

St Andrew's C of E Primary School

Curriculum Map for Computing



Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	COMPUTING is not part of	the Statutory Framework fo	or EYFS			
EYFS - Nursery	Year A & B	Year A	Year A	Year A	Year A	Year A
	Me and My Family	Winter Wonderland	How to Catch a	Fluff and Feathers	Somewhere Over the	Beside The Seaside
	·	Year B	Dragon	Year B	Rainbow	Year B
		Splashing Around	Year B	Let's Build Together	Year B	Animal Antics
		' '	Me and My Shadow		If You're Healthy	
			,		and You Know It	
			E-Safety Day	•		
EYFS - Reception	COMPUTING is not part of	the Statutory Framework fo	or EYFS		•	
271 3 11335P11311	Marvellous Me	Awesome Authors	Reach for the Stars	Commotion in the	All Creatures Great	Rumble in the Jungle
				Ocean	and Small	
			E-Safety Day			

E Safety	Programming	Handling Data	Multimedia	Technology in our Lives
<u>EA</u> -I can explain why I need to keep my password and personal information private.	<u>PA</u> - I can give instructions to my friend (using forward, backward and turn) and physically follow their instructions.	HA - I talk about the different ways I use technology to collect information, using a range of devices.	<u>MA</u> -I can use technology to organise and present my ideas in different ways.	TA - I can tell you why I use technology in the classroom. TB - I can tell you why I use
EB - I understand how to keep myself safe on line and who to tell if I feel unsafe EC - I know that if I put information online it leaves a digital footprint. ED - I can talk about what cyber bullying is and what to do if I encounter it EE - I understand that key word searching is an effective way of locating info.	PB - I can tell you the order I need to do things to make something happen and talk about this as an algorithm. PC - I can program a robot or software to do a particular task. PD - I can look at my friend's program and tell you what will happen. PE - I can use programming software to make objects move.	HB - I can make and save a chart or graph using the data I collect. HC - I can talk about the data that is shown in my chart or graph. HD - I am starting to understand different types of data bases. HE - I can tell you what kind of information I could use to help me investigate a question	MB - I can use the keyboard on my device to add, delete and space text for others to read. MC - I can identify that the look of a text can be changed in a computer. MD - I can save and open files on the device I use.	technology in my home and community. TC - I am starting to understand that other people have created the information I use. TD - I can identify benefits of using technology including finding information, creating and communicating. TE - I can talk about the differences between the Internet and things in the physical world.

		ch a program execute e it goes wrong so that					
Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
	National Curriculum - KS1						
	Pupils should be taught to:						
	understand what algorithm	ns are; how they are implem	ented as programs on digita	l devices; and that programs	s execute by following precise	e and unambiguous	
	instructions						
	* create and debug simple programs						
 use logical reasoning to predict the behaviour of simple 		le programs					
	* use technology purposefully to create, organise, store, manipulate and retrieve digital data						
	 recognise common uses of 	information technology beyo	ond school				
	* use technology safely and	respectfully, keeping person	nal information private; iden	tify where to go for help ar	nd support when they have co	oncerns about content o	
	contact on the internet or o		•		•		

.51 - Year 1	<u>Our Place</u>	<u>Heroes & Superheroes</u>	<u>City to Sea</u>
	Tech in our Lives	<u>Multi Media (5)</u>	Programming A
	 To identify technology Discuss information that can be found - who creates To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text To create rules for using technology responsibly 	 To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text To explain why I used the tools that I chose To compare typing on a computer to writing on paper Save work on computer 	 To explain what a given command will do To act out a given word To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem To choose a command for a given purpose
		Multi Media (2) To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I chose the tools I used To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper	
Additional Lessons covering	Esafety - Project evolve Self-image and identity I can recognise that there may be people online who could make me feel sad, embarrassed or upset.	Esafety - Project evolve Online relationships > Understand how to ask permission to use technology/do something online.	Esafety - Project evolve Privacy and security

- I know when I should ask an adult for help with things online that upset me.
- I can give examples of different adults I can ask for help.
 E Safety (EB ED)

Jigsaw Puzzle

Celebrating Difference

Pieces 3 & 4

- > I can tell you what bullying is.
- > I understand how being bullied might feel.
- > I know some people who I could talk to if I was feeling unhappy or being bullied.
- > I can be kind to children who are bullied.

- Understand how to ask permission to do something that affects someone else online.
- Give examples of situations where permission must always be sought.

Esafety - Project evolve

Health, well-being and lifestyle

- Tell you the rules around their own use of technology in and beyond the home.
- > Explain why these rules help keep them safe.
- > Identify rules that apply to safety and rules that apply to health/well-being
- Emerging awareness of how rules may change with simple changes in context (where they are, what they are doing and who they might be with)

- Demonstrate the types of data that may be personal to you.
- Able to articulate under what conditions I would ask an adult for help.

E Safety (EB ED)

Jigsaw Puzzle

Relationships

Piece 4

- > I know who can help me in my school community.
- > I know when I need help & know how to ask for it.

KS1 - Year 2	Knights, Dungeons & Castles	<u>Explorers</u>	<u>Australia</u>	
	Handling Data (4) To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer	Multimedia (5) To say how music can make us feel To identify that there are patterns in music To describe how music can be used in different ways To show how music is made from a series of notes To create music for a purpose To review and refine our computer work Project (squirrel) Making music - Linked	Programming A (B???) To describe a series of instructions as a sequence and explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program (series of commands) To design an algorithm To create and debug a program that I have written To explain that a sequence of commands has a start and an outcome To create a program using a given design To change a given design To create a program using my own design	
			> To decide how my project can be improved	

Additional Lessons covering...

Esafety - Project evolve

Online reputation

- > I know how to find information online
- > I can find information online that is older than I am
- I understand that my information can stay online for a very long time

E Safety (EB ED)

Jigsaw Puzzle

Celebrating Difference

Pieces 3 & 4

- > I understand that bullying is sometimes about difference.
- > I can tell you how someone who is bullies feels.

<u>Esafety - Project evolve</u>

Managing information online

- I can explain what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri).
- I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'.
- I can explain why some information I find online may not be true.

Esafety - Project evolve

Copyright and ownership

E Safety (EB ED)

Jigsaw Puzzle

Relationships

Piece 5

I recognise & appreciate people who can help me in my family, my school & my community.

Esafety - Project evolve

Online bullying

- I understand what the definition of bullying behaviour is
- > I can apply this definition to online behaviour

 ➤ I can be kind to children who are bullied. ➤ I can recognise what is right & wrong & know how to look after myself. ➤ I know when and how to stand up for myself and others. 	 Identify digital content that belongs to them. Describe why content on the internet may belong to others. 	 I can provide simple examples of what online bullying can look like I can give examples of bullying behaviour and where this can happen i.e. apps, social media, phone, tablets, computer etcI understand that mean or unkind words can upset someone else I understand that bullying can make someone feel upset, unsafe and/or uncomfortable I can identify some signs and symptoms that someone who is being bullied may show I can say ways bullying can make someone feel
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Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	National Curriculum - KS2					
	Pupils should be taught 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
- 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 goals, including collecting, analysing, evaluating and presenting data and information
- * use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

KS2 - Year 3	<u>Hunter Gatherers</u>	<u>Extreme Earth</u>	<u>Togatastic</u>
	Programming B To explore a new programming environment To identify that commands, have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order To edit and debug a program To change the appearance of my project To create a project from a task description Extra point of discussion - Looking at algorithms and uses in learning-Maths, Science and Design Technology	Technology in our Lives (1) To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way that we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network	Multimedia (2) To explain that animation is a sequence of drawings or photographs with a sequence of images To plan an animation To review and improve an animation To evaluate the impact of adding other media to an animation To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To edit and uplevel a program by adding new context and features To identify and fix bugs in a program To design and create a maze-based challenge

Additional Lessons covering...

E Safety (EB ED) Jigsaw Puzzle Being Me Pieces 3,4 & 5

Esafety - Project evolve

Online relationships

- \succ I can explain what is meant by trusting someone online
- I can give examples of what 'liking' someone online means and how it can be done

E Safety (EB ED)

Jigsaw Puzzle Relationship Piece 3

 I understand why rules are needed & how they relate to rights & responsibilities I understand that my actions affect myself & others & I care about other people's feelings. 	> I understand and can extrusting and liking some
 ➤ I understand that my behaviour brings rewards/consequences. ➤ I can make responsible choices & take action. 	E Safety (EB ED) Jigsaw Puzzle Healthy Me
Esafety - Project evolve Health, well-being and lifestyle Give examples of and explain the positive impact of using	Piece 4 & 5 > I can identify things, people from & can tell you some stinctuding who to go to for here.

- Give examples of and explain the positive impact of using technology and the internet.
- Give examples of tech/online activities that they (could) engage with for extended periods of time.
- Give examples of and explain the negative impact of excessive technology use on health and bodies.
- Give examples of and explain the negative impact of excessive technology use on thoughts and feelings.
- Give examples of and explain the negative impact of excessive technology use on relationships and work (e.g. homework/chores/etc.)
- > Explain simple rules/strategies they use to reduce the impact of these issues.

 I understand and can explain the difference between trusting and liking someone online.

- I can identify things, people & places that I need to keep safe from & can tell you some strategies for keeping myself safe including who to go to for help.
- > I can take responsibility for keeping myself & others safe.

- I know & can use some strategies for keeping myself safe online.
- > I know who to ask for help if I am worried or concerned about anything online.

Esafety - Project evolve

Self-image and identity

- > I can explain what is meant by the term 'identity'.
- > I can explain how people can represent themselves in different ways online.
- I can explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an avatar; social media).

KS2 - Year 4	<u>River Deep Mountain High</u>	River Deep Mountain High Eureka	
	Programming B	Handling Data (4)	Technology in our Lives (1)
	 To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means To modify a count-controlled loop to produce a given outcome To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome Extra point of discussion - Looking at algorithms and uses in learning- Maths, Science and Design Technology 	 To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way that we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network 	 To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content Project (squirrel) Audio production - Stand alone

Additional
Lessons
covering

E Safety (EB ED)

Jigsaw Puzzle

Being Me

Piece 4

I understand that my actions affect myself & others;

Esafety - Project evolve

Online reputation

- > I understand that others may search my name online to find information about me
- I know that not all information about me online may have been posted online by me
- I understand that people may alter information or put untrue information about me online with or without my knowledge

E Safety (EB ED)

Jigsaw Puzzle

Celebrating Difference

Piece 3

I know that sometimes bullying is hard to spot & I know what to do if I think it is going on but I'm not sure.

Esafety - Project evolve

Managing online information

- I can explain the difference between a 'belief', an 'opinion' and a 'fact'.
- > I can analyse information and differentiate between 'opinions', 'beliefs' and 'facts'.
- I understand what criteria have to be met before something is a 'fact'.
- I can explain how to evaluate evidence to determine its credibility.
- I can identify how to get help from a trusted adult if needed.

E Safety (EB ED)

Jigsaw Puzzle

Healthy Me

Piece 5

 \succ I can recognise when people are putting me under pressure & can explain ways to resist this when I want.

<u>Esafety - Project evolve</u>

Online bullying

- > I can understand what posting content online means
- ➤ I can reflect on how content I post may make some feel
- > I can understand my content can affect others feelings
- I can understand how some media i.e. images, video, text and chat can be interpreted differently online v offline
- I can predict how others may feel towards what I do online
- I understand I should not be mean online

<u>Esafety - Project evolve</u>

Copyright and ownership

- Demonstrate ways of recognising who might own online content.
- Explain what reuse is.
- Give examples of when they are/are not permitted to reuse online content.

E Safety	Programming	Handling Data	Multimedia	Technology in our Lives
EA - I can create rules for how to	<u>PA</u> - I can deconstruct a problem into	<u>HA</u> - I can plan the process needed	MA - I can talk about audience,	<u>TA</u> - I can tell you the Internet
behave online	smaller steps, recognising similarities	to investigate the world around me	atmosphere and structure when	services I need to use for different
Denave online	to solutions used before.		planning a particular outcome	purposes.
EB - I can explain the consequences		<u>HB</u> – I can select the most effective		
of sharing too much about myself	<u>PB</u> - I can explain and program each	tool to collect data for my	MB - I can confidently identify the	<u>TC</u> - I can describe how information
online	of the steps in my algorithm.	investigation	potential of unfamiliar technology to	is transported on the Internet.
ED T are make and shaired culing			increase my creativity.	
EB - I can make good choices online,	<u>PC</u> - I can recognise when I need to	<u>HB</u> - I can check the data I collect		TC - I can check the reliability of a
including reporting concerns to an adult.	use a variable to achieve a required	for accuracy and plausibility.	<u>MC</u> - I can combine a range of media,	website.
ddui'i.	output.		recognising the contribution of each	
EC - I can protect my computer or		<u>HC</u> - I can interpret the data I	to achieve a particular outcome.	<u>TD</u> - I can talk about the way search
device from harm on the internet. Eg	<u>PD</u> - I can evaluate the effectiveness	collect.		results are selected and ranked.
virus threats	and efficiency of my algorithm while I		MD - I can tell you why I select a	
	continually test the programming of	<u>HD</u> - I can present the data I	particular online tool for a specific	<u>TF</u> - I can tell you about copyright
<u>ED</u> - I can explore the safe use of	that algorithm.	collect in an appropriate way	purpose	and acknowledge the sources of
online communication. Eg blogs,				information that I find online
messages	<u>PE</u> - I can use a variable and	<u>HE</u> - I use the skills I have developed	MF - I can be digitally discerning	
	operators to stop a program	to evaluate a database.	when evaluating the effectiveness of	<u>TG</u> - I know that websites can use my
			my own work and the work of others.	data to make money and target their
				advertising.

PF - I can use logical detect and correct er algorithms and progra	rors in	TI - I can select an appropriate tool to communicate and collaborate online
<u>PF</u> - I can use differe (including sensors) to or onscreen action and will happen.	control a device	

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	National Curriculum - KS2					
	Pupils should be taught 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 * 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					
				ecomposing them into		
				runities they offer for		
	communication and collabore	ation				
	* 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					
	* use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and					
	contact.					

KS2 - Year 5	<u>The Age of Change</u>	<u>Extreme Freeze</u>	<u>Tomb Raiders</u>
	<u>Handling Data (4)</u>	Multimedia (2)	<u>Multimedia (5)</u>
	 To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data Plan own data base To use a form to record information Present and interpret data To explain that computer programs can be used to compare data visually To apply my knowledge of a database to ask and answer real-world questions 	 To explain what makes a video effective To use a digital device to record video To capture video using a range of techniques To create a storyboard To identify that video can be improved through reshooting and editing To consider the impact of the choices made when making and sharing a video Project (squirrel) Selection in physical computing - Stand alone 	 To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To apply what I have learned about vector drawings To use a computer to create and manipulate three-dimensional (3D) digital objects To compare working digitally with 2D and 3D graphics To construct a digital 3D model of a physical object To design a digital model by combining 3D objects To develop and improve a digital 3D model

Additional
Lessons
covering

E Safety (EA EB)

Jigsaw Puzzle

Being Me

Piece 4

- > I can make choices about my own behaviour because I understand how rewards & consequences feel.
- I understand that my actions affect me & others.

Esafety - Project evolve

Self-image and identity

- I understand that I can show my online identity in different ways.
- > I know that my online identity can have an impact on others, both positively and negatively.
- I can demonstrate responsible choices about my online identity, depending on context.

Esafety - Project evolve

Online relationships

- > I can describe what is meant by harm.
- I understand that not everyone I communicate with online is pleasant and may not have my best intentions at heart
- I can explain why some people choose to act in a certain way online, that it is their decision and that I am not responsible.
- I understand how to report problems online and can name a number of reporting routes that I could use or suggest to someone else

<u>Esafety - Project evolve</u> Health, well-being and lifestyle

- Explain what in-app purchasing is (including loot boxes).
- > Identify the benefits but also the risks of in-app purchases.
- \succ Know that I should always ask permission when making an online purchase.
- > Understand simple properties of healthy sleep
- > Can recount simple benefits of sleep on body's health
- Can offer suggestions on how use of technology before sleep could affect quality of sleep

E Safety (EA EB ED)

Jigsaw Puzzle

Relationships

Piece 3, 4 5 & 6)

- I understand there are rights & responsibilities in an online community or social network.
- I can recognise when an online community is helpful or unhelpful to me.
- I know there are rights & responsibilities when playing a game online.
- I can recognise when an online game is becoming unhelpful or unsafe.
- I can recognise when I am spending too much time using devices (screen time).
- > I can identify things I can do to reduce screen time, so my health isn't affected.
- I can explain how to stay safe when using technology to communicate with my friends.
- I can recognise & resist pressures to use technology in ways that may be risky or may cause harm to myself or others.

Esafety - Project evolve Copyright and ownership

- Recognise fair dealing situations
- Understand that some work is in the public domain
- Know that even copyrighted work can be used, if this use is fair.

Tudor Tales KS2 - Year 6 Rations and Raids Mexico Multimedia (2) Technology in our Lives (1) Programming A To identify how to use a search engine To review an existing website and consider its To describe how search engines select results To create a program to run on a controllable device To explain that selection can control the flow of a To explain how search results are ranked structure To plan the features of a web page To recognise why the order of results is important, program To consider the ownership and use of images and to whom To update a variable with a user input To recognise how we communicate using technology To use a conditional statement to compare a (copyright) To recognise the need to preview pages To evaluate different methods of online variable to a value To outline the need for a navigation path To design a project that uses inputs and outputs on communication To recognise the implications of linking to content a controllable device owned by other people To develop a program to use inputs and outputs on a controllable device To define a 'variable' as something that is changeable To explain why a variable is used in a program To choose how to improve a game by using variables

> To design a project that builds on a given example > To use my design to create a project > To evaluate my project
Project (squirrel) Sensing - Linked

Additional Lessons covering...

E Safety (EA EB)

Jigsaw Puzzle Being Me

Piece 4

- > I can make choices about my own behaviour because I understand how rewards & consequences feel & how these relate to my rights & responsibilities.
- > I understand that my actions affect myself & others.

E Safety - Project evolve

Managing information online

- I can describe how some online information can be opinion and can offer examples.
- I can explain how and why some people may present 'opinions' as 'facts'.
- I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online (e.g. advertising and 'ad targeting').
- > I can use search technologies effectively.
- I can explain how search engines work.
- > I can explain how results are selected and ranked.

Esafety - Project evolve

Online reputation

- > I understand what an online reputation is
- I understand that people may do an online search to find out information about me
- I understand that the information that people find about me will allow them to form an opinion about me
- > I can explain what a digital personality is.
- > I can explain strategies anyone can use to protect their 'digital personality' and online reputation.
- > I can explain how online anonymity can protect online reputation.

Esafety - Project evolve

Privacy and security

- Recognise and select effective strategies for managing passwords.
- Suggest methods for managing situations where passwords are lost or stolen.
- > Recognise that app permissions allow access to our personal information.
- Understand the relationship between the value of data and the ethics of collecting that data.
- Be aware that the data we share is valuable to app developers.

E Safety (EA EB)

Jigsaw Puzzle

Relationships

Piece 5

- I can judge whether something online is safe and helpful for me.
- I can resist pressure to do something online that might hurt myself or others.

Esafety - Project evolve

Copyright and ownership

- Demonstrate ways of searching for reusable content.
- Select content that is appropriate for reuse in my own work
- Understand how to reference online sources in my own work.