



Curriculum Overview ICT 2018-2019

Subject overview:

At Halesbury digital literacy and the safe and appropriate use of ICT form the backbone of learning. These skills underpin today's modern lifestyles and it is essential that all students gain the confidence and ability needed in this subject to keep them safe whilst preparing them for the challenges of a rapidly developing and changing technological world. We look to develop pupils to become successful, independent learners with the skills ready for post-16 education and the world of work. Students develop their research and presentation ICT skills during discrete ICT lessons each week. E-Safety is at the core of our curriculum as many students struggle to see the dangers of the misuse of technology. Topics covered include the safe Searching for information, E-safety, Computer Systems, Programming, Spreadsheets, Solving problems with computer programs, Multimedia and Web Design. Pupils cover a variety of other subjects within ICT, researching Topics such as British Values, Prevent (Anti-radicalisation), E-safety and Anti-Bullying. The content of their research is then presented in a variety of programmes (Word/PowerPoint/Publisher). This provides pupils with the opportunity to become independent learners ready to leave Halesbury after Year 11. As they progress through KS3 and KS4 children will become confident in the application of their new digital skills, becoming increasingly efficient and effective communicators, collaborators and analysts, showing imagination and creativity in their use of ICT in different aspects of their learning and life beyond school.

Core areas include:

Skills (Sk)

Children should be provided with the opportunity to learn, refine and improve their digital skills, across the range of ICT curriculum areas outlined above.

Technology in the world (TIW)

Children should develop an understanding of how technology makes a difference in all aspects of life- at home, at school and in the workplace, as well as considering the impact technology has had on society over the years.

Children will, for example, identify the different elements of a webpage, develop an awareness of how different technology is used in the world around us and begin to evaluate web pages, software and applications and use this evaluation in the planning of their own digital artefacts.

Technical understanding (TU)

Children should develop the knowledge and understanding of how technology works.

This extends from an awareness that there is 'something inside' a piece of technology to make it work (KS2), progressing through KS3 and KS4 to children creating their own simple programs including games, utilities and applications with exposure to computer codes and scripts.

Safe and Responsible Use. (SRU)

The curriculum extends children's understanding of the legal consequences of inappropriate use of technology. This includes fake profiles (Catfish) and consequences from the creation of inappropriate images and their distribution.

Curriculum Structure.

To help ensure children have opportunity to develop a wide range of skills, experiences and competencies with technology, the curriculum has been broken down into 8 key areas, with the core principles permeating through each area.

Using a computer- *mouse skills, typing etc*

Using the internet - *Researching, finding information etc...*

Communicating and Collaborating On-line- *E-mails, Collaborative working, Video Conferencing etc...*

Creating and Publishing:- *Anything that involves presenting information in some way using ICT- word processing, presentations, blogging, websites etc...*

Digital Media- *Photo editing and image manipulation, video and video editing, audio recording and editing and animation (some animation can also be programming)*

Programming and Control- *making something 'happen' using ICT (control, movement etc..).*

Modelling and Simulations- *Representing real life situations, scenarios or items on the computer.*

Using Data- *Spreadsheets (including using formulas), Databases and any other work which involves either sorting, presenting or manipulating data of some sort.*

The coverage of each area will vary between year group and ability, with some areas being covered primarily in KS3 and others primarily in KS4. The emphasis on Programming increases as children move through Halesbury at KS4.

It is important that technology is used as a day to day element of school life and across all subject areas, therefore if opportunities to use ICT arise which do not fall within the curriculum for each year group they should be taken advantage of.

E-Safety

E-safety is a fundamental element of ICT teaching and technology use at Halesbury School. The school has a separate E-Safety policy, and E-Safety sessions take place regularly at the beginning of each term to reinforce and safeguard our pupils.

Year 7

Learning Objectives	Key Skills	Notes
Using technology		
<ul style="list-style-type: none"> • To become skilful in using different tools to control technology. • To understand the purpose of, and begin to use a range of different technology. • To begin to develop typing speed and accuracy to enable independent access to a computer. 	<ul style="list-style-type: none"> • Continue to develop their familiarity with a computer and keyboards • Continue to develop their skills in using a mouse and/or trackpad to control a computer/laptop. • Begin to develop their typing speed, using a range of games and programs in school. Children should also be encouraged to play these games at home. • Continue exposure to a range of technology, including cameras, tablets, microphones/recording devices and computers. 	<p>See 'tools for teaching typing' document for software and websites to use.</p>
Using the Internet		
<ul style="list-style-type: none"> • To understand that information comes from different sources e.g. books, web sites, TV etc • To understand that ICT can give access quickly to a wide variety of resources • To talk about their use of ICT and the Internet and other methods to find information • To be able to explore a variety of electronic information as part of a given topic • To know buttons/icons can represent different functions e.g. record, pause, play 	<ul style="list-style-type: none"> • Select appropriate buttons to navigate web sites or stored information • Begin to understand that computers use icons, menus, hyperlinks to provide information and instructions e.g. Select a specific part of the CBBC site to find an activity • Access different types of information from different sources e.g. using CD players, web sites, TV, video, DVD etc <p><i>These skills rely on the teacher directing children to specific content. It is not expected for children to do open searching at this stage.</i></p>	

Communicating and collaborating online		
<ul style="list-style-type: none"> To start to understand that messages can be sent electronically over distances. 	<ul style="list-style-type: none"> Contribute ideas to a class email and together respond to messages- this can be to real life of 'fictitious' characters. 	<i>Halesbury-internal mail only.</i>
Creating and Publishing		
<ul style="list-style-type: none"> To use technology to combine text with photographs, graphics and drawings. To create their own text based content, including adding basic effects to sections of text. 	<ul style="list-style-type: none"> Add text to photographs, graphics, drawings and sound using a computer. Use simple authoring tools to create their own content and begin to add basic effects to sections of text, changing the font size and colour. 	
Digital Media		
<ul style="list-style-type: none"> To know they can explore sound and music using technology and that they can create sound using computer programs. To know they can record sound using ICT that can be stored and played back To take photographs for a range of different purposes. To understand that video can be recorded using technology and to begin to record video. To understand that a range of different technology can be used to record sounds. 	<ul style="list-style-type: none"> Use a computer to compose and record basic rhythms. Continue to take photographs for a range of different purposes. Begin to record video Begin to record sounds using a range of different tools. 	Audio- use 2simple software- 2explore and 2beat.
Using Data		
<ul style="list-style-type: none"> To use ICT to begin to organise items. To begin to use technology to create graphs and pictograms, recognising there is a link between data collected and the information presented on screen. 	<ul style="list-style-type: none"> Use ICT to sort objects into groups according to a give criteria, or criteria which the child identifies themselves. Begin to use technology to create graphs and pictograms. 	
Programming and Control		
<ul style="list-style-type: none"> To understand that devices respond to commands 	<ul style="list-style-type: none"> Explore a range of control toys and devices Begin to develop computational thinking by following instructions to move around a course 	

<ul style="list-style-type: none"> • To begin to understand how a computer processes instructions and commands (computational thinking) • To understand that they can programme a simple sequence of commands into a programmable robot or toy to send it on a route 	<p>and creating a series of instructions to move their peers around a course</p> <ul style="list-style-type: none"> • Explore outcomes when individual buttons are pressed on robots, such as floor turtles and combine these together to draw simple shapes or follow a route. 	
<p>Modelling and Simulations</p>		
<ul style="list-style-type: none"> • To understand computers can represent real or fantasy situations • To understand computer representations allows the user to make choices and that different decisions produce different outcomes 	<ul style="list-style-type: none"> • Understand that computers and technology can be used to represent and model situations. • Use an art package or drag and drop software to create a representation of a real or a fantasy situation • Explore a simulation to support a given topic and talk about what happens and why 	

Learning Objectives	Key Skills	Notes
Using technology		
<ul style="list-style-type: none"> To continue to develop typing speed and accuracy to enable independent and efficient access to a computer. To understand the purpose of, and begin to independently use a range of different technology. 	<ul style="list-style-type: none"> Work on developing typing speed, aiming for a minimum speed of 13wpm by the end of the year. Continue exposure to and increasingly independently use a range of technology, including cameras, tablets, microphones/recording devices and computers 	<p>Typing speed refers to copying WPM, composition WPM will be slower.</p> <p>See ‘tools for teaching typing’ document for software and websites to use.</p>
Using the Internet		
<ul style="list-style-type: none"> To talk about the different forms of information (text, images, sound, multimodal) and understand some are more useful than others To understand and talk about how the information can be used to answer specific questions To begin to develop key questions and find information to answer them To recognise the layout of a web page, recognise web addresses, menu buttons and links To understand that the internet contains a large amount of information and recognise the need to use search tools and search engines to begin to find information 	<ul style="list-style-type: none"> Recognise that not all information is useful some information is more useful Use web based resources to find answers to questions Develop questions about a specific topic and use information to answer those questions Begin to navigate within a website using hyperlinks and menu buttons to locate information Begin to manipulate information using copy and paste for a specific purpose Enter <u>given</u> text into a search engine to find specific given web sites Understand that web sites have a specific address e.g. www.bbc.co.uk/ Locate links to web sites from Favourites or saved hyperlinks, intranet or from the Learning Platform Use basic information from the internet. 	
Communicating and collaborating online		

<ul style="list-style-type: none"> • To start to understand that messages can be sent electronically over distances. • To understand that email can be used to send messages electronically and people can reply to emails 	<ul style="list-style-type: none"> • Look at the different ways that messages can be sent, letters, telephone, email, text, instant messaging etc • Continue to contribute ideas to a class or group email and together respond to messages- this can be to real life of ‘fictitious’ characters. 	<i>Halesbury mail disabled for individual children.</i>
Creating and Publishing		
<ul style="list-style-type: none"> • To use technology to word process work, making a wide range of edits and using common features of word processing tools. • To use technology to create basic presentations giving consideration to the layout of slides and combining images and sound. • To use the skills and techniques learnt to organise, reorganise and communicate ideas for a specific purpose in different contexts 	<ul style="list-style-type: none"> • Word process work, changing the font, font size, colour and adding images and using text boxes, word art, and cut, copy and paste ensuring they can save and load their work. • Create basic presentations (for example using Microsoft PowerPoint) changing the layout of slides and adding images and sound. 	
Digital Media		
<ul style="list-style-type: none"> • To know they can explore sound and music in ICT using keyboards, and onscreen music software • To know they can record sound using ICT that can be stored and played back and independently using a range of tools to record sound. • To independently record video and sound using a range of tools. • To use the computer to create basic images. • To choose to take photographs for a range of different purposes. 	<ul style="list-style-type: none"> • <i>Use a computer to compose and record basic rhythms. (only if not covered in Y7)</i> • Record video for a range of purposes. • Use a computer to create basic images. • Continue to take photographs for a range of different purposes, developing independence. • Independently record sounds using a range of different tools. 	Images- paint and http://canvastic.net , and http://pencilmadness.com/pencil_madness
Using Data		
<ul style="list-style-type: none"> • To use technology to create graphs and amend created graphs. 	<ul style="list-style-type: none"> • Use technology to create graphs and pictograms, adding labels and amending the charts as appropriate. 	

<ul style="list-style-type: none"> To begin to create their own branching databases using ICT, identifying objects and questions to classify data. 	<ul style="list-style-type: none"> Begin to create their own branching database using ICT, identifying objects using yes or no questions. 	
<p>Programming and Control</p>		
<ul style="list-style-type: none"> To continue to develop their understanding of how a computer processes instructions and commands. To understand that devices or on screen turtles are controlled by sequences of instructions or actions, and that these can be inputted using icons or by text. To create, edit and refine sequences of instructions for a variety of programmable devices. 	<ul style="list-style-type: none"> Further develop their understanding of computational thinking. Continue to explore floor turtles, combining sequences of instructions to follow a pattern or create a shape. Explore an on screen turtle navigate it around a course or grid and/or draw shapes by inputting a sequence of instructions. Begin to understand that the on screen turtle can be directed through the use of text. 	<p><i>(e.g. Beebot iPad app, Turtle in textease, various on-line apps)</i></p>
<p>Modelling and Simulations</p>		
<ul style="list-style-type: none"> To use a range of basic simulations to represent real life situations and explore the effects of changing variable and the benefits of using the simulations. 	<ul style="list-style-type: none"> 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. Discuss their use of simulations and compare with reality 	

Learning Objectives	Key Skills	Notes
Using technology (objectives throughout KS3)		
<ul style="list-style-type: none"> To continue to develop typing speed and accuracy to develop competency in typing To understand the purpose of and use independently a range of different technology. To make choices about when to use technology, which piece(s) of technology to use, which software/tools they are going to use on the technology and be able to explain their choices to others. 	<p>Throughout KS3 children should:-</p> <ul style="list-style-type: none"> Continue to become familiar with a range of devices, for example tablets, desktop computers, laptops, microphones, cameras etc and increasingly develop their independence and confidence in using these devices. Continue to increase their typing speed, and be encouraged to play games at home and school which help with this. Aim to reach the accepted competency rate for children of 20WPM by the end of Year 9. Be encouraged to increasingly make sensible choices about the technology they use to help them work, and to justify their choices- for example, why they have chosen to use a <i>tablet</i> rather than a laptop, or why they have chosen to use an <i>easi-speak</i> microphone rather than the computer to record sound. 	<p><i>Just like handwriting, it is important that children type themselves when using a computer- no matter how slow they may be!</i></p> <p>Typing speed refers to copying WPM, composition WPM will be slower.</p> <p>See ‘tools for teaching typing’ for software and websites to use.</p>
Using the Internet		
<ul style="list-style-type: none"> To follow a simple search to find specific information from a web site To find and use appropriate information To identify how different web pages are organised e.g. graphics, hyperlinks, text To navigate a web page to locate specific information 	<ul style="list-style-type: none"> Develop key questions to search for specific information with purpose to answer a problem e.g. to find out about different Roman Gods. Understand how a search engine works and begin to create and enter appropriate search strings. Save and retrieve accessed information through the use of Favourites, History, and Save As 	<p>Delivered as part of the ‘Creating and Publishing’ unit and alongside the day-day curriculum.</p>

<ul style="list-style-type: none"> • To know that ICT enables access to a wider range of information and tools to help find specific information quickly • To understand a website has a unique address 	<ul style="list-style-type: none"> • Understand that some information found through searching is more relevant than others • Use the information purposefully to complete specific tasks e.g. copy, paste and edit relevant information (ref. creating and publishing unit) • Talk about and describe the process of finding specific information 	
Communicating and collaborating online		
<ul style="list-style-type: none"> • To understand that Cloud based tools can allow multiple people to contribute to shared documents and Google Sites 	<ul style="list-style-type: none"> • Begin to use on-line tools, such as Google docs and sites to collaborate together- for example by working together to add ideas to a word bank, write a shared story 	<i>Halesbury mail disabled for individual children.</i>
Creating and Publishing		
<ul style="list-style-type: none"> • To continue to produce work using a computer, using more advanced features of programs and tools. • To work collaboratively together to create documents, including presentations. • To use desk top publishing tools effectively and understand the differences between a word processor and desk top publisher. 	<ul style="list-style-type: none"> • Continue to word process a range of work in other curriculum areas, using more advanced word processing features such as columns and borders. • Work together to collaboratively produce a presentation using cloud based tools. • Understand the differences between a word processor and desktop publishing tools and use desk top publishing tools to create posters, leaflets and other documents which require specific formatting. 	
Digital Media		
<ul style="list-style-type: none"> • To understand they can compose music using icons to represent musical phrases • To understand ICT allows easy creation, manipulation and change • To know they can record sound using ICT that can be stored and played back and 	<ul style="list-style-type: none"> • Use a computer to sequence short pieces of music using a small selection of pre-record sounds. • Independently record video for a range of purpose, paying attention to the quality of the video capture. 	Audio- use 2simple 2sequence.

<p>independently using a range of tools to record sound.</p> <ul style="list-style-type: none"> • To independently record video using a range of devices and for a range of purposes. • To independently take photographs taking into account the audience and/or purpose for the image. • To create digital artefacts using photographs which they have taken or found. • To edit photographs using a range of basic tools. 	<ul style="list-style-type: none"> • Take photographs for a specific reason or project and/or find appropriate images on-line. • Create a video out of still images. • Use the computer to preform photo edits and create a range of digital creations using photos. 	
Using Data		
<ul style="list-style-type: none"> • To understand the basic structure of a database. • To be able to add data to a pre-made database. • To use the data in a pre-made database to generate graphs and charts. • To use technology to create graphs and charts. 	<ul style="list-style-type: none"> • Continue to use technology to create graphs and charts. • Understand which a database is, and the basic structure of a database. • Create graphs from pre-made databases, and enter their own data into a database and generate graphs using these. Use other software to present these findings as appropriate. 	<p><i>Use TextEase Data for database work.</i></p>
Programming and Control		
<ul style="list-style-type: none"> • To continue to develop their understanding of how computer and technology works and how computers process instructions and commands. • To create, edit and refine more complex sequences of instructions for a variety of programmable devices. • To use a computer to create basic applications, investigating how different variables can be changed and the effect this has.. 	<ul style="list-style-type: none"> • Continue to develop understanding of how a computer and technology works, focusing on computational thinking. • Begin to plan more complex sequences of instructions for on-screen and floor turtles test and amend these instructions. (e.g. using RoboMind) • Use software to make basic puzzles and quizzes, changing parameters (e.g. time allowed, points, number of pieces etc) to customise the puzzle or quiz (e.g. 2DIY) 	
Modelling and Simulations		
<ul style="list-style-type: none"> • To use a range of increasingly simulations to represent real life situations. • Use simulations to make and test predictions. 	<ul style="list-style-type: none"> • Continue to explore simulations as appropriate and as link with other curriculum areas and discuss the benefits of using these simulations 	

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| | <ul style="list-style-type: none">• Use simulations to make and test predictions. | |
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Year 10

Learning Objectives	Key Skills	Notes
Using technology		
<ul style="list-style-type: none"> • To continue to develop typing speed and accuracy to develop competency in typing • To understand the purpose of and use independently a range of different technology. • To make choices about when to use technology, which piece(s) of technology to use, which software/tools they are going to use on the technology and be able to explain their choices to others. 	<p>Throughout KS4 children should:-</p> <ul style="list-style-type: none"> • Continue to become familiar with a range of devices, for example tablets, desktop computers, laptops, microphones, cameras etc and increasingly develop their independence and confidence in using these devices. • Continue to increase their typing speed, and be encouraged to play games at home and school which help with this. Aim to reach the accepted competency rate for children of 20WPM by the end of Year 10. • Be encouraged to increasingly make sensible choices about the technology they use to help them work, and to justify their choices- for example, why they have chosen to use a <i>tablet</i> rather than a laptop, or why they have chosen to use an <i>easi-speak</i> microphone rather than the computer to record sound. 	<p><i>Just like handwriting, it is important that children type themselves when using a computer- no matter how slow they may be!</i></p> <p>Typing speed refers to copying WPM, composition WPM will be slower.</p> <p>See 'tools for teaching typing' for software and websites to use.</p>
Using the Internet		
<ul style="list-style-type: none"> • To draw information from a question to develop keywords to find relevant information e.g. What did Romans eat? • To understand the dynamics of a search engine and know that there are different search engines (some within specific sites e.g. BBC, and some the whole of the Internet e.g. Google, Yahoo!igans, Ask Jeeves) 	<ul style="list-style-type: none"> • Know that they can use search engine tools for different types of media e.g. Google Image Search, video, sound but understand that the results are not always what you expect • Be aware that web sites are not always accurate and that information should be checked before it is used. 	

<ul style="list-style-type: none"> • To be able to skim read and sift information to check its relevance and modify their search strategies if necessary • To understand that the information they use needs to be appropriate for the audience they are writing for e.g. copying and pasting difficult language • To evaluate different search engines and explain their choices for using these for different purposes • To begin to recognise that anyone can author on the Internet and sometimes authors on the Internet can produce content which is offensive, rude and upsetting and to follow school rules if anything is found 	<ul style="list-style-type: none"> • Develop keywords and enter them into a chosen search engine, using more advanced search engine features. • Present their findings using a word processing or multimedia/publishing package for a specific audience 	
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Communicating and collaborating online

<p>To understand a small range of web 2.0 tools that can help them work together and collaborate; forums, shared documents etc</p> <ul style="list-style-type: none"> • To use the web 2.0 tools to work collaboratively on a project (e.g. sharing comparative data, creating a story) • To understand how e-mails work and be able to send an e-mail, including choosing a suitable subject and entering addresses in the 'to', 'cc' and 'bcc' fields. • To share and exchange their ideas using e-mail and electronic communication- inside the school environment. 	<ul style="list-style-type: none"> • Understand how e-mails work, and send e-mails between people within the Halesbury domain, including using the 'cc' and 'bcc' fields. • Use e-mail to e-mail work completed in school to their teachers and peers. • Collaborate with peers on a project to produce a finished piece to support topic work- using google documents within the Halesbury domain. • Contribute/edit/refine contributions to a shared document and understand that all changes are visible 	<p>1 hour input. <i>Halesbury students email restricted to internal e-mails only.</i></p>
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Creating and Publishing

- To create a website, giving thought to it's audience and including links, images and embedded media and documents.
- To understand that evaluation and improvement is a vital part of a design process and ICT allows changes to be made quickly and efficiently

- Work together to create a website based on a topic, area of interest or event (for example using goggle sites) which incorporates hyperlinks, images and embedded media/documents.
- Use ICT to create a finished product or set of linked products, making revisions to their work.

Digital Media

- To know they can record sound using ICT that can be stored and played back and independently using a **range of tools** to record sound, choosing appropriate tools for the situation and purpose.
- To use a range of technology to sequence sound samples, giving consideration to the audience and purpose.
- To create basic stop motion animations using technology.
- To independently record video using a range of devices and for a range of purposes.
- To use technology to create images and apply effects to these images.
- To use technology to edit video, applying basic effects and transitions.
- To independently take photographs taking into account the audience and/or purpose for the image.

- Create simple stop motion animations.
- Use a range of devices to create extended pieces of music using a wide range of pre-recorded samples.
- Independently choose to record video for a range of purposes, paying attention to the quality of video capture.
- Use a range of tools to create more complex images using a computer (no layering)
- Edit video using a range of basic video editing applications.
- Continue to take photographs for a specific reason or project and/or find appropriate images on-line.

Using Data

- To continue to use technology, including spreadsheets to create graphs and present data in different ways.
- To be able to design and create a basic database, including using basic data validation.
- To use a database to answer questions by constructing queries.

- Plan and create their own database, creating fields and applying simple data validation.
- Use pre-made databases and those which they have created themselves to answer questions by constructing basic queries. Understand how to translate questions into queries to find information e.g to find the most common etc.

Use TextEase Data for database work.

	<p>Use other software to present these findings as appropriate</p> <ul style="list-style-type: none"> • <i>Begin to use a spread sheet to enter data and create graphs. (2013-14 onwards)</i> 	
Programming and Control		
<ul style="list-style-type: none"> • To continue to develop their understanding of how computer and technology works and how computers process instructions and commands. • <i>To create, edit and refine more complex sequences of instructions for a variety of programmable devices (2012-13 only)</i> • Use templates on a computer to create a game, which can be controlled by external inputs, changing parameters and algorithms and investigating the effect this has on the response. 	<ul style="list-style-type: none"> • <i>Begin to plan more complex sequences of instructions for on-screen and floor turtles, test and amend these instructions. (e.g. using RoboMind) (2012-13 only)</i> • Use computer game design software to plan, design and make their own, multi-level game, controllable by external inputs, changing parameters and responses. (e.gf using 2DIY) 	
Modelling and Simulations		
<ul style="list-style-type: none"> • To understand that ICT allows for situations to be modelled, or those which it would be impractical to try out in real life and investigate the effect of changing variables in these simulations. • TO use software to model 3D objects made up of cuboids. 	<ul style="list-style-type: none"> • Begin to use software to represent 3D objects or items. • Continue to explore simulations as appropriate and as link with other curriculum areas. 	Use Lego Digital Designer for 3D modelling task.

Year 11

Learning Objectives	Key Skills	Notes
Using technology		
<ul style="list-style-type: none"> • To continue to develop typing speed and accuracy to develop competency in typing • To understand the purpose of and use independently a range of different technology. • To make choices about when to use technology, which piece(s) of technology to use, which software/tools they are going to use on the technology and be able to explain their choices to others. 	<p>Throughout KS4 children should:-</p> <ul style="list-style-type: none"> • Continue to become familiar with a range of devices, for example tablets, desktop computers, laptops, microphones, cameras etc and increasingly develop their independence and confidence in using these devices. • Continue to increase their typing speed, and be encouraged to play games at home and school which help with this. • Be encouraged to increasingly make sensible choices about the technology they use to help them work, and to justify their choices- for example, why they have chosen to use a <i>tablet</i> rather than a laptop, or why they have chosen to use an <i>easi-speak</i> microphone rather than the computer to record sound. 	<p><i>Just like handwriting, it is important that children type themselves when using a computer- no matter how slow they may be!</i></p> <p>Typing speed refers to copying WPM, composition WPM will be slower.</p> <p>See 'tools for teaching typing' for software and websites to use.</p>
Using the Internet		
<ul style="list-style-type: none"> • To use a range of sources to check validity and recognise different viewpoints and the impact of incorrect data • To save and use pictures, text and sound and be able to import into a document for presentation (ref. multimedia presentation) • To recognise that the Internet may contain material that is irrelevant, bias, implausible and inappropriate • To understand the issues of copyright and how they apply to their own work 	<ul style="list-style-type: none"> • Discuss different strategies for finding relevant information e.g. using different keywords to find information on a given enquiry • Use a range of keywords to find different sources of information and enter them into a chosen search engine • Modify searches further to find relevant information for a report • Select and combine information from a range of different sources and present their findings using a word processing or 	<p>Delivered alongside 'Creating and Publishing' unit.</p>

	<p>multimedia/publishing package for a specific audience</p> <ul style="list-style-type: none"> • Be aware that web sites are not always accurate and that information should be checked before it is used. • Discuss issues of copyright and downloading material e.g. mp3s, images, videos etc. Find images which are creative common licenced and understand the importance of stating their sources. 	
Communicating and collaborating online		
<ul style="list-style-type: none"> • To share and exchange their ideas using e-mail and electronic communication- inside the school environment. • To use collaboration tools to work together to produce a joint piece of work 	<ul style="list-style-type: none"> • Continue to use e-mail to e-mail within Halesbury and to e-mail work completed in and out of school to their teachers and peers. • Collaborate on a project using a range of web 2.0 tools to support their work- including, but not limited to , goggle documents and sites (within the Halesbury domain) • Begin to collaborate with other children outside of Halesbury (e-safety paramount) • Upload files to an online area e.g. video, photo story, sounds, images 	All delivered as part as general curriculum.
Creating and Publishing		
<ul style="list-style-type: none"> • To create non-traditional presentations using a range of tools, for a specific purpose (2012-13 only) • To create websites for a specific purpose and improve these sites. • To use technology to help them present their work, showing an increasing degree of skill and using advanced features of software and tools. • To select tools which they can use to help them achieve a specific aim and justify these choices to others. 	<ul style="list-style-type: none"> • Use an alternative presentation tool (for example <i>Prezi</i> or <i>Ahead</i>) to create a presentation linking into a topic, area of interest or event. • Continue to create websites based on topics, area of interest or events, increasing the complexity of these sites. • Continue to regularly use word processing and desktop publishing to present their work, combing formatted text with other media and making choices about programs and features to use and justifying these choices to others. 	

- Continue to use ICT to create a finished product or set of linked products, developing consistency in style across linked products.

Digital Media

- *To use a range of technology to sequence sound samples, giving consideration to the audience and purpose. (2012-13 only)*
- To use technology to electronically compose music or sounds including creating melodies and save these as audio files.
- To use technology to capture and edit video, applying a range of different effects and incorporating numerous video clips.
- To use technology to create images including using layers.
- To understand the difference between a image and a vector drawing.
- To independently take photographs and record video taking into account the audience and/or purpose for the image/video.

- *Use a range of devices to create extended pieces of music using a wide range of pre-recorded samples. (2012-13 only)*
- Use a range of devices to create music samples and sequence these.
- Create and plan film trailers incorporating a range of different scenes and effects.
- Use image creation tools to create more complex images, including using layers. Understand the differences between an image and a vector drawing.
- Continue to choose to independently record video for a range of purposes.
- Continue to take photographs for a specific reason or project and/or find appropriate images on-line.

Audio- use web based on-line tools and iPad apps.

Using Data

- To continue to use, search, enter data into and create their own databases
- To continue to use technology, including spreadsheets to create graphs and present data in different ways..

- Continue to use the computer and spreadsheets to create and alter graphs and charts.
- Continue to use, query and create their own databases as appropriate, linking into work across the curriculum.
- If appropriate and cross curricular links present the opportunity, begin to explore spreadsheets entering basic formulae.

Programming and Control

- To continue to develop their understanding of how computer and technology works and how computers process instructions and commands, including the use of coding languages.

- Continue to develop an understanding of how technology works, with a focus on developing computational thinking.
- Understand that software relies on codes to run and that a range of different coding languages exist.

<ul style="list-style-type: none"> • To explore ways in which software can be planned. • To use assisted programming software to create basic software which interacts with external controllers, and elements on screen, creating algorithms and using logic and calculations. 	<ul style="list-style-type: none"> • Explore different ways in which computer software can be planned. • Use a range of assisted programming 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 the software control the movement and responses of different elements on screen. • Use visual programming based software to plan, design and create basic non-game software which use logic, algorithms and calculations. <i>(e.g. use scratch to create an interactive maths quiz for a KS1 child)</i> 	
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Modelling and Simulations

<ul style="list-style-type: none"> • To understand that ICT allows for situations to be modelled, or those which it would be impractical to try out in real life and investigate the effect of changing variables in these simulations. • Know that simulations are often guided by hidden rules • To use software to model 3D objects. 	<ul style="list-style-type: none"> • Use software to create models of 3D objects, landscapes or items. • Explore a range of increasingly complex simulations, exploring the effect of changing variables and recording the results. 	<p>Use Trimble Sketckup for the 3D modelling task.</p>
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Learning Objectives	Key Skills	Notes
Using technology		
<ul style="list-style-type: none"> To continue to develop typing speed and accuracy to develop competency in typing To understand the purpose of and use independently a range of different technology. To make choices about when to use technology, which piece(s) of technology to use, which software/tools they are going to use on the technology and be able to explain their choices to others. 	<p>Throughout KS4 children should:-</p> <ul style="list-style-type: none"> Continue to become familiar with a range of devices, for example tablets, desktop computers, laptops, microphones, cameras etc and increasingly develop their independence and confidence in using these devices. Continue to increase their typing speed, and be encouraged to play games at home and school which help with this. Be encouraged to increasingly make sensible choices about the technology they use to help them work, and to justify their choices- for example, why they have chosen to use a <i>tablet</i> rather than a laptop, or why they have chosen to use an <i>easi-speak</i> microphone rather than the computer to record sound. 	<p><i>Just like handwriting, it is important that children type themselves when using a computer- no matter how slow they may be!</i></p> <p>Typing speed refers to copying WPM, composition WPM will be slower.</p> <p>See 'tools for teaching typing' for software and websites to use.</p>
Using the Internet		
<ul style="list-style-type: none"> To check plausibility of information from a variety of sources on the same topic To use a range of sources to check validity and recognise different viewpoints and the impact of incorrect data To understand plagiarism and the importance of acknowledging sources 	<ul style="list-style-type: none"> Understand the dynamics of different search engines and know that there are different search engines which may focus on different media Modify searches further to find relevant information for a report Talk about where web content might originate from by looking at web address, author, other linked pages Talk about validity and plausibility of information by checking other sources Recognise the impact of using incorrect information in their work Skim and select information checking for bias and different viewpoints 	<p>Useful websites for Plausibility:</p> <ul style="list-style-type: none"> <i>Investigate plausibility</i> http://www.school-portal.co.uk/GroupHomepage.asp?GroupID=257454 Dog Island Free Forever: A puppy dog paradise. http://www.thedogisland.com The Pacific Northwest Tree Octopus: http://zapatopi.net/treeoctopus.html Victorian Robots: http://www.bigredhair.com/robots/index.html

Communicating and collaborating online

- To use appropriate forms of communication to, share information or ideas
- To use collaboration tools to work together to produce a joint piece of work with children both inside Halesbury and in other schools.

- Continue to collaborate on a project using a range of web 2.0 tools to support their work- including, but not limited to , goggle documents and sites- both with children in their class, other classes and children from other schools.
- Respond to e-mails sent from outside the Halesbury domain using their Halesbury e-mail account. (e-safety paramount)
- Talk about the different forms of electronic communication and web 2.0 tools, discuss appropriateness of using different tools in different contexts and the advantages and disadvantages

Collaboration and e-mails as part of transition to colleges.

Halesbury e-mail account allows for monitored and filtered e-mailing outside of the Halesbury domain.

Creating and Publishing

- To use tools to help them design and create a web based application for smart phones/tablets, giving consideration to the market/audience for their application.
- To create websites for a specific purpose and improve these sites.
- To use technology to help them present their work, showing an increasing degree of skill and using advanced features of software and tools.
- To select tools which they can use to help them achieve a specific aim and justify these choices to others.,
- Understand the importance of evaluation and adaptation of individual features to enhance the overall product.

- Continue to create websites based on topics, area of interest or events, increasing the complexity of these sites.
- Continue to create presentations which link into a topic, area of interest or event, choosing an appropriate tool or service
- Create a web based application for a smart phone or tablet with consideration for the audience- containing information about a topic, trip, the school or to support work in other areas of the curriculum.
- *Create a non-linear presentation.*
- Continue to regularly use word processing and desktop publishing to present their work, combing formatted text with other media and making choices about programs and features to use and justifying these choices to others.
- Continue to use ICT to create a finished product or set of linked products, developing consistency in style across linked products.

Digital Media

- *To use technology to electronically compose music or sounds including creating melodies and save these as audio files.*
- *To begin to recognise the different layers of sound in a professional broadcast and use technology to record and manipulate music/sound refining for a given audience or project*
- To use technology to create astop motion animations and add audio and video effects to these animations.
- To use a computer to add complex effects to photographs and to preform common photograph edits (e.g. red eye removal)
- To compare different image creation and editing tools and select the most appropriate tool to use, justifying their choices.
- To independently take photographs and record video taking into account the audience and/or purpose for the image/video.

- Use a range of devices to create music samples and sequence these.
- Independently choose and use an appropriate device to record sounds in order to create a sound file and use software manipulate sounds using computer software – e.g. remove unwanted silences/trimming start and - combine to make a podcast or similar broadcast.
- Create stop motion animations and combine with video and audio effects.
- Apply more complex effects to photographs using a computer.
- Compare and contrast different image creation and editing tools across a range of platforms.
- Continue to choose to independently record video for a range of purposes.
- Continue to take photographs for a specific reason or project and/or find appropriate images on-line.

Audio- use web based on-line tools, audacity on a computer and iPad apps. Focus on using ambient sounds.

Using Data

- To continue to use, search, enter data into and create their own databases..
- To continue to use technology, including spreadsheets to create graphs and present data in different ways. To be able to design, construct, evaluate and modify simple models i.e. enter data, enter formulae, copy cells and use simple formatting in a spreadsheet.
- To use a spreadsheet to draw a graph to show data
- To understand that ICT allows quick and easy changes to be made to different variables

- Continue to use, query and create their own databases as appropriate, linking into work across the curriculum
- Understand what a spreadhseet is and the basic features of a spreadsheet and how these may be used in real life applications.
- Linked into a theme, or real life application, create a spreadhseet, enter basic formulae (simple calculations and SUM) and change data in a spreadsheet to model situations and answer 'What if...?' questions.

<p>once a spreadsheet is set up. Talk about how the spreadsheet helps them to manipulate a model easily</p>		
<p>Programming and Control</p>		
<ul style="list-style-type: none"> • To continue to develop their understanding of how computer and technology works and how computers process instructions and commands, including the use of coding languages. • <i>To use assisted programing software to create basic software which interacts with external controllers, and elements on screen, creating algorithms and using logic and calculations.</i> • To use assisted programing software to more complex software which interacts with external controllers, and elements on screen, creating algorithms and using logic and calculations. • To control an on screen icon using text based programing, including writing complex written algorithms which involve sensors. • TO begin to write simple scripts in an international recognised coding language 	<ul style="list-style-type: none"> • Continue to explore different ways in which computer software can be planned. • Continue to develop an understanding of how technology works, with a focus on developing computational thinking • <i>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.</i> • Use a range of visual programing software to plan and design more complex software (for example a multi-level game) • Control an on-screen icon using text based controls, including responding to sensors and repeating written algorithms (e.g. Robomind) • <i>Begin to explore text based programing languages and create basic scripts (for example writing a python script to identify if a number is odd or even)</i> 	
<p>Modelling and Simulations</p>		
<ul style="list-style-type: none"> • To understand that ICT allows for complex situations to be modelled, or those which it would be impractical to try out in real life investigate the effect of changing variables in these simulations. • Know that simulations are often guided by hidden rules • To use software to model 3D objects, working to a scale. 	<ul style="list-style-type: none"> • Use software to create models of 3D objects, landscapes or items, including creating to scale • Use a range of more complex simulations, exploring the link to 'real life' and the impact of changing variables. Link the work exploring simulations to creating their own basic simulations in excel (see Using Data strand). 	<p>Use Trimble Sketckup for the 3D modelling task.</p>