Lindow
Community
Primary School

Computing Staff Handbook

Updated September 2024

Contents

INTENT: How should Computing be delivered at Lindow

At Lindow Community Primary School, our intent is for all our children to secure knowledge of computer science and computational skills in order to use and apply these safely in our increasingly digitised world. By the time children transfer to the next stage of their education, they will be computer literate and confident to use and express themselves through information and communication technology, develop coding skills, and ensure they are aware of the risks of the digital world.

At Lindow, we want students to master their computing knowledge and skills. The end points are made clear to staff and students at the beginning of each unit of work via student e-portfolios.

The Computing curriculum is comprised of three strands: Computer Science, Information Technology, and Digital Literacy. Each of these strands can have highly heterogenous learning outcomes resulting in a need to have altered style of pedagogy, feedback and assessment.

For Computer science, students will need to demonstrate essential skills and the pedagogical paradigm can be led by the process model of coding confidence:

Working Towards	**USE**	Using the code to some extent, but not confident or skilled enough to understand how to manipulate the code
Expected	**EDIT**	Students show evidence of understanding the code and can edit the code to suit a different purpose
Greater Depth	**CREATE**	Students use the code creatively without guidance. They are not simply editing code, but they can create original outputs beyond what has been explicitly taught.

For Information Technology, students will be expected to demonstrate essential knowledge of the evolving digital world we live in. These units will have a greater emphasis on developing students' wealth of knowledge (rather than just skill) on how the digital world operates.

For digital literacy, students will need to show they are competent with using technology and are highly aware of the risks that come with it.

Throughout all of computing it is imperative that we allow regular opportunities to discuss the risks of the digital world, covering, as discussed in the KCSiE document, the 4Cs of online safety: conduct, contact, commercialism and content.

Although this is also covered in Assemblies and the PSHE curriculum explicitly, as regularly as possible, teachers will lead discussions and activities that develop this awareness through their computing lessons.

IMPLEMENTATION: What should student work look like?

At Lindow, we follow the Teach Computing scheme of work.

All of the curriculum objectives are covered through our progressive and well-sequenced lessons. Please refer to this KS2 or KS1 database for a breakdown by lesson for intended National Curriculum objectives coverage and appendix 2 for intended coverage over each unit.

Each student has a unique login for Google Classroom and work should be evidenced, as often as possible on an e-portfolio

The first two pages for each e-portfolio across the school should be made up of a cover page for the unit and the Success Criteria, like the example below.

Lindow Community Primary School

Year 5 Computing

Unit 1: Systems and Searching

Unit Success Criteria

Lesson	Learning objectives
1 Systems	To explain that computers can be connected together to form systems • I can explain that systems are built using a number of parts • I can describe the input, process, and output of a digital system • I can explain that computer systems communicate with other devices
2 Computer systems and us	To recognise the role of computer systems in our lives • I can identify tasks that are managed by computer systems • I can identify the human elements of a computer system • I can explain the benefits of a given computer system
3 Searching the web	To identify how to use a search engine • I can make use of a web search to find specific information • I can refine my web search • I can compare results from different search engines
4 Selecting search results	To describe how search engines select results • I can explain why we need tools to find things online • I can recognise the role of web crawlers in creating an index • I can relate a search term to the search engine's index
5 How search results are ranked	To explain how search results are ranked • I can order a list by rank • I can explain that a search engine follows rules to rank results • I can give examples of criteria used by search engines to rank results
6 How are searches influenced?	To recognise why the order of results is important, and to whom • I can describe some of the ways that search results can be influenced • I can recognise some of the limitations of search engines • I can explain how search engines make money

In line with the Keeping Children Safe in Education guidance, it is important that we offer opportunities to develop awareness of Online Safety at every opportunity. Though Online Safety is a theme within PSHE and through whole school assemblies, etc, computing lessons are an essential part of this. The third page of each portfolio should then be a grid where students can – throughout the unit – add to their knowledge of the 4Cs (contact, conduct, commercialisation and content) relevant to the unit they are covering. For guidance on what could be discussed, look to the appendices for some suggestions.

Lindow Community Primary School

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Staying Safe Online

Conduct	Contact
Content	Commercialisation

An example completed by a student could look like:

Staying Safe Online

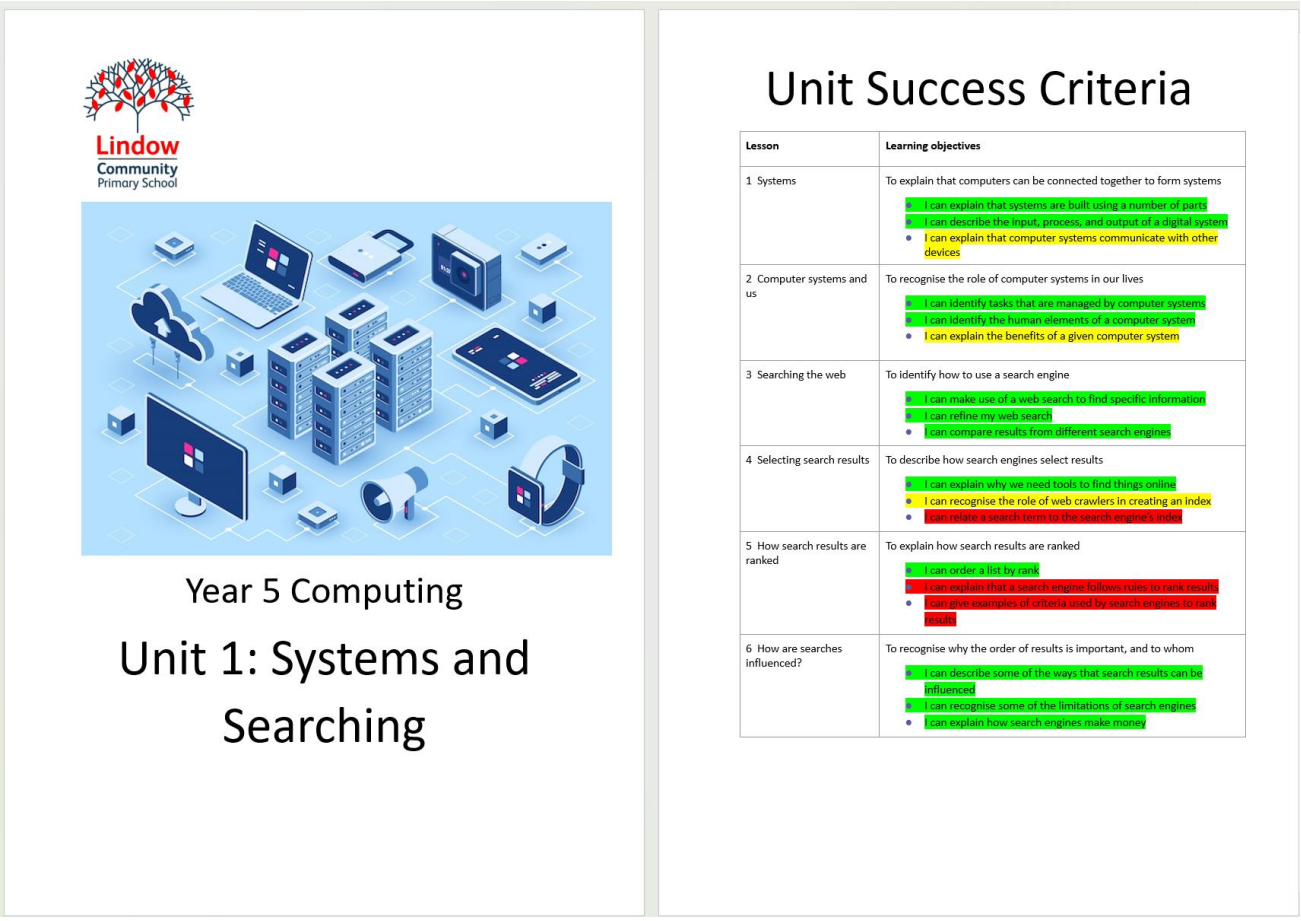
Conduct	Contact
I shouldn't share anything online that is rude or offensive. Ask consent if I share something involving someone else.	People online may not be who they say they are Never meet with someone you meet online
Content Don't trust everything you see online Why are these results at the top. Sponsored ads at the top of search results may not be relevant	**Commercialisation** My data is being tracked Don't accept all cookies as they track what sites I go on and what I search for. Is Ecosia a better search engine than google? Sponsored ads at the top of search results are there because they have paid to be

This sheet may look different for every unit, relevant to the specific content of the module.

IMPLEMENTATION: Metacognition and evidence of progress

Students need to be aware of the areas of the curriculum they need to develop their understanding of. The success criteria grid in their portfolios is an important way for students to know how they are doing through the unit. This is adaptive. If a criterion is highlighted red at the beginning of the unit, it can be changed to green if they have provided evidence of improving.

Students should be able to answer the question "what do you need to improve in this unit?" by showing this grid. They should also be able to answer the question "do you know *how* to improve?"



Lindow Community Primary School

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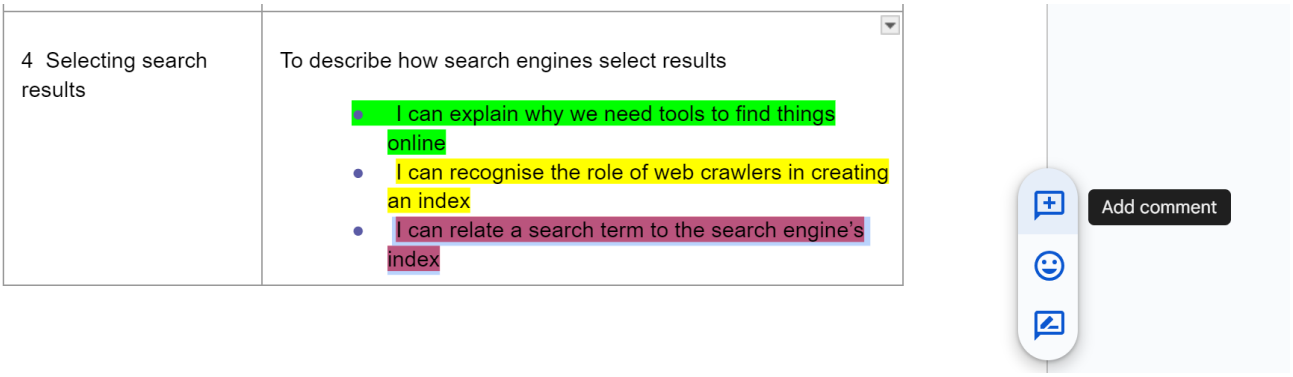
Either by using methods in the formative assessment section of this handbook or through written teacher feedback on the e-portfolio, students will develop an understanding of how to improve.

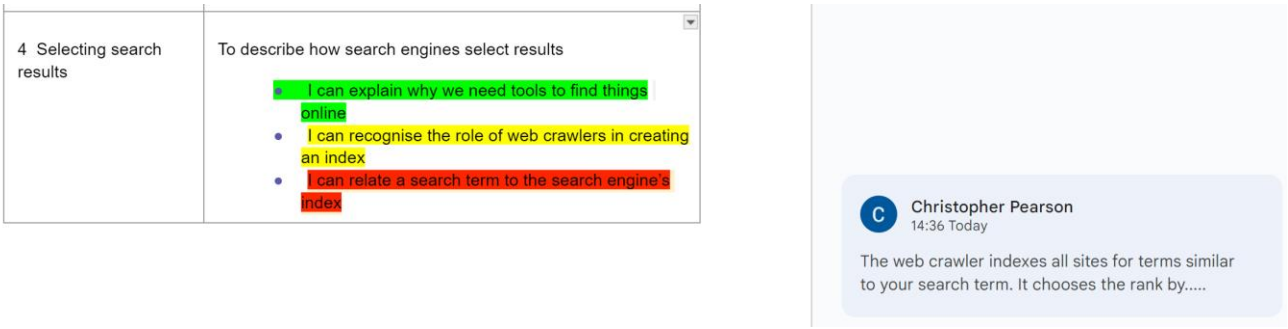
IMPLEMENTATION: Feedback

Evidence of student teacher dialogue and student improvement through the e-portfolio

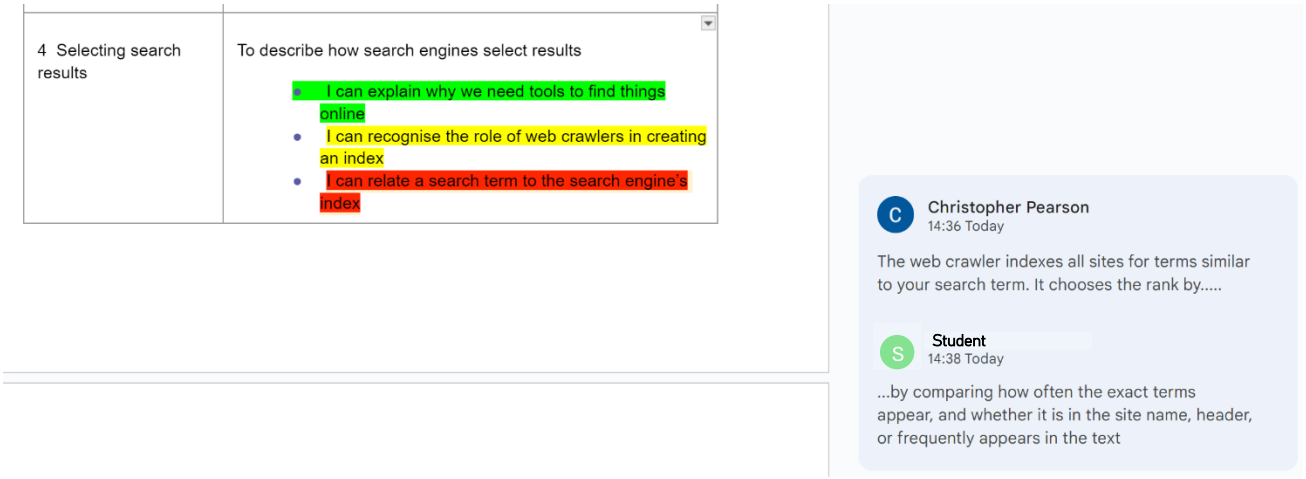
When a student's Success Criteria grid has been RAG-ed, and a student has an amber or red, one way for a student to know how to improve is to leave a comment for that sentence. Highlight the sentence, like the red one below and select "add comment"



Here is some feedback relating to the red criterion:



Students can then respond to your comment demonstrating their knowledge gained through discussion with teacher or peers.

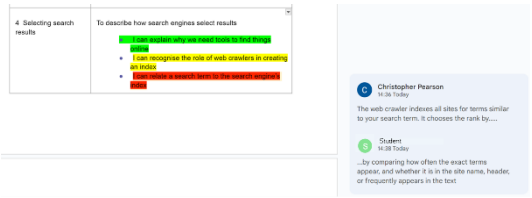


This dialogue can appear throughout the student's portfolio, not simply on the success criteria, when misconceptions arise.

IMPLEMENTATION: Formative Assessment

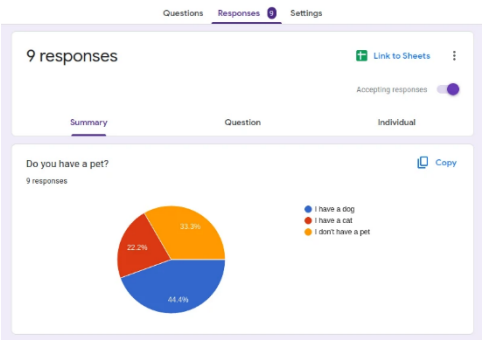
1. **Portfolios** – Use of e-Portfolios on the Google Classroom for each pupil to contain digital work and receive feedback, in the moment. Teachers can look at any student's work, live, on their device.

2. **Teacher Feedback** – Face-to-face or using digital 'marking' strategies such as adding text comments in portfolios. It could even be audio or video files



3. **Screen casting –** Screen casting provides excellent opportunities for pupils to reflect on others work. This could be an opportunity to share *what a good one looks like* (WAGOL) or provide peer feedback to an individual that needs guidance to develop their work. This can be easily achieved by taking the classroom screen's HDMI cable out and placing it in the Chromebook.

4. **Slow-stakes diagnostic testing** – Creative online interactive quizzes from Google Forms, scanning QR codes or Diagnostic Questions. These can provide anonymised graphical representations of the class results to be displayed on screen and prompt class discussion about common errors. This feedback is in-the-moment and the subsequent teaching task should be adaptive to the needs highlighted.



IMPACT: Summative assessment

1. **Teacher assessed tasks/projects** – Using end-of-unit open-ended project tasks allow pupils to demonstrate learning. These tasks are teacher assessed. This task, that could span the work of several lessons must meets the units' end goals.
2. **Google Forms** – multiple choice quizzes that assess knowledge of learning objectives for the unit. Data is provided instantaneously and anonymised class feedback can be displayed to prompt discussion immediately after the assessment to address common misconceptions.

Owing to the reading skills and the nature of the computing lessons in EYFS and KS1, all assessments will be teacher assessed.

In KS2, ready-made Google Forms will be used for the knowledge-rich units. This way, the data from these can be benchmarked against subsequent year groups offering a more objective form of data.

Here are the links to the Google Form assessments, please make a copy for your Google Classroom.

Year 3 - Computer systems and networks - Connecting computers

Year 3 - Branching databases

Year 3 - Programming B - Events and actions in programming

Year 4 - Computer systems and networks - The internet

Year 4 - Programming A - Repetition in shapes

Year 5 - Data - Flat file databases

Year 5 - Computer systems and networks - Systems and searching

Year 5 - Programming B - Selection in quizzes

Year 6 - Computer systems and networks - Communication and collaboration

Year 6 - Data - Introduction to spreadsheets

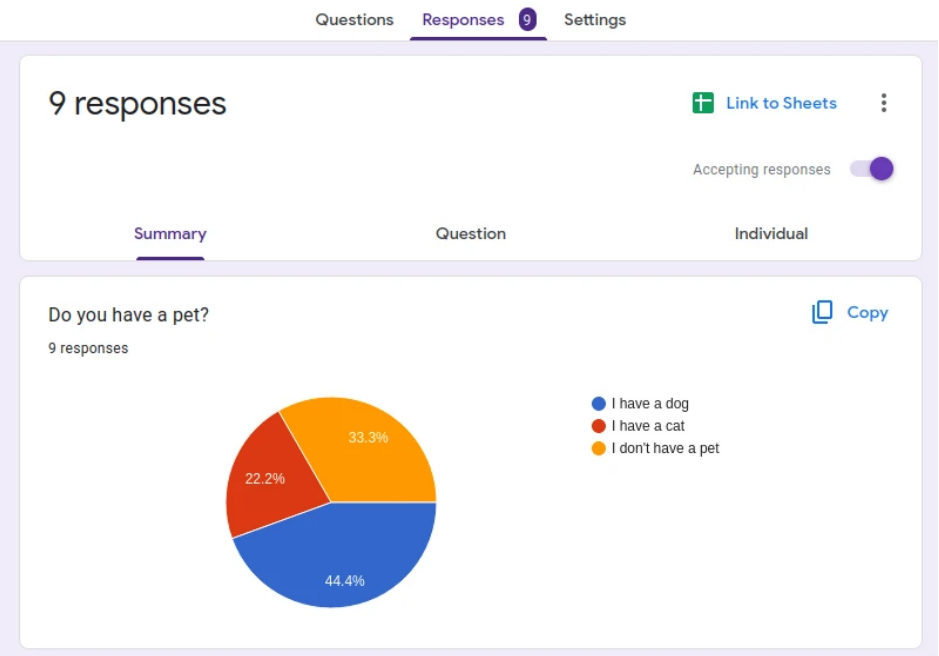
Year 6 - Programming A - Variables in games

The distribution of teacher and quiz assessments throughout KS2, is shown in the table below.

	Computing Systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
Year 3	Connecting computers **Assessment Quiz**	Stop-frame animation **Teacher Assessed**	Sequencing sounds **Teacher Assessed**	Branching databases **Assessment Quiz**	Desktop publishing **Teacher Assessed**	Events and actions in programs **Assessment Quiz**
Year 4	The Internet **Assessment Quiz**	Audio production **Teacher Assessed**	Repetition in shapes **Assessment Quiz**	Data logging **Teacher Assessed**	Photo editing **Teacher Assessed**	Repetition in games **Teacher Assessed**
Year 5	Systems and searching **Assessment Quiz**	Video production **Teacher Assessed**	Selection in physical computing **Teacher Assessed**	Flat-file databases **Assessment Quiz**	Introduction to vector graphics **Teacher Assessed**	Selection in quizzes **Assessment Quiz**
Year 6	Communication and collaboration **Assessment Quiz**	Web page creation **Teacher Assessed**	Variables in games **Assessment Quiz**	Spreadsheets **Assessment Quiz**	3D modelling **Teacher Assessed**	Sensing movement **Teacher Assessed**

Teacher assessments should be based on a general sense of all the evidence in the unit that cannot be easily evidenced, however it is imperative that this aligns with the student's highlighted rubric in their e-portfolio.

The Google Form quizzes can also be a learning opportunity, by instantaneously showing how the class responded, visually and anonymously. Common errors can be addressed in the moments following the assessment.



IMPACT: Data and tracking

Data will be expected to be uploaded to Insight each half term, whether it is teacher assessed or quizzed.

For the units that use a Google Form as summative assessment, it is important that there is a consistent rule for our judgements so that we can objectively compare progress year-on-year. The table below offers clear thresholds for these judgements.

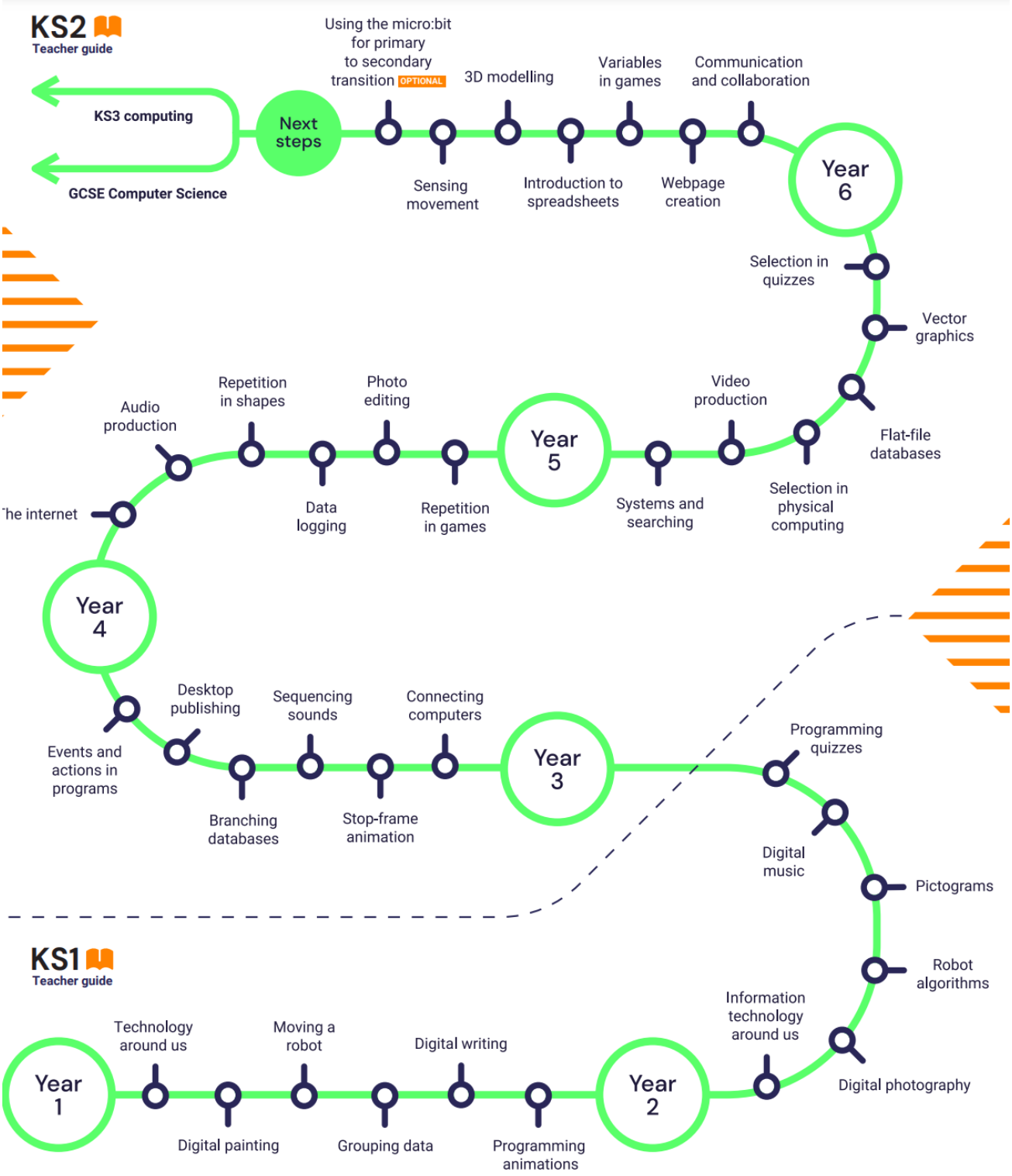
Below	Less than 30%
Working Towards	30%-50%
Expected	50-80%
Greater Depth	More than 80%

For these units, this data will be uploaded to Insight, the school data tracking software, without any additional evidence required to maintain data objectivity.

For those units that are teacher-assessed, teachers will input data to Insight for *Working Towards/ Expected / Greater Depth*. As this is a subjective judgement, it must be based on all evidence the teacher has seen through the unit and must be consistent with the highlighted (RAG-ed) success criteria that the student has on their e-portfolio. For example, a student that is judged *Working Towards* should have more reds and ambers than greens in their e-portfolio's RAG-ed success criteria.

Appendices

Appendix 1: Unit guide throughout school. Source: TeachComputing. Downloaded September 2024



Appendix 2: National Curriculum Coverage by unit.

Source: Teach Computing website, downloaded September 2024

National Curriculum Coverage – Years 1 and 2	1.1 Technology around us	1.2 Digital painting	1.3 Moving a robot	1.4 Grouping data	1.5 Digital writing	1.6 Programming animations	2.1 Information technology around us	2.2 Digital photography	2.3 Robot algorithms	2.4 Pictograms	2.5 Digital music	2.6 Programming quizzes
Understand what algorithms are, how they are 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			✓			✓			✓			✓
Use technology purposefully to create, organise, store, manipulate, and retrieve digital content	✓	✓		✓	✓		✓	✓		✓	✓	✓
Recognise common uses of information technology beyond school	✓		✓				✓	✓				
use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	✓			✓	✓		✓	✓	✓	✓		

National Curriculum Coverage – Years 3 and 4	3.1 Connecting computers	3.2 Stop-frame animation	3.3 Sequencing sounds	3.4 Branching databases	3.5 Desktop publishing	3.6 Events and actions in programs	4.1 The internet	4.2 Audio production	4.3 Repetition in shapes	4.4 Data logging	4.5 Photo editing	4.6 Repetition in games
design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts			✓			✓			✓			✓
use sequence, selection, and repetition in programs; work with variables and various forms of input and output	✓		✓			✓			✓	✓		✓
use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs			✓			✓			✓			✓
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					✓		✓	✓			✓	
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, including collecting, analysing, evaluating and presenting data and information	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		✓		✓			✓	✓			✓	

National Curriculum Coverage – Years 5 and 6	5.1 systems and searching	5.2 Video production	5.3 Selection in physical computing	5.4 Flat-file database	5.5 Introduction to vector graphics	5.6 Selection in quizzes	6.1 Communication and collaboration	6.2 Webpage creation	6.3 Variables in games	6.4 Introduction to spreadsheets	6.5 3D modelling	6.6 Sensing movement
design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts			✓			✓	✓		✓			✓
use sequence, selection, and repetition in programs; work with variables and various forms of input and output			✓			✓			✓			✓
use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs			✓			✓			✓			✓
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	✓						✓					
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use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	✓	✓						✓	✓		✓	

Appendix 3: Suggested 4C discussion points based on KS2 units.

Year Group	Unit Name	4Cs	Suggested discussions linked to 4Cs for the unit
3	Computing systems and networks – Connecting computers	Conduct and content	Risks of sharing information. Discuss the students' conduct in sharing information between devices. The content they share and can access can pose risks especially if they do not know who they are in contact with.
4	Computing systems and networks – The Internet	Content and conduct	Discussion on what disinformation is and that we should be cautious about trusting things we see online. Students need to be aware of the need to act responsibly if they publish something online
4	Creating media - Audio production	Conduct and content	The recording of someone can only be completed if they consent and understand how it will be shared. Students should understand that audio can be edited to make us believe false things.
4	Data and information – Data logging	Conduct	Discussion on consent to gather data. Students need to be aware that sound recordings should not be taken without consent - in this case, the data logger is only recording data on the decibels reached rather than recording the sounds.
4	Creating media – Photo editing	Conduct, contact and content	Discuss trustworthiness of images and the ethics of editing an image. Themes to consider: ◦Deepfakes ◦Photo editing for disinformation ◦Photo editing to propagate unhealthy beliefs on self-image by viewing unrealistic images of others ◦Trusting images and videos of those they are in contact with online, as they may have edited their image or live video using AI.

5	Computing systems and networks - Systems and searching	Content and commercialism	Discuss that websites are ranked not only by using web crawlers, but also by organisations paying to be promoted. Students need to understand the risks of searching websites and that the top results may be there for commercial reasons through advertising. Students should be taught to: Identify Ads. Understand the commercialism behind search engines and how they make money. Trust https over http URLsTo look for the secure padlock symbol. Understand the benefits of using more than one search engine.
5	Creating media - Video production	Content, contact and conduct	Understand that consent needs to be gained before taking videos of others. Appreciate that filming techniques and editing can give unrealistic impressions of reality. Discuss the need to conduct ourselves properly in videos at all times Consider who the audience of the video will be and the importance in considering the place for the video to be stored or shared. Discuss that once a video goes online or on social media, it can be copied and shared with people that were not the intended audience.
5	Data and information – Flat-file databases	Content and commercialism	Discuss how commercial entities collect online information in databases. Discuss cookies and online tracking. Discuss how commercial entities should store are information Discuss how commercial entities store our online data in databases to change what we see online.

6	Computing systems and networks - Communication and collaboration	Conduct, contact, content and commercialism	Discuss the importance of accessing online content safely and from trusted sources. Discuss the importance of the padlock symbol for websites to show the data on the site is secure. Discuss the alternative ways to communicate online, including social media. Discuss the risks of online contact; how we conduct ourselves in these communications, including what content is shared and what should not be shared. Discuss the need to question the person or groups that communications are happening with. Do they have an ulterior motive?
6	Creating media – Web page creation	Content and conduct	Information published on a website should be carefully considered. Do not share personal information or inappropriate content. Give students an opportunity to discuss who the intended audience is and recognise that once a website is published, unintended audiences might be able to access it. Discuss risk of linking to untrusted content of others.
6	Data and information – Spreadsheets	Content	Make sure the information gathered is appropriate and when data is collected, we need to gain consent and know who the intended audience is. Know that if you collect data, it is your responsibility to store it securely.