

"There is a world of difference between what computers can do and what society will chose to do with them." – **Seymour Papert**

# Computing Handbook

Approved by: Headteacher & SLT

Last reviewed: April 2022

Next review: July 2023

## Intent

Children to be critical thinkers and use resources cross curricular to enhance learning and be adaptive users of technology for the present and for the future.

## Implementation

### **Why has the specific content knowledge been selected?**

The National Curriculum gives a broad coverage for Computing. This allows us to be selective as to when the units of work are taught. We have designed the Computing curriculum to ensure it is well-sequenced, has a clear progression and end point. Reading and vocabulary is at the heart of the Computing curriculum.

### **Why is it taught in the order that it is?**

We have a split the Computing curriculum into four sections which runs through Gaskell to allow children to deepen their knowledge and understanding whilst giving plenty of opportunity for long term memory links.

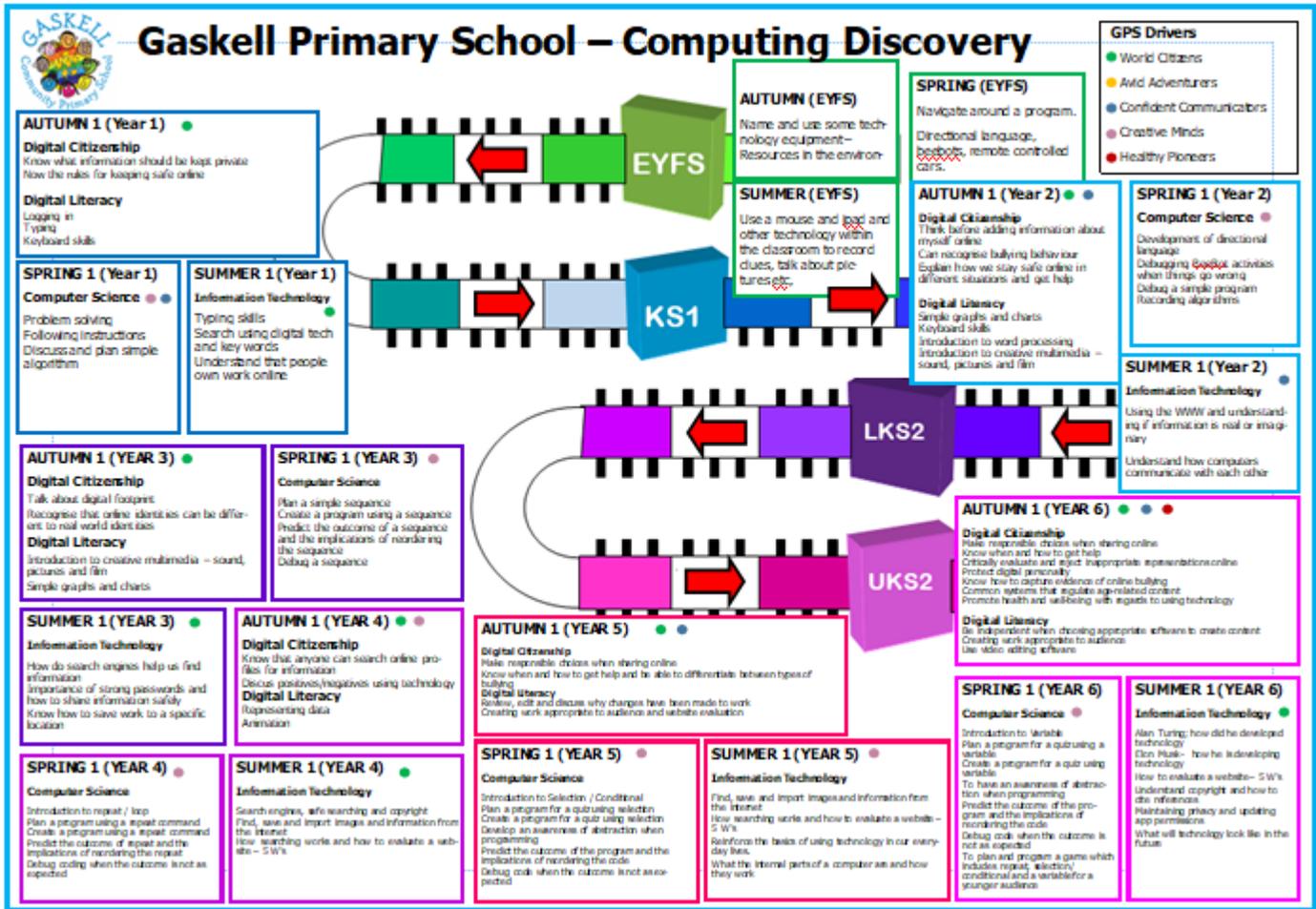
### **How are Computing lessons taught at Gaskell Primary School?**

The topics start with a vocabulary focus linked to the subject specific and topic specific words needed to ensure they can apply the knowledge and skills needed to make progress. Reading links are vital and we adapt a cross curricular approach to the topics. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. Each year the Computing curriculum is split into Digital Citizenship, Digital Literacy, Computer Science and Information Technology, this is so children can learn a range of skills and build upon prior knowledge each year. Children are assessed against the iCan statements so teachers know their next steps in learning.

## Impact

After the implementation of this robust computing curriculum, children at Gaskell will be digitally literate and able to join the rest of the world on its digital platform. They will be equipped, not only with the skills and knowledge to use technology effectively and for their own benefit, but more importantly – safely. The biggest impact we want on our children is that they understand the consequences of using the internet and that they are also aware of how to keep themselves safe online. As children become more confident in their abilities in Computing, they will become more independent and key life skills such as problem-solving, logical thinking and self-evaluation become second nature.

# Curriculum Structure



Within this curriculum Digital Citizenship, Digital Literacy, Computer Science and Information Technology are developed and extended each year. Each year builds on previous years' knowledge and skills to enable children to build up essential skills to be used throughout their time at school.

Appropriate key Computer Scientists, skills and key findings are then matched to this knowledge to support children in learning about these Computing skills at the appropriate level. The chosen Computer Scientists are sequenced to match the skills chosen and to link into other subject topics of study where appropriate. Consideration has been given to the breadth and balance of the coverage of the contextual knowledge to ensure a diverse range of technology, skills, and resources are used well and represented throughout.

Computing will be taught in weekly sessions to enable children to build up a variety of skills every half term. Children only access the use of technology once they have completed their first half term of Digital Citizenship where they learn to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Children will be encouraged to explore Computing in everyday life and trips out will be part of some topics. Computing will also be used for cross-curricular activities and this will enhance their range of skills further.

# Planning

Teachers refer to the knowledge organisers/mats and the toolkits to plan their half term of lessons, this can be the knowledge then the skills alone or this can also be completed cross curricular with links to other subjects. Teachers ensure the vocabulary is taught first of all and fed through their lessons each week.



Knowledge Mat – Digital Citizenship – Year 6

**National Curriculum Links: KS2 Computing**

Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Digital Citizenship Vocabulary	
<b>Digital Citizens</b>	A person who develops the skills and knowledge to be online safely and effectively
<b>Digital footprint</b>	The information about you that exists on the internet as a result of your online activity
<b>World Wide Web</b>	Is a collection of webpages found on a network of computers
<b>Privacy settings</b>	These settings allow you to control who sees information about you
<b>Social media</b>	Websites and apps that enable users to create, share or participate whilst online
<b>Self-Image and identity</b>	Ideas that you have about your own qualities and abilities and knowing that this is what makes you unique
<b>Online relationships</b>	Understanding relationships and behaviours that may harm and how positive online interaction can empower the user
<b>Online reputation</b>	What kind of person others think you are based on the things you say and do online
<b>Online bullying</b>	Understanding how to report your concerns and to consider how bullying and the impacts of such behaviour
<b>Health and Wellbeing</b>	Understanding the impact technology has on health, well-being and lifestyle, understanding the positives and negatives and strategies to deal with them

**I can...**

**DL6.1** talk about my digital footprint and the importance of asking until I get the help needed

**DL6.2** identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online

**DL6.3** describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline

**DL6.4** explain how sharing something online may have an impact either positively or negatively

**DL6.5** describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not

**DL6.6** explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of **anonymity**

**DL6.7** describe how to capture bullying content as evidence to share with others who can help me

**DL6.8** I can describe common systems that regulate age-related content (e.g.PEGI, BBFC, parental warnings) and describe their purpose

**DL6.9** I can assess and action different strategies to limit the impact of technology on health

**What should you do if you get a 'butterfly feeling' when online?**

Remember to save evidence of the thing that has made you feel uncomfortable.

Check your privacy settings and use the tools in the game / app to block and report the user.

If you need further advice, there are sites that can help. E.g. CEOP, Barnardo's and Childline



THINK

Is it true?  
Is it helpful?  
Is it inspiring?  
Is it necessary?  
Is it kind?

My Digital Footprint



PEGI

(Pan European Game Information)  
What are the possible issues of accessing games that are a higher PEGI rating?

3

7

12

16

18

Media Pressures

How can young people get support if they are worried about pressures from social media?



When planning each topic of Computing, teachers will use the Toolkits and knowledge organisers/mats to embed the words and knowledge into children's computing lessons. Each half term children will be introduced to their new vocabulary for that half term. Weekly reviews of the vocabulary before each new computing lesson will ensure that children are constantly recapping the words and their meaning. This leads to 'sticky knowledge' of new vocabulary so that children are aware of their objectives and skills for that half term. The vocabulary follows the intent and skills progression of computing and links directly to each year group's objectives. Each year, children learn new words and knowledge linked to their learning and also repeat certain words from previous years to ensure they have a solid understanding of their objectives and skills for that half term. Going up throughout school, this means that children should become clearer about computing skills and vocabulary and become more confident with what each one entails.

## Computing for Year 6

### Year 6 - Long Term Overview

Autumn term Opportunity to intertwine these two strands where appropriate	
Digital Citizenship	Digital Literacy
Make responsible choices when sharing online Know when and how to get help Critically evaluate and reject inappropriate representations online Be kind and respect others online Protect digital personality Know how to capture evidence of online bullying Common systems that regulate age-related content Promote health and well-being with regards to using technology	Be independent when choosing appropriate software to create content Creating work appropriate to audience Use video editing software
Spring Term – Computer Science Focus: Variable - part of a program that can change	
<b>Spring 1</b> – Consolidation of algorithms, program, sequences, repeat and selection/conditional To know the different between an algorithm and a program To plan and program using a repeat To plan and program a quiz using selection Predict the outcome of the program and the implications of reordering the code Debug code when the outcome is not as expected To have an awareness of abstraction when programming Transfer skills between different software	<b>Spring 2</b> – introduction to <b>Variable</b> Plan a program for a quiz using a variable Create a program for a quiz using variable To have an awareness of abstraction when programming Predict the outcome of the program and the implications of reordering the code Debug code when the outcome is not as expected To plan and program a game which includes repeat, selection/conditional and a variable for a younger audience Transfer skills between different software
Summer 1 Information Technology	Summer 2 Consolidation project for Digital Literacy
Research: Alan Turing; how did he developed technology Elon Musk - how he is developing technology How to evaluate a website – 5 W's Understand copyright and how to cite references Maintaining privacy and updating app permissions What will technology look like in the future	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals (NC 2014)  <b>Possible Project ideas:</b> <b>Literacy</b> - create a short film about end of Primary school <b>Science</b> - Time elapse video about decomposition <b>Computer Science</b> - Game creation including writing instructions and marketing materials

Key Objectives for each half term are outlined on the Long Term Overview document. Children's learning is evidenced weekly on Seesaw in each classes computing folders. The development of skills, research, exploration, and practice is recorded here, where appropriate teachers/children may add a copy of their finished work and any self and peer assessment.

## Assessment

Building a picture of what children know, understand and can do in each computing unit is essential for moving their learning forward. The knowledge, understanding and skills specified in the computing objectives should form the basis of your discussions with children and inform your observations. The information you gather during each unit about the performance of individual children and groups will enable you to provide carefully tailored feedback, questioning, explanation and support, according to their needs. When each unit has been completed, teacher assessments are updated to the termly tracking tool (Insight). Seesaw will also be used to support objectives and showcase evidence through images, work and videos of explanations.

### Year 6 - ICan Statements - Information Technology

FOCUS: HISTORY AND THE FUTURE OF COMPUTING Alan Turing & Elon Musk		
KS2: Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content		
Education for a Connected World Managing online information Privacy and security Copyright and ownership	<p>IT6.1 I can explain how search engines work and how results are selected and ranked</p> <p>IT6.2 I can explain how to use search technologies effectively</p> <p>IT6.3 I can explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal</p> <p>IT6.4 I can describe how some online information can be opinion and can offer examples</p> <p>IT6.5 I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online (e.g. advertising and 'ad targeting' and targeting for fake news)</p> <p>IT6.6 I can describe how and why people should keep their software and apps up to date, e.g. auto updates</p> <p>IT6.7 I can describe simple ways to increase privacy on apps and services that provide privacy settings</p> <p>IT6.8 I can describe strategies to help me identify such content (e.g. scams, phishing)</p> <p>IT6.9 I can demonstrate how to make references to and acknowledge sources I have used from the internet</p> <p>IT6.10 I can suggest what technology might look like in twenty years' time</p> <p>I understand the concept of persuasive design and how it can be used to influence peoples' choices</p> <p>I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser)</p> <p>I can explain what to do if a password is shared, lost or stolen</p> <p>I can describe ways in which some online content targets people to gain money or information illegally;</p> <p>I know that online services have terms and conditions that govern their use</p> <p>I can demonstrate the use of search tools to find and access online content which can be reused by others</p> <p>I can independently save and retrieve work from different places</p>	
Possible Resources: Resources and lesson plans for the Education for a Connected World ICan statements - Purple Mash <a href="https://tinyurl.com/vfxb5786">https://tinyurl.com/vfxb5786</a> Project evolve <a href="https://projectevolve.co.uk/">https://projectevolve.co.uk/</a> KS2 BBC Computing - <a href="https://www.bbc.co.uk/bitesize/subjects/zvnrq6f">https://www.bbc.co.uk/bitesize/subjects/zvnrq6f</a>	Networks- Purplemash Unit6.6 2Type to develop typing skills Link to Bolton Schools ICT resources for Year 6 including Pioneer PowerPoint & Quiz and videos Opportunities for Reading (see Information technology Book list in appendices <a href="#">Technology timeline</a>	
Assessment - Emerging	Expected	Secure
Barriers to learning	Questions evidencing greater depth	
	Tell me how... How would I ...	Explain it to ... Would you rather...
Enrichment Opportunities:		

The 'I can statements' are what the children will achieve each half term. Each year group and each strand have their own 'I can statements'. The statements link to the objectives on Insight, as the year progresses, children will achieve the objectives which are linked to the National Curriculum. This gives teachers a good overview of what each child can achieve against each 'I can statement'. In the assessment boxes, teachers write the names of children who fall into emerging, expected and secure by analysing each 'I can statement'. Teachers are encouraged to use a range of question types which links to Rosenshine's Principles. For those children who are achieving greater depth, we ensure we use open ended explanation type questions such as 'tell me how' and encourage children to explain

their thinking to others as this deepens their understanding and the teacher gains a good knowledge of children who are achieving the greater depth.

Here are some examples as how Computing is evidenced on Seesaw weekly in each year group.



LO: I can use selection to create games in which the user must make a choice.

I can save my work so that others know it belongs to me.

