HIGHER FAILSWORTH PRIMARY SCHOOL

Computing
Subject Leader: Mrs R.Gately and Miss K.Cave

ACHIEVE TEAM

Computing

Intent

At Higher Failsworth, we aim to allow children to develop their understanding of socially responsible use of technology. We aim for children to use technology in a safe way, both inside and outside of the school setting. We allow children to use a range of technologies and software (inc. desktops, I-pads, beebots, IWB) in order for them to have a breadth of experience in becoming digitally literate young people/ adults. We develop children's knowledge and understanding of computer science in order for them to be able to rival peers working within the computer science industry . We allow children to develop their resilience, problem solving and critical thinking through the teaching of all 3 areas of the National Curriculum; computer science, information technology and digit

Implementation

At Higher Failsworth each year group will study 5 main areas of the commuting curriculum. These are: E-Safety, Using Technology, Algorithms and Programmes, Data retrieval and Organising and COmmunication and Presentation. This has been planned to ensure that there is adequate progression across all year groups

Impact

At Higher Failsworth we want learners to discuss, reflect and appreciate the impact computing has on their learning, development and well being. Finding the right balance with technology is key to an effective education and a healthy lifestyle. We feel the way we implement computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We look for evidence through reviewing pupil's knowledge and skills digitally through tools like Google Drive, PurpleMash and FFT assessments. Progress of our computing curriculum is demonstrated through outcomes and the record of coverage in the process of achieving these outcomes.

Computing

We want pupils at Higher Failsworth to become:

- Become competent using a range of programmes
- Develop children who are resilient and good problems solvers
- Develop critical thinkers
- Become digitally literate
- Compete with their peers across the wider community

We ensure our pupils receive:

- Good access to a range of hardware and software to develop their skills across the wider curriculum
- Adequate progression throughout their time at HFPS
- Appropriate differentiation where needed

Computing - Threshold Concepts

Coding: This concept involves developing an understanding of instructions, logic and sequences

Connect: This concept involves developing an understanding of how to safely connect with others

Communicate: This concept involves using apps to communicate one's ideas

Collect: This concept involves developing an understanding of databases and their uses

Concept : This concept involves developing and understanding of how technology works

Computing - EYFS Skills (no discreet ELG)

	Communication and Language		Personal, Social and Emotional Development			Physical Development	
	Listening, Attention and Understanding	Speaking	Self-Regulation	Managing Self	Building relationships	Gross Motor Skills	Fine Motor Skills
Tinkering						✓	✓
Creating						✓	✓
Collaboration	✓		✓	✓	✓		
Persevering	✓			✓			
Logic	✓	✓					
Pattern	✓	✓					
Abstraction	✓	✓					
Algorithms and decomposition	✓	✓					

Computing - EYFS Skills (no discreet ELG)

	Literacy			Mathematics		Understanding the world			Expressive arts and design	
	Comprehension	Word Reading	Writing	Number	Numerical Patterns	Past and Present	People, Culture and communities	The Natural World	Creating with Materials	Being imaginative and Expressive
Tinkering									✓	✓
Creating								✓	✓	✓
Collaboration						✓	✓		✓	
Persevering										
Logic	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Pattern	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Abstraction	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Algorithms and decomposition	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Coding: This concept involves developing an understanding of instructions, logic and sequences

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Can they use a range of control toys and devices? Can they begin to develop computational thinking by following instructions to move around a course? Do they know that commands affect algorithms? Can they create a series of instructions for others to follow?	Can they continue to explore floor turtles, combining sequences of instructions to follow a pattern or create a shape. Can they explore an on screen turtle and navigate it around a course or grid and/or draw shapes by inputting a sequence of instructions? Can they begin to understand that the on screen turtle can be directed through the use of text? Can they enter information into a basic computer simulation and explore the effects of changing the variables in simulations and discuss the benefits of using these simulations? Can they discuss their use of simulations and compare with reality?	Can they begin to plan more complex sequences of instructions for on-screen turtles and floor turtles and test and amend these instructions for different purposes? Can they use a computer to create basic applications, investigating how different variables can be changed? Can they explore simulations as appropriate and discuss the benefits of using these simulations? Can they use simulations to make and test predictions?	Can they use programming software EG scratch. to plan, design and make their own game,, controllable by external inputs, changing parameters and responses? Can they begin to use software to represent 3D objects or items? Can they explore some simulations and evaluate them?	Can they understand that software relies on codes to run and that a range of different coding languages exist? can they name some? Can they explore different ways in which computer software can be created? Can they use a range of assisted programing software (e.g Scratch and/or Kodu) to plan, design and create basic software (for example a simple game), which interact with external controllers (e.g. keyboard and/or mouse). Using software can they control the movement and responses of different commands on screen? Can they use software to create models of 3D objects, landscapes or items? Can they explore a range of increasingly complex simulations, exploring the effect of changing variables and recording the results?	Do they know how to use a range of visual based Programing software (e.g Scratch and Kodu) to plan and design basic software (for example a simple game), controlling the movement and responses of different elements on screen? Can they use a range of visual programing software to plan and design a game? Can they control an on-screen icon using text based controls, and respond to sensors and repeating written algorithms (e.g. Robomind)? Can they begin to explore text based programing languages and create basic scripts ? Can I Use software to create models of 3D objects, landscapes or items, including creating to scale ? Can they use a range of more complex simulations, exploring the link to ‘real life’ and the impact of changing variables?

Connect: This concept involves developing an understanding of how to safely connect with others

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
recognise that majority of technology devices have access to the internet know that some information is personal and shouldn't be shared online know things happen on computer that are not their fault eg pop ups	Can they recognise that there are other people on the internet and this affects how they should use it? Do they know how to act if they find inappropriate content online? Can they tell a trusted adult if someone they don't know tries to contact them via the internet? Can they understand that they should only open an email from someone they know? Can they send and receive an email safely as a class? Do they understand why passwords shouldn't be shared? Can they use the internet safely for learning and communicating with others?	Can they understand that once an online message has been sent it cannot be taken back and understand that there might be consequences of this? Can they recognise that people on the internet are not always who they say they are? Can they understand that if they make personal information available online it may be seen by others? Can they understand the need to keep personal information and password private?	Can they understand and articulate that social networking sites carry risk? Do they understand the benefit of developing a nickname for online use? Can they behave appropriately online? Can they understand that copyright exists on most digital images, video and recorded music? Can they recognise that cyber bullying is unacceptable? Do they know how to report an incident of cyber bullying? Can they identify when emails should not be opened and when an attachment may not be safe? Can they recognise the dangers of communicating via a variety of devices such as Xbox live, PSP, phones etc? Can they understand that there are means of reporting unpleasant online data e.g. Ceop ?	Do they understand the need for privacy settings in social networking sites? Can they judge when to answer a question online and when not to? Can they recognise the specific dangers associated with online gaming? Can they understand that information found on the internet should be viewed critically? Can they use various sources to double check information found? Can they discuss the positive and negative impacts of using ICT? Can they recognise that some material on the internet is copyright and may not be copied or downloaded? Can they understand that they should not publish other people's picture or tag them on the internet? Do they know that content put online is extremely difficult to remove? Can they create a strong password and recognise the need to regularly update them?	Can they use and amend their own privacy settings to keep themselves safe on social networking sites? Can they understand that some malicious adults may use varies techniques to make contact and elicit personal information? Can they understand the dangers of chatting or meeting up with an online friend? Can they share their own knowledge of e-safety with others? Can they understand the term peer pressure and how powerful an emotion of feeling left out can be? Can they explain why people may publish content on the internet that is not accurate? Can they identify and recognise the potential risks of scamming and phishing?

Communicate: This concept involves using hardware and software to safely communicate one's ideas

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
know what an email address looks like? Enter text using a keyboard? Use a mouse to draw a picture on screen?	Are they aware that email is used beyond school? Can they send group/individual email in a controlled environment and reply? Can they word process work, changing the font, font size, colour? Can they add images and use text boxes, word art? Can they cut, copy and paste on to a document? Can they create basic presentations? Can they format their text to refine and improve? e.g underline, italics, bold.	Can they use the email address book and can they open and send an attachment? Can they contribute to blog & wiki/forum etc? (linked to E safety) Can they understand the difference between word processing and desktop publishing tools? Can they use the publishing tools to create posters, leaflets etc? Can they create a presentation using PowerPoint changing the layout of slides and adding images and sound? Can they refine and improve work by using spell checker, thesaurus etc? Can they use a computer to sequence short pieces of music using a small selection of pre-record sounds? Can they independently record video for a range of purpose, paying attention to the quality of the video capture?	• Can they send e-mails between people within their school domain using the 'cc' and 'bcc' fields? • Can they use e-mail to email work completed in school to their teachers and peers? • Can they collaborate with peers on a project to produce a finished piece to support topic work- using the cloud? • Can they contribute/edit/refine contributions to a shared document and understand that all changes are visible? • Can they insert sound recordings into a multimedia presentation? • Can they capture images using a variety of technology eg webcams, screen capture, scanning, visualizer and internet? • Can they choose images and download into a file? • Can they transfer graphics from a range of sources and use them in a desktop publishing program? • Can they edit video, applying basic effects and transitions? • Can they create an extended piece of music using pre- recorded samples for a specific audience then evaluate this? • Can they create a stop motion animation using ICT software?	• Can they use instant messaging to communicate? • Can they conduct a video chat with someone elsewhere in school? • Can they use a range of presentation applications, using a range of digital devices? • Can they make a home page for a website that contains links to other pages? • Can they locate and access streaming audio such as online radio? Can they download and listen to podcast? • Can they produce and upload a podcast, selecting and importing already existing sound effects and music as well as recording their own? • Can they select and download music from open sources? • Can they use a range of software to create/manipulate music and sound samples and sequence these? • Can they create a film for a given audience incorporating a range of different scenes and carefully selected effects? • Can they use technology to create images using layers e.g. Photoshop?	• Can they confidently use text formatting tools, including heading and body text? • Can they compare and contrast different image creation and editing tools across a range of platforms? • Can they develop a web-site which contains more than one page? • Can they create a web based application for a smart-phone or tablet for a variety of audiences? • Can they explore the menu bar and experiment with images (colour effects, options, snap to grid, grid settings etc)? • Can they Save as gif or jpeg to make the file smaller for emailing or downloading? • Can they create a multimedia presentation that contains sound, animation, video and buttons to navigate taking into consideration good design principles, making independent choices about the best media to use and considering the needs of the audiences and the impact the presentation will have? • Can they create a non-linear presentation? • Can they regularly use word processing and desktop publishing to present their work, making choices about programs and features to use and justifying these choices to others?

Collect: This concept involves developing an understanding of databases and their uses

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Can they enter information into a template to make a graph and pictogram? Can they answer questions relating to a graph and pictogram?	Can they produce simple graphs using ICT? Can they use a branching database to answer questions? Can they amend teacher prepared graphs?	Can they input data into a prepared database and can they search and sort a database to answer simple questions? Can they create a graph or chart to present classified data from a database? Can they create a simple branching database, identifying objects and questions to classify data?	Can they work as a group to collect data on a pre-prepared data collection template? Can they create a database template? Can they input data , using previously collected information, on their database template? Can they use a database to answer questions by constructing queries? Can they explain what a spreadsheet is? Can they use the terms cells, rows and columns? Can they enter data highlighted to make bar charts?	Can they create their own data collection sheet using data validation? Can they create databases, planning the fields, rows and columns taking into consideration data collected? Can they search spreadsheets using symbols =<>? Can they create a formula in a spreadsheet and check for accuracy and plausibility? Can they interrogate their data to create graphs and tables which they can copy and paste into other documents?	Can they collect live data using data logging equipment and present this data in different ways? Can they identify data error, patterns and sequences? Can they use the formula bar to explore mathematical scenarios. For example, that quick and easy changes can be made to different variables once the spreadsheet is set up?

Concept: this concept involves developing and understanding of how technology works

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Do they know that there is a wide range of technology and can they name some equipment? Do they use a range of different technology and talk about its use? Can they turn on and shut down equipment safely? Can they use keyboard skills to type a simple username and password into a given program? Can they use the space button with increased accuracy?	Do they know some uses of a wide range of technology and can describe how it works in a variety of different contexts? Can they select the appropriate piece of technology for a particular purpose and communicate this? Can they save their work to a folder and retrieve it when needed? Can they understand how to edit and copy information using a variety of media? Can they film short scenes & edit with others?	Do they know how to use a wide variety of technology to suit a particular purpose? Do they understand how to navigate the internet simply? Can they contribute to an online class blog? Can they find relevant information by browsing a menu? Can they search by keyword using a child friendly search engine? Can they bookmark a page into “your favourites”?	Do they know what the term browser is and can they use it to navigate a variety of programmes? Can they use tabbed browsing to open two or more web pages at the same time? Can they open a variety of links and use them? Do they know how to open and view a PDF and can they describe how it works? Can they use a range of digital devices and combine a variety of software? Can they make accurate predictions about the outcome of a programme they have written?	Do they know how to download a document and save it to a computer or given device? Can they decide which sections are appropriate to copy and paste from a variety of web pages? Can they explain the meaning of different domain names and common website extensions? E.g. co,uk,;.com;,ac; .sch; .org; ,gov; .net. to support validation of information Do they know how a variety of information is stored and can describe why information is useful to be stored in this way, e.g remote access and collaborative working. Do they know what a variety of file formats are and can they save an image document as a gif or jpeg file format using the save as command?	Can they conduct a video chat with more than one person at a time? Can they save and retrieve information online e.g. using Cloud technology? Can they develop and use their own QR codes? Can they use tabs to make a comparison of a website? Can they use a variety of symbols such as + and – and “” to refine and scale down internet searches?

Computing - Long Term Plan 2022/2023

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Using Technology	E Safety	Algorithms and Programs	Data Retrieval	Using Technology	Communicating and Presentation
Year 2	E Safety	Using Technology	Algorithms and Programs	Using the internet	Data Retrieval	Communicating and Presentation
Year 3	Algorithms and Programs	SImulations	Communication and Presentation- Email	Data Retrieval	E-Safety	Using Technology
Year 4	Algorithms and Programs	E Safety	Data Retrieval- Evaluating data	Communication and Presentation	Data Retrieval- creating databases	Using Technology
Year 5	E Safety	Using technology	Using technology	Algorithms and Programs	Data retrieval	Communication and Presentation
Year 6	Algorithms and Programs	E Safety	Data Retrieval	Using technology	Communication and Presentation	Communication and Presentation