Pudsey Bolton Royd Primary School Computing Long-Term Plan
Year 5

Autumn 1	Autumn 2	Spring 1
Enquiry Questions		
How can 3D models improve upon what 2D images can offer?	How can effective searching skills be utilised in other areas of computing?	How can formulas help interrogate data?
Outcomes		
I can explain the difference between a 2D image and a 3D model. I can create a simple 3D model. I can present my 3D model to others.	I can search effectively, using safer searching techniques. I understand rankings in search to be more effective. I can use file explorer to search effectively. I can have logical discussions based around searching. I can apply these search skills and discussions to databases. I can access and interrogate a database effectively.	I can input data into a spreadsheet proficiently I can create simple formulas I can change data and see different outputs as a formula remains constant
Linked Texts		
N/A	N/A	N/A
Linked Experiences		
N/A	N/A	N/A
Overview		
Just as children have progressed from simple images to moving media, children begin to progress from the 2D to the 3D in order to develop their ability to plan and design. Children will look at why 3D modelling is important in design, how it can be advantageous over flat 2D designs and, ultimately, present what they've done to others as would be expected of a design. Purple Mash 5.6 - Graphic Modelling.	Children start this unit honing and consolidating much of the content from their safer searching learning throughout school. Building on discussion, children then look at how these skills can apply to databases and look to access and interrogate them for information effectively. Purple Mash 5.4 - databases. To be used only after an initial lesson covering the requisite searching skills.	Children are now much more proficient at data input. Looking at their spreadsheet skills, they will enter data and then look at what they can do with the data. They can recap their understanding of graphs and previous knowledge on sorting, but a key focus here is on formulas and how spreadsheets allow us to have computers complete calculations, and how we can vary the data we input but the formula will remain - discussing the scope for this in real life problem solving. A good PSHE link here would be budgeting. As always, checking and correct inaccuracies in work should be a priority as we constantly look to instil the values of logic and editing. Purple Mash 5.3 - Spreadsheets
Knowledge and/or Skills Covered		
Create a presentation with text/ images to support them in showcasing work. Confident use of a mouse. Select and use a range of editing software independently.	Find files on a computer without support - keyword searching and logically manually searching. Use a search engine and explain the rationale/purpose behind which site they choose to visit. Start to position hands correctly, moving fingers rather than arms to type.	Start to position hands correctly, moving fingers rather than arms to type. Confident use of a mouse. (Focus on effectively data entry) Design and write programs for a given purpose in more abstract contexts e.g. Excel formulas

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National Curriculum Attainment Targets		
Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of p rograms, 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 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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 logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs use sequence, selection, and repetition in programs; work with variables and various forms of input and output
Important Vocabulary		
Impact, obstacle, crucial, rigorous, verify, context, paraphrase, quote, verbatim.	Protocol, deconstruct, improve, efficiency, audience, complex, prior, subsequent, intersecting.	impact obstacle crucial rigorous verify context paraphrase quote verbatim

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Spring 2	*Summer 1*	*Summer 2*
Enquiry Questions		
How can increasingly complicated code be organised?	How can I code sensors and motors to achieve a specific goal?	How can I create a successful advert?
Outcomes		
I can write and debug code in multiple sections I can include the 'if' command in code I can alter/utilise backgrounds or costumes for effect	I can work collaboratively I can apply my block coding skills to a physical device I can code my physical device to achieve a specific task I can use motors to make my device move I can use sensors to alter the behaviour of my device I can debug mistakes after testing on a physical device	I can plan an advert I can film an advert I can upload an advert I can edit a title/credits, sound and visual effects into an advert I can present an advert digitally - with no physical presence
Linked Texts		
N/A	N/A	N/A
Linked Experiences		
N/A	N/A	N/A
Overview		
Children will look to improve upon coding with ever increasingly difficult code. They will introduce the 'if' command, look at longer sections of code, debug as they need to create multiple sections of code and organise their code for efficiency. Children will look at backgrounds and costumes in more detail. Timers will be recapped and scoring systems introduced. Some children may progress to Scratch, where they can view the PONG game and look to create their own, though this is an extension. Purple Mash coding 5.1	Children will have the chance to collaborate in small groups as they get hands-on with robots. They will need to follow instructions to build robots, and then code them for specific tasks. This unit will amalgamate all coding work that has been completed so far - using physical devices, block coding, an opportunity for repeat/if commands. The robot will have sensors, so children will be able to build upon cause and effect and making the robot fulfil behaviours when criteria are met. Children will have the time here to complete their coding from last half term and progress onto the extension if possible. This will allow them to prepare and consolidate their coding skills.	Children will progress from animation to film.They will need to plan (which may include a script), practice, film, upload and edit an advert for their enterprise product which will then be distributed across the classes to convince them to purchase the product. This is the culmination of years of previous learning for a real life purpose.The key presentation here is that this will be the first time presented work is done in the absence of the child themselves - distributed online. A conversation around safe distribution and personal data should occur.
Knowledge and/or Skills Covered		
Design and write programs for a given purpose in more abstract contexts e.g. Excel formulas Use precise language to explain how to debug a program	Start using a range of inputs (e.g. sensors, music) to inform selection commands. Independently alter a program, e.g. to make it more efficient and remove superfluous code.	Select and use a range of editing software independently Create a presentation with text/ images to support them in showcasing work Begin to critique peers' work with simple comments that can be later rationalised and built upon.
National Curriculum Attainment Targets		

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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	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 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
Important Vocabulary		
protocol deconstruct improve efficiency audience complex prior subsequent intersecting	protocol deconstruct improve efficiency audience complex prior subsequent intersecting	cookies file directory send reply CC/BCC reply-all recipient field permissions cache flash drive memory stick/pen HTML open source Wikis solid state