



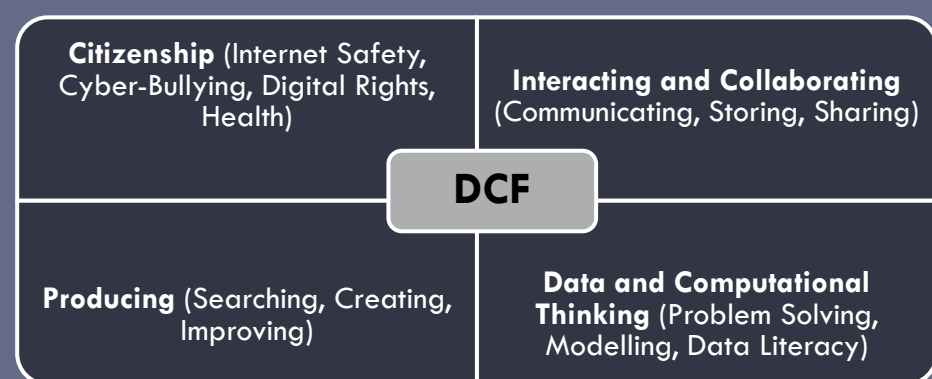
Developing Digital Competence in the Classroom – A Practical Guide for Teachers

This poster aims to introduce the reader to three educational strategies that engage learners and promote digital competence across the curriculum. Each strategy is introduced and discussed in the context of the skills in the DCF.



Introduction

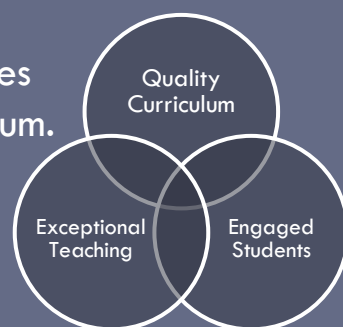
Since the turn of the decade the Welsh Government has placed considerable importance on ensuring that schools in Wales are able to provide pupils with an education that is appropriate for a digital world (Welsh Government 2011). In ‘Successful Futures’ Professor Graham Donaldson introduced the idea of Digital Competence as a cross-curricular aspect of the new curriculum (Donaldson 2015). Following this the Welsh Government (2016) released the Digital Competence Framework (DCF). The framework is made up of four strands that aim to develop the digital skills of pupils in Wales. These strands are:-



So what?

As educational professionals it is our responsibility to deliver the DCF in an innovative way that engages learners and gives them the opportunity to be digitally competent.

It is important to consider the ‘Instructional Core’ (Hopkins 2010) when thinking about the strategies that we use to deliver the DCF across the curriculum. For optimum learning there must be a good curriculum (the DCF), engaged learners and exceptional teaching.



This poster is designed to support you with the exceptional teaching element of the instructional core. Three teaching strategies are introduced to support you in delivering engaging lessons that cover DCF skills across the curriculum.

Who can use this poster?

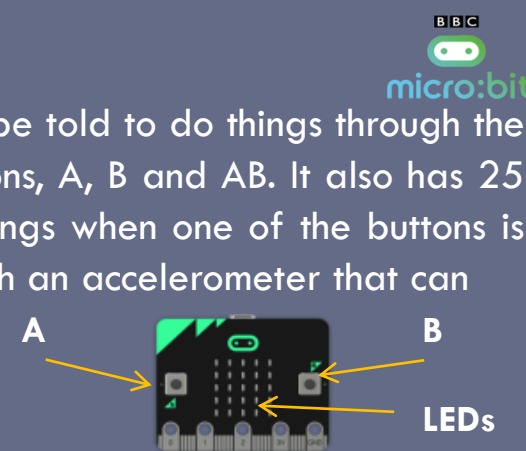
This poster is predominantly aimed at teachers in a KS2 setting. The examples of lessons that I put forward have been trialled by myself with a Y5/6 class. However, the strategies introduced can be used in many ways and will support you in exploring how you can be digitally innovative in your classroom.

References

- City, E, et al. (2009) *Instructional rounds in education*. Cambridge, MA: Harvard Education Press.
- Coder Dojo York (2018) *Microbit – Step Counter*. Available at: (yorkdojo.github.io/worksheets/microbit/step-counter
- Donaldson, G. (2015). *Successful Futures*. Cardiff: Welsh Government
- Welsh Government (2011) *Delivering a Digital Wales*. Cardiff: Welsh Government.
- Welsh Government (2016) *Digital Competency Framework*. Cardiff: Welsh Government.

BBC Micro:bit - What is it?

The BBC Micro:bit is a very small computer that can be told to do things through the process of ‘coding’. In its most basic form has 3 buttons, A, B and AB. It also has 25 small LED lights that can be ‘coded’ to do certain things when one of the buttons is pressed (see the diagram). Each Micro:bit is fitted with an accelerometer that can detect when the Micro:bit has been shaken, moved to the left or right and can detect if the Micro:bit has been turned upside down. There are further functions of a Micro:bit such as its ability to transmit sound and be used as a motor.

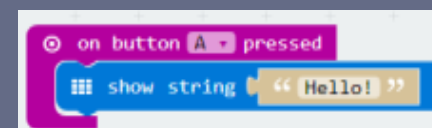


Why use it?

The fourth strand of the DCF is ‘Data and Computational Thinking’. The BBC Micro:bit can cover a number of skills from this strand across KS2. The Micro:bit uses a basic coding language (JavaScript) that encourages the learner to think logically and to problem solve to be successful. As learners become more confident with the coding language they can be increasingly innovative with the Micro:bit.

How do I use this?

Before using the Micro:bit it must be coded, to develop that code you must visit www.microbit.co.uk and go to ‘Let’s Code’ at the top of the web page. This will lead you to a JavaScript Blocks editor. Here you will find a drag and drop system where you can drag blocks onto a blank page. These blocks are basic instructions that when downloaded onto a Micro:bit will tell it how to do things. For example, you could drag across the two blocks in the picture below which would mean that when button A is pressed the LED lights would show “Hello!”



The best thing about the Micro:bit, is that in its simple nature it can be used across the curriculum in many innovative ways. One example of how I have done this is through using the Micro: bits as step-counters. This linked into our class topic of ‘Skin deep’ and looking towards ‘Successful futures’ was a fantastic activity for incorporating the DCF into the ‘Health and Well-being’ AoLE.

Pupils were given instructions on how to produce code for step-counters in the JavaScript block editor (found below). They then set themselves a challenge of undertaking a chosen amount of steps throughout their break-times. The Micro:bit is able to track steps through the accelerometer. This activity resulted in my pupils being highly engaged and helped them to apply their knowledge of being fit and healthy in a practical way.

Scan this QR code for a step-by-step guide to create the code for the lesson example.



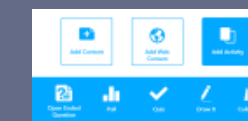
Nearpod - What is it?

Scan this QR code to see what Nearpod can do



Nearpod is a web-based programme that allows people to communicate effectively and collaborate online. Nearpod has been designed with an education focus and has many different features that can enhance lessons in your classroom. The main idea behind this programme is that through their personal devices pupils can follow and contribute to lessons that you create using Nearpod. Through Nearpod you can create and put together a series of slides with engaging features that you take the class through in a ‘live lesson’.

You can add content or activities to your lessons.



These features include the ability to ask pupils direct questions; a collaborate board where pupils can input their opinions or ideas so that all members of the class can see; a quiz function; virtual reality function and other engaging learning strategies. Nearpod can be used on any device that has access to the internet. In my setting I have used iPads and ChromeBooks to enable the use of Nearpod.

Why use it?

Through features available on Nearpod it can act as a platform to cover some of the skills laid out in strand 2 of the DCF ‘Interacting and Collaborating’. As pupils intuitively respond to the layout and interactivity of Nearpod they will naturally communicate across an online workspace. Responding to the comments and ideas of others and offering suggestions to peers is a key positive aspect of the Nearpod platform. Using Nearpod across the curriculum also allows pupils to explore their ‘Citizenship’ as a member of an online community. All interaction can be approved by you the teacher, this allows for a safe space for pupils to explore and develop their online behaviour.

How do I use this?

As the lead user you will need to create an account, this means you will need to use your HWB email as you log-in in your school context. To set-up your account you will need to visit www.nearpod.com and click on ‘Create free account’. Then you are ready to create.

One particular area where I have used Nearpod effectively across the curriculum is through self and peer assessment. In Literacy I used Nearpod to enable pupils to share good practice and give each other feedback on stories that they had written. Due to the digital nature of the task all pupils contributed freely to a ‘collaborate board’. They were asked to identify different positive aspects of their story such as similes or personification. Pupils then followed this up by appreciating each others work and saying how it could be improved. Pupils commented on how this was a great way to share ideas and work collaboratively to edit and improve their own stories.

Scan this QR code to see how to set up your collaborate board for your pupils



J2office - What is it?

J2office is a software package that has recently been added to the HWB platform. To access J2office teachers and pupils need to log-in to their HWB account and go to the J2e dashboard where there is a tile for J2office. J2office provides three programmes – **Writer**, **Spreadsheet** and **Present**. The programmes are pupil-user friendly.

Why use it?

There are many possibilities for using J2office across the curriculum. I would argue that J2office can be used to give opportunities for pupils to experience a number of skills from all of the DCF strands. It is an engaging software package that can enable pupils to produce, create shared work, collaborate and analyse data.

How do I use this?

As a teacher I have used J2office to facilitate learning in the classroom. A successful cross-curricular activity I used J2office for was to enable pupils to create ‘Infographics’ on endangered species. This activity combined Literacy, ESDGC and the DCF in an innovative way that gave the pupils independence and creative freedom. Pupils used ‘Present’ to create their ‘Infographics’. Pupils were able to creatively present information about their species, using graphics and text. The friendly nature of ‘Present’ allowed for the pupils to explore and experiment with their ideas before settling on a final piece.

