 Year 11The Nature of Ancient History: Ancient Australia

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Indicative duration - Approximately 40 hours

Unit description

This is an example of a combined program that attempts to teach aspects from ‘Investigating Ancient History’ within the Case Study ‘Ancient Australia’.

The three specific sections from the introductory section of the syllabus that are the most relevant are:

* The Investigation of Ancient Sites and Sources
* Preservation, Conservation and/or Reconstruction of Ancient Sites and Sources
* The Treatment and Display of Human Remains

Focus questions

What does the investigation of relevant sites and sources reveal about Ancient Australia?

Outcomes

Student:

* AH11-1 describes the nature of continuity and change in the ancient world
* AH11-2 proposes ideas about the varying causes and effects of events and developments
* AH11-3 analyses the role of historical features, individuals and groups in shaping the past
* AH11-4 accounts for the different perspectives of individuals and groups
* AH11-5 examines the significance of historical features, people, places, events and developments of the ancient world
* AH11-6 analyses and interprets different types of sources for evidence to support an historical account or argument
* AH11-7 discusses and evaluates differing interpretations and representations of the past
* AH11-8 plans and conducts historical investigations and presents reasoned conclusions, using relevant evidence from a range of sources
* AH11-9 communicates historical understanding, using historical knowledge, concepts and terms, in appropriate and well-structured forms
* AH11-10 discusses contemporary methods and issues involved in the investigation of ancient history

Historical concepts and skills

Analysis and use of sources

* Explain the meaning and value of sources for an historical inquiry (ACHMH007, ACHMH009)
* Analyse sources to identify and account for the different perspectives of individuals and groups in the past (ACHMH010)
* Analyse and synthesise evidence from different types of sources to develop reasoned claims (ACHMH008)
* Identify and analyse problems relating to sources in the investigation of the past (ACHMH011)

Historical interpretation

* Analyse the extent and nature of continuity and change over time (ACHMH001)
* Identify and analyse the varying causes and effects of events and developments in order to construct historical arguments (ACHMH001)
* Form judgements about historical significance, recognising that significance may be attributed for different purposes
* Analyse and evaluate contested interpretations and representations of the past (ACHMH011, ACHMH012)

Historical investigation and research

* Frame questions to guide historical inquiry and develop a coherent research plan (ACHMH004)
* Use evidence from a range of sources to inform investigation and research (ACHMH005)
* Acknowledge sources appropriately (ACHMH015)

Explanation and communication

* Develop texts, particularly historical accounts and arguments, supported by relevant evidence from sources (ACHMH013)
* Communicate historical understanding, using historical knowledge, concepts and terms, in forms appropriate to purpose and audience (ACHMH014)

Assessment

Formative and Summative forms of assessment are used throughout this unit of work and is imperative for the teacher to determine student engagement and understanding. Formative student assessment is completed throughout the unit and can be found in the evidence of learning section of the unit content table.

* Research task - focus on one specific archaeological site in Australia.

Scope and sequence

Example of combined program (time allocation will be blended throughout)

‘The Nature of Ancient History’ (Approx. 10 hours)

* The Investigation of Ancient Sites and Sources
* Preservation, Conservation or Reconstruction of Ancient Sites and Sources
* The Treatment and Display of Human Remains

Case Study: Ancient Australia: (Approx. 30 – 35 hours)

| Week | Week1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
| --- | --- | --- | --- | --- |
| Content focus | Investigating Ancient History:Investigation of Ancient Sites and SourcesAncient Australia: RepresentationsGeographical and Historical Context | Investigating Ancient History:Treatment and display of human remainsReconstruction of Ancient SitesAncient Australia:Range of sources and their condition | Investigating Ancient History:Reconstruction of Ancient SitesTreatment and display of human remainsAncient Australia:Ancient Australia as revealed through the sources | Investigating Ancient History:Preservation, Conservation and Reconstruction of Ancient SitesAncient Australia:Significance of the site today |
| Historical concepts and skills | * Continuity and change
* Explanation and communication
 | * Significance
* Perspective
* Analysis and use of sources
* Historical interpretation
* Historical investigation and research
 | * Continuity and change
* Perspective
* Significance
* Analysis and use of sources
* Historical interpretation
* Explanation and communication
 | * Contestability
* Perspective
* Significance
* Historical investigation and research
 |
| Outcomes | AH11-1, AH11-2, AH11-4, AH11-6, AH 11-10 | AH11-3, AH11-4, AH11-5, AH 11-6 | AH11-1, AH11-2, AH11-3, AH11-4, AH 11-6, AH11-7 | AH11-1, AH11-4, AH 11-7, AH11-8, AH11-9, AH11-10 |

Program overview

This teaching program displays an integrated approach to accommodating sections of the core study of ‘The Nature of Ancient History’ whilst teaching the case study ‘B1: Ancient Australia’.

The relevant focus points from ‘The Nature of Ancient History’ are:

* The Investigation of Ancient Sites and Sources
* Preservation, Conservation and/or Reconstruction of Ancient Sites and Sources
* The Treatment and Display of Human Remains

These focus points should be used as a ‘lens’ through which teachers can teach the ‘Ancient Australia’ case study.

The specific site often referred to in this program is Lake Mungo, NSW.

It is essential that when planning and programming content relating to Aboriginal and Torres Strait Islander histories and cultures, teachers are encouraged to:

* involve local Aboriginal communities and/or appropriate knowledge holders in determining suitable resources, or to use Aboriginal or Torres Strait Islander authored or endorsed publications
* read the Principles and Protocols relating to teaching and learning about Aboriginal and Torres Strait Islander histories and cultures and the involvement of local Aboriginal communities.

In order for the particular Preliminary HSC Ancient History program to work as a mixed model, teachers and students need to regularly engage with foundational questions and content. This is the syllabus content connected to ‘The Nature of Ancient History’.

A foundational approach can be implemented at the beginning of the topic, or specific concepts can be investigated at different times during the term. Concepts and syllabus content can be taught separately or they can be incorporated within the delivery of the Ancient Australia option.

This program is designed to last ten weeks – approximately 35 – 40 hours.

The assessment task should be issued at the beginning of the topic and submitted when the topic is completed. This will provide students with the opportunity to engage with modelled examples, apply specific skills or utilise scaffolds for inquiry as they progress through the topic.

| Content | Teaching and learning | Evidence of learning |
| --- | --- | --- |
| The Investigation of Ancient Sites and Sources* the changing nature of archaeological excavation and recording techniques
* the contribution of archaeological and scientific techniques to the discovery and investigation of the ancient past, including site surveys using radar, excavation, dating methods, forensic examination and DNA analysis
* problems associated with reconstructing the past through archaeological evidence, for example in relation to understanding ancient customs and religious beliefs
 | Introduction (Week One: 2 – 3 hours)The Investigation of Ancient Sites and Sources‘What is history’? Students should be encouraged to develop an answer to the question.Assist students in identifying the differences between an archaeologist and a historian.Students outline how technology has changed archaeological investigation.Explore a range of excavation methods:* Examples include but are not limited to: site surveys, aerial surveys, satellite surveys, geophysical surveys, radar, excavation

Explore a range of dating methods:* Relative dating methods (age determined by comparison to other artefacts in its vicinity) fir example; stratigraphy, seriation, morphology, typology
* Absolute dating methods (age determined by scientific testing) foe example; Radiocarbon dating, luminescence, forensic examination, dendrochronology and DNA analysis.

Identify the types of problems that exist with dating methods and evidence. For example; Dating methods = ‘radiocarbon barrier’, loss of evidence due to changing climatic conditions = ‘rising sea levelsProvide a brief overview of archaeological excavation and recording and how this has changed over time.Students should investigate how can archaeology and science contribute to our understanding of the past. Examples of specific cases for investigation could include: Bugj Bim (Vic.), Mount William (Vic.), Keilor (Vic.), Burrill Lakes (NSW), Bass Point (NSW), Barrow Island (WA), Tarkine region (Tas.), Laura region (QLD), Gabarnmung (NT).This material can be re-visited at different times through the case study | PerspectivesThis could be introduced as a ‘think / pair / share’ activity or built into their process diary (assessment).ExplanationStudents should be able to define the terms ‘source’ and ‘evidence’ and identify the differences between written and physical evidence.Students should be able to identify technological change and explain its impactCommunicationStudents should be able to define, highlight the purpose and the specific methodExplanationStudents should be able to define, highlight their valueContestabilityStudents should be able to identify any relevant problems with evidence and datingInvestigationStudents research modern technology and identify major changes.Students investigate a specific example that the teacher models to the class.This is an early opportunity to set up the rest of the unit.Teacher supplies reading material and students work in groups. Focus on artefacts and interpretation |
| Ancient Australia* representations of ancient Australia, for example origins and its longevity

The Investigation of Ancient Sites and Sources* the contribution and limitations of ancient texts, inscriptions and iconography to an understanding of the ancient past

Ancient Australia* the geographical and historical context, including:
	+ the scope and diversity of Aboriginal language groups across Australia
	+ the geographical context of at least ONE site

The Investigation of Ancient Sites and Source* problems associated with reconstructing the past through archaeological evidence, for example in relation to understanding ancient customs and religious beliefs

The Investigation of Ancient Sites and Sources* the contribution of archaeological and scientific techniques to the discovery and investigation of the ancient past, including site surveys using radar, excavation, dating methods, forensic examination and DNA analysis
 | IntroductionRepresentations of ancient Australia, for example origins and its longevityIn this section, students are to explore how our understanding of ancient Australia has changed. The key is for students to develop an understanding that the way ancient Australia has been viewed has changed, and continues to change through advances in scientific dating methods and a re-evaluation of source material.Introduction/establish prior knowledge about Ancient Australia decorativePrevious learning about Aboriginal people and cultureAge or length of occupation/ Origins/ Culture/ BeliefsWere Aboriginal people “uncivilised”?Tim Flannery and three waves of migration (historical debate)Theory about “firestick farming”: systematic use of fire for the purpose of changing Australian landscape to suit Aboriginal way of lifeCook’s/Banks’ description of Aboriginals that on voyage of discovery in 1770 and their reports back to the British that provided the context for colonisation.Australian Indigenous ArtAboriginal art is the oldest surviving art culture in the worldTeacher to show students a variety of different Australian Indigenous art and discusses different uses, styles, and so on.A “static culture”Pro. I. Davidson (UNE)Long-held belief that ancient Australian Aboriginal culture remained static for thousands of years is incorrect.Popular perception of a culture of an unchanging people in an unchanging environment c. 1920s has slowly changed to one of an unchanging people in a changing environment.In your own words, describe what Davidson means “unchanging people” and “changing environment” in the context of his findings - How does this changing perception relate to modern society’s views of Aboriginal culture and its importance to our collective past?The geographical and historical context, including: the scope and diversity of Aboriginal language groups across Australia* What scientific evidence do we have that explains the age of the continent?
* How has the continent changed over time?
* What occurred in Australia during the Pleistocene and Holocene periods?
* What scientific and anthropological theories attempt to explain the movement of people across Earth?
* How do these theories connect to Aboriginal people in Australia?
* How do Aboriginal belief systems contrast with the scientific theories?
* How are scientific methods used to discover and investigate the ancient past?

Geography, geology and historyStudents engage with the scientific school of Geoscience. Students investigate what is revealed through the scientific investigation of the ages of rock and crystals.Example: Western Australia dating using a sensitive resolution ion microprobe.Students identify significant rock features in Australia.Ensure that students make a comparison between scientific interpretations with origin stories of the Dreaming. This approach presents students and teachers with the opportunity to engage and connect with local indigenous Dreaming stories that are embedded within a local geographical context.Changing LandscapesTeacher leads discussion regarding how changing landscapes and climate offered different opportunities.Introduce the concept of how different time periods in the Earth’s history are represented through the archaeological investigation of sources.Example: location, resources, archaeological and geological record.Discuss:How could changing climatic conditions and changing landscapes have affected where and how people travelled?How could it have affected where they settled?How would this changing landscape impact on the preservation of sources?Origins of Ancient AustraliaStuart Macintyre discusses the crossing of people from Sunda (modern-day Malaysia, Indonesia and the Philippines) into Sahul (modern-day Papua New Guinea and Australia) and that this would have been when Timor Sea level was low for ease of passage using (theorised) bamboo rafts rapid occupation compare this to the Djankawa origin Dreaming story coming from “the island of Baralku”Geographical context and periods of occupationWhat geographical features would encourage the occupation of a specific region or site?Teacher provides an overview of the diversity of landscapes and the associated experiencesFor example; **Biomes**: deserts, rainforests or **Regions**: North Western Australia, Tasmania, and so on.Language and DialectLanguage and dialect – over 250 languages and over 600 dialects covered Australia in 1788.Teacher highlights the scope and diversity of Aboriginal language groups across Australia.How did this diversity translate into a map of Aboriginal Australia that is marked by language groups?Origin theoriesMigration – movement of humans across the EarthTeachers need to highlight that changing historical and scientific interpretations are connected to ongoing scientific and archaeological discoveries.These discoveries could be referenced and studied in order to engage with the dynamic nature of archaeology and the ‘historical record’.Example: The Aboriginal Study: ‘A Genomic history of Aboriginal Australia’ (2017) argued that Aboriginal and Papuan Ancestors left Africa approx. 72 thousand years BP. | ExplanationThink / pair / shareClass discussion with mind-mapDefine the Terra Nullius conceptUse of sourcesContestabilityProvide students with information about Flannery’s theory of future eaters and waves of migration - Students read extracts from Cook / BanksFocus on the differences between the two representations, for example; short answer writing activity or table formatAnalysisStudents answer the following questions:How has Australian Indigenous art changed over time?Can you account for some of the changes?How has it stayed the same?Assess its value in modern Australia.Define ‘static culture’.What has impacted on changing perception?ResearchStudents conduct brief research to find supporting/contradictory evidence from archaeologists and experts (for example, Dr P. Hiscock, Dr J. Flood, Dr. I. Keen, Prof T. Flannery, J. Field) for each statement.In this section it is important that students are provided with an overview of the changing geographical nature of ‘Ancient Australia’.PerspectivesMake a comparison between the scientific interpretation and the Dreaming stories about creation, for example; Uluru (or a local example)Invite appropriate knowledge holders of the local community to present to students about local experiences.Continuity & ChangeStudents examine a range of physical maps of Ancient and Modern Australia. Compare the coastlines of ‘Sahul’ and ‘Sunda’ and the location of modern coastlines. Estimate distance of change of waterline through using scale.PerspectivesStudents create a comparison table that highlights the similarities and differences between the scientific theory and Dreaming storyCommunicationStudents create a graphic organiser that presents their understanding of geographical contextExplanationStudents are allocated specific biomes and they investigate how geographical context would have translated into different living experiences, food sources, technology or habitation sites.Continuity & ChangeStudents identify the language group of their local area and answer the following questions: Where are the borders of the local language group? What aspects of the local dialect still exist in place names or terminology?Contestability Students identify, define and compare the theories associated movement of people across the planet, for example; the “Out of Africa”, the “Out of Europe” and the “Multi-Region” theory. |
| Ancient AustraliaThe range of sources and their condition, including:* archaeological sources: hunting tools, grinding stones, shell middens, replanting, land farming, scarred trees, carved trees, structures, rock carvings, iconography, human remains
* oral history and communication: the knowledge of the custodians of the site

The Investigation of Ancient Sites and Sources* problems associated with reconstructing the past through archaeological evidence, for example in relation to understanding ancient customs and religious beliefs
 | The range of sources and their conditionListed below are some examples of important Aboriginal archaeology sites in Australia. This list is not comprehensive and other sites should be explored and the list should be regularly updated. Students could use these examples as the basis for their assessment task:* Lake George, NSW: charcoal and pollen study – Changing interpretations of the site in terms of habitation. ANU - Lake George Project: a multidisciplinary study of the site.
* Madjedbebe rock shelter, Northern Territory: Archaeological studies have identified the site as an internationally significant cultural and archaeological site. Dating methods including radiocarbon and luminescence have estimated the site dates to approx. 65 thousand years BP. Some estimates have placed some artefacts further back towards 80 thousand years. Sources found at the site include ground-edge axes, grindstones, flint, ochre and fireplaces.
* Malakunanja II rock shelter, Arnhem Land, Northern Territory: Dated to approx. 55 thousand years BP. Range of sources including burial sites, stone artefacts, tool making and exchange of resources.
* Jinmium rock shelter, Western Australia: Archaeological debate regarding dating methods and the contamination of sites - use of optical luminescent and thermoluminescence dating.
* Warratyi Rock Shelter, Flinders Ranges, South Australia: Evidence for occupation approx. 49 thousand years BP. Evidence for use of technology and co-existence with megafauna. Project conducted with Adnyamthanha indigenous group.
* Kimberley Ranges, Western Australia: Range of projects studying archaeology, dating, paleo environments and rock art. Range of sites near the Ord River, and on the Kimberley coast have been dated up to approx. 50 thousand years BP. Rock art in the region is estimated to be some of the oldest in the world.
* Devil's Lair cave, Western Australia: Evidence for occupation approx. over 45 thousand years BP. Evidence of food consumption, megafauna and species now extinct on the mainland, for example; Tasmanian devil.
* Kutikina Cave, Tasmania: Occupation site dated to approx. 20 thousand years BP. Wide range of source material and artefacts that date back to the Pleistocene era. Southern most known human habitation site during the last ice age. Important connection to environmental protests re: the 1980s Franklin Dam project.
* Kenniff Cave, Queensland: Occupation site dated to approx. 18 - 20 thousand years BP. Evidence of stone tools, composite tools and tool making, weapons, ochre and rock art. Significant - evidence from the site pushed Aboriginal occupation estimates back thousands of years to what was previously accepted.
* Local example: Through consultation with local Aboriginal communities, determine an appropriate local site that could be investigated by the whole class in terms of evidence of occupation and longevity.

Group Construction Activity: Ancient Australia Site Survey MapTeacher selects an Australian Archaeology website with a list of known and current archaeological sites. Group construction of a map of archaeological sites across Australia. Extension: Students may also place current dating on the site markers and made judgements about the extent of human occupation across Ancient Australia and compare this to the previous lessons on origins and longevityGroup construction: Ancient Australia Range of Sources Mind MapStudents use the information in the table or the Ancient Australia Site Survey Map to create a mind map with the types of evidence found from the Ancient Australia survey activity.* Contribution and limitation of ancient text, inscriptions and iconography to understanding the ancient past
* Problems in reconstructing past for example; ancient custom and religious beliefs

The Nature and Preservation of SourcesTeacher led discussion on the nature of sources and their preservation under certain conditions. The teacher may provide diagrams and archaeological explanations for the preservation process.Students explore the role of the environment and human intervention in the preservation of sources through the sources that they found in the survey site activity. The location of the source from the original site survey may be useful in interpreting the survival of the source over time. Refer students to the Ancient Australian map activity.Limitation and gaps in the sources on Ancient AustraliaTeacher poses the question: What sources would you expect as a result of human migration and occupation over time that are not evident in the sources discovered?Teacher led examination of different sources and their longevity, based on the following factors:* Environmental conditions
* Composition of the source
* Decomposition of the source naturally over time
* Human intervention in preservation or destruction of sources
* Destruction of sources from natural disasters- fire, cyclones, floods, earthquakes
* Rising sea levels and destruction or hidden sources
 | Historical researchExplanationSite study:Students examine the evidence from the sources and may use other sources to create a mini Presentation to the class. This may be done in pairs. The presentation must outline the following:* Location of archaeological evidence. Mark on a map.
* Type of archaeological evidence- hunting tools, grinding stones, shell middens, replanting, land farming, scarred trees, carved trees, structures, rock carvings, iconography, human remains
* Dating, archaeological period and methods used (if evident)
* Condition of the evidence
* Significance of site and evidence (if evident)
* Briefly outline what the evidence reveals about Ancient Australia?
* Name the sources used

SignificanceThis activity will provide a ‘big picture’ of the range and scope of the archaeological sites to date. This task is not meant to be heavy on detail, but act as a survey of the range of sources available.CommunicationStudents are provided with a marker for the archaeological site they surveyed. Students place marker on the map.Students select printed visual labels for a range of archaeological source types and they place these on the map next to the archaeological site they surveyed.Students examine the map with the markers and the archaeological labels and make statements about the range of sources and sites.ExplanationMind Map – types of evidence. CausationStudents select one type of source and examine how this source is preserved and under what environmental and human conditions. Students draw a diagram of the preservation method of the source selected and the process of preservation. Students present their findings to the class.TEEL paragraph activityExplanationExplain how the gaps and limitations of the sources discovered to date effect our interpretations of human occupation in Ancient Australia? |
| Ancient AustraliaThe range of sources and their condition, including:* archaeological sources: hunting tools, grinding stones, shell middens, replanting, land farming, scarred trees, carved trees, structures, rock carvings, iconography, human remains
* oral history and communication: the knowledge of the custodians of the site

The Investigation of Ancient Sites and Sources* problems associated with reconstructing the past through archaeological evidence, for example in relation to understanding ancient customs and religious beliefs
* the contribution and limitations of ancient texts, inscriptions and iconography to an understanding of the ancient past

The investigation of Ancient sites and Sources* the contribution of archaeological and scientific techniques to the discovery and investigation of the ancient past, including site surveys using radar, excavation, dating methods, forensic examination and DNA analysis

Preservation, Conservation and/or Reconstruction of Ancient Sites* the nature of the site(s), and the condition and extent of the remains

The Treatment and Display of Human Remains* the condition of the human remains and how they were preserved, discovered and/or removed from where they were found
* the methods and results of scientific analysis (dating of finds and forensic techniques) and modern preservation of the remains

The Treatment and Display of Human Remains* the significance of the human remains and other sources, for example written, for an understanding of the life and times in which they lived
* the ethical issues relevant to the treatment, display and ownership of the remains, for example the use of invasive methods of scientific analysis

The Investigation of Ancient Sites and Sources* the contribution of archaeological and scientific techniques to the discovery and investigation of the ancient past, including site surveys using radar, excavation, dating methods, forensic examination and DNA analysis
 | Reconstructing the Past through archaeological sourcesArchaeological evidenceStudents explore a range of archaeological evidence including the following areas.* Seed grindstone tools found at Lake George, New South Wales
* Shell mounds, Cape York at Weipa. Excavation by Geoffrey Bailey- Weipa Mounds
* Stands of native fruit trees have been used as evidence of deliberate plant cultivation through the practice of selective seed spitting. These native fruit trees are also consistent with evidence of prehistoric village settlements
* Budj Bim eel traps, Lake Condah, Western Victoria
* Fish traps, Barwon River, Brewarrina, New South Wales

Primary Written Sources: Observations from early Europeans identified a range of evidence of agricultural practices that existed in Australia. They refer to:* Yam farming – Port Phillip District, Victoria (Robinson, 1841)
* Piles of grass ‘hay ricks’ - harvested for seed/ flour (Mitchell, 1839/ 48)
* Wells and yam farming – Western Australia (Grey, 1839)
* Land terracing for the use of planting and harvesting (Batey, 1846)
* Seed broadcasting and harvesting of grasses (Kemp, 1910)
* Nardoo/ Wild oats/ Barley grass/ irrigation (Dark Emu, Pascoe, 2014)

The Clogg Cave Project: Snowy MountainsStudents examine the stratigraphic evidence of human and animal occupation at the site.* What do the pebble tools and scrapers indicate about the use of the cave and human occupation at the location?
* What evidence of camp fires, cooking and diet was revealed in the excavation?
* Examine the change and continuity of occupation at the site?
* What might this reveal?
* What role did the environment play in the changes to the occupation of the site over time?

Other sites for structures* Rock Shelter, Western Desert, Riwi- Pleistocene occupation of the arid zone
* Devils Lair, north of Cape Leeuwin
* Allen’s Cave, arid zone Nullarbor Plain, South Australia
* Kutikina Cave, Lower Franklin River, Tasmania- presence of rock art and ochre

Structures: SheltersExplore a range of structures from caves, rock overhanging, grass huts, stone and timber structures and gunyah (shelters made from local wood). Investigate sources from early European explorers, for example; Mitchell and Sturt who refer to large villages or ‘towns’.Examine the nature of the structures and what they reveal about early habitation and occupation habits.Examine the range of archaeological sources found in the structures and draw conclusions.Primary source AnalysisStudents examine the following statements and undertake to find at least one other source from the list provided.* Charles Sturt’s 1845 accounts of structures in Strzelecki Creek, 1845
* Karl Emil Jung and Alfred Howitt’s report of cone-shaped huts at Cooper’s Creek, east of Lake Eyre
* George Goyder’s (South Australian Surveyor General) survey account, 1861
* Thomas Mitchell’s (surveyor and explorer of south-eastern Australia) account of villages in the Murray Darling Basin

Primary sources* Source A “Houses and villages were observed from the far Kimberley to Cape York, from Hutt River to Tasmania, from Brewarrina to Hamilton. Permanent housing was feature of the pre-contact Aboriginal economy and marked the movement towards agricultural reliance. These villages were not just functional occupation centres but places of solace and comfort in often difficult terrains and climates.” Bruce Pascoe, “Dark Emu, Black Seeds: agriculture or accident?” (2014)
* Source B “Came on the site of a large native encampment, quite a quarter of a mile across. Framework of several large humpies one having been 12 feet high: small enclosures as if some small game had been yarded and kept alive...This camp must have contained quite 500 natives, and have been the site of some great festival, the corroboree or dancing grounds, being numerous and well worn.” David Lindsay, 1983 (survey report Arnhem Land)
* Source C “In crossing one hollow we passed among the huts of a native tribe. They were tastefully distributed amongst dropping acacias and casuarinae. Each hut was semicircular, or circular, the roof conical, and from one side a flat roof stood forward like a portico, supported by two sticks.” Thomas Mitchell, (surveyor and explorer of south-eastern Australia) account of villages in the Murray Darling Basin.
* Source D “These huts were a considerable size, and close to each there was a smaller one equally well made...and had apparently been swept prior to the departure of the inhabitants” Charles Sturt 1845

Land FarmingEarly written accounts* Explorers- George Grey 1839
* Chief Aboriginal Protector of the Port Phillip District (1839-49) George Augustus Robinson
* Colonist, Isaac Batey account of yam cultivation in 1846
* Thomas Mitchell, 1848, Journal of an Expedition into the Interior of Tropical Australia
* David Collins, Esquire, 1798, An Account Of The English Colony In New South Wales
* Watkin Tench, June 1789, A Complete Account of the Settlement at Port Jackson
* John Hunter, Historical Journal of the Transactions at Port Jackson and Botany Bay, reprinted 1968. p150
* Other accounts of fire stick farming, accidental cultivation
1. What evidence of agricultural practices are presented in the early written accounts?
2. Does the early written evidence contradict the misconception that Ancient Aboriginal people were nomadic hunter-gatherers only?
3. What are the problems of evidence in using the early written accounts? Consider ethnocentrism, reliability and bias.

Extension: Critical thinking TaskStudents read the statement below and write an extended answer response.“It is amazing that such witness (written accounts from early explorers and surveyors) is not part of Australian geographical and historical folklore. Such is the tenacity of the Australian delusion, it encourages an impoverished national debate...This stain is deep in our chalk and until we accept what the explorers saw as part of the national story our debate of national origins, character and attributes is hobbled by ignorance.” Bruce Pascoe, “Dark Emu, Black Seeds: agriculture or accident?” (2014)Using your own knowledge and sources studied, evaluate this statement in relation to the misconception of ‘terra nullius’ and the stereotype that Ancient Aboriginal communities did not have permanent houses or practice agriculture.Contribution and limitation of ancient text, inscriptions and iconography to understanding the ancient pastPleistocene Rock ArtStudents examine the range of evidence of graphic markings from the Pleistocene period on cliffs and rock or cave surfaces.* Paintings
* Drawings
* Stencils
* Imprints
* Carvings

Source Analysis - Suggested sites include:* Incised marking at the Lightning Brothers site, Yowarlarlay, Northern Territory
* Heavily weathered and patinated petroglyphs at Early Man shelter, Laura, Queensland
* Herringbone markings at Koonalda Cave, South Australia
* Panel markings and diagonal and circle patterns at Snowy River Cave, Buchan, Victoria.
* Finger markings and linear markings engraved with stone at Mount Gambier Caves, Victoria.

The Panaramitee TraditionStudents examine and describe the 1970’s three-part model of the Panaramitee tradition, proposed by Lesley Maynard.Cleland Hills FacesStudents examine a range of images of the heavily weathered motifs depicting faces found at the Cleland Hills Alice Springs.Painted Rock Shelters Accelerator mass spectrometry (AMS) dating has been used on the organic remains in the pigments, and in some cases human blood protein has been detected to determine the relative dating of painted rock art.Arnhem Land – Case StudyArnhem Land has the most proliferate rock art in Australia. Teacher provides images (line drawings) and information from a number of significant painted rock art shelters from Arnhem Land. Images and detail can be found from the research of Chaloupka of the Northern Territory Museum in Darwin.* Painting of thylacine (Tasmanian tiger) at Ubirr, Kakadu National Park, NT
* Male hunter figures, Deaf Adder Creek, Arnhem Land, NT
* Kangaroo man, Deaf Adder Creek, Arnhem Land, NT
* Anthropomorphic yam figures, Deaf Adder Creek, Arnhem Land, NT
* “Bradshaw” dancing figures, Kimberley, WA

Students examine the line drawings of the rock painting images above (or other samples)1. What images are frequently depicted?
2. What is the nature of the human figures depicted?
3. What types of animals are frequently depicted?
4. What is the Mimi Style?
5. What is the “Bradshaw” Style?
6. What does the evidence from painted figures reveal about human occupation at the sites?
7. There is evidence of changes in the rock art. What might this reveal about social and environmental changes?

Range of Sources - Oral history and communication: the knowledge of the custodians of the siteOutline the role of oral history and communication in Aboriginal cultures.Define the nature of Indigenous knowledge: examples, types of indigenous knowledge.Watch authentic traditional Aboriginal dances, listen to Dreaming stories and examine the key features of this oral tradition.Focus on the role of oral history and communication in Dreaming stories, dance, message sticks, and song lines.Consider the following statements1. Dreaming stories are significant recounts of natural events, histories, life lessons, education, social education, initiation passed down through an oral tradition from Elders to the Nation, Clan or Family Group.
2. Dreaming stories contain and safeguard the identity of a community.
3. Oral stories have a significant impact on communities.
4. Dreaming stories contain the future for communities and the connection to the past.
5. Dreaming stories are Indigenous Knowledge
6. Dreaming stories are Lore

Writing activityUse TEEL scaffold to respond to the following.“Oral histories are an acceptable and important source on the nature of human occupation in Ancient Australia”. Discuss.Lake MungoThe Paakantji, the Mutthi Mutthi and Ngiyampaa Aboriginal people are the custodians of the Willandra ancestors.Group activityAccess the Mungo National Park website - Local Elders have recorded videos about local stories.Watch the Three Tribal Groups Video as a class.Groups select one video and complete group activity.Take brief notes in a mind map.Discuss the role the traditional custodians of the Willandra Lakes region play in preserving culture through oral history and communication.Case study: Lake Mungo Acknowledge the traditional owners - Barkindji, Ngiyampaa, and Muthi Muthi indigenous groups.Geographical ContextChanging climate patterns influenced the levels of precipitation and water levels in the basin region where the Willandra Lakes are located.The lake system was fed by Willandra Creek that flowed from the ancient Lachlan River system.Between 60 thousand years BP and 15 thousand years BP, lake levels rose and fell between 15 and 20 metres in depth.At it’s peak, high water levels in the lake system supported a wide range of vegetation, aquatic life, megafauna and now extinct animals, for example; Thylacine.The ancient lake system also has a significant archaeological record that provides scientists with evidence of changing human occupation. There is evidence of human occupation in the sediment layers at Lake Mungo.Archaeological sources include human burial sites, fireplaces, shell middens and stone tools.Geological contextStudy of geological phases represented through stratigraphy.Identify the changing climatic conditions that influenced the layering of sediment phases.the image shows a screen shot of a table. the column headings read "sediemtne phases", "environmental interaction. Relationship of water leveles and arid environments", "impact and nature of human occupations or lack of occupation".  The row headings in the first column read "golgol sediments", "lower mungi lacustral phase", "upper mungo aeolian phase" and "zanci drying phase"Human remainsSignificant evidence - ancient human remains: Mungo Lady and Mungo Man. Examine the remains and evidence for Mungo Man (WLH 3) and Mungo Woman (WLH 1)The remainsWhat was the estimate of the age and gender of WLH 3? What evidence was used to determine this estimate?What was the estimate of the age and gender of WLH 1? What evidence was used to determine this estimate?What dating methods were used on the human remains and what are the current debates and issues with the changing interpretations?The human remains of WLH 3 showed signs of osteoarthritis in the right elbow (also shown in WLH 152). What might this suggest about the daily life and physical activities of WLH 3?WLH 3’s teeth show unusual wear on the molars. What do historians such as Stephen Webb suggest may be the cause and what does this reveal about human occupation at the site?Comparison and contestability issue - What archaeological evidence has been found at Kow Swamp (Victoria)? How does this evidence represent changing interpretations of human remains in Australia?Ethical IssuesExplore the changing attitudes to human remains over the nineteenth and twentieth centuries.* How has archaeology been influenced by social and historical context?
* In what ways have attitudes regarding human remains changed during this period?
* What role have indigenous groups played in developing ‘ethical’ protocols regarding human remains?
* What is the World Archaeological Congress? What is the aim of this organisation?
* How can they be applied to the human remains found at Lake Mungo?

Students need to be able identify the importance of returning both Mungo Lady (WLH 1) and Mungo Man (WLH 3) to their original site of burial. * Where are the remains currently located?
* What process was undertaken in order for the remains to be returned?
* Why is this significant?

Problems in reconstructing past, for example; ancient custom and religious beliefsBurial ritualsExamine the following evidence on burials of WLH 3 and WLH 1. What conclusions can you draw about burial rituals and human occupation at the site?WLH 3* Hands were placed in lap
* Red ochre smeared on head and chest

WLH 1* The corpse was first cremated
* Skull was smashed into 175 fragments
* Ash and smashed bones gathered and deposited into a small depression beneath or near a cooled funeral pyre
* Presence of pellets of red ochre

Extension:Students can research if there is a cultural continuity of these burial practices today.Initiation practicesWLH 3 lost 2 lower canine teeth simultaneously, possibly as a tooth avulsion rite. What might this suggest about human occupation at the site?Red ochre does not occur locally but can be sourced 200 kilometres away. What can this suggest?Artefacts and Human OccupationWhat objects or evidence was excavated in the site around WLH 3?What does the 200 carbonate-encrusted stone tools collected at the site suggest?Two cooking methods were uncovered in the ‘hearth’ and ‘oven’ fireplaces. What might this suggest about the occupation of this area?Black deposits of charcoal, burnt animal and fish bones, freshwater mussel shells, emu shells and stone artefacts were uncovered 15 kilometres from the human remains. These freshwater middens have been dated to be the oldest in the world. What does this suggest about human occupation at this site? What categories of human occupation can you brainstorm as a class from this evidence?What do the burnt, carbonate-encrusted bones suggest about his burial?There was evidence of red ochre pigment smeared on the head and chest of the human remains.What might this suggest about ritual and ceremonial practices?TechnologyAccording to Michael Organ from the University of Wollongong there are two types of hunter gather tools: “extractive”, which are tools such as “shields, spear throwers, boomerangs, digging sticks, bark canoes, fishing lines, shell fish hooks, baskets” and “maintenance”, which are tools such as “large pebble choppers, fish hook files, scrapers, adzes and chisels”. 1997 Illawarra Aborigines - An Introductory HistoryFew bone tools have been found at the site. Three bone tools near the WHL 1 site near the Walls of China and on the Lake Mulurulu lunette.Stone tools are more readily available at the site. Examine a stone tool diagram from Lake Mungo- a chopping tool and a scraping tool. Describe how each type of tool was made and outline the uses for each tool.Rhys Jones of the Australian National University suggests that there was a ‘core tool’ kit and tradition that formed an early Australian stone industry. Find evidence to support this thesis.As the environment change in the Willandra Lakes region, new tools were invented to meet the changes. Explore this thesis with evidence of seed grinding stones as a result of the move away from freshwater resources to wild seed grass cultivation.Everyday life, economics and dietExplore the evidence of freshwater creature remains at ‘base camp’ and ‘dinnertime camps’ at Top Hut III midden and the Lake Tandou lunette.Nets do not survive but it is assumed that they were used to catch the large quantity of golden perch at the excavation site.There are 563 complete sets of Pleistocene footprints found at the site. These footprints are of adult males, females and children. Twenty three trackways or trails over 850 square kilometres have been found as well as a paw print of a large kangaroo and small circular depressions, and a 70cm grove.Focus on recent scientific studies of the dune system. International team including the Max Planck Institute (Germany), La Trobe University (Victoria) and Wollongong University (NSW). Study of the dune transect using special optical stimulated luminescence techniques. Method was used to date sediments surrounding ancient fireplaces which provided insights into Aboriginal occupation of the area around 20, 000 years ago.Other sites of significance and artefactsWhy would these archaeological discoveries be regarded as significant?Examine other sites of significance in order to explore a range of archaeological sources not examined in the Lake Mungo case study. You may like to explore these types of evidence in your local significant sites. | Students respond to the following questions:1. What evidence of agricultural practices are presented in the archaeological evidence?
2. Why would there be gaps in the archaeological evidence of agricultural practices?
3. Does the absence of evidence suggest that Aboriginal people did not conduct agricultural practices? What alternative can we consider in our historical interpretation?
4. Does the archaeological and written evidence contradict the misconception that Ancient Aboriginal people were nomadic hunter- gatherers only?

ExplanationStudents identify the use of stratigraphy as an archaeological dating method.Analysis and use of sourcesStudents combine the evidence presented in the artefacts and the archaeological record in order to develop an understanding of archaeological sites.Analysis and use of sourcesWhat does the evidence suggest about human occupation in Ancient Australia? Historical interpretationStudents need to focus on evidence for built structures, social organisation, trade and transport networks and agricultural practices.Analysis and use of sourcesStudents utilise primary sources as a means of connecting with changing interpretations.analysis and use of sourcesWhat does each source suggest about the nature of human occupation at the time of European colonisation?Historical interpretationWhat does each source suggest about the nature of human occupation in Ancient Australia?ContestabilityStudents explore the current evidence of semi-agricultural practices. For example;* Bill Gammage: Complex system of land management – ‘Biggest Estate on Earth: How Aborigines made Australia’ (2011)
* Bruce Pascoe: “Dark Emu” (2014)

Students investigate the misconception that Aboriginal people were nomadic hunter-gatherers who conducted no form of agriculture.* Bruce Pascoe: “Dark Emu” (2014) - Theory that this misconception was a ‘political tool for dispossession’.
* Discuss after examining the evidence.

Explanation and communicationContinuity and changeContestabilityStudents write an extended response that requires them to make an evaluation of the quote and support their answer using specific examples of sites and sources/ evidence.This activity could be supported through the use of:* Modelling
* Scaffolds
* Group construction activities

Analysis and use of sourcesStudents compare and contrast the modern term ‘art’ compared to the evidence of Pleistocene graphic markings.Students examine the nature and evidence of ancient petroglyphs (carvings made into rock surfaces either using abrasion or percussion methods)Explanation and communicationStudents are provided a map with the major rock art regions and finds in Australia.What does this map suggest about the extent and use of rock art across Australia?Analysis and use of sources* What styles were examined in the model?
* What were the frequent motifs depicted?
* How widespread was the Panaramitee tradition across the continent?
* Describe the nature of the Cleland Hills Faces.
* What facial expressions are evident in the faces?
* What might this suggest?
* How many other motifs, tracks and circles have been found at the Cleland Hills site?
* Discuss why dating painted rock art is important.
* How can dating rock art and sequencing its development add to our interpretation and understanding of Ancient Australia?

Analysis and use of sourcesWhat are the problems of inadequate dating methods in our interpretation of art as evidence?Student examination of sources.Analysis and use of sourcesThink, pair, share: What is indigenous knowledge?Why is Indigenous knowledge and oral history vital to the protection of Ancient Australian Aboriginal cultures?How is indigenous knowledge transmitted and continued? PerspectivesStudents examine a traditional Dreaming story: Baiami, the creator Spirit.Historical interpretationStudents examine rock art associated with Baiami. (Baiami Cave, Hunter Valley, NSW) SignificanceStudents use the TEEL paragraph model to construct a written response.Group activity1. Write a report on the oral account/story from the video you selected.
2. What indigenous knowledge is being preserved by the videos on the site?
3. How important is this Indigenous knowledge to our interpretation of the ancestors of the Willandra Lakes Region?
4. How can the examination of the oral histories and, Indigenous knowledge of the Willandra Lakes custodians, change our interpretations and understanding of Ancient Australia?

Continuity and changeIn this section students are to use the examination of the archaeological excavation, recording techniques, dating methods and forensics examination provided earlier in the program on archaeological finds at Lake Mungo.Analysis and use of sourcesStudents will examine how the sources excavated at Lake Mungo can be used to reconstruct the past and analyse and synthesise evidence from different types of sources to develop reasoned claims about the inhabitants of Lake Mungo over time.Historical interpretationStudents complete table and draw conclusions about the patterns and impact of the 4 phases on human occupation or lack of occupation at the site.Explanation and communicationStudents create a flow-chart that outlines the process of identification.Key features include:* WLH 1 (identified in 1968)
* WLH 3 (identified in 1974)
* Jim Bowler (geologist)
* John Mulvaney and Rhys Jones (archaeologists)
* Alan Thorne (anthropologist).

Continuity and changeKey documents for students to explore include: The Vermillion Accord on Human Remains (1989), The First Code of Ethics (1990), and The Tamaki Makau-rau Accord on the Display of Human Remains and Sacred Objects (2006).Historical investigationStudents should investigate each of the key international accords and evaluate how they represent ‘ethical’ practice in archaeology.ContestabilityExample of international scientific study - Mitochondrial DNA Analysis of Mungo Man (2016): Mungo Man's (WLH 3) remains were dated and accepted as dating to 42 thousand years BP (Prof. Lambert - Griffith University).Previous to this study there had been wide ranging scientific debate and changing interpretations regarding different cultural groups and periods of Aboriginal occupation.The 2016 analysis was published in Proceedings of the National Academy of Sciences of the United States of America.SignificanceStudents develop theories about the significance of artefacts, human remains and evidence found at the siteStudents formulate conclusions about everyday life and human occupation using the following categories:-* Hunter/gatherer lifestyle
* Food and diet
* Tools and technology
* Social organisation
* Religion/spirituality
* Use of land resources
* Ritual, ceremonies, initiation
* Adaptation to the environment
* Economic life

Analysis and use of sourcesStudents identify and classify tools found at the site.Using Organ’s classification model, what type do they belong to and what does this reveal about human occupation and technological attainment over time at the site?What do archaeologists believe these tools were used for? What does this evidence reveal about the occupation at the site and the use of technology?Write a TEEL paragraph to explore your research.Historical interpretationWhat evidence is there to support a pattern of seasonal exploitation and movement at the site?What statements can we make about change and continuity of occupational usage, relating to the environmental changes at the site?What does this suggest about technology and organisation of human occupation (for example; hunting and travel) at the site?Create a comparison table that contrasts the views of Aboriginal people and the views of Australian scientists and anthropologists |
| The Investigation of Sites and Sources* the changing nature of archaeological excavation and recording techniques
* the contribution of archaeological and scientific techniques to the discovery and investigation of the ancient past, including site surveys using radar, excavation, dating methods, forensic examination and DNA analysis (ACHAH018)

Ancient Australia as revealed through the sources, including: The approximate dating of the archaeological sources through the use of scientific analysis The Investigation of Sites and Sources* the changing nature of archaeological excavation and recording techniques
* the contribution of archaeological and scientific techniques to the discovery and investigation of the ancient past, including site surveys using radar, excavation, dating methods, forensic examination and DNA analysis (ACHAH018)

Ancient Australia as revealed through the sources, including:* the approximate dating of the archaeological sources through the use of scientific analysis
* the significance of the site to Aboriginal communities, for example; cultural, spiritual
* the value to our understanding of Australia’s ancient past

Preservation, Conservation and/or Reconstruction of Ancient Sites* the nature of the site(s), and the condition and extent of the remains

The Investigation of Sites and Sources* the contribution of archaeological and scientific techniques to the discovery and investigation of the ancient past, including site surveys using radar, excavation, dating methods, forensic examination and DNA analysis (ACHAH018)

Preservation, Conservation and/or Reconstruction of Ancient Sites* the contribution of archaeological and scientific techniques to the discovery and investigation of the ancient past, including site surveys using radar, excavation, dating methods, forensic examination and DNA analysis (ACHAH018)
 | The approximate dating of the archaeological sources through the use of scientific analysisRevision:Relative dating methods (age determined by comparison to other artefacts in its vicinity) for example; stratigraphy, seriation, morphology, typologyAbsolute dating methods (age determined by scientific testing) for example; Radiocarbon dating, luminescence, forensic examination, dendrochronology and DNA analysis.Explain the nature of archaeology in Australia and how this impacts on dating sources.Most evidence for early dates come from stone tools buried in soils (either rock shelters and cave deposits or in ancient dried out lake beds and other landscape features). Stone tools are identified because of their distinctive flaking and/or shape. Dating in this instance is based on when the tool was buried because stone cannot be dated. This is determined by conducting the scientific analysis like radiocarbon dating on the soil, in particular the sand grains and charcoal, to determine the age of the stone tool.Stone tool sources buried in open sites are less reliable because they are not protected like other sheltered sites. The soil is impacted by environmental factors such as wind disturbance, flooding and soil erosion, which impacts the integrity of the site, and any sources found.In terms of relative dating methods, using typology with ancient Australian sources is not a useful dating method. Although this is a well-known archaeological method used since the 19th century, there are no real variations in the shaping of tools like there has been in Europe. Therefore, tool typology that tracks changes to tool types throughout history which helps establish a chronological timeline cannot be used as a dating method by archaeologists in Australia.It is also important to reiterate the fact that the archaeological record of ancient Australia is different to that of traditional classical archaeology found in places such as Greece and Italy. In Australia, organic material such as bone, wood, and shell do not survive longer than a few hundred years in normal Australian conditions. As a result, the archaeological record in Australia tends to rely heavily on artefacts and sources made of stone and bone.Possible site studies:Madjedbebe rockshelter, Kakadu, Northern TerritoryWhat is revealed? Focus: length of occupationExcavations in 2012 and 2015, led by Dr. C. Clarkson (UoQ)Excavated four times since 1970s but revisited because of development in technologyArtefacts found in three distinct layers of occupation100 samples collected for datingBoth radiocarbon dating and OSL (optically stimulated luminescence) was usedThey were both used because of limitations of radiocarbon dating in being used to date samples over 50,000 years old whereas OSL estimate the time elapsed since sand grains were last exposed to sunlight and doesn’t rely on the carbon isotypes* Sand grains at the lowest level of occupation were measured by OSL to be 65,000 years old helped date the artefacts found buried at that level
* Issue of possible movement of artefacts which may distort findings

Other sources found include mixing of ochre with reflective powders made from ground mica to make a vibrant paint, stone tools such as ground hatchet head and grinding stones, ancient fireplaces.Wyrie Swamp, South AustraliaFocus: technology/ boomerang useThe swamp is a peat bog which helps preserve artefacts because they are not exposed to oxygen. The site was an accidental discovery by archaeologist R. Luebbers (1973).Excavation revealed:* 25 wooden tools have been found, of which 9 were boomerangs.
* There were also a digging stick, a stake about 40 cm long that was probably also a digging stick, a short simple spear and 2 barbed spears.
* Pollen cores and carbon dates of peat samples where the boomerangs were found showed that the swamp had been a lake with shores particularly favourable for human occupation between 10,000 and 8,500 years ago, the period to which the artefacts are dated.

Process of excavation:* Accidental discovery
* Digging in trenches/ stratigraphy
* Artefacts found, including flint tools and chipping debris from campsites
* Removal of artefacts in peat blocks and other preservation techniques, such as, treating wooden tools with polyethylene glycol before freeze drying them
* Photos of the dig in process and recording of finds
* Links to ethnography branch of archaeology (historical and contemporary observations of Aboriginal use of boomerangs to help interpretation of the sources found)

Lake Mungo, New South Wales (site study)Focus: occupation, use of land, burial methodsFour main methods of dating used in this region:radiocarbon dating, potassium-argon dating, OSL and thermoluminescence datingVariety of sources have been found at the site including stone artefacts, middens, fireplaces and burialsBurials are sources ‘buried’ on purpose and the conditions of the region have helped the long-term preservation of the bonesArtefacts are found in landscapes, termed lunettes (large sand dunes)* Sediments accumulate over time, moved by wind, and the sources mentioned earlier are covered
* This helps preserve the potential sources of evidence

Examples of artifact sites include:* Freshwater middens
* Fireplaces
* Stone tool manufacturing sites
* Burial sites

Specific examples:Human remains* Mungo Lady (WLH 1) and Mungo Man (WLH 3)
* Identified by geologist Jim Bowler in 1967 and 1974
* WLH 1 was dated as 19,000 – 25, 000 years old by radiocarbon dating charcoal from a hearth found above her burial site
* Early estimates dated the WLH 3 as 28,000 – 32,000 years old but in 2003 this had been refined to 40,000 – 42, 000 years old by H. Johnston and Prof J. Bowler
* 1976, relative dating by using stratigraphic evidence with WLH 1
* 1987, electron spin resonance was used
* 1995, mitochondrial DNA analysis was used
* 1999, electron spin resonance was used again in conjunction with uranium-thorium dating and OSL
* 2003, used OSL conducted by four different labs

Fossil TrackwayIdentified in 2003 during routine archaeological surveyFootprints of a group of adults, young adults and children who walked across the claypan on the shores of a lakeAnother group of adults also journeyed through the area and left footprintsThe clay hardened before sand covered the footprints creating perfect environmental and climatic conditions for preservationThe sediments above and below the clay layer were dated to about 20,000 years old using OSLThe significance of the site to Aboriginal communities, for example; cultural, spiritualAspects of significance for Lake Mungo* Significance of sophisticated fishing techniques and technology over 30,000 years
* Spiritual significance of Lake Mungo- Dreaming continuity and links to local Aboriginal communities.
* Evidence of early intellectual life, transport and trade connections through the use of red ochre and pigments.
* Evidence of early sophisticated tool techniques and practices.
* Evidence of early cremation and ceremonial rites for women (WLH 1)
* Evidence of early adaptation to the environment
* Cultural continuity - connections to local Aboriginal communities through cremation practices- spiritual and cultural links.
* The debate over “gracile” and “robust” evidence of human development, evolution and adaptation.
* Biological and cultural diversity of the site
* Preservation and Conservation of the foot prints, replicas of the footprints, reburial of remains and the museum at the site

Extension activity:Explain the importance of the Lake Mungo site to the Paakantji, the Mutthi Mutthi and Ngiyampaa Aboriginal people, who are the custodians of the Willandra ancestors.Students use the TEEL process to write each paragraph. Students should be guided in the organisational structure and editing of the essay text typeThe value to our understanding of Australia’s ancient past Mind Map Activity: categorise and examine evidenceCritical Thinking ActivityUse source A and your own knowledge to evaluate how archaeological evidence is changing our interpretation and understanding of Ancient Australia.* Source A “The belief that Aboriginal people were ‘mere’ hunter-gatherers has been used as a political tool to justify dispossession. Every Land Rights application hinges on the idea that Aboriginal and Torres Strait Islander did nothing more than collect available resources and therefore had no managed interaction with the land; that is, Indigenous population did not own or use the land.” Bruce Pascoe, “Dark Emu, Black Seeds: agriculture or accident?” (2014)

Critical thinkingExamine the earlier debate about the stereotypes of Ancient Australian occupation from the early Europeans.Does the evidence you have examined from Lake Mungo and other significant sites reveal that Ancient Australians adapted, changed and modified their lifestyle and culture to meet environmental needs and changes?Write a TEEL paragraph to reveal your point of view, include supporting evidence and a thesis statement. | Explanation and communicationStudents need to revise the range of dating methods: Define, highlight their value and identify associated problems.Students identify the types of problems that exist with dating methods and evidence: For example; Dating methods = ‘radiocarbon barrier’, loss of evidence due to changing climatic conditions = ‘rising sea level’Students could create a ‘Media File: Current Research’ that includes dating.Revise dating methods and outlining the positive/negatives of methods either by discussion or written answersSignificanceCase study: This site is an important site in terms of scientific analysis. The scientific findings have pushed occupation dates back to beyond 65 000 years. PerspectivesHow does this scientific research support the indigenous belief that ‘indigenous people have always been in Australia’?Continuity and changeStudents need an understanding of the properties of bogs and how they preserve organic matter; teacher can do this by using bog-bodies such as Lindow Man or Tollund Man as examplesIt has produced a range of wooden tools that are missing from most other sites because wood requires the correct conditions to survive for thousands of years. Also an opportunity if time permits to look at process of excavation by Luebbers in 1973TEEL short answer response: Assess the importance of the Wyrie Swamp boomerangs.Historical researchStudents can conduct a small independent research: 1. How have dating techniques changed historical understanding of Lake Mungo?
2. What dating methods have been used at Lake Mungo?
3. What is so important about the finds at Lake Mungo?

Conservation1. Describe the nature of the site.
2. What factors threaten the survival of the site at Lake Mungo?
3. Suggest some strategies to help the preservation of this historically and culturally important site.

Analysis and use of sourcesExplanation and communicationSignificanceConsider the significance of the finds at Lake Mungo and in pairs or groups design a Power Point which evaluates the cultural and spiritual significance of the Lake Mungo site. Use archaeological evidence, journal articles, written sources and Aboriginal sources and your own notes to support your evaluation. Differentiation: Students can create a mind or other concept map exploring the cultural and spiritual significance of a site they have studied. The teacher may add key words and clues in a mind map for students to complete. Explanation and communicationClass brainstorm, in a jointly constructed mind map, the evidence from their study of Ancient Australia. * Students categorise the evidence. (human remains, rock art, shelters and so on)
* Students examine each category and explore what the evidence reveals about the human occupation of Ancient Australia.

Historical interpretationContestabilitySignificance |
| Ancient AustraliaThe significance of the site today, including:* issues relating to conservation and promotion of the site as Australia’s heritage
* principles of Indigenous cultural and intellectual property relevant to the site
 | The significance of the site todayLake Mungo is part of the Willandra Lakes Region World Heritage Area.This type of classification represents recognition of significance at an international level of the region’s environmental and human record. Students need to investigate the strategies that are being utilised to conserve the site. These include:* Mungo National Park (NPWS)
* NSW Land and Property Management Authority
* Willandra Lakes Region Environmental Plan - involving a range of stakeholders including Community Management Council, Technical and Scientific Advisory Committee, Elders Council of Traditional Tribal Groups affiliated with the Willandra and the Landholders Protection Group
* Individual Property Plans (IPPs)
* Environment Protection and Biodiversity Conservation Act (1999)

What do these strategies attempt to do in terms of management?What are their areas of responsibility?What similarities and differences exist between these groups?What challenges do management groups face in terms of preservation and conservation of the site?Example: The Mungo archaeology projectDefinition: An international multidisciplinary research project that is studying the history of human settlement of the Willandra Lakes region. The project is being undertaken in close consultation with the Elders Council of Willandra Lakes Region World Heritage Area. Academic institutions involved include Latrobe University (Vic.), Wollongong University (NSW), and the Max Planck Institute (Germany). The project involves the active participation and guidance by Aboriginal cultural officers and local elders in order to provide advice about issues of cultural sensitivity and discuss research priorities. Participants also include National Parks rangers and student volunteers.Aim: The project is researching changes in technology, economy and social networks that have taken place over the past 45, 000 years and investigating their relationship to the changes in landscape and environment that have taken place since the region was first settled.Method: The Lake Mungo basin has been ‘divided’ using a 1.25km grid system. The 1.25km grid square has then been broken into 50m x 50m grid squares that are investigated using a systematic foot survey. GPS systems are used to ensure accuracy and any discoveries are documented electronically using a location, geological context and content categorisation profile. Specific midden, stone artefact and hearth sites are photographed in-situ and provide both research data and information to elders who use this to make judgements about how and when to recover artefacts. Erosion of the site is a major threat to preservation of evidence.Funding: Australian Research Council (ARC)Example: The Mungo Youth ProjectDefinition: A youth oriented project that aims to unite traditional Aboriginal culture and heritage with archaeology and science. The learning program culminates in a conference run by Traditional Elders within the Willandra Lakes Region World Heritage Area.AIM: Cultural and academic education and the development of deep understanding and appreciation of traditional Aboriginal culture and heritage. Students between Years 5 and 12 are take part in a learning program that is guided by local Elders, Traditional Owners, Discovery rangers, archaeologists, scientists, landholders, educators and NPWS staff.Method: Students are mentored and study key topics including shifting landscape, climate change, biodiversity and what life was like ‘in Ancient Mungo’. By the end of the program, students take on the role of educator and engage in ‘kids teaching kids’ workshops.Funding: Mix of private and public sponsorship | SignificanceStudents need to explore the World Heritage website.What does it mean for a site to be declared World Heritage?What factors or criteria are necessary for an area to be declared World Heritage?What criteria did the Willandra Lakes Region possess?Compare the Willandra Lakes Region to at least two other examples of World Heritage sites.Explain key similarities and differences.Historical investigation and researchStudents could research and compare the following two projects as examples of conservation and promotion of the Lake Mungo site.Explanation and communicationSignificancePerspectivesContinuity and changeExplanation and communication |

Resources

Books:

* Peter Hiscock (2007), The Archaeology of Ancient Australia, Taylor and Francis Ltd.
* Bill Gammage, (2011) The Biggest Estate on Earth: How Aborigines Made Australia. Sydney: Allen and Unwin
* Bruce Pascoe (2014) Dark emu: black seeds agriculture or accident?, Western Australia: Magabala Book

Websites:

* [Methods of archaeology](https://msu.edu/~aarondan/methodsofarchaeology.htm)
* [Methods of gathering data](http://www.saa.org/ForthePublic/Resources/EducationalResources/ForEducators/ArchaeologyforEducators/MethodsofGatheringData/tabid/1347/Default.aspx)
* [Archaeological tools and methods:](https://maas.museum/event/zagora/archaeological-field-tools-and-methods/) https://maas.museum/event/zagora/archaeological-field-tools-and-methods/
* [Australian Aboriginal timeline:](https://www.creativespirits.info/aboriginalculture/history/australian-aboriginal-history-timeline) https://www.creativespirits.info/aboriginalculture/history/australian-aboriginal-history-timeline
* [Australian archaeological sites:](http://austhrutime.com/australian_archaeological_sites.htm) http://austhrutime.com/australian\_archaeological\_sites.htm
* [Aboriginal places of significance:](http://www.environment.nsw.gov.au/nswcultureheritage/PlacesOfSignificance.htm) http://www.environment.nsw.gov.au/nswcultureheritage/PlacesOfSignificance.htm
* [Guide to Aboriginal sites and places:](https://www.creativespirits.info/aboriginalculture/land/guide-to-aboriginal-sites-and-places) https://www.creativespirits.info/aboriginalculture/land/guide-to-aboriginal-sites-and-places
* [Australian Aboriginal archaeology:](https://australianmuseum.net.au/australian-aboriginal-archaeology) https://australianmuseum.net.au/australian-aboriginal-archaeology
* [Identifying Aboriginal sites:](http://www.aboriginalheritage.org/sites/identification/) http://www.aboriginalheritage.org/sites/identification/
* [Aboriginal cultural heritage:](https://australianmuseum.net.au/indigenous-australia-cultural-heritage) https://australianmuseum.net.au/indigenous-australia-cultural-heritage
* [Australian Association of Consulting Archaeologists:](https://www.aacai.com.au/membership/member-list/Indigenous/) https://www.aacai.com.au/membership/member-list/Indigenous/
* [ARC Centre of Excellence for Australian Biodiversity and Heritage:](https://cabah.org/) https://cabah.org/
* [Example – Madjedbebe:](http://www.abc.net.au/news/science/2017-07-20/aboriginal-shelter-pushes-human-history-back-to-65%2C000-years/8719314) http://www.abc.net.au/news/science/2017-07-20/aboriginal-shelter-pushes-human-history-back-to-65,000-years/8719314
* [Example – Cuddie Springs:](https://australianmuseum.net.au/cuddie-springs-archaeological-site-new-south-wales) https://australianmuseum.net.au/cuddie-springs-archaeological-site-new-south-wales
* [Example – Lake Mungo:](http://www.visitmungo.com.au/) http://www.visitmungo.com.au/
* [Mungo Archaeology:](http://www.visitmungo.com.au/archaeology) http://www.visitmungo.com.au/archaeology
* [Discoveries at Lake Mungo:](http://splash.abc.net.au/home#!/media/522233/discoveries-at-lake-mungo) http://splash.abc.net.au/home#!/media/522233/discoveries-at-lake-mungo
* [Mungo archaeology:](http://www.nma.gov.au/kspace/teachers/mungo/learning/archaeology) http://www.nma.gov.au/kspace/teachers/mungo/learning/archaeology
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* [Mungo Archaeology Project:](http://www.latrobe.edu.au/humanities/about/staff/profile?uname=nstern) http://www.latrobe.edu.au/humanities/about/staff/profile?uname=nstern
* [Mungo Youth Project:](http://www.nationalparks.nsw.gov.au/conservation-programs/mungo-youth-project) http://www.nationalparks.nsw.gov.au/conservation-programs/mungo-youth-project
* [World Archaeology Congress:](http://worldarch.org/code-of-ethics/) http://worldarch.org/code-of-ethics/

Reflection and evaluation