

The Herefordshire Primary Computing Progression (2014)

ASSESSMENT PAGES



Assessment

There are a good deal of questions around the area of assessment for the whole curriculum; it's also true to say that, for a variety of very good reasons, we never really got assessment of ICT right and so the challenges for assessment of computing are even greater. The Secretary of State decided that:

In order to ensure that every child is expected to master this content, I have ... decided that the current system of levels and level descriptors should be removed and not replaced.

And in every national curriculum programme of study the same statement on assessment is to be found:

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.

Further DfE guidance has made schools' responsibilities with regard to assessment clear (very much in line with previously):

Schools will be able to introduce their own approaches to formative assessment, to support pupil attainment and progression. The assessment framework should be built into the school curriculum, so that schools can **check what pupils have learned and whether they are on track to meet expectations at the end of the key stage, and so that they can report regularly to parents.** Full DfE article [here](#)

Miles Berry, in his excellent publication [Computing in the national curriculum: A guide for primary teachers](#) (pp 22-25) makes some very helpful suggestions as to how we might approach formative and summative assessment. Briefly these are:

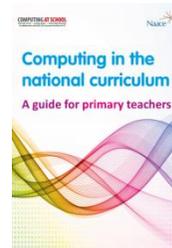
Self-assessment – where each child maintain a blog of their work; attaching examples and reflecting on learning

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Peer-assessment –perhaps through shared blog entries and comments on peers' blogs

Open questioning – by teachers

Target setting - using KWL lists (what pupils already know, want to learn, what they have learned)



Were teacher assessment takes place, teachers will use their professional judgement to determine the most effective method of gathering evidence of progress but in computing it will certainly require knowledge of the context in which work was completed rather than simple scrutiny of a finished outcome.

One good approach is to consider, perhaps on an annual basis, what a child has accomplished for each of the strands (CS, IT, DL). Then take into account attainment across all aspects and adopt a “best fit” approach when arriving at an overall judgement.

Miles Berry offers a breakdown of the programme of study statements to create a hierarchy (or progression) of learning. We have adapted his idea as one possible approach **in the first of the four assessment grids** below.

The assessment statements in the remaining three grids (one for each strand) draw on the first five levels of the [CAS Progression Pathways](#) document (created by [Mark Dorling](#)) but statements have been modified and in some cases moved to different stages / levels. The PoS extract from the first grid is also in the first column of these grids. It must be stressed that the numbering in both of these is not that from the old attainment targets but it is, at least for the tie being a system with which teachers will be familiar. It's highly likely that assessment will need a good deal more work!

SIMPLE ASSESSMENT GRID

	COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITEACY
1	<ul style="list-style-type: none"> Understand what algorithms are Create simple programs Understand that algorithms are implemented as programs on digital devices Recognise common uses of information technology beyond school 	<ul style="list-style-type: none"> Use technology purposefully to create digital content Use technology purposefully to store digital content Use technology purposefully to retrieve digital content 	<ul style="list-style-type: none"> Use technology safely Keep personal information private
2	<ul style="list-style-type: none"> Understand that programs execute by following precise and unambiguous instructions Debug simple programs Use logical reasoning to predict the behaviour of simple programs 	<ul style="list-style-type: none"> Use technology purposefully to organise digital content Use technology purposefully to manipulate digital content 	<ul style="list-style-type: none"> Use technology respectfully Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies
3	<ul style="list-style-type: none"> Write programs that accomplish specific goals Use sequence in programs Work with various forms of input Work with various forms of output 	<ul style="list-style-type: none"> Use search technologies effectively Use a variety of software to accomplish given goals Collect information Design and create content Present information 	<ul style="list-style-type: none"> Use technology responsibly Identify a range of ways to report concerns about contact
4	<ul style="list-style-type: none"> Design programs that accomplish specific goals Design and create programs Debug programs that accomplish specific goals Use repetition in programs Control or simulate physical systems Use logical reasoning to detect and correct errors in programs Understand how computer networks can provide multiple services, such as the World Wide Web Appreciate how search results are selected 	<ul style="list-style-type: none"> Select a variety of software to accomplish given goals Select, use and combine internet services Analyse information Evaluate information Collect data Present data Understand the opportunities computer networks including the internet offer for communication 	<ul style="list-style-type: none"> Identify a range of ways to report concerns about content Recognise acceptable/unacceptable behaviour
5	<ul style="list-style-type: none"> Solve problems by decomposing them into smaller parts Use selection in programs Work with variables Use logical reasoning to explain how some simple algorithms work Use logical reasoning to detect and correct errors in algorithms Understand computer networks, including the internet Appreciate how search results are ranked 	<ul style="list-style-type: none"> Combine a variety of software to accomplish given goals Select, use and combine software on a range of digital devices Understand the opportunities computer networks including the internet offer for collaboration Design and create systems Analyse data Evaluate data 	<ul style="list-style-type: none"> Be discerning in evaluating digital content

PoS extract: COMPUTER SCIENCE	Programming	Computers and networks
1 <ul style="list-style-type: none"> • Understand what algorithms are • Create simple programs • Recognise common uses of information technology beyond school 	<ul style="list-style-type: none"> • Understands what an algorithm is and can express some. • Understand that computers need precise instructions. • Demonstrates care and precision to avoid errors. • Creates a simple program on a programmable robot 	<ul style="list-style-type: none"> • Knows common uses of information technology in and beyond the classroom. • Recognises that all software executed on digital devices is programmed.
2 <ul style="list-style-type: none"> • Understand that algorithms are implemented as programs on digital devices • Understand that programs execute by following precise and unambiguous instructions • Debug simple programs • Use logical reasoning to predict the behaviour of simple programs 	<ul style="list-style-type: none"> • Understands that algorithms are implemented on digital devices as programs. • Executes, checks and changes programs, appreciating the need for precision. • Uses logical reasoning to predict outcomes of someone else's or their own program. 	<ul style="list-style-type: none"> • Shares their experiences of technology in school and beyond the classroom. • Recognises that any one of a range of digital devices can be considered a computer. • Recognises and can use a range of input and output devices. • Can save / open a file appropriately, locally and on a network for personal and shared use.
3 <ul style="list-style-type: none"> • Write programs that accomplish specific goals • Use sequence in programs • Work with various forms of input • Work with various forms of output 	<ul style="list-style-type: none"> • Uses diagrams to express solutions. • Uses logical reasoning to predict outputs showing an awareness of inputs. • Creates programs that implement algorithms for purpose. 	<ul style="list-style-type: none"> • Understands the difference between hardware and software, and their roles. • Understands the difference between the internet and internet services (e.g. the www)
4 <ul style="list-style-type: none"> • Design and create programs that accomplish specific goals • Debug programs that accomplish specific goals • Use repetition in programs • Control or simulate physical systems • Use logical reasoning to detect and correct errors • Understand how computer networks can provide multiple services, such as the World Wide Web • Appreciate how search results are selected 	<ul style="list-style-type: none"> • Shows an awareness of tasks best completed by humans and those for computers. • Designs solutions by decomposing a problem and creates a sub-solution for each (decomposition). • Recognises that different solutions exist for the same problem. • Designs algorithms and programs that use repetition 	<ul style="list-style-type: none"> • Understands why and when computers are used. Understands the main functions of the operating system. • Knows the difference between physical, wireless and mobile networks. • Knows how search results are selected, e.g. search engines use 'web crawler programs'.
5 <ul style="list-style-type: none"> • Solve problems by decomposing into smaller parts • Use selection in programs • Work with variables • Use logical reasoning to explain how some simple algorithms work • Use logical reasoning to detect and correct errors in algorithms • Understand networks, including the internet • Appreciate how search results are ranked 	<ul style="list-style-type: none"> • Recognises there are different algorithms for the same problem. • Understands the difference between, and appropriately uses if, if ... then and if ... else statements in programs • Write programs that include variables (e.g. a scoring system in a game) 	<ul style="list-style-type: none"> • Recognises and understands the function of the main internal parts of a computer. • Knows that there is a range of operating systems and software for the same hardware. • Understands how search engines rank results. • Understands data transmission over networks, i.e. IP addresses and packet switching. • Knows that computers use binary to represent data. • Understands how bit patterns represent numbers and images.

PoS ext: INFORMATION TECHNOLOGY	Multimedia	Data handling
<p>1</p> <ul style="list-style-type: none"> • Use technology purposefully to create digital content • Use technology purposefully to store ... • Use technology purposefully to retrieve ... 	<ul style="list-style-type: none"> • Uses software with supervision to create, store and edit digital content using appropriate file and folder names. • Understands that people interact with computers. • Talks about their work and makes changes to improve it. 	<ul style="list-style-type: none"> • Obtains content from the web using a web browser. • Recognises that digital content can be represented in many forms. • Distinguishes between some of these forms, can explain different ways that they communicate information.
<p>2</p> <ul style="list-style-type: none"> • Use technology purposefully to organise digital content. • Use technology purposefully to manipulate digital content. 	<ul style="list-style-type: none"> • Uses technology with increasing independence to purposefully organise digital content. • Shows awareness for the quality of digital content collected. • Uses a variety of software to manipulate and present digital content: data and information. • Talks about their work and makes improvements to solutions based on feedback 	<ul style="list-style-type: none"> • Navigates the web and can carry out simple web searches to collect digital content. • Recognises different types of data: text, number. Appreciates that programs can work with different types of data. Recognises that data can be structured in tables to make it useful.
<p>3</p> <ul style="list-style-type: none"> • Use search technologies effectively • Use a variety of software to accomplish given goals • Collect information • Design and create content • Present information 	<ul style="list-style-type: none"> • Collects, organises and presents data and information in digital content. • Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience e.g. blogging. • Makes appropriate improvements to solutions based on feedback, and can comment on the success of the solution. 	<ul style="list-style-type: none"> • Understands the difference between data and information. • Knows why sorting data in a flat file can improve searching for information. • Uses filters or can perform single criteria searches for information.
<p>4</p> <ul style="list-style-type: none"> • Select a variety of software to accomplish given goals • Select, use and combine internet services • Analyse / Evaluate information • Collect data / Present data • Understand the opportunities networks offer for communication 	<ul style="list-style-type: none"> • Makes judgements about digital content when evaluating and repurposing it for a given audience. • Recognises the audience when designing and creating digital content. • Selects, combines and uses internet services. • Uses criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution, and future solutions. 	<ul style="list-style-type: none"> • Understands how to use search engines effectively. • Performs more complex searches for information e.g. using Boolean and relational operators. • Analyses and evaluates data and information, and recognises that poor quality data leads to unreliable results, and inaccurate conclusions.
<p>5</p> <ul style="list-style-type: none"> • Combine a variety of software to accomplish given goals • Select, use and combine software on a range of digital devices • Analyse data / Evaluate data • Design and create systems • Understand the opportunities networks offer for communication 	<ul style="list-style-type: none"> • Evaluates the appropriateness of digital devices, internet services and application software to achieve given goals. • Designs criteria to critically evaluate the quality of solutions, uses the criteria to identify improvements and can make appropriate refinements to the solution. 	<ul style="list-style-type: none"> • Uses a range of operators and expressions e.g. Boolean. • Selects the appropriate data types.

PoS extract: DIGITAL LITERACY	E-safety
1 <ul style="list-style-type: none"> • Use technology safely • Keep personal information private 	<ul style="list-style-type: none"> • Understands the importance of communicating safely and respectfully online, and the need for keeping personal information private. • Knows what to do when concerned about content or being contacted.
2 <ul style="list-style-type: none"> • Use technology respectfully • Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies 	<ul style="list-style-type: none"> • Demonstrates use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online.
3 <ul style="list-style-type: none"> • Use technology responsibly • Identify a range of ways to report concerns about contact 	<ul style="list-style-type: none"> • Recognises what is acceptable and unacceptable behaviour when using technologies and online services.
4 <ul style="list-style-type: none"> • Identify a range of ways to report concerns about content • Recognise acceptable/unacceptable behaviour 	<ul style="list-style-type: none"> • Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns.
5 <ul style="list-style-type: none"> • Be discerning in evaluating digital content 	<ul style="list-style-type: none"> • Recognises ethical issues surrounding the application of information technology beyond school.