COMPUTING IMPLEMENTATION AND CURRICULUM PROGRESSION

Computing Implementation and Progression at Black Horse Hill Infant School

Vocabulary and Reading Development	Inclusion	Assessment
Spoken language is promoted in all lessons for all children including strategies such as: no hands up , explicit teaching of vocabulary, modelled thinking and use of vocabulary by the teacher, think, pair, share, my turn-your turn, Talk Partners, Sentence Stems Reading is promoted wherever possible and wider texts are used to deepen knowledge across all subject areas.	All children will be given the same task because we believe in teaching a mastery approach across all subject areas and equal access for all. Quality first teaching for all children Lots of scaffolded practice for all children and this is continued in focus groups if required. Focus groups with adult support Talk partners to build confidence Now and next boards to support completion of tasks Intervention External advice sought to support inclusion	Prior knowledge/retrieval opportunities are included at the beginning of units of work so that planning can be adapted/amended to support gaps or misconceptions. Clear sequence of lessons which identify the key knowledge that children need to know at the end of a lesson/unit of work. Children's digital work folders Knowledge Quizzes
Retrieval practice (Knowing more and remembering more)	**Cultural Capital opportunities**	**British values and SMSC**
Revisit sessions Retrieval/fluency sessions Knowledge organisers published versions and class Knowledge organisers sent home for further practise	Safer Internet Day – February.	Teaching students to respect and value diversity is encouraged in the day-to-day teaching and learning through showing respect for different viewpoints and ideas as well as in the ability to work effectively together both individually and in groups. We approach the teaching of Computing with an awareness to children's different faiths and beliefs. We consider how life has changed for people over time and how rules and laws have changed. Children engage in debates, allowing for freedom of speech and different views to be heard and expressed By looking at the achievements of significant people across the world children develop an awareness of how they have influenced and shaped the country and world in which we live.

Black Horse Hill Infant School Computing Curriculum Progression Map

Early Years Foundation Stage

Foundation 1 & Foundation 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
In the EYFS we lay the foundations for the KS1 Computing Curriculum. Computing is embedded into our EYFS provision by the use of iPads, IWBs, beebots and also unplugged activities. EYFS also take part in digital literacy activities as part of whole school initiatives.						

KS1

YEAR 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Project for the half term	Online safety Children learn to log in to Purple Mash, save their work, open their existing work and also how to protect themselves whilst using	Pictograms This unit is an introduction to pictograms and looking at how they	Lego Builders In this unit children are introduced to programming,	Technology This unit encourages the children to consider how technology	Animated stories The series of lessons will provide an opportunity for the	Coding This unit entails children learning to code and use their developing programming skills.

	Purple Mash and the wider internet.	can be used to represent data. <u>Grouping and sorting</u> In this unit, the children will sort items by different criteria away from the computer.	algorithms and programs. <u>Maze Explorers</u> In this unit children develop further their understanding of algorithms, programming, debugging and further programming.	is used outside of the school environment. <u>Spreadsheets</u> In this unit children will learn about what spreadsheets look like. They also will learn to manipulate clip art images in their spreadsheet.	children to develop the skills to create, organise, store, manipulate and retrieve digital content through the creation of their own animated story book.	
Link to the National Curriculum	**Use technology safely and respectfully, keeping personal information private; identify where to go**	**Use technology purposefully to create, organise, store, manipulate**	**Understand what algorithms are; how they are**	**Recognise common uses of information**	**Use technology purposefully to create,**	**Understand what algorithms are; how they are implemented as programs on digital**

	for help and support when they have concerns about content or contact on the internet or other online technologies.	**and retrieve digital content.** **Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.**	**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.**	**technology beyond school**	**organise, store, manipulate and retrieve digital content**	**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.** **Use technology purposefully to create, organise, store, manipulate and retrieve digital content**
Key Knowledge, key questions and people	**Online Safety** *To log in safely. *To learn how to find saved work in the Online Work area and find teacher comments.	**Pictograms** *To understand that data can be represented in picture format.	**Lego Builders** *To compare the effects of adhering strictly to instructions to completing tasks	**Technology** *To walk around the local community and find examples of where	**Animated Stories** To introduce e-books and the 2Create a Story tool.	**Coding** • To understand what instructions are and predict what might happen when they are followed. • To use code to make a computer program.

	*To learn how to search Purple Mash to find resources. *To become familiar with the icons and types of resources available in the Topics section. *To start to add pictures and text to work. *To explore the Tools and Games section of Purple Mash. *To learn how to open, save and print. *To understand the importance of logging out.	*To contribute to a class pictogram. *To use a pictogram to record the results of an experiment. **Grouping and Sorting** *To sort items using a range of criteria. *To sort items on the computer using the 'Grouping' activities in Purple Mash.	without complete instructions. *To follow and create simple instructions on the computer. *To consider how the order of instructions affects the result. **Maze Explorers** *To understand the functionality of the direction keys. *To understand how to create and debug a set of instructions (algorithm). *To use the additional direction keys as part of an algorithm. *To understand how to change and extend the algorithm list. *To create a longer algorithm for an activity. *To set challenges for peers. *To access peer challenges set by the teacher as 2Dos	technology is used. *To record examples of technology outside school. Spreadsheets *To know what a spreadsheet program looks like. *To locate 2Calculate in Purple Mash. *To enter data into spreadsheet cells. *To use 2Calculate image tools to add clipart to cells. *To use 2Calculate control tools: lock, move cell, speak and count.	• To add animation to a story. • To add sound to a story, including voice recording and music the children have composed. • To work on a more complex story, including adding backgrounds and copying and pasting pages. • To share e-books on a class display board.	• To understand what object and actions are. • To understand what an event is. • To use an event to control an object. • To begin to understand how code executes when a program is run. • To understand what backgrounds and objects are. • To plan and make a computer program.

Key Vocabulary	Alert,avatar, button, device, log in, My work area, file name, log out, notification, private, icon , menu , password, save, search,	collect data, compare, data, pictogram, title, record results	criteria, groups, sort, algorithm, code, computer, debugging, instructions, program, technology, direction, route, challenge, instruction, undo, command, left, right, unit.	curve, calculations, cell, clip art, column , count tool, data , delete, image, lock cell, move cell, row, speak tool, spreadsheet, value.	Animation, Font , sound effect, E-book, file, display board,	action, character, coding, background, Code block, collision detection, button, code design, command, design mode, input, properties, sound, object, scale, program

YEAR 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Project for the half term	Coding Online Safety	Spreadsheets	Questioning	Effective searching	Pictures	Music
Link to the National Curriculum	**Understand what algorithms are; how they are implemented as programs on**	**Use technology purposefully to create, organise, store, manipulate and retrieve digital**	**Use technology purposefully to create, organise, store, manipulate**	**Use technology purposefully to create, organise, store, manipulate**	**Use technology purposefully to create, organise, store, manipulate**	**Use technology purposefully to create, organise, store, manipulate**

	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. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about	content.	and retrieve digital content	and retrieve digital content Recognise common uses of information technology beyond school	and retrieve digital content	and retrieve digital content

	content or contact on the internet or other online technologies.					
Key Knowledge, key questions and people	**<u>Coding</u>** *To understand what an algorithm is *To create a computer program using an algorithm. *To create a program using a given design. *To understand the collision detection event. *To understand that algorithms follow a sequence. *To design an algorithm that follows a timed sequence. *To understand that different objects have different properties. *To understand what different events do in code. *To understand the function of buttons in a program. *To understand and debug simple programs. **<u>Online Safety</u>**	**<u>Spreadsheets</u>** *To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. *To learn how to copy and paste in 2Calculate. *To use the totalling tools. *To use a spreadsheet for money calculations. *To use the 2Calculate equals tool to check calculations. *To use 2Calculate to collect data and produce a graph.	**<u>Questioning</u>** *To learn about data handling tools that can give more information than pictograms. *To use yes/no questions to separate information. *To construct a binary tree to identify items. *To use 2Question (a binary tree database) to answer questions. *To use a database to answer more complex search questions. *To use the Search tool to find information.	**<u>Effective Searching</u>** *To understand the terminology associated with searching. *To gain a better understanding of searching on the Internet. *To create a leaflet to help someone search for information on the Internet.	**<u>Pictures</u>** *To learn the functions of the 2Paint a Picture tool. *To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). *To recreate Pointillist art and look at the work of pointillist artists such as Seurat. *To learn about the work of Piet Mondrian and recreate the style using the lines template. *To learn about the work of William Morris and recreate the style using the patterns template. *To explore surrealism and eCollage.	**<u>Music</u>** *To explore how a story can be presented in different ways. *To make a quiz about a story or class topic. *To make a fact file on a non-fiction topic. *To make a presentation to the class.

	*To know how to refine searches using the Search tool. *To use digital technology to share work on Purple Mash to communicate and connect with others locally. *To have some knowledge and understanding about sharing more globally on the Internet. *To introduce Email as a communication tool using 2Respond simulations. *To understand how we should talk to others in an online situation. *To open and send simple online communications in the form of email. *To understand that information put online leaves a digital footprint or trail. *To identify the steps that can be taken to keep personal data and hardware secure.					
Key Vocabulary	Action, algorithm, background, bug, button, click events, collision detection,	Block Graph, cell, column, copy, count tool, data, drag, equals tool,	Binary Tree, Data, Database, Field, Pictogram,	Digital Footprint, Domain, Internet, Network, Search Engine, Web	Art, Fill, Impressionism, Palette, Pointillism, Style, Surrealism.	E-book, Fact file, Fiction, Mind map, Node, Non-fiction, Presentation, Quiz.

	command, debug/debugging, event, execute, implement, instructions, interaction, interval, object, output, properties, run. Attachment, digital footprint, email, filter, internet, personal information, private information, internet, search, secure, sharing.	equals, label, row, table, total, speak tool.	Question, Record, Search, Sort.	Address, Web Page, World Wide Web, Web Site.		

Computing Lesson Structure

Long Term Memory (Retrieval)

Review and revisit previous knowledge-make links to knowledge from previous lesson, unit, term, year.

Amend future planning to incorporate and gaps in knowledge.

Introduce new knowledge

Teacher introduces vocabulary and new knowledge in small steps to the children making links to prior learning.

Teachers will provide modelling, explanations and practice to the children.

Developing the Knowledge

Teachers will ask questions and use strategies to check for pupil understanding and to identify the next steps in the lesson.

Applying the Knowledge

New knowledge is sometimes deepened by applying knowledge to complete practice tasks. Tasks are carefully planned to ensure that they are purposeful and support the application of new knowledge.

Review-has learning been successful?

Teachers and children will review the learning that has taken place. Misconceptions addressed and feedback given.