Government of Western Australia
School Curriculum and Standards Authority

Western Australian Curriculum

Technologies

Glossary | Pre-primary–Year 10

For implementation in 2026

Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

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Contents

A–B

abstraction

The process of reducing complexity to formulate generalised fundamental ideas or concepts removed from the specific details or situation. For example, the idea that a cricket ball is a sphere in the same way that a soccer ball is, or the concept that data can be organised in records made up of fields irrespective of whether the data are numbers, text, images or something else.

accessibility

The extent to which a system, environment or object may be used irrespective of the user's capabilities or disabilities. For example, the use of assistive technologies to allow people with physical disabilities to use computer systems or the use of icons in place of words to allow young children to use a system.

adaptation

A physical or behavioural characteristic that is inherited and which results in an individual being more likely to survive and reproduce in its environment.

aerial view

A drawing or image taken from above to show features of a building, landscape or environment.

aesthetics

Judgements based on sentiment and the visual impact or appeal of a product or environment, which are influenced by social, emotional and demographic factors.

agile process

Processes that take an iterative or repetitive path rather than a linear approach during planning and development. It involves incremental improvement and continual evaluation and feedback from users. Also known as ‘responsive’ or ‘flexible’.

algorithm

Precise description of the steps and decisions needed to solve a problem. Algorithms often involve iterative or repetitive processes and can be represented visually as flow charts or using text as pseudocode.

algorithmic logic

The logic of breaking down computing problems and information systems to a step-by-step process to problem solve or achieve some end. It involves sequencing and abstraction and leads to algorithmic statements.

analyse

Identify components and the relationship between them, draw out and relate implications.

anecdotal evidence

Evidence collected in a casual or non-systematic manner to draw conclusions or support arguments, such as observation or opinion.

ASCII

The American Standard Code for Information Interchange. An early encoding system, later extended, used to represent characters, including 0–9 and a–z, in computer systems. For example, capital P is represented by the number 80 in ASCII, which in turn is represented as 0101000 in binary. See also data representation.

assess

To make a judgement of value, quality, outcomes, results or size.

attribute

A characteristic or property that identifies and describes entities within a database; for example, an attribute of an entity (person) could be their name or date of birth.

bandwidth

The range of frequencies available when transferring data in a network.

binary

A base 2 number system that uses two states or allowable values to represent data such as the off and on position of a light switch or the 0 and 1 values in the binary number system.

biometrics

A digital encoding or representation of physical attributes of a user to gain access to data or a computer system; for example, fingerprints, facial recognition or voice patterns.

biomimicry

Inspiration for features and functions found in nature for use and adaptation in the design of a product, service or environment; for example, hook and loop fastener and air vents were inspired by nature.

branching

A control structure that involves making a decision between one of two or more actions depending on sets of conditions and the data provided. For example, in testing whether a light works, the following algorithm uses branching: Diagram illustrating branching.

C

central processing unit

The central processing unit or CPU is hardware that performs data input/output, processing and storage functions for a computer system. It is installed internally on the motherboard. The CPU executes instructions from programs and performs calculations in the same way our brain processes information.

characteristic

Distinguishing aspect (including attribute and behaviour) of an object, material, living thing, system or event. These qualities influence the choices people make about materials and processes.

chart

A visual display of information.

classify

To arrange items into named categories to sort, group or identify them.

client

A client (sometimes known as a customer, stakeholder, buyer or purchaser) is the recipient of a good, service, product or idea obtained from a seller, vendor or supplier for a monetary or other valuable consideration.

code of conduct

A code of conduct is a set of guidelines outlining the social norms and rules and responsibilities of, or proper practices for, an individual, party or organisation.

collaborate

To work with others to perform a specific task.

comparison operators

Algorithmic expressions that compare values, returning true or false to make decisions; for example, the operator < determines if one value is less than another.

components

The parts, ingredients or elements that make up a product or system and perform specific functions.

compression

See data compression.

computational thinking

A problem-solving method that involves various techniques and strategies that can be implemented by digital technologies such as organising data logically, breaking down problems into components, and the design and use of algorithms, patterns and models.

concept sketches

Developed outlines or representations of objects and ideas to inform the development of designed solutions.

conclusion

A judgement based on evidence.

constraints

The boundaries that define how a project can be carried out, such as its timeline, budget, scope, quality standards, available resources and potential risks.

constructed environments

Environments developed, built and/or made by people for human and animal activity, including buildings, streets, gardens, bridges and parks. It includes the natural environment after it has been changed by people for a purpose.

control structures

The decision-making building blocks of an algorithm that determine or control the flow of which statements are executed. The three control structures are sequence, branching and iteration.

convention

An agreed method of representing concepts, information and behaviours.

create

To make, produce, manufacture and/or invent a product, service, system or environment.

creativity

Techniques and methods that encourage creative actions, including ideation, divergent thinking and ways to reframe problems.

criteria

A descriptive list of essential features or guidelines against which success can be measured or considered acceptable.

crop sensors

Physical or remotely operated sensors that monitor crop conditions, and measure and record data, such as nutrient status and moisture levels for food or fibre crops.

cryptography

A method of protecting data that is communicated via a network so that unintended recipients cannot read it. Data is encrypted using a system of algorithms and keys that can be decrypted back to its original form securely by those who hold the key; for example, Caesar Cipher.

cybersecurity

Technologies, processes and practices taken to protect digital systems and networks from theft, damage or disruption to hardware, software, data or services.

cybersecurity threats

Malicious acts designed to damage or steal stored and transmitted data, or to disrupt networked digital systems; for example, distributed denial of services attacks, phishing and ransomware.

D–E

data

A general term for a set of observations or measurements collected during an investigation. Primary data is collected by the user; secondary data is collected by others.

data compression

The process of encoding data, using less data than the original representation to reduce size. Compression can maintain (lossless) or reduce (lossy) data.

data packet

A data packet is a single unit of data for transmission across the internet. All data, including images and text, are broken down into packets for efficient and secure transfer.

data representation

How data is represented and structured symbolically for storage and communication by people and digital systems; for example, symbols can communicate ideas and whole numbers can represent letters.

database

A collection of data organised by records and fields that can be easily stored, accessed, managed and updated. Each discrete piece of data to be stored is represented by a field; for example, a song title, artist, bank account number, date of transaction, and the values in the fields that are associated with an entity, which are a record; for example, a song, a bank transaction. Interaction with the database usually takes place through a user interface designed specifically for the structure and use of the data stored in it.

debug

A systematic process that involves finding existing errors in a program; for example, identifying error messages in lines of code, fixing them and validating if the changes are correct.

decompose

To separate a complex problem into simpler, less complex parts, allowing it to be more easily understood. For example, to create an interactive story, the problem could be decomposed into a list of characters and their characteristics (e.g. clothing), the actions of the characters, the backdrops and the sequence of scenes with reference to which characters, actions and backdrops are involved in each scene. Decomposition may be represented in diagrams.

deepfake

A deepfake is media (images, video etc.) generated by artificial intelligence to replace a person's likeness or represent an event that has never occurred. The result is very convincing, and the intent is usually malicious and to misinform.

define

State the meaning and identify the essential qualities.

dependent variable

A variable that changes in response to changes to the independent variable in an investigation.

design brief

A statement clarifying a task requirement and defining the need or opportunity to be resolved. It usually identifies the users, design criteria, constraints, resources and timeframe.

design criteria

Predetermined requirements, essential features or guidelines against which success can be measured or considered acceptable for the designed solution.

design process

A process that involves investigating and defining, generating and designing, producing and implementing, evaluating, and collaborating and managing to create designed solutions that meet needs.

design thinking

An approach which helps people to empathise and understand needs, opportunities and problems; generate, iterate and represent innovative, user-centred ideas, and analyse and evaluate those ideas.

designed solution

The product, services, systems or environments that have been designed and created for a specific purpose, intention or to problem solve.

desk checking

A method used to check the logic of a computer program's algorithm to reduce the likelihood of errors occurring. This may be done on paper, using a diagram, or mentally, trying a sample of typical inputs to see what the outputs would be. For example, to desk check the branching statement {IF age >65 THEN 'retire' ELSE 'keep working'} the values for age of 64, 65 and 66 could be tried to show that 64 and 65 would result in 'keep working' and 66 in 'retire' so that it could be determined whether the statement works as intended.

device

A technology that is created or adapted for a specific purpose. In Digital Technologies, this is a combination of hardware, software and peripherals.

digital citizenship

The acceptance and upholding of the norms of appropriate, responsible behaviour when using digital technologies. This involves using digital technologies effectively and not misusing them to disadvantage others. Digital citizenship includes appropriate online etiquette, literacy in how digital technologies work and how to use them, an understanding of ethics and related law, knowing how to stay safe online and advice on related health and safety issues, such as predators and the permanence of data.

digital footprint

The total set of traceable data left behind by a person using digital tools. A person's digital footprint includes active data; for example, emails and passive data; for example, browser history.

digital identity

How an individual is represented or perceived online, often via comments or social media posts; for example, a person's digital identity can be based on their activities, connections or tags.

digital information

The nature and forms of information stored digitally, and the processes that transform digital data into information for various purposes and meanings; the structures, properties, features and conventions of particular forms of digital information and appropriate methods of storage, transmission and presentation of each form.

digital solutions

The result or output of transforming data into information using digital systems, skills, techniques and processes to meet a need or opportunity.

digital system

Digital hardware and software components (internal and external) used to transform data into digital (binary) signals. When digital systems are connected, they form a network.

digital technologies

Any technologies controlled using digital logic, including computer hardware and software, digital media and media devices, digital toys and accessories, and contemporary and emerging communication technologies.

digital tools

Digital hardware, software, platforms and resources used to develop and communicate learning, ideas and information; for example, software and hardware to compose and record music.

divergent techniques

Tools or approaches to support design thinking, in particular, the generation of design ideas; for example, brainstorming and role-play techniques are unstructured and encourage creativity.

domain name system

The domain name system (DNS) is considered the ‘phonebook of the internet’ as it returns the IP addresses of websites, allowing easy navigation of the internet.

drawing standards

Australian standards for technical drawing. Identified as Australian Standard AS 1100, they describe drawing conventions for professionals and associated tradespeople.

economic sustainability

Practices that sustain economies while recognising the finite nature of resources, using resources optimally over the longer term without resulting in economic loss.

electromechanical

A mechanical device that is moved or controlled by electricity.

emerging digital tools

Hardware, software, platforms and digital resources whose development and applications are not yet realised or widespread; for example, robotics, artificial intelligence, augmented reality, etc.

emerging technologies

An advancement in technologies that provides opportunities to problem solve innovatively and creatively with new technological developments.

empathy

The ability to understand and share the feelings of another person.

encryption

A cryptographic process that protects data stored and transmitted by digital systems. It involves encoding data so that it can only be decoded with a key by the intended recipient.

engineering

The practical application of technologies, scientific and mathematical principles as part of the process to develop systems and maintain solutions for an identified need or opportunity.

enterprise

Shows leadership and/or resourcefulness and demonstrates an ability to recognise and embrace opportunities and a willingness to generate and apply new ideas. Negotiates economic conditions, acts for change and implements risk management strategies to find solutions.

entities and their relationships

Key elements of a data-modelling technique that represent the entities (e.g. employees and their department) and their relationships (e.g. one department has many employees).

entity

An entity is something that exists in itself, actually, or hypothetically.

environment

One of the outputs of a technology process and/or a place or space in which they operate. Environments may be natural, managed, constructed or digital.

environmental sustainability/environmental

Practices that have minimal impact on ecosystem health, allow renewal of natural systems and value environment qualities that support life.

equipment

Items needed for carrying out specific jobs, activities, functions or processes. For example, a bench hook is used to hold a piece of wood when making a straight cut across it, tailor's chalk is used to make marks on fabric to show details of the location and type of construction, a soldering iron is used to solder components to a printed circuit board, scales are used to accurately weigh ingredients for a cake or feed for domestic animals.

ethics

Principles that govern a person's behaviour.

evaluate

To examine and judge the merit or significance of something based on criteria, including processes, events, descriptions, relationships or data.

exploded view

An image of an object with individual parts shown separately but arranged to show the relationship and position of the parts for assembly.

explore

Investigate, search for or evaluate.

F–G

familiar

Well-known, something that has been encountered previously on a number of occasions.

features

Distinctive properties, characteristics, functions and qualities of an object, material, living thing, system or event that affect how it performs or operates.

fibre

Plant-based materials (e.g. cotton, bamboo, timber and hemp) or animal-based materials (e.g. wool and silk) that can be used for clothing or construction.

firewall

A firewall is a security system that acts as the 'traffic manager' between the trusted internal network and the unknown external network (e.g. internet). The firewall monitors incoming and outgoing traffic to identify and manage potential threats using predefined rules.

flow chart

A diagrammatic representation of an algorithm. Steps and decisions are represented by specific symbols and arrows indicating sequence.

force

A push or pull between objects which may cause one or both objects to change speed and/or direction of their motion (accelerate) or change their shape.

formal measurement

Measurement based on an agreed standard unit (metre, second, gram, newton).

formal unit

A unit of measurement based on an agreed fixed standard (metre, second, gram, newton).

functionality

Design of products, services, systems or environments to ensure they are fit for purpose and meet the intended need or market opportunity and the identified criteria for success.

futures thinking

Strategic thinking that envisages what can be, given existing knowledge and strategies, to propose scenarios for probable, possible and preferred futures.

general-purpose programming language

A text (rather than visual) programming language that is designed to solve a wide range of problems. It can often support multiple programming styles.

graph

A visual representation of the relationship between quantities plotted with reference to a set of axes.

graphic organisers

A communication tool that uses visual symbols to represent structured thinking. Graphic organisers make thinking processes visible by showing connections between ideas/data. Examples include concept maps, flow charts and cause-and-effect patterns. Their use has become more popular with the availability of software to create, edit and display them.

graphical representation

A technique used to communicate ideas and plans; for example, sketching, drawing, modelling, making patterns, technical drawing and computer-aided drawing.

graphics

Visual images, pictorial representations or designs produced on a surface, such as paper, canvas or a screen. Images generated by a computer are known as computer graphics. The purpose of these images, representations or designs is to inform, illustrate or entertain.

H–K

hard disk drive

The hard disk drive (HDD) is the primary data storage device in desktop computers and other devices. It will store (write) data permanently and be available to retrieve data (read) as needed.

hardware

Physical components of a digital system. Hardware comprises internal components (e.g. motherboard and central processing unit) and external peripherals (e.g. microphone and keyboard).

hardware specifications

Technical descriptions of the capabilities of hardware components; for example, descriptions of storage memory size in gigabytes and speed of the central processing unit in gigahertz.

hardwood

The wood from broadleaved or angiosperm trees, such as oak, ash, gum or jarrah.

hashing

A method of generating output of a fixed length that is used as a shorthand reference to larger amounts of data. Used extensively to speed up searching, or when the size of the data being used becomes cumbersome. Hashing is especially useful in cryptography as a means of reliably and securely obscuring input for communication. A hashing algorithm is deterministic – it always produces the same output for any given input – ensuring that data retrieval and use are reliable. Bitcoin employs the SHA-256 hash to secure the cryptocurrency.

health

A state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity (World Health Organization, 1946).

ideate

During the ideate phase, designers focus on generating ideas via activities such as mind mapping and brainstorming to challenge, 'think outside the box' and innovate.

identify

Recognise and name.

independent variable

A variable that is changed in an investigation to see what effect it has on the dependent variable.

infographic

An image that displays a graphical representation of data for an intended purpose.

informal measurement

Measurement that is not based on any agreed standard unit; for example, handspans, paces, cups.

informal units

Measurements based on variable quantities; for example, handspans, paces, cups.

information

That which informs, i.e. an answer to a question, as well as that from which knowledge and data can be derived (as data represents values attributed to parameters, and knowledge signifies understanding of real things or abstract concepts).

information system

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

innovation

A new idea, a more effective device or process.

integers

Whole numbers including those with negative signs; for example, −4, −2. Sometimes defined as numbers that can be written without fractional components.

Internet of Things

The Internet of Things (IoT) is a network of devices that gather data using sensors to exchange information with other devices and systems, such as weather stations and smart cars.

intrusion detection software

Intrusion detection software (IDS) monitors network traffic to identify suspicious activity; however, unlike a firewall, will not take any action. The IDS will report incidents to the network administrators.

investigate

Plan, inquire into and draw conclusions about.

investigation

A component of the process of exploring an idea, developing a solution or problem-solving that requires planning a course of action, collecting data, interpreting data, reaching a conclusion and communicating results.

iteration

Repetition of a set of steps or instructions in an algorithm or program or process; for example, a loop in a flow chart, a repeat block of FOR, WHILE statements.

jig

A custom-made tool or piece of equipment used to control the positioning and or motion of another tool to go into a work piece; for example, woodworking jigs include a dowelling jig and welder's jigs.

justify

Support an argument or conclusion, give reasons for your statements or comments.

L–M

latency

The delay or lack of performance of data that is being transferred in a network.

life cycle thinking

A strategy to identify possible improvements to products, services and environments to reduce environmental impact and resource consumption while considering social and economic impacts.

local environment

Surroundings that can be considered as proximal or familiar to the subject of investigation; for example, a building, community area or workshop.

logical operators

An operator or function to combine Boolean (true or false) values, including AND, OR and NOT; for example, the 'x AND y' operation is only true if both 'x' and 'y' are true.

lossless compression

A type of compression algorithm that retains sufficient information to allow the original data to be perfectly reconstructed from the compressed data. It is used when it is important for the original data to be perfectly preserved; for example, in text documents, programming source code, application files or for archival purposes. File formats include PNG and WAV.

lossy compression

A type of compression algorithm that compresses data by discarding information that is not necessary to reproduce the original data with sufficient detail for the user not to notice the difference. It is used primarily for reducing the size of multimedia assets such as video, audio and photos, especially when streaming or transmitting the data over the internet. The original data cannot be restored from the compressed version, as is noticeable when attempting to increase the size of a compressed jpeg file.

managed environments

Environments coordinated by humans; for example, farms, forests, marine parks, wetlands or storage facilities.

material

A substance from which a product can be made. Materials can be either natural (e.g. sourced from animals, food, fibre, timber, mineral, etc.) or fabricated (e.g. metal alloys, plastics, textiles, composites) and are used to create products or environments. The structure of a material can be manipulated by applying knowledge of its origins, properties and uses.

mobile networks

A system of connecting movable computer systems or peripheral devices, each one remote from the others.

model

A visual or physical representation that describes, simplifies, clarifies or gives an explanation of the workings, structure or relationships within an object, system or idea.

modify

To change the form or qualities.

modular programs

Programs separated into individual well-defined modules of code that perform related tasks. Each subdivided program or module performs one aspect of the required functionality of the solution.

motherboard

A motherboard is an internal hardware component of a computer. It is a circuit board on which internal hardware components such as the CPU and RAM reside and are connected.

multidimensional data

Data that has many dimensions and values. The data is structured in many rows and columns and can be modelled and viewed in multiple dimensions, facilitating interpretation.

multifactor authentication

A security system that typically requires two or more authentication factors to identify a person for access purposes; for example, a personal identification number, a swipe card and a biometric.

multimedia

The use of digital technologies to present text, graphics, video, animation and sound in an integrated way.

N–O

natural materials

Products or physical matter that come from plants, animals or earth and have undergone very little modification by humans. Minerals and metals that can be extracted from them (without further modification) are considered natural materials.

nested control structures

Control structures that are placed within other control structures; for example, IF, THEN, ELSE block placed within a FOR, NEXT loop.

netiquette

A set of social conventions that facilitate interaction over networks.

network

Digital systems connected via the internet or Bluetooth® devices that allow data to be transmitted. The connection can be established via cables (wired) or without the use of cables (wireless).

no-till farming

A method of farming which provides minimum disruption to the soil to maintain its moisture and natural structure. Minimum tillage requires the use of specially designed machinery.

nutrients

The nutritional components in foods that an organism uses to survive and grow.

object-oriented programming language

A programming language which supports declaring classes to define objects and their behaviour. Objects combine data (attributes) and actions that can be performed on that data (methods).

observation

The identified quantitative or qualitative action by an individual or measuring device either directly or indirectly to see, hear, smell, feel, taste, such as a ruler, scales, thermostat, sensor or wind vane.

online environment

Allows the connection of computers/mobile devices to one or more computers/mobile devices or networks, such as the internet.

online safety

The practice of individuals protecting themselves and others from online harm and risks, which might jeopardise their personal information, lead to unsafe communications or affect their mental health and wellbeing.

orthogonal drawings

A scaled multiview drawing of a three-dimensional object to show each view separately, in a series of two-dimensional drawings; for example, top or bottom, front, back and sides. In Australia, orthogonal drawings use third-angle projection for the layout of the views and may also include the measurements on each view and are used to develop lists of material requirements.

P–R

passcode

A passcode is a security method used to protect a device or service. It is often shorter than a password, uses numbers only, and is designed for a specific use, such as unlocking screens.

passive design

A design approach that uses natural elements, often sunlight, to heat, cool or light a building. Systems that employ passive design reduce or minimise the need for auxiliary heating or cooling.

passphrase

A string of words used for authentication purposes to gain access to a digital system. They need to be memorable to the user but difficult to guess or determine.

pattern

A repeated occurrence or sequence.

peripheral devices

Digital components that can be externally connected to a digital system to extend its functionality but are not essential to the operation of the system; for example, a speaker or printer.

personal data

Personal data refers to any information that can be used to identify an individual; for example, name, date of birth or address.

personal protective equipment (PPE)

Equipment used or worn by a person to minimise risk to the person's health or safety; for example, safety goggles, earmuffs, face shield, hard hat, apron, gloves etc.

perspective drawing

A drawing that represents the way objects appear to be smaller and closer together the further away they are. Perspective drawings may be one-, two- or three-point perspective and have the corresponding number of vanishing points. A one-point perspective drawing has a single vanishing point (VP). Perspective drawings are often used in building, interior and architectural design.

phishing

Fraudulent practice of sending untargeted emails asking people to reveal sensitive data such as bank details or encouraging people to open a malicious attachment or download malicious content.

pictorial drawing

A pictorial drawing is a three-dimensional illustration on a two-dimensional surface, such as paper.

ping

A ping is a diagnostic tool on a network that can determine whether another device (host) is connected as well as the time taken for a response (latency).

plan view

A top view or a view as seen from above. Objects or places can be looked at from different points of view, including front, side and plan views. An orthogonal drawing view.

play

Any activity that is positively valued, self-motivated, freely chosen and engaging.

preferred futures

Preferences for the future identified to inform the creation and evaluation of solutions. This entails considering how the solutions created now may be used in the future.

processed materials

Physical products that have been modified from natural materials by human intervention or do not occur in the natural environment. Products designed and manufactured to fulfil a particular purpose.

producing

Actively realising (making) designed solutions using appropriate resources and means of production.

product

The result of processes and production. Products are the tangible results of natural, human, mechanical, manufacturing, electronic or digital processes to meet a need or want.

production drawing

A working drawing that details the requirements for the manufacture and assembly of products and environments.

production processes

To transform through the selection and application of technologies and processes to produce products, services, systems or environments, such as the steps taken to produce a product.

programming environment

Hardware and software the user interacts with while programming.

project

A series of structured processes or activities required to understand the nature of an identified problem, situation or need.

project management

Detailed proposals for managing projects to meet the design criteria; for example, proposals list and sequence tasks, and indicate the required resources, costs and timelines.

properties

The distinctive qualities of a material or food that can be tested and used to help people select the most suitable one for a specific use.

protocols

Generally accepted standards or rules that govern relationships and interactions between and within information systems. For example, collaborative working groups agree on a set of rules or expectations to achieve accountability and productivity that are known as ‘group protocols’. Another example is the use of protocols in computer networks for the exchange of data between devices that is simple, reliable and secure (e.g. HTTPS).

prototype

A trial model used to test an idea or process and inform further design development. Its purpose is to see if and how well the design works and is tested by users, stakeholders, programmers and analysts.

pseudocode

English language statements that describe the steps in an algorithm in a clear, unambiguous way. It can be easily translated into code using a programming language.

qualitative data

Qualitative data can be arranged into categories that are not numerical. These categories can be physical traits, gender, colours or anything that does not have a number associated to it.

quantitative data

Quantitative data can be quantified and verified and is amenable to statistical manipulation.

query

A question or request for data results from a database; for example, queries can be actions such as combining data to produce more in-depth responses or they can be simply answers to questions.

random access memory

Random access memory (RAM) is a computer's short-term memory or storage. It keeps data readily available for internal hardware components to access quickly.

rapid prototyping

A range of techniques used to quickly fabricate a scale model of a physical part or assembly using three-dimensional computer-aided drawing.

reflect

To think and consider past experiences, activities or events, and develop suggestions to improve, adjust or make easier to use.

regenerative practices

The restoration and/or enhancement of the health of ecosystems, often focusing on agriculture and land management.

relate

To identify connections or associations between ideas or relationships, or between components of systems and structures.

relational database

A type of database that is structured to recognise relationships between stored data and information; for example, data organised in tables can be linked based on data that is common to each.

relationship

A connection or association between ideas, or between components of systems and structures.

reliability

The extent to which repeated observations and/or measurements taken under identical circumstances will yield similar results.

reliable data

Data that has been judged to have a high level of reliability. Reliability is the degree to which an assessment instrument or protocol consistently and repeatedly measures an attribute, achieving similar results for the same population.

rendered

A drawing that shows the relative relationship of elements or the form of objects using texture, colour, light, shade and tone (lightness or darkness of a colour). Rendered drawings are used to show what a product might look like or illustrate the form and shape of the proposed product design. Rendering can be done by hand, or using computer software, such as computer-aided drawing.

report

A written account of an investigation.

research

To locate, gather, record and analyse information to develop understanding.

resources

Assets available to assist in meeting needs or opportunities, including energy, time, finance and human input.

router

A networking device that is used to transport data packets from source to destination in a network. This can be used to connect two networks together.

S

search engines

Software programs that help people find information they are looking for online. A search engine searches for and identifies items in its database that correspond with specified keywords.

security mitigation strategies

Security mitigation strategies involve the use of cybersecurity policies and processes to reduce the risk and impact of potential cyber threats; for example, the implementation of firewalls and virus protection, and network access controls.

sensory properties

Attributes used to describe and evaluate products based on the senses, such as food and materials.

service

The result of processes and production. Services are the less tangible outcome (compared to products) of technologies processes to meet a need or want. They may involve development or maintenance of a system; for example, catering, cloud computing (software as a service), communication, transportation and water management. Services can be communicated by charts, diagrams, models, posters and procedures.

service agreement

A service agreement aims to meet the needs of the end user, client, stakeholder or customer that are required to be delivered by the provider and includes the physical, organisational, aesthetic and psychological benefits of the service and outlines the required systems thinking.

side view

Drawing of an object to show what it looks like when viewed from its side. An orthogonal drawing view.

simulation

A representation of a process, event or system, which imitates the real situation.

social protocols

Generally accepted rules or behaviours for when people interact in online environments; for example, using language that is not rude or offensive to particular cultures, and not divulging personal details about people without their permission.

social sustainability

Practices that maintain quality of life for people, societies and cultures in a changing world for a long period of time, ensuring health and wellbeing without disproportionate costs or side effects.

software

A set of programs, procedures and routines associated with the operation of a digital system.

soil preparation

The processes of tillage, addition of organic matter and fertilisers, and drainage before establishing a food or fibre crop.

solid state drive

A storage device that works faster and more efficiently than the traditional hard disk drive (HDD). A solid state drive (SSD) is composed of flash memory rather than moving parts. Data is stored permanently.

stakeholder

A person or organisation with a vested interest or concern in a product, service, system and/or environment.

storyboard

A graphic organiser in the form of illustrations or images displayed in sequence for the purpose of previsualising an idea or concept.

structured data

Data that is organised on the basis of a predefined model or schema, and formatted in a way that shows relationships, such as fields, rows, columns etc. This structuring makes the data more easily searchable.

supply chain vulnerability

Possible risks to a system involved in supplying a product or service (supply chain) to a consumer; for example, a cyberattack resulting in malicious code stopping a system from functioning correctly.

survey

An investigation method that involves asking questions of a range of respondents to collect data to assist in determining opinions, needs or beliefs.

sustainability

The capacity for development that can be sustained into the future without destroying or altering the environment in the process.

sustainable

Supports the needs of the present generation without compromising the ability of future generations to support their needs.

system

A structure, properties, behaviour and interactivity of people and components (inputs, processes and outputs) within and between natural, managed, constructed and digital environments.

systems thinking

A way of thinking holistically about the interactions and interconnections that shape the behaviour of systems. Systems thinkers consider the purpose, parts, order of events and feedback in a system.

T–U

table

An arrangement of data or observations in rows and columns.

technical protocols

A set of rules governing the format in which messages are sent from one computer to another, as in a network, using agreed terminology.

techniques

Method of performance; way of accomplishing.

technologies

The materials, data, systems, components, tools and equipment used to design and create solutions for identified needs and opportunities.

technology process

A defined, structured step-by-step process to create, implement or problem solve a solution for an end user, client, stakeholder or consumer. The process typically requires one or more types of thinking, such as agile, computational, critical, design or systems.

temperature danger zone

The temperature range between 5° and 60° Celsius is known as the ‘danger zone’, where bacteria can multiply quickly and cause food poisoning.

thumbnail sketches

Quickly developed outlines or small representations of objects and ideas to inform development of designed solutions.

top view

Drawing of an object to show what it looks like when viewed from above. An orthogonal drawing view.

trace

The process of following an algorithm precisely to confirm it produces the expected output for a given input; for example, a trace table allows for the manual checking of any logical errors.

transmission control protocol/internet protocol

A set of rules or standards for organising how messages are transmitted over the internet. Transmission control protocol (TCP) is one of the main protocols in the internet protocol (IP) suite. TCP provides reliable, ordered and error-checked delivery of messages that are broken into data packets for ease of transport.

transport layer security

Transport layer security (TLS) is a cryptographic tool that allows secure use of web-based systems. It is activated when the padlock icon appears in a web browser.

trend

A general shift in direction for change, such as societal, political, technological, values and ethical beliefs.

troubleshoot

The ability to solve technical problems by tracing and correcting faults; for example, restart a digital tool or ensure cables are correctly connected.

trusted adults

Reliable people who children feel comfortable talking to if they are upset or need help when engaged in online activities. They might include family members, carers or teachers.

Unicode

The Universal Character Encoding Standard or Unicode is a system that encodes characters to store in digital form. A standard for consistent encoding and representation of text from most of the world's writing systems. Like ASCII, characters are mapped to unique numerical values; however, Unicode contains more than 100 000 characters from more than 100 different types of script.

usability

The ease of use and learnability of a human-made object. The object can be a software application, website, book, tool, machine, process or anything a human interacts with.

user experience

The process used to create products that meet the design criteria and provide meaningful and relevant experiences to users. It encompasses all end users' interactions with a product.

user interface

The characteristics of the boundary between users and a computer system, or the way users interact with computer hardware or software. 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 the user and machine.

V–Z

validity

The extent to which tests measure what was intended; an extent to which data, inferences and actions produced from tests and other processes are accurate.

variable

A factor that can be changed, kept the same or measured in an investigation; for example, time, distance, light and temperature.

variable programming

A data value that can change depending on the conditions during the running of a program. Variables are the named stored locations where the data values are held.

vector graphics

A type of digital image that is created with mathematical equations to create shapes and no pixels.

virtual private network

A virtual private network (VPN) is a secure connection between a device and the internet, even on a public network, protecting users' online identities and data.

visual program

A programming language where the program is mainly represented and manipulated graphically rather than as text. Statements and control structures within graphic blocks can be composed to form programs. For example, Scratch (https://scratch.mit.edu/).

visual representation

Data presented in a summarised form to help with communication and analysis; for example, sorting and presenting data as a chart showing spending trends to help make financial decisions.

visualisation tools

Software to help in the recording of ideas as visual representations; for example, computer-aided drawing or computer-assisted design (CAD) and computer simulation. Graphic organiser software is a visualisation tool, as is software that displays graphs of data.

visualise data

Process of presenting data in a summarised form to help with communication and analysis; for example, sorting and presenting data as a chart showing spending trends to help make financial decisions.

wired networks/wired

Digital systems that use cables (or wires) to establish connections to the internet and allow the transmission of data to other digital systems.

wireless networks/wireless

Digital systems that can transmit data to other systems without using cables; for example, data can be transmitted via microwave signals, radio frequencies, and Bluetooth and infrared devices.

working models

Physical prototypes or virtual engineering simulations that can be used to evaluate performance and test how components interact.

workloads

The ability of digital systems to handle and process computational requirements; for example, the effort required by a gaming server to meet storage, communication and processing demands.