



Crafty Parasites – Malaria

Australian Curriculum Links

| Science in the early years in the Early Years Learning Framework (EYLF) | | |
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| Ages | Science Understanding | Link to EYLF |
| Birth to five years and through the transition to school | <p>Outcome 4: Children are confident and involved learners</p> <p>Children develop dispositions for learning such as curiosity, cooperation, confidence, creativity, commitment, enthusiasm, persistence, imagination and reflexivity</p> <p>Children develop a range of skills and processes such as problem solving, inquiry, experimentation, hypothesising, researching and investigating</p> <p>Children transfer and adapt what they have learned from one context to another</p> <p>Children resource their own learning through connecting with people, place, technologies and natural and processed materials</p> <p>Integrating science into other aspects of young children's learning can help develop skills in science as well as literacy and numeracy.</p> | <p>Science in the early years in the Early Years Learning Framework (EYLF) for preschool children</p> <p>The Early Years learning Framework for Australia</p> <p>Australian Government Department of Education and Training. for the Council of Australian Governments</p> <p>https://www.acecqa.gov.au/sites/default/files/2018-02/belonging_being_and_becoming_the_early_years_learning_framework_for_australia.pdf</p> <p>https://research.acer.edu.au/cgi/viewcontent.cgi?article=1024&context=early_childhood_misc</p> |

| Australian Science Curriculum | | | |
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| School Grade | Science Understanding | Science as a human endeavour | Science Inquiry Skills |
| Foundation Year | <p>Biological sciences</p> <p>Living things have basic needs, including food and water (ACSSU002)</p> <p>The way objects move depends on a variety of factors, including their size and shape (ACSSU005)</p> | <p>Science involves observing, asking questions about, and describing changes in, objects and events (ACSHE013)</p> | <p>Basing the scientific inquiry on the malaria parasite and its lifecycle:</p> <p>Pose and respond to questions about familiar objects and events (AC SIS014)</p> <p>Engage in discussions about observations and represent ideas (AC SIS233)</p> <p>Share observations and ideas (AC SIS012)</p> |
| 1 | <p>Biological sciences</p> <p>Living things have a variety of external features (ACSSU017)</p> <p>Living things live in different places where their needs are met (ACSSU211)</p> | <p>Science involves observing, asking questions about, and describing changes in, objects and events (ACSHE021)</p> <p>People use science in their daily lives, including when caring for their environment and living things (ACSHE022)</p> | <p>Basing the scientific inquiry on the malaria parasite and its lifecycle:</p> <p>Pose and respond to questions, and make predictions about familiar objects and events (AC SIS024)</p> <p>Participate in guided investigations to explore and answer questions (AC SIS025)</p> <p>Use informal measurements to collect and record observations, using digital technologies as appropriate (AC SIS026)</p> <p>Use a range of methods to sort information, including drawings and provided tables and through discussion, compare observations with predictions (AC SIS027)</p> <p>Compare observations with those of others (AC SIS213)-</p> <p>Represent and communicate observations and ideas in a variety of ways (AC SIS029)</p> |

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| 2 | <p>Biological sciences</p> <p>Living things grow, change and have offspring similar to themselves (ACSSU030)</p> <p>Physical sciences</p> <p>A push or a pull affects how an object moves or changes shape (ACSSU033) in relation to malaria parasite moving between and within hosts.</p> | <p>Science involves observing, asking questions about, and describing changes in, objects and events (ACSHE034)</p> <p>People use science in their daily lives, including when caring for their environment and living things (ACSHE035)</p> | <p>Basing the scientific investigation on the malaria parasite and its lifecycle:</p> <p>Participate in guided investigations to explore and answer questions (AC SIS038)</p> <p>Use informal measurements to collect and record observations, using digital technologies as appropriate (AC SIS039)</p> <p>Use a range of methods to sort information, including drawings and provided tables and through discussion, compare observations with predictions (AC SIS040)</p> <p>Compare observations with those of others (AC SIS041)</p> <p>Represent and communicate observations and ideas in a variety of ways (AC SIS042)</p> |
| 3 | <p>Biological sciences</p> <p>Content description with elaborations: Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)</p> <ul style="list-style-type: none"> • recognising characteristics of living things such as growing, moving, sensitivity and reproducing • recognising the range of different living things • exploring differences between living, once living and products of living things | <p>Nature and development of science</p> <p>Content description with elaborations: Science involves making predictions and describing patterns and relationships (ACSHE050)</p> <ul style="list-style-type: none"> • making predictions about change and events in our environment <p>Use and influence of science</p> <p>Content description with elaborations: Science knowledge helps people to understand the effect of their actions (ACSHE051)</p> <p>investigating how science helps people such as nurses, doctors, dentists, mechanics and gardeners</p> | <p>Basing the scientific investigation on the malaria parasite and its lifecycle:</p> <p>With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (AC SIS053)</p> <p>choosing questions to investigate from a list of possibilities</p> <p>jointly constructing questions that may form the basis for investigation</p> <p>listing shared experiences as a whole class and identifying possible investigations</p> <p>working in groups to discuss things that might happen during an investigation</p> |

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| 4 | <p>Biological sciences Content descriptions with elaborations: Living things have life cycles (ACSSU072)</p> <ul style="list-style-type: none"> making and recording observations of living things as they develop through their life cycles describing the stages of life cycles of different living things such as insects, birds, frogs and flowering plants comparing life cycles of animals and plants recognising that environmental factors can affect life cycles such as fire and seed germination <p>Living things, depend on each other and the environment to survive (ACSSU073)</p> <ul style="list-style-type: none"> investigating how plants, provide shelter for animals investigating the roles of living things in a habitat, for instance producers, consumers or decomposers recognising that interactions between living things may be competitive or mutually beneficial | <p>Science involves making predictions and describing patterns and relationships (ACSHE061)</p> <p>exploring ways in which scientists gather evidence for their ideas and develop explanations</p> | <p>Basing the scientific investigation on the malaria parasite and its lifecycle:</p> <p>With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (AC SIS064)</p> |
| 5 | <p>Biological sciences</p> <p>Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)</p> | <p>Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE081)</p> | <p>Basing the scientific investigation on the malaria parasite and its lifecycle:</p> <p>With guidance, pose clarifying questions and make predictions about scientific investigations (AC SIS231)</p> <p>Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (AC SIS090)</p> <p>Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (AC SIS093)</p> |

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| 6 | <p>Biological sciences</p> <p>The growth and survival of living things are affected by physical conditions of their environment (ACSSU094)</p> | <p>Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE098)</p> <p>Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE100)</p> | <p>Basing the scientific investigation on the malaria parasite and its lifecycle:</p> <p>With guidance, pose clarifying questions and make predictions about scientific investigations (ACSIS232)</p> <p>Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (ACSIS107)</p> <p>Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (ACSIS110)</p> |
| 7 | <p>Biological sciences</p> <p>Classification helps organise the diverse group of organisms (ACSSU111)</p> <p>Interactions between organisms, including the effects of human activities can be represented by food chains and food webs (ACSSU112)</p> | <p>Nature and development of science</p> <p>Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE119)</p> <p>Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE223)</p> <p>Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE120)</p> <p>People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE121)</p> | <p>Basing the scientific investigation on the malaria parasite and its lifecycle:</p> <p>Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (ACSIS124)</p> <p>Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (ACSIS130)</p> <p>Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate (ACSIS133)</p> |
| 8 | <p>Biological sciences</p> <p>Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)</p> <ul style="list-style-type: none"> examining a variety of cells using a light microscope, by digital technology or by viewing a simulation distinguishing plant cells from animal or fungal cells | <p>Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE134)</p> <p>Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE226)</p> | <p>Basing the scientific investigation on the malaria parasite and its lifecycle:</p> <p>Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (ACSIS139)</p> |

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| | <ul style="list-style-type: none"> identifying structures within cells and describing their function recognising that some organisms consist of a single cell recognising that cells reproduce via cell division describing mitosis as cell division for growth and repair <p>Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)</p> <ul style="list-style-type: none"> identifying the organs and overall function of a system of a multicellular organism in supporting the life processes describing the structure of each organ in a system and relating its function to the overall function of the system examining the specialised cells and tissues involved in structure and function of particular organs comparing similar systems in different organisms such as digestive systems in herbivores and carnivores, respiratory systems in fish and mammals distinguishing between asexual and sexual reproduction comparing reproductive systems of organisms | <p>Use and influence of science</p> <p>Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE135)</p> <p>People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE136)</p> | <p>Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (ACSIS145)</p> <p>Use scientific knowledge and findings from investigations to evaluate claims based on evidence (ACSIS234)</p> <p>Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate (ACSIS148)</p> |
| 9 | <p>Biological sciences</p> <p>Content description with elaborations:</p> <p>Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176)</p> <ul style="list-style-type: none"> exploring interactions between organisms such as predator/prey, parasites, competitors, pollinators and disease examining factors that affect population sizes such as seasonal changes, destruction of habitats, introduced species | <p>Use and influence of science</p> <p>People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions and advances in science can affect people's lives including generating new career opportunities (ACSHE160)</p> <ul style="list-style-type: none"> considering the impacts of human activity on an ecosystem from a range of different perspectives | <p>Basing the scientific investigation on malaria parasite research:</p> <p>Formulate questions or hypotheses that can be investigated scientifically (ACSIS164)</p> <p>Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (ACSIS170)</p> <p>Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data (ACSIS171)</p> |

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| | <ul style="list-style-type: none"> investigating how ecosystems change as a result of events such as bushfires, drought and flooding | | <p>Critically analyse the validity of information in primary and secondary sources and evaluate the approaches used to solve problems (ACSIS172)</p> <p>Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (ACSIS174)</p> |
| 10 | <p>Biological sciences</p> <p>Content descriptions with elaborations:</p> <p>Characteristics from one generation to the next involves DNA and genes (ACSSU184)</p> <ul style="list-style-type: none"> controlling the characteristics of organisms recognising that genetic information passed on to offspring is from both parents by meiosis and fertilisation describing mutations as changes in DNA or chromosomes and outlining the factors that contribute to causing mutations <p>The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence (ACSSU185)</p> <ul style="list-style-type: none"> outlining processes involved in natural selection including variation, isolation and selection investigating changes caused by natural selection in a particular population as a result of a specified selection pressure such as artificial selection in breeding for desired characteristics | <p>Nature and development of science</p> <p>Content descriptions with elaborations:</p> <p>Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE191)</p> <ul style="list-style-type: none"> considering the role of science in identifying and explaining public health outcomes globally <p>Advances in scientific understanding often rely on technological advances and are often linked to scientific discoveries (ASHE192)</p> <ul style="list-style-type: none"> considering how computer modelling has improved knowledge and predictability of phenomena such as spread and distribution of disease, climate change and atmospheric pollution <p>Use and influence of science</p> <p>Content descriptions with elaborations:</p> <p>People can use scientific knowledge to evaluate whether they accept claims, explanations or predictions and advances in science can affect people's lives including generating new career opportunities (ACSHE194)</p> <ul style="list-style-type: none"> considering the scientific knowledge used in discussions relating to parasitology | <p>Basing the scientific investigation on malaria parasite research:</p> <p>Formulate questions or hypotheses that can be investigated scientifically (ACSIS198)</p> <p>Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods (ACSIS199)</p> <p>Select and use appropriate equipment, including digital technologies, to collect and record data systematically and accurately (ACSIS200)</p> <p>Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies (ACSIS203)</p> <p>Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (ACSIS204)</p> <p>Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data (ACSIS205)</p> <p>Critically analyse the validity of information in primary and secondary sources and evaluate the approaches used to solve problems (ACSIS206)</p> <p>Communicate scientific ideas and information for a particular purpose, including constructing evidence-</p> |

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| | | <p>The values and needs of contemporary society can influence the focus of scientific research (ACSHE230)</p> <ul style="list-style-type: none"> consider which communities have the greater burden of parasites globally and how much resource is directed at developing treatment and prevention strategies for the worlds poorest communities affected by parasites. | <p>based arguments and using appropriate scientific language, conventions and representations (AC SIS208)</p> |
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Australian Science Curriculum

<https://www.australiancurriculum.edu.au/f-10-curriculum/science/>

<https://www.acara.edu.au/>

https://docs.acara.edu.au/resources/Australian_Curriculum_-_Science.pdf

| Science teaching links by state - Australia | |
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| Western Australia | https://k10outline.scsa.wa.edu.au/home/year-7-to-year-10/science |
| South Australia | https://www.education.sa.gov.au/schools-and-educators/curriculum-and-teaching/curriculum-south-australia-early-years-year-12 |
| Northern Territory | https://nt.gov.au/learning/primary-and-secondary-students/nt-school-curriculum |
| Queensland | https://www.qcaa.qld.edu.au/p-10/aciq/learning-areas/science |

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| New South Wales | https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/science/science-and-technology-k-6-new-syllabus |
| Victoria | https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/science/Pages/default.aspx |
| Tasmania | https://www.education.tas.gov.au/students/school-and-colleges/curriculum/ |
| Australian Capital Territory | https://www.australiancurriculum.edu.au/f-10-curriculum/science/ |