Hampton Junior School

Progression of Skills

Subject: Computing

PROGRESSION OF SKILLS - area/context	Year 3	Year 4	Year 5	Year 6
Computing systems and networks	**3.1 Connecting Computers** Identifying and exploring how information is shared between digital systems. - To explore the inputs, processes and outputs of digital devices. - To identify how digital devices have impacted our life through comparison using https://paintz.app/. - To identify a computer network and its components to explore how information is shared.	**4.1 The Internet** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content. - To identify how a network can share messages with another network to form the internet and the WWW. - To explore, analyse and design a website and its contents and understand how they are created. - To evaluate the contents of websites to decide if the information is accurate and importance of thinking before they reshare.	**5.1 Sharing information** Identifying and exploring how information is shared between digital systems. - To explain that computers can be connected together to form systems and how information is transferred. - To recognise and evaluate different ways computer systems share information. - To explain and evaluate how connected devices can allow people to work collaboratively and how this contributes to our lives.	**6.1 Internet communication** Recognising how the WWW can be used to communicate and be searched to find information. - To identify and describe how to use a search engine and select results appropriately. - To recognise and use search engines and how rank relevant webpages, highlighting how this can be influenced and explore their limitations. - To recognise and evaluate different methods of communication online.
Creating media	**3.2 Stop-frame animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story	**4.2 Audio editing** Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	**5.2 Video editing** Planning, capturing, and editing video to produce a short film.	**6.2 Webpage creation** Designing and creating webpages, considering copyright, aesthetics, and navigation.

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	- To explore the idea that an animation is a series of pictures or photographs shown in a sequence. - To plan, create and evaluate a short stop motion animation using https://cloudstopmotion.com/ - To review, evaluate and improve an animation. **3.5 Desktop publishing** Creating documents by modifying text, images, and page layouts for a specified purpose. - To recognise how a text and image can convey information. - To choose appropriate settings and add content dependent on its purpose.	- To identify and use digital devices to record sound. - To explain that audio can be changed through editing. - To edit and combine sounds. **4.5 Photo editing** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled. - To explain that digital images can be changes and change the composition of an image. - To describe how images can be changed for different uses. - To use and select appropriate tools and evaluate how changes can improve an image.	- To recognise video as moving images, which can include audio. - To identify and use digital devices to record video. - To identify that video can be improved through editing and the impact of choices when making a video. - **5.5 Vector drawing** Creating images in a drawing program by using layers and groups of objects. - To identify that drawing tools can be used to produce different outcomes. - To create a vector drawing by combining shapes, selecting tools to achieve a desired effect. - To recognise that vector drawings consist of layers and grouping items makes it easier to work with.	- To review and consider the structure of existing websites. - To plan the features of a webpage, considering ownership and use of images. - To recognise the importance or previewing pages, a navigation path and recognise the implications of sharing content owned by other people. **6.5 3D modelling** Planning, developing, and evaluating 3D computer models of physical objects. - To use a computer to create and manipulate 3D digital objects. - To compare and construct 2D and 3D graphics. - To identify that physical objects can be broken down into a collection of 3D shapes. - To design, develop and improve a digital 3D model.

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Programming	**3.3 Sequencing sounds** Creating sequences in a block-based programming language to make music - To explore and use scratch to create a sequence of commands. - To make changes to my sprite and appearance of my project. - To create a project from a task description. **3.6 Events and actions in programs** Writing algorithms and programs that use a range of events to trigger sequences of actions. - To explain how a sprite moves in an existing project. - To create, adapt and develop programs with added features. - To identify and fix bugs within a program.	**4.3 Repetition in shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes. - To identify and use programming with increase accuracy. - To use and create programs in a text based language. - To create a program that uses loops to produce a given outcome. **4.6 Repetition in games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game. - To use and develop count-controlled loops in a different programming environment.	**5.3 Selection in physical computing** Exploring conditions and selection using a programmable microcontroller. - To control a simple circuit connected to a computer. - To write program that includes count-controlled loops and understand they stop when the condition has been met. - To design and create a controlled system. **5.6 Selection in quizzes** Exploring selection in programming to design and code an interactive quiz. - To explain how selection is used in computer programs. - To relate conditional statements, connect a condition to an outcome. - To design, create and evaluate a program which uses selection.	**6.3 Variables in games** Exploring variables when designing and coding a game. - To define and explain a variable and why it is used in a program. - To design, create and evaluate a project based on a given example by using variables. **6.6 Sensing** Designing and coding a project that captures inputs from a physical device. To create a program to run on a controllable device and explain that selection can control the flow of a program. To design and develop a project that uses inputs and outputs on a controllable device.

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		- To explain that there are infinite loops and count controlled loops. - To modify, design and create a project that uses repetition.		
Data and information	**3.4 Branching databases** Building and using branching databases to group objects using yes/no questions. - To create questions with yes/no answers. - To collect relevant data and create branching databases. - To identify and compare data shown in a database including pictograms.	**4.4 Data logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation. - To gather and create data that can be used to answer questions. - To identify and use collected data to find information and answers.	**5.4 Flat-file databases** Using a database to order data and create charts to answer questions. - To use and compare paper and computer-based databases to record information. - To outline how grouping and then sorting data allows us to answer questions and explain that tools can be used to select specific data. - To apply my knowledge of a database to ask and answer real-world questions.	**6.4 Introduction to spreadsheets** Answering questions by using spreadsheets to organise and calculate data. - To identify questions which can be answered using data. - To explain that formula can be used to produce calculated data. - To apply formulas, create spreadsheets and choose suitable ways to present data.

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What are the key/essential knowledge and skills for this year group? **3 areas of computing** - **Digital literacy (DL)** - **Information technology (IT)** - **Computer science. (CS)**	Connecting computers (CS): To identify the benefits of a computer network. To identify an input and an output. Desktop publishing (DL): To be able to choose appropriate settings for a desired purpose. To evaluate my choice. Sequencing sound (IT): To be able to show what an algorithm is. To be able to create an algorithm. Branching databases (IT/DL): To show what a database is. To be able to give an appropriate question for a branching database.	The internet (CS) To be able to identify a network. To be able to evaluate how safe a website is. 4.2 Audio production (IT/DL): To be able to identify a sound input and output. 4.3 Repetition in shape (DL/IT): To be able to create a program by using algorithms. 4.4: Databases (IT/DL) TO be able to explain why data is collected over time. To show how data can be used. 4.5 Digital images (IT): To be able to evaluate the effectiveness of edits made to images. 4.6 Repetition in games (DL): To be able to repeat a command and modify an	5.1 – Networks (CS): To be able to explain that networks are connected and that this allows us to share information. 5.2 Video (DL/IT): To be able to capture a video and export it to another device. 5.3 Selecting in physical computing (IT/CS) To be able to create a circuit. To be able to write a program/ algorithm. 5.4 Databases (DL/IT): To be able to group data in an effective way to answer a question. 5.5 Vector drawing(DL) To be able to explain what a vector drawing is. To be able to use a variety of tools to create layers within a vector drawing. 5.6 Quizzes (CS): To be able to select an appropriate program to use.	6.1 (CS) To be able to identify and use a search engine. TO be able to identify how to communicate safely online. 6.2 (CS) To understand what copyright is. TO be able to consider whether sharing something online is safe and nay implication. 6.3 (IT): To be able to identify a variable/. 6.4(DL/IT): TO be able to create a formula. To be able to answer a given question by using a formula 6.5 (DL): To be able to create a model. To be able to identify that a 3D shape is a collection of shapes.

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		algorithm.		6.6 (CS/IT): TO be able to use a physical device to program an input.