

Key Stage 3 Computing Curriculum Maps

Intent of Computing Curriculum at Littleover Community School

To provide a high quality and ambitious subject curriculum in line with the exam board requirements. Our intent is to provide a challenging, ambitious and knowledge-rich curriculum that equips students with a detailed understanding of how computer systems work and how computational thinking can be applied to solve real-world problems. The curriculum is designed to develop students into confident, independent and creative thinkers who can adapt to rapidly changing digital technologies.

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
YEAR 7	Topic – Introduction to the system. This unit introduces the school system. Students will learn how to login and set a suitable password. How to use the school email system and Go 4 Schools to check things like homework. Assessment – Unit project submitted. E Safety PowerPoint. S – E-Safety, Email, Network Security. Basic computer skills. P – How to login to the network, email & G4S. How to create a document in word & Excel. K – Accessing the school network Send emails with							Topic – Hardware & History. This unit introduces Computer hardware. Students will look at the history of Computer through time using games consoles. We will use the BBC Microbit to gain an understanding of the link between hardware and software. Assessment - Unit project submitted, Newspaper Article. S – Internal Components, Processor Speed, History of Computing, Basic programming. Web Research. P – Different components & how they are linked, how computers have improved over time.							Topic – Binary This unit introduces the concepts of the binary number system, the way data is stored in the computer. Assessment – Unit project Submitted, Binary video. S – Binary number system, Conversions, Overflow, Video Editing Skills. P – How to convert Binary To decimal & Decimal to Binary, Binary Addition, Overflow. How to use Movieplus. K – Multiple worksheets in class performing each type of conversion & Addition. Binary video, highlighting one of the three aspects.							Topic – Think like a Computer Scientist. This unit develops students understanding of Computational thinking and beings looking at programming concepts. Assessment – Unit project Submitted, Scratch Programs. S – Algorithms, Decomposition, Pattern Matching, Assignment, Selection, Iteration. P – Decompose problems, Different methods for representing algorithms. How to display data visually. Scratch. K – Create algorithm storyboards, create graphs in excel. Create simple Scratch programs that demonstrate Assignment, Selection & Iteration.							Topic – Programming in Scratch This unit continues the development in Computational thinking and programming. Over several lesson, students will complete the game Pong in Scratch. Assessment – Unit project submitted, Complete Scratch Pong program. S – Programming, Assignment, Selection, Iteration, Procedures, Sprites, Boolean Logic. P – Understand how to create more complex Scratch programs, using the various techniques. Understand how Sprites are used in games. K – Create, If statements, Loops & procedures in Scratch. Create a complete										

	attachments, Access Homework & Behaviour on G4S, manage OneDrive, basic skills e.g. Copy & Paste. K – Timeline of different CPU's, Microbit Programs (e.g. Mood Badge), Research a Famous Computing Pioneer.				Pong game. Make their own Sprites in Scratch.
YEAR 8	Topic – Internet Safety This unit introduces students to different concepts of Internet Safety. They will learn about different types of threats to machines, including Malware and hackers. Assessment – Unit project submitted, E-Safety PowerPoint. S – E Safety, Digital Resilience, Appropriate online behaviour. P – Understand the different types of Hackers & Malware, Suggest mitigation techniques, Understand digital resilience K – Create an E safety PowerPoint, demonstrating their understanding. Create a digital resilience toolbox.	Topic – Introduction to Python Programming This unit introduces you to text-based programming with Python. The lessons form a journey that starts with simple programs involving input and output, and gradually moves on through arithmetic operations, randomness, selection, and iteration. Assessment – Unit project submitted; various Python programs completed. Summative Quiz S – Algorithms, Programming theory including Syntax & Logic, P – Understand how to create Python programs from Algorithms, Understand assignment, sequence, selection & iteration	Topic – Vector Graphics This unit offers students the opportunity to design graphics using vector graphic editing software. Students will be able to understand the processes involved in creating such graphics and will be provided with the knowledge and tools to create their own. Assessment – Unit project submitted. Icon, Illustration or Logo, summative assessment. S – Vector graphics & their properties, such as fill & stroke. The difference between Vector & Raster Graphics. P – Understand how to create vector graphics in image editing software, terminology, such as Path, Stroke, Fill, understand advance techniques such as Union, difference & Intersection. K – Create vector graphics demonstrating a variety of	Topic – Computing Systems This unit allows students to understand the different layers of computing systems: from programs and the operating system to the physical components that store and execute these programs, right down to Binary. Assessment – Unit project submitted. Summative Quiz. S – What is a Computer, The stored Program Concepts, Von Neuman Architecture, Boolean Logic, open-source software & AI. P – Understand the different components of a computer and how they work together. Understand Operating systems. Understand Boolean logic, AND, OR, NOT. K – Classify software, complete worksheet on the Fetch, Decode, Execute cycle, systems monitor, Complete Truth tables. Teach an AI.	Topic – HTML Web Development In this unit, students will explore the technologies that make up the internet and World Wide Web. Starting with HTML and CSS, whilst understanding how search engines categories websites. Assessment – Unit project submitted. Website on HTML S – What is the Internet, how are websites made, how search engines categories websites. P – Understand how to create webpages using HTML & CSS, Understand advanced search operators. K – Create a website about web development using HTML & CSS, they will contain multiple linked pages. Construct suitable search engine searches, to find specific data.

		K – Create Python programs containing examples of the various programming techniques. Summative Quiz.	skills in Inscape, based on a client brief. Summative Quiz.		
YEAR 9	Topic - In this unit, students will be introduced to data science, being exposed to both global and local data sets and gain an understanding of how visualising data can help with the process of identifying patterns and trends. Assessment – Unit project submitted. S – What is data science, what are patterns & trends. How to investigate a problem. P – PPDAC, understand what a correlation and an outlier are. What large data sets are used in day-to-day life. K – Follow the PPDAC, to investigate a problem, cleanse a large data set of errors, create a number of data visualisations. Analyse data for patterns, trends, correlation etc.	Topic – In this unit, students will build on their knowledge from the previous Python unit in year 8. They will develop programs that work on sequences of data, such as lists. Assessment – Unit project submitted, showing screenshots of programs developed. S – Algorithms, programming theory including selection & iteration, how computers store sequences of data. P – Understand Python list and string functions, understand while/for loops and if statements in Python, understanding Boolean conditions. K – Create Python programs that work with both strings and lists (sequences of data). Create programs with changeable flow	Topic – In this unit, students will learn about digital media such as images & sounds and discover the binary digits that lie beneath these types of media. Assessment – Unit project submitted; screenshots of image & sound work included. S – Digital images including editing & its use, sound, compression, Binary P – Photoshop skills, how to use audacity, understanding files sizes, different methods of compression such as RLE K – Mix digital colours using light, Modify some images in photoshop. Modify pre recorded sound files in audacity. Modify a vector graphic using a web browser.	Topic – In this unit, students will develop skills as a Web Developer, learning both HTML and CSS. You will develop several webpages, adding formatting, images and creating links between them. Assessment – Unit project submitted. Report on their website. S – The difference between the WWW & internet. How websites are developed. Career options. P – Understand how to create webpages using HTML & CSS, K – Create a website about web development using HTML & CSS, they will contain multiple linked pages.	Topic – In this unit, students will, discover the techniques used by cybercriminals to steal data, disrupt systems, and infiltrate networks. Considering the value of data to organisations and what they might use it for. Assessment – Unit project submitted, Summative test S – Data & Information, legislation, Cyber security. P – Understand the different legal requirements when storing and using data online, Understand different cyber security threats & protection methods. K – Complete worksheets/tasks about different types of cyber attacks & malware e.g. DDOS, Brute force, Worm. Learn about prevention methods, learn about the Data Protection & Computer Misuse Acts.

		control (e.g. containing If Statements & Loops).			
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