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**Food and wellbeing: years 9 and 10**

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

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| Years 9 and 10 |
| Key aspect 1: Individuals, families and communities |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Technologies -** **Design and Technologies** | **Knowledge and understanding** Technologies and society | analyse how people in design and technologies occupations consider ethical, security and sustainability factors to innovate and improve products, services and environmentsAC9TDE10K01 | * explaining how product life cycle thinking can influence decision-making related to design and technologies, for example rethinking products to provide for re-use, selecting a material for a product that has a lower carbon footprint
* examining mass production systems taking into account ethics and sustainability considerations, for example the mass production of food, clothing and shoes and why manufacturers produce different versions of the same product and support complete product life cycle strategies
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| **Technologies –** **Digital Technologies** | **Processes and production skills**Investigating and defining | define and decompose real-world problems with design criteria and by interviewing stakeholders to create user storiesAC9TDI10P04 | * creating user stories by interviewing a stakeholder to complete a template such as "As a <type of user>, I want <some goal> so that <some reason>", for example interviewing an amateur athlete to complete the template, such as "As an athlete, I want to ensure my energy intake is high enough to complete a half marathon."
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| **Health and Physical Education** | **Personal, social and community health**Identities and change | analyse factors that shape identities and evaluate how individuals influence the identities of others AC9HP10P01 | * evaluating how societal norms, stereotypes and expectations influence how young people view themselves and how they deal with these influences
* analysing the role of family, friends and community in supporting an individual’s identities, and proposing strategies to enhance their own and others’ wellbeing
 |
| **Personal, social and community health**Interacting with others | evaluate the influence of respect, empathy, power and coercion on establishing and maintaining respectful relationships AC9HP10P04 | * investigating the characteristics of positive, respectful relationships and the rights and ethical responsibilities of individuals in relationships
* investigating how bullying, racism and gender-based violence can take different forms, including verbal, physical, emotional, sexual and economic forms, and can occur in both face-to-face and online environments
 |
| **Personal, social and community health**Interacting with others | propose strategies and actions individuals and groups can implement to challenge biases, stereotypes, prejudices and discrimination, and promote inclusion in their communities AC9HP10P05 | * investigating community health resources to evaluate how accessible they are for marginalised individuals and groups, and proposing changes to improve inclusiveness and accessibility
* critiquing media representations of different cultural and racial groups and analysing whether the representations are respectful, realistic and inclusive
* analysing messages about gender norms and stereotypes in popular culture and considering the impact these might have on individuals, institutions and communities
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| **Personal, social and community health**Interacting with others | evaluate emotional responses in different situations to refine strategies for managing emotions AC9HP10P06 | * reflecting on the possible consequences of not recognising their own or others’ emotions in a range of challenging situations, including responses to rejection, failure, harassment and violence
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| Years 9 and 10 |
| Key aspect 2: Nutrition and food specialisations |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Technologies -** **Design and technologies** | **Knowledge and understanding** Technologies context: Food specialisations | Analyse and make judgements on how the principles of food preparation, preservation, safety, presentation and sensory and functional properties influence the creation of food solutions for healthy eatingAC9TDE10K05 | * analysing how First Nations Australians have long understood techniques to turn plant products into food sources with high nutritional value, for example throughout much of northern Australia, cycad nuts have been detoxified to prepare them for safe consumption
* experimenting with food preservation methods such as freezing and dehydrating to determine changes to food structure and how these impact on designing healthy food solutions, for example dehydrating fruit for a lunchbox
* conducting sensory and nutritional assessment testing of a range of foods to determine how these characteristics might be used to enhance food solutions, for example taste-testing a variety of milks, comparing freshly squeezed juice with commercial juices or locally grown fruit with imported fruit
* determining how the causes of food spoilage can be addressed when preparing, cooking, presenting and storing food items, for example developing a comprehensive checklist of considerations for safe and hygienic food storage and preparation including danger-zone temperatures for a food service
* reflecting on food trends and how they may influence choosing food or designing food solutions for healthy eating, for example choosing organic ingredients or plant-based foods to reduce environmental impact, food delivery systems, insect protein or non-dairy milk or virtual cooking classes
* investigating ways innovations may influence human health and sustainability, for example 3D printing of foods, Internet of Things (IoT) network in the food supply chain or use of augmented reality (AR) in food labelling
* considering factors that influence the preparation and presentation of foods using a range of techniques to ensure optimum nutrient content, flavour, texture and visual appeal, for example designing and producing a healthy snack for the canteen and using food photography and digital tools to promote the item in a healthy eating campaign
 |
| **Technologies –** **Digital Technologies** | **Processes and production skills**Investigating and defining | define and decompose real-world problems with design criteria and by interviewing stakeholders to create user storiesAC9TDI10P04" | * creating user stories by interviewing a stakeholder to complete a template such as "As a <type of user>, I want <some goal> so that <some reason>", for example interviewing an amateur athlete to complete the template, such as "As an athlete, I want to ensure my energy intake is high enough to complete a half marathon."
* defining the problem with precision and some awareness of scope, for example "How do we encourage people to balance their energy intake and expenditure?" and "Can this be solved in a specified timeframe?"
* asking questions that help them define the problem more precisely, for example "How do we measure energy intake?" or "How much energy does each exercise expend?"
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| **Health and Physical Education** | **Personal, social and community health**Making healthy and safe choices | critique health information, services and media messaging about relationships, lifestyle choices, health decisions and behaviours to evaluate their influence on individual attitudes and actionsAC9HP10P09 | * critiquing health information and services that provide advice and support on issues targeted at specific groups of young people, including support with substance use, healthy food choices, fitness and exercise plans, mental health support, sexual health and personal safety
* analysing the nutritional composition of foods eaten by the First Peoples of Australia and explaining how the information could be used to increase health benefits for everyone
* investigating health issues specific to First Nations Australian communities and proposing proactive community strategies for promoting better access and health outcomes; for example, remote area dialysis buses and community-based treatment options
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| **Personal, social and community health**Making healthy and safe choices | plan, justify and critique strategies to enhance their own and others’ health, safety, relationships and wellbeingAC9HP10P10 | * investigating community-action initiatives young people have started that have a positive influence on the health and wellbeing of their communities
* proposing, sharing and evaluating a presentation on serving and eating food that has been prepared sustainably; for example, using local ingredients to cut down on emissions, using sustainably produced foods and not using single-use plastic for serving
* investigating how cultural rights of First Nations Australians include maintaining traditional diets and explaining how these have proven health and wellbeing benefits
* analysing the influence social, cultural and economic factors may have on health behaviours and help-seeking, such as factors associated with the cost of help or stigma associated with menstrual health, gender and sexual diversity, sexual health and mental illness
* investigating the pharmacopeia and health practices of First Nations Australian communities while showing respect for Indigenous Cultural and Intellectual Property (ICIP) protocols and cultural knowledge
* designing and evaluating strategies that enhance their own and others’ mental health and wellbeing, such as regular physical activity, positive self-talk, consistent sleep habits, mindfulness and social connection
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| **Science****Year 9** | **Science as a human endeavour**Nature and development of science | investigate how advances in technologies enable advances in science, and how science has contributed to developments in technologies and engineeringAC9S9H02 | * examining how properties of electromagnetic radiation relate to its uses, such as radar, medicine, mobile phone communications, remote sensing and microwave cooking
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| **Science****Year 10** | **Science understanding**Chemical sciences | identify patterns in synthesis, decomposition and displacement reactions and investigate the factors that affect reaction ratesAC9S10U07 | * investigating the effect of a range of factors, such as temperature, concentration, surface area and catalysts, on the rate of chemical reactions
* investigating some of the chemical reactions and methods employed by First Nations Australians to convert toxic plants into edible food products
* examining reactions that are used to produce a range of useful products
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| Years 9 and 10 |
| Key aspect 3: Informed choices and sustainable practices |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Technologies –** **Design and Technologies** | **Knowledge and understanding** Technologies context: Food specialisations | Analyse and make judgements on how the principles of food preparation, preservation, safety, presentation and sensory and functional properties influence the creation of food solutions for healthy eatingAC9TDE10K05 | * analysing how First Nations Australians have long understood techniques to turn plant products into food sources with high nutritional value, for example throughout much of northern Australia, cycad nuts have been detoxified to prepare them for safe consumption
* experimenting with food preservation methods such as freezing and dehydrating to determine changes to food structure and how these impact on designing healthy food solutions, for example dehydrating fruit for a lunchbox
* conducting sensory and nutritional assessment testing of a range of foods to determine how these characteristics might be used to enhance food solutions, for example taste-testing a variety of milks, comparing freshly squeezed juice with commercial juices or locally grown fruit with imported fruit
* determining how the causes of food spoilage can be addressed when preparing, cooking, presenting and storing food items, for example developing a comprehensive checklist of considerations for safe and hygienic food storage and preparation including danger-zone temperatures for a food service
* reflecting on food trends and how they may influence choosing food or designing food solutions for healthy eating, for example choosing organic ingredients or plant-based foods to reduce environmental impact, food delivery systems, insect protein or non-dairy milk or virtual cooking classes
* investigating ways innovations may influence human health and sustainability, for example 3D printing of foods, Internet of Things (IoT) network in the food supply chain or use of augmented reality (AR) in food labelling
* considering factors that influence the preparation and presentation of foods using a range of techniques to ensure optimum nutrient content, flavour, texture and visual appeal, for example designing and producing a healthy snack for the canteen and using food photography and digital tools to promote the item in a healthy eating campaign
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| **Processes and production skills**Investigating and defining | analyse needs or opportunities for designing; develop design briefs; and investigate, analyse and select materials, systems, components, tools and equipment to create designed solutions AC9TDE10P01 | * analysing First Nations Australians’ traditional grains for their potential for providing nutritional and commercial solutions and developing a design brief to highlight the materials, systems, components and tools or equipment needed
* considering the needs of community groups to identify rich design tasks, for example interviewing community members about accessibility requirements to develop the initial brief and then during specific phases of the design process to determine the best possible designed solution for the community
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| **Processes and production skills**Generating and designing | apply innovation and enterprise skills to generate, test, iterate and communicate design ideas, processes and solutions, including using digital tools AC9TDE10P02 | * considering competing variables that may hinder or enhance project development, for example weight, strength and price of materials; laws; sustainability; accessibility; social protocols, user needs and community consultation processes
* communicating using appropriate technical terms and recording the generation and development of design ideas and processes for an intended audience including justification of decisions, for example developing a digital portfolio with images and text which clearly communicate each step of a design process
* using design thinking and enterprise skills to create innovative approaches to processes and solutions, for example brainstorming novel ideas inspired by nature or transforming a solution into an enterprise for a target market
 |
| **Processes and production skills**Producing and implementing | select, justify, test and use suitable technologies, skills and processes, and apply safety procedures to safely make designed solutions AC9TDE10P03 | * experimenting with innovative combinations and ways of manipulating traditional and contemporary materials, components, tools, equipment and techniques, and recording findings in a collaborative space to debate the merits of each with peers
* modifying production processes to respond to opportunities, risks or unforeseen challenges, for example when producing bulk quantities of recipes in terms of workload and coordination, the impact of lower-than-average rainfalls on crop growth or using materials with unexpected faults
* experimenting with the functional and sensory properties of food to determine the most successful approach, for example preparing vegetables 3 different ways to maximise colour, flavour and nutritive value
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| **Processes and production skills**Evaluating | develop design criteria independently including sustainability to evaluate design ideas, processes and solutions AC9TDE10P04 | * reflecting on learning including processes or choices made at various stages of a design process and modifying plans when needed with consideration of design criteria
* responding creatively to evaluation feedback to iterate and modify design ideas and processes to improve sustainability measures, for example considering opportunities to use sustainable materials, such as plant-based timber oils or bioplastics
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| **Processes and production skills**Collaborating and managing | develop project plans for intended purposes and audiences to individually and collaboratively manage projects, taking into consideration time, cost, risk, processes and production of designed solutions AC9TDE10P05 | * producing, explaining and interpreting drawings and planning production timelines using digital tools, for example establishing materials and equipment needs using spreadsheets, or creating production flowcharts to ensure efficient, safe and sustainable workflows
* collaborating to develop production plans for equitable distribution of work including discussing roles, tasks and deadlines and considering flexibility and contingencies
* investigating manufacturing processes to identify strategies to enhance production, for example identifying techniques to reduce use, cut costs, speed up processes or to form beneficial partnerships with others in production
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| **Technologies –** **Digital Technologies** | **Processes and production skills**Acquiring, managing and analysing data | acquire, store and validatedata from a range of sources using software, including spreadsheets and databasesAC9TDI8P01 | * acquiring data 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 data and accessing canteen sales data
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| **Processes and production skills**investigating and defining | define and decompose real-world problems with design criteria and by creating user storiesAC9TDI8P04 | * 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
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| **Processes and production skills**Privacy and security | investigate and manage the digital footprint existing systems and student solutions collect and assess if the data is essential to their purposeAC9TDI8P14 | * assessing the appropriateness and relevance of data collected by surveys from other students and organisations they complete online, for example identifying that providing your address data is not necessary for a survey asking about your food preferences but providing the address for the Census would be appropriate
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| **Health and Physical Education** | **Personal, social and community health**Making healthy and safe choices | plan, justify and critique strategies to enhance their own and others’ health, safety, relationships and wellbeingAC9HP10P10 | * investigating community-action initiatives young people have started that have a positive influence on the health and wellbeing of their communities
* proposing, sharing and evaluating a presentation on serving and eating food that has been prepared sustainably; for example, using local ingredients to cut down on emissions, using sustainably produced foods and not using single-use plastic for serving
* investigating how cultural rights of First Nations Australians include maintaining traditional diets and explaining how these have proven health and wellbeing benefits
* analysing the influence social, cultural and economic factors may have on health behaviours and help-seeking, such as factors associated with the cost of help or stigma associated with menstrual health, gender and sexual diversity, sexual health and mental illness
* investigating the pharmacopeia and health practices of First Nations Australian communities while showing respect for Indigenous Cultural and Intellectual Property (ICIP) protocols and cultural knowledge
* designing and evaluating strategies that enhance their own and others’ mental health and wellbeing, such as regular physical activity, positive self-talk, consistent sleep habits, mindfulness and social connection
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| **Science****Year 10** | **Science understanding**Chemical sciences | identify patterns in synthesis, decomposition and displacement reactions and investigate the factors that affect reaction ratesAC9S10U07 | * investigating the effect of a range of factors, such as temperature, concentration, surface area and catalysts, on the rate of chemical reactions
* investigating some of the chemical reactions and methods employed by First Nations Australians to convert toxic plants into edible food products
* examining reactions that are used to produce a range of useful products
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| Years 9 and 10 |
| Key aspect 4: Taking action towards futures that support wellbeing |
| Learning area/subject | Strand/sub-strand | Content descriptions | Content elaborations |
| **Technologies -** **Design and Technologies** | **Knowledge and understanding** Technologies and society | analyse the impact of innovation, enterprise and emerging technologies on designed solutions for global preferred futuresAC9TDE10K02 | * exploring the ways commercial enterprises respond to the challenges and opportunities of technological change, for example e-commerce, and considering their carbon footprint
* examining real-world problems and understanding basic needs when considering designed solutions, for example students collaborating to design solutions to challenges in the Asia region; or artists from a country in South-East Asia creating posters for the world to take action in a pandemic
 |
| **Knowledge and understanding** Technologies context: Food specialisations | Analyse and make judgements on how the principles of food preparation, preservation, safety, presentation and sensory and functional properties influence the creation of food solutions for healthy eatingAC9TDE10K05 | * analysing how First Nations Australians have long understood techniques to turn plant products into food sources with high nutritional value, for example throughout much of northern Australia, cycad nuts have been detoxified to prepare them for safe consumption
* experimenting with food preservation methods such as freezing and dehydrating to determine changes to food structure and how these impact on designing healthy food solutions, for example dehydrating fruit for a lunchbox
* conducting sensory and nutritional assessment testing of a range of foods to determine how these characteristics might be used to enhance food solutions, for example taste-testing a variety of milks, comparing freshly squeezed juice with commercial juices or locally grown fruit with imported fruit
* determining how the causes of food spoilage can be addressed when preparing, cooking, presenting and storing food items, for example developing a comprehensive checklist of considerations for safe and hygienic food storage and preparation including danger-zone temperatures for a food service
* reflecting on food trends and how they may influence choosing food or designing food solutions for healthy eating, for example choosing organic ingredients or plant-based foods to reduce environmental impact, food delivery systems, insect protein or non-dairy milk or virtual cooking classes
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* considering factors that influence the preparation and presentation of foods using a range of techniques to ensure optimum nutrient content, flavour, texture and visual appeal, for example designing and producing a healthy snack for the canteen and using food photography and digital tools to promote the item in a healthy eating campaign
 |
| **Processes and production skills**Investigating and defining | analyse needs or opportunities for designing; develop design briefs; and investigate, analyse and select materials, systems, components, tools and equipment to create designed solutions AC9TDE10P01 | * analysing First Nations Australians’ traditional grains for their potential for providing nutritional and commercial solutions and developing a design brief to highlight the materials, systems, components and tools or equipment needed
* considering the needs of community groups to identify rich design tasks, for example interviewing community members about accessibility requirements to develop the initial brief and then during specific phases of the design process to determine the best possible designed solution for the community
 |
| **Processes and production skills**Generating and designing | apply innovation and enterprise skills to generate, test, iterate and communicate design ideas, processes and solutions, including using digital tools AC9TDE10P02 | * considering competing variables that may hinder or enhance project development, for example weight, strength and price of materials; laws; sustainability; accessibility; social protocols, user needs and community consultation processes
* communicating using appropriate technical terms and recording the generation and development of design ideas and processes for an intended audience including justification of decisions, for example developing a digital portfolio with images and text which clearly communicate each step of a design process
* using design thinking and enterprise skills to create innovative approaches to processes and solutions, for example brainstorming novel ideas inspired by nature or transforming a solution into an enterprise for a target market
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| **Processes and production skills**Producing and implementing | select, justify, test and use suitable technologies, skills and processes, and apply safety procedures to safely make designed solutions AC9TDE10P03 | * experimenting with innovative combinations and ways of manipulating traditional and contemporary materials, components, tools, equipment and techniques, and recording findings in a collaborative space to debate the merits of each with peers
* modifying production processes to respond to opportunities, risks or unforeseen challenges, for example when producing bulk quantities of recipes in terms of workload and coordination, the impact of lower-than-average rainfalls on crop growth or using materials with unexpected faults
* experimenting with the functional and sensory properties of food to determine the most successful approach, for example preparing vegetables 3 different ways to maximise colour, flavour and nutritive value
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| **Processes and production skills**Evaluating | develop design criteria independently including sustainability to evaluate design ideas, processes and solutions AC9TDE10P04 | * reflecting on learning including processes or choices made at various stages of a design process and modifying plans when needed with consideration of design criteria
* responding creatively to evaluation feedback to iterate and modify design ideas and processes to improve sustainability measures, for example considering opportunities to use sustainable materials, such as plant-based timber oils or bioplastics
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| **Processes and production skills**Collaborating and managing | develop project plans for intended purposes and audiences to individually and collaboratively manage projects, taking into consideration time, cost, risk, processes and production of designed solutions AC9TDE10P05 | * producing, explaining and interpreting drawings and planning production timelines using digital tools, for example establishing materials and equipment needs using spreadsheets, or creating production flowcharts to ensure efficient, safe and sustainable workflows
* collaborating to develop production plans for equitable distribution of work including discussing roles, tasks and deadlines and considering flexibility and contingencies
* investigating manufacturing processes to identify strategies to enhance production, for example identifying techniques to reduce use, cut costs, speed up processes or to form beneficial partnerships with others in production
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| **Technologies –** **Digital Technologies** | **Processes and production skills**Investigating and defining | "define and decompose real-world problems with design criteria and by interviewing stakeholders to create user storiesAC9TDI10P04" | * defining the problem with precision and some awareness of scope, for example ""How do we encourage people to balance their energy intake and expenditure?"" and ""Can this be solved in a specified timeframe?”
 |
| **Health and Physical Education** | **Personal, social and community health**Interacting with others | evaluate the influence of respect, empathy, power and coercion on establishing and maintaining respectful relationships AC9HP10P04 | * investigating the characteristics of positive, respectful relationships and the rights and ethical responsibilities of individuals in relationships
* investigating how bullying, racism and gender-based violence can take different forms, including verbal, physical, emotional, sexual and economic forms, and can occur in both face-to-face and online environments
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| **Personal, social and community health**Interacting with others | propose strategies and actions individuals and groups can implement to challenge biases, stereotypes, prejudices and discrimination, and promote inclusion in their communities AC9HP10P05 | * investigating community health resources to evaluate how accessible they are for marginalised individuals and groups, and proposing changes to improve inclusiveness and accessibility
* critiquing media representations of different cultural and racial groups and analysing whether the representations are respectful, realistic and inclusive
* analysing messages about gender norms and stereotypes in popular culture and considering the impact these might have on individuals, institutions and communities
 |
| **Personal, social and community health**Making healthy and safe choices | critique health information, services and media messaging about relationships, lifestyle choices, health decisions and behaviours to evaluate their influence on individual attitudes and actionsAC9HP10P09 | * critiquing health information and services that provide advice and support on issues targeted at specific groups of young people, including support with substance use, healthy food choices, fitness and exercise plans, mental health support, sexual health and personal safety
* analysing the nutritional composition of foods eaten by the First Peoples of Australia and explaining how the information could be used to increase health benefits for everyone
* investigating health issues specific to First Nations Australian communities and proposing proactive community strategies for promoting better access and health outcomes; for example, remote area dialysis buses and community-based treatment options
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 |