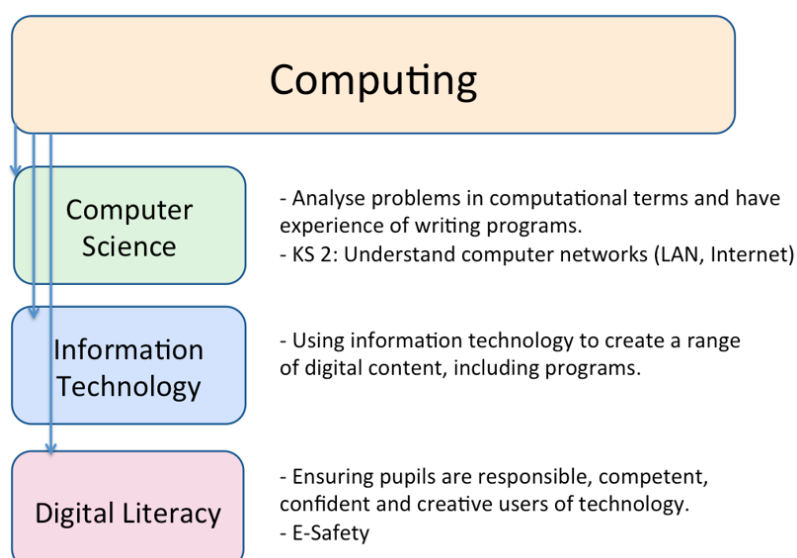
Intent

Each pupil at Dean Field has the right to a wealth of rich, deep learning experiences within the subject area of computing. As technology plays such a significant role in society today, we believe 'Computational Thinking' is a skill that children must be taught if they are to be able to participate safely and effectively in this digital world. The core of computing is Computer Science alongside basic skills. Pupils are introduced to a wide range of technology, including desktop computers, iPads, coding toys and interactive whiteboards, allowing them to continually practise and improve the skills they learn. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology at a level suitable for their next step into high school and the future workplace as active participants in a digital world.

We teach a curriculum that enables children to become confident users of technology who can:

- Understand and apply the fundamental principles and concepts of Computer Science, including logic, algorithms and data representation
- Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Evaluate and apply information technology analytically to solve problems
- Communicate ideas well by utilising appliances and devices throughout all areas of the curriculum.
- Have the basic skills needed to be computer literate in an ever developing digital world

The Computing national curriculum is made up of 3 main components and is broken down into three elements- Computer Science, Information Technology and Digital Literacy.



Children access these components by using various skills, which are outlined in the progression document. Children also need to be computational thinkers to be successful computer scientists- the skills needed to be a computational thinker are outlined below.



Our Aims

Through our teaching of computing we aim to enable the children to become confident users of technology who can:

- Understand and apply the fundamental principles and concepts of Computer Science, including logic, algorithms and data representation
- Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Evaluate and apply information technology analytically to solve problems
- Communicate ideas well by utilising appliances and devices throughout all areas of the curriculum.
- Have the basic skills needed to be computer literate in an ever-developing digital world

Implementation: Planning

Computing is planned and sequenced in a curriculum designed specifically for our children. Code a Pillars, Beebots, Botley robots, Daisy the Dinosaur, Scratch Junior, and Purple Mash are used for programming in KS1 and move on to using Scratch and Makeblock Cody in KS2.

Teaching and learning

Computing is taught mainly as a standalone subject however links are made with other curriculum areas where possible. Children have a weekly computing lesson. These lessons take place in the classroom either using iPads, laptops, netbooks, Beebots, Code-a-pillars or doing 'unplugged' activities. There is a half termly timetable created each half term to indicate when each class are in the computing suite.

Children's work is evidenced and saved in one of 4 places-

- Purple Mash- children have their own accounts and their work on Purple Mash is saved in there
- Group Shared- Children have their own named folders in Group Shared drive on the school system. Any Office documents and Scratch files will be saved in here
- Seesaw- Children have their own folders in Seesaw that move with them year on year. Photos, screenshots, activities will be saved in the computing folder on here

Resources

All computing resources are stored centrally in a computing cupboard. Each class has a minimum of ten iPads to use. Sets of laptops and Chromebook can be booked out by teachers to use with their class. Electronic toys including are used in computing sessions and in provision in EYFS and KS1.

Computing curriculum planning

To support our computing teaching in school, we use 'Must Knows' to help children understand key facts about their computing topic. Key vocabulary is also displayed on the 'Must Knows' to work alongside our whole school focus on developing our children's vocabulary across the subjects. These are shared with children at the beginning of the unit and are saved on Seesaw so that they can be referred to as they go along.

Inclusion

Each child will be given the same opportunities regardless of ethnic group, age, gender, ability, social circumstances or SEND in the development of their computing education. Lessons are differentiated to extend children who are working at a greater depth or higher ability in computing. There is also a coding club, which will be aimed at children in KS2 who are high attaining in programming. Teachers are able to look at Crash Courses on Purple Mash to give to children who have missed previous teaching in particular units or need extra support. Lessons are adaptable and can be changed to suit the ability of the children in the classes. Lessons can be differentiated by outcome, support or with crash courses. The progression document can also be used to help differentiate- lessons can be adapted to teach the skills relevant to the specific children that require differentiation.

Assessment for learning

Children demonstrate their ability in computing in a variety of different ways and teachers assess accordingly. Teachers will assess children's work by making informal judgements during lessons to move forward each individual child's learning. On completion of a piece of work, the teacher assesses the saved work on purple mash and uses this to inform future planning. Written or verbal feedback is given to the child to help guide their progress. All children are encouraged to make judgements about how they can improve their own work. Once the children complete a whole unit of work, the teacher makes a summary judgement of work for each child in relation to the National curriculum objectives on Sonar

The progression document in computing is used as a tool for teaching and assessment. The progression document ensures that teachers are able to understand what has been previously been taught, what they need to teach in their year group and what will be taught next. It is also a tool for identifying any gaps in pupils' learning and allows teachers to plan for this effectively.

Monitoring and reviewing

The subject leader is responsible for monitoring the standard of the children's work and quality of teaching in computing, developing the assessment and ensuring progression and continuity within the subject. This is carried out through a combination of deep dives with SLT, monitoring of online folders and folders on the drive, learning walks, lesson visits and speaking to children and teachers. Additionally, the subject leader will support colleagues in their teaching, inform staff of any current developments in the subject and provide lead and direction for computing across school. The subject leader updates resources which are needed to deliver the computing curriculum, within budget restraints. There will be at least one deep dive per year in computing, where children's work is looked at in depth and some lessons will be observed.

Impact

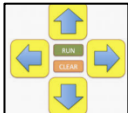
Assessment and Feedback

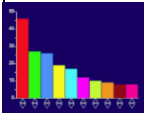
Sonar is used to assess children against the bespoke statements from our computing progression document. Assessment is ongoing and will be updated half-termly on Sonar after each unit is completed. See the table below for the assessment statements for each year group.

Aspect	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Basic Computing skills (ICT)	Turn on a computer Name the main parts of a desktop computer/pc Log in and log out Hold a mouse correctly Single and double click the mouse Start to recognise where letters are on the keyboard Recognise that the cursor moves when I move the mouse Know that the return key moves the cursor to the next line when I am word processing Save work on Purple Mash from a 2Do and know where to find it Use the keyboard or a word bank on my device to enter text. (PM, Word)	Recall and do all previously learned skills Find and open Microsoft Word Use Save As to save work in their own folder on pupil drive Save work on Purple Mash using Save As in their own folder Remember their own username and password Use the keyboard on a device to add, delete and space text for others to read. Use their knowledge of where the letters are on the keyboard to start to touch type Know the function of the delete and backspace key Use the Caps Lock key	Recall and do all previously learned skills Find and open work from my own folder in pupil drive Find, open and save Microsoft Word and Microsoft PowerPoint Change the colour, size and style of font in Word and PowerPoint Begin to touch type more accurately Use Undo I can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker.	Recall and do all previously learned skills Continue to improve accuracy and speed of touch typing Find and open work from a friend's folder to peer assess (with their permission) Print work Find and open Word, PowerPoint and Excel Right click the mouse in Word Copy and paste items from one document to another using the buttons on the toolbar or the drop down menu Insert a picture to a Word or PowerPoint document Add bullet points or numbers to a list in Word or PowerPoint Insert a shape into a Word document and change its size, colour and orientation Use ctrl Z to undo	Recall and do all previously learned skills Find and open work from a friend's folder to peer assess (with their permission) Rename a file in their own folder Insert shapes and pictures into a PowerPoint document Copy and paste using keyboard shortcuts Ctrl c Ctrl v Use the snipping tool Create a PowerPoint including animations Include transitions in a PowerPoint Use the shift key pressed with a letter to capitalise Insert a table and add data	Recall and do all previously learned skills Create and name new folders Use shortcuts on the keyboard to work more efficiently in Word and PowerPoint Ctrl x Ctrl b Ctrl u Ctrl a Use format painter Format text using align, spacing dependant on audience Insert table and use data to create a chart/graph

Online Safety (part of digital literacy) 	Recognise that there may be people online who could make someone feel sad, embarrassed or upset.	Explain how people may look and act differently online and offline.	Explain what is meant by the term 'identity'	Explain how online identity can be different to offline identity.	Explain how identity online can be copied/ modified or altered.	Critically evaluate online content relating to gender, race, religion, disability and culture
	Know when and how to speak to an adult I can trust and how they can help	Discuss issues that might make someone feel sad, worried, uncomfortable or frightened and give examples of how they might get help.	Explain how people can represent themselves in different ways online and how someone might change their identity depending on what they are doing online	Describe positive and respectful ways for someone to interact with others online and understand how this will positively impact on how others perceive them.	Demonstrate how to make responsible choices about having an online identity	Explain why it is important to challenge and reject inappropriate representations online.
	Give examples of when I should ask permission to do something online and explain why this is important.	Understand the risks posed by people who might use technology to communicate with others they don't know offline	Explain what it means to 'know someone' online and why this might be different from knowing someone offline.	Explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.	Explain that there are some people I can communicate with online who may want to do me or my friends harm	Explain how sharing something online may have an impact positively or negatively
	Explain how to behave online and why it is important to be considerate and kind to people online	Know who to ask before sharing things about themselves or agreeing to things online	Understand why it is important to be careful about who to trust online including what information and content they are trusted with.	Describe strategies for safe and fun experiences in a range of online social environments	Describe ways people may be involved in online communities and describe how they might collaborate constructively with others	Describe the importance of respecting boundaries regarding what is shared online and how things shared privately online can have unintended consequences for others
	Recognise that information can stay online and could be copied	Know their right to deny their permission online, ways to ask for and give permission and understand how others would feel if permission isn't sought before sharing something about them.	Explain how someone's feelings can be hurt by what is said or written online.	Understand that some of the information about anyone online could have been created, copied or shared by others	Demonstrate how to support others who are having difficulties online.	Explain strategies to protect their 'digital personality and online reputation'
	Describe what information I should not put online without asking a trusted adult first.	Name their trusted adults who can help if something happens online without consent or is incorrect	Explain the importance of giving and gaining permission before sharing things online	Describe ways people can be bullied through a range of media	Describe ways that information about anyone online can be used by others to make judgements about an individual and why these may be incorrect.	Explain how someone would report online bullying in different contexts
	Understand that we can encounter things we like and don't like online as well as things		Explain the need to be careful before sharing anything personal	Explain why people need to think carefully about how content they post might affect others	Recognise that online bullying can be different to bullying in the physical world	Explain and give examples of what a 'hoax' is.
			Demonstrate how to get help		Identifies ways to report concerns and access	Explain how and why some people may

which are real or make believe/ a joke Explain rules to keep safe when using technology both in and beyond the home Understand that passwords are used to protect information, accounts and devices Recognise examples of information that is personal to someone Explain why work children create using technology belongs to them Understand that work made by others does not belong to me even if I save a copy.	Understand that information put online about someone can last for a long time and can be seen by others Explain what bullying is, how bullying can make someone feel and how victims can get help Understand the difference between things that are imaginary, 'made up', or 'make believe' and things that are 'true' or 'real' Explain why some information I find online may not be real or true. Explains simple guidance for using technology in different environments and settings Knows how to use passwords to protect information, accounts and devices. Explain some rules for keeping personal information private Recognises that content on the internet may	from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened Give examples of how bullying behaviour could appear online and how someone can get support Demonstrate how to use key phrases in search engines to gather accurate information online. Explain the difference between a belief, an opinion and a fact and give examples of how and where they might be shared online. Describe simple strategies for creating and keeping passwords private. Describe how connected devices can collect and share anyone's information with others. Explain why copying someone else's work from the internet without permission isn't fair and what	Analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others. Describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy Describe some of the methods used to encourage people to buy things online Understands that lots of people sharing the same opinions or beliefs online do not make those beliefs or opinions true. Knows the benefits and risks of technology that can be designed to act like or impersonate living things Explain what is meant by fake news	support both in school and at home about online bullying. Knows how to block abusive users Explain the benefits and limitations of using different types of search technologies Evaluate digital content and explain how to make choices about what is trustworthy. Identify ways the internet can draw us to information for different agendas. Knows ways to identifying when online content has been commercially sponsored or boosted Knows how 'stereotypes' are amplified and reinforced online Describe how fake news may affect someone's emotions and behaviour Demonstrate how to create a strong password Describe how many free apps or services may read and share private	present opinions as facts; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. Define the terms 'influence', 'manipulation', and 'persuasion' and explain how someone might encounter these Understand the concept of persuasive design and how it can be used to influence peoples' choices. Demonstrate how to analyse and evaluate the validity of facts and information online Explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this. Describe the difference between online misinformation and disinformation Understand that information that is on a large number of sites
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		belong to other people.	problems this might cause	Describe strategies for keeping personal information private, depending on context. Describe and know how to respond appropriately if online services seek consent to store personal information Knows what the digital age of consent is and the impact this has on online services asking for consent. Explain the need to consider who owns information online and whether I have the right to use it. Give examples of content which I must not use without permission from the owner	information with others Explain what app permissions Assess and justify when it is acceptable to use the work of others. Give examples of content that is permitted to be reused and know how this content can be found online.	may still be inaccurate or untrue Identify, flag and report inappropriate content Describe effective ways people can manage passwords and what to do if a password is shared, lost or stolen. Describe how and why people should keep their software and apps up to Describe simple ways to increase privacy on apps and services that provide privacy settings Describe strategies to help me identify and deal with content which targets people to gain money or information illegally Demonstrate how to make references to and acknowledge sources I have used from the internet.
Computer Science 	Give instructions to a friend and follow their instructions to move around.	Give instructions to a friend (using forward, backward and turn) and physically follow	Break an open-ended problem up into smaller parts. Put programming commands into a	Use logical thinking to solve an open-ended problem by breaking it up into smaller	Decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to	Deconstruct a problem into smaller steps, recognising similarities to solutions used

	Describe what happens when buttons are pressed on a robot. (Code a Pillar/ programmable toy) Stack the pieces of the Code a Pillar's body in the correct order to make it do what they want. Describe what actions I will need to do to make something happen and begin to use the word 'algorithm'. Begin to predict what will happen for a short sequence of instructions. Begin to use software/apps to create movement and patterns on a screen. (Daisy the Dinosaur, Scratch Jr) Use the word 'debug' when mistakes are corrected when programming.	their instructions. Follow a set of instructions and debug them to improve the outcome Explain the order I need to do things to make something happen and talk about this as an algorithm. Program programmable toy to follow a particular path. Look at a friend's program and tell you what will happen. Watch a program execute and spot where it goes wrong so that it can be debugged (Daisy the Dinosaur, PM)	sequence to achieve a specific outcome. Keep testing a program and can recognise when they need to debug it. Use repeat commands. Describe the algorithm needed for a simple task. Detect a problem in an algorithm which could result in the program not working Use 'when' and 'then' commands Use 'if' statements to allow selection (PM)	parts. (Starters, Scratch) Use an efficient procedure to simplify a program. (Scratch) Know the need to keep testing a program while they are putting it together. (Scratch) Use a forever loop (Scratch) Recognise an error in a program and debug it. (Scratch) Recognise that an algorithm will help sequence more complex programs. (Scratch) Recognise that using algorithms will also help solve problems in other learning such as maths, science and design technology. Use 'if' statements to allow selection (Scratch)	write a program. (Scratch- slug trail) Refine a procedure using repeat commands to improve a program. (scratch) Use a variable to increase programming possibilities. (scratch) Change an input to a program to achieve a different output. (scratch) Use 'if' and 'then' commands to select an action. (Scratch) Use logical reasoning to detect and debug mistakes in a program. (Scratch) Use logical thinking, imagination and creativity to extend a program. (Starters, Scratch) Use programming to simulate a physical system (Scratch)	before. (Starters, Scratch) Explain and program each of the steps in my algorithm. (Scratch, Crumble) Evaluate the effectiveness and efficiency of algorithms while continually testing the programming of that algorithm. (Scratch, Crumble) Recognise when they need to use a variable to achieve a required output. (Scratch, Crumble) Use a variable and operators to stop a program. (Scratch, Crumble) Use different inputs (including sensors) to control a device or onscreen action and predict what will happen. (Crumble)
Handling Data 			Talk about the different ways data can be organised. (Unplugged)	Organise data in different ways. (Unplugged, PM, Maths)	Use a spreadsheet and database to collect and record data. (PM, Excel)	

			Search a ready-made database to answer questions. (PM) Collect data to help me answer a question. (Unplugged) Add to a database. (PM) I can make a branching database. (PM)	Collect data and identify where it could be inaccurate. (Science, maths, Unplugged) Plan, create and search a database to answer questions. (PM) Choose the best way to present data (Maths, PM)	Choose an appropriate tool to help collect data. (PM, Excel, Word) Present data in an appropriate way. (Maths, Science, unplugged, PM) Search a database using different operators to refine my search. (PM, Excel) Be able to find mistakes in data and suggest how it could be checked. (Excel, PM) Interrogate a database. (Excel, PM)	
Multimedia   	Be creative with different technology tools. (PM, paint, Seesaw) Use technology to create and present my ideas. (Seesaw, Paint, PM)	Use technology to organise and present my ideas in different ways. (Seesaw, paint, PM)	Create different effects with different technology tools. (PM, Paint, Seesaw) Combine a mixture of text, graphics and sound to share my ideas and learning. (Seesaw) Evaluate my work and improve its effectiveness.	Use photos, video and sound to create an atmosphere when presenting to different audiences. (Seesaw, Thinglink, PowerPoint, I Can Animate) Explore new media to extend what I can achieve. (Adobe Spark Page, Adobe Spark Video, PowerPoint, Seesaw) Give constructive feedback to peers to help them improve their work and	Use text, photo, sound and video editing tools to refine my work. (iMovie, Seesaw, Thinglink, Adobe apps) Review and improve own work and support others to improve their work. (Seesaw, unplugged)	Talk about audience, atmosphere and structure when planning a particular outcome. Combine a range of media, recognising the contribution of each to achieve a particular outcome. (Office, Seesaw, Adobe apps, Thinglink etc)

				refine my own work. (Unplugged, Seesaw)		
Technology in our lives  	Recognise the way we use technology in our classroom. Recognise ways that technology is used in my home and community. Use links to websites to find information. (Post these on Seesaw) Begin to identify some of the benefits of using technology	Explain why I use technology in the classroom. Explain why I use technology in my home and community. Understand that other people have created the information I use. Discuss the differences between the internet and things in the physical world. I can talk about the parts of a computer. (Display in ICT suite)	Save and retrieve work on the internet, the school network or an iPad. Describe ways to communicate with others online. Describe the World Wide Web as the part of the internet that contains websites. Use search tools to find and use an appropriate website. Know whether I can use images that I find online in my own work. Identify the negative impact of spending too much time using technology Explain why some online activities have age restrictions and the importance of following them	Describe whether a resource I am using is on the internet, the school network or an iPad Identify key words to use when searching safely on the World Wide Web. Think about the reliability of information I read on the World Wide Web. Describe how to check who owns photos, text and clipart. Create a hyperlink to a source on the World Wide Web. Identify times or situations when someone may need to limit the amount of time they use technology.	Describe different parts of the internet. Use a search engine to find appropriate information and check its reliability. Recognise and evaluate different types of information I find on the World Wide Web. Describe the different parts of a webpage. Find out who the information on a webpage belongs to. Know the way search results are selected and ranked. Describe ways that technology can affect health and well-being both positively and negatively. Describe strategies to promote health and well-being with regards to technology. Explain how and why some apps and games may request or take payment for additional	Describe the internet services I need to use for different purposes. Describe how information is transported on the internet. Know what HTML is and be able to spot html tags Check the reliability of a website. Describe copyright and acknowledge the sources of information that I find online Describe common systems that regulate age-related content Recognise the pressures that technology can place on someone and how to manage this. Assess and action different strategies to limit the impact of technology on health

					content and the importance of seeking permission from a trusted adult before purchasing	
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