



Big Ideas & Key Vocabulary
Subject - Computing



	<u>Autumn - E-Safety, Data and Digital Literacy</u>	<u>Spring - Information Technology, Media and Computing Skills</u>	<u>Summer - Coding, Algorithms and Programming</u>
Bears	<p style="text-align: center;">E-Safety Computer Discovery</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> • Understand online dangers • Recognise the differences between different types of digital technology and recognise basic components. <p>Key Teaching Resources: - E-Safety Unit (iLearn2) - Computer Discovery Unit (iLearn2)</p> <p>Additional Linked Resources Awesome Autumn Unit Computational Thinking prompt questions</p>	<p style="text-align: center;">Early Digital Music Digital Art and Design Digital Literacy and Numeracy</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> • Use technology to create sounds and patterns • Use technology to create colours, lines and shapes • Use technology to recognise numbers and letters <p>Key Teaching Resources: - Digital Art and Design Unit (iLearn2) - Digital Photos and Videos Unit (iLearn2) - Mouse and Keyboard skills Unit (iLearn2)</p> <p>Additional Linked Resources Winter Warmers Activity Computational Thinking prompt questions</p>	<p style="text-align: center;">Early Programming Exploring Beebots</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> • Know how to operate simple equipment and give basic instructions <p>Key Teaching Resources: - Early Programming Unit (iLearn2)</p> <p>Additional Linked Resources Summer Fun Unit Computational Thinking prompt questions</p>
Lions	<p style="text-align: center;">E-Safety and Technology Around Us Grouping Data</p> <p>BIG IDEAS –</p>	<p style="text-align: center;">Digital Painting and Design Digital Writing</p>	<p style="text-align: center;">Moving a Robot Programming Animations</p>

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	<ul style="list-style-type: none"> Recognise technology and use it responsibly Explore object labels and use them to sort and group objects by properties <p>Key Teaching Resources: - Computer Systems and Networks Unit - Data and Information Unit</p> <p>Additional Linked Resources E-Safety (iLearn 2) Keyboard and Mouse Skills (iLearn 2)</p> <p>KEY VOCABULARY: Technology, Computer, mouse, trackpad, keyboard, screen</p>	<p>BIG IDEAS –</p> <ul style="list-style-type: none"> Choosing appropriate tools in a program to create art and making comparisons with working non-digitally Using a computer to create and format text, before comparing to writing non-digitally <p>Key Teaching Resources: - Creating Media – Digital Painting Unit - Creating Media – Digital Writing Unit</p> <p>Additional Linked Resources Digital Art (iLearn 2) Comic Creation (iLearn 2)</p>	<p>BIG IDEAS –</p> <ul style="list-style-type: none"> Writing short algorithms and programs for floor robots, and predicting program outcomes. Designing and programming the movement of a character on screen to tell stories. <p>Key Teaching Resources: - Programming A – Moving a Robot Unit - Programming B – Introduction to Animation Unit</p> <p>Additional Linked Resources Introduce Programming (iLearn 2)</p>
Tigers	<p>E-Safety, Information and Technology around us Pictograms</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Identifying IT and how its responsible use improves our world in school and beyond. Collecting data in tally charts and using attributes to organise and present data on a computer. <p>Key Teaching Resources: - Computer Systems and Networks Unit - Data and Information Unit</p> <p>Additional Linked Resources E-Safety (iLearn 2)</p>	<p>Digital Photography Digital Music</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Capturing and changing digital photographs for different purposes. Using a computer as a tool to explore rhythms and melodies, before creating a musical composition. <p>Key Teaching Resources: - Creating Media – Digital Photography Unit - Creating Media – Making Music Unit</p> <p>Additional Linked Resources E-Book Creation (iLearn 2)</p>	<p>Robot Algorithms Programming Quizzes</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Creating and debugging programs, and using logical reasoning to make predictions. Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. <p>Key Teaching Resources: - Programming A - Robot Algorithms Unit - Programming B – Introduction to Quizzes Unit</p> <p>Additional Linked Resources Develop Programming (iLearn 2) Programming with Scratch Jr (iLearn 2)</p>

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	<p>Internet Research (iLearn 2) Introduce Data Handling (iLearn 2)</p>		
Turtles	<p>E-Safety and Connecting Computers Branching Databases</p> <p>BIG IDEAS -</p> <ul style="list-style-type: none"> Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks Building and using branching databases to group objects using yes/no questions. <p>Key Teaching Resources: - Computer Systems and Networks Unit - Data and Information Unit</p> <p>Additional Linked Resources E-Safety (iLearn 2) Branching Databases (iLearn 2)</p>	<p>Stop-frame animation Desktop Publishing</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Capturing and editing digital still images to produce a stop-frame animation that tells a story Creating documents by modifying text, images, and page layouts for a specified purpose <p>Key Teaching Resources: - Creating Media – Animation Unit - Creating Media – Desktop Publishing Unit</p> <p>Additional Linked Resources Document Editing and Creation (iLearn 2) Infographics (iLearn 2)</p>	<p>Sequencing Sounds Events and Actions in Programs</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Creating sequences in a block-based programming language to make music Writing algorithms and programs that use a range of events to trigger sequences of actions <p>Key Teaching Resources: - Programming A – Sequence in Music Unit - Programming B – Events and Actions Unit</p> <p>Additional Linked Resources Music Creation (iLearn 2) Programming in Scratch (iLearn 2)</p>
Dolphins	<p>E-Safety and The Internet Data Logging</p> <p>BIG IDEAS -</p> <ul style="list-style-type: none"> Recognising the internet as a network of networks including the WWW, and why we should evaluate online content 	<p>Audio Editing Photo Editing</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Capturing and editing audio to produce a podcast, ensuring that copyright is considered. 	<p>Repetition in Shapes Repetition in Games</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Using a text-based programming language to explore count-controlled loops when drawing shapes.

	<ul style="list-style-type: none"> Recognising how and why data is collected over time, before using data loggers to carry out an investigation. <p>Key Teaching Resources:</p> <ul style="list-style-type: none"> Computer Systems and Networks Unit Data and Information Unit <p>Additional Linked Resources</p> <ul style="list-style-type: none"> E-safety (iLearn 2) Internet Research (iLearn 2) Data Handling (iLearn 2) 	<ul style="list-style-type: none"> Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled. <p>Key Teaching Resources:</p> <ul style="list-style-type: none"> Creating Media – Audio Editing Unit Creating Media – Photo Editing Unit <p>Additional Linked Resources</p> <ul style="list-style-type: none"> Video Editing (iLearn 2) Animation (iLearn 2) 	<ul style="list-style-type: none"> Using a block-based programming language to explore count-controlled and infinite loops when creating a game. <p>Key Teaching Resources:</p> <ul style="list-style-type: none"> Programming A – Repetition in Shapes Unit Programming B – Repetition in Games Unit <p>Additional Linked Resources</p> <ul style="list-style-type: none"> Programming in Scratch (iLearn 2)
Penguins	<p>E-Safety and Sharing Information Flat-File Databases</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Identifying and exploring how information is shared between digital systems. Using a database to order data and create charts to answer questions <p>Key Teaching Resources:</p> <ul style="list-style-type: none"> Computer Systems and Networks Unit Data and Information Unit <p>Additional Linked Resources</p> <ul style="list-style-type: none"> E-Safety (iLearn 2) Data Handling (iLearn 2) Computer Networks and the Internet (iLearn 2) 	<p>Video Editing Vector Drawing</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Planning, capturing, and editing video to produce a short film. Creating images in a drawing program by using layers and groups of objects <p>Key Teaching Resources:</p> <ul style="list-style-type: none"> Creating Media – Vector Drawing Unit Creating Media – Video Editing Unit <p>Additional Linked Resources</p> <ul style="list-style-type: none"> App Design (iLearn 2) 	<p>Selection in Physical Computing Selection in Quizzes</p> <p>BIG IDEAS –</p> <ul style="list-style-type: none"> Exploring conditions and selection using a programmable microcontroller Exploring selection in programming to design and code an interactive quiz. <p>Key Teaching Resources:</p> <ul style="list-style-type: none"> Programming A – Selection in Physical Computing Unit Programming B – Selection in Quizzes Unit <p>Additional Linked Resources</p> <ul style="list-style-type: none"> Text-based programming (iLearn 2) Programming in Scratch (iLearn 2)
Sharks	<p>E-Safety and Internet Communication Introduction to Spreadsheets</p> <p>BIG IDEAS –</p>	<p>Webpage Creation 3D Modelling</p> <p>BIG IDEAS –</p>	<p>Variables in Games Sensing</p> <p>BIG IDEAS –</p>

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	<ul style="list-style-type: none"> • Recognising how the WWW can be used to communicate and be searched to find information • Answering questions by using spreadsheets to organise and calculate data <p>Key Teaching Resources: - Computer Systems and Networks Unit - Data and Information Unit</p> <p>Additional Linked Resources E-Safety (iLearn 2)</p>	<ul style="list-style-type: none"> • Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation • Planning, developing, and evaluating 3D computer models of physical objects. <p>Key Teaching Resources: - Creating Media – 3D Modelling Unit - Creating Media – Web Page Creation Unit</p> <p>Additional Linked Resources Web Design (iLearn 2) Graphic Design (iLearn 2)</p>	<ul style="list-style-type: none"> • Exploring variables when designing and coding a game. • Designing and coding a project that captures inputs from a physical device <p>Key Teaching Resources: - Programming A – Variables in Games Unit - Programming B – Sensing Unit</p> <p>Additional Linked Resources Programming in Scratch (iLearn 2) Programming in Python (iLearn 2) HTML (iLearn 2)</p>
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All Key Teaching Resources are from the Teach Computing resources. All Additional linked resources can be used to extend learners, or as star challenges, cross-curricular opportunities (Barefoot Computing), differentiation, etc.