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**food and fibre: years 5 and 6**

The following table identifies how the key aspects of understanding food and fibre production are evident in content descriptions from across the Australian Curriculum Version 9.0. From this information, teachers can develop a sequential program for learning about food and fibre by connecting the key aspects of learning with learning area and subject-specific content descriptions.

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| Years 5 and 6 |
| Key aspect 1: Sustaining life |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Design and Technologies** | **Knowledge and understanding**Technologies context: Food and fibre production; Food specialisations | explain how and why food and fibre are produced in managed environmentsAC9TDE6K03 | * exploring how before colonisation, First Nations Australians lived in discrete communities that cared for, protected and sustainably harvested food and fibre resources, some of which are now cultivated to meet domestic and international demand, for example bunya nuts, macadamia and finger limes
* describing the relationship between plant types and animal breeds and their environmental suitability when selecting suitable plants or animals for an environment, for example growing tropical fruits in northern Australia due to higher temperature, and raising sheep in the cooler regions of Australia
* visiting a farm or participating in a virtual tour to ask questions about how and why food and fibre are produced in that environment
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| **Science – Year 6** | **Science understanding**Biological sciences | investigate the physical conditions of a habitat and analyse how the growth and survival of living things is affected by changing physical conditionsAC9S6U01 | * identifying the physical conditions in an aquatic or terrestrial habitat and how they change over time
* investigating how changes to physical conditions such as salinity, soil type, sunlight or temperature affect plant growth
* examining how changes in physical conditions such as temperature, light availability and rainfall affect animals, such as corals, honey bees or flying foxes, and predict impacts of these changes
* investigating changes in physical conditions that are the result of human activity and exploring the impact of these on living things, such as the impact of urban lighting on nocturnal and migratory animals
* investigating the effect of physical conditions on the growth of bread mould colonies in sealed plastic bags
* recognising that environmental conditions can affect stages of life, such as ponds drying up, seeds requiring water to germinate, or temperatures being too hot or cold for eggs to hatch
* investigating First Nations Australians’ knowledges and understandings of the physical conditions necessary for the survival of certain plants and animals
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| **Science as a human endeavour**Nature and development of science | examine why advances in science are often the result of collaboration or build on the work of others AC9S6H01 | * investigating how contemporary restorative ecology adapts and builds on the traditional ecological knowledges of First Nations Australians
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| Years 5 and 6 |
| Key aspect 2: Valuing resources |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Design and Technologies** | **Knowledge and understanding** Technologies and society | explain how people in design and technologies occupations consider competing factors including sustainability in the design of products, services and environmentsAC9TDE6K01 | * investigating how First Nations Australians have long considered competing factors especially those related to sustainability in the design of fish harvesting technologies, for example fish traps and fish poisons that allow for selective harvesting and release of bycatch, as compared with high-yield, non-selective harvesting practices such as trawling
 |
| **Knowledge and understanding**Technologies context: Food and fibre production; Food specialisations | explain how and why food and fibre are produced in managed environmentsAC9TDE6K03 | * investigating and experimenting with different tools, equipment and methods of preparing soil and the effect on soil quality and sustainability including conserving and recycling nutrients, for example building a food composting system, including mulch when designing a sustainable school vegetable garden or cropping area
 |
| **Knowledge and understanding**Technologies context: Materials and technologies specialisations | explain how characteristics and properties of materials, systems, components, tools and equipment affect their use when producing designed solutions AC9TDE6K05 | * identifying and describing the properties of materials for the design and construction of a household product or system to improve household sustainability, for example a product for storing harvested water or reducing energy consumption
 |
| **Digital Technologies** | **Processes and production skills** Generating and designing | design algorithms involving multiple alternatives (branching) and iterationAC9TDI6P02 | * designing an algorithm or understanding and modifying an existing algorithm to fix an error or change functionality, for example exploring issues in drought-prone areas to decide when to water a garden, taking into account humidity as well as soil moisture level
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| **Science – Year 5** | **Science understanding**Earth and space sciences | describe how weathering, erosion, transportation and deposition cause slow or rapid change to Earth’s surfaceAC9S5U02 | * identifying types of weathering caused by mechanical means such as by wind abrasion, cycles of extreme heat or cold, and frost wedging; and biological means such as by plants and tree roots
* exploring how erosion can be caused by moving air or moving water and how substances such as surface soil are relocated, and identifying examples of erosion on a local or regional scale
* analysing the difference between weathering and erosion and comparing the timescales over which these processes can occur
* modelling the effects of erosion on a simulated landscape and exploring factors that mitigate its effects
* investigating how humans have changed local landscapes and predicting the effect these changes might have on rates of erosion
* considering how First Nations Australians are impacted by the rapid erosion of sand dunes and the resulting effect of saltwater on culturally significant freshwater swamps
* considering the effects of significant rainfall, such as a monsoon, on the transportation and deposition of river sediments in the Asia-Pacific region
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| **Humanities and Social Sciences (HASS) –** **Year 5** | **Knowledge and understanding**Geography | the influence of people, including First Nations Australians and people in other countries, on the characteristics of a placeAC9HS5K04 | * identifying how First Nations Australian communities altered the environment and sustained ways of living through their methods of land and resource management; for example, firestick farming
* exploring the extent of change in the local environment over time (for example, through vegetation clearance, fencing, urban development, drainage, irrigation, erosion, farming, the introduction of grazing livestock such as sheep and cattle, forest plantations or mining), and evaluating the effects of change on economic development and environmental sustainability
* exploring examples of positive influences people have on the characteristics of places; for example, reforestation, land-care groups, rehabilitating former mining, industrial or waste disposal sites
* identifying positive and negative influences of people on places in other countries, including countries in Asia, Europe and North America
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| the management of Australian environments, including managing severe weather events such as bushfires, floods, droughts or cyclones, and their consequencesAC9HS5K05 | * exploring how environments are used and managed, such as the practices and laws that aim to manage human impact, the use of zoning to manage local environments, creation of wildlife corridors and national parks
* examining how changes due to environmental practices create issues, such as water shortages and increased floods and bushfires, the impact of issues on places and communities, and how people can mitigate the impacts, for example through building codes, zoning, firebreaks and controlled burns, and efficient irrigation
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| **Skills** Concluding and decision-making | develop evidence-based conclusionsAC9HS5S05 | * drawing conclusions about a community and/or the environment; for example, changing democratic values from past to present, patterns of human consumption and changes in environment
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| propose actions or responses to issues or challenges and use criteria to assess the possible effectsAC9HS5S06 | * forecasting probable futures for an issue; for example, how native fauna populations might change if an introduced species such as the cane toad, carp, feral cats or rabbits continues to increase in population and proposing preferred futures that relate to the issue
* undertaking a project that responds to an identified challenge or issue with strategies to be used that will achieve desired outcomes; for example, a school fundraising activity, an ecological preservation project, a school-based opinion poll about a relevant issue
* making judgements about how effectively challenges have been addressed in the past (for example, relative success of a response to challenges during colonial settlement) or how effectively a current challenge is being addressed (for example, a response to an environmental issue or a strategy for economic development)
* using criteria to evaluate the possible options that people could take to resolve challenges, such as improving water quality, managing excess waste and providing resources, and using criteria to improve responses in communities to environmental hazards; for example, considering economic factors such as needs, wants and costs, as well as environmental, health and social factors
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| Years 5 and 6 |
| Key aspect 3: Designing solutions and meeting challenges |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Design and Technologies** | **Knowledge and understanding** Technologies and society | explain how people in design and technologies occupations consider competing factors including sustainability in the design of products, services and environmentsAC9TDE6K01 | * explaining the importance of aesthetics, function and sustainability in product design, for example a textile product that gives ultraviolet protection and is appealing; an odour-fighting wool fabric that minimises washing; a motor that moves a vehicle and uses a sustainable power source; a modification to a home to reduce environmental impact; restoring a natural environment and enabling low-impact access for the public such as boardwalks in fragile wet heath or swamp ecosystems
 |
| **Knowledge and understanding**Technologies context: Food and fibre production; Food specialisations | explain how and why food and fibre are produced in managed environmentsAC9TDE6K03 | * investigating and experimenting with different tools, equipment and methods of preparing soil and the effect on soil quality and sustainability including conserving and recycling nutrients, for example building a food composting system, including mulch when designing a sustainable school vegetable garden or cropping area
* sequencing the process of converting on-farm food or fibre products into a product suitable for retail sale, for example creating a digital flowchart to record a paddock-to-plate supply chain, or the fibre-to-garment life cycle (fibre, yarn, fabric, garment)
 |
| **Knowledge and understanding**Technologies context: Materials and technologies specialisations | explain how characteristics and properties of materials, systems, components, tools and equipment affect their use when producing designed solutions AC9TDE6K05 | * investigating how First Nations Australians have long used material science knowledge to identify materials and preparation techniques to meet performance needs, for example twining techniques of string and rope fibres to ensure suitability for use in wet, dry, freshwater and saltwater applications
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| **Processes and production skills** Investigating and defining | investigate needs or opportunities for designing, and the materials, components, tools, equipment and processes needed to create designed solutions AC9TDE6P01 | * investigating First Nations Australians’ traditional fibre sources as potential commercial solutions for biodegradable string or rope, and researching the materials, systems, components, tools and equipment needed
* surveying people in the school community about their needs in order to design an appropriate product, service or environment that addresses the need, for example planning the requirements for a community meal, creating more shade in the school by determining where trees could be planted or designing a security system for the community garden
* investigating designed solutions from around the world to make suitable, quality decisions that meet needs or opportunities, for example locating information online about small-space gardening ideas from different countries and judging their suitability for the local environment
* investigating the importance of complementary parts of working systems by deconstructing the components, structure and purpose of products, services or environments, for example labelling a diagram of a robotic weeder or vacuum cleaner and explaining the function of parts
* testing a range of materials, components, tools and equipment to determine the appropriate technologies needed to make products, services or environments, for example the materials for a product such as a rubber-band-powered vehicle or item of protective clothing
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| **Processes and production skills** Generating and designing | generate, iterate and communicate design ideas, decisions and processes using technical terms and graphical representation techniques, including using digital toolsAC9TDE6P02 | * generating a range of design ideas for products, services or environments using prior knowledge, skills and research, for example a security system for a community garden, a product made from a repurposed item of clothing, a permaculture vegetable patch or a healthy meal for a family picnic
* analysing, modifying and developing design ideas to enhance and improve the sustainability of the product, service, environment or system, for example analysing eco-friendly alternatives to non-recyclable decorations for a community event or replacing paper-based newsletters with online formats
* representing and communicating design ideas using modelling and drawing standards including the use of digital tools, for example including scale, symbols and codes in plans and diagrams; using pictorial maps and aerial views; and using digital mapping applications or infographics to present research and ideas to others
* developing and using models to iterate and improve design ideas, for example using modelling applications to design the layout and features of an enclosure for a chosen animal
* experimenting with materials, tools and equipment to refine design decisions and processes, for example considering the selection of materials and joining techniques to suit the purpose of a product, such as a pop-up book, a fabric bag or an electric circuit
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| **Processes and production skills** Producing and implementing | select and use suitable materials, components, tools, equipment and techniques to safely make designed solutions AC9TDE6P03 | * matching material and joining techniques to the design intention, for example accurately and safely cutting and sewing the fabric pieces to make a community banner or joining components to produce an electric circuit
* using appropriate personal protective equipment (PPE) required for the use of some tools and equipment, for example protective eyewear and working safely, responsibly and cooperatively to ensure safe work areas, for example the safe use of equipment when making a water-resistant, floating craft
* choosing appropriate materials, tools, equipment and techniques for a specific purpose, for example when safely and hygienically preparing food, cultivating garden beds or constructing electronic products
 |
| **Processes and production skills** Evaluating | negotiate design criteria including sustainability to evaluate design ideas, processes and solutions AC9TDE6P04 | * deciding on design criteria collaboratively for a designed solution, for example including an environmental sustainability criterion such as product should be recyclable
* developing design criteria with others to evaluate the suitability of materials, tools and equipment for specific purposes, for example considering the most suitable fabric, tools and equipment needed to make beeswax wraps
* evaluating their designed solutions including considering the benefits and costs of production processes and the environmental impact, for example for the production of an animal shelter
 |
| **Processes and production skills** Collaborating and managing | develop project plans that include consideration of resources to individually and collaboratively make designed solutionsAC9TDE6P05 | * setting milestones for production processes and allocating roles to team members, for example using a cloud-based or server-based document or spreadsheet to list tasks, deadlines and roles for team members working on a project collaboratively, including setting document sharing permissions with selected people
* identifying the human resources, materials, tools and equipment that will be needed to make the designed solution as part of the project plan and specifying when these will be needed, for example access to a wildlife expert at the planning stage and scheduling access to shared tools when building a habitat for local animals
* planning production steps needed to produce a product, service or environment using digital tools, for example making a flowchart or using a digital planner to record the sequence of tasks and deadlines needed to complete a project
 |
| **Digital Technologies** | **Processes and production skills** Investigating and defining | define problems with given or co-developed design criteria and by creating user storiesAC9TDI6P01 | * using provided stimulus to identify an issue and writing a user story in groups, for example using a newspaper article to develop a user story, such as: a family in a bushfire or flood-prone environment needs a way to ensure they are prepared in case of an emergency
 |
| **Processes and production skills** Generating and designing | design algorithms involving multiple alternatives (branching) and iterationAC9TDI6P02 | * designing an algorithm or understanding and modifying an existing algorithm to fix an error or change functionality, for example exploring issues in drought-prone areas to decide when to water a garden, taking into account humidity as well as soil moisture level
 |
| **Science – Year 5** | **Science understanding**Physical sciences | identify sources of light, recognise that light travels in a straight path and describe how shadows are formed and light can be reflected and refractedAC9S5U03 | * recognising First Nations Australians’ understanding of refraction as experienced in spearfishing and in shimmering body paint, and reflection as evidenced by materials selected for construction of housing
 |
| **Science as a human endeavour**Nature and development of science | examine why advances in science are often the result of collaboration or build on the work of othersAC9S5H01 | * investigating how contemporary soil erosion management practices adapt and build on First Nations Australians’ fire management and agricultural practices
* exploring why developing new erosion mitigation techniques such as contour banks and strip cropping requires geologists, hydrologists and farmers to collaborate
 |
| **Science as a human endeavour**Use and influence of science | investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisionsAC9S5H02 | * considering how decisions are made to farm particular crops or animals depending on local habitats, such as considering their ability to withstand drought or cold weather
* examining how communities use knowledge of erosion processes to design landscape features that reduce erosion in fragile environments
 |
| **Science Inquiry**Processing, modelling and analysing | construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and information and describe patterns, trends and relationshipsAC9S5I04 | * constructing a column graph to illustrate the relationship between predation and an animal feature such as colour as indicated by a simulation, and using values to represent the outcomes of repeated simulations
* modelling landscapes using materials such as sand, gravel, soil and rocks to show effects of erosion by water
* constructing labelled ray diagrams to represent observations and compare how light interacts with different objects
* using maps to identify patterns in erosion site locations or aerial photographs to show effects of erosion over time
 |
| **Science – Year 6** | **Science as a human endeavour**Use and influence of science | investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisionsAC9S6H02 | * investigating how people use knowledge of conditions that reduce mould or bacterial growth when considering food packaging and storage
 |
| **Science Inquiry**Planning and conducting | use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriateAC9S6I03 | * recording data in tables and diagrams or electronically as digital images and spreadsheets
* using digital tools such as digital thermometers or soil moisture probes to collect data over time and record data in spreadsheets
 |
| **Humanities and Social Sciences (HASS) – Year 5** | **Knowledge and understanding**Geography | the influence of people, including First Nations Australians and people in other countries, on the characteristics of a placeAC9HS5K04 | * identifying how First Nations Australian communities altered the environment and sustained ways of living through their methods of land and resource management; for example, firestick farming
* exploring the extent of change in the local environment over time (for example, through vegetation clearance, fencing, urban development, drainage, irrigation, erosion, farming, the introduction of grazing livestock such as sheep and cattle, forest plantations or mining), and evaluating the effects of change on economic development and environmental sustainability
* exploring examples of positive influences people have on the characteristics of places; for example, reforestation, land-care groups, rehabilitating former mining, industrial or waste disposal sites
* identifying positive and negative influences of people on places in other countries, including countries in Asia, Europe and North America
 |
| the management of Australian environments, including managing severe weather events such as bushfires, floods, droughts or cyclones, and their consequencesAC9HS5K05 | * exploring how environments are used and managed, such as the practices and laws that aim to manage human impact, the use of zoning to manage local environments, creation of wildlife corridors and national parks
* examining how changes due to environmental practices create issues, such as water shortages and increased floods and bushfires, the impact of issues on places and communities, and how people can mitigate the impacts, for example through building codes, zoning, firebreaks and controlled burns, and efficient irrigation
 |
| **Skills** Questioning and researching | develop questions to investigate people, events, developments, places and systemsAC9HS5S01 | * developing questions to guide the identification and location of useful sources for an investigation or project; for example, “Is this source useful?”, “Who can help us do this project?”, “What rules/protocols must we follow when we do this inquiry/project?”, “What resources do we need to conduct this project?”
 |
| locate, collect and organise information and data from primary and secondary sources in a range of formatsAC9HS5S02 | * using geospatial tools such as a globe, wall map or a digital application to collect information; for example, to identify the influences of people on the characteristics of places in other countries, or the location of information they have collected through fieldwork
* conducting surveys or interviews to gather primary data that support decision-making processes when investigating an issue, and summarising the key points or particular points of view; for example, surveying the views of conflicting parties in a planning or environmental dispute
 |
| **Skills** Interpreting, analysing and evaluating | evaluate information and data in a range of formats to identify and describe patterns and trends, or to infer relationshipsAC9HS5S03 | * examining visual and written sources to infer relationships; for example, examining photographs to see how people respond to droughts in enterprising ways; examining maps to investigate patterns in the characteristics of a place; investigating written sources to explore patterns in the development of colonial society
 |
| **Skills** Concluding and decision-making | propose actions or responses to issues or challenges and use criteria to assess the possible effectsAC9HS5S06 | * forecasting probable futures for an issue; for example, how native fauna populations might change if an introduced species such as the cane toad, carp, feral cats or rabbits continues to increase in population and proposing preferred futures that relate to the issue
* undertaking a project that responds to an identified challenge or issue with strategies to be used that will achieve desired outcomes; for example, a school fundraising activity, an ecological preservation project, a school-based opinion poll about a relevant issue
* making judgements about how effectively challenges have been addressed in the past (for example, relative success of a response to challenges during colonial settlement) or how effectively a current challenge is being addressed (for example, a response to an environmental issue or a strategy for economic development)
* using criteria to evaluate the possible options that people could take to resolve challenges, such as improving water quality, managing excess waste and providing resources, and using criteria to improve responses in communities to environmental hazards; for example, considering economic factors such as needs, wants and costs, as well as environmental, health and social factors
 |
| **Skills** Communicating  | present descriptions and explanations, drawing ideas, findings and viewpoints from sources, and using relevant terms and conventionsAC9HS5S07 | * selecting and referencing ideas and viewpoints from letters, graphs, tables, timelines, photographs and pictures, in descriptions and explanations
* using accurate and subject-appropriate terms; for example, historical terms such as “colonial”, “the gold era”, “migration” and “penal”; geographic terms such as “characteristics”, “environmental”, “human”, “ecosystems”, “sustainable”, “settlement” and “management”; civics terms such as “electoral process”, “democracy”, “shared beliefs”; and economic terms such as “scarcity”, “choices”, “resources”, and “needs and wants”
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| **Humanities and Social Sciences (HASS) – Year 6** | **Knowledge and understanding**Geography | the geographical diversity and location of places in the Asia region, and its location in relation to AustraliaAC9HS6K04 | * comparing the daily lives of people in other countries, in terms of food, clothing, personal and household goods, housing and education, and differences between the wealthy and poor in a country
* identifying examples of Indigenous peoples who live in different regions in Asia, such as Orang Asli of Malaysia and Indonesia, the Tibetans and the Mongols, and appreciating their similarities and differences, and the ways they have lived sustainably over time
 |
| Australia’s interconnections with other countries and how these change people and placesAC9HS6K05 | * researching connections between Australia and countries in the Asia and Pacific regions in terms of migration, trade, tourism, aid, education, defence or cultural influences, and explaining the effects of at least one of these connections on their own place and another place in Australia
 |
| **Skills** Questioning and researching | develop questions to investigate people, events, developments, places and systemsAC9HS6S01 | * mind-mapping a concept to create research questions that reveal connections between economic, political, and/or environmental systems; for example, “How do the purchases my family makes influence the environment?”, “How do laws aim to ensure sustainable use of resources in the products we use?”, “What actions can consumers take to ensure their purchases protect the environment?”
 |
| locate, collect and organise information and data from primary and secondary sources in a range of formatsAC9HS6S02 | * determining the most appropriate range of methods to find information, including digital tools, such as personal observation, interviews and surveys, internet searches, census data, and primary and secondary sources, and using excursions and field trips; for example, a study trip to wetlands, or a visit to a war memorial, a cultural site, an Asian food festival, a courthouse, a town hall, a not-for-profit enterprise or a bank
* creating maps, using spatial technologies and cartographic conventions as appropriate, including border, source, scale, legend, title and north point, to show information and data such as location; for example, a large-scale map to show the location of places and their features in Australia and countries of Asia; a flow map or small-scale map to show the connections Australia has with Asian countries such as shipping or migration
 |
| **Skills** Interpreting, analysing and evaluating | evaluate information and data in a range of formats to identify and describe patterns and trends, or to infer relationshipsAC9HS6S03 | * using graphic organisers, maps and concept maps to identify patterns, such as settlement in regional agricultural areas, trends (for example, changes in Australian immigration statistics) and cause–effect relationships (for example, relationships between war and the movement of refugees), and the effects of consumer decisions on the individual, the broader community and on environmental sustainability
 |
| evaluate primary and secondary sources to determine origin, purpose and perspectivesAC9HS6S04 | * evaluating points of view about a sustainability issue; for example, considering producers’ and consumers’ views on the sustainable use of resources and the expertise of people expressing views
 |
| **Skills** Concluding and decision-making | propose actions or responses to issues or challenges and use criteria to assess the possible effectsAC9HS6S06 | * planning a project, campaign or enterprise around an identified challenge with specification of the sequence of tasks and activities, responsibilities and deadlines
* determining a preferred option for action by identifying the advantages and disadvantages of different proposals, surveying people’s views and opinions, analysing the data, and debating and voting on alternatives
* identifying the possible social, cultural, economic and environmental effects of consumer or financial choices and developing strategies to minimise negative effects
 |
| **Skills** Communicating  | present descriptions and explanations, drawing ideas, findings and viewpoints from sources, and using relevant terms and conventionsAC9HS6S07 | * composing informative and persuasive texts, supported by evidence, to describe and explain conclusions from their economic, civic, historical and geographical inquiries
* selecting and referencing findings and viewpoints from sources and visual materials such as journals, diaries, graphs, tables, timelines, photographs and pictures, in descriptions and explanations
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| Years 5 and 6 |
| Key aspect 4: Economy |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Design and Technologies** | **Knowledge and understanding** Technologies and society | explain how people in design and technologies occupations consider competing factors including sustainability in the design of products, services and environmentsAC9TDE6K01 | * explaining the importance of aesthetics, function and sustainability in product design, for example a textile product that gives ultraviolet protection and is appealing; an odour-fighting wool fabric that minimises washing; a motor that moves a vehicle and uses a sustainable power source; a modification to a home to reduce environmental impact; restoring a natural environment and enabling low-impact access for the public such as boardwalks in fragile wet heath or swamp ecosystems
 |
| **Knowledge and understanding**Technologies context: Food and fibre production; Food specialisations | explain how and why food and fibre are produced in managed environmentsAC9TDE6K03 | * exploring how before colonisation, First Nations Australians lived in discrete communities that cared for, protected and sustainably harvested food and fibre resources, some of which are now cultivated to meet domestic and international demand, for example bunya nuts, macadamia and finger limes
* investigating and experimenting with different tools, equipment and methods of preparing soil and the effect on soil quality and sustainability including conserving and recycling nutrients, for example building a food composting system, including mulch when designing a sustainable school vegetable garden or cropping area
* describing the relationship between plant types and animal breeds and their environmental suitability when selecting suitable plants or animals for an environment, for example growing tropical fruits in northern Australia due to higher temperature, and raising sheep in the cooler regions of Australia
* sequencing the process of converting on-farm food or fibre products into a product suitable for retail sale, for example creating a digital flowchart to record a paddock-to-plate supply chain, or the fibre-to-garment life cycle (fibre, yarn, fabric, garment)
* visiting a farm or participating in a virtual tour to ask questions about how and why food and fibre are produced in that environment
 |
| **Knowledge and understanding**Technologies context: Materials and technologies specialisations | explain how characteristics and properties of materials, systems, components, tools and equipment affect their use when producing designed solutions AC9TDE6K05 | * describing the materials and systems used in public places and facilities that benefit the way people live, for example a community exercise environment, arts facility, water treatment plant or garbage collection service
* comparing and describing the tools, equipment and techniques used to manufacture products in factories with those used by local and regional enterprises including cost and impacts, for example clothing made in factories compared with local handmade garments
* comparing the design and production of products, services or environments in Australia and a country in Asia, for example comparing the diversity, availability and properties of preferred materials and the design of public shelters and housing in Indonesia and Australia
* investigating the properties of fibres and how these are used to create products, for example designing an experiment to test which fabrics are warmest and explaining how those properties influence what they are used for
 |
| **Digital Technologies** | **Processes and production skills** Investigating and defining | define problems with given or co-developed design criteria and by creating user storiesAC9TDI6P01 | * using provided stimulus to identify an issue and writing a user story in groups, for example using a newspaper article to develop a user story, such as: a family in a bushfire or flood-prone environment needs a way to ensure they are prepared in case of an emergency
 |
| **Humanities and Social Sciences (HASS) – Year 6** | **Knowledge and understanding**Geography | Australia’s interconnections with other countries and how these change people and placesAC9HS6K05 | * researching connections between Australia and countries in the Asia and Pacific regions in terms of migration, trade, tourism, aid, education, defence or cultural influences, and explaining the effects of at least one of these connections on their own place and another place in Australia
 |
| **Skills** Questioning and researching | develop questions to investigate people, events, developments, places and systemsAC9HS6S01 | * mind-mapping a concept to create research questions that reveal connections between economic, political, and/or environmental systems; for example, “How do the purchases my family makes influence the environment?”, “How do laws aim to ensure sustainable use of resources in the products we use?”, “What actions can consumers take to ensure their purchases protect the environment?”
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| Years 5 and 6 |
| Key aspect 5: People |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Design and Technologies** | **Knowledge and understanding** Technologies and society | explain how people in design and technologies occupations consider competing factors including sustainability in the design of products, services and environmentsAC9TDE6K01 | * investigating how First Nations Australians have long considered competing factors especially those related to sustainability in the design of fish harvesting technologies, for example fish traps and fish poisons that allow for selective harvesting and release of bycatch, as compared with high-yield, non-selective harvesting practices such as trawling
 |
| **Knowledge and understanding**Technologies context: Food and fibre production; Food specialisations | explain how and why food and fibre are produced in managed environmentsAC9TDE6K03 | * exploring how before colonisation, First Nations Australians lived in discrete communities that cared for, protected and sustainably harvested food and fibre resources, some of which are now cultivated to meet domestic and international demand, for example bunya nuts, macadamia and finger limes
* visiting a farm or participating in a virtual tour to ask questions about how and why food and fibre are produced in that environment
 |
| **Knowledge and understanding**Technologies context: Materials and technologies specialisations | explain how characteristics and properties of materials, systems, components, tools and equipment affect their use when producing designed solutions AC9TDE6K05 | * investigating how First Nations Australians have long used material science knowledge to identify materials and preparation techniques to meet performance needs, for example twining techniques of string and rope fibres to ensure suitability for use in wet, dry, freshwater and saltwater applications
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|  | **Processes and production skills** Collaborating and managing | develop project plans that include consideration of resources to individually and collaboratively make designed solutionsAC9TDE6P05 | * setting milestones for production processes and allocating roles to team members, for example using a cloud-based or server-based document or spreadsheet to list tasks, deadlines and roles for team members working on a project collaboratively, including setting document sharing permissions with selected people
* identifying the human resources, materials, tools and equipment that will be needed to make the designed solution as part of the project plan and specifying when these will be needed, for example access to a wildlife expert at the planning stage and scheduling access to shared tools when building a habitat for local animals
* planning production steps needed to produce a product, service or environment using digital tools, for example making a flowchart or using a digital planner to record the sequence of tasks and deadlines needed to complete a project
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| **Digital Technologies** | **Processes and production skills** Investigating and defining | define problems with given or co-developed design criteria and by creating user storiesAC9TDI6P01 | * using provided stimulus to identify an issue and writing a user story in groups, for example using a newspaper article to develop a user story, such as: a family in a bushfire or flood-prone environment needs a way to ensure they are prepared in case of an emergency
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| **Science – Year 5** | **Science understanding**Physical sciences | identify sources of light, recognise that light travels in a straight path and describe how shadows are formed and light can be reflected and refractedAC9S5U03 | * recognising First Nations Australians’ understanding of refraction as experienced in spearfishing and in shimmering body paint, and reflection as evidenced by materials selected for construction of housing
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| **Science as a human endeavour**Use and influence of science | investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisionsAC9S5H02 | * considering how decisions are made to farm particular crops or animals depending on local habitats, such as considering their ability to withstand drought or cold weather
* examining how communities use knowledge of erosion processes to design landscape features that reduce erosion in fragile environments
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| **Science – Year 6** | **Science understanding**Biological sciences | investigate the physical conditions of a habitat and analyse how the growth and survival of living things is affected by changing physical conditionsAC9S6U01 | * identifying the physical conditions in an aquatic or terrestrial habitat and how they change over time
* investigating how changes to physical conditions such as salinity, soil type, sunlight or temperature affect plant growth
* examining how changes in physical conditions such as temperature, light availability and rainfall affect animals, such as corals, honey bees or flying foxes, and predict impacts of these changes
* investigating changes in physical conditions that are the result of human activity and exploring the impact of these on living things, such as the impact of urban lighting on nocturnal and migratory animals
* investigating the effect of physical conditions on the growth of bread mould colonies in sealed plastic bags
* recognising that environmental conditions can affect stages of life, such as ponds drying up, seeds requiring water to germinate, or temperatures being too hot or cold for eggs to hatch
* investigating First Nations Australians’ knowledges and understandings of the physical conditions necessary for the survival of certain plants and animals
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| **Science as a human endeavour**Nature and development of science | examine why advances in science are often the result of collaboration or build on the work of others AC9S6H01 | * investigating how contemporary restorative ecology adapts and builds on the traditional ecological knowledges of First Nations Australians
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| **Science as a human endeavour**Use and influence of science | investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisionsAC9S6H02 | * investigating how people use knowledge of conditions that reduce mould or bacterial growth when considering food packaging and storage
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| **Humanities and Social Sciences (HASS) – Year 5** | **Knowledge and understanding** Geography  | the influence of people, including First Nations Australians and people in other countries, on the characteristics of a placeAC9HS5K04 | * identifying how First Nations Australian communities altered the environment and sustained ways of living through their methods of land and resource management; for example, firestick farming
* exploring the extent of change in the local environment over time (for example, through vegetation clearance, fencing, urban development, drainage, irrigation, erosion, farming, the introduction of grazing livestock such as sheep and cattle, forest plantations or mining), and evaluating the effects of change on economic development and environmental sustainability
* exploring examples of positive influences people have on the characteristics of places; for example, reforestation, land-care groups, rehabilitating former mining, industrial or waste disposal sites
* identifying positive and negative influences of people on places in other countries, including countries in Asia, Europe and North America
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| the management of Australian environments, including managing severe weather events such as bushfires, floods, droughts or cyclones, and their consequencesAC9HS5K05 | * exploring how environments are used and managed, such as the practices and laws that aim to manage human impact, the use of zoning to manage local environments, creation of wildlife corridors and national parks
* examining how changes due to environmental practices create issues, such as water shortages and increased floods and bushfires, the impact of issues on places and communities, and how people can mitigate the impacts, for example through building codes, zoning, firebreaks and controlled burns, and efficient irrigation
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| **Skills** Questioning and researching | locate, collect and organise information and data from primary and secondary sources in a range of formatsAC9HS5S02 | * using geospatial tools such as a globe, wall map or a digital application to collect information; for example, to identify the influences of people on the characteristics of places in other countries, or the location of information they have collected through fieldwork
* conducting surveys or interviews to gather primary data that support decision-making processes when investigating an issue, and summarising the key points or particular points of view; for example, surveying the views of conflicting parties in a planning or environmental dispute
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| **Skills** Concluding and decision-making | develop evidence-based conclusionsAC9HS5S05 | * drawing conclusions about a community and/or the environment; for example, changing democratic values from past to present, patterns of human consumption and changes in environments
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| **Humanities and Social Sciences (HASS) – Year 6** | **Knowledge and understanding**Geography | the geographical diversity and location of places in the Asia region, and its location in relation to AustraliaAC9HS6K04 | * comparing the daily lives of people in other countries, in terms of food, clothing, personal and household goods, housing and education, and differences between the wealthy and poor in a country
* identifying examples of Indigenous peoples who live in different regions in Asia, such as Orang Asli of Malaysia and Indonesia, the Tibetans and the Mongols, and appreciating their similarities and differences, and the ways they have lived sustainably over time
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| Australia’s interconnections with other countries and how these change people and placesAC9HS6K05 | * researching connections between Australia and countries in the Asia and Pacific regions in terms of migration, trade, tourism, aid, education, defence or cultural influences, and explaining the effects of at least one of these connections on their own place and another place in Australia
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| **Skills** Questioning and researching | develop questions to investigate people, events, developments, places and systemsAC9HS6S01 | * mind-mapping a concept to create research questions that reveal connections between economic, political, and/or environmental systems; for example, “How do the purchases my family makes influence the environment?”, “How do laws aim to ensure sustainable use of resources in the products we use?”, “What actions can consumers take to ensure their purchases protect the environment?”
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| **Skills** Interpreting, analysing and evaluating | evaluate information and data in a range of formats to identify and describe patterns and trends, or to infer relationshipsAC9HS6S03 | * using graphic organisers, maps and concept maps to identify patterns, such as settlement in regional agricultural areas, trends (for example, changes in Australian immigration statistics) and cause–effect relationships (for example, relationships between war and the movement of refugees), and the effects of consumer decisions on the individual, the broader community and on environmental sustainability
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