Gosberton Academy

Computing Portfolio

Computing at Gosberton Academy

At Gosberton Academy, we aim to provide our pupils with a high-quality computing education, which will equip them with the knowledge and skills to embrace and utilise new technology in a socially responsible and safe way. Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators not consumers and our broad curriculum encompassing computer science, information technology and digital literacy reflects this. We want our pupils to understand that there is always a choice with using technology and as a school we utilise technology (especially social media) to model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education.

We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. Our knowledge rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skilful computer scientists.

By the time they leave Gosberton Academy, our learners will have gained key knowledge and skills in the three main areas of the computing curriculum:
- Computer science (programming and understanding how digital systems work)
- Information technology (using computer systems to store, retrieve and send information)
- Digital literacy (evaluating digital content and using technology safely and respectfully – i.e. being responsible, digital citizens)

Teaching Mixed-Age Classes

Our teachers recognise that mixed aged teaching can be a challenge and they constantly adapt their approach to teaching and learning. They demonstrate a high level of flexibility and organisation in Computing, to ensure that their provision caters for both age groups and includes all learners.

Mixed Aged classes generate a family of learners who support and care for each other. Older children have the opportunity to help others and be a leader, supporting younger learners to play and learn. At the same time, the older child is increasing an independence and competence.

At Gosberton Academy, we recognise learning happens individually, in small groups and as a whole class. Keeping children engaged, motivated and focused ensures they will learn regardless of the class they are in.

We have in place robust transition procedures which starts at the planning process, where teachers work collaboratively in Computing. Good communication across classes fosters curriculum continuity. Teachers share information to ensure learners start confidently in their new class.

Our Vision, Values and Aims

Gosberton Academy aims to provide a high-quality, **exceptional** education with first-hand learning experiences that are able to motivate and stimulate all learners. All learners will recognise the importance of the community in which they are educated and understand that the Academy is based at the heart of the community, bringing a **togetherness** of all stakeholders.

- All pupils and families will feel supported and integrated into the school life.
- Every pupil, regardless of their life experiences, can reach their full potential, growing in confidence and being **honest** to themselves.

H

Honesty – Honest to each other but also, honest to themselves.

A

Aspirational-
Aspirational staff, children, parents and families

T

Togetherness-
Friendships, support, stakeholders, community, parents and staff

E

Exceptional- Exceptional behaviour, effort, attitude, progress and opportunities

R

Resilient- Never giving up, always wanting to succeed.

Gosberton Goals

We take pride in everything that we do

We show respect to everyone in our School and community

We aspire to reach our dreams and strive for excellence

We are tolerant towards other people's views and opinions

We always try our best

We show exceptional behaviour around school

We are enthusiastic about our learning

We are honest and always tell the truth

We are committed to making our school a better place

We work together and support each other

Coding Medium Term Plan

R/Y1	Y1/Y2	Y3/Y4	Y4/Y5	Y6
EYFS Activity 1 - Explore toys that simulate control devices *Talk about technology around us* Y1 Activity 1 – Algorithms (Robots) *Teacher and pupils robot* EYFS Activity 2 - Introduce sequence instructions *Jam sandwich images* Y1 Activity 2 – Bee Bot/Blue Bot - Algorithms (Tinkering / Debugging) *Children in group/pairs write algorithms* EYFS Activity 3 - Control objects on a touchscreen *Busy Things Busy Bundle* Y1 Activity 3 - Writing Algorithms (Tinkering / Debugging) *Beebot directions zigzag etc.* EYFS Activity 4 - Explore a website *Nina and the neurons* Y1 Activity 4 - BlueBot - Algorithms (Explore / Challenge) *BlueBot app* EYFS Activity 5 - Control a programmable toy *Tinker Beebot* Y1 Activity 5 - Algorithms (Move Sprites) (Tinkering / Debugging) *JIT Turtle*	Y1 Activity 1 Hello Ruby - Make your own keyboard (Unplugged) https://www.helloruby.com/play/12 Y2 Activity 1 (1)– Create Crazy Characters *Barefoot unplugged* Y1 Activity 2 (formerly Y2 Activity 2) – Write algorithms in Daisy the Dinosaur app Y2 Activity 2 – Tynker https://www.tynker.com/hour-of-code/ Y1 Activity 3 (6) – Sequencing with Scratch https://studio.code.org/s/coursea-2021/lessons/4/levels/2 (lesson plan available on the site) Y2 Activity 3 (3)– Debug algorithms *Angry Birds (Course B)* Y1 Activity 4 (3) – BeeBots Use Teacher prepared maps using flipchart paper –can link to Topic. *(From second part of lesson plan for Y1 Activity 3)* Y2 Activity 4 (4)– Program a Beebot/Bluebot to form numerals Y1 Activity 5 - Program a Beebot/Bluebot *maths grid (differentiated for Y1)* Y2 Activity 5 - Program a Beebot/Bluebot *maths grid (Differentiated for Y2)* Y1 Activity 6 – Use J2Code JIT Turtle https://www.j2e.com/jit5#turtle. (Children to use the blank screen and select their sprite to draw lines and shapes on the screen) Y2 Activity 6 - Use LOGO to draw lines and shapes *J2 Code*	Y3 Activity 1 (1) – Understand Algorithms *What is a computer/ unplugged noughts and crosses/ paper plane* Y4 Activity 1 (1) – If, Then, Else Conditionals *Unplugged* Y3 Activity 2 (3) – Create and debug Algorithms in Angry Birds *(Course C)* Y4 Activity 2 (2) – Use if then else statements *CS Fundamentals (block)* Y3 Activity 3 (2) – Problem solving *Rush hour/ALEX* Y4 Activity 3 (4) – Sequences, Conditions, Loops *(Light Bot)* Y3 Activity 4 – Introduction to Scratch Jr Y4 Activity 4 /5 – Scratch Jr Revision/Consolidation. Children can design and then create their own games being introduced to variables to generate scores or set time limits. Multiple sprites can be coded using multiple backgrounds. Year 3 Activity 5 – Create a maze in Scratch Jr Year 3 Activity 6 –Create presentations using Scratch Jr Y4 Activity 6 – Design a game using Sketch Nation (If further extension activity required)	Y4 Activity 1 – Barefoot unplugged (https://www.barefootcomputing.org/resources/logical-reasoning-unplugged-activity) Activity 1 (1) – Repeated patterns/loops revision *unplugged card tricks and stacking* Y4 Activity 2 (5) – Write a simple program *Logo* Y5 Activity 2 (5) – Write and use simple procedures *Logo* Y4 Activity 3(3) – Spy kids problem solving CIA *(cia.gov/spy-kids/games/index.html) (plus lesson plans)* Y5 Activity 3 (2) – Apply computational skills *card trick/problem solving wolf sheep etc* Y4 Activity 4– Make a flappy bird game – *Hour of code (for lesson plan see https://hourofcode/flap)* Y5 Activity 4 (4) – Use functions or procedures in programming *CS fundamentals Minecraft* Y4 Activity 5 – Code for life Rapid Router (https://www.codeforlife.education/rapidrouter/) Y5 Activity 5 (3) – Use directional commands to control a character *Blockly* Y4 Activity 6 – Scratch Tinkering (https://www.barefootcomputing.org/resources/scratch-tinkering-activity) Y5 Activity 6 (6) - Use "if,do,else" to create a program *J2Code Block*	Activity 1 – Move blocks with the use of loops and repeats Activity 2 – use computational thinking to solve problems Activity 3 – understand variables in programming Activity 4 – use variables to program a game Activity 5 – Voting app with variables using Scratch Activity 6 - Shark Game with variables
Online Safety Week	Online Safety Week	Online Safety Week	Online Safety Week	Online Safety Week

Computing Progression- Online Safety

Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recognise the internet can be used to communicate with others in a variety of ways	Identify rules to keep safe and healthy when using technology in and beyond the home	Identify rules to keep safe and healthy when using technology in and beyond the home and suggest devices connected to the internet in their homes	Explain identity and how they can represent themselves in different ways online such as using an avatar	Explain how their online identity can be different to real life and describe the right decisions how they interact with others online	Explain how identity on line can be copied, modified or altered and demonstrate responsible choices for their online identity	Identify messages online about gender roles from the media and others and explain why it is important to reject inappropriate messages about gender online
Identify ways information can be put on the internet	Give examples of rules to keep safe and healthy when using technology in and beyond the home	Recognise how to use technology responsibly	Describe how people can get together online and explain some risks of communicating with others online which is different from knowing someone in real life	Describe strategies to be safe and have fun when using online social environments; giving examples of how to be respectful to others online	Explain how they can collaborate positively with others online but that there are some people online who ay want to do harm to them or their friends and this is not their fault.	Describe issues online that might make them or others feel sad, worried, uncomfortable or frightened and give examples of online and offline help
Identify rules that help keep them safe and healthy in and beyond the home when using technology. Use the internet with adult support and know what not to share with others online	Discuss what are the benefits from the rules to keep safe and healthy when using technology in and beyond the home	Describe how those rules help them stay safe	Know who to ask if unsure about uploading content about themselves or others and can search for themselves online	Describe how others can find information about them online and explain ways that some information could be created, copied or shared by others	Search for information about others online and describe ways that information can be used to make judgements about others	Explain how impulsive and rash communications online may cause problems and show understanding for the need to be responsible for the well being of others
Describe how some people can be unkind and what makes someone a good friend	Recognise that there may be people who could make them feel sad or upset and give examples of when and how to speak to an adult they trust	Give examples of issues online that might make them feel sad, worried, uncomfortable or frightened and can give examples of how they might get help	Know what cyberbullying is and can describe rules about how to behave online	Identify some online media technologies such as image, video, text and chat where bullying might take place and the need to consider others feelings	Recognise when someone is upset, hurt or angry online and describe ways for someone being bullied online to get help	Explain how they are developing an online reputation influencing others opinions of them and how to build a positive online reputation
Identify how devices connected to the internet can be used to find things out and give examples e.g. voice activated Smart Speakers	Use the internet with adult support to communicate with others they know and explain why it is important to be kind and considerate to others	Give examples of how they can use technology to communicate with others	Use key phrases in search engines with awareness of belief, fact and opinion as well as explain how the internet is used to buy and sell things	Search for information within different technologies (social media, images, videos) and differentiate between opinions beliefs and facts and what makes something a fact.	Explain how to block abusive users and report online bullying on the apps and platforms they use including to helpline services such as Childline	Describe how to evidence cyber bullying such as capturing content with screen grabs, recording URL's to enable them to report concerns in school and at home
Know that information can be private or public and they can identify examples of personal information e.g. name, age	Ask a trusted adult about what should be put online as they recognise that information ca stay online and be copied	Explain how information put online about them or by them can last a long time and be seen by others	Explain why too much time using technology can have a negative impact such as spending time engaged with games and videos	Describe some methods the internet uses to encourage people to buy things such as pop ups, in app purchases, offers and that some people on line may be computer programmes pretending to be real people	Use different search technologies and evaluate digital content from search results with an understanding for data, information, fact, opinion, belief, true, false, valid, reliable and evidence.	Use search engines effectively and explain how search engines work as well as be discerning in evaluating digital content

Computing Progression- Online Safety

Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Give examples of how bullying online might look; how someone might feel and where someone can get help	Explain why they should only share information with people they know and trust and if unsure to ask a trusted adult.	Explain how using technology can distract them from other activities and identify ways to limit the amount of time using technology	Understand the difference between online mis-information and dis-information and explain what is meant by being scep-	Describe how online information can be opinion and explain how and why some people present information as facts
Use the internet to find a picture	Use the internet to find things out	Use keywords in search engines and explain why some information online may not be true	Understand why passwords are important and should be kept private	Describe strategies for keeping personal information private and explain what a strong password is	Explain what is meant by a hoax and why some online information may not be honest, accurate or legal	Define terms influence, manipulation and persuasion and how they might encounter these on line e.g. advertising
Recognise inappropriate content and know to tell an appropriate trusted adult	Recognise personal information and explain why they should ask a trusted adult before putting information online	Describe and explain rules for keeping information private such as passwords	Explain why they should not copy someone else's work from the internet without permission	Explain that others online can pretend to be them or their friends	Describe ways technology can affect healthy sleep and describe some of the issues	Model ideas using prototypes and pattern pieces.
	Know that the work they create belongs to them	Recognise that consent online may belong to other people		Explain the need to consider who owns content on the internet and whether they have the right to use it	Help stay safe by creating and using strong passwords	Know systems to regulate age related content such as PEGI ratings and use strategies to promote healthy, self regulated use of technology e.g. night shift mode, regular breaks, correct posture, sleep
They can name their work so others know it belongs to them	Name their work so others know it belongs to them				Explain why they should seek permission from a trusted adult before making payment for additional content such as in-app purchasing	Use different passwords for online services, manage those passwords and know what to do if the password is lost or stolen
					Explain that many free apps and services may access and share their private information e.g. contacts, lies, images, videos, messages and geolocation with others	Explain what app permissions are, use privacy settings and identify illegal strategies such as scams and phishing.
					Assess and justify when it is acceptable to use the work of others	Use search tools to access online content that can be used be others and demonstrate how to reference content from others used from

Computing Progression- Computer Systems and Networks

Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recognise and use different digital devices	Name a range of digital devices in the classroom	Identify examples of computers and describe some uses of computers	Explain that digital devices accept inputs and produce outputs	Describe the internet as a network of networks and demonstrate how information is shared across the internet	Describe that a computer system features inputs, processes, and outputs and explain that computer systems communicate with other devices	Use a search engine - complete a web search to find specific information, refine the search and compare results from different search engines
Understand that you can access content on a digital device	Understand that you can share digital content	Explain the purpose of information technology in the home	Identify input and output devices	Explain how the internet allows us to view the World Wide Web;	Identify tasks that are managed by computer systems	Describe how search engines select results and recognise the role of web crawlers in creating an index
Recognise the basic parts of a computer, e.g. mouse, screen, keyboard	Explain what the basic parts of a computer are used for, e.g. mouse, screen, keyboard	Identify information technology beyond school giving examples	Recognise and explain how digital devices can be used for different activities	Outline how websites can be shared via the World Wide Web and where they are stored	Recognise that data is transferred over the internet and that networked digital devices have unique addresses	Explain how search results are ranked and suggest some of the criteria that a search engine checks to decide on the order of
Recognise key parts of a keyboard, e.g. spacebar, numbers, letters	Recognise and use a range of output devices e.g. printer, speakers, monitor, screen	Explain how information technology benefits us - demonstrate how information technology is used in a shop and explain how information technology helps people	Suggest differences between using digital devices and non-digital tools	Describe how content can be added and accessed on the World Wide Web	Recognise that connected digital devices can allow us to access shared files stored online and that the internet allows different media to be shared	Explain the different ways in which people communicate using technology
Use a simple password when logging on, where relevant	Use a simple password when logging on, where relevant	List different uses of information technology recognising how to use information technology responsibly	Explain how a computer network can be used to share information using multiple connections	Explain how websites and their content are created by people	What are the benefits of working together in a shared project online	Compare different methods of communicating on the internet and decide when you should and should not share
Add text to a document using the keyboard (where appropriate)	Recognise and use a range of input devices e.g. mouse, keyboard, microphone, touchscreen	Identify the choices that are made when using information technology	Explore how digital devices can be connected and explain the role of a switch, server, and wireless access point in a network	Explain why everything on the World Wide Web is not true and why you need to think carefully before sharing or resharing content	Identify different ways of working together online and explain how the internet enables effective collaboration	
Use a mouse, touchscreen or appropriate access device to target and select options on screen						
Understand you can access the same content on different devices	Understand that you can find information on a website		Identify the physical components of a network and describe the benefits of a network			
	Understand that you can use a search engine to find information using keyword searches					
Understand that information and media can be stored on a digital device, e.g. they ask to view a photo that has been	Know where to save and open work					
	Recognise that a range of devices contain computers e.g.					
	Understand that all devices, program, websites, apps and games are designed and manufactured by real people to					

Computing Progression- Digital Data Handling

Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Able to sort objects into 1 or more categories	Recognise that digital content can be represented in many forms e.g. charts, tables, or branching databases; and why we use them	Recognise different types of data e.g., text, number	Appreciate that different programs work with different types of data e.g. text, number	Aware of the difference between data and information	Understand the difference between data and information	Performs more complex searches for information e.g. uses Boolean and relational operators
Able to answer basic questions about information displayed in images e.g. more or less	Distinguish between different forms of data representation and can explain different ways that they can communicate information	Appreciate that programs can work with different types of data	Able to explore a record database to find out information	Use the sort feature in a flat file to refine searches for information	Know why sorting data in a flat file can improve searching for information	Analyses and evaluates data and information, and recognises that poor quality data leads to unreliable results, and inaccurate conclusions
Collect simple data on a topic e.g. likes/dislikes	Use specific software to create simple charts	Recognise that data can be structured in tables to make it useful	Understand the benefits of using a computer to create charts and databases	Begin to use filters in a database to find out information	Use filters in a database to find out specific information	Use filters in a database to find out specific information
Able to present simple data using images e.g. number of animals, shapes	Collect data on a topic (eye colour, pets, etc)	Present data in a pictogram independently	Understand that search engines store information in databases	Able to perform single criteria searches for information	Present data in different ways to convey information	Present data in an increasing number of ways to effectively convey information
	Create a branching database using pre-prepared images and questions	Independently plan out and create a branching database	Begin to present data in a number of ways to convey information	Design a questionnaire with support and collect a range of data on a theme	Design a questionnaire independently and collect a range of data on a theme	Design a questionnaire independently and collect, present and analyse a range of data on a theme
	Identify an object using a branching database	Recognise an error in a branching database	Enter data into a database package and test	Draw conclusions from information stored in a database, table or chart	Analyse and interrogate data stored in a database, table or chart	Analyse and interrogate data stored in a database, table or chart
	Identify an object by asking yes/no questions	Evaluate a given branching database and suggest improvements				
	Explain information shown in a simple chart, pictogram or database	Understand that questions are important when collecting data				

Computing Progression- Digital Media

| Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Use technology to explore digital content	Explore the keyboard to write and add text on a computer and remove text by using backspace	Know how to edit digital content to improve it	Know how to edit digital content to improve it with clear purpose	Know how to edit digital content to improve it with clear purpose with some consideration for the given audience	Identify and use appropriate hardware and software to fulfil a specific task	Identify and use appropriate hardware and software to fulfil a specific task
Operate a digital device with support to fulfil a task	Make changes to text and explain why you chose the tools you use	Apply edits to digital content to achieve a particular effect	Edit digital content to improve it according to feedback	Edit existing media to make new content with an awareness of copyright	Remix and edit a range of existing and their own media to create content	Remix and edit a range of existing and their own media to create content
Create simple digital content e.g. digital art	Compare writing on a computer and writing on paper and can say which you prefer	Identify what makes good or bad digital content, e.g. poor sound recordings, unfocussed images	Evaluate their own and existing digital content	Collaborate with peers using online tools e.g. blogs, Google Drive, Office 365	Understand the benefits of technology to collaborate with others	Understand the benefits of technology to collaborate with others
Choose a digital device from a selection to complete a specific task	Know how to create digital content using the tools within a simple art or writing package	Select media with support to present information on a topic e.g. images, video, sound	Select media independently to present information on a topic e.g. text, images, video, sound	Collect, organise and present information effectively using a range of media	Be aware of a range of Internet services to aid collaboration e.g. email, VOIP Voice Over Internet Protocol - Skype, Hangouts, FaceTime), World Wide Web, and what they do	Select, combine and use Internet services to fulfil a purpose
Choose media to convey information, e.g. image for a poster	Begin to select basic options to change the appearance of digital content	Plan out digital content e.g. use a storyboard to sequence an animation	Design and create digital content for a specific purpose	Use a range of tools to edit and enhance media for a particular effect	Recognise the audience when designing and creating digital content	Evaluate their own content against their own success criteria and make improvements accordingly
Access and playback captured digital content	Know how to capture media (digital images, video or audio) using digital devices					
	Combine media with support to present information e.g. text and images					
	Access and edit captured digital content					

Computing SMSC Links

We promote **Spiritual** development	We promote **moral** development	We promote **social** development	We promote **cultural** development
By wondering at the power of the digital age e.g. use of the internet	By exploring the moral issues surrounding the use of data.	By discussing the impact of ICT on the ways people communicate e.g. Skype and email	By using technology to further our understanding of cultures and beliefs.
By understanding the advantages and limitations of ICT	By considering the vision of those involved in developing the internet	By using technology to further out understanding of the world we live in.	
By developing a sense of awe and wonder at human ingenuity	We encourage children to consider the benefits and potential dangers of the internet e.g. cyber bullying	At Gosberton Academy, we highlight ways to stay safe when using online services and social media.	

British Values: At Gosberton Academy, we use strategies within the national curriculum and beyond to secure an understanding of British Values for learning. We weave the British Values throughout all of our lessons. A high proportion of class based work sees the value of mutual respect woven throughout the lessons. From sharing ideas, celebrating good work, valuing others contributions, or discussions and debates – mutual respect is key. Teachers and staff aspire to create classroom environments where respect and tolerance are highly prioritised.

Computing at Gosberton Academy
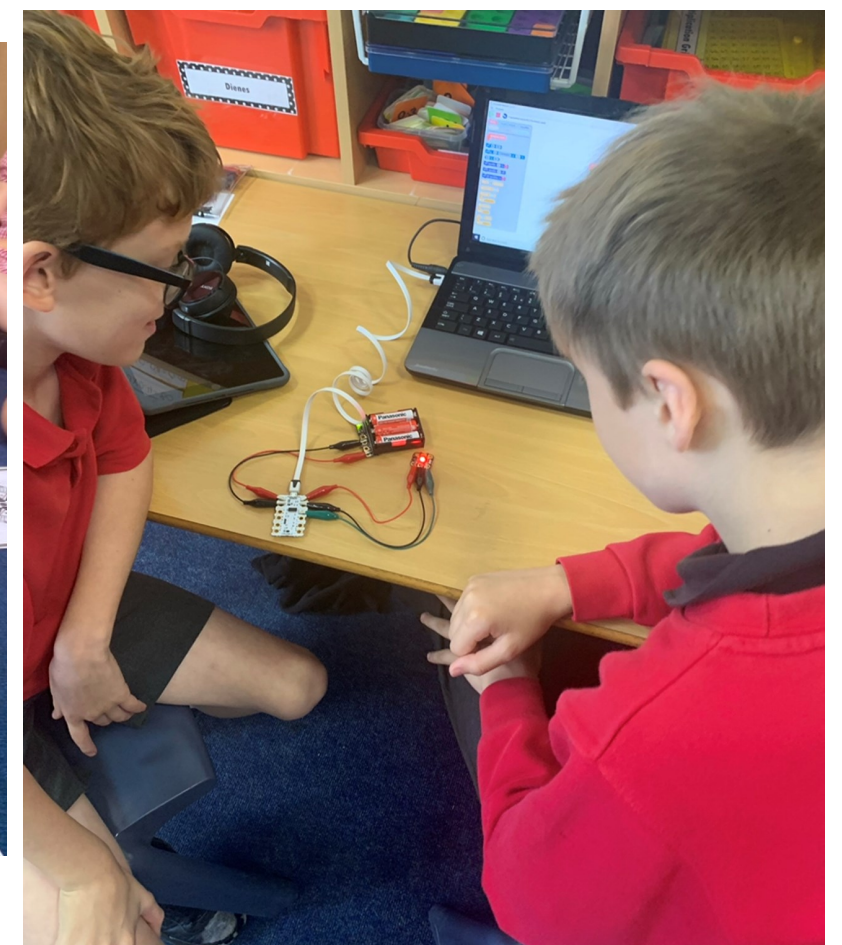
"I enjoy using computers in Literacy. We use programs like Word to publish our writing."

Year 6

"I love learning new things that I can take home and show my family and then teach them."

Year 1

"I love being a computer scientist. It's really interesting writing codes and debugging them. "

Year 5

What do we love about Computing at Gosberton?

"I enjoy working with my friends. One of us is always the driver and the other is the navigator. We have to listen carefully and work as a team."

Year 4

"We have so much more technology than what our parents have. It's so important to know because the"

Year 3

Capturing Our Knowledge

Assessments: Low stake Quizzes, Questioning and Quick fire

Self Assessments and Peer Reviews

Enquiry based lessons

Progressive Curriculum building on prior knowledge

Retrieval based activities

Application of knowledge through cross curricular

Knowledge Organisers

Pre-Teaching

Transition preparation for Secondary School and across phases with Primary

Use of different Apps such as Scratch, Alex and Crumble

Learning by Questions

GOSBERTON ACADEMY