Computing at Littleton Green Community School

Our P.U.R.P.L.E. Curriculum Intent, Implementation and Impact Model

P.U.R.P.L.E. is an acronym that stands for the qualities that we believe all children need to possess to be successful in life. It doesn't just involve implementing a series of learning experiences, but is a complete values set that encompasses everything that we do. It shapes every minute, of every day, for every child in every class at the school. Our aim is that every single child leaves our school, equipped with a toolbox packed full of knowledge, skills and experiences that enables them to confidently shout: 'I AM P.U.R.P.L.E..' ...and that they keep shouting it for the rest of their lives! Our Curriculum Intent, Implementation, and Impact Model for 2020-2021 describes how we plan to achieve that. Staff, children, and governors at Littleton Green Community School have all contributed to this document

How do children become P.U.R.P.L.E in Computing?

PROUD: I am Proud. I am proud of my work and the effort that I have made to produce it.			
Intent		Implementation	Impact
What are our aims?	What do we want to see?	What will we do?	What will success look like?
• To provide lots of opportunities to celebrate very high quality work • To provide lots of opportunities to celebrate effort	All children are taking pride in the work that they are producing and the effort that they have put into achieving it. This is being celebrated by all adults.	We will use Class Dojo, P.U.R.P.L.E. assemblies and Open Days to celebrate work and effort in Computing.	Children and adults will be proud of the work produced at LGCS and the efforts that the children have made.
		We will hold moderation meetings once a block to ensure that high standards are maintained in Computing.	Work scrutinies, pupil interviews and 'Chequebook' walks will show that all children and adults demonstrate the Proud value in every lesson.
		We will save a collection of Computing work on the School Shared Drive to showcase learning in Computing.	

UNIQUE: I am Unique. I am an individual who offers many talents. Everybody is good at something.			
Intent		Implementation	Impact
What are our aims?	What do we want to see?	What will we do?	What will success look like?
• To deliver a curriculum that offers children a chance to develop a wide range of skills in **all** areas of learning • To devote plenty of time to all areas of learning, so children can showcase their talents	All children are being taught a broad and balanced curriculum, which recognises and celebrates their individual strengths but also identifies and addresses any gaps that they may have.	We will use Digital Leaders as experts in every class.	Every class will use child experts in each subject.
		We will deliver a Computing curriculum that provides enough time for knowledge and skills to be developed.	Work scrutinies, pupil interviews, and 'Chequebook' walks will show that all children and adults demonstrate the Unique value in every lesson.
		We will provide computing interventions to ensure that **all** children become the best that they can be as a Computer Programmer.	All children, who are working below age related expectations, will diminish the difference or have support altered. Parents and pupils of SEND children at LGCS will feel that they are fully supported.

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REFLECTIVE: I am Reflective. I learn from my mistakes and get better at things as a result.			
Intent		Implementation	Impact
What are our aims?	What do we want to see?	What will we do?	What will success look like?
• To provide opportunities for children and adults to reflect on learning and then provide opportunities to act upon it	All children are reflecting on their learning and benefitting from high quality adult pupil dialogue, which is based on accurate AFL.	We will train all teachers and Learning Support Assistants to provide high quality feedback in Computing.	Work scrutinies, pupil interviews, and 'Chequebook' walks will show that all children and adults demonstrate the Reflective value in every lesson.
		We will recap learning in Computing to ensure that knowledge is remembered and skills are applied.	
		We will teach children to peer and group mark Computing work successfully and reflect on their work.	

POSITIVE: I am Positive. I always try my hardest. If at first I don't succeed, I try, try, and try again.			
Intent		Implementation	Impact
What are our aims?	What do we want to see?	What will we do?	What will success look like?
• To provide lessons which really challenge a child's understanding by delivering an age related curriculum to all children all day, every day • To teach higher order thinking skills and an "it's good to be stuck "ethos • To provide praise, praise and more praise!	All children using appropriate strategies to achieve learning objectives, which challenge them.	We will plan, deliver, and assess Computing using Cornerstones to ensure that the level of challenge is appropriate for all children in all Computing lessons.	Work scrutinies, pupil interviews, and 'Chequebook' walks show that all children and adults demonstrate the Positive value in every lesson.
		We will hold regular staff meetings to understand how children approach challenges that they are stuck on in Computing.	

LOVING: I Love. I respect and love the world that I live in. I respect and love other people. I respect and love myself.			
Intent		Implementation	Impact
What are our aims?	What do we want to see?	What will we do?	What will success look like?
• To provide a curriculum that places a high degree of emphasis on building mutual respect • To provide a curriculum that enables a child to recognise that they can influence local, national and international communities • To have high expectations about the quality of the learning	All children are profiting from a climate of mutual respect in which Positive Behaviour Intervention Strategies are applied at all times. They feel seen, safe, soothed and secure.	We will follow a Behaviour Policy which encourages Positive Behaviour Intervention Strategies for all.	In Interviews children and staff can demonstrate that they feel seen, safe, soothed and secure at school.
		We will appoint Digital Leaders to provide pupil voice and lead school projects.	Pupil Interviews and Ambassador led learning walks indicate that the children are 'loving'.
		We will teach children how to support one another by working in mixed ability pairs in Computing and take	In pupil interviews, children enjoy working in mixed ability pairs and have the skills to support each other

environment and of the child's actions and attitudes within it		care of the computer room and computers within classrooms.	successfully.

EMPOWERED: I am Empowered. I can overcome any challenge that comes my way because I own a toolkit packed full of skills and knowledge that I will use for the rest of my life.			
Intent		Implementation	Impact
What are our aims?	What do we want to see?	What will we do?	What will success look like?
• To equip children with a wide range of skills that they can use throughout their life • To ensure that every single stakeholder at the school's sole focus is making sure that every single child leaves our school being 'the best that they can be'	All children are fully focused on their learning and either acquiring new knowledge/ skills or applying knowledge/skills that have been previously taught.	We will hold regular Subject Leader, R.A.P And Link Governor Meetings to ensure that high standards are maintained and to ensure that the development of knowledge and skills is progressive in Computing.	Children make good progress in Computing.
		We will hold a parental engagement day focused on Internet Safety to ensure all children know how to stay safe online.	In pupil interviews, children are able to talk with confidence about how to stay safe online.
		We will ensure that every child in the school completes a P.U.R.P.L.E. Passport which include some Computing activities.	Children increase the range of P.U.R.P.L.E. experiences that they have had.
		We will teach children how to be a P.U.R.P.L.E. Computing Programmer.	In pupil interviews, children can talk with confidence about being P.U.R.P.L.E.

How do we teach Computing?

Computing is part of Connected Learning at LGCS for children in years 1-6. The key features of this are:
• The school year is split into six blocks. If a school holiday falls in the middle of a block of work, teacher set holiday homework challenges to maintain pupil interest.
• Children complete 6 projects connected under an umbrella theme.
• These projects are based around a cross-curricular theme and have a main driver subject such as history, geography or science. Each project will provide coverage for several other subjects as well as focussing on the main driver subject.
• During the Computing sessions, children are referred to as Computer Programmers and are taught the knowledge and skills identified in Cornerstones Curriculum.
• At the end of each project, children produce a product which demonstrates their learning.

What is Cornerstones Curriculum?

We use Cornerstones to support our teaching of Computing.

Cornerstones is broken down into four stages: Engage, Develop, Innovate, Express.

ENGAGE
- Each project begins with 'Hook': a memorable experience either within school or a trip which sets the scene and provides the context for future learning. Teachers then ask questions to find out the children's interests and spark children's curiosity.

DEVELOP
- Children explore themes, concepts and subjects in greater depth. Teachers provide the opportunities for children to gain new skills and knowledge through a range of challenging activities. This enables children to make progress and develop confidence across a range of subjects.

INNOVATE
- Children are offered a range of rich and stimulating scenarios. These scenarios act as provocations encouraging children to think creatively. During this stage children have the opportunity to work both independently and with different groups.

EXPRESS
- Children reflect on their learning through talk and opportunities for shared evaluations. Children are provided with the opportunity to explain their learning in different ways and identify next steps. The involvmetn of parents and carers at this stage of learning enables a shared understanding of progress and achievement.

Progression of knowledge and skills						
Aspect	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Data and computational thinking	Follow a sequence of steps to solve a problem and create instructions that others can follow (for floor robots or onscreen sprites). An algorithm is a sequence of steps, instructions or rules that is used to perform a specific task. Algorithms can be followed by people or digital equipment. For algorithms to achieve the end goal, instructions have to be accurate and followed sequentially.	Create a simple solution that tests an idea, predict the outcome and test and debug the solution to ensure that it works. Computers' behaviour can be predicted and the outcome tested by following the steps of an algorithm and recognising that the computer will follow instructions precisely.	Identify and use repetitions or loops in a program sequence, predicting outcomes and noticing and correcting any mistakes. Repetitions or loops can be used in programming where a computer will continue to run part of a program a number of times or until a condition is met, using the term 'repeat... until'. The given feedback can be used to identify and correct any mistakes in the program.	Describe and demonstrate a simple program that contains a looping element and how part of a program may need repetition. A loop is a sequence of instructions that repeats continually until a certain condition is met. A program that contains a looping element is useful for a wide range of scenarios, such as controlling traffic lights.	Design, write and debug simple sequences of instructions (algorithms), including IF, THEN and OTHERWISE commands, to decide if something is true or false. Sequences of instructions (algorithms) that contain IF, THEN and OTHERWISE statements are called selections. The computer will complete operations based on whether the conditions of these selections are met or not.	Demonstrate how programs run in an exact order by following a sequence of instructions, and test and debug programs. Decomposition is breaking down a problem down into smaller parts to make it easier to process and following a sequence of instructions. Decomposition is useful for checking programs and debugging because it saves time.
Networks	Show awareness that work they create and save on a computer or tablet can be shown to others using another device. When work is saved electronically, it can be stored on a hard drive, a shared drive called a server or online so that it can be opened on the same device or another device at a later time.	Recognise that computers can be linked to share resources and digital content can be stored, organised and retrieved. Computers and devices can be linked in different ways, such as through a network, the internet and Bluetooth. This allows for the sharing of resources.	Recognise that saved work can be retrieved from another device on the same network. When work is saved, it is stored on a storage device, such as the computer's hard drive, a USB flash drive, a shared server or online. This work can then be retrieved from another device (except if it is saved on the computer's hard drive).	Recognise that the school network links computers to allow the sharing of resources. A school network has computers that are connected together so they can share hardware, software and data.	Compare the ways in which work can be shared on a school network with the ways work is shared at home or in the wider world. Computer networks are made up of computers that are connected by cables, fibres or wireless links. Each network can only be accessed by computers within their network, such as in school or at home. The internet network can be accessed by anyone.	Name some of the positives and negatives of communicating with others online. The positives of communicating online include the speed, low cost and ability to communicate globally. The negatives of communicating online include the threat to privacy, influencing of others, access to technology and anonymity.
Physical interactions	Observe and explore outcomes when buttons are pressed in sequences on a robot and identify and debug a simple algorithm. An algorithm is a sequence of steps, instructions or rules that is used to perform a specific task. Algorithms can be followed by people or digital equipment. For algorithms to achieve the end goal, instructions have to be accurate	Plan and enter a sequence of instructions using a robot, specifying distance and angle of turn. Robots can be programmed to follow a series of instructions using algorithms.	Design, write and enter a sequence of instructions using a robot or other device to achieve specific outcomes, debugging if necessary. Sequencing instructions is the step-by-step process that robots or other devices follow to achieve specific outcomes. This can be a single algorithm or series of algorithms called a program.	Use sensors to 'trigger' an action, such as sound or movement. Computers interact with the world using input and output devices. An input device may include sensors that can detect changes, such as in temperature, light level, sound level or movement. The input then sends the information to a computer, which tells the output device to trigger an	Use a range of sensors to control a physical system. Sensors can be combined to control a physical system, such as using motion, light and sound sensors to control a road network of traffic lights and level crossings.	Design, write and debug a program to control a physical system, which may include output devices, such as motors, lights and buzzers. Input and output devices can be combined with programming software to control a physical system, such as using sensors to create a sensory station that incorporates motors, lights and buzzers.

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	and followed sequentially. Mistakes are called bugs and finding and fixing them is called debugging.			action, such as making a sound or creating a movement.		
Creation	Select appropriate software to complete given tasks using text, images, audio and video clips. Software is the programs that are used by a computer, such as word processing software, presentation software or image editing software. It can be used to create and combine digital content for different audiences and purposes.	Create and edit multimedia components for a range of tasks. Multimedia components, such as text, images, audio and video clips, can be created, edited and combined to create content for a range of tasks.	Combine a range of text, images, animation and audio and video clips for given purposes. Text, images, animation, audio and video clips can be combined using tools within a piece of software or by using a range of software. For example, an image could be inserted into a word processing document or a video could be inserted into a presentation.	Manipulate a range of text, images, sound or video clips and animation for given purposes. Manipulating a range of text, images, sound or video clips and animation may include changing their style, size, colour, effect, shape, location or format.	Create, select and combine a range of texts, images, sound clips and videos for given purposes. Creating, selecting and combining a range of texts, images, sound clips and videos for given purposes could include creating a web page, slide show presentation, short film or an animation.	Select, use and combine a variety of software, including internet services, to meet a goal. A variety of software, such as word processing software, image editing software or internet services, can be selected, used and combined to meet a goal.
Digital searching	Search for or retrieve digital content, including images and information, in digital folders and online, with supervision. To search for digital content, the user needs to know the file name, file type and folder name or keywords and search terms to find the correct information.	Recognise and demonstrate that some information can be found online and some offline. A device is online if it is connected to the internet or a network and can communicate with other devices. A device is offline if it is not connected to the internet or network and cannot connect to other devices.	Explain that the World Wide Web contains lots of web pages about different subjects that can be searched. The World Wide Web is a collection of web pages that are run via the internet. The information requested can be displayed as text, images or videos.	Explain that when searching online, some web pages may contain adverts or pop-ups that encourage people to click on them. Pop-ups or adverts are a form of online advertising that companies use to encourage users to buy something or go to another website. Some pop-ups can be malicious and lead to a virus, whereas some are helpful and give information. Pop-ups can be blocked by computer software. Concerns should be reported to a trusted adult before clicking on anything.	Discern where web content might originate from and recognise that this gives clues to its authenticity, reliability and security. Some websites have more reliable content than others and content should be verified with another independent source.	Critically evaluate search engine results and identify factors that may affect ranking, such as how long the site has existed, the number of links to the site and whether the organisation has paid to have their site promoted. Search engines take many factors into account, such as the quality of the site, number of updates or number of matches to keywords. However, search engines do not consider whether the content is true, age-appropriate or relevant, and so users need to be aware of these things when searching.
Hardware	Use a range of computing hardware for different purposes. Hardware is the parts of a computer that you can touch, such as a mouse, tablet or floor robot.	Use computing hardware in different ways to collect data. Hardware, such as cameras, scanners and data loggers, can be used to collect data.	Use familiar computer hardware to successfully complete a task. Several pieces of hardware can be used together to complete one task, such as using a camera to take a photograph, uploading it to a computer and then printing it using a printer.	Use new and unfamiliar computing hardware. Interacting regularly with hardware enables users to recognise common features and become confident in working with new or unfamiliar hardware.	Apply computing skills using unfamiliar hardware to solve a problem successfully. Using prior knowledge and experience of computing skills can be applied to unfamiliar hardware to solve a problem successfully.	Identify how using different hardware can increase creativity and productivity. Some hardware is more effective than others in particular contexts, such as using virtual reality or a touchscreen rather than a mouse to meet a specific need.

						Choosing the right hardware can increase creativity and productivity.
Software	Begin to use a range of software for different purposes. Software is the programs that are used by a computer, such as word processing software, presentation software or image editing software.	Use different types of software and identify their purposes. Each type of software, such as word processing, presentation and image editing, can be used for different purposes, including writing reports and creating slide shows or posters.	Use a range of different software to successfully complete a project. Several pieces of software can be used together to complete one task, such as adding a video to a word processed document.	Apply computing skills to use new computing software. New computing software commonly has features that should be familiar to users, such as icons or terminology.	Apply computing skills to create content using unfamiliar programs or apps. Using prior knowledge and experience of computing skills can be applied to create content using unfamiliar programs or apps.	Identify how a new piece of software or an app can increase creativity. Some software or apps are designed to help increase creativity by saving time or making tasks easier, such as being able to combine text, images, audio or video content into one place.
Real world	Observe how collected data can be represented electronically. Data can be collected manually or using digital technology, such as data loggers. It can be represented in different electronic forms, including charts and tables.	Use data handling skills to represent data digitally. Software is available that can be used to represent collected data digitally, such as in a pictogram or bar chart.	Log light level, temperature or sound level using a program or app. Some programs or apps have special types of technology, such as a built in camera or microphone, or sensors that measure light level, temperature or sound level.	Log light level, temperature or sound level using a program or app, over a period of time. An input device receives information about the outside world, such as light level, temperature or sound level, and sends it to a computer. This information can be tracked over time using a program or app.	Use sensing tools or apps for an investigation and interpret the findings. Sensing tools or apps have features that can be used for an investigation and the findings can be interpreted. For example, a sound sensor or app can be used to investigate the pitch of instruments.	Plan data handling investigations and use the outcomes from data collection to show the findings. Data handling includes databases, graphs, charts and tables. These can be used to present the findings of investigations.
Communication	Explain simply that digital technology can be used to connect with others locally and globally. Digital technology is used in all parts of everyday life, such as using a tablet to play a game or a microwave to heat food. Some of this digital technology can be used to connect with others locally, such as sharing digital work in the classroom, or globally, such as using Skype on a computer to speak to a friend overseas.	Use digital technology appropriately to communicate and connect with others locally and globally. Digital technology, such as email, social media platforms or blogs, can be used by individuals to communicate and connect with others but should be used appropriately, including using language that is not hurtful or disrespectful to others, having adult supervision or following the school's acceptable use policy.	Explain the advantages and disadvantages of communicating electronically and strategies for preventing issues. Advantages of communicating electronically are that it is available at any time, instant and global. Disadvantages include easier misunderstandings, people pretending to be someone they are not, lack of privacy (once something is published online, it cannot be removed) and a threat to personal safety (access to personal information). Concerns should be reported to a trusted adult.	Explain actions to report and prevent cyberbullying. Cyberbullying is bullying using technology, such as social media or gaming networks and can involve teasing, name calling, harassment, deliberate exclusion, threatening or being undermined. A trusted adult or child safety organisation should be contacted if there are any concerns or worries. A trusted adult can provide help and support or contact the police if needed.	Demonstrate appropriate online behaviour and apply a range of strategies to protect themselves and others from potential online dangers, inappropriate behaviour and bullying. Working online requires a level of responsibility and strategies to stay safe, including protecting private information and accounts. This enables people to protect themselves and others from potential online dangers, inappropriate behaviour and bullying. Any concerns should be reported to a trusted adult, the police or child protection organisations.	Recognise that sending intimate images and content and using offensive language online is a risk, has a permanent online trail (digital footprint) and is not appropriate behaviour. Knowing someone online is not the same as knowing them face to face. People online are not always who they say they are and may use intimate images or content inappropriately. Once something is online, it is not under the user's control and can be made public. Using offensive language can affect others negatively and is a form of bullying called 'trolling'. Privacy and personal boundaries are important when communicating with others

						online.
Staying safe	Recognise that some websites ask for private information and discuss how to handle these requests and where to go for help and support. Private information includes names, addresses, dates of birth or schools and this information should not be shared online. Any concerns or worries should be reported to a trusted adult.	Stay safe online by choosing websites that are appropriate to visit (based on the confidence you have in the author(s) of the website) and know where to go for help and support when they have concerns about content or contact on the internet and other online technologies. Some websites are not age-appropriate and so it is important to tell a trusted adult about any concerns or worries.	Describe simple rules for sharing images and data safely. Images and data should not be shared online without the permission of the owner. Personal information, such as full name, age, school and address, should not be shared online.	Identify the positive and negative influences of technology on health and the environment and how to protect themselves. Technology can have positive influences on health, such as enabling people to hear using a hearing aid or helping doctors to diagnose or treat illnesses using special machines. Both mental and physical health can be negatively influenced by technology. Technology can have positive influences on the environment, such as using systems to monitor and control energy usage. Negative influences on the environment include contributing to pollution by travelling and using a lot of power.	Discuss the impact that digital content can have and why it is important to discuss their use of technology with an adult. Digital content can affect others and be available to anyone. Digital content is traceable, which means it can be tracked to the person who created it. To stay safe, it is important to discuss technology use with a trusted adult.	Identify the benefits and risks of devices broadcasting the user's location and of giving personal information to different organisations. The benefits of devices broadcasting the user's location and passing on personal information include improved customer service, allowing organisations to analyse data and improving the quality of applications. Risks include identity theft, cyberstalking, victimisation and threat to privacy.
Digital citizenship	Recognise that work they have created belongs to them. When work is saved electronically, it needs to have a name that identifies it and is easily remembered.	Recognise that information put online leaves a digital footprint. A digital footprint is the information that exists on the internet, following a user's online activity.	Compose clear and appropriate messages in online communities. As with face to face communication, online communication should be done respectfully and responsibly, considering the impact on others.	Identify appropriate behaviour when contributing to collaborative online projects for learning. Appropriate behaviour when contributing to collaborative online projects includes consideration towards others, awareness of copyright and keeping personal data safe.	Cite all sources when researching and explain why sources should be provided. Citing sources is giving credit to the person or website that created the information. Using someone else's work without citing it is called plagiarism and is a form of cheating.	Recognise that digital content can be edited online. Digital content may have been edited online by anyone, and so it is important to verify content against other independent or reputable sources.
Digital world	Understand that there are online tools that can help people to create content and communicate. Software available online, such as email, social media platforms or blogs, can be made by individuals to communicate their ideas.	Recognise some uses of the internet, in simple terms and some of its benefits and drawbacks. The internet is used to connect computers or devices around the world. The internet is an important part of life for many people. However some people spend too much	Use appropriate tools (software, websites and apps) to collaborate and communicate safely online. Different software, websites and apps can be used to collaborate and communicate online. Each one has different terms and conditions that need	Exchange online communications with other learners, adding and responding to comments, such as in a blog. There are various forms of online communication, such as email, blogging, vlogging and video chatting. Online communication should	Create an online collaborative project for a specific purpose, sharing documents and appropriately setting permissions for other group members. Online collaborative projects can be shared with different permission settings, such as who can view, edit or	Exchange online communications, making use of a growing range of available features and being aware of security settings. There are a wide variety of online communication platforms, such as social media, blogs, vlogs, email or messaging, which have

		time on devices, which can have a negative impact on people's mental and physical health.	to be followed to stay safe, such as age restrictions.	be used responsibly, remembering that online actions affect other people and there are rules that need to be followed.	comment on the documents. Privacy settings can be restricted to those who are invited, those who have access to the link or can be made open to the public.	different available features, including the option to comment. It is important to be aware of security settings, such as age restrictions or property rights.
Real world	Recognise the ways digital technology can be used in the classroom, home and community. Technology is used in many ways to do different jobs, such as using an interactive whiteboard in the classroom, using a tablet to do online shopping at home or using scanners in a shop in the community.	Recognise why digital technology is used in the classroom, home and community. Digital technology is used in everyday life and can be used to support learning and connect with others.	Use digital technology in different ways in the classroom, home and community. Digital technology can be used for a range of purposes in different settings, such as using a tablet in the classroom to access educational material, in the home to access entertainment and in the community to share local news.	Use digital technology in different ways in the classroom, home and community to achieve a set goal. Digital technology can be used in different ways and settings to achieve a specific goal, such as using data collection in the community and home to answer a classroom based question.	Select, use and combine appropriate technology to create a solution that will have an impact on others. A range of technologies can be selected, used and combined, such as using different hardware and software to create a solution that will have an impact on others.	Combine a range of technology to achieve a particular outcome. A range of technologies can be combined to achieve a particular outcome. For example, sensors (input), a computing device (hardware) and lights (hardware) can be used together to create a set of traffic lights.