Computing

Y1

Online Safety & exploring Purple Mash (Unit 1.1)

Lesson 1

CORE

Log in safely and understand why that is important.

Create an avatar and to understand what this is and how it is used.

Create a picture and add their own name to it.

Understand the idea of ‘ownership’ of creative work.

Save work to the My Work area and understand that this is private space.

WORKING DEEPER

Working Deeper: understands the importance of keeping personal information private and actively demonstrates this in lessons.

Lesson 2

CORE

Learn how to find saved work in the Online Work area.

Learn about what the teacher has access to in Purple Mash.

Learn how to see messages left by the teacher on their work.

Learn how to search Purple Mash to find resources.

Lesson 3

CORE

Become familiar with the types of resources available in the Topics section

Become more familiar with the icons used in the resources in the Topics section.

Start to add pictures and text to work.

Lesson 4

CORE

Explore the Tools area of Purple Mash and to learn about the common icons used in Purple Mash for Save, Print, Open, New

Explore the Games area on Purple Mash.

Understand the importance of logging out when they have finished.

WORKING DEEPER

Working Deeper: Confidently saves work in their own personal space

Grouping & Sorting (Unit 1.2)

Lesson 1

CORE

Begin to think logically about the steps of a process.

Sort items using a range of criteria

Lesson 2

CORE

Sort items on the computer using the 'Grouping' activities in Purple Mash.

Describe what information should not be put online without asking a trusted adult first

Bring together logical thinking and the use of technology.

Introduce the term 'algorithm' to describe logically following a process

WORKING DEEPER

Demonstrate their depth of understanding by creating their own criteria for items and explain their reasoning

Pictograms (Unit 1.3)

Lesson 1

CORE

Understand that data can be represented in picture format.

Lesson 2

CORE

Contribute to a class pictogram.

Lesson 3

CORE

Use a pictogram to record the results of an experiment.

WORKING DEEPER

Collate & organise class data into a physical/virtual pictogram and interrogate this data to present statements about the data

Lego Builders (Unit 1.4)

Lesson 1

CORE

Emphasise the importance of following instructions.

Lesson 2

CORE

Follow and create simple instructions on the computer

Lesson 3

CORE

Consider how the order of instructions affects the result.

WORKING DEEPER

Understands the effect that precise accuracy of the instructions has on the outcome

Maze Explorers (Unit 1.5)

Lesson 1

CORE

Understand the functionality of the basic direction keys in Challenges 1 and 2.

Able to use the direction keys to complete the challenges successfully.

Lesson 2

CORE

Understand the functionality of the basic direction keys in Challenges 3 and 4.

understand how to create and debug a set of instructions (algorithm).

Lesson 3

CORE

Use the additional direction keys as part of their algorithm.

Understand how to change and extend the algorithm list.

Create a longer algorithm for an activity

Lesson 4

CORE

Provide an opportunity for the children to set challenges for each other.

Provide an opportunity for the teacher to add these challenges to a display board for the class to try.

WORKING DEEPER

Able to complete challenges 4-6, which require anticipating several steps, with ease

Intuitively debug their code knowing that any unexpected outcome is down to the code and not the computer's understanding

Animated Stories (Unit 1.6)

Lesson 1

CORE

Understand the differences between traditional books and e-books.

Explore the tools of 2Create a Story's My Simple Story level.

Save the page they have created.

Lesson 2

CORE

Add animation to a picture

Play the pages created so far

Save the additional changes and overwrite the file.

Lesson 3

CORE

Add a sound effect to a picture.

Add a voice recording to the picture

Add created music to the picture.

Lesson 4

CORE

Add a background to the story

Demonstrate a good understanding of all the tools they have used in 2Create a Story and use these successfully to create their own story

Lesson 5

CORE

Use the copy and paste feature to create additional pages.

Continue and complete an animated story.

Create a class display board of the story books created by the class.

WORKING DEEPER

Demonstrates their ability to combine all the aspects available within the software e.g. recording their own sounds and importing backgrounds, to enhance their narrative

Coding (Unit 1.7)

Lesson 1

CORE

Understand what instructions are

Predict what will happen when instructions are followed.

Understand that computer programs work by following instructions called code.

Lesson 2

CORE

Use code to make a computer program.

Understand what objects and actions are.

Lesson 3

CORE

Understand what an event is.

Use an event to control an object.

Lesson 4

CORE

Understand what an event is.

Begin to understand how code executes when a program is run.

Lesson 5

CORE

Understand what backgrounds and objects are.

Understand how to use the scale property.

Lesson 6

CORE

Plan a computer program.

Make a computer program.

WORKING DEEPER

Can try, test and often succeed in using code blocks that are new to them and that haven't been explained

Using the 2Code design mode and the properties table, they can manipulate how their program looks and create a program that controls multiple objects

Spreadsheets (Unit 1.8)

Lesson 1

CORE

Understand what a spreadsheet looks like.

Be able to navigate around a spread sheet and enter data.

Learn new vocabulary related to spreadsheets.

Lesson 2

CORE

Add clipart images to a spreadsheet.

Use the ‘move cell’ and ‘lock’ tools

Lesson 3

CORE

Use the ‘speak’ and ‘count’ tools in 2Calculate to count items.

WORKING DEEPER

Demonstrate greater depth by explaining the data and sorting it

Technology Outside School

Lesson 1

CORE

Find and understand examples of where technology is used in the local community

Lesson 2

CORE

Record examples of technology outside school.

WORKING DEEPER

Explain why a certain technology has been chosen as a solution to a specific problem

Computing

Y2

Coding (2.1)

Lesson 1

CORE

Understand what an algorithm is.

Create a computer program using an algorithm.

Lesson 2

CORE

Create a program using a given design.

Understand the collision detection event.

Lesson 3

CORE

Understand that algorithms follow a sequence.

Design an algorithm that follows a timed sequence.

Lesson 4

CORE

Understand that different objects have different properties.

Understand what different events do in code.

Lesson 5

CORE

Create a program using a given design.

Understand the function of buttons in a program.

Lesson 6

CORE

Know what debugging means.

Understand the need to test and debug a program repeatedly.

Debug simple programs.

WORKING DEEPER

Creates more complex programs that utilise all the coding constructs that they have learnt about and extend their own learning by trying out different ways to code that achieve a specific purpose

Apply their knowledge as a transferable skill across a range of debugging scenarios including making logical attempts to debug their own more complex code

Online Safety (Unit 2.2)

Lesson 1

CORE

Know how to refine searches using the Search tool.

Know how to share work electronically using the display boards.

Use digital technology to share work on Purple Mash to communicate and connect with others locally.

Have some knowledge and understanding about sharing more globally on the Internet.

Lesson 2

CORE

Introduce Email as a communication tool using 2Respond simulations.

Understand how we talk to others when they are not there in front of us

Open and send simple online communications in the form of email.

Lesson 3

CORE

Understand that information put online leaves a digital footprint or trail.

Begin to think critically about the information they leave online.

Identify the steps that can be taken to keep personal data and hardware secure

WORKING DEEPER

Understand how to use the Purple Mash search bar and refine their searches using Boolean search terms (AND, OR, NOT)

Spreadsheets (Unit 2.3)

Lesson 1

CORE

Review the work done in 2Calculate in year 1.

Revise spreadsheet related vocabulary.

Use some 2Calculate tools that were introduced in year 1.

Lesson 2

CORE

Use copying, cutting and pasting shortcuts in 2Calculate.

Use 2Calcuate totalling tools

Use 2Calculate to solve a simple puzzle

Lesson 3

CORE

Explore the capabilities of a spreadsheet in adding up coins to match the prices of objects

Lesson 4

CORE

Add and edit data in a table layout.

Use the data to manually create a block graph.

WORKING DEEPER

Independently open, edit and save sheets and support others in doing this

Can enter a wider amount of data into cells, allocate a value to an image and manipulate data seamlessly using keyboard shortcuts for copying, cutting and pasting, allowing them to solve puzzles

Questioning (Unit 2.4)

Lesson 1

CORE

Show that the information provided on pictograms is of limited use beyond answering simple questions

Lesson 2

CORE

Use yes/no questions to separate information

Lesson 3

CORE

Construct a binary tree to separate different items.

Lesson 4

CORE

Use 2Question (a binary tree) to answer questions

Lesson 5

CORE

Use a database to answer more complex search questions.

Use the Search tool to find information.

WORKING DEEPER

Confidently store and retrieve data throughout the unit

Create their own questions using the data and will use skills covered in other units to assist with this

Effective Searching (Unit 2.5)

Lesson 1

CORE

Understand the terminology associated with the Internet and searching.

Lesson 2

CORE

Gain a better understanding of searching the Internet.

Lesson 3

CORE

Create a leaflet to help someone search for information on the Internet.

WORKING DEEPER

Independently, children can effectively retrieve relevant, purposeful digital content using a search engine and can alter searches to yield relevant results.

Can apply their learning of effective searching beyond the classroom

Creating Pictures (Unit 2.6)

Lesson 1

CORE

Explore 2Paint A Picture

Look at the work of Impressionist artists and recreate them using the Impressionism template

Lesson 2

CORE

Look at the work of pointillist artists such as Seurat.

Recreate pointillist art using the Pointillism template.

Lesson 3

CORE

Look at the work of Piet Mondrian and recreate it using the Lines template.

Lesson 4

CORE

Look at the work of William Morris and recreate it using the Patterns template.

Lesson 5

CORE

Look at some surrealist art and create your own using the eCollage function in 2Paint A Picture.

WORKING DEEPER

Seamlessly use all aspects of the software. Using the eCollage tool on 2Paint a Picture, they can upload a background image and manipulate this using the tools and ability to layer images to create a given style.

Making Music (Unit 2.7)

Lesson 1

CORE

Introduced to making music digitally using 2Sequence.

Explore, edit and combine sounds using 2Sequence.

Lesson 2

CORE

Add sounds to a tune to improve it.

Think about how music can be used to express feelings and create tunes which depict feelings.

Lesson 3

CORE

Upload a sound from a bank of sounds into the Sounds section.

Record their own sound and upload it into the Sounds section.

Create their own tune using the sounds which they have added to the Sounds section.

WORKING DEEPER

Using 2Beat, children can create a simple drum composition and export this as an mp3. They can then upload this into 2Sequence allowing them to add greater complexity to their composition

Presenting Ideas (Unit 2.8)

Lesson 1

CORE

Explore how a story can be presented in different ways.

Lesson 2

CORE

Make a quiz about a story or class topic.

Lesson 3

CORE

Make a fact file on a non-fiction topic.

Lesson 4

CORE

Make a presentation to the class.

WORKING DEEPER

Independently choose the software to use to represent their narrative (2Quiz, 2Publish+, 2Connect) which demonstrates their understanding of how digital content can be represented in many forms

Computing

Y3

Coding (Unit 3.1)

Lesson 1

CORE

Review previous coding knowledge.

Understand what a flowchart is and how flowcharts are used in computer programming.

Lesson 2

CORE

Understand that there are different types of timers

Be able to select the right type of timer for a purpose.

Lesson 3

CORE

Understand how to use the repeat command.

Lesson 4

CORE

Use coding knowledge to create a range of programs.

Understand the importance of nesting.

Lesson 5

CORE

Design and create an interactive scene.

WORKING DEEPER

Identifies errors within a program that prevents it following the desired algorithm and then fix it

Exhibit greater ease at fixing their own bugs as their coding becomes more complex

Online Safety (Unit 3.2)

Lesson 1

CORE

Know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away.

Understand how the Internet can be used to help us to communicate effectively.

Understand how a blog can be used to help us communicate with a wider audience.

Lesson 2

CORE

Consider if what can be read on websites is always true.

Look at a ‘spoof’ website.

Create a ‘spoof’ webpage.

Think about why these sites might exist and how to check that the information is accurate.

Lesson 3

CORE

Learn about the meaning of age restrictions symbols on digital media and devices.

Discuss why PEGI restrictions exist.

Know where to turn for help if they see inappropriate content or have inappropriate contact from others.

WORKING DEEPER

Demonstrates greater depth by being able to give clear explanations and examples of why having a secure, confidential password is essential.

Be able to appraise the accuracy of information shared on a website and decide whether it is trustworthy or not.

Spreadsheets (Unit 3.3)

Lesson 1

CORE

Add and edit data in a table layout.

Find out how spreadsheet programs can automatically create graphs from data.

Lesson 2

CORE

Introduce the ‘more than’, ‘less than’ and ‘equals’ tools.

Introduce the ‘spin’ tool and show how it can be used to count through times tables.

Lesson 3

CORE

Introduce the Advanced mode of 2Calculate

Learn about describing cells using their addresses.

WORKING DEEPER

Explore more complex functioning of the 2Calculate tools to create their own spreadsheets to explore number and interpret their own data

Touch Typing (Unit 3.4)

Lesson 1

CORE

Introduce & use typing terminology.

Understand the correct way to sit at the keyboard.

Learn how to use the home, top and bottom row keys.

Lesson 2

CORE

Practice and improve typing for home, bottom, and top rows.

Lesson 3

CORE

Practice the keys typed with the left hand.

Lesson 4

CORE

Practice the keys typed with the right hand.

WORKING DEEPER

Types with accuracy and suitable pace, positioning their hands correctly in relation to the home, bottom and top row keys using both hands

Email (Unit 3.5)

Lesson 1

CORE

Think about the different methods of communication.

Lesson 2

CORE

Open and respond to an email.

Write an email to someone from an address book.

Lesson 3

CORE

Learn how to use email safely.

Lesson 4

CORE

Learn how to use email safely.

Lesson 5

CORE

Add an attachment to an email.

Lesson 6

CORE

Explore a simulated email scenario.

WORKING DEEPER

Understands the importance of staying safe when using email and can apply these principles to the related aspects of messaging.

Branching Databases (Unit 3.6)

Lesson 1

CORE

Sort objects using just YES/NO questions.

Lesson 2

CORE

Complete a branching database using 2Question.

Lesson 3

CORE

Create a branching database of the children's choice.

WORKING DEEPER

Understands the specific characteristics of a branching database and its application in real world situations.

Understands the needs of the end user and can adapt their program to reflect this using supporting information

Simulations (Unit 3.7)

Lesson 1

CORE

Find out what a simulation is and understand the purpose of simulations.

Lesson 2

CORE

Explore a simulation, making choices and discussing their effects.

Lesson 3

CORE

Work through and evaluate a more complex simulation.

WORKING DEEPER

Use 2Simulate to analyse, evaluate, identify patterns, and predict the outcomes of simulated scenarios

Understand the importance of simulations to replicate events but will also identify where simulations are used in everyday life

Graphing (Unit 3.8)

Lesson 1

CORE

Enter data into a graph and answer questions.

Lesson 2

CORE

Investigate in order to answer a question.

Present the results in graphic form

WORKING DEEPER

Select the most appropriate graph format to present data and explain reasoning

Experiment with different types of charts and determine the most suitable.

Explores different ways of presenting data so that it can be graphically represented

Presenting (With Google Slides) Unit 3.9

Lesson 1

CORE

Create a page in a presentation.

Lesson 2

CORE

Add media to a presentation

Lesson 3

CORE

Add shapes and lines to a presentation.

Lesson 4

CORE

Add animations into a presentation.

Lesson 5 & 6

CORE

Use the skills learnt in previous weeks to design and present an effective presentation.

WORKING DEEPER

Incorporate video and audio into slideshows

Appraise the animation effects available to them and make decisions about what to include and what to leave out for the most effective presentation

Micro:bits (Units 3.10)

Lesson 1

CORE

Understand the micro:bit is a tiny computer which needs instructions in code to make it work

Use Free Code Micro:bit to create instructions in code that the micro:bit can understand and then transfer them to the micro:bit

Know the micro:bit has an LED display output which it can use to show words (as well as numbers and pictures).

Lesson 2

CORE

Understand that sequence and timing is important when making an animation.

Understand that animations create an illusion of movement by showing a sequence of still images

Code the micro:bit to show simple animations on its LED display output

Lesson 3

CORE

Code the micro:bit to make different outputs happen depending on different inputs.

Understand that inputs and outputs involve the flow of data in and out of computers.

Apply this knowledge using the micro:bit's button inputs and display output

Lesson 4

CORE

Understand how sensor inputs from the accelerometer can be used to detect movement.

Understand how to create sounds and music using the music editor

Apply this knowledge using the micro:bit's gesture inputs and sound output.

WORKING DEEPER

Independently program the micro:bit to show text, images and animations.

Transfer their program to a micro:bit and run it.

Modify their code to add different outputs such as sound

Computing

Y4

Coding (Unit 4.1)

Lesson 1

CORE

Review coding vocabulary and knowledge.

Create a simple computer program.

Lesson 2

CORE

Begin to understand selection in computer programming.

Understand how an IF statement works.

Lesson 3

CORE

Understand how to use coordinates in computer programming.

Understand how an IF statement works.

Lesson 4

CORE

Understand the Repeat until command.

Begin to understand selection in computer programming.

Understand how an IF/ELSE statement works.

Lesson 5

CORE

Understand what a variable is in programming.

Use a number variable

Lesson 6

CORE

Review vocabulary and concepts learnt in Year 4 Coding.

Create a playable game

WORKING DEEPER

Designs for programs show that they are absorbing new knowledge of coding structures such as IF statements, repetition and variables.

Online Safety (Unit 4.2)

Lesson 1

CORE

Understand how children can protect themselves from online identity theft

Understand that information put online leaves a digital footprint or trail and that this can aid identity theft.

Lesson 2

CORE

Identify the risks and benefits of installing software including apps.

Lesson 3

CORE

understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism.

Identify appropriate behaviour when participating or contributing to collaborative online projects for learning.

Lesson 4

CORE

Identify the positive and negative influences of technology on health and the environment.

Understand the importance of balancing game and screen time with other parts of their lives.

WORKING DEEPER

Demonstrates that they are making connections between the positive possibilities that technology provides e.g. collaboration and sharing and the possible downsides of this such as malware and phishing

Help others to understand the importance of online safety and apply their knowledge and approach to staying safe online in all areas of the curriculum

Spreadsheets (Unit 4.3)

Lesson 1

CORE

Explore how the numbers entered into cells can be set to either currency or decimal.

Explore the use of the display of decimal places.

Find out how to add formulae to a cell.

Lesson 2

CORE

Explore how tools can be combined to use 2Calculate to make number games.

Explore the use of the timer, random number and spin button tools.

Lesson 3

CORE

Use the line graphing tool in 2Calculate with appropriate data.

Interpret a line graph to estimate values between data readings.

Lesson 4

CORE

Use the currency formatting tool in 2Calculate

Use 2Calculate to create a model of a real-life situation.

Lesson 5

CORE

Use the functions of allocating value to images in 2Calculate to make a resource to teach place value.

WORKING DEEPER

Explore more complex functioning of the 2Calculate tools to create their own spreadsheets to explore number and interpret their own data

Use 2Calculate to design a range of different graphs which present data in a variety of ways and select the most appropriate one to independently solve mathematical problems

Writing for Different Audiences

Lesson 1

CORE

Explore how font size and style can affect the impact of a text.

Lesson 2 & 3

CORE

Use a simulated scenario to produce a news report.

Lesson 4 & 5

CORE

Use a simulated scenario to write for a community campaign.

WORKING DEEPER

Seamlessly use a variety of software including 2Connect and 2Publish+ to create content linked to a 2Simulate scenario for a variety of different audiences

Logo (Unit 4.5)

Lesson 1

CORE

Learn the structure of the language of 2Logo.

Input simple instructions in 2Logo

Lesson 2

CORE

Use 2Logo to create letter shapes.

Lesson 3

CORE

Use the Repeat command in 2Logo to create shapes.

Lesson 4

CORE

Use and build procedures in 2Logo.

WORKING DEEPER

Challenge themselves to think about the 2Logo commands that they need in long steps of several commands at a time before executing the code to check the result

Animation (Unit 4.6)

Lesson 1

CORE

Decide what makes a good, animated film or cartoon and discuss favourite animations.

Learn how animations are created by hand.

Find out how 2Animate animations can be created in a similar way using technology.

Lesson 2

CORE

Learn about onion skinning in animation.

Add backgrounds and sounds to animations.

Lesson 3

CORE

Explore & use ‘stop motion’ animation.

Share animation the class blog.

WORKING DEEPER

Create own detailed animation using 2Animate utilising all features of the software

Suggest novel ways to solve difficulties that other children are having in making their animations effective.

Effective Searching (Unit 4.7)

Lesson 1

CORE

Locate information on the search results page.

Lesson 2

CORE

Use search effectively to find out information.

Lesson 3

CORE

Assess whether an information source is true and reliable

WORKING DEEPER

Able to interpret search questions and decide upon how to re-phrase them so that they return the most suitable results in a search engine

Hardware Investigators (Unit 4.8)

Lesson 1

CORE

Understand the different parts that make up a desktop computer.

Lesson 2

CORE

Recall the different parts that make up a computer.

WORKING DEEPER

Understands that there are different types of network and how they are connected

Making Music (Unit 4.9)

Lesson 1

CORE

Identify and discuss the main elements of music: Pulse, Rhythm, Tempo, Pitch, Texture

Lesson 2

CORE

Understand and experiment with rhythm and tempo.

Lesson 3

CORE

Create a melodic phrase.

Lesson 4

CORE

Compose a piece of electronic music.

WORKING DEEPER

Creates more complex rhythms and is able to form more complex compositions where pitch, rhythm and melody have been considered

Artificial Intelligence (Unit 4.10)

Lesson 1

CORE

Understand the basic concept of artificial intelligence.

Identify real-life examples of artificial intelligence.

Recognise the impact of artificial intelligence in daily life.

Lesson 2

CORE

Recap what is meant by the terminology artificial intelligence.

Explore how artificial intelligence can assist and benefit us in various aspects of daily life

Lesson 3

CORE

Understand the potential applications and impact of AI in the future.

Encourage critical thinking and creativity when thinking about the future of AI.

Lesson 4

CORE

Understand how artificial intelligence is being used to create music and art.

Use artificial intelligence to create music and art.

WORKING DEEPER

Exhibits a secure comprehension of artificial intelligence concepts. Articulates a detailed explanation of AI

Showcases strong critical thinking skills when evaluating AI systems and their impact. Identifies potential biases or ethical concerns relating to AI applications

Micro:bits (Unit 4.11)

Lesson 1

CORE

Understand how sensor inputs from the accelerometer can be used to detect movement, such as when a step is taken.

Understand that variables are used to keep track of the current step count.

Apply this learning to build a practical, real-world project.

Lesson 2

CORE

Understand how inputs, outputs, and computer code work together to make control systems.

Understand how logic (conditional ‘IF/ELSE’ instructions) is used to make different outputs happen depending on changes in data from a sensor.

Use ‘repeat forever’ infinite loops to keep control systems responding to changes in the environment.

Lesson 3

CORE

Use the accelerometer via the ‘when gesture: shake’ block to start the code running.

Make use of logical ‘IF’ conditional instructions.

Apply these concepts to make a computer simulation of a real-world game.

Lesson 4

CORE

Use the accelerometer via the ‘when gesture: shake’ command to start the code running.

Make use of more complex logical ‘IF’ conditional instructions.

Apply these concepts to make a computer simulation of a real-world tool.

WORKING DEEPER

Describe, in their words, that variables are containers that hold data (information) that is changeable and that their code uses a variable so it can keep track of steps taken.

Computing

Y5

Coding (Unit 5.1)

Lesson 1

CORE

- Review existing coding knowledge.
- Begin to be able to simplify code.
- Create a playable game

Lesson 2

CORE

- Understand what a simulation is.
- Program a simulation using 2Code.

Lesson 3

CORE

- Know what decomposition and abstraction are in Computer Science.
- Take a real-life situation, decompose it and think about the level of abstraction.
- Use decomposition to make a plan of a real-life situation

Lesson 4

CORE

Understand how to use friction in code.

Begin to understand what a function is and how functions work in code.

Lesson 5

CORE

Begin to understand what a function is and how functions work in code.

Understand how to create a string.

Lesson 6

CORE

Begin to explore text variables when coding.

Understand what concatenation is and how it works.

WORKING DEEPER

Creates more complex programs and understand that there are ways to simplify code to make their programming more efficient

Intuitively grasp the concepts of selection, repetition and variables. Challenge themselves to combine these with other coding structures to personalise and improve their programs

Online Safety (Unit 5.2)

Lesson 1

CORE

Gain a greater understanding of the impact that sharing digital content can have.

Review sources of support when using technology.

Review children' responsibility to one another in their online behaviour.

Lesson 2

CORE

Know how to maintain secure passwords.

Understand the advantages, disadvantages, permissions, and purposes of altering an image digitally and the reasons for this.

Be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.

Lesson 3

CORE

Learn about how to reference sources in their work.

Search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.

Lesson 4

CORE

Ensuring reliability through using different methods of communication.

WORKING DEEPER

Developing a deeper understanding of the interaction of the positive benefits and negative risks of innovative technology. They take advantage of these technologies in their work but are mindful of protecting themselves and others from harm.

Have a detailed knowledge of what the SMART rules are and understand how these are applied to using technology safely and respectfully. Furthermore, they understand the implications of improper use of technology and the internet

Spreadsheets (Unit 5.3)

Lesson 1

CORE

Use formulae within a spreadsheet to convert measurements of length and distance.

Lesson 2

CORE

Use a spreadsheet to model a real-life problem.

Use formulae to calculate area and perimeter of shapes.

Lesson 3

CORE

Use a spreadsheet to investigate the probability of the results of throwing many dice.

Lesson 4

CORE

Use spreadsheets to model real-life situations.

Lesson 5

CORE

Use the count tool to answer hypotheses about common letters in use.

Databases (Unit 5.4)

Lesson 1

CORE

Learn how to search for information in a database.

Lesson 2

CORE

Contribute to a class database.

Lesson 3

CORE

Create a database around a chosen topic.

WORKING DEEPER

Able to create an individual database with a greater number of fields and create complex search questions about their database for their classmates to answer (Questions using and/or statements)

Game Creator (Unit 5.5)

Lesson 1

CORE

Introduce the 2DIY 3D tool.

Begin planning a game.

Lesson 2

CORE

Design the game environment.

Lesson 3

CORE

Design the game quest to make it a playable game.

Lesson 4

CORE

Finish and share the game.

Lesson 5

CORE

Self- and peer evaluate.

WORKING DEEPER

Able to think about the entirety of their game at the design stage and can consider the game environment, objects and characters and the interactions of these components and their impact on playability to design a good end-user experience before proceeding with the construction stage.

Modelling (Unit 5.6)

Lesson 1

CORE

Introduced to the 2Design and Make tool.

Lesson 2

CORE

Explore the effect of moving points when designing

Lesson 3

CORE

Design a 3D model to fit certain criteria.

Lesson 4

CORE

Refine and print a model.

WORKING DEEPER

Uses the geometric shapes and the addition of up to 24 points to design the recognisable form of abuilding

Concept Maps (Unit 5.7)

Lesson 1

CORE

Understand the need for visual representation when generating and discussing complex ideas.

Understand the uses of a 'concept map'.

Lesson 2

CORE

Understand and use the correct vocabulary when creating a concept map.

Create a concept map

Lesson 3

CORE

Understand how a concept map can be used to retell stories and information.

Lesson 4

CORE

Create a collaborative concept map and present this to an audience.

WORKING DEEPER

Uses full functionality of 2Connect to create concept maps which contain appropriate images and additional links between nodes

Word Processing (with Google Docs) Unit 5.8

Lesson 1

CORE

Knows what a word processing tool is for.

Lesson 2

CORE

Add and edit images to a document.

Lesson 3

CORE

Knows how to use word wrap with images and text

Lesson 4

CORE

Change the look of text within a document.

Lesson 5

CORE

Add features to a document to enhance its look and usability.

Lesson 6

CORE

Use the sharing capabilities in Google docs

WORKING DEEPER

Explore the full functionality of the word processor realising that there is often a function that will help them to perform the task that the wish to accomplish.

Can conceptualise that a document created using a word processing programme can be more effective than a paper-based document by making use of the powerful tools within a word processor.

Using External Devices - Purple Chip (Unit 5.9)

Lesson 1

CORE

Understand what Purple Chip is.

Be able to upload a program to an external device.

Adapt a program and operate it using Purple Chip

Lesson 2

CORE

Understand how a device can be programmed to be used as a game controller.

Lesson 3

CORE

Explore the text functions available and appraise their uses.

Create a simple quiz program that can be answered using an external device

Lesson 4

CORE

Create a program in which an external device can be used to monitor real world conditions.

Lesson 5 - extended project 1

CORE

Design a program for the Purple Chip

Lesson 6 - extended project 2

CORE

Code, test, debug and share a program for the Purple Chip

WORKING DEEPER

Understand the design, code, test, debug process and use this to code, appraise, and further refine their programs.

Understand the practical setup of using an external device and design accordingly, for example, they determine whether a program's function is enhanced using the chip or whether certain programs lend (or do not lend) themselves to the use of the chip.

Computing

Y6

Coding (Unit 6.1)

Lesson 1 & 2

CORE

- Design a playable game with a timer and a score
- Plan and use selection and variables.
- Understand how the launch command works.

Lesson 3

CORE

- Use functions and understand why they are useful.
- Understand how functions are created and called.

Lesson 4

CORE

- Use flowcharts to test and debug a program.
- Create a simulation of a room in which devices can be controlled.

Lesson 5

CORE

Understand the different options of generating user input in 2Code.

Understand how user input can be used in a program.

Lesson 6

CORE

Understand how 2Code can be used to make a text-based adventure game.

WORKING DEEPER

Turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs.

thinking about good structure to their code with a view to debugging such as the use of tabs and functions to organise code and the naming of variables.

Online Safety (Unit 6.2)

Lesson 1

CORE

Identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g., apps accessing location.

Identify secure sites by looking for privacy seals of approval, e.g., https, padlock icon.

Identify the benefits and risks of giving personal information and device access to different software.

Lesson 2

CORE

Review the meaning of a digital footprint and understand how and why people use their information and online presence to create a virtual image of themselves as a user.

Have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour

Begin to understand how information online can persist and give away details of those who share or modify begin to understand how information online can persist and give away details of those who share or modify it.

Lesson 3

CORE

Understand the importance of balancing game and screen time with other parts of their lives, e.g., explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health.

Identify the positive and negative influences of technology on health and the environment.

WORKING DEEPER

Have an internalised in-depth understanding of the risks and benefits of an online presence

Actions demonstrate that they also feel a responsibility to others when communicating and sharing content online

Confident in having strategies to help them promote a positive online image of themselves and deal with issues that might arise in the future.

Spreadsheets (6.3)

Lesson 1

CORE

Use a spreadsheet to investigate the probability of the results of throwing many dice.

Lesson 2

CORE

Use a spreadsheet to calculate the discount and final prices in a sale. Create a formula to help work out the prices of items in the sale.

Lesson 3

CORE

Use a spreadsheet to plan how to spend pocket money and the effect of saving money.

Lesson 4 & 5

CORE

Use a spreadsheet to plan a school charity day to maximise the money donated to charity.

WORKING DEEPER

Create a spreadsheet using 2Calculate that demonstrates a systematic and logical approach.

Blogging (Unit 6.4)

Lesson 1

CORE

Identify the purpose of writing a blog.

Identify the features of successful blog writing.

Lesson 2

CORE

Plan the theme and content for a blog.

Lesson 3

CORE

Understand how to write a blog and a blog post.

Consider the effect upon the audience of changing the visual properties of the blog

Understand how to contribute to an existing blog.

Lesson 4

CORE

Understand the importance of commenting on blogs.

Peer-assess blogs against the agreed success criteria.

Understand how and why blog posts and comments are approved by the teacher.

WORKING DEEPER

Understand that 2Blog is an introduction to the world of blogging and is a way for the user to become a content creator on the internet

Understands the implications of inappropriate use of the blog and how this relates to the real world.

Text Adventures (Unit 6.5)

Lesson 1

CORE

Find out what a text-based adventure game is and to explore an example made in 2Create a Story.

Use 2Connect to plan a ‘Choose your own Adventure’ type story.

Lesson 2

CORE

Use 2Connect plans for a story adventure to make the adventure using 2Create a Story.

Lesson 3

CORE

Read and understand given code for a text adventure game.

Lesson 4

CORE

Debug a text adventure.

Independently design and implement improvements to a text adventure game.

WORKING DEEPER

Use the example code once debugged and adapt it to make their own text adventure, likely implementing more challenging code such as adding a Key Feature to the game which would require an additional variable and IF block. Children will debug as they code with little support required.

Networks (Unit 6.6)

Lesson 1

CORE

Discover what the children know about the Internet.

Lesson 2

CORE

Find out what a LAN and WAN are.

Find out how we access the internet in school.

Lesson 3

CORE

Research and find out about the age of the internet.

Think about what the future might hold.

WORKING DEEPER

Can explain the differences between more than two network types such as: LAN, WAN, WLAN and SAN

Quizzing (Unit 6.7)

Lesson 1

CORE

Create a picture-based quiz for young children.

Lesson 2 & 3

CORE

Learn how to use the question types within 2Quiz.

Lesson 4

CORE

Explore the grammar quizzes.

Lesson 5

CORE

Make a quiz that requires the player to search a database.

Lesson 6

CORE

Develop skills in creating surveys and questionnaires.

Use a survey to gain information rather than scores.

WORKING DEEPER

See the links between the variety of software2DIY, 2Quiz and 2Investigate. They select the software based on whether it is appropriate for the task and can give reasons to justify their choice

Binary (Unit 6.8)

Lesson 1

CORE

Examine how whole numbers are used as the basis for representing all types of data in digital systems.

Recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems).

Understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics.

Lesson 2

CORE

Examine how whole numbers are used as the basis for representing all types of data in digital systems.

Recognise that the numbers 0, 1, 2 and 3 could be represented by the patterns of two binary digits of 00, 01, 10 and 11

Represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary.

Lesson 3

CORE

Examine how whole numbers are used as the basis for representing all types of data in digital systems.

Represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary.

Explore how division by two can be used as a technique to determine the binary representation of any whole number by collecting remainder terms.

Lesson 4

CORE

Examine how whole numbers are used as the basis for representing all types of data in digital systems

Represent the state of an object in a game as active or inactive using the respective binary values of 1 or 0

WORKING DEEPER

Understand and confidently explain how the binary system works within a wide variety of digital systems.

Spreadsheets (with Google Sheets) Unit 6.9

Lesson 1

CORE

Know what a spreadsheet looks like.

Navigate and enter data into cells.

Lesson 2

CORE

Introduce some basic data formulae in Excel.

Demonstrate how the use of Excel can save time and effort when performing calculations.

Lesson 3

CORE

Use a spreadsheet to model a situation.

Lesson 4

CORE

Demonstrate how Excel can make complex data clear by manipulating the way it is presented.

Lesson 5

CORE

Use formulae for percentages, averages, max and min in spreadsheets.

Lesson 6

CORE

Create a variety of graphs in Excel.

Lesson 7

CORE

Use a spreadsheet to model a real-life situation.

Lesson 8

CORE

Apply spreadsheet skills to solving problems.

WORKING DEEPER

Can suggest situations in which a spreadsheet would help them to model a situation and make decisions or accomplish a task.

Self-motivated to extend the applicability of a spreadsheet model to explore factors of the situation that were not specifically directed by a teacher.