Being a Champion Digital Engineer: an approach to Computing at Filton Avenue Primary

States of Being
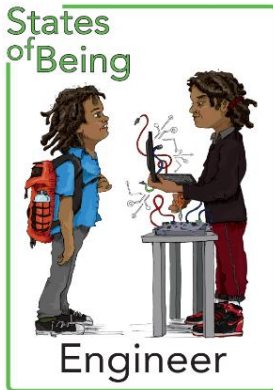
Engineer

Intent

What is the point of Being a Digital Engineer?

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. 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.

The aims of being a Digital Engineer are:

- To understand and respond to spoken and written language from a variety of authentic sources
- To speak with increasing confidence, fluency and spontaneity, finding ways of communicating what they want to say, including through discussion and asking questions, and continually improving the accuracy of their pronunciation and intonation
- Can write at varying length, for different purposes and audiences, using the variety of grammatical structures that they have learnt
- discover and develop an appreciation of a range of writing in the language studied

Where does it come from?

Being a Digital Engineer is integrated into our curriculum through Curious-city. An enquiry-led, local learning approach to the National Curriculum 2014. This approach recognises that the cognitive maturity of learners affects what and how they learn. It also encourages teachers to think of how they encourage learners to be a Digital Engineer instead of simply teaching them Design and Technology.

Within a Curious-city curriculum, there is no 'skills or knowledge' debate. It is seamless blend of both, and through every enquiry, learners are challenged to work independently to prove their understanding of Being a Digital Engineer.

Implementation

What does being a lead Digital Engineer entail?

- Provide encouragement and ideas to staff across the school. Know when Digital Engineer enquiries are happening and speak with the relevant year groups.
- Ensure visits and experiences are carried out and provide support regarding this.
- Monitor content, progression and enquiries and be mindful of coverage 'v' skill acquisition.
- Support with the development of skills and knowledge progressions.
- Lead staff training sessions.
- Drive the development of being a Digital Engineer, sharing best practice.
- Evaluate being a Digital Engineer and complete a Deep Dive analysis.
- Ensure enquiry planning and floor books (or alternative evidence) are sufficient to effectively represent the state of being you lead.
- Lead a group of children to be "Champions" for the subject and use this group to gather different voices across the school.
- With the State of Being Champions, create an annual newsletter for your state of being, which is sent to families and shared on our website and other social media channels. This should celebrate learning, create aspiration and centre children in current affairs for that state of being.
- Working closely with these Champions, have a strong focus on developing pupil voice, ensuring our pupils know their thoughts are valued and providing evidence of the positive impact of our curriculum.
- Lead being an Digital Engineer in line with the school improvement plan and curriculum action plan so that you are sensitive to, and understand how, whole school improvement has to be considered strategically in order to have the best effect and not overwhelm staff.

What is 'covered'?

Essentially, a Curious-city curriculum uses the National Curriculum 2014 areas as a basic foundation of entitlement. However Curious-city is much more than that. It is localised, real-life and challenges learners to apply their learning in unique ways without the support of adults to prove what they have learnt. Local companies, charities, organisations, individuals and objects are used as foci to enhance and instill a sense of curiosity, pride and stewardship.

Impact

How is Being a Digital Engineer monitored and assessed?

Every term, *Being Champions* meet as a team (the Enquiry hub) to discuss and share what they are seeing and hearing and, working as a team, help to review the school's curriculum and contribute to the Enquiry action plan.

Twice a year, Being Champions work with the Enquiry leads to review floor books and enquiry books to ensure coverage and progress across the school for their state of being.

As there is no requirement to formally report attainment of Computing, Being a Digital Engineer is assessed through monitoring how a learner responds to enquiries and whether they show a particular enthusiasm and disposition towards it, or, if they constantly needed support in order to access it. This information is recorded on the Enquiry crib sheets which are kept and used for report writing towards the end of the year. These are then passed on to the next teacher to use to support future learning.

Progression and whole school overview

Consolidation, additional or contextual variation objectives are also mapped within enquiries but not listed here.

As mentioned, the enquiries from Year 1 to Year 6 are progressive in content with enquiry questions reinforcing the conceptual development. The development from what to why questions is important, as it ensures a progression in understanding from what something is, through to how it works and ending with considering alternatives of why.

As seen on the next page, the National Curriculum objectives of key stage 1 and 2 have been organised into year groups.

It is important for Computing Leads to recognise that computing does not 'start' in Year 1. The ICT strand within EYFS Development Matters is a critical stage in a young person's understanding of the digital world and must not be underestimated. It is highly recommended that Computing Leads spend time talking to EYFS practitioners and watching learners within the Foundation Stage.

Creative Computing

1A: What does 'digital' mean?
Consolidation of EYFS 'computing' skills

Curious-city link: N/A.

2A: What tools are useful?
Know how to use word processing and paint and associated software.

Curious-city link: Y2: What could my classroom be made of?

3A: How can I change things?
Know how to create a multi-media animated show. Know how to use editing functions of word processing and presentation software.

Curious-city link: Y3: Where does darkness come from?

4A: How can data be modified?
Know how to create a spreadsheet. Know how to use modify functions of word processing and presentation software [through revisiting and building on Y3 objectives].

Curious-city link: Y4: Why are more people becoming vegetarian?

5A: Why are spreadsheets useful?
Using search technology and then using spreadsheet software to collect, analyse and present data and information.

Curious-city link: Y5: What do forces actually do?

6A: Why are formulas helpful?
Know how to use spreadsheets to organise and sort data (in addition to Y5) and know to create a simple formula.

Curious-city link: Y6: Where does our food really come from?

Programming and coding

1B: What is programming?
Understand that devices can be controlled by buttons and single step commands.

Curious-city link: Y1: How do we move around?

2B: What is coding?
Using a programming app to create an interactive display to explain an object/artefact.

Curious-city link: Y2: How will we get around in the future?

3B: How can codes be different?
Understand that different sequences of actions can achieve the same outcome.

Curious-city link: Y3: What's the difference between surviving and being healthy?

4B: How can variables help?
Know that variables can be used to store user input.

Curious-city link: Y4: What is the difference between noise and sound?

5B: Why does sequencing in coding matter?
Know simple programming concepts, such as sequencing, repetition, variables, and selection.

Curious-city link: Y5: How can you show what you believe in?

6B: Why can coding go 'wrong'?
Know simple programming concepts, such as sequencing, repetition, variables, and selection. [applied variation: change of context]

Curious-city link: Y6: Who were the greater engineers?

Digital Research

1C: Where can I find information?
Recognise, use and talk about different sorts of digital content, information and data.

Curious-city link: Y1: What changes around me?

2C: What is the 'World Wide Web'?
Know of types of digital content and information. Know that a range of content can be found on the World Wide Web and how to use it safely.

Curious-city link: Y2: What did Brunel do for Great Britain?

3C: How is everything connected?
Know that a web browser lets you look at web pages on the World Wide Web that is part of the internet. Be able to use menus, indexes, search tools and keywords to find particular information on a website.

Curious-city link: Y3: How can we find out about people in the past?

4C: How do hyperlinks work?
Understand the features of hyperlinks: online and embedded in documents.

Curious-city link: Y4: Who has stood here before us?

5C: Why is 'trial and error' helpful?
Select, use and combine a variety of software (including internet services) on a range of digital devices.

Curious-city link: Y5: Who is trading with whom?

6C: Why is 'copyright' important?
Understand copyright and the importance of acknowledging sources. Understand the purpose of a range of content

Curious-city link: Y6: How are lives saved?

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Lighting up Learning