

TECH TALK FOR PRINCIPALS

ScopelT Education – Term 1, 2019

Edition #10



Unpacking the digital technologies lingo

The digital literacy curriculum can be wide, varied and fraught with complexity. This edition of *Tech Talk for Principals* is a valuable resource which will help you understand the latest Digital Education terminology. For some, this will be revision, but for most there will be some technical words and aspects that are important to understand. This list is quite expansive, especially as more States implement Digital

Technologies as a compulsory part of meeting the Australian curriculum for schools. ScopelT Education have new digital technologies courses that align with 100% of the Digital Technologies curriculum outcomes for both State and National standards. Additionally, ScopelT is endorsed by APPA (Australian Primary Principals Association).

Your terminology guide

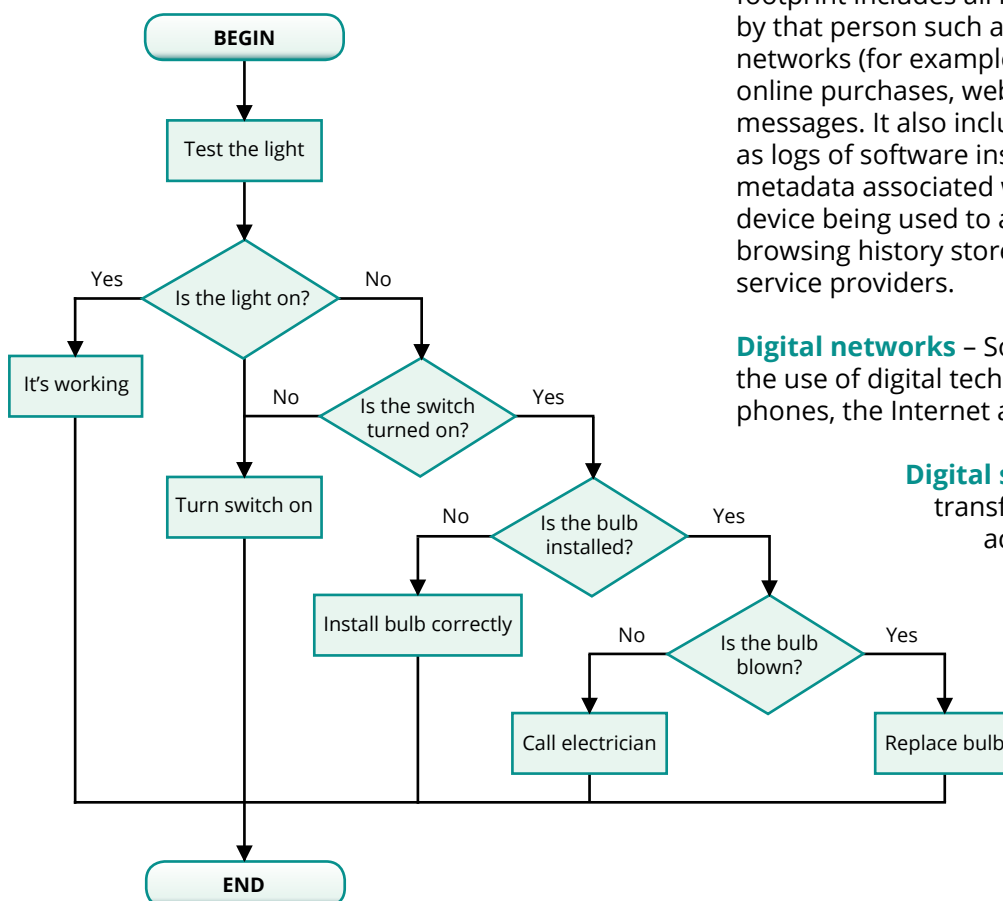
Abstraction – The process by which data and programs are defined with a representation similar in form to its meaning while hiding away the implementation details. Abstraction tries to temporarily ignore details so that the programmer can focus on a few concepts at a time. Algorithms must ultimately be broken down into simple instructions for a digital system to execute.

Algorithm – A step-by-step procedure required to solve a problem. In digital technologies algorithms may be presented in many ways, for example in written instructions, flowcharts or by using a computer programming language.

App – A software application designed to run on mobile devices through a web browser or on a personal computer.

Binary – Binary digit (or bits) in digital technologies describes a numbering scheme with either 0 or 1. Computers use binary to store data.

Branching – An instruction in a computer program or algorithm that causes different actions to be performed depending on specified conditions. For example, in testing whether a light works, the following algorithm uses branching:



Components – Parts or elements that make up a system or whole object. At the simplest level a computer has two main components: the hardware and the software. The components of a computer system may include a central processing unit (CPU), memory chips and a hard drive, a screen, a keyboard and a mouse.

Data – In science, data refers to information that can be used to derive patterns, inform decisions and draw conclusions. In digital technologies data refers to information using number codes. Data may include characters, images, sounds and/or instructions that, when represented by number codes, can be manipulated.

Data representation – How data types are structured; for example, how signs are represented in numerical values or how strings are formatted (enclosed in quotes, terminated with a null, etc.).

Digital citizenship – An acceptance and upholding of the norms of appropriate, responsible behaviour in the use of digital technologies. Digital citizenship includes appropriate online etiquette, literacy in how digital technologies work and how to use them, an understanding of ethics, knowing how to stay safe online, and advice on related health and safety issues, such as predators and the permanence of data.

Digital footprint – A total set of data left behind by a person using a digital system. A person's digital footprint includes all information actively provided by that person such as interactions on social networks (for example, comments, photographs), online purchases, website logons, emails and instant messages. It also includes passive information such as logs of software installed and used on a computer, metadata associated with files, a user's IP address, a device being used to access a web page, and a user's browsing history stored as cookies or by internet service providers.

Digital networks – Social networks enabled through the use of digital technologies such as mobile phones, the Internet and e-mail.

Digital solution – A result (or output) of transforming data into information or action using digital systems, skills, techniques and processes to meet a need or opportunity.



New Digital Technologies courses 100% aligned with Australian and State curricula

With a growing number of States implementing the Digital Technologies section of the Australian Curriculum, there is a growing struggle faced by schools and teachers. This curriculum is full of jargon, requires technical knowledge and understanding, and is very specific in places. For a teacher without a technology background, who has not specialised in this field, it is a big challenge. The calls of despair that we receive tell us that schools are struggling even at step 1 - interpreting the curriculum.

ScopeIT Education's new courses take a "curriculum-first" approach, which aims to address the Digital Technologies curriculum without exception. The curriculum itself is separated into 3 groups by school year:

- Years 1 - 2
- Years 3 - 4
- Years 5 - 6

Each Digital Technologies course is 20 lessons, delivered in 2 parts which can be delivered anywhere in the above year blocks.

ScopeIT Education's detailed lesson plans come with outcomes in specific Key Learning Areas (KLAs) to ensure that your students not only receive efficient delivery of lessons, but have deep integration with other subjects including mathematics, science and creative arts and design.

If you haven't already booked a time to discuss how ScopeIT Education can help at your school, we welcome you to do so.

References: <https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/science/science-and-technology-k-6-new-syllabus/glossary>

ACARA The Australian Curriculum Version 8.3 dated Friday, 16 December 2016.

Digital system – Digital hardware and software components (internal and external) used to transform data in a digital solution. When digital systems are connected, they form a network.

Digital technologies – Digital technologies are electronic tools, systems, devices and resources that generate, store or process data. These may include games, applications (apps), multimedia, mobile devices, networks, robotics and microcontrollers.

Hardware – The term hardware describes the physical aspects of computers and related devices. This includes the computer case, monitor, keyboard, and mouse. It also includes all the parts inside the computer case, such as the hard disk drive, motherboard, video card, and many others. Computer hardware is what you can physically touch.

Information systems – A combination of digital hardware and software components, data, processes and people that interact to create, control and communicate information.

Input – Data or information put into a digital system to activate or modify a process.

Iteration – A repetition of a process in computer programming where each repeated cycle builds towards a desired result.

Network – A group or system of interconnected digital technology components.

Output – A result of something (physical or virtual), such as power, energy, action, material or information produced by a person, machine or a system.

Peripheral devices – Digital components that can be connected to a digital system but is not essential to the operation of the system, for example printer, scanner, digital camera.

Software – Software is a general term for the various kinds of programs used to operate computers and related devices.

User interface – The means by which users interact with computer software or hardware. In software, this usually comprises fields for text and number entry, mouse pointers, buttons and other graphical elements. In hardware, switches, dials and light-emitting diodes (LEDs) provide information about the interactions between a user and a machine.

Visual programming – A programming language or environment where a program is represented and manipulated graphically, such as graphic blocks that can be connected to form programs rather than as text.