A.R.H. Curriculum Progression Document - Computing

Our school vision: Pupils will leave A.R.H. as happy, healthy and inspired young people who can confidently participate in the world as resilient, articulate citizens who have a life-long love of learning, creativity and discovery.

Our curriculum: Our curriculum is the vehicle to empower pupils with knowledge and skills. We strive to immerse young people in their topics which are designed to engage, provide real life links and progress all pupils' understanding.

'A.R.H. - Educating a community of life-long learners'

National Curriculum Aims – Computing			
Children can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.	Children can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems.	Children can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.	Children are responsible, competent, confident and creative users of information and communication technology.

Computing can be taught in weekly blocks for Programming and IT units. Online safety should be spread out throughout the half term.

Year 1	Twisted Tales	Inspirational Occupation	Best of Leicester	Weird and Wonderful Weather	Marvellous Makers	World Explorers	Computing Focus Days

NC Objective Broken Down Core Knowledge and Skills	Previous knowledge	Questions and activity	Date Covered	Instructions Debug Predict Log on Save Insert Cursor Button
<u>understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</u> **<u>create and debug simple programs</u>** **<u>use logical reasoning to predict the behaviour of simple programs</u>** • I can follow clear instructions to perform a task. • I can create my own clear instructions for a simple task. • I can control the movement of a screen turtle (beebot app) using single commands. • I can think about how I would fix issues in my instructions and attempt to fix them. • I am beginning to use the words debug and algorithms when fixing problems in my instructions. I can predict what I think would happen if I…. *pressed this button 1st, pressed both buttons, clicked these instructions etc.*	ELG Listening, Attention and Understanding: Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions.	Questions: What do you think will happen if I press __, __ and ___ on a Beebot? Activity: Beebot app + Daisy the Dinosaur app **Saved as screenshot of activity on Seesaw in Computing folder.**		
<u>use technology purposefully to create, organise, store, manipulate and retrieve digital content</u> **<u>recognise common uses of information technology beyond school</u>** • . I can turn a device on or off • I can log onto a device / website. • I am beginning talk about the parts of devices such as: screen, mouse, keyboard, button etc. • I can save and find my digital work from a clear destination as modelled by the teacher (EG Activities in Seesaw) I can use technology to create work using painting programs	ELG role play with devices	Questions: How can you login to Seesaw and draw? How would you add text? How do you add writing? What are the letters on the screen called? (keyboard) Activity: Logging on to Seesaw using QR code * Using Seesaw paint drawing tool to paint inspirational occupations. Add text to		

		describe. Additional challenge: use microphone to describe. **Saved on Seesaw in Computing folder**		
use technology purposefully to create, organise, store, manipulate and retrieve digital content **recognise common uses of information technology beyond school** • I can use technology to create work using word processing programs. • I can save and find my digital work from a clear destination as modelled by the teacher (EG Activities in Seesaw) • I can use technology to create work using a variety of tools (stamps, texts, paint, images etc.) • I can turn a device on or off • I can log onto a device / website. • I am beginning talk about the parts of devices such as: screen, mouse, keyboard, button etc.	ELG Creating with Materials: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	Questions: What makes an effective photo? What can you record about your photo? What takes the photo and what records? (camera and mic on the tablet or iPad – if possible compare to other devices with cameras) Activity: Logging on to Seesaw. Take a photo (or multiple) and record what the photo is about – maybe of work about the Best of Leicester topic. Challenge: Complete multiple pages within the same Seesaw post, each with a photo and recording or text. **Saved on Seesaw in Computing folder**		Log on Save Insert Cursor Keyboard Button Type Text box
use technology purposefully to create, organise, store, manipulate and retrieve digital content **recognise common uses of information technology beyond school** • I can save and find my digital work from a clear destination as modelled by the teacher (EG Activities in Seesaw) • I can use technology to create work using painting programs. • I can use technology to create work using word processing programs. • I can use technology to create work using a variety of tools (stamps, texts, paint, images etc.) • I can turn a device on or off	ELG role playing	Questions: Can you make a poster using typing, microphone, drawing and pictures on Seesaw using a tablet? How many different tools can you use on Seesaw? Can you log in and save into folders and add your friends to your work? Activity: Create a poster using as many techniques as possible on Seesaw. Children should do this		Log on Save Insert Cursor Keyboard Button Type Paint Text box

• I can log onto a device / website. • I am beginning talk about the parts of devices such as: screen, mouse, keyboard, button etc.		independently as an accumulation of all they've learnt. **Saved on Seesaw in Computing folder**		
<u>understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</u> **<u>create and debug simple programs</u>** **<u>use logical reasoning to predict the behaviour of simple programs</u>** • I can follow clear instructions to perform a task. • I can create my own clear instructions for a simple task. • I can control the movement of a floor robot (beebot) using simple commands. • I can control the movement of a screen turtle (beebot app) using single commands. • I can think about how I would fix issues in my instructions and attempt to fix them. • I am beginning to use the words debug and algorithms when fixing problems in my instructions. I can predict what I think would happen if I…. *pressed this button 1st, pressed both buttons, clicked these instructions etc.*	No prior knowledge. Children will need a lot of support logging onto Computers. Teach as many experts as possible to support you.	Questions: Why isn't the programme doing what you want it to do? What do the blocks mean? How do they affect what is happening on the screen? Activity: Code.org Course B **Save screenshots or photos of children doing this activity on Seesaw.** + Using Beebots by following instructions from the teacher **Take a photo or video to put on Seesaw in Computing folder**		Instructions Debug Predict Beebot
<u>recognise common uses of information technology beyond school</u> **<u>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.</u>** • I can recognise some uses of technology in school. • I can recognise some uses of technology at home. • I understand that some information is personal and can give examples of this. • I know where to go for support when I am using technology (trusted adult).	Please see online safety and safeguarding progression.	Questions: Activity:		

• I can talk about being kind online and real life consequences • I follow the SMART safety rules.				

Year 2	Captivating Capitals	Terrible Tudors	Food Glorious Food	Magnificent Materials	Into the woods	Tales from around the world.	Computing Focus days		Vocabulary

NC Objective Broken Down Core Knowledge and Skills	Previous knowledge	Questions and skills	Date Covered	Vocabulary
<u>understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</u> **<u>create and debug simple programs</u>** **<u>use logical reasoning to predict the behaviour of simple programs</u>** • I understand what algorithms are. • I can create more detailed instructions. • I can predict the behaviour of simple programs such as where the Beebot will finish after a series of commands. • I can transfer and apply learning from a floor robot to an on screen environment. I am beginning to write my algorithms down using notation. EG, arrows.	Year 1 Daisy dinosaur and Beebot app. These are more controlled. Children have learnt about instructions and prediction.	Questions: Why might you repeat certain parts of your instructions in these apps? Could you give instructions to your friend for each challenge? (need a solid understanding of instructions to connect to algorithms as a new vocabulary) Activity: Lightbot hour of code app and A.L.E.X app. **Screenshot and save on Seesaw in Computing folder**		Instructions Detail Debug Predict Log on Save Insert Cursor Keyboard Button Type Image / Picture Internet Saved location Photos Gallery Text box
<u>use technology purposefully to create, organise, store, manipulate and retrieve digital content</u> **<u>recognise common uses of information technology beyond school</u>** • I can save and retrieve digital content independently on Seesaw. • I can save my work to my name independently on Seesaw. • I can use technology to create a range of media including: video, posters and presentations. • I can change the content and look of my work (Eg colours, pictures). I can organise information in a logical way. • I can turn a device off and on independently. • I can log onto a device or website independently.	Year 1 Children should have reached a level of using Seesaw independently with a variety of tools. It is likely this will need to be reviewed in this half term to ensure they are 'Seesaw ready' and are able to do tasks without needing support with app issues.	Questions: How can you use Seesaw to create an information page about Terrible Tutors? How many different tools can you use? What folder should you save your work in for each lesson and how do you know? Activity: Use Seesaw in a variety of core and non-core subjects to cover computing without specific computing lessons. Children to use the program as a tool and try to use all creative tools, know where to save, add friends etc. Try to		

• I can talk about devices using the correct terminology, eg: screen, mouse, keyboard, button, touchscreen etc. I can explain why we use technology and its benefits as well as some dangers.		plan into as many non-computing lessons as possible: science experiment recording, word bank, maths photos of treasure hunt etc. **Saved on Seesaw in Computing folder**		
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.**	Please see online safety and safeguarding progression.	Questions: Activity:		
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** • I understand what algorithms are. • I can create more detailed instructions. • I can control and debug the Beebot to move it to a given position or along a given path. • I can predict the behaviour of simple programs such as where the Beebot will finish after a series of commands. • I can transfer and apply learning from a floor robot to an on screen environment. I am beginning to write my algorithms down using notation. EG, arrows.	Prior learning year 1 Children have completed course B in Year 1. They should be familiar with some of the layout of the course and therefore able to access it easier. Children will still require help logging onto computers.	Questions: What is an algorithm? How is this linked to instructions? How is an algorithm the same / different to instructions? Activity: Code.org course C **Take photos / screenshots of children completing this activity and save in Computing folder on Seesaw.** + Giving instructions to a partner such as putting on a coat, having a drink etc. **Take a video of giving and following the algorithm on Seesaw in Computing folder**		Photo / image Ipad Type Text box Insert Download / save Screenshot Shape tool Resize Font size

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.** I everyone is who they say they are on the Internet.	Please see online safety and safeguarding progression.	Questions: Activity:		Online Offline Technology Safe adult Personal information Real life
use technology purposefully to create, organise, store, manipulate and retrieve digital content **recognise common uses of information technology beyond school** • I can save and retrieve digital content independently on Seesaw. • I can save my work to my name independently on Seesaw. • I can use technology to create a range of media including: video, posters and presentations. • I can change the content and look of my work (Eg colours, pictures). I can organise information in a logical way. • I can turn a device off and on independently. • I can log onto a device or website independently. • I can talk about devices using the correct terminology, eg: screen, mouse, keyboard, button, touchscreen etc. I can explain why we use technology and its benefits as well as some dangers.	Prior learning from Year 1 and Year 2 Children can use all of the tools but now looking at the affect. Is it easy to read? Why or why not? How can you make your work clear?	Questions: How can you make your work look its best on Seesaw using tablets? How can you organise the images and text? Activity: Activity: Add a picture to the centre of a page on Seesaw. Create a mind map using lines, text boxes and resizing to talk about the picture. **Saved on Seesaw in Computing folder**		Algorithm Instruction Detail Debug Predict Organising Linked ideas Resizing Text boxes

Year 3	Energised Earth	Kapow!	Smashing Saxons	Rock 'n' Roll	Ancident China	The Wizarding World of Harry Potter	Computing focus days	Vocabulary

NC Objective Broken Down Core Knowledge and Skills	Previous knowledge	Questions and skills	Date Covered	
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.**	Please see online safety and safeguarding progression.	Questions: Activity:		
design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into	Prior learning Year 1 and 2 will have completed courses B and C.	Questions: Why can one error affect your whole algorithm on Code.org course D?		Sprite Button Command Algorithm

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** • I can write algorithms that achieve specific goals. EG to draw a rectangle • I can control and debug a floor turtle (Beebot) to achieve a given aim using a set of commands. • I can recognise a command in a program which causes an error. • I can use repeat commands. • I can describe the algorithm I will need for a simple task. I can use Scratch JR and I am using basic commands in Scratch (computer).	Children should be familiar with the platform and starting to login independently. By the end of year 3, children should be able to login to a computer completely independently. They will know instructions, algorithm, debug and predict. They should know that instructions and algorithms are steps in order. (I,e sequencing)	Activity: Code.org Course D **Take photos / screenshots of children completing this activity and save in Computing folder on Seesaw.**		Order Sequence Algorithm
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** • I can write algorithms that achieve specific goals. EG to draw a rectangle • I can control and debug a floor turtle (Beebot) to achieve a given aim using a set of commands.	Prior learning: None on Scratch Junior but the concepts of algorithms should be there. This is nearly new teaching apart from sequencing. Beebots at the start of this unit are linked to Years 1 and 2 where children will have covered basic instructions.	Questions: Why are timings important when creating an animation using Scratch Junior on iPads? Activity: Scratch JR app to create an animation of the Saxon settlement using the microphone + Beebot map work (geography) **Saved on Scratch Junior. Video of the finished video to go on Seesaw**		Animation Sprite Button Command Algorithm Order Sequence

• I can recognise a command in a program which causes an error. • I can use repeat commands. • I can describe the algorithm I will need for a simple task. I can use Scratch JR and I am using basic commands in Scratch (computer).				
<u>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</u> **<u>use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</u>** • I can use different search engines (Not just Google but also Bing, Yahoo kids, Swiggle etc) • I can use a range of media to complete my work (Eg, photos, text, drawing, videos). • I can collect information from a range of digital sources. • I can share my ideas and information with the rest of the class. • I can present information using a range of apps (Seesaw, Comic life, Puppet pals etc). I can think about the presentation of my digital creations and discuss how I can make these pleasing to the eye. • I can use the appropriate controls on a touchscreen, including taking screenshots. • I can explain why we use technology and its benefits as well as some dangers. • I can save and retrieve work on Seesaw on tablets, my own device and computers where applicable	Prior knowledge Animations have been covered in Year 3 but not in 1 or 2. Children have used Seesaw and the tablets but not puppet pals. This is nearly new teaching.	Questions: How can you make your animations on Puppet Pals easy to watch and understand? What makes a good animation? Activity: Use Puppet pals to create an explanation of the different kinds of rocks / fossils. Save video onto Seesaw. **Shared to Seesaw using the sharing tool in the app. Make sure Seesaw is logged in first before you share.**		Typing Keyboard Letters Keys Space
		Questions:		Power point

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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content** • I can use different search engines (Not just Google but also Bing, Yahoo kids, Swiggle etc) • I can use a range of media to complete my work (Eg, photos, text, drawing, videos). • I can collect information from a range of digital sources. • I can share my ideas and information with the rest of the class. • I can present information using a range of apps (Seesaw, Comic life, Puppet pals etc). I can think about the presentation of my digital creations and discuss how I can make these pleasing to the eye. • I can use the appropriate controls on a touchscreen, including taking screenshots. • I can explain why we use technology and its benefits as well as some dangers. I can save and retrieve work on Seesaw on tablets, my own device and computers where applicable	Prior knowledge A presentation is the cumulation of all learning about Seesaw in Years 1 and 2. By the end of Year 2, children should be able to: login, save in correct folders, add friends and use all creative tools. The new learning is how to copy and paste an external picture from the internet. ALSO new is what search engines are and how they work.	Why are the words you type into search engines important? Do all search engines work the same way? Do search engines search when you are on them or do they search all of the time? Activity: Use search engines to create presentation about Ancient China + present. **Saved on Seesaw in Computing folder as the presentation is made directly onto Seesaw**		Search engine Spiders Crawling Webpages Internet Google Yahoo Bing Term Information Copying Slide Transition Background
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**	Prior learning: Beebots in Year 1, 2 and 3. Scratch Junior in Scratch 3. Algorithms, sequencing and instructions in Years 1 and 2. Repetition in Year 3. This unit is about preparing children for	Questions: How are the movement commands in Scratch on the computer similar to the Beebot commands? Activity: Beebot movement and link to		Floor robot Command Buttons Instructions Algorithm Degrees Turn

<u>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</u> • I can write algorithms that achieve specific goals. EG to draw a rectangle • I can control and debug a floor turtle (Beebot) to achieve a given aim using a set of commands. • I can recognise a command in a program which causes an error. • I can use repeat commands. • I can describe the algorithm I will need for a simple task. I can use Scratch JR and I am using basic commands in Scratch (computer).	years 4,5,6 who will be using Scratch as their main programming language. Focus on basic commands and how to use the program.	Scratch 3.0 on tablets. Take screenshots / worksheets to be on Seesaw. **Photo of finished code on Seesaw in Computing folder.**		Forward Backwards

Year 4	Rockin' Rainforest	Willy Wonkas wonderful world of chocolate	Rotten Romans	Groovy Greeks	Shocking Mysteries	Adventures around Europe	Computing focus days	Vocabulary

NC Objective Broken Down Core Knowledge and Skills	Previous knowledge	Questions and skills	Date Covered	algorithm Debug Sequence Repetition Commands Tinkering Points Score
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** • I can design write and debug a simple program that uses sequence and repetition (e.g. a repeated shape pattern) • I can use logical reasoning to predict the outcome when a change is made to my program. • I can predict the behaviour of simple programs such as where the Beebot will finish after a series of commands. • I can recognise an error in a program and debug it. • I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology. • I can use the appropriate controls on a touchscreen, including taking screenshots. • I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer and am beginning to recognise the difference between inputs and outputs.	Previous knowledge Year 1 – Course B Year 2 – Course C Year 3 – Course D	Questions: What is sequence and repetition? When have you used these in Couse E on Code.org? Activity: Activity: Code.org Course E **Take photos / screenshots of children completing this activity and save in Computing folder on Seesaw.**		

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.**	Please see online safety and safeguarding progression.	Questions: Activity:		

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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content** • I can select an appropriate app / tool to accomplish a specific goal – EG using the microphone in Seesaw for recording instead of the video or opening Comic Life to create a comic. • I can collect, organise and sort information / data from a small range of sources and check for validity / mistakes (Checking websites) • I can share my digital ideas and information with a selected audience. • I can present information using a range of charts, articles, and audio / visual presentations. • I can use photos, video and sound to create an atmosphere when presenting to different audiences. This includes using different presentation apps. • I can create a hyperlink to a resource on the World Wide Web with support. • I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer and am beginning to recognise the difference between inputs and outputs. • I can open the appropriate app for my needs (E.g. a web browser for searching the internet) • I can use the appropriate controls on a touchscreen, including taking screenshots. • I can explain why we use technology and its benefits as well as some dangers.	Previous knowledge: Children have used search engines in Year 3 and have looked at how they work. Year 3 touched on reliability but not in depth. Year 3 have not been given the choice of an app before so this is new learning.	Questions: How do you know if the information on a website is correct? How could you check if something online was true or not? Activity: Use two different search engines to compare results and check the validity of websites for Romans research. Present finished research in an app of the children's choice or, depending on ability, a teacher chosen app **Saved on Seesaw in Computing as a screenshot.**		Internet Online Search engine Search terms Define Image Video Web Shopping Copyright Computer network World wide web
design, write and debug programs that accomplish specific goals, including controlling or simulating	Previous learning Children have practised using Scratch in Year 3 and	Questions: How does the physical system (the Micro:bits) link to the		Algorithm Debug Break down

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** • I can design write and debug a simple program that uses sequence and repetition (e.g. a repeated shape pattern) • I can use logical reasoning to predict the outcome when a change is made to my program. • I can predict the behaviour of simple programs such as where the Beebot will finish after a series of commands. • I can recognise an error in a program and debug it. • I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology. •	have worked on Scratch JR. In Year 4, children will have also completed a Scratch conversation for WhoDunnit? (This learning may come before or after)	Computer? What do they communicate to each other? Which system is in control? Activity: Children to create Greek monuments / statues and light them up with the Micro:bit external systems. Micro:bit to be coded on the Micro:bit LED software. (10 Micro:Bits currently so children in groups of 3 or more). **Video of the Art and Computing projects lighting up and a photo of the code put onto Seesaw.**		Error Sequence Selection Repetition Fix Logic Intructions Predict Reason
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** • I can design write and debug a simple program that uses sequence and repetition (e.g. a repeated shape pattern) • I can use logical reasoning to predict the outcome when a change is made to my program. • I can predict the behaviour of simple programs such as where the Beebot will finish after a series of commands. • I can recognise an error in a program and debug it. • I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology.	Previous knowledge In Year 3, children have used wait blocks in Scratch Junior but not in Scratch online. Children in Year 3 have had one unit on Scratch online so should be familiar but not experts.	Questions: How might you use 'wait' blocks to ensure characters don't talk over one another within Scratch? Is there another block that can help you with this? Activity: Scratch conversation with clues in each picture for 'Shocking mysteries. What have the people discovered? **Photos of the code and, if possible, a video of the conversation saved onto Seesaw in the Computing folder.**		Algorithm Debug Break down Error Fix Logic Sequence Repetition

• I can use the appropriate controls on a touchscreen, including taking screenshots. • I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer and am beginning to recognise the difference between inputs and outputs.				
<u>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</u> **<u>use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</u>** • I can select an appropriate app / tool to accomplish a specific goal – EG using the microphone in Seesaw for recording instead of the video or opening Comic Life to create a comic. • I can collect, organise and sort information / data from a small range of sources and check for validity / mistakes (Checking websites) • I can share my digital ideas and information with a selected audience. • I can present information using a range of charts, articles, and audio / visual presentations. • I can use photos, video and sound to create an atmosphere when presenting to different audiences. This includes using different presentation apps. • I can create a hyperlink to a resource on the World Wide Web with support.	Children have only used Seesaw and Puppet pals as IT tools. A new presentation software will need teaching but focus on making links between different programs and how they can tinker. Children have created a presentation in Year 3 about Ancient China and will have learnt about colour schemes and pictures.			Presentation Audience Hyperlink video

• I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer and am beginning to recognise the difference between inputs and outputs. • I can open the appropriate app for my needs (E.g. a web browser for searching the internet) • I can use the appropriate controls on a touchscreen, including taking screenshots. I can explain why we use technology and its benefits as well as some dangers.		Questions: Why might you include a hyperlink and video in a presentation? What impact will this have on your audience? What presentation software could you use? Create presentation NOT on Seesaw (Eg, Keynote on the iPads or Prezi online or even, Activ Inspire). The presentation must include a hyperlink and if possible, a video about Europe. **If possible, share the presentation direct to Seesaw. If not, take a video of the children presenting and put onto Seesaw in Computing folder.**		

Year 5	Invaders and Traders	Narnia	Ancient Egypt	Wonders of the Universe	Human Body	Innovative inventions	Computing focus days		Vocabulary

NC Objective Broken Down Core Knowledge and Skills	Previous knowledge	Questions and skills	Date Covered	
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.**	Please see online safety and safeguarding progression.	Questions: Activity:		
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**	Previous knowledge Year 1 – Course B Year 2 – Course C Year 3 – Course D Year 4 – Course E	Questions: Choose one of the programs you have completed from previous code.org. How would you make it even better? What makes a good algorithm? Activity: Code.org Course F **Take photos / screenshots of children completing this activity and save in Computing folder on Seesaw.**		Debug Decompose Logical thinking Resilience Streamlining Abstraction: removing unnecessary detail from an algorithm / programme.

• I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. • I can design algorithms that use repeats and variables • I can use physical inputs and outputs alongside programming. • I can use logical reasoning to detect and debug mistakes in a program. • I use logical thinking, imagination and creativity to extend a program. • I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer and recognise the difference between inputs and outputs. • I can use the appropriate controls on a touchscreen, including taking screenshots. I can explain why we use technology and its benefits as well as its dangers.				
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** • I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. • I can design algorithms that use repeats and variables • I can use physical inputs and outputs alongside programming. • I can use logical reasoning to detect and debug mistakes in a program. • I use logical thinking, imagination and creativity to extend a program.	Previous knowledge: In Year 3 children tinkered with Scratch and learnt the move buttons and some basic information about sprites and backdrops. In Year 4 children have expanded this to more complicated programming with a conversation where sprites interact with each other. Now in Year 5, you'll work on controlling variables as the new learning.	Questions: How can we make controlling the movement of the mummy in Scratch different from game to game? Activity: Ancient Egypt Scratch mummy game based on this planning: http://code-it.co.uk/scratch/crabmaze where the crab is a mummy. **Photos of the code and if possible, a video of the game being played.**		Algorithm Debug Decompose Tinker Repeat Variable Blocks Sequence Selection Repetition

• I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer and recognise the difference between inputs and outputs. • I can use the appropriate controls on a touchscreen, including taking screenshots. I can explain why we use technology and its benefits as well as its dangers.				
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.**	Please see online safety and safeguarding progression.	Questions: Activity:		

<u>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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</u> • I can use a table to collect and record data. (Numbers app on iPads). • I can select and use multiple apps / tools to accomplish a specific goal. (Using a web browser to support information gathering for another app) • I can collect, organise and sort information / data from a range of sources and check for validity / mistakes. • I can use photos videos and sound effectively to improve my presentations to different audiences. This includes using a variety of presentation apps. • I can use hyperlinks to link to the World Wide Web independently. I can make posters, presentations, comics, videos, spreadsheets etc. using appropriate apps. • I can use multiple apps at once (eg: web browsers for pictures whilst working on a presentation).	Previous knowledge: Children have worked with apps and have done data in Maths (See Math progression). They have not done any spreadsheets before so this is new learning in terms of Computing.	Questions: Why is the information easier to read in a table than on a page of writing? How can you create this using the Numbers App or Microsoft Excel? Activity: Table for class 'human bodies' - height, heart rate, hand span etc. Using Numbers App on iPads or excel on laptops. **Screenshot onto Seesaw in Computing folder**	Questions:	Spreadsheet Table Formula Compare Data Information
		Questions:		Video

<u>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</u> **<u>use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</u>** • I can use a table to collect and record data. (Numbers app on iPads). • I can select and use multiple apps / tools to accomplish a specific goal. (Using a web browser to support information gathering for another app) • I can collect, organise and sort information / data from a range of sources and check for validity / mistakes. • I can use photos videos and sound effectively to improve my presentations to different audiences. This includes using a variety of presentation apps. • I can use hyperlinks to link to the World Wide Web independently. I can make posters, presentations, comics, videos, spreadsheets etc. using appropriate apps. • I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer and recognise the difference between inputs and outputs. • I can use multiple apps at once (eg: web browsers for pictures whilst working on a presentation). • I can use the appropriate controls on a touchscreen, including taking screenshots. I can explain why we use technology and its benefits as well as its dangers.	Previous knowledge: Children have created presentations from Year 3 using web or book based resources. They will have learnt about colour schemes, fonts and about not having too much information on a page. This presentation should be looking at making it look professional and clear as well as linking the act of presenting to the presentation on the Computing with planning what is being said etc,	Why do companies and individuals use forms? What can you do with the data received? How can you gather more data from each question? Activity: Create a form using the Google forms program to evaluate the trip for this half term. Use this planning to support: http://code-it.co.uk/dlplanning/google/survey **Photo of completed form on Seesaw in Computing folder.**		Image Photo Save Insert Embed Presentation Slide Animation

Year 6	Vile Victorians	Extinct?	Voyages	Amazing Australia	Over The Top	Survival!	Computing focus days	Vocabulary

NC Objective Broken Down Core Knowledge and Skills	Previous knowledge	Questions and skills	Date Covered	Deconstruct Debug Decompose Evaluate Efficiency Input Output Logical reasoning Variable
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** • I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. • I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. • I can use sequencing, selection and repetition in programs, including working with variables. • I can use physical inputs and outputs alongside programming . I can use logical reasoning to detect and correct errors in an algorithms and programs. • I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer, including internal features and can recognise the difference between inputs and outputs. • I can use multiple apps at once (eg: web browsers for pictures whilst working on a presentation). • I can use the appropriate controls on a touchscreen, including taking screenshots, using appropriate pressure etc. I can explain why we use technology and its benefits as well as its dangers.	Previous knowledge: Code.org courses from Year 1 support algorithm creation. Used Scratch JR and Scratch in Year 3 and compared to movement of Beebots. Year 4 have completed a conversation which used timings to stop overlap: broadcast is the more efficient way of doing this. In Year 5 the mummy game on scratch uses variables and different controls that can be embedded into this story.	Questions: How can the 'broadcast' block on Scratch be used effectively to move the story on and ensure there are no clashes with the algorithms within your program? Activity: Retell story using Scratch. Incorporate into writing in English. Screenshot programming onto Seesaw and use microphone tool to explain programming. **Video of the story and programming uploaded to Seesaw.**		

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**	Please see online safety and safeguarding progression.	Questions: Activity:		
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** • I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. • I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. • I can use sequencing, selection and repetition in programs, including working with variables. • I can use physical inputs and outputs alongside programming . I can use logical reasoning to detect and correct errors in an algorithms and programs	Previous knowledge: Code.org courses from Year 1 support algorithm creation. Used Scratch JR and Scratch in Year 3 and compared to movement of Beebots. Year 4 have completed a conversation which used timings to stop overlap: broadcast is the more efficient way of doing this. In Year 5 the mummy game on scratch uses variables which will be important in recording responses and adding	Questions: Why do you need specific answers for the computer to refer to in your quiz when creating a quiz on Scratch? How can you add points to your quiz to record the score? Activity: Scratch quiz for revision (maths or grammar). Screenshot and explain the blocks on Seesaw using microphone tool. **Quiz saved in the public folder on the server.**		Input Output When If, then, else Equals User Sequence Selection Repetition

	points. ASK button is new.			
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 • I understand the role of a server, a workstation and a user in a network, and can draw a simple network map. • I can explain how data is transported on the internet, including the use of cables under the sea / through countries. • I can use a search engine to find appropriate information and check its reliability using more concise search terms. • I can explain how search engines work and how results are ranked. • I can save and retrieve work on the Internet, Seesaw, the school network or my own device. • I can talk about the parts of a device or computer, including internal features and can recognise the difference between inputs and outputs. • I can explain why we use technology and its benefits as well as its dangers.	Previous knowledge: new knowledge in Year 6.Internet and search engines have been covered in previous years. Internet from KS1 and search engines from Year 3 so basic knowledge will be there but networking knowledge is new.	Questions: What is the world wide web? How does this work? How is it different and similar to our LAN Computer network in school? In your home? Activity: Computer networks (in school and internet) + how downloads work. **Photos / videos of each lesson and children explaining how networks work with pictures / diagrams on Seesaw in the Computing folder**		Network Packet Cable Chunks Wifi Computers Users World Wide Web Connected Spider web Data Sent
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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content**	Previous knowledge: Children have worked on iPads since KS1 on apps such as Seesaw, Scratch Jr and Puppet pals. This will be the first activity using stop motion and more 'professional' video / animation creation.	Questions: How can you make your stop motion on the iPads both exciting and informative? How can your stop motion be smoother? Activity: Create a Stop Motion		Animation Stop motion Audience Entertain Clear Sequence Media

• I can select and use multiple apps / tools to accomplish a specific goal. (Using a web browser to support information gathering for another app) • I can make: posters, presentations, graphs, leaflets, newspapers and text using appropriate apps. • I can use sequencing, selection and repetition in programs, including working with variables.	Children will know what an animation is and have made their own on Scratch Jr and Scratch.	animation about WW2 using the trenches created in Art. Stop Motion app on iPads. **Animation video shared to Seesaw.**		Video Save Retrieve FPS
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.**	Please see online safety and safeguarding progression.	Questions: Activity:		