(no-code)

explain how affect and select appropriate for particular tasks and

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Elaborations

• explaining how affect what, and how quickly, a can perform tasks, for example how different bandwidth networks affect download speed and lag or how much random access memory (RAM) is needed for multimedia authoring
• selecting appropriate for particular tasks, for example choosing a powerful graphics card for computer gaming or large external storage for video editing
• considering how First Nations Australians communities in areas classified as remote often share access to smartphone and services, and how the of these devices affect , for example where immediate and extended families share and access through a single smartphone or device
• explaining how the specifications of in a system impact the speed with which AI can be trained; for example, GPUs are more efficient at performing the mathematical calculations necessary for training generative AI than CPUs

Students learn to:

explain how hardware specifications affect performance and select appropriate hard

particular tasks and workloads

(AC9TDI8K01)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Managing and operating

• Select and operate tools

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Managing and operating

• Select and operate tools

Managing and operating

• Select and operate tools

Managing and operating

• Select and operate tools

People

• Australia has 2 distinct First Nations Peoples; each encompasses a diversity of nations across Australia. Aboriginal Peoples are the first peoples of Australia and have occupied the Australian continent for more than 60,000 years. Torres Strait Islander Peoples are the First Nations Peoples of the Torres Strait and have occupied the region for over 4,000 years.

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8K01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and use the core features of digital tools to efficiently complete tasks
• troubleshoot basic problems and identify repetitive tasks to automate
• select and use the advanced or unfamiliar features of digital tools to efficiently complete tasks
• troubleshoot common problems and automate repetitive tasks
• select and operate advanced and emerging digital tools confidently
• troubleshoot common problems systematically and seek to improve efficiency by developing new skills

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8K01

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Digital Literacy: Managing and operating: Select and operate tools

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Digital Literacy: Managing and operating: Select and operate tools

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AC9TDI8K02

investigate how is transmitted and secured in and networks including the

•

Elaborations

• describing physical networks and comparing their properties, for example the bandwidth, latency and reliability of versus networks
• explaining why cryptography is necessary for securing , for example transmitting credit card details over the
• exploring simple and decryption , for example ROT13 and XOR
• explaining how problems occur in network communication and how they can be solved, for example routers can drop packets and how Transmission Control Protocol (TCP) uses acknowledgements to confirm packets have been■received

Students learn to:

investigate how data is transmitted and secured in wired and wireless networks incl internet

(AC9TDI8K02)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Managing and operating

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Elaborations

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Managing and operating

• Select and operate tools

Managing and operating

• Select and operate tools

Managing and operating

• Select and operate tools

Managing and operating

• Select and operate tools

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8K02

Continuum extract

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Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8K02

Continuum extract

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Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

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Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

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Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

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AC9TDI8K03

investigate how represent text, image and audio using

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Elaborations

• explaining how represent text as a sequence of individual characters numbered using the Unicode character set, for example upper-case and lower-case letters, punctuation and■emoji
• explaining how represent audio using for the amplitude of the soundwave at a given sampling rate, for example -32,768 to 32,767 for 16-bit audio at 44,100 Hz
• explaining how represent images (for example PNG and JPEG) as the colour of each pixel in separate red, green and blue (RGB) channels ranging from 0 to 255, and represent Scalable Vector graphics (SVG) using the geometry of lines and shapes
• investigating how a converts audio to as it records, stores and outputs sound, for example using the Welcome to Country to understand the local history and Traditional Owners of the lands which students learn on to inform the programming of an Acknowledgement of Country in a local First Nations Australian language

Students learn to:

investigate how digital systems represent text, image and audio data using integers

(AC9TDI8K03)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Managing and operating

• Select and operate tools

Number sense and algebra

• Number and place value

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Managing and operating

• Select and operate tools

Managing and operating

• Select and operate tools

Managing and operating

• Select and operate tools

Managing and operating

• Select and operate tools

Culture

• First Nations Australian societies are diverse and have distinct cultural expressions such as language, customs and beliefs. As First Nations Peoples of Australia, they have the right to maintain, control, protect and develop their cultural expressions, while also maintaining the right to control, protect and develop culture as Indigenous Cultural and Intellectual Property.

Country/Place

• First Nations communities of Australia maintain a deep connection to, and responsibility for, Country/Place and have holistic values and belief systems that are connected to the land, sea, sky and waterways.

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8K03

Continuum extract

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Snapshot – Number and place value

Numeracy: Number sense and algebra: Number and place value

Content description

AC9TDI8K03

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Numeral recognition and identification

• identifies, reads, writes and interprets decimal numbers applying knowledge of the place value periods of tenths, hundredths and thousandths and beyond

Place value

• compares the size of decimals to other numbers including natural numbers and decimals expressed to different numbers of places (e.g. selects 0.35 0.35 0 . 3 5 as the greatest number from the set 0.2 , 0.125 , 0.35 0.2, 0.125, 0.35 0 . 2 , 0 . 1 2 5 , 0 . 3 5 ; explains that 2 2 2 is greater than 1.845 1.845 1 . 8 4 5)
• describes the multiplicative relationship between the adjacent positions in place value for decimals (e.g. understands that 0.2 0.2 0 . 2 is 10 10 1 0 times as great as 0.02 0.02 0 . 0 2 and that 100 100 1 0 0 times 0.005 0.005 0 . 0 0 5 is 0.5 0.5 0 . 5)
• compares and orders decimals greater than one including those expressed to an unequal number of places (e.g. compares the heights of students in the class that are expressed in metres such as 1.6 1.6 1 . 6 m is taller than 1.52 1.52 1 . 5 2 m; correctly orders the numbers 1.4 1.4 1 . 4 , 1.375

1.375 1 . 3 7 5 and 2.15 2.15 2 . 1 5 from least to greatest)
• rounds decimals to one and 2 decimal places for a purpose

Numeral recognition and identification

• reads, represents, interprets and uses negative numbers in computation (e.g. explains that the temperature – 10 10 1 0 °C is colder than the temperature – 2.5 2.5 2 . 5 °C; recognises that negative numbers are less than zero; locates – 12 12 1 2 on a number line)

Place value

• identifies that negative numbers are integers that represent both size and direction (e.g. uses a number line to represent position and order negative numbers; uses negative numbers in financial contexts such as to model an overdrawn account)
• understands that multiplying and dividing numbers by 10 , 100 , 1000 10, 100, 1000 1 0 , 1 0 0 , 1 0 0 0 changes the positional value of the digits (e.g. explains that 100 100 1 0 0 times 0.125 0.125 0 . 1 2 5 is 12.5 12.5 1 2 . 5 because each digit value in 0.125 0.125 0 . 1 2 5 is multiplied by 100 100 1 0 0 , so 100 × 0.1 100 \times 0.1 1 0 0 × 0 . 1 is 10 10 1 0 , 100 × 0.02 100 \times 0.02 1 0 0 × 0 . 0 2 is 2 2 2 and 100 × 0.005 100 \times 0.005 1 0 0 × 0 . 0 0 5 is 0.5 0.5 0 . 5 ; converts between units of centimetres and millimetres when planning, measuring and marking materials for cutting)
• rounds decimals to a specified number of decimal places for a purpose (e.g. the mean distance thrown in a school javelin competition was rounded to 2 2 2 decimal places; if the percentage profit was calculated as 12.467921 12.467921 1 2 . 4 6 7 9 2 1 %, rounds the calculation to 12.5 12.5 1 2 . 5 %)

Numeral recognition and identification

• identifies, reads and interprets very large numbers and very small numbers (e.g. reads that the world population is estimated to be seven billion and interprets this to mean 7 7 7 000 000 0 0 0 000 000 0 0 0 000 000 0 0 0 or 7 × 1 0 9 7 \times 10^9 7 × 1 0 9 ; interprets the approximate mass of protons and neutrons as 1.67 × 1 0 – 24 1.67 \times10^{-24} 1 . 6 7 × 1 0 – 2 4 g; identifies and interprets the value of national government debt)

Place value

• compares and orders very large numbers and very small numbers (e.g. understands the relative size of very large time scales such as a millennium)
• relates place value parts to exponents (e.g. 1000 1000 1 0 0 0 is 100 100 1 0 0 times greater than 10 10 1 0 , and that is why 10 × 1 0 2 = 1 0 3 10 \times 10^2 = 10^3 1 0 × 1 0 2 = 1 0 3 and why 1 0 3 10^3 1 0 3 divided by 10 10 1 0 is equal to 1 0 2 10^2 1 0 2)
• expresses numbers in scientific notation (e.g. when calculating the distance of the Earth from the sun uses 1.5 × 1 0 8 1.5\times 10^8 1 . 5 × 1 0 8 as an approximation; a nanometre has an order of magnitude of – 9 9 9 and is represented as 1 0 – 9 10^{-9} 1 0 – 9)

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8K03

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
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Digital Literacy: Managing and operating: Select and operate tools

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Digital Literacy: Managing and operating: Select and operate tools

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AC9TDI8K04

explain how and why represent in

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Elaborations

• explaining how can be represented in , for example counting in from 0■to 31, and recognising that one byte = 8 bits, which can represent from 0 to 255
• explaining how in , for example by converting a character to its Unicode value, then converting that value into
• explaining how circuits can perform operations represented as on/off states, for example showing how circuits with 2 switches can represent AND or OR gates

Students learn to:

explain how and why digital systems represent integers in binary

(AC9TDI8K04)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Number sense and algebra

• Additive strategies

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to

general capabilities and cross-curriculum priorities. Content elaborations are optional .

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9M8N04

Snapshot – Additive strategies

Numeracy: Number sense and algebra: Additive strategies

Content description

AC9TDI8K04

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Flexible strategies with fractions and decimals

• uses knowledge of place value and how to partition numbers in different ways to make the calculation easier when adding and subtracting decimals with up to 3 3 3 decimal places

• identifies and justifies the need for a common denominator when solving additive problems involving fractions with related denominators

• represents a wide range of familiar real-world additive situations involving decimals and common fractions as standard number sentences, explaining their reasoning

Flexible strategies with rational numbers

• uses knowledge of equivalent fractions, multiplicative thinking and how to partition fractional numbers to make calculations easier when adding and subtracting fractions with different denominators

• solves additive problems involving the addition and subtraction of rational numbers including fractions with unrelated denominators and integers

• chooses and uses appropriate strategies to solve multi-step problems involving the addition and subtraction of rational numbers

AC9TDI8P01

, store and validate from a range of sources using , including spreadsheets and databases

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•

Elaborations

• acquiring to answer questions for their own investigations, for example answering "Does the canteen sell the right food?" by designing a survey to collect food preferences and accessing canteen sales

• judging how meaningful is to a question, its correctness and how up to date the is, for example "Does age affect the chance of cyclist injury?", "Are self-reported accidents reliable?" and "Is the before cycleways existed relevant?"

• storing acquired using specialised and general appropriate for how it will be accessed and manipulated, for example a spreadsheet for visualisation or a pre-defined database for filtering and

• acquiring, storing and validating from a reputable source, such as the Australian Bureau of Statistics, to analyse the geographic distribution of First Nations Australians, with the aim to highlight past and emerging trends

• ensuring that the used to train an AI minimises any potential biases in its output and is representative of the target audience; for example, training a on collected from a single demographic group may not produce correct outputs for a more diverse population

Students learn to:

acquire, store and validate data from a range of sources using software, including s

databases

(AC9TDI8P01)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Investigating

• Acquire and collate data
• Interpret data

Statistics and probability

• Interpreting and representing data
• Interpreting and representing data
• Interpreting and representing data

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Investigating

• Locate information
• Acquire and collate data
• Interpret data

Investigating

• Acquire and collate data
• Interpret data

Statistics and probability

• Interpreting and representing data
• Interpreting and representing data

Investigating

• Interpret data

Investigating

• Interpret data

People

• Australia has 2 distinct First Nations Peoples; each encompasses a diversity of nations across Australia. Aboriginal Peoples are the first peoples of Australia and have occupied the Australian continent for more than 60,000 years. Torres Strait Islander Peoples are the First Nations Peoples of the Torres Strait and have occupied the region for over 4,000 years.

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9HC7S02
AC9HC8S02
AC9HE7S02
AC9HE8S02
AC9HG7S02
AC9HG8S02
AC9M7ST01
AC9M8ST01

Snapshot – Acquire and collate data

Digital Literacy: Investigating: Acquire and collate data

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• collect and access data using a range of digital tools and methods in response to a defined question or problem
• collect and access data from a range of sources, using specialised digital tools in response to problems, and evaluate it for relevance
• collect and evaluate quantitative and qualitative data using specialised digital tools and processes in the context of identified problems

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• analyse and visualise data using a range of digital tools to identify patterns and make predictions

• analyse and visualise data by selecting and using a range of digital tools to infer relationships and make predictions

• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9TDI8P01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Collecting, displaying and interpreting numerical data

• collects and records discrete numerical data using an appropriate method for recording (e.g. uses a frequency table to record the experimental results for rolling a dice; records sample measurements taken during a science investigation)

• constructs graphical representations of numerical data and explains the difference between continuous and discrete data (e.g. explains that measurements such as length, mass and temperature are continuous data whereas a count such as the number of people in a queue is discrete)

• explains how data displays can be misleading (e.g. whether a scale should start at zero; not using uniform intervals on the axes)

• interprets visual representations of data displayed using a multi-unit scale, reading values between the marked units and describing any variation and trends in the data

Collecting, displaying, interpreting and analysing numerical data

• poses questions based on variations in continuous numerical data and chooses the appropriate method to collect and record data (e.g. collects information on the heights of buildings or daily temperatures, tabulates the results and represents these graphically; uses a survey to collect primary data or secondary data extracted from census data)

• uses numerical and graphical representations relevant to the purpose of the collection of the data and explains their reasoning (e.g. "I can’t use a frequency histogram for categorical data because there is no numerical connection between the categories"; converts their data to percentages in order to compare the girls' results to those of the boys, as the total number of boys and girls who participated in the survey was different)

• determines and calculates the most appropriate statistic to describe the spread of data (e.g. when creating an infographic, uses the mean of the data to describe household income and the median of the data for house prices)

• calculates simple descriptive statistics such as mode, mean or median as measures to represent typical values of a distribution (e.g. describes the mean kilojoule intake and median hours of exercise of a sample population when investigating community health and wellbeing; describes central tendency when analysing road safety statistics)

• compares the usefulness of different representations of the same data (e.g. chooses to use a line graph to illustrate trends, a bar graph to compare the living standards of different economies and a histogram to show income distribution)

• describes the spread of a data distribution in terms of the range, clusters, skewness and symmetry of the graphical display, and determines and makes connections to the mode, median and mean of the data

Interpreting graphical representations

• uses features of graphical representations to make predictions (e.g. predicts audience numbers based on historical data; interprets a range of graphs to identify possible trends and make predictions such as economic growth, stock prices, interest rates, population growth)

• summarises data using fractions, percentages and decimals (e.g. 2 3 \frac23 3 2 ■ of a class live

in the same suburb; represents road safety and sun safety statistics as a percentage of the Australian population)
• explains that continuous variables depicting growth or change often vary over time (e.g. creates growth charts to illustrate impacts of financial decisions; describes patterns in inflation rates, employment rates, migration rates over time; represents changes to fitness levels following the implementation of a personal fitness plan; interprets temperature charts)
• interprets graphs depicting motion such as distance–time and velocity–time graphs
• interprets and describes patterns in graphical representations of data from real-life situations such as the motion of a rollercoaster, flight trajectory of a basketball shot and the spread of disease
• investigates the association of 2 2 2 numerical variables through the representation and interpretation of bivariate data (e.g. uses scatter plots to represent bivariate data when investigating the relationship between 2 2 2 variables, such as income per capita, population density and life expectancy for different socio-economic groups)
• investigates, represents and interprets time series data (e.g. interrogates a time series graph showing the change in costs over time; uses a maximum daily temperature chart to determine the average temperature for the month)
• interprets the impact of changes to data (e.g. recognises the impact of outliers on a data set such as the income of a world-class professional athlete on the average income of players at the state/territory level; uses digital tools to enhance the quality of data in a science investigation)

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9TDI8P01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Collecting, displaying, interpreting and analysing numerical data

• poses questions based on variations in continuous numerical data and chooses the appropriate method to collect and record data (e.g. collects information on the heights of buildings or daily temperatures, tabulates the results and represents these graphically; uses a survey to collect primary data or secondary data extracted from census data)
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Sampling

• considers the context when determining whether to use data from a sample or a population
• determines what type of sample to use from a population (e.g. decides to use a representative sample when conducting targeted market research or when researching beliefs about a health-related issue)
• makes reasonable statements about a population based on evidence from samples (e.g. considers accuracy of representation of marginalised individuals or population groups)
• plans, executes and reports on sampling-based investigations, taking into account validity of methodology and consistency of data, to answer questions formulated by the student

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9TDI8P01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Interpreting graphical representations

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• interprets graphs depicting motion such as distance–time and velocity–time graphs
• interprets and describes patterns in graphical representations of data from real-life situations such as the motion of a rollercoaster, flight trajectory of a basketball shot and the spread of disease
• investigates the association of 2 2 2 numerical variables through the representation and interpretation of bivariate data (e.g. uses scatter plots to represent bivariate data when investigating the relationship between 2 2 2 variables, such as income per capita, population density and life expectancy for different socio-economic groups)
• investigates, represents and interprets time series data (e.g. interrogates a time series graph showing the change in costs over time; uses a maximum daily temperature chart to determine the

average temperature for the month)
• interprets the impact of changes to data (e.g. recognises the impact of outliers on a data set such as the income of a world-class professional athlete on the average income of players at the state/territory level; uses digital tools to enhance the quality of data in a science investigation)

Sampling

• considers the context when determining whether to use data from a sample or a population
• determines what type of sample to use from a population (e.g. decides to use a representative sample when conducting targeted market research or when researching beliefs about a health-related issue)
• makes reasonable statements about a population based on evidence from samples (e.g. considers accuracy of representation of marginalised individuals or population groups)
• plans, executes and reports on sampling-based investigations, taking into account validity of methodology and consistency of data, to answer questions formulated by the student

Recognising bias

• applies an understanding of distributions to evaluate claims based on data (e.g. recognises that the accuracy of using a sample for predicting population values depends on both the relative size of the sample and how well the characteristics of the sample reflect the characteristics of the population; critically analyses statistics that reinforce stereotypes; evaluates claims made by the media regarding young people in relation to drugs and/or risk-taking behaviours)
• identifies and explains bias as a possible source of error in media reports of survey data (e.g. uses data to evaluate veracity of review headlines such as "everybody's favourite game"; investigates media claims on attitudes to government responses to market failure or income redistribution)
• justifies criticisms of data sources that include biased statistical elements (e.g. inappropriate sampling from populations; identifying sources of uncertainty in a scientific investigation; checks the authenticity of a data set)

Snapshot – Locate information

Digital Literacy: Investigating: Locate information

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• locate information through search engines and in documents by applying specific search terms based on set criteria, and select and retrieve relevant information from multiple sources
• locate, select and retrieve relevant information from multiple sources, exploring advanced search functions and targeted criteria
• locate relevant information by applying advanced search functions across multiple sources involving purposefully selected and contextually specific terms and criteria

Snapshot – Acquire and collate data

Digital Literacy: Investigating: Acquire and collate data

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• collect and access data using a range of digital tools and methods in response to a defined question or problem
• collect and access data from a range of sources, using specialised digital tools in response to problems, and evaluate it for relevance
• collect and evaluate quantitative and qualitative data using specialised digital tools and processes in the context of identified problems

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• analyse and visualise data using a range of digital tools to identify patterns and make predictions

• analyse and visualise data by selecting and using a range of digital tools to infer relationships and make predictions

• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

Snapshot – Acquire and collate data

Digital Literacy: Investigating: Acquire and collate data

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• collect and access data using a range of digital tools and methods in response to a defined question or problem

• collect and access data from a range of sources, using specialised digital tools in response to problems, and evaluate it for relevance

• collect and evaluate quantitative and qualitative data using specialised digital tools and processes in the context of identified problems

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• analyse and visualise data using a range of digital tools to identify patterns and make predictions

• analyse and visualise data by selecting and using a range of digital tools to infer relationships and make predictions

• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9TDI8P01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Collecting, displaying and interpreting numerical data

• collects and records discrete numerical data using an appropriate method for recording (e.g. uses a frequency table to record the experimental results for rolling a dice; records sample measurements taken during a science investigation)

• constructs graphical representations of numerical data and explains the difference between continuous and discrete data (e.g. explains that measurements such as length, mass and temperature are continuous data whereas a count such as the number of people in a queue is discrete)

• explains how data displays can be misleading (e.g. whether a scale should start at zero; not using uniform intervals on the axes)

• interprets visual representations of data displayed using a multi-unit scale, reading values between the marked units and describing any variation and trends in the data

Collecting, displaying, interpreting and analysing numerical data

• poses questions based on variations in continuous numerical data and chooses the appropriate method to collect and record data (e.g. collects information on the heights of buildings or daily temperatures, tabulates the results and represents these graphically; uses a survey to collect

primary data or secondary data extracted from census data)
• uses numerical and graphical representations relevant to the purpose of the collection of the data and explains their reasoning (e.g. "I can’t use a frequency histogram for categorical data because there is no numerical connection between the categories"; converts their data to percentages in order to compare the girls' results to those of the boys, as the total number of boys and girls who participated in the survey was different)
• determines and calculates the most appropriate statistic to describe the spread of data (e.g. when creating an infographic, uses the mean of the data to describe household income and the median of the data for house prices)
• calculates simple descriptive statistics such as mode, mean or median as measures to represent typical values of a distribution (e.g. describes the mean kilojoule intake and median hours of exercise of a sample population when investigating community health and wellbeing; describes central tendency when analysing road safety statistics)
• compares the usefulness of different representations of the same data (e.g. chooses to use a line graph to illustrate trends, a bar graph to compare the living standards of different economies and a histogram to show income distribution)
• describes the spread of a data distribution in terms of the range, clusters, skewness and symmetry of the graphical display, and determines and makes connections to the mode, median and mean of the data

Interpreting graphical representations

• uses features of graphical representations to make predictions (e.g. predicts audience numbers based on historical data; interprets a range of graphs to identify possible trends and make predictions such as economic growth, stock prices, interest rates, population growth)
• summarises data using fractions, percentages and decimals (e.g. 2 3 \frac23 3 2 ■ of a class live in the same suburb; represents road safety and sun safety statistics as a percentage of the Australian population)
• explains that continuous variables depicting growth or change often vary over time (e.g. creates growth charts to illustrate impacts of financial decisions; describes patterns in inflation rates, employment rates, migration rates over time; represents changes to fitness levels following the implementation of a personal fitness plan; interprets temperature charts)
• interprets graphs depicting motion such as distance–time and velocity–time graphs
• interprets and describes patterns in graphical representations of data from real-life situations such as the motion of a rollercoaster, flight trajectory of a basketball shot and the spread of disease
• investigates the association of 2 2 2 numerical variables through the representation and interpretation of bivariate data (e.g. uses scatter plots to represent bivariate data when investigating the relationship between 2 2 2 variables, such as income per capita, population density and life expectancy for different socio-economic groups)
• investigates, represents and interprets time series data (e.g. interrogates a time series graph showing the change in costs over time; uses a maximum daily temperature chart to determine the average temperature for the month)
• interprets the impact of changes to data (e.g. recognises the impact of outliers on a data set such as the income of a world-class professional athlete on the average income of players at the state/territory level; uses digital tools to enhance the quality of data in a science investigation)

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9TDI8P01

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Interpreting graphical representations

• uses features of graphical representations to make predictions (e.g. predicts audience numbers based on historical data; interprets a range of graphs to identify possible trends and make predictions such as economic growth, stock prices, interest rates, population growth)
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in the same suburb; represents road safety and sun safety statistics as a percentage of the Australian population)
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Sampling

• considers the context when determining whether to use data from a sample or a population
• determines what type of sample to use from a population (e.g. decides to use a representative sample when conducting targeted market research or when researching beliefs about a health-related issue)
• makes reasonable statements about a population based on evidence from samples (e.g. considers accuracy of representation of marginalised individuals or population groups)
• plans, executes and reports on sampling-based investigations, taking into account validity of methodology and consistency of data, to answer questions formulated by the student

Recognising bias

• applies an understanding of distributions to evaluate claims based on data (e.g. recognises that the accuracy of using a sample for predicting population values depends on both the relative size of the sample and how well the characteristics of the sample reflect the characteristics of the population; critically analyses statistics that reinforce stereotypes; evaluates claims made by the media regarding young people in relation to drugs and/or risk-taking behaviours)
• identifies and explains bias as a possible source of error in media reports of survey data (e.g. uses data to evaluate veracity of review headlines such as "everybody's favourite game"; investigates media claims on attitudes to government responses to market failure or income redistribution)
• justifies criticisms of data sources that include biased statistical elements (e.g. inappropriate sampling from populations; identifying sources of uncertainty in a scientific investigation; checks the authenticity of a data set)

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• analyse and visualise data using a range of digital tools to identify patterns and make predictions
• analyse and visualise data by selecting and using a range of digital tools to infer relationships and make predictions
• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P01

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• analyse and visualise data using a range of digital tools to identify patterns and make predictions

• analyse and visualise data by selecting and using a range of digital tools to infer relationships and make predictions

• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

AC9TDI8P02

analyse and using a range of , including spreadsheets and databases, to draw conclusions and make predictions by identifying trends

•

•

Elaborations

• summarising based on its to identify trends and make predictions, for example sorting crime by type of offence, showing that burglaries have decreased over time to predict fewer burglaries will happen next year

• visualising by choosing appropriate graphs, for example a scatter plot of food prices and sales, coloured by each food's sugar content, or diagrams such as a social network diagram and maps of crime rates by location to reveal trends, or other information

• using an AI with a natural language interface to generate to perform analysis; for example, describing a database schema and asking the to generate an SQL to find results that match a set of criteria

• comparing the analysis performed by a trained predictive AI with other analysis techniques; for example, comparing the output from a classification against tagged manually to verify its accuracy and effectiveness

Students learn to:

analyse and visualise data using a range of software, including spreadsheets and d conclusions and make predictions by identifying trends

(AC9TDI8P02)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Creating and exchanging

• Create, communicate and collaborate

Investigating

• Interpret data

Number sense and algebra

• Number patterns and algebraic thinking

Statistics and probability

• Interpreting and representing data

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Investigating

• Interpret data

Investigating

• Interpret data

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9HE7S03

AC9HE8S03
AC9HG7S03
AC9HG8S03
AC9M7P02
AC9M7SP01
AC9M7ST02
AC9M7ST03
AC9M8A04
AC9M8P03
AC9M8ST04

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups

• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups

• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• analyse and visualise data using a range of digital tools to identify patterns and make predictions

• analyse and visualise data by selecting and using a range of digital tools to infer relationships and make predictions

• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

Snapshot – Number patterns and algebraic thinking

Numeracy: Number sense and algebra: Number patterns and algebraic thinking

Content description

AC9TDI8P02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Representing unknowns

• creates algebraic expressions to represent relationships involving one or more operations (e.g. when n = n = n = number of egg cartons, then the number of eggs can be represented by the expression 12 n 12n 1 2 n ; to find the number of neutrons n n n given the atomic mass A A A and number of protons p p p , uses n = A – p n = A - p n = A – p)

• uses words or symbols to express relationships involving unknown values (e.g. total number of apples = 48 × = 48\space\times = 4 8 × number of boxes; C = 20 + 30 h C = 20 + 30h C = 2 0 + 3 0 h where C C C is the total cost and h h h is the hours of labour; uses v = d t v=\frac dt v = t d ■ to represent the relationship between velocity, distance and time)

• evaluates an algebraic expression or equation by substitution (e.g. uses the formula for force F F F , F = m a F=ma F = m a to calculate the force given the mass m m m and the acceleration a a a)

Algebraic expressions

• creates and identifies algebraic equations from word problems involving one or more operations

(e.g. if a taxi charges $ 5 \$5 $ 5 call out fee then a flat rate of $ 2.30 \$2.30 $ 2 . 3 0 per km travelled, represents this algebraically as C = 5 + 2.3 d C=5+2.3d C = 5 + 2 . 3 d where d d d is the distance travelled in km and C C C is the total cost of the trip)
• identifies and justifies equivalent algebraic expressions
• interprets a table of values in order to plot points on a graph

Algebraic relationships

• interprets and uses formulas and algebraic equations that describe relationships in various contexts (e.g. uses A = π r 2 \mathrm A=\mathrm{πr}^2 A = π r 2 to calculate the area of a circular space; uses A = P (1 + r n) n t \mathrm A=\mathrm P(1+\frac{\mathrm r}{\mathrm n})^{\mathrm{nt}} A = P (1 + n r ■) n t when working with compound interest; uses v = u + a t v=u+at v = u + a t to calculate the velocity of an object
• plots relationships on a graph using a table of values representing authentic data (e.g. uses data recorded in a spreadsheet to plot results of a science experiment)

Snapshot – Interpreting and representing data

Numeracy: Statistics and probability: Interpreting and representing data

Content description

AC9TDI8P02

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Interpreting graphical representations

• uses features of graphical representations to make predictions (e.g. predicts audience numbers based on historical data; interprets a range of graphs to identify possible trends and make predictions such as economic growth, stock prices, interest rates, population growth)
• summarises data using fractions, percentages and decimals (e.g. 2 3 \frac23 3 2 ■ of a class live in the same suburb; represents road safety and sun safety statistics as a percentage of the Australian population)
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Sampling

• considers the context when determining whether to use data from a sample or a population
• determines what type of sample to use from a population (e.g. decides to use a representative sample when conducting targeted market research or when researching beliefs about a health-related issue)
• makes reasonable statements about a population based on evidence from samples (e.g. considers accuracy of representation of marginalised individuals or population groups)
• plans, executes and reports on sampling-based investigations, taking into account validity of methodology and consistency of data, to answer questions formulated by the student

Recognising bias

• applies an understanding of distributions to evaluate claims based on data (e.g. recognises that

the accuracy of using a sample for predicting population values depends on both the relative size of the sample and how well the characteristics of the sample reflect the characteristics of the population; critically analyses statistics that reinforce stereotypes; evaluates claims made by the media regarding young people in relation to drugs and/or risk-taking behaviours)
• identifies and explains bias as a possible source of error in media reports of survey data (e.g. uses data to evaluate veracity of review headlines such as "everybody's favourite game"; investigates media claims on attitudes to government responses to market failure or income redistribution)
• justifies criticisms of data sources that include biased statistical elements (e.g. inappropriate sampling from populations; identifying sources of uncertainty in a scientific investigation; checks the authenticity of a data set)

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• analyse and visualise data using a range of digital tools to identify patterns and make predictions
• analyse and visualise data by selecting and using a range of digital tools to infer relationships and make predictions
• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P02

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
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• analyse and visualise data by selecting and using a range of digital tools to infer relationships and make predictions
• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

AC9TDI8P03

and the of objects and events using

•

Elaborations

• objects and events as , that is, the relevant to the task, for example products in the canteen and the sale of those products, with such as the product name, price, quantity and nutritional value
• using a spreadsheet table to objects and events, including choosing appropriate formats for each column, and filtering and sorting rows to answer questions
• interpreting and querying using visual or simple SQL with SELECT, WHERE and ORDER BY clauses, for example answering in a database for a historical■event

Students learn to:

model and query the attributes of objects and events using structured data

(AC9TDI8P03)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Investigating

• Interpret data

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Investigating

• Interpret data

Investigating

• Interpret data

Investigating

• Interpret data

Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P03

Continuum extract

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Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P03

Continuum extract

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Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P03

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

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Snapshot – Interpret data

Digital Literacy: Investigating: Interpret data

Content description

AC9TDI8P03

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• analyse and visualise data using a range of digital tools to identify patterns and make predictions

• analyse and visualise data by selecting and using a range of digital tools to infer relationships

and make predictions
• analyse and visualise multidimensional data by selecting and using a range of interactive tools to draw conclusions and make predictions

AC9TDI8P04

define and with and by creating

•
•

Elaborations

• framing a problem in terms of what we know, why it is important and the outcome we want, for example matching the items in your fridge to possible recipes to reduce food waste
• asking a series of questions and sub-questions to understand the problem and breaking it down into manageable parts, for example “How do we keep track of what items are in the pantry? Are there any dietary requirements that need to be considered?”
• using a template such as "As a , I want so that ", for example "As a user with a visual impairment I want to be able to get the news on my smartphone so that I can keep up with my world"
• making predictions about future population distribution of First Nations Australians based on identified trends, for example analysing and visualising using spreadsheets and databases on their population growth in metropolitan areas

Students learn to:

define and decompose real-world problems with design criteria and by creating use

(AC9TDI8P04)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

• Evaluate actions and outcomes

Writing

• Creating texts

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

• Evaluate actions and outcomes

Design

• Sustainable design requires an awareness of place, past practices, research and technological developments, and balanced judgements based on projected environmental, social and economic impacts.

Analysing

• Evaluate actions and outcomes

Analysing

• Evaluate actions and outcomes

People

• Australia has 2 distinct First Nations Peoples; each encompasses a diversity of nations across Australia. Aboriginal Peoples are the first peoples of Australia and have occupied the Australian continent for more than 60,000 years. Torres Strait Islander Peoples are the First Nations Peoples of the Torres Strait and have occupied the region for over 4,000 years.

Resources

Work Samples

WS01 - Digital project: website design

Snapshot – Evaluate actions and outcomes

Critical and Creative Thinking: Analysing: Evaluate actions and outcomes

Content description

AC9TDI8P04

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• evaluate the effectiveness of a course of action or the outcome of a task, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action or the outcome of a task and account for expected and unexpected results, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action to achieve desired outcomes and suggest improvements, including using a personally developed set of criteria to support judgements and decisions

Snapshot – Creating texts

Literacy: Writing: Creating texts

Content description

AC9TDI8P04

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

• creates informative texts for a broader range of learning area purposes (e.g. explains a life cycle of a butterfly, recounts a process, describes an artwork)
• includes structural features appropriate to the type of text and task such as opening statements to define the topic and at least 2 body paragraphs
• includes ideas which are relevant to the topic and purpose of the text
• organises information into paragraphs to support the reader
• includes a relevant graphic to support the reader (e.g. diagram or photo)

Text forms and features

• uses cohesive devices to signpost sections of text (e.g. uses text connectives such as "finally", "as a result", "in addition")
• uses present or timeless present tense consistently throughout text (e.g. "bears hibernate in winter") (see Grammar)
• selects visual and audio features to expand ideas in written texts (e.g. diagrams, tables, images)
• uses adjectives to create more accurate description (e.g. "the warm-blooded mammal") (see Grammar)

Vocabulary

• uses a range of technical and subject specific words to add detail and authority to information (e.g. "hibernate" instead of "sleep")

Crafting ideas

• creates informative texts that describe, explain and document (e.g. describe an artwork, document the materials and explain why it was created)
• selects structural elements to comprehensively and accurately represent the information (e.g. a fact sheet includes an opening statement, labelled diagrams and text boxes)
• orients the reader to the topic or concept using a definition or classification
• develops ideas with details and examples
• uses ideas derived from research
• uses written and visual supporting evidence

Text forms and features

• uses cohesive devices to link concepts across texts (e.g. uses lexical cohesion such as word associations and synonyms)
• uses cohesive devices to express cause and effect (e.g. uses text connectives such as "therefore", "subsequently")
• includes salient visual and audio features to expand on written information (e.g. creates graphs and other technical diagrams from authentic data)
• uses language to compare (e.g. "alternatively", "whereas")
• uses formatting appropriately to reference and label graphics

Vocabulary

• uses a range of learnt, technical and discipline-specific terms (e.g. "adapt", "survive")
• uses more sophisticated words to express cause and effect (e.g. "therefore", "subsequently")

Crafting ideas

• creates informative texts to explain and analyse (e.g. analyses how artists use visual conventions in artworks)
• creates texts to compare and contrast phenomena (e.g. identify the similarities and differences between species of animals)
• orients the reader clearly to the topic or concept (e.g. using a definition or classification in the opening paragraph)
• intentionally selects structural elements for effect (e.g. includes an effective conclusion that synthesises complex ideas)
• uses evidence and research including digital resources to expand upon information and elaborate concepts

Text forms and features

• varies sentence structure for effect (see Grammar)
• judiciously uses language, visual and audio features to emotionally or intellectually affect the reader
• uses more elaborate noun groups/phrases that include classifying adjectives and specific nouns (e.g. "mineral component of sedimentary rocks")
• creates cohesive flow by condensing previous information into a summarising noun (e.g. "A series of tumultuous events culminated in the outbreak of WWI - modern history's turning point.")
• uses passive voice and nominalisation to write succinctly (e.g. "the results were analysed") (see Grammar)

Vocabulary

• uses discipline-specific terminology to provide accurate and explicit information (e.g. "discipline metalanguage")
• uses a range of synonyms for frequently occurring words, in a longer text (e.g. "repair", "fix", "remedy")
• uses vocabulary to indicate and describe relationships (e.g. "additionally", "similarly")

Snapshot – Evaluate actions and outcomes

Critical and Creative Thinking: Analysing: Evaluate actions and outcomes

Content description

AC9TDI8P04

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• evaluate the effectiveness of a course of action or the outcome of a task, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action or the outcome of a task and account for expected and unexpected results, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action to achieve desired outcomes and suggest improvements, including using a personally developed set of criteria to support judgements and decisions

Snapshot – Evaluate actions and outcomes

Critical and Creative Thinking: Analysing: Evaluate actions and outcomes

Content description

AC9TDI8P04

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• evaluate the effectiveness of a course of action or the outcome of a task, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action or the outcome of a task and account for expected and unexpected results, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action to achieve desired outcomes and suggest improvements, including using a personally developed set of criteria to support judgements and decisions

Snapshot – Evaluate actions and outcomes

Critical and Creative Thinking: Analysing: Evaluate actions and outcomes

Content description

AC9TDI8P04

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• evaluate the effectiveness of a course of action or the outcome of a task, including using a given or co-developed set of criteria to support decisions

• evaluate the effectiveness of a course of action or the outcome of a task and account for expected and unexpected results, including using a given or co-developed set of criteria to support decisions

• evaluate the effectiveness of a course of action to achieve desired outcomes and suggest improvements, including using a personally developed set of criteria to support judgements and decisions

Resource – WS01 - Digital project: website design

By the end of Year 8 students explain how people design, innovate and produce products, services and environments for preferred futures.■For each of the 4 prescribed technologies contexts students explain how the features of technologies impact on design decisions, and create designed solutions based on analysis of needs or opportunities.■They acquire, interpret and model with spreadsheets and represent data with integers and binary.■ Students design and trace algorithms; and implement them in a general-purpose programming language.■Students create and adapt design ideas, processes and solutions, and justify their decisions against developed design criteria that include sustainability. They communicate design ideas and solutions to audiences using technical terms and graphical representation techniques, including using digital tools. They select appropriate hardware for particular tasks, explain how data is transmitted and secured in networks, and identify cyber security threats. They use a range of digital tools to individually and collaboratively document and manage production processes to safely and responsibly produce designed or digital solutions for the intended purpose. Students manage their digital footprint.

By the end of Year 8 students develop and modify creative digital solutions, decompose real-world problems, and evaluate alternative solutions against user stories and design criteria. Students acquire, interpret and model data with spreadsheets and represent data with integers and binary.■They design and trace algorithms and implement them in a general-purpose programming language.■Students select appropriate hardware for particular tasks, explain how data is transmitted and secured in networks, and identify cyber security threats. They select and use a range of digital tools efficiently and responsibly to create, locate and share content; and to plan , collaborate on and manage projects. Students manage their digital footprint.

AC9TDI8P04

define and decompose real-world problems with design criteria and by creating user stories

AC9TDI8P07

design the user experience of a digital system

AC9TDI8P08

generate, modify, communicate and evaluate alternative designs

AC9TDI8P10

evaluate existing and student solutions against the design criteria, user stories and possible future impact

AC9TDI8P11

select and use a range of digital tools efficiently, including unfamiliar features, to create, locate and communicate content, consistently applying common conventions

AC9TDI8P12

select and use a range of digital tools efficiently and responsibly to share content online, and plan and manage individual and collaborative agile projects

AC9TDI8P05

design involving and represent them using and

•

•

Elaborations

• designing an or modifying an existing to fix an error or change functionality, for example calculating the coins and notes needed for an amount of money and changing the to handle new denominations

• describing precisely in (structured English) or with for each part of the problem, for example using separate to describe the purchase of an item and the giving of change during the purchase

• describing with , including a nested if, for example IF it is raining THEN [IF parents are home THEN drive to school]; or an IF inside a loop, for example REPEAT [select the largest coin smaller than the remaining total, and subtract it] UNTIL the remainder is zero

Students learn to:

design algorithms involving nested control structures and represent them using flo

pseudocode

(AC9TDI8P05)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Creating and exchanging

• Create, communicate and collaborate

Measurement and geometry

• Understanding geometric properties

Number sense and algebra

• Proportional thinking

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

• Interpret concepts and problems

Creating and exchanging

• Create, communicate and collaborate

Analysing

• Interpret concepts and problems

Creating and exchanging

• Create, communicate and collaborate

Analysing

• Interpret concepts and problems

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9M7SP04

AC9M8SP04

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups

• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups

• select and control the features of digital tools to purposefully create content and effectively

communicate and collaborate, inclusive of diverse groups

Snapshot – Understanding geometric properties

Numeracy: Measurement and geometry: Understanding geometric properties

Content description

AC9TDI8P05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Properties of shapes and objects

• investigates and uses reasoning to explain the properties of a triangle (e.g. explains why the longest side is always opposite the largest angle in a triangle; recognises that the combined length of 2 2 2 sides of a triangle must always be greater than the length of the third side)

• uses relevant properties of common geometrical shapes to determine unknown lengths and angles

Transformations

• enlarges and reduces shapes according to a given scale factor and explains what features change and what stay the same (e.g. says ‘when I double the dimensions of the rectangle, all of the lengths are twice as long as they were, but the size of the angles stay the same)

• applies angle properties to solve problems that involve the transformation of shapes and objects and how they are used in practice (e.g. determines which shapes tessellate)

Angles

• uses angle properties to identify perpendicular and parallel lines (e.g. develops a computer-aided design drawing involving the creation of parallel and perpendicular lines)

• demonstrates that the angle sum of a triangle is 180 180 1 8 0 ■ and uses this to solve problems

• identifies interior angles in shapes to calculate angle sum

• uses angle properties to identify and calculate unknown angles in familiar two-dimensional shapes

Geometric properties

• uses Pythagoras’ theorem to solve right-angled triangle problems

• determines the conditions for triangles to be similar

• determines the conditions for triangles to be congruent

Transformations

• uses the enlargement transformation to explain similarity and develop the conditions for triangles to be similar

• solves problems using ratio and scale factors in similar figures

Angles

• uses angle properties to reason geometrically, in order to solve spatial problems (e.g. applies an understanding of the relationship between the base angles of an isosceles triangle to determine the size of a similar shape in order to solve a problem)

• uses trigonometry to calculate the unknown angles and unknown distances in authentic problems (e.g. measures the height of a tree using a clinometer to measure the angle of inclination and trigonometry to approximate the vertical height; calculates the angle of inclination for a ramp)

Snapshot – Proportional thinking

Numeracy: Number sense and algebra: Proportional thinking

Content description

AC9TDI8P05

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Using ratios and rates

• uses a ratio to create, increase or decrease quantities to maintain a given proportion (e.g. creates mixtures such as adhesives, finishes, salad dressings; scales a recipe up or down; makes 100 100 1 0 0 litres of cordial given instructions for making 5 5 5 litres using one part cordial to 6 6 6 parts water)

• uses rates to determine how quantities change (e.g. when travelling at a constant speed of 60 60 6 0 km/h, determines the distance travelled in 30 30 3 0 minutes; uses price rate of change to measure

the direction and speed of a financial trend, such as an upward momentum in stock prices; compares the effect of different frame rates, frames per second, when producing a slow-motion sequence)

Proportionality and the whole

• determines the whole given a percentage (e.g. given 20 20 2 0 % is 13 13 1 3 millilitres, determines the whole is 65 65 6 5 millilitres; given 20 20 2 0 % is 1300 1300 1 3 0 0 kilojoules, determines the whole is 6500 6500 6 5 0 0 kilojoules when calculating the amount of energy consumed as part of a daily recommended intake)

• identifies the common unit rate to compare rates expressed in different units (e.g. calculates best buys; compares the relative speed of 2 2 2 vehicles)

• identifies, compares, represents and solves problems involving different rates in real world contexts (e.g. measures heart rate and breathing rate to monitor the body's reaction to a range of physical activities)

• determines the equivalence between 2 2 2 rates or ratios by expressing them in their simplest form

• describes how the proportion is preserved when using a ratio (e.g. uses the ratio 1 : 4 : 15 1:4:15 1 : 4 : 1 5 for the composition of silver, copper and gold to determine the mass of copper in a rose gold ring that weighs 8 8 8 grams; applies an aspect ratio when resizing images of an artwork such as if the aspect ratio is 3 : 2 3:2 3 : 2 then a picture that is 600 600 6 0 0 pixels wide would be 400 400 4 0 0 pixels tall)

Applying proportion

• recognises that percentages can be greater than 100 100 1 0 0 % (e.g. the entry price to the show has gone up from $ 20 \$20 $ 2 0 last year to $ 25 \$25 $ 2 5 this year, that's 125 125 1 2 5 % of last year's price; examines food labels and nutritional tables to determine whether the percentage a fast food meal exceeds a recommended daily intake for sugar/fats)

• uses common fractions and decimals for proportional increase or decrease of a given amount

• increases and decreases quantities by a percentage and expresses a percentage increase or decrease using a multiplier (e.g. calculates 70 70 7 0 % or 0.7 0.7 0 . 7 of the original marked price to apply a 30 30 3 0 % discount; multiplies by 1.03 1.03 1 . 0 3 when predicting a 3 3 3 % future capital gain; calculates percentage increase or decrease in international migration in Australia)

• models situations uses percentages, rates and ratios (e.g. calculates interest payable on loans; compares taxation rates and the effect of a pay increase on how much annual income tax is payable; mixes chemical solutions using ratios; uses Mendelian inheritance to predict the ratio of offspring genotypes and phenotypes in monohybrid crosses)

• identifies and interprets situations where direct proportion is involved (e.g. hours worked and payment received; increase in income and increase in demand for branded products; increasing the mass will increase the force provided that acceleration remains constant)

• identifies and interprets situations where inverse proportion is involved (e.g. number of people working on a job and time taken to complete the job; speed and time taken to travel recognising that travelling at a greater speed will mean the journey takes less time; decrease in price and increase in demand)

• uses ratio and scale factors to enlarge or reduce the size of objects (e.g. interprets the scale used on a map and determines the real distance between 2 2 2 locations; draws engineering drawings to scale)

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9TDI8P05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• identify the relevant and significant aspects of a concept or problem, understanding that approaches may change depending on the subject or learning area

• identify the relevant aspects of a concept or problem, recognising gaps or missing elements necessary for understanding by using approaches and strategies suitable for the context

• identify the objective and subjective aspects of a complex concept or problem, with sensitivity to context

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups

• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups

• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9TDI8P05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• identify the relevant and significant aspects of a concept or problem, understanding that approaches may change depending on the subject or learning area

• identify the relevant aspects of a concept or problem, recognising gaps or missing elements necessary for understanding by using approaches and strategies suitable for the context

• identify the objective and subjective aspects of a complex concept or problem, with sensitivity to context

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups

• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups

• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Interpret concepts and problems

Critical and Creative Thinking: Analysing: Interpret concepts and problems

Content description

AC9TDI8P05

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• identify the relevant and significant aspects of a concept or problem, understanding that approaches may change depending on the subject or learning area

• identify the relevant aspects of a concept or problem, recognising gaps or missing elements necessary for understanding by using approaches and strategies suitable for the context

• identify the objective and subjective aspects of a complex concept or problem, with sensitivity to context

AC9TDI8P06

to predict output for a given and to identify errors

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Elaborations

• following an precisely to confirm it produces the expected output for the given , for example desk check with a table of , and output

• specifying and comparing the expected and actual output to determine the correctness of an , for

example a of the change-calculating could have $1.45 and expected output 1 x $1, 2 x 20c and 1 x 5c coins

• following instructions for making woven baskets or nets by hand, as done by First Nations Australians, and making predictions of how the instructions would need to be modified to enable the item to be produced through automated manufacturing processes

Students learn to:

trace algorithms to predict output for a given input and to identify errors

(AC9TDI8P06)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Measurement and geometry

• Understanding geometric properties

Number sense and algebra

• Proportional thinking

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Culture

• The First Peoples of Australia (Aboriginal Peoples) belong to the world’s oldest continuous cultures. First Nations Australians demonstrate resilience in the maintenance, practice and revitalisation of culture despite the many historic and enduring impacts of colonisation, and continue to celebrate and share the past, present and future manifestations of their cultures.

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9M7SP04

AC9M8SP04

Snapshot – Understanding geometric properties

Numeracy: Measurement and geometry: Understanding geometric properties

Content description

AC9TDI8P06

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Properties of shapes and objects

• investigates and uses reasoning to explain the properties of a triangle (e.g. explains why the longest side is always opposite the largest angle in a triangle; recognises that the combined length of 2 2 2 sides of a triangle must always be greater than the length of the third side)

• uses relevant properties of common geometrical shapes to determine unknown lengths and angles

Transformations

• enlarges and reduces shapes according to a given scale factor and explains what features change and what stay the same (e.g. says ‘when I double the dimensions of the rectangle, all of the lengths are twice as long as they were, but the size of the angles stay the same)

• applies angle properties to solve problems that involve the transformation of shapes and objects and how they are used in practice (e.g. determines which shapes tessellate)

Angles

• uses angle properties to identify perpendicular and parallel lines (e.g. develops a computer-aided design drawing involving the creation of parallel and perpendicular lines)

• demonstrates that the angle sum of a triangle is 180 180 1 8 0 ■ and uses this to solve problems

• identifies interior angles in shapes to calculate angle sum

• uses angle properties to identify and calculate unknown angles in familiar two-dimensional shapes

Geometric properties

• uses Pythagoras’ theorem to solve right-angled triangle problems

• determines the conditions for triangles to be similar
• determines the conditions for triangles to be congruent

Transformations

• uses the enlargement transformation to explain similarity and develop the conditions for triangles to be similar
• solves problems using ratio and scale factors in similar figures

Angles

• uses angle properties to reason geometrically, in order to solve spatial problems (e.g. applies an understanding of the relationship between the base angles of an isosceles triangle to determine the size of a similar shape in order to solve a problem)
• uses trigonometry to calculate the unknown angles and unknown distances in authentic problems (e.g. measures the height of a tree using a clinometer to measure the angle of inclination and trigonometry to approximate the vertical height; calculates the angle of inclination for a ramp)

Snapshot – Proportional thinking

Numeracy: Number sense and algebra: Proportional thinking

Content description

AC9TDI8P06

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Using ratios and rates

• uses a ratio to create, increase or decrease quantities to maintain a given proportion (e.g. creates mixtures such as adhesives, finishes, salad dressings; scales a recipe up or down; makes 100 100 1 0 0 litres of cordial given instructions for making 5 5 5 litres using one part cordial to 6 6 6 parts water)
• uses rates to determine how quantities change (e.g. when travelling at a constant speed of 60 60 6 0 km/h, determines the distance travelled in 30 30 3 0 minutes; uses price rate of change to measure the direction and speed of a financial trend, such as an upward momentum in stock prices; compares the effect of different frame rates, frames per second, when producing a slow-motion sequence)

Proportionality and the whole

• determines the whole given a percentage (e.g. given 20 20 2 0 % is 13 13 1 3 millilitres, determines the whole is 65 65 6 5 millilitres; given 20 20 2 0 % is 1300 1300 1 3 0 0 kilojoules, determines the whole is 6500 6500 6 5 0 0 kilojoules when calculating the amount of energy consumed as part of a daily recommended intake)
• identifies the common unit rate to compare rates expressed in different units (e.g. calculates best buys; compares the relative speed of 2 2 2 vehicles)
• identifies, compares, represents and solves problems involving different rates in real world contexts (e.g. measures heart rate and breathing rate to monitor the body’s reaction to a range of physical activities)
• determines the equivalence between 2 2 2 rates or ratios by expressing them in their simplest form
• describes how the proportion is preserved when using a ratio (e.g. uses the ratio 1 : 4 : 15 1:4:15 1 : 4 : 1 5 for the composition of silver, copper and gold to determine the mass of copper in a rose gold ring that weighs 8 8 8 grams; applies an aspect ratio when resizing images of an artwork such as if the aspect ratio is 3 : 2 3:2 3 : 2 then a picture that is 600 600 6 0 0 pixels wide would be 400 400 4 0 0 pixels tall)

Applying proportion

• recognises that percentages can be greater than 100 100 1 0 0 % (e.g. the entry price to the show has gone up from $ 20 \$20 $ 2 0 last year to $ 25 \$25 $ 2 5 this year, that’s 125 125 1 2 5 % of last year's price; examines food labels and nutritional tables to determine whether the percentage a fast food meal exceeds a recommended daily intake for sugar/fats)
• uses common fractions and decimals for proportional increase or decrease of a given amount
• increases and decreases quantities by a percentage and expresses a percentage increase or decrease using a multiplier (e.g. calculates 70 70 7 0 % or 0.7 0.7 0 . 7 of the original marked price to apply a 30 30 3 0 % discount; multiplies by 1.03 1.03 1 . 0 3 when predicting a 3 3 3 % future capital gain; calculates percentage increase or decrease in international migration in Australia)

• models situations uses percentages, rates and ratios (e.g. calculates interest payable on loans; compares taxation rates and the effect of a pay increase on how much annual income tax is payable; mixes chemical solutions using ratios; uses Mendelian inheritance to predict the ratio of offspring genotypes and phenotypes in monohybrid crosses)
• identifies and interprets situations where direct proportion is involved (e.g. hours worked and payment received; increase in income and increase in demand for branded products; increasing the mass will increase the force provided that acceleration remains constant)
• identifies and interprets situations where inverse proportion is involved (e.g. number of people working on a job and time taken to complete the job; speed and time taken to travel recognising that travelling at a greater speed will mean the journey takes less time; decrease in price and increase in demand)
• uses ratio and scale factors to enlarge or reduce the size of objects (e.g. interprets the scale used on a map and determines the real distance between 2 2 2 locations; draws engineering drawings to scale)

AC9TDI8P07

design the of a

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Elaborations

• designing a or experience to satisfy and , using , for example sketch multiple pages of a website with wireframes, storyboards and simple branding guidelines for colours and
• considering the factors of why a user might buy and use a product, in addition to its utility, for example how aligning the brand with the user's values and identity contributes to its appeal
• exploring the evolution of a , for example comparing the design and branding of different search engines over time

Students learn to:

design the user experience of a digital system

(AC9TDI8P07)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Creating and exchanging

• Plan

Writing

• Creating texts

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Creating and exchanging

• Plan

Creating and exchanging

• Plan

Creating and exchanging

• Plan

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9TDI8P07

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and use digital tools to develop and follow a plan to complete individual tasks and group projects
• use simple planning tools to develop and follow a plan to complete individual and collaborative projects

• use project management tools to develop and track a plan to complete individual and collaborative projects

Snapshot – Creating texts

Literacy: Writing: Creating texts

Content description

AC9TDI8P07

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

• creates informative texts for a broader range of learning area purposes (e.g. explains a life cycle of a butterfly, recounts a process, describes an artwork)
• includes structural features appropriate to the type of text and task such as opening statements to define the topic and at least 2 body paragraphs
• includes ideas which are relevant to the topic and purpose of the text
• organises information into paragraphs to support the reader
• includes a relevant graphic to support the reader (e.g. diagram or photo)

Text forms and features

• uses cohesive devices to signpost sections of text (e.g. uses text connectives such as "finally", "as a result", "in addition")
• uses present or timeless present tense consistently throughout text (e.g. "bears hibernate in winter") (see Grammar)
• selects visual and audio features to expand ideas in written texts (e.g. diagrams, tables, images)
• uses adjectives to create more accurate description (e.g. "the warm-blooded mammal") (see Grammar)

Vocabulary

• uses a range of technical and subject specific words to add detail and authority to information (e.g. "hibernate" instead of "sleep")

Crafting ideas

• creates informative texts that describe, explain and document (e.g. describe an artwork, document the materials and explain why it was created)
• selects structural elements to comprehensively and accurately represent the information (e.g. a fact sheet includes an opening statement, labelled diagrams and text boxes)
• orients the reader to the topic or concept using a definition or classification
• develops ideas with details and examples
• uses ideas derived from research
• uses written and visual supporting evidence

Text forms and features

• uses cohesive devices to link concepts across texts (e.g. uses lexical cohesion such as word associations and synonyms)
• uses cohesive devices to express cause and effect (e.g. uses text connectives such as "therefore", "subsequently")
• includes salient visual and audio features to expand on written information (e.g. creates graphs and other technical diagrams from authentic data)
• uses language to compare (e.g. "alternatively", "whereas")
• uses formatting appropriately to reference and label graphics

Vocabulary

• uses a range of learnt, technical and discipline-specific terms (e.g. "adapt", "survive")
• uses more sophisticated words to express cause and effect (e.g. "therefore", "subsequently")

Crafting ideas

• creates informative texts to explain and analyse (e.g. analyses how artists use visual conventions in artworks)
• creates texts to compare and contrast phenomena (e.g. identify the similarities and differences between species of animals)
• orients the reader clearly to the topic or concept (e.g. using a definition or classification in the opening paragraph)

• intentionally selects structural elements for effect (e.g. includes an effective conclusion that synthesises complex ideas)
• uses evidence and research including digital resources to expand upon information and elaborate concepts

Text forms and features

• varies sentence structure for effect (see Grammar)
• judiciously uses language, visual and audio features to emotionally or intellectually affect the reader
• uses more elaborate noun groups/phrases that include classifying adjectives and specific nouns (e.g. "mineral component of sedimentary rocks")
• creates cohesive flow by condensing previous information into a summarising noun (e.g. "A series of tumultuous events culminated in the outbreak of WWI - modern history's turning point.")
• uses passive voice and nominalisation to write succinctly (e.g. "the results were analysed") (see Grammar)

Vocabulary

• uses discipline-specific terminology to provide accurate and explicit information (e.g. "discipline metalanguage")
• uses a range of synonyms for frequently occurring words, in a longer text (e.g. "repair", "fix", "remedy")
• uses vocabulary to indicate and describe relationships (e.g. "additionally", "similarly")

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9TDI8P07

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and use digital tools to develop and follow a plan to complete individual tasks and group projects
• use simple planning tools to develop and follow a plan to complete individual and collaborative projects
• use project management tools to develop and track a plan to complete individual and collaborative projects

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9TDI8P07

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and use digital tools to develop and follow a plan to complete individual tasks and group projects
• use simple planning tools to develop and follow a plan to complete individual and collaborative projects
• use project management tools to develop and track a plan to complete individual and collaborative projects

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9TDI8P07

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and use digital tools to develop and follow a plan to complete individual tasks and group projects
• use simple planning tools to develop and follow a plan to complete individual and collaborative projects

• use project management tools to develop and track a plan to complete individual and collaborative projects

AC9TDI8P08

generate, modify, communicate and evaluate alternative designs

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Elaborations

• reviewing and modifying a preferred design as part of the iterative development approach, for example making changes to overcome limitations of the design or better satisfy the

• using concept maps, wireframes or other diagrams to record and discuss the generated ideas, for example creating and discussing wireframes of a music streaming service, evaluating it against and , such as the needs of diverse users

• comparing multiple outputs from a generative to determine the most suitable; for example, using AI tools to generate multiple of a and selecting the design or that best address users' needs

Students learn to:

generate, modify, communicate and evaluate alternative designs

(AC9TDI8P08)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Generating

• Create possibilities

• Consider alternatives

Creating and exchanging

• Plan

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Generating

• Create possibilities

• Consider alternatives

Creating and exchanging

• Plan

Generating

• Create possibilities

• Consider alternatives

Creating and exchanging

• Plan

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9AMA8D01

Resources

Work Samples

WS01 - Digital project: website design

Snapshot – Create possibilities

Critical and Creative Thinking: Generating: Create possibilities

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• create possibilities by changing, combining, or elaborating on new and known ideas in a variety of creative ways

• create possibilities by adapting, combining or elaborating on new and known ideas, and proposing a range of different or creative combinations
• create possibilities by connecting or adapting complex ideas and proposing innovative and detailed variations or combinations

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• consider alternatives by challenging or creatively adjusting existing ideas in situations where current approaches do not work and recommend a preferred option
• consider alternatives by creatively adapting ideas when information is limited or conflicting and recommend a preferred option
• consider alternatives by creatively revising and modifying ideas and recommendations when circumstances change

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and use digital tools to develop and follow a plan to complete individual tasks and group projects
• use simple planning tools to develop and follow a plan to complete individual and collaborative projects
• use project management tools to develop and track a plan to complete individual and collaborative projects

Snapshot – Create possibilities

Critical and Creative Thinking: Generating: Create possibilities

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• create possibilities by changing, combining, or elaborating on new and known ideas in a variety of creative ways
• create possibilities by adapting, combining or elaborating on new and known ideas, and proposing a range of different or creative combinations
• create possibilities by connecting or adapting complex ideas and proposing innovative and detailed variations or combinations

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• consider alternatives by challenging or creatively adjusting existing ideas in situations where current approaches do not work and recommend a preferred option
• consider alternatives by creatively adapting ideas when information is limited or conflicting and recommend a preferred option
• consider alternatives by creatively revising and modifying ideas and recommendations when circumstances change

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and use digital tools to develop and follow a plan to complete individual tasks and group projects

• use simple planning tools to develop and follow a plan to complete individual and collaborative projects

• use project management tools to develop and track a plan to complete individual and collaborative projects

Snapshot – Create possibilities

Critical and Creative Thinking: Generating: Create possibilities

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• create possibilities by changing, combining, or elaborating on new and known ideas in a variety of creative ways

• create possibilities by adapting, combining or elaborating on new and known ideas, and proposing a range of different or creative combinations

• create possibilities by connecting or adapting complex ideas and proposing innovative and detailed variations or combinations

Snapshot – Consider alternatives

Critical and Creative Thinking: Generating: Consider alternatives

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• consider alternatives by challenging or creatively adjusting existing ideas in situations where current approaches do not work and recommend a preferred option

• consider alternatives by creatively adapting ideas when information is limited or conflicting and recommend a preferred option

• consider alternatives by creatively revising and modifying ideas and recommendations when circumstances change

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9TDI8P08

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and use digital tools to develop and follow a plan to complete individual tasks and group projects

• use simple planning tools to develop and follow a plan to complete individual and collaborative projects

• use project management tools to develop and track a plan to complete individual and collaborative projects

AC9TDI8P09

implement, modify and programs involving and functions in a

•

Elaborations

• writing and editing programs to solve problems using , , and functions in a , such as Python, JavaScript or C#

• reading and interpreting an existing program and modifying the code to change functionality and fix errors, for example taking existing code for a weather forecasting that includes temperatures and improving the output to include extra information such as rainfall, UV levels and air quality
• writing a program that receives from the environment to change the program behaviour, for example reading moisture level from a soil sensor and switching on the watering system
• writing a program that contains to perform more complicated and decisions, for example using an IF statement inside a loop to count the warm days from an array containing temperature only when the temperature for each day is more than 20■degrees■Celsius
• defining and using a function that produces different output based on the argument(s) it receives, for example a function that receives the name of an actor from user , and searches a file or database to return a list of movies that actor appears in
Students learn to:

implement, modify and debug programs involving control structures and functions programming language

(AC9TDI8P09)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Creating and exchanging

• Create, communicate and collaborate

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Creating and exchanging

• Create, communicate and collaborate

Creating and exchanging

• Create, communicate and collaborate

Creating and exchanging

• Create, communicate and collaborate

Systems

• Sustainable patterns of living require the responsible use of resources, maintenance of clean air, water and soils, and preservation or restoration of healthy environments.

Creating and exchanging

• Create, communicate and collaborate

Creating and exchanging

• Create, communicate and collaborate

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P09

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups
• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups
• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P09

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups
• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups
• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P09

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups
• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups
• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P09

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups
• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups
• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P09

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups
• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups
• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P09

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups
• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups

• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

AC9TDI8P10

evaluate existing and student solutions against the , and possible future impact

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Elaborations

• evaluating how an existing solution ensures users can control their safety and experience online as described in the Safety by Design Vision for Young People, for example ensuring settings are comprehensive, easy to use and set to maximum protection by default
• reviewing the requirements of a to ensure that their solution meets the user's needs, for example making sure that recommendations offered by their music application are of a similar genre to the rest of the user's library
• judging existing solutions on the basis of their possible impact on the economy, environment or society, for example cloud computing services decrease loss but require vast amounts of electricity to power the servers
• discussing the risks and consequences of AI-generated content on social media platforms; for example, the potential for the spread of misinformation due to high volumes of automatically generated and intentionally misleading content being posted

Students learn to:

evaluate existing and student solutions against the design criteria, user stories and future impact

(AC9TDI8P10)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Analysing

• Draw conclusions and provide reasons
• Evaluate actions and outcomes

Reading and viewing

• Understanding texts

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Analysing

• Draw conclusions and provide reasons
• Evaluate actions and outcomes

Analysing

• Draw conclusions and provide reasons
• Evaluate actions and outcomes

Analysing

• Draw conclusions and provide reasons
• Evaluate actions and outcomes

Design

• Sustainably designed products, environments and services aim to minimise the impact on or restore the quality and diversity of environmental, social and economic systems.

Resources

Work Samples

WS01 - Digital project: website design

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9TDI8P10

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• draw conclusions and make choices when completing tasks, using discipline knowledge to provide reasons and evaluate arguments for choices made

• draw conclusions and make choices when completing tasks by connecting evidence from within and across discipline areas to provide reasons and evaluate arguments for choices made

• draw conclusions and make choices when completing tasks, using analysis of complex evidence and arguments before making recommendations

Snapshot – Evaluate actions and outcomes

Critical and Creative Thinking: Analysing: Evaluate actions and outcomes

Content description

AC9TDI8P10

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• evaluate the effectiveness of a course of action or the outcome of a task, including using a given or co-developed set of criteria to support decisions

• evaluate the effectiveness of a course of action or the outcome of a task and account for expected and unexpected results, including using a given or co-developed set of criteria to support decisions

• evaluate the effectiveness of a course of action to achieve desired outcomes and suggest improvements, including using a personally developed set of criteria to support judgements and decisions

Snapshot – Understanding texts

Literacy: Reading and viewing: Understanding texts

Content description

AC9TDI8P10

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Comprehension

• reads and views some moderately complex texts (see Text complexity)

• accurately retells a text including most relevant details

• identifies main idea and related or supporting ideas in moderately complex texts (see Text complexity)

• evaluates the accuracy within and across texts on the same topic

• explains how authors use evidence and supporting detail to build and verify ideas

• draws inferences and verifies using textual evidence

Processes

• monitors reading for meaning using grammatical and contextual knowledge (see Fluency)

• explains how textual features support the text's purpose

• identifies and explains techniques used to present perspective (e.g. emotive or descriptive language, order in which ideas are presented)

• predicts the development of ideas based on a partial read (e.g. predicts the final chapter of a narrative, drawing on understanding of the textual features in the previous chapters)

• uses prior knowledge and context to read unknown words (e.g. uses morphemic knowledge of "explosion" to decode "explosive" and uses context and knowledge of metaphorical use of language to understand "explosive outburst")

• uses knowledge of cohesive devices to track meaning throughout a text (e.g. connectives such as "however", "on the other hand") (see Grammar)

• uses knowledge of the features and conventions of the type of text to build meaning (e.g. recognises that the beginning of a persuasive text may introduce the topic and the line of argument)

• identifies language features used to present opinions or points of view

• skims and scans texts for key words to track the development of ideas

• uses sophisticated punctuation to support meaning (e.g. commas to separate clauses in complex sentences)

Vocabulary

• uses knowledge of prefixes and suffixes to read and interpret unfamiliar words
• identifies how technical and discipline-specific words develop meaning in texts
• analyses the effect of antonyms, synonyms and idiomatic language
• understands precise meaning of words with similar connotations (e.g. "generous", "kind-hearted", "charitable")

Comprehension

• reads and views complex texts (see Text complexity)
• identifies the main themes or concepts in complex texts by synthesising key ideas or information
• summarises the text, identifying key details only
• draws inferences, synthesising clues and evidence across a text
• builds meaning by actively linking ideas from a number of texts or a range of digital sources
• distils information from a number of texts according to task and purpose (e.g. uses graphic organisers)
• identifies different interpretations of the text citing evidence from a text
• evaluates language features for relevance to purpose and audience
• analyses texts that have more than one purpose and explains how parts of the text support a particular purpose
• analyses the use of language appropriate to different types of texts (e.g. compare the use of pun in imaginative and persuasive texts)
• identifies techniques used to obscure author’s purpose (e.g. inclusion or omission of content)

Processes

• uses processes such as predicting, confirming predictions, monitoring, and connecting relevant elements of the text to build or repair meaning
• uses knowledge of a broader range of cohesive devices to track meaning (e.g. word associations) (see Grammar)
• selects reading or viewing strategies appropriate to reading purpose (e.g. scans text for evidence)
• judiciously selects texts for learning area tasks and purposes

Vocabulary

• identifies language used to create tone or atmosphere
• analyses language and visual features in texts using metalanguage (e.g. cohesion, interpretation, figurative)
• applies knowledge of base words and word origins to understand the meaning of unfamiliar, discipline-specific words
• uses a range of context and grammatical cues to understand unfamiliar words
• interprets complex figurative language (e.g. euphemisms, hyperbole)

Comprehension

• reads and views complex or some highly complex texts (see Text complexity)
• interprets abstract concepts integrating complex ideas
• analyses how language features are used to support the point of view in a text (e.g. the strategic use of images such as a cartoon in an editorial)
• draws inferences using evidence from the text and discounting possible inferences that are not supported by the text
• applies and articulates criteria to evaluate the language structures and features for relevance to purpose and audience
• evaluates the reasoning and evidence in a persuasive text
• explains how context (e.g. time, place, situation) influences interpretations of a text
• analyses the author’s perspectives in complex or some highly complex texts
• analyses the techniques authors use to position readers
• recognises when ideas or evidence have been omitted from a text to position the reader

Processes

• automatically integrates a range of processes such as predicting, confirming predictions, monitoring and connecting relevant elements of the text, to build meaning
• describes how sophisticated cohesive devices establish patterns of meaning (e.g. "class" – "subclass")
• navigates extended texts including complex digital texts

Vocabulary

• demonstrates an understanding of nuances and subtleties in words of similar meaning (e.g. "frustrated", "discouraged", "baffled")
• verifies interpretations of unfamiliar words using grammatical and contextual cues

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9TDI8P10

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• draw conclusions and make choices when completing tasks, using discipline knowledge to provide reasons and evaluate arguments for choices made
• draw conclusions and make choices when completing tasks by connecting evidence from within and across discipline areas to provide reasons and evaluate arguments for choices made
• draw conclusions and make choices when completing tasks, using analysis of complex evidence and arguments before making recommendations

Snapshot – Evaluate actions and outcomes

Critical and Creative Thinking: Analysing: Evaluate actions and outcomes

Content description

AC9TDI8P10

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• evaluate the effectiveness of a course of action or the outcome of a task, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action or the outcome of a task and account for expected and unexpected results, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action to achieve desired outcomes and suggest improvements, including using a personally developed set of criteria to support judgements and decisions

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9TDI8P10

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• draw conclusions and make choices when completing tasks, using discipline knowledge to provide reasons and evaluate arguments for choices made
• draw conclusions and make choices when completing tasks by connecting evidence from within and across discipline areas to provide reasons and evaluate arguments for choices made
• draw conclusions and make choices when completing tasks, using analysis of complex evidence and arguments before making recommendations

Snapshot – Evaluate actions and outcomes

Critical and Creative Thinking: Analysing: Evaluate actions and outcomes

Content description

AC9TDI8P10

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• evaluate the effectiveness of a course of action or the outcome of a task, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action or the outcome of a task and account for expected and unexpected results, including using a given or co-developed set of criteria to support decisions
• evaluate the effectiveness of a course of action to achieve desired outcomes and suggest improvements, including using a personally developed set of criteria to support judgements and

decisions

Snapshot – Draw conclusions and provide reasons

Critical and Creative Thinking: Analysing: Draw conclusions and provide reasons

Content description

AC9TDI8P10

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

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• draw conclusions and make choices when completing tasks by connecting evidence from within and across discipline areas to provide reasons and evaluate arguments for choices made

• draw conclusions and make choices when completing tasks, using analysis of complex evidence and arguments before making recommendations

Snapshot – Evaluate actions and outcomes

Critical and Creative Thinking: Analysing: Evaluate actions and outcomes

Content description

AC9TDI8P10

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• evaluate the effectiveness of a course of action or the outcome of a task, including using a given or co-developed set of criteria to support decisions

• evaluate the effectiveness of a course of action or the outcome of a task and account for expected and unexpected results, including using a given or co-developed set of criteria to support decisions

• evaluate the effectiveness of a course of action to achieve desired outcomes and suggest improvements, including using a personally developed set of criteria to support judgements and decisions

AC9TDI8P11

select and use a range of efficiently, including unfamiliar , to create, locate and communicate content, consistently applying common conventions

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Elaborations

• locating relevant content from multiple sources, exploring advanced search functions and targeted criteria, for example using specific filters such as date range, image size, file type and usage■licence

• selecting and using appropriate , for example when participating in online lessons or planning sessions using a common video conferencing tool

• applying common conventions consistently when creating content, for example organising content in paragraphs and within a heading hierarchy, writing captions to describe images and using gender-inclusive pronouns, where appropriate

• creating logical storage locations for project assets and resources together with an outline to ensure collaborators are up to date, for example creating a logical storage area for a group to share content and ideas in a timely manner about the canteen issue they are solving

• using effective prompts with generative AI to create output that is better suited to the problem being solved; for example, specifying the voice, tone and brevity for a persuasive news article with a restrictive word limit

• using a progressive series of prompts with generative to refine output to improve its correctness; for example, performing translation from one language to another and instructing the to correct errors in translation

Students learn to:

select and use a range of digital tools efficiently, including unfamiliar features, to cr locate and communicate content, consistently applying common conventions

(AC9TDI8P11)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Creating and exchanging

• Create, communicate and collaborate

Investigating

• Locate information

Managing and operating

• Manage content

• Select and operate tools

Writing

• Creating texts

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Investigating

• Locate information

Managing and operating

• Select and operate tools

Creating and exchanging

• Create, communicate and collaborate

Managing and operating

• Manage content

Resources

Work Samples

WS01 - Digital project: website design

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P11

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups

• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups

• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Locate information

Digital Literacy: Investigating: Locate information

Content description

AC9TDI8P11

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• locate information through search engines and in documents by applying specific search terms based on set criteria, and select and retrieve relevant information from multiple sources

• locate, select and retrieve relevant information from multiple sources, exploring advanced search functions and targeted criteria

• locate relevant information by applying advanced search functions across multiple sources involving purposefully selected and contextually specific terms and criteria

Snapshot – Manage content

Digital Literacy: Managing and operating: Manage content

Content description

AC9TDI8P11

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• store content using appropriate names and folders for ease of retrieval
• store and backup content online for access and editing from multiple devices
• store content systematically online for access and editing (with version history) from multiple devices and ensure data is reliably backed up

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8P11

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and use the core features of digital tools to efficiently complete tasks
• troubleshoot basic problems and identify repetitive tasks to automate
• select and use the advanced or unfamiliar features of digital tools to efficiently complete tasks
• troubleshoot common problems and automate repetitive tasks
• select and operate advanced and emerging digital tools confidently
• troubleshoot common problems systematically and seek to improve efficiency by developing new skills

Snapshot – Creating texts

Literacy: Writing: Creating texts

Content description

AC9TDI8P11

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

• creates informative texts for a broader range of learning area purposes (e.g. explains a life cycle of a butterfly, recounts a process, describes an artwork)
• includes structural features appropriate to the type of text and task such as opening statements to define the topic and at least 2 body paragraphs
• includes ideas which are relevant to the topic and purpose of the text
• organises information into paragraphs to support the reader
• includes a relevant graphic to support the reader (e.g. diagram or photo)

Text forms and features

• uses cohesive devices to signpost sections of text (e.g. uses text connectives such as "finally", "as a result", "in addition")
• uses present or timeless present tense consistently throughout text (e.g. "bears hibernate in winter") (see Grammar)
• selects visual and audio features to expand ideas in written texts (e.g. diagrams, tables, images)
• uses adjectives to create more accurate description (e.g. "the warm-blooded mammal") (see Grammar)

Vocabulary

• uses a range of technical and subject specific words to add detail and authority to information (e.g. "hibernate" instead of "sleep")

Crafting ideas

• creates informative texts that describe, explain and document (e.g. describe an artwork, document the materials and explain why it was created)
• selects structural elements to comprehensively and accurately represent the information (e.g. a fact sheet includes an opening statement, labelled diagrams and text boxes)
• orients the reader to the topic or concept using a definition or classification
• develops ideas with details and examples
• uses ideas derived from research

• uses written and visual supporting evidence

Text forms and features

• uses cohesive devices to link concepts across texts (e.g. uses lexical cohesion such as word associations and synonyms)
• uses cohesive devices to express cause and effect (e.g. uses text connectives such as "therefore", "subsequently")
• includes salient visual and audio features to expand on written information (e.g. creates graphs and other technical diagrams from authentic data)
• uses language to compare (e.g. "alternatively", "whereas")
• uses formatting appropriately to reference and label graphics

Vocabulary

• uses a range of learnt, technical and discipline-specific terms (e.g. "adapt", "survive")
• uses more sophisticated words to express cause and effect (e.g. "therefore", "subsequently")

Crafting ideas

• creates informative texts to explain and analyse (e.g. analyses how artists use visual conventions in artworks)
• creates texts to compare and contrast phenomena (e.g. identify the similarities and differences between species of animals)
• orients the reader clearly to the topic or concept (e.g. using a definition or classification in the opening paragraph)
• intentionally selects structural elements for effect (e.g. includes an effective conclusion that synthesises complex ideas)
• uses evidence and research including digital resources to expand upon information and elaborate concepts

Text forms and features

• varies sentence structure for effect (see Grammar)
• judiciously uses language, visual and audio features to emotionally or intellectually affect the reader
• uses more elaborate noun groups/phrases that include classifying adjectives and specific nouns (e.g. "mineral component of sedimentary rocks")
• creates cohesive flow by condensing previous information into a summarising noun (e.g. "A series of tumultuous events culminated in the outbreak of WWI - modern history's turning point.")
• uses passive voice and nominalisation to write succinctly (e.g. "the results were analysed") (see Grammar)

Vocabulary

• uses discipline-specific terminology to provide accurate and explicit information (e.g. "discipline metalanguage")
• uses a range of synonyms for frequently occurring words, in a longer text (e.g. "repair", "fix", "remedy")
• uses vocabulary to indicate and describe relationships (e.g. "additionally", "similarly")

Snapshot – Locate information

Digital Literacy: Investigating: Locate information

Content description

AC9TDI8P11

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• locate information through search engines and in documents by applying specific search terms based on set criteria, and select and retrieve relevant information from multiple sources
• locate, select and retrieve relevant information from multiple sources, exploring advanced search functions and targeted criteria
• locate relevant information by applying advanced search functions across multiple sources involving purposefully selected and contextually specific terms and criteria

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8P11

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and use the core features of digital tools to efficiently complete tasks
• troubleshoot basic problems and identify repetitive tasks to automate
• select and use the advanced or unfamiliar features of digital tools to efficiently complete tasks
• troubleshoot common problems and automate repetitive tasks
• select and operate advanced and emerging digital tools confidently
• troubleshoot common problems systematically and seek to improve efficiency by developing new skills

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P11

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups
• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups
• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Manage content

Digital Literacy: Managing and operating: Manage content

Content description

AC9TDI8P11

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• store content using appropriate names and folders for ease of retrieval
• store and backup content online for access and editing from multiple devices
• store content systematically online for access and editing (with version history) from multiple devices and ensure data is reliably backed up

AC9TDI8P12

select and use a range of efficiently and responsibly to share content online, and plan and manage individual and collaborative

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Elaborations

• collaborating effectively online using cloud storage, for example setting up and managing a shared space in an online repository to co-develop content for an which presents and checks safety aspects of working in a specific setting such as a kitchen, lab, workshop or greenhouse
• displaying for diverse cultural expectations when participating in teams and in online communities, for example showing sensitivity around images or names of deceased people, and valuing the intellectual property and perspectives of others
• demonstrating agile skills and understanding, for example when collaborating with First Nations Australians' community groups to develop digital solutions to projects: following cultural protocols, including relevant permissions and attributions; acknowledging diversity, capability and strength; and addressing risks and responsibilities such as , and accuracy of
• determining and recording the tasks, responsibilities and timeframes for a collaborative project, for example using a spreadsheet to record tasks and their sequence, critical dates and who is responsible for each task so a project can be finished on time
• using AI tools to high-level instructions into more detailed steps to assist with completing a task; for example, asking an AI to break down the steps involved in building a website from scratch
Students learn to:

select and use a range of digital tools efficiently and responsibly to share content o
plan and manage individual and collaborative agile projects

(AC9TDI8P12)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Practising digital safety and wellbeing

• Manage online safety

Managing and operating

• Select and operate tools

Social management

• Communication

• Collaboration

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Creating and exchanging

• Create, communicate and collaborate

Practising digital safety and wellbeing

• Manage online safety

Managing and operating

• Manage content

Social management

• Collaboration

Creating and exchanging

• Respect intellectual property

Social management

• Communication

Creating and exchanging

• Respect intellectual property

Culture

• First Nations Australian societies are diverse and have distinct cultural expressions such as language, customs and beliefs. As First Nations Peoples of Australia, they have the right to maintain, control, protect and develop their cultural expressions, while also maintaining the right to control, protect and develop culture as Indigenous Cultural and Intellectual Property.

Creating and exchanging

• Plan

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9HP8P10

Resources

Work Samples

WS01 - Digital project: website design

Snapshot – Manage online safety

Digital Literacy: Practising digital safety and wellbeing: Manage online safety

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• report negative or harmful online behaviour to trusted adults and know how to report it in online tools

• recognise when to step away from negative online social interactions

• identify online abuse and bullying and report them to trusted adults, appropriate authorities and in online tools
• stop engaging in negative online social interactions
• engage in safe, legal and ethical online behaviour and defuse negative online social interactions
• recognise the benefits and risks of anonymity online

Snapshot – Select and operate tools

Digital Literacy: Managing and operating: Select and operate tools

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and use the core features of digital tools to efficiently complete tasks
• troubleshoot basic problems and identify repetitive tasks to automate
• select and use the advanced or unfamiliar features of digital tools to efficiently complete tasks
• troubleshoot common problems and automate repetitive tasks
• select and operate advanced and emerging digital tools confidently
• troubleshoot common problems systematically and seek to improve efficiency by developing new skills

Snapshot – Communication

Personal and Social capability: Social management: Communication

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• apply skills to address factors that influence verbal and non-verbal communication
• demonstrate communication skills in a range of contexts, responding to the enablers of, and barriers to, effective verbal and non-verbal communication
• devise strategies that apply effective verbal and non-verbal communication in response to feedback

Snapshot – Collaboration

Personal and Social capability: Social management: Collaboration

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• coordinate contributions of group members, suggesting improvements to ways of working and collaborative outputs
• appreciate diverse perspectives in a range of collaborative contexts, and demonstrate negotiation skills to improve ways of working and outputs
• devise strategies for collaborative work and outputs in a range of contexts, building on the perspectives, experiences and capabilities of group members

Snapshot – Create, communicate and collaborate

Digital Literacy: Creating and exchanging: Create, communicate and collaborate

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and control a variety of features in appropriate digital tools to create content and communicate and collaborate with trusted groups
• select and control advanced features of appropriate digital tools to independently create content and effectively communicate and collaborate with wider groups
• select and control the features of digital tools to purposefully create content and effectively communicate and collaborate, inclusive of diverse groups

Snapshot – Manage online safety

Digital Literacy: Practising digital safety and wellbeing: Manage online safety

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• report negative or harmful online behaviour to trusted adults and know how to report it in online tools

• recognise when to step away from negative online social interactions

• identify online abuse and bullying and report them to trusted adults, appropriate authorities and in online tools

• stop engaging in negative online social interactions

• engage in safe, legal and ethical online behaviour and defuse negative online social interactions

• recognise the benefits and risks of anonymity online

Snapshot – Manage content

Digital Literacy: Managing and operating: Manage content

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• store content using appropriate names and folders for ease of retrieval

• store and backup content online for access and editing from multiple devices

• store content systematically online for access and editing (with version history) from multiple devices and ensure data is reliably backed up

Snapshot – Collaboration

Personal and Social capability: Social management: Collaboration

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• coordinate contributions of group members, suggesting improvements to ways of working and collaborative outputs

• appreciate diverse perspectives in a range of collaborative contexts, and demonstrate negotiation skills to improve ways of working and outputs

• devise strategies for collaborative work and outputs in a range of contexts, building on the perspectives, experiences and capabilities of group members

Snapshot – Respect intellectual property

Digital Literacy: Creating and exchanging: Respect intellectual property

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• respect intellectual property by identifying the legal obligations regarding the ownership and appropriate use of products, exploring copyright protocols and applying some referencing conventions

• respect intellectual property by applying practices that comply with ethical and legal obligations, referencing conventions and copyright protocols

• respect intellectual property by identifying and applying practices that meet legal and ethical obligations, referencing conventions, copyright and trademark protocols

Snapshot – Communication

Personal and Social capability: Social management: Communication

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• apply skills to address factors that influence verbal and non-verbal communication
• demonstrate communication skills in a range of contexts, responding to the enablers of, and barriers to, effective verbal and non-verbal communication
• devise strategies that apply effective verbal and non-verbal communication in response to feedback

Snapshot – Respect intellectual property

Digital Literacy: Creating and exchanging: Respect intellectual property

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• respect intellectual property by identifying the legal obligations regarding the ownership and appropriate use of products, exploring copyright protocols and applying some referencing conventions
• respect intellectual property by applying practices that comply with ethical and legal obligations, referencing conventions and copyright protocols
• respect intellectual property by identifying and applying practices that meet legal and ethical obligations, referencing conventions, copyright and trademark protocols

Snapshot – Plan

Digital Literacy: Creating and exchanging: Plan

Content description

AC9TDI8P12

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• select and use digital tools to develop and follow a plan to complete individual tasks and group projects
• use simple planning tools to develop and follow a plan to complete individual and collaborative projects
• use project management tools to develop and track a plan to complete individual and collaborative projects

AC9TDI8P13

explain how protects an account when the password is compromised and identify and other

•
•

Elaborations

• explaining how prevents unauthorised access by prompting the account owner for a token or single-use password, for example demonstrating how a funds transfer from their bank account requires not only logging in, but provision of a one-time password received via■SMS
• identifying the common techniques used in scams to identify and exploit susceptible users, for example using an email address from an unofficial domain when pretending to be an online retailer, or including grammatical errors to help filter out users who are more likely to detect the■scam

Students learn to:

explain how multi-factor authentication protects an account when the password is c
identify phishing and other cyber security threats

(AC9TDI8P13)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Managing and operating

• Protect content

Speaking and listening

• Speaking

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to

general capabilities and cross-curriculum priorities. Content elaborations are optional .

Managing and operating

• Protect content

Managing and operating

• Protect content

Snapshot – Protect content

Digital Literacy: Managing and operating: Protect content

Content description

AC9TDI8P13

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• protect content when sharing with peers and trusted adults by setting appropriate access controls

• protect content when sharing by selecting appropriate access controls for individuals and shared links for wider groups

• protect content when sharing by purposefully selecting appropriate access controls for individuals and groups

Snapshot – Speaking

Literacy: Speaking and listening: Speaking

Content description

AC9TDI8P13

Learning progression extract

The following learning progression extract shows the alignment of the learning progression with this content.

Crafting ideas

• creates spoken texts responsive to audience and a broad range of learning area topics, clearly articulating words and ideas

• organises more complex ideas or concepts logically, selecting details to accentuate key points

• speaks audibly and coherently to a less familiar audience for a sustained period

• shows increasing awareness of audience by moderating length, content and delivery of spoken texts

• adjusts register according to purpose and audience

• does research to prepare spoken texts

• uses a range of technology, and audio and visual resources to engage audience and enhance content

Vocabulary

• varies vocabulary to add interest and to describe with greater precision (e.g. uses topic-specific noun groups/phrases such as "exploitation of resources") (see Grammar)

• uses language creatively (e.g. "the moon shines bravely")

• uses sensory vocabulary to engage the audience (e.g. "a gasp of dismay")

• uses technical vocabulary to demonstrate topic knowledge (e.g. "deforestation")

• consistently uses a range of synonyms to add variety and precision to spoken text

• uses abstractions (e.g. "freedom", "fairness")

Crafting ideas

• creates spoken texts which explore and interpret concepts drawn from research or learning area content

• selects voice appropriate to purpose (e.g. third person to create distance and authority or first person to achieve personal connection)

• develops complex ideas or a central theme across a spoken text

• uses language features according to purpose, to impact the audience (e.g. uses more complex connectives such as "consequently", "accordingly" to explain)

• rephrases or clarifies to repair or refine meaning

• uses language structures and features appropriate to learning area content

• uses technologies and visual and audio resources to enhance meaning and effect in presentations

Vocabulary

• selects vocabulary to intensify and sharpen the focus (e.g. "scarcely", "absolutely", "real", "simply")

• uses a range of evaluative language to express opinions or convey emotion (e.g. "significant benefits", "devastating consequences")
• uses a range of emotive language appropriate to topic, purpose and audience
• uses rich, evocative, descriptive language
• uses figurative language (e.g. "hungry for success")

Crafting ideas

• creates complex and creative spoken texts which analyse and evaluate issues drawn from research or learning area content
• includes a range of alternative viewpoints in spoken texts, where appropriate
• controls and manipulates a sophisticated range of language features to affect the audience
• uses a range of rhetorical devices and humour to engage an audience
• references and quotes authorities or statistics to add authority (e.g. "according to a recent OECD report")
• delivers spoken text flexibly, allowing for questions and maintaining the flow of ideas

Snapshot – Protect content

Digital Literacy: Managing and operating: Protect content

Content description

AC9TDI8P13

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• protect content when sharing with peers and trusted adults by setting appropriate access controls
• protect content when sharing by selecting appropriate access controls for individuals and shared links for wider groups
• protect content when sharing by purposefully selecting appropriate access controls for individuals and groups

Snapshot – Protect content

Digital Literacy: Managing and operating: Protect content

Content description

AC9TDI8P13

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.
• protect content when sharing with peers and trusted adults by setting appropriate access controls
• protect content when sharing by selecting appropriate access controls for individuals and shared links for wider groups
• protect content when sharing by purposefully selecting appropriate access controls for individuals and groups

AC9TDI8P14

investigate and manage the existing systems and student solutions collect and assess if the is essential to their purpose

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•

Elaborations

• investigating the ethical obligations of individuals and organisations regarding ownership and of and information by researching an online platform’s policy for collection, use and storage information and discussing impacts on
• reviewing and managing their across online that they use, for example selecting their default and sharing settings on social media accounts
• investigating how recommendation used in media services rely on that tracks user habits, for example how music streaming services generate playlists that contain songs from genres and artists that are similar to those you listen to regularly
• assessing the appropriateness and relevance of collected by surveys from other students and organisations they complete online, for example identifying that providing your address is not necessary for a survey asking about your food preferences but providing the address for the Census would be appropriate

• explaining the risks associated with sharing personal due to the ease with which generative AI can create new content; for example, from short videos and audio recordings it is possible for convincing deepfake videos to be generated and distributed for malicious purposes

Students learn to:

investigate and manage the digital footprint existing systems and student solutions

assess if the data is essential to their purpose

(AC9TDI8P14)

General capabilities and cross-curriculum priorities

This content description connects to the following general capabilities and cross-curriculum priorities.

Practising digital safety and wellbeing

• Manage digital privacy and identity

Responding to ethical issues

• Explore ethical issues

• Making and reflecting on ethical decisions

Understanding ethical concepts and perspectives

• Explore ethical concepts

Elaborations

Content elaborations provide suggestions of ways to teach the content description and connect it to general capabilities and cross-curriculum priorities. Content elaborations are optional .

Practising digital safety and wellbeing

• Manage digital privacy and identity

Responding to ethical issues

• Explore ethical issues

• Making and reflecting on ethical decisions

Understanding ethical concepts and perspectives

• Explore ethical concepts

Practising digital safety and wellbeing

• Manage digital privacy and identity

Responding to ethical issues

• Explore ethical issues

• Making and reflecting on ethical decisions

Understanding ethical concepts and perspectives

• Explore ethical concepts

Practising digital safety and wellbeing

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• Explore ethical concepts

Practising digital safety and wellbeing

• Manage digital privacy and identity

Responding to ethical issues

• Explore ethical issues

• Making and reflecting on ethical decisions

Understanding ethical concepts and perspectives

• Explore ethical concepts

Related content

This content description can be taught with the following content descriptions from other learning areas.

AC9HP8P10

Snapshot – Manage digital privacy and identity

Content description

AC9TDI8P14

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• recognise the permanence of their digital footprint and digital identity, and the associated risks, including to their reputation

• give and seek consent before sharing online in trusted groups

• recognise their digital footprint is valuable, used by online tools for targeting, and that data shared online is no longer under their control

• consider who they trust with their data and review privacy policies before giving consent, and seek consent before sharing online

• recognise their actions contribute to their passive digital footprint

• manage their digital identity by controlling privacy, connections and group settings, and curating posts

• consent selectively to data collection after assessing the benefits and risks of an online tool privacy policy

Snapshot – Explore ethical issues

Ethical Understanding: Responding to ethical issues: Explore ethical issues

Content description

AC9TDI8P14

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• describe how ethical perspectives or approaches to ethical issues may vary in different situations

• analyse■the relationships between values, ethical perspectives■and ethical frameworks when responding to ethical issues

• apply knowledge of ethical concepts, values, perspectives and frameworks when responding to ethical issues

Snapshot – Making and reflecting on ethical decisions

Ethical Understanding: Responding to ethical issues: Making and reflecting on et

Content description

AC9TDI8P14

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• consider alternative■ethical responses■to an issue when making and reflecting on ethical decisions

• consider how values and beliefs influence approaches to ethical issues, and■analyse■how these affect■outcomes

• analyse■biases■when applying ethical concepts,■values■and ethical frameworks,■in order to explore and evaluate ethical decisions

Snapshot – Explore ethical concepts

Ethical Understanding: Understanding ethical concepts and perspectives: Explor

Content description

AC9TDI8P14

Continuum extract

The following continuum extract shows the alignment of the continuum with this content.

• identify and describe ethical concepts, such as truth and justice, and explain how perspectives may vary according to the situation or context

• analyse■the similarities and differences between ethical concepts, such as integrity, loyalty and equality, in a range of situations and contexts

• evaluate■the consistency in meaning of ethical concepts, such as trust, freedom and rights and responsibilities, in a range of situations and contexts

Snapshot – Manage digital privacy and identity

Digital Literacy: Practising digital safety and wellbeing: Manage digital privacy an

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