# WHOLE SCHOOL OVERVIEW

## COMPUTING

| | | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|---|
| Cycle A | EY | **Using devices** | | **Creating Content** | | **Using the internet** | |
| | Y1/2 | **Computing Systems and Networks** Technology Around Us | **Creating Media** Digital Painting | **Programming A** Moving A Robot | **Data and Information** Grouping Data | **Creating Media** Digital Writing | **Programming B** Programming Animations |
| | Y3/4 | **Computing Systems and Networks** Connecting Computers | **Creating Media** Stop-Frame Animation | **Programming A** Sequencing Sounds | **Data and Information** Branching Databases | **Creating Media** Desktop Publishing | **Programming B** Events and Actions in Programs |
| | Y5/6 | **Computing Systems and Networks** Systems and Searching | **Creating Media** Video Production | **Programming A** Selection in Physical Computing | **Data and Information** Flat-File Databases | **Creating Media** Introduction to Vector Graphics | **Programming B** Selection in Quizzes |
| Cycle B | EY | **Using devices** | | **Creating Content** | | **Using the Internet** | |
| | Y1/2 | **Computing Systems and Networks** IT Around Us | **Creating Media** Digital Photography | **Programming A** Robot Algorithms | **Data and Information** Pictograms | **Creating Media** Digital Music | **Programming B** Programming Quizzes |
| | Y3/4 | **Computing Systems and Networks** The Internet | **Creating Media** Audio Production | **Programming A** Repetition in Shapes | **Data and Information** Data Logging | **Creating Media** Photo Editing | **Programming B** Repetition in Games |
| | Y5/6 | **Computing Systems and Networks** Communication and Collaboration | **Creating Media** Web Page Creation | **Programming A** Variables in Games | **Data and Information** Spreadsheets | **Creating Media** 3D Modelling | **Programming B** Sensing Movement |

| | Cycle A | | | | | |
|---|---|---|---|---|---|---|
| | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **EY** | **Using devices** | **Using devices** | **Creating Content** | **Creating Content** | **Using the internet** | **Using the internet** |
| | 1. Can you play a game on the interactive whiteboard or tablet? | 1. How do you make a floor turtle move? | 1. How do you take a photograph on a tablet? | 1. How do you make a voice recording on a tablet? | 1. How do you keep safe when using the internet? | 1. How do you find the answer to a question on the internet? |
| **Year 1/2** | **Computing Systems and Networks** Technology Around Us | **Creating Media** Digital Painting | **Programming A** Moving A Robot | **Data and Information** Grouping Data | **Creating Media** Digital Writing | **Programming B** Programming Animations |
| | 1. What technology is in your classroom?<br>2. What are the different parts of a computer?<br>3. How do you use a mouse?<br>4. How do you use a keyboard?<br>5. How do you edit text?<br>6. What are the rules for using technology responsibly? | 1. How can we paint using computers?<br>2. How can we make different shapes using computers?<br>3. How can you create a digital painting, inspired by an artist?<br>4. What do different tools do?<br>5. Which tool is best?<br>6. What is it like to paint on a computer? | 1. What will the command do?<br>2. What is direction?<br>3. What is the difference between a forwards and backwards movement?<br>4. How can the robot move?<br>5. What will the program do?<br>6. How can you fix a problem? | 1. What are the objects?<br>2. How can we input information?<br>3. How would you describe the object?<br>4. Which objects have the same properties?<br>5. How can we compare the groups?<br>6. How are the groups similar or different? | 1. How can we use a computer to write?<br>2. How do you add and remove text?<br>3. What is a toolbar?<br>4. What changes can you make to a text?<br>5. Why did you use that tool?<br>6. What is it like to write on a computer? | 1. What does your command do?<br>2. What makes a simple programme on Scratch Jnr?<br>3. Why do the blocks have numbers?<br>4. Why does each sprite have its own instructions?<br>5. What is your project design?<br>6. Can you use an algorithm to create a program? |
| **Year 3/4** | **Computing Systems and Networks** Connecting Computers | **Creating Media** Stop-Frame Animation | **Programming A** Sequencing Sounds | **Data and Information** Branching Databases | **Creating Media** Desktop Publishing | **Programming B** Events and Actions in Programs |
| | 1. How do digital devices function?<br>2. What are input and output devices?<br>3. How can digital devices change the way we work?<br>4. How can a computer network be used to share information?<br>5. How can digital devices be connected?<br>6. What are the physical components of a network? | 1. Can you explain that animation is a sequence of drawings or photographs?<br>2. Can you relate animated movement with a sequence of images?<br>3. Can you plan an animation?<br>4. Can you identify the need to work consistently and carefully?<br>5. Can you review and improve an animation?<br>6. Can you evaluate the impact of adding other media to an animation? | 1. Can you explore a new programming environment?<br>2. Can you identify that commands have an outcome?<br>3. Can you explain that a program has a start?<br>4. Why does a sequence of commands have an order?<br>5. How do you change the appearance of your project?<br>6. Can you create a project from a task description? | 1. How do you create questions with yes/no answers?<br>2. Can you identify the attributes needed to collect data about an object?<br>3. How do you create a branching database?<br>4. Can you explain why it is helpful for a database to be well structured?<br>5. How do you plan the structure of a branching database?<br>6. Can you independently create an identification tool? | 1. How do text and images convey information?<br>2. How can text and layout be edited?<br>3. Can you choose appropriate page settings?<br>4. How do you add content to a desktop publishing publication?<br>5. How do different layouts suit different purposes?<br>6. What are the benefits of desktop publishing? | 1. How does a sprite move?<br>2. Can you create a program to move a sprite in four directions?<br>3. Can you adapt a program to a new context?<br>4. How will you develop your program by adding features?<br>5. Do you know how to identify and fix bugs in a program?<br>6. Can you design and create a maze-based challenge? |
| **Year 5/6** | **Computing Systems and Networks** Systems and Searching | **Creating Media** Video Production | **Programming A** Selection in Physical Computing | **Data and Information** Flat-File Databases | **Creating Media** Introduction to Vector Graphics | **Programming B** Selection in Quizzes |
| | 1. How can computers be connected together to form systems?<br>2. What is the role of computer systems in our lives?<br>3. Can you experiment with search engines?<br>4. How do search engines select results?<br>5. How are search results ranked?<br>6. Why is the order of search results important, and to whom? | 1. What makes a video effective?<br>2. What digital devices can record video?<br>3. Can you capture video using a range of techniques?<br>4. How do you create a storyboard?<br>5. How can video be improved through reshooting and editing?<br>6. What is the impact of the choices made when making and sharing a video? | 1. Can you control a simple circuit connected to a computer?<br>2. How do you write a program that includes count-controlled loops?<br>3. Can you explain that a loop can stop when a condition is met?<br>4. Can you explain that a loop can be used to repeatedly check whether a condition has been met?<br>5. Can you design a physical project that includes selection?<br>6. Can you create a program that controls a physical computing project? | 1. Why is a form useful to record information?<br>2. What are the advantages and disadvantages of paper and computer-based databases?<br>3. How can you answer questions by grouping and then sorting data?<br>4. How can tools be used to select specific data?<br>5. How can computer programs be used to compare data visually?<br>6. Can you use a real-world database to answer questions? | 1. How can drawing tools be used to produce different outcomes?<br>2. Can you create a vector drawing by combining shapes?<br>3. How will you use tools to achieve a desired effect?<br>4. What is a vector drawing?<br>5. Why does grouping objects make them easier to work with?<br>6. What I have learned about vector drawings? | 1. How is selection used in computer programs?<br>2. What is a conditional statement?<br>3. How does selection direct the flow of a program?<br>4. Can you design a program which uses selection?<br>5. Can you create a program which uses selection?<br>6. Can you evaluate your program? |

| | Cycle B | | | | | |
|---|---|---|---|---|---|---|
| | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **EY** | **Using devices** | **Using devices** | **Creating Content** | **Creating Content** | **Using the internet** | **Using the internet** |
| | 1. Can you play a game on the interactive whiteboard or tablet? | 1. How do you make a floor turtle move? | 1. How do you take a photograph on a tablet? | 1. How do you make a voice recording on a tablet? | 1. How do you keep safe when using the internet? | 1. How do you find the answer to a question on the internet? |
| **Year 1/2** | **Computing Systems and Networks**<br>IT Around Us | **Creating Media**<br>Digital Photography | **Programming A**<br>Robot Algorithms | **Data and Information**<br>Pictograms | **Creating Media**<br>Digital Music | **Programming B**<br>Programming Quizzes |
| | 1. What is IT?<br>2. What is IT used for in school?<br>3. What is IT used for beyond school?<br>4. What are the benefits to using IT?<br>5. How is IT used safely?<br>*6.* What choices are made when using information technology? | 1. What devices are used to take photographs?<br>2. What is landscape and portrait?<br>3. What makes a good photograph?<br>4. How does lighting effect a photograph?<br>5. How can a photograph/image be changed?<br>6. Are all images real? | 1. What is your sequence?<br>2. What happens when we change the order of instructions?<br>3. What do you predict the outcome of your program will be?<br>4. What makes a program?<br>5. What does your algorithm look like?<br>6. How did you debug your program? | 1. How can we organise information?<br>2. How can data be represented?<br>3. Can you represent data in a pictogram?<br>4. What is an attribute?<br>5. What attributes do people have?<br>6. How can we present data on a computer? | 1. How does music make you feel?<br>2. What is rhythm?<br>3. How can you change sound on a computer?<br>4. How can a computer be used to create a musical pattern?<br>5. Can you create music for purpose?<br>6. What changes can you make to refine your work? | 1. What does a sequence of commands need?<br>2. What is an outcome?<br>3. What will be the outcome of the algorithm?<br>4. How can the design be changed?<br>5. What does your program look like?<br>6. How can your project be improved? |
| **Year 3/4** | **Computing Systems and Networks**<br>The Internet | **Creating Media**<br>Audio Production | **Programming A**<br>Repetition in Shapes | **Data and Information**<br>Data Logging | **Creating Media**<br>Photo Editing | **Programming B**<br>Repetition in Games |
| | 1. How do networks physically connect to other networks?<br>2. How do networked devices make up the internet?<br>3. How can websites be shared via the World Wide Web (WWW)?<br>4. How can content be added and accessed on the World Wide Web (WWW)?<br>5. How is the content of the WWW created by people?<br>6. What are the consequences of unreliable content? | 1. How can sound can be recorded?<br>2. How can audio recordings be edited?<br>3. What are the different parts of creating a podcast project?<br>4. Can you apply audio editing skills independently?<br>5. Can you combine audio to enhance your podcast project?<br>6. Can you evaluate the effective use of audio? | 1. Why is accuracy in programming so important?<br>2. Can you create a program in a text-based language?<br>3. What does 'repeat' mean?<br>4. Can you modify a count-controlled loop to produce a given outcome?<br>5. Can you decompose a task into small steps?<br>6. Can you create a program that uses count-controlled loops to produce a given outcome? | 1. What can data that has been gathered over time be used for?<br>2. Can you use a digital device to collect data automatically?<br>3. What does a data logger collect?<br>4. How can a computer help us analyse data?<br>5. Can you identify the data needed to answer questions?<br>6. Can you use data from sensors to answer questions ? | 1. How can the composition of digital images be changed?<br>2. How can colours be changed in digital images?<br>3. How can cloning be used in photo editing?<br>4. How can images be combined?<br>5. For what purpose might you combine images?<br>6. How can changes improve an image? | 1. Can you use count-controlled loops in a different programming environment?<br>2. What are infinite loops and count controlled loops in programming?<br>3. Can you develop a design that includes two or more loops which run at the same time?<br>4. Can you modify an infinite loop in a given program?<br>5. Can you design a project that includes repetition?<br>6. Can you create a project that includes repetition? |
| **Year 5/6** | **Computing Systems and Networks**<br>Communication and Collaboration | **Creating Media**<br>Web Page Creation | **Programming A**<br>Variables in Games | **Data and Information**<br>Spreadsheets | **Creating Media**<br>3D Modelling | **Programming B**<br>Sensing Movement |
| | 1. What is the importance of internet addresses?<br>2. How is data transferred across the internet?<br>3. How can sharing information online help people to work together?<br>4. What are some of the different ways of working together online?<br>5. How can we communicate using technology?<br>6. What are the advantages and disadvantages of different methods of online communication? | 1. Can you review an existing website and consider its structure?<br>2. What are the features of a web page?<br>3. When creating a web page have you considered the ownership and use of images (copyright)?<br>4. Have you recognised the need to preview pages?<br>5. Can you outline the need for a navigation path?<br>6. What are the implications of linking to content owned by other people? | 1. What is a 'variable'?<br>2. Why is a variable used in a program?<br>3. How can you improve a game by using variables?<br>4. Can you design a project that builds on a given example?<br>5. Can you use your design to create a project?<br>6. Can you evaluate your project? | 1. Can you create a data set in a spreadsheet?<br>2. Can you build a data set in a spreadsheet?<br>3. How can formulas be used to produce calculated data?<br>4. Can you apply formulas to data?<br>5. Can you create a spreadsheet to plan an event?<br>6. Can you choose suitable ways to present data? | 1. How can you work in three dimensions on a computer?<br>2. How can digital 3D objects can be modified?<br>3. How can objects be combined in a 3D model?<br>4. Can you create a 3D model for a given purpose?<br>5. Can you plan your own 3D model?<br>6. Can you create your own digital 3D model? | 1. Can you create a program to run on a controllable device?<br>2. How can selection control the flow of a program?<br>3. Can you update a variable with a user input?<br>4. Can you use a conditional statement to compare a variable to a value?<br>5. Can you design a project that uses inputs and outputs on a controllable device?<br>6. Can you develop a program to use inputs and outputs on a controllable device? |