



The T-RF Computing Curriculum Coverage EYFS



Computer Science	Information Technology	Digital Literacy
<p><i>Substantive know ledge:</i></p> <ul style="list-style-type: none">• <i>I know how to follow instructions in the classroom.</i>• <i>I know how to give my own instructions.</i>• <i>I know how to give a beebot an instruction.</i>	<p><i>Substantive know ledge:</i></p> <ul style="list-style-type: none">• <i>I know a camera takes a picture.</i>	<p><i>Substantive know ledge:</i></p> <ul style="list-style-type: none">• <i>I know different types of technology e.g. phone, camera, computer, kettle, toaster, oven, etc.</i>• <i>I know a computer or I pad can be turned on and off.</i>• <i>I know we need to be safe when using technology.</i>



The T-RF Computing Curriculum Coverage KS1



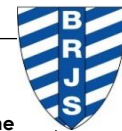
Computer Science	Information Technology	Digital Literacy
<p>NC:</p> <ul style="list-style-type: none"> Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. 	<p>NC:</p> <p>Use technology purposefully to create, organize, store, manipulate</p>	<p>NC:</p> <ul style="list-style-type: none"> Recognise common uses of information technology beyond school. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. and retrieve digital content.
<p>Substantive know ledge:</p> <ul style="list-style-type: none"> I know an algorithm is a set of instructions. I know a program needs a set of precise instructions for it to work. I know that algorithms can covert into code. I know how to correct simple errors in a program. I know how to fix code if it isn't working properly. I know what will happen in a program. 	<p>Substantive know ledge:</p> <ul style="list-style-type: none"> I know how to sort sound, pictures and text. I know how to add sound, pictures, text and photos to a program. I know how to change content such as text, sound and images. I know how to name my work. I know how to save my work. I know how to find my work. I know how to organise data using a database. I know how to find data using specific searches. I know how to use different programs to organize information. I know how to edit digital data. 	<p>Substantive know ledge:</p> <ul style="list-style-type: none"> I know what technology is. I know what examples of technology are in school and at home. I know old technology and new technology. I know to keep my login details safe. I know how to save my work in a safe place. I know how to find information using a search engine. I know the consequences of not searching online safely. I know how to share work and communicate electronically. I know how to report unkind behaviour and things that upset me to a trusted adult. I know programs I've used, use similar skills in the adut world.



The T-RF Computing Curriculum Coverage LKS2



Computer Science	Information technology	Digital Literacy
<p>NC:</p> <ul style="list-style-type: none"> To 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 To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	<p>NC:</p> <ul style="list-style-type: none"> 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 goals, including collecting, analysing, evaluating and presenting data and information 	<p>NC:</p> <ul style="list-style-type: none"> To use technology safely, respectfully and responsibly; recognize acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and content
<p>Substantive know ledge to be covered in both cycles:</p> <ul style="list-style-type: none"> I know an algorithm is a process or set of rules. I know that a flowchart can represent procedures I know what a timer does I know that a variable is a value that can change I know that a repeat command can make a block of commands run a set number of times or forever I know outputs, inputs, controls, events, variables and objects I know programs have several steps. I know the difference between a network and Internet To know what the Internet is and understand that through a connection of computers communication can take place. To recognise the main hardware parts of a computer. To know what commonly found and used devices can connect to networks I know the icon often associated with attachment. 	<p>Substantive know ledge to be covered in both cycles:</p> <ul style="list-style-type: none"> I know some age-appropriate search engines. I know basic features of a search engine (a search box, results page, and toolbar. I know entering data into software can be more easily analysed than looking at raw paper-based data. I know what working collaboratively is. I know what is meant by 'reliable' and different clues on how to assess it. I know what the term 'digital content' means. 	<p>Substantive know ledge to be covered in both cycles:</p> <ul style="list-style-type: none"> I know what a password is. I know why we need secure passwords. I know the outcomes of not keeping a password safe I know a password shouldn't contain information about them such as their birthday as that could be easily discovered. I know the SMART online safety rules I know the difference between online and offline. I know the importance of behaving respectfully online. I know the importance of reporting concerns



The T-RF Computing Curriculum Coverage LKS2

Disciplinary knowledge in computing is the use and interpretation of substantive knowledge in order to develop original digital content and programs. Long term planning identifies the cross curricula opportunities for pupils to demonstrate their disciplinary understanding.

Computer Science	Information technology	Digital Literacy
<p>NC:</p> <ul style="list-style-type: none"> To 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 To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	<p>NC:</p> <ul style="list-style-type: none"> 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 goals, including collecting, analysing, evaluating and presenting data and information 	<p>NC:</p> <ul style="list-style-type: none"> To use technology safely, respectfully and responsibly; recognize acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and content

CYCLE A

Autumn		Spring		Summer	
D&T: I can design a 3D long ship and print the nets to make a prototype.	Science: Code making – create a life cycle of a frog	Romans: I can carry out searches to find digital content on a range of online systems, such as an internet search engine	Italian Geography: I can create spreadsheets to sort features of European counties.	Science: I can use data loggers to collect information	Literacy: To use a range of software to create a persuasive presentation.

CYCLE B

Art: Images in paint and/or descriptions of settings recorded on sound buttons to choose from - also look at an online generator to pick settings from - brief look at useful tools online and how they can help us	PSHE: Safety poster for Bonfire night made in Word/2create or similar with images and information.	D&T: Use of data loggers to check temperature and discuss how these can be connected to alarm systems in places like the rainforest to alert people to concerns	Geography: Record information about the rainforest and make into podcasts and/or movies with voices from the rainforest	Literacy: Information texts - finding reliable materials online and safe search recap with opportunities to locate appropriate searches and learn to move on quickly if the page you find is not relevant or appropriate	Literacy: With bullying topic discuss online bullying and ways to find support and how to block/report and talking to an adult about anything worrying you.
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The T-RF Computing Curriculum Coverage UKS2



Computer Science	Information technology	Digital Literacy
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<p>Substantive know ledge to be covered in both cycles:</p> <ul style="list-style-type: none">I know that when debugging, properties and actions of objects may need to be modified to make a program run as intended.I know what the term decomposition means (breaking a task into manageable components and coding separately).I know what the term abstraction (removing unnecessary details from code)I know what a function is and that these can be used to make code more refined.I know the key components within a coding environment including objects have properties and these can be different according to object type.I know there can be negative aspects to computer networks and that some users behave inappropriately or carry out unkind or illegal activities online.I know what information is personal and what should and shouldn't be shared.I know some methods that are used to try to steal people's personal information and how to protect themselves against these.I know who our trusted adults are and what to do if we feel uncomfortable or concerned about an interaction, experience or something we have observed online.I know what networks are and that hardware within computers and devices can enable connections to a network.I know that the Internet is a worldwide network of linked computers.I know that the world wide web is just one part of the InternetI know that networks can be independent or connected to the Internet.	<p>Substantive know ledge to be covered in both cycles:</p> <ul style="list-style-type: none">I know the importance of behaving respectfully and appropriately onlineI know the SMART online safety rules and why they are important.I know what types of information is private.I know that some online services have age restrictions to help keep children safe from harmful content or contact.I know that we should never be embarrassed or ashamed of an online concern they have and to always share this with a trusted adult who can help them.I know that nothing online is ever truly safe or private and therefore our behaviours should reflect this fact.	<p>Substantive know ledge to be covered in both cycles:</p> <ul style="list-style-type: none">I know that when searching online they do not need to use grammar and how using a Boolean search can improve the effectiveness of their search.To know that when using search engines, the user can search for specific types of information e.g. images, videos and from the news and that these are called filtersI know what a blog is.I know what working collaboratively means and why it is effective.



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CYCLE A					
Autumn		Spring		Summer	
Maths: lesson(s) on understanding algorithms i.e. the vending machine example. What coins will it give us? What if one of the coins has run out? What rules is the vending machine given? What would it do if it ran out of most coins?	Science: electrical circuits link to how computers are hardware is made and built and what physical hardware examples of technology they can think of - look at "old" technology i.e building chairs vs "new" technology such as computers, televisions and games consoles.	Science: Use microscopes to look at properties of materials - easiscopes and easiscopes with screens	MFL: Record German words to sound buttons with translations and do recap of German by making recordings on microphones to go into a German school revision podcast	English: Plastic persuasion - make podcast adverts about use of plastics.	Geography: How can we "visit" a beach without actually going? Google Earth, connecting with friends there via Zoom etc - all the ways technology connects us around the world
Cycle B					
Geography: Make their own Google map of an area - adding pins with interesting facts etc for Geography - find out how to get and share a link and make it public/private or unlisted - relate this briefly to YouTube etc if uploading own content to internet	Geography: How technology impacts on economy and jobs market (factory jobs lost to robots but creating new jobs for engineers etc) - related to human geography and could relate to increase in home working during COVID lockdowns and how that may have longer impact on city centres and people being able to move to bigger and affordable houses out of London etc	English: Typing persuasive writing to practice typing skills	History: Podcast the turning point of Battle of Britain and interview characters from history (hotseating)	English: Make websites about animals and how to care for them . Can be collective i.e. each pair makes one page and then put them all together. Or could be individual to persuade on a specific topic i.e. circus captivity or zoo breeding	Egyptian art digital