

An Essential Guide to the Digital Literacy Strand for Primary Schools (excluding Safe and Responsible Use)

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A Naace Publication by Tim Scratcherd & Dr Carol Porter
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Here at Plum Innovations, we have always been proud to be a company that is dedicated to helping teachers succeed in their professional fields with efficient and solid IT platforms by providing a stress-free IT experience. So having an opportunity to sponsor the Naace Essential Guides trilogy: Programming, Digital Literacy and Information Technology was very exciting for us.

As a Naace sponsor partner and British Computer Society organisational member, the chance to really help spread correct understanding of computing felt extremely important to us in regards to helping ensure teachers are able to teach Computing with confidence and ultimately help to boost children's future career prospects. These Essential Guides explain the boundaries and relationships between the three strands of the Computing Programme of Study. The authors of these guides stress the necessity of maintaining a broad, balanced computing curriculum with various technologies available to children, especially with the current emphasis on coding.

We hope after reading these guides, you will find the answers that you are looking for.

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Summary

IN the UK, Digital Literacy is one of the three strands of the Computing Programme of Study, the other two being Computer Science and Information Technology. These strands each have their own eGuides. Digital Literacy has two main parts. One is the **use of applications to solve problems and make things for a given audience and purpose**. The other part is to ensure that this is done **safely and responsibly**. Safe and Responsible Use is not covered in this eGuide, principally because working safely and responsibly should not just take place when studying Computing but on **all** occasions when digital technology is used within learning. So Safe and Responsible Use will be the subject of its own eGuide. Digital Literacy is the strand which most teachers will already be very familiar with. Document processors, spreadsheets, presentation and drawing tools, data handling applications, together with sound and image processing tools, provide unparalleled opportunities for making digital artefacts fit for purpose. Communications and social media applications provide the means to give away, share, sometimes sell and celebrate them. Ability with these tools is also essential for further learning, life and work. Knowledge, understanding and competence in this strand is essential if we want our pupils to achieve the aspiration of the Computing Programme of Study, 'to understand and change the world'. To do this, we need to empower our children to solve problems and make things, which are fit for purpose, using applications within digital technology.

Introduction

The statements to do with Digital Literacy in the Programme of Study are

From the purpose of study:

Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

From the aims:

are responsible, competent, confident and creative users of information and communication technology.

From Key Stage 1:

use technology purposefully to create, organise, store, manipulate and retrieve digital content

From Key Stage 2:

select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of ... content that accomplish given goals

From Key Stage 3:

undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users

create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability

Key Concepts

To clarify the nature of Digital Literacy itself, compare it with concepts, which are often mistaken for Digital Literacy, but in fact are essential to its application.

Techniques (or **skills**) are simple tasks which you either can do, or you can't. Applying effects to texts, such as choosing a piece of text and making it bold, are good examples.

Competences are knowing when it is appropriate to deploy the skills that you have. For example, a child who knows how to change the font, size and colour of text becomes competent when the skill stops being used just for the sake of it. Alternatively, you can do things which might have several outcomes, such as knowing that you can enter words into a search engine, get results which relate to the words entered and be able to assess the relation between the words and the search result.

Digital Literacy requires you to have a wide range of techniques and competences, but their acquisition does not by itself make you digitally literate. Far too often we have seen tick lists of techniques, skills and competences, used as the basis for a scheme of work. It is how well pupils have deployed their competences to meet a real world or relevant need, which matters.

So in summary it is mainly the difference between knowing **how** to do things with digital technology, and **why** you are doing them. The essence of Digital Literacy is that it is the ability to deploy techniques, skills and competences to ensure that a digital artefact is **fit for purpose and audience**.

Within Digital Literacy, there are concepts and tools associated with the sort of digital artefact created.

A video or animation requires the understanding and the use of **tracks, clips, transitions** (especially **cuts** and **fades**), **titles, captions, and credits**. The proper use of transitions to control the pace and impact of a video or animation, and the proper use of camera position (**telephoto** and **wideangle**), **angle** and movement (**zoom, pan** and **track**) to control emotion and relation, are distinctive characteristics of Digital Literacy.

The key concepts associated with still images are covered in the Essential Guide to Graphics. The use of camera position to control impact overlaps with Digital Literacy and video.

The key concepts associated with sounds and music are **pitch, volume, tracks, recording** and **sampling**. For Digital Literacy, a sound sequence or piece of music will have an internal structure

similar to that of a video; indeed sound is integral to a good video, and the structure of clips and transitions should be followed within the sound track.

A paper based publication such as a letter, flyer, or banner requires the understanding and use of **pages, objects** on pages such as graphics, the application of **effects to text**, the use of **colour palettes** and **design themes**, the use of **white space**, layout and design conventions, such as **titles, sections, headers** and **footers**, and **proximity** conventions. In broad terms, for Digital Literacy, the latter means that the position of an object with regard to another should reflect how its information is related.

A presentation requires the understanding and use of all of these, and in addition the concepts of **slides, transitions** and **animations**. There is much overlap with video concepts.

A **hypermedia** publication such as a website requires the publication concepts and also the use and understanding of navigation tools such as **links** and **menus**. Structuring such a **non-linear** digital artefact so that a user never feels 'lost' is a distinctive characteristic of Digital Literacy.

The general key concepts associated with making a **model** are covered in the Essential Guide to Models and Modelling. The key concepts associated with **financial modelling** are covered in more detail in the Essential Guide to Spreadsheets. Those associated with **data handling** are covered in the Essential Guide to Databases.

All of these concepts need to be understood and deployed by pupils to solve problems and create digital artefacts. The sheer breadth of possible artefacts, which pupils might produce, is a consideration when planning a scheme of work, and with the pressure on curriculum time, choices have to be made. One way to approach this is to choose projects which together cover all the concepts, but which may not cover all the possible different artefacts. Also the sheer breadth of tools available for developing digital artefacts should be considered. The tools recommended below in the resources constitute enough to cover the essential core of a curriculum.

Key Methodologies

Prospective chefs are not expected to learn their craft only by listening to lectures and reading recipe books. Similarly, children need to do more than passively watch demonstrations of how to use applications packages on an interactive whiteboard.

So how should they learn?

Clearly, there needs to be some direct teaching, and Naace believes this is best done within the context of solving a problem or making a digital artefact, wherein the teaching guides pupils to a solution or an artefact, highlighting the skills, concepts and competences required.

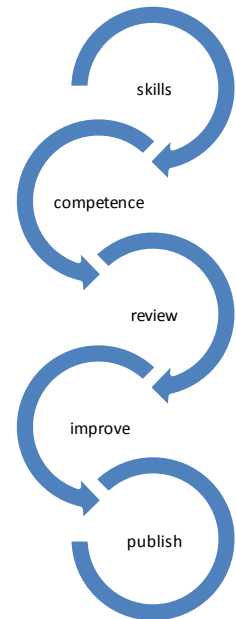
In terms of suitable software to start young children's skills development on, look no further than your interactive whiteboard –but give your pupils access to the software on their own PCs. That way, you can demonstrate skills on the big board, and the children can try the skills for themselves at the same time. The chances are, the children already know a good deal about how to use IWB software, after all, they watch you use it every day.

Be open to learning from the children too; they are likely to make discoveries about the software functionality that you haven't had time to explore, so embrace their knowledge and expertise.

Skills and competences need to be developed first, before children create digital artefacts from scratch to meet a need. **The key to developing competences is for children to see how a concept is applied in a range of contexts to meet the needs of audience and purpose.** So for each kind of digital artefact you choose to have the pupils make, select some good ones, and engage the pupils early on with what makes them good. To help them decide, always ask them to think about both the **audience** and the **purpose** for the artefact. Does it meet the needs of that particular audience? Will it appeal to them? How much information is presented? Is there too much? Is it organised so that the more important information is more prominent? If it tells a story, (common to presentations, sound tracks and movies), is it a good story? If it is meant to be persuasive, does it persuade?

From the planning point of view, any scheme of work should ensure that there are sufficient activities to cover all the competences required, and that children have the opportunities to develop their competences in a range of problem solving and making activities, where they have agreed on the audience and purpose of the artefact. As far as possible, make the task **authentic**, where meeting real world needs is clear. A key consideration is progression. Far too often we have seen pupils make presentations in every year, which are really no different. You create progression by demanding increasing **sophistication** in terms of audience and purpose. You do not necessarily do this by simply requiring the use of more concepts and competences (the tick list trap), although you should plan to do so.

It is impossible for children to be digitally literate if they are not already appropriately literate and numerate. An obvious example is that spelling and punctuation must be correct, if a digital artefact is to be fit for purpose. It follows that planning for all three of literacy, numeracy and digital literacy must go hand in hand.



Do not wait for a piece of work to be complete before appraising and evaluating it. Self-review should be an ongoing process. Encourage positive and constructive peer-review by projecting children's work-in-progress onto the IWB for discussion. Having listened to the feedback, children are able to make informed decisions to improve their work further.

When ready, the finished artefact should be published. Confidence and competence are of course different, but the growth of each is usually linked to the other. Confidence often comes with positive praise from a genuine audience. Celebrate your pupils' growing competence by posting their work on your class blog, or photograph the work and Tweet about it.

The sequence of skills acquisition, develop competence, review against audience and purpose, improve, publish is absolutely key to success in the Digital Literacy strand.

How will you know whether your pupils are at the appropriate standard for their age? Naace has entered into a partnership with Frog Education and the Life after Levels Project, to offer a set of age related examples of pupil work, which you can look at.

Resources

ActivInspire – free-to-download interactive whiteboard software that (amongst its other functionalities) can be used for hyperlinked presentations and combining text and graphics
<http://support.prometheanplanet.com/server.php?show=nav.29751&changeCountry=United+Kingdom>

Your school will have its own selection of generic applications suites. You should consider the two major online suites designed for schools, which are **Office 365** from Microsoft and **G Suite for Education** from Google, both of which are complete operating systems and applications suites. They integrate this with email, personal storage and an online presence for an organisation.

<https://www.microsoft.com/en-us/education/products/office/default.aspx>

https://www.google.co.uk/intl/en_uk/edu/products/productivity-tools/

There are two other major educational offerings to run alongside the above.


Purple Mash – a comprehensive online suite of software to support discrete skills development within the computing PoS (2Paint, 2Publish, 2Publish Extra, 2Animate, 2Create a Story) as well as embedding technology across the wider primary curriculum: <http://www.purplemash.com/>

j2e – a comprehensive suite of online tools originally based upon the concept of digital paper but now expanded to provide tools for the whole Digital Literacy strand: www.j2e.com

Both of these also provide portfolio management for pupils, and assessment and feedback tools.

Smart Notebook – free-to-download interactive whiteboard software that (amongst its other functionalities) can be used as a graphics package: <https://www.smarttech.com/downloads>

TTS – a supplier of peripherals suitable for use in EYFS and primary environments, in particular for graphics, cameras, visualisers, webcams, digital microscopes, scanners: <http://www.tts-group.co.uk/shops/tts/Range/Search?search=cameras>



Naace has produced this series of Essential Guides, or “eGuides” in response to an identified gap in teachers’ CPD. That is, what the Digital Literacy Strand of the Computing Programme of Study is actually all about.

Furthermore, Naace believes that technology has a major role to play in raising standards in learning across the curriculum, provided teachers know how to adapt their pedagogies in order to maximise the potential gains offered by learning technologies.

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For further information please contact
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Having read this “eGuide”, you may wish to register with The Naace Open Badge Academy for Open Badge CPD accreditation

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