

Kestrels Cycle A		
KS2 POS	<ul style="list-style-type: none"> • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • Understand computer networks including the internet; how they can provide multiple services, such as the world Wide Web; and the opportunities they offer for communication and collaboration. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given. 	
Unit of work	Knowledge	Skills
Creating media: Stop motion animation	<ul style="list-style-type: none"> • Understand and can explain what 'animation' means • Explain the history of animation. • Understand and can explain what 'stop motion' means • Understand how to create a short animation • Understand what onion skinning is. 	<ul style="list-style-type: none"> • Make small changes to my object to make my animation smoother • Work collaboratively with others to plan a storyboard for an animation • Keep an animation idea simple • Design and create a character that can be used in an animation • Decompose a story into smaller parts. • Create a simple animation following a storyboard plan

	<ul style="list-style-type: none"> • Understand the importance of keeping the camera still and making small movements between shots. • Identify ways to improve and edit programmes, videos and images etc. 	<ul style="list-style-type: none"> • Change a plan to recognise when something is too difficult to animate. • Make small changes to models to make an animation smoother • Delete frames • Assess an animation
Micro:bit	<ul style="list-style-type: none"> • Know what a Micro:bit is and what it is used for. • Learn that external devices can be programmed by a separate computer. • Explain the difference between 'on start' and 'forever' • Explain how a programme works. 	<ul style="list-style-type: none"> • Use logical thinking to explore software more independently, making predictions based on previous experiences. • Programme an animation. • Interrogating and developing programmes as they work. • Use previous skills and knowledge of decompose an animation into a series of images. • Decompose without support. • Write more complex algorithms for a purpose.
Search Engines	<ul style="list-style-type: none"> • Learn what a search engine is and how it is used. • Suggest keywords for searching. • Recognise that not everything online is true • Suggest ways of checking the validity of a website • Understand anyone can create a website • Understand the importance of keywords 	<ul style="list-style-type: none"> • Use a search engine to navigate the web • Develop searching skills to help find relevant information on the internet. • Use the acronym TASK • Use my search skills to answer focused questions • Choose appropriate pictures, colours and designs • Consider fair use • Credit people for information, images and videos which are used.

	<ul style="list-style-type: none"> • Understand what is meant by the terminology 'copyright' and 'ownership' • Understand what is meant by the term 'Web Crawlers' • Understand the role of a web index • Discuss page index 	
Music Programming apps	<ul style="list-style-type: none"> • Explain how my program will add to the story. • Explain how my program enhances the scene • Combine known commands. 	<ul style="list-style-type: none"> • Use a software programme (Sonic Pi) to create music. • Design, write and debug programs that accomplish specific goals • Use sequence, selection, and repetition in programs. • Begin to use nested loops (loops within loops). • Debug programme. • Write a code for a desired effect. • Use repetition within a programme. • Amend code within a live scenario.
Mars Rover 1	<ul style="list-style-type: none"> • Learn the vocabulary associated with data-know the meaning of 'data' and 'transmit' • Know the difference between computer input and output • Learn how data for digital images can be compressed. • Learn the difference between ROM and RAM 	<ul style="list-style-type: none"> • Calculate binary numbers, knowing each digit is worth double the one that precedes it. • Explain how the size of random-access memory (RAM) affects the processing of data (CPU) • Relate binary signal

	<ul style="list-style-type: none"> • Recognise that computers transfer data in binary and understand simple binary addition. • Learn that messages can be sent by binary code, reading binary up to 8 characters and carrying out binary calculations. • Understand how bit patterns represent images as pixels. 	Relate binary signals (Boolean) to the simple character-based language, ASCII
Mars Rover 2	<ul style="list-style-type: none"> • Recall how computers transfer data in binary. • Relate 8-bit binary to 256 possibilities • Know that a pixel is the smallest possible element of a digital image • Explain how a series of pixels are used to encode an image. • Recall that images are made of pixels • Relate the number of pixels to the size of an image. • Explain one of the methods of JPEG compression • Explain how to reduce the file-size of a digital image • Understand the fetch, decode and execute cycle. • an choose a safe and suitable username and password 	<ul style="list-style-type: none"> • Choose a safe and suitable username and password • Independently learn how to use 3D design software packages TinkerCAD • Undertake independent online tutorial-based learning • Name an object • Share my object to an online community

	<ul style="list-style-type: none">• Understand the importance of keeping personal information safe	
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