COMPUTING OVERVIEW – Sticky Knowledge

Wrens (EYFS/Y1)	Year A	Year B
Autumn 1	**Technology Around Us** **Y1 – Technology Around Us** • Can you name some examples of technology in the classroom? • What rules do you need to know and understand to use computer technology safely? • What are the main parts of a computer?	**Technology Around Us** **Y1 – Technology Around Us** • Can you name some examples of technology in the classroom? • What rules do you need to know and understand to use computer technology safely? • What are the main parts of a computer?
Autumn 2	**Beebots** **Y1 – Moving a Robot** • Can you match an outcome to a button press and explain what the button does? (forwards, backwards etc). • Can you plan and show a route around a mat/map? (Program a robot).	**Beebots** **Y1 – Moving a Robot** • Can you match an outcome to a button press and explain what the button does? (forwards, backwards etc). • Can you plan and show a route around a mat/map? (program a robot).
Spring 1	**Exploring Media (paint)** **Y1 – Digital Painting** • How do you make lines and dots using a digital device? • How do you change the colour and brush sizes on a digital device? • Can you explain what some of the paint tools do?	**Exploring Media (paint)** **Y1 – Digital Painting** • How do you make lines and dots using a digital device? • How do you change the colour and brush sizes on a digital device? • Can you explain what some of the paint tools do?
Spring 2	**Group data** **Y1 – Grouping Data** • Why is labelling important when grouping data? • Explain how you would group objects to answer a question. • Show how you would record how many objects are in a group.	**Group data** **Y1 – Grouping Data** • Why is labelling important when grouping data? • Explain how you would group objects to answer a question. • Show how you would record how many objects are in a group.
Summer 1	**Animations & stories – Apps** **Y1 – Programming – Animations** • What is an algorithm? • What is a sprite? • Show how you can use commands to move a sprite, using a **Start** block to run your program. • What happens when you press or change a block that has a number underneath it?	**Animations & stories – Apps** **Y1 – Programming – Animations** • What is an algorithm? • What is a sprite? • Show how you can use commands to move a sprite, using a **Start** block to run your program. • What happens when you press or change a block that has a number underneath it?
Summer 2	**Exploring Media (writing)** **Y1 – Digital Writing** • How do you use a keyboard to add and remove text? • What tools do you use to change the text? (e.g. size, underline etc). • What are the differences between typing and writing on paper?	**Exploring Media (writing)** **Y1 – Digital Writing** • How do you use a keyboard to add and remove text? • What tools do you use to change the text? (e.g. size, underline etc). • What are the differences between typing and writing on paper?

Robins (Years 1/2)	Year A	Year B
Autumn 1	**Y2 – IT Around Us** • Where can IT be found? • What can IT be used for? Describe some examples. • What rules keep you safe when using IT?	**Y1 – Technology Around Us** • Can you name some examples of technology in the classroom? • What rules do you need to know and understand to use computer technology safely? • What are the main parts of a computer?
Autumn 2	**Y2 – Robot Algorithms** • What is a sequence? • Use an algorithm to program a sequence on a floor robot/device e.g. Beebots and explain what my algorithm should achieve. • What is 'debugging'?	**Y1 – Moving a Robot** • Can you match an outcome to a button press and explain what the button does? (forwards, backwards etc). • Can you plan and show a route around a mat/map? (program a robot).
Spring 1	**Y2 – Digital Photography** • Explain how you can take/capture a digital photo. • Describe how some tools can be used to change an image. • Identify which photos are real and which have been changed.	**Y1 – Digital Painting** • How do you make lines and dots using a digital device? • How do you change the colour and brush sizes on a digital device? • Can you explain what some of the paint tools do? Y2 Extension • Which tools are helpful and why when creating a picture in a style of an artist?
Spring 2	**Y2 – Pictograms** • Show and explain how you can enter data into a computer/device to create a pictogram. • What other ways can you present data? • Give some examples of why information should not be shared.	**Y1 – Grouping Data** • Why is labelling important when grouping data? • Explain how you would group objects to answer a question. • Show how you would record how many objects are in a group.
Summer 1	**Y2 – Programming – Quizzes** • How do you change the background or characters for your design? • What will a sequence of commands do when running a program? • What features could you add to your design to improve your project? • Create and show an algorithm to meet a design.	**Y1 – Programming – Animations** • What is an algorithm? • What is a sprite? • Show how you can use commands to move a sprite, using a **Start** block to run your program. • What happens when you press or change a block that has a number underneath it?
Summer 2	**Y2 – Making Music** • Show how you can create a rhythm pattern on a computer/device and how it can be changed. • How do you change pitch on a computer/device? • How do you add a sequence of notes to your rhythm?	**Y1 – Digital Writing** • How do you use a keyboard to add and remove text? • What tools do you use to change the text? (e.g. size, underline etc). • What are the differences between typing and writing on paper?

Woodpeckers (Years 3/4)	Year A	Year B
Autumn 1	**Y3 – Connecting Computers** • Explain what input, output and process means and how digital devices function. • What is a network? • Give some examples of similarities and differences between using non-digital tools and digital devices.	**Y4 – Internet** • What is the internet and what is it used for? • What is the purpose of a router? • Give some examples of why a network needs to be protected. • Give some examples of how you can spot whether information online is real or not real and what to do to keep safe.
Autumn 2	**Y3 – Sequencing Sounds** • What are the objects in Scratch? • How are sprites controlled? • Show how you can build a sequence of commands, and explain how you can change motion, sounds, background etc.	**Y3 – Events and Actions in Programs** • Explain the relationship between an event and an action. • Show how you can program movement for a sprite. • How can you identify and fix errors in a program to match an outcome?
Spring 1	**Y3 – Stop Frame Animation** • What is an animation? • What can 'onion skinning' be used for when creating an animation? • How can you add other media to your animation?	**Y4 – Photo Editing** • Show how you can crop and rotate an image. • Explain some ways in how you can edit a photo. • What does the 'cloning' tool do and why might it be used in editing a photo?
Spring 2	**Y3 – Branching Databases** • What are the important features to create a database? • What word best describes the structure of a branching database? • Give some examples of real-world uses for branching databases.	**Y4 – Data Logging** • What data can be collected by using sensors? • Give some examples of how data can be viewed on a computer or device. • What conclusions can you make from your data? E.g. Science.
Summer 1	**Y4 – Repetition in Shapes** • What are the effects of changing the value of a command? • What is a count-controlled loop? • Show how you would write an algorithm to produce a given outcome.	**Y4 – Repetition in Games** • What is the difference between a count-controlled loop and an infinite loop? • Give an example of when you would use a count-controlled loop and an infinite loop. • Show how you can create additional sprites and copy code over to them.
Summer 2	**Y3 – Desktop Editing** • What are the advantages and disadvantages of using text and images? • How can you edit your text? • What do the copy and paste buttons do? • What does 'page orientation' mean?	**Y4 – Audio Editing** • What are the input and output devices used to play and record sound? • Show how you can use a computer/device to record audio. • Show how you can edit a soundwave using a device.

GOODRICH

Owls (Years 4/5)	Year A	Year B
Autumn 1	**Y5 – Sharing Information** • What is a digital system and what parts make up a system? • What tasks are managed by computer systems? • Explain what to do when you use a search engine to find specific information. • What are the limitations of search engines?	**Y4 – Internet** • What is the internet and what is it used for? • What is the purpose of a router? • Give some examples of why a network needs to be protected. • Give some examples of how you can spot whether information online is real or not real and what to do to keep safe.
Autumn 2	**Y5 – Selection in Physical Computing** • What can a loop be used for? • What are conditions used for in programming? • Name some real-world examples of a condition starting an action.	**Y5 – Selection in Quizzes** • Why do you use selection in programming? • Which blocks would you use for program setup on Scratch? • Identify the condition and outcomes in an 'If,… then… else' statement.
Spring 1	**Y5 – Video Editing** • What makes a video effective? • Show how you can record a video. • Show how you can export a recording to a computer/device.	**Y4 – Photo Editing** • Show how you can crop and rotate an image. • Explain some ways in how you can edit a photo. • What does the 'cloning' tool do and why might it be used in editing a photo?
Spring 2	**Y5 – Flat-file databases** • What is a database? • Show how to use a flat-file database to compare different views of information. • Show how to use a computer program to make an appropriate chart to visually compare data.	**Y4 – Data Logging** • What data can be collected by using sensors? • Give some examples of how data can be viewed on a computer or device. • What conclusions can you make from your data? E.g. Science.
Summer 1	**Y4 – Repetition in Shapes** • What are the effects of changing the value of a command? • What is a count-controlled loop? • Show how you would write an algorithm to produce a given outcome.	**Y4 – Repetition in Games** • What is the difference between a count-controlled loop and an infinite loop? • Give an example of when you would use a count-controlled loop and an infinite loop. • Show how you can create additional sprites and copy code over to them.
Summer 2	**Y5 – Vector Drawing** • What are vector drawings? • Show how you can move, resize and rotate objects you have duplicated. • What tools can you use to add details and improve consistency of your drawings?	**Y4 – Audio Editing** • What are the input and output devices used to play and record sound? • Show how you can use a computer/device to record audio. • Show how you can edit a soundwave using a device.

Peregrines (Years 5/6)	Year A	Year B
Autumn 1	**Y5 – Sharing Information** • What is a digital system and what parts make up a system? • What tasks are managed by computer systems? • Explain what to do when you use a search engine to find specific information. • What are the limitations of search engines?	**Y6 – Communication** • Explain the importance of internet addresses. • Identify and explain the main parts of a data packet. • Give some examples of how people communicate using technology. • Describe and explain some examples of the benefits and risks of sharing information online.
Autumn 2	**Y5 – Selection in Physical Computing** • What can a loop be used for? • What are conditions used for in programming? • Name some real-world examples of a condition starting an action.	**Y6 – Variables in Games** • What is a variable? Give some examples of information that is variable. • Why are variables used in programming games? • Show how you can use variables to extend your game.
Spring 1	**Y6 – Webpage Creation** • What are the common features of a webpage? • What does the terms 'fair use' and 'copyright' mean? • What is a navigation path and why might they be useful?	**Y5 – Video Editing** • What makes a video effective? • Show how you can record a video. • Show how you can export a recording to a computer/device.
Spring 2	**Y6 – Spreadsheets** • What can a spreadsheet be used for? How can you use it to present data? • Give some examples of formulas you can use in a spreadsheet.	**Y5 – Flat-file databases** • What is a database? • Show how to use a flat-file database to compare different views of information. • Show how to use a computer program to make an appropriate chart to visually compare data.
Summer 1	**Y6 – Sensing (Programming)** • What is a micro:bit? • Show how to use a variable in an if, then, else statement to select the flow of a program. • Show how to use a conditional statement to compare a variable to a value. • Give some examples of variables that can be included in a project that uses inputs and outputs on a controllable device.	**Y5 – Selection in Quizzes** • Why do you use selection in programming? • Which blocks would you use for program setup on Scratch? • Identify the condition and outcomes in an 'If,… then… else' statement.
Summer 2	**Y6 – 3D Modelling** • Show how you can modify 3D shapes using a programme? E.g. resize, lift, colour. • What are placeholders used for? • Choose objects to create a 3D model and explain why you have chosen those objects.	**Y5 – Vector Drawing** • What are vector drawings? • Show how you can move, re-size and rotate objects you have duplicated. • What tools can you use to add details and improve consistency of your drawings?