Archaeology for Kids

Excavating

Rubbish from the past is very exciting to an archaeologist. Rubbish pits/ middens are one of the most common features found on archaeological sites. Rubbish gives us a snapshot of past people's everyday lives through the things they used and threw away.

When a feature with artefacts is found, archaeologists excavate it carefully to learn as much information as possible. How should a rubbish pit be excavated?

First, the feature must be recorded. It is important to know the dimensions of what you are excavating. How wide and long is the feature?

Now you can start to excavate. Take a trowel and carefully scrape away the surface of the dirt. Once you have moved a pile of dirt, scoop it into the bucket. The dirt you move out of the way is called spoil.

Once you reach an artefact, stop! Before you go any further you will need to measure how deep it is buried. The depth is important because it tells us what order artefacts were deposited in the feature. For a rubbish pit, the first items thrown away will be at the very bottom. Items thrown away at a later date will have landed on top and be higher up, closer to the surface.

Question: What does this assemblage of artefacts tell us about how people lived their lives in the past? Why do you think these items were thrown out?

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Archaeology for Kids

Cleaning

When artefacts come out of the ground they are usually filthy! It is important to clean the artefacts for a number of reasons: so that they can be handled without making a mess, so that their details can be seen and analysed, and so that they are stable. Dirt can cause artefacts to go mouldy or degrade (fall apart).

Archaeologists use special methods to clean artefacts so that everything gets as clean as possible without being damaged. How do they do this?

Handle each item carefully. You never know what sharp edges might be hiding under the dirt or if there are tiny artefacts completely covered in mud.

Think about how delicate each item might be. Artefacts that are soft or made of natural materials might not cope with being dunked in water. Brush these carefully with a dry brush.

Look for items with tricky shapes. Bottles might have dirt inside that cannot be reached with a brush; fill these with water and give them a gentle shake. Some artefacts might have rough edges that catch dirt; carefully scrub these with a wet brush.

Once you have cleaned away the dirt and muck hiding the important details of these artefacts, they can dry out.

Question: Which items were easiest to clean and why? Which were hardest?

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Sorting

Archaeologists often excavate huge assemblages, especially when they have found a midden or rubbish pit. When assemblages are all jumbled up, they can be overwhelming and difficult to know exactly what has been found. Sorting is the first step of analysis, which is the process of working out what artefacts can tell us about the past.

Archaeologists sort artefacts using a technique called like-with-like. They work from big categories down to small. They might sort the assemblage several times, getting more specific each time.

The first category to sort by is material. What are things made of? Can you see different materials like cardboard, plastic, wood, glass and metal? Sort objects into trays with other like materials.

Next artefacts can be sorted by function. What are things for? Choose one material tray and look at the objects. Can you see objects that do different things like lids, buttons, and beads? Sort objects into trays with other objects made from the same material.

Now look at decoration. What do things look like? The easiest way to start this is to sort colours. Also sort by decorative words or patterns.

If there is time count how many groups you have, and how many items in each group. This gives you useful data on your artefacts.

Questions: How would you count and keep records of large numbers of artefacts? What is the most common material/function and why?

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Cataloguing

Once an assemblage has been excavated, washed, and sorted, archaeologists catalogue artefacts to record all the information about each item. This helps the archaeologist tell stories about each artefact.

The first step of cataloguing is to describe each artefact in detail. Archaeologists use forms to remind them of what details to record. Choose several artefacts and make brief notes about them in the form on your worksheet.

The next step is interpretation. The archaeologist thinks about how an artefact was used in the past. Choose one artefact and write about it using the questions on your worksheet as prompts. Think beyond what you can see in front of you. What do you know about objects like these and what can you guess? We can never be 100% sure how things happened in the past but interpretation is the archaeologist's best idea of the story that the artefact tells.

The final step is making an illustration of the artefact. Archaeologists use both photographs and drawings to show artefacts. Cameras can quickly take lots of photos of many artefacts. A drawing takes time but can show important details that the archaeologist wants to highlight, like the words on a glass bottle or the picture on a coin.

Questions: What do these artefacts tell us about the people who used them?

Why are artefacts that are 'rubbish' important?

You have helped to tell the story of an artefact and made a record of it that other people can learn from.

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Archaeology for Kids

Shell Sorting and Classification

In New Zealand middens give us valuable information about what early Māori ate and how they processed and cooked their food. Māori middens usually contain large numbers of shells.

Archaeologists who excavate shellfish middens have found that Māori ate a huge variety of shellfish. Pipi, pāua, pūpū, mussels, cockles, oysters, scallops and mud snails, as well as more unusual shells, have all be found. Shells could also be used as tools for scaling fish or preparing flax. These activities would leave use-wear patterns on the shells.

There is always more to a shellfish midden than just shells. There may also be animal bones, wood, charcoal, pollen, oven stones and artefacts. Archaeologists might also investigate microscopic components such as pollen, grains, insect eggs and larvae.

One of the first steps for an archaeologist is to identify the different components of a shellfish midden and sort them.

- Sort the shells into rough taxonomic groups by placing items that look similar to each other together.
- Using the shell identification sheets, sort the shells into their taxonomic classification.
- Bag each group of shells and write a label. Include their English name, Māori name, and scientific name, and where the shells come from.

Question: Have a look at your shells. Carefully observe the shells to see if any look modified (worn or ground away edges) or might be artefacts (drilled holes or carved). What does this tell you about how these shells might have been used?

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Glossary of Archaeological Terms

Analysis: a detailed look at archaeological data to try and understand its different parts, whether there are any patterns, and how features and artefacts relate to each other.

Archaeological site: a place with physical evidence of people in the past. In New Zealand law, a place associated with pre-1900 human activity.

Artefact: a moveable object made by a human, often recovered from an archaeological site.

Assemblage: a group of different artefacts that are connected – for example found on the same site, or from the same time period.

Data: facts and information. Different forms of archaeological data include site plans, artefact tables, feature drawings, structure records, and dates.

Ecofact or biofact: natural objects (plant, animal, mineral) found at an archaeological site that are used but not made by humans. For example, food remains such as animal bones, seeds or shells.

Feature: non-moveable evidence related to human activity, usually dug into the ground. For example soil stains, pits, or post holes.

Interpretation: suggesting what story your archaeological data might tell, what it might all mean.

Like-with-like: grouping together artefacts that have the same physical characteristics (such as material, colour, shape).

Midden: a rubbish heap. Māori midden usually contain shellfish, animal bones and charcoal.

Spoil: excavated soil and rubble that is removed during an excavation and does not get studied.

Stable: an object that is in good condition, unlikely to fall apart or get mouldy.

Taxonomic classification: a way for scientists to organise and name biological organisms into groups based on how they are related to each other.

Use-wear pattern: Scrapes, breaks, and worn areas on an artefact that shows how it has been used as a tool.

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Archaeology is Rubbish

A lot of archaeology is rubbish. The artefacts archaeologists find are often things that people in the past threw out. Before there were rubbish collection services and landfills, people had to dispose of waste themselves. When archaeologists find a collection of rubbish, they call it a midden.

Rubbish is important because it shows what people use in their everyday lives. People usually look after and mend their best possessions, or hand them on as family heirlooms. But the items we use day to day are more likely to break or wear out, and then be discarded.

Different types of rubbish

- Faunal waste: shellfish, animal, bird and fish bones
- Household rubbish: broken china, glass bottles, broken toys, pipes, leather shoes and clothing
- At a Māori site, offcuts from stone and bone tool production
- Waste from a business or industrial site: e.g. metal from a blacksmith, teeth from a dentist's surgery, medicine bottles from a chemist.

Questions: What can rubbish tell us about people? What do you think archaeologists of the future would think about us, if they looked at our rubbish?

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Archaeological Landscapes

Landscape Archaeology is studying the ways people in the past constructed and used the landscape around them. Archaeologists are interested in how people changed the landscape and natural environment through deforestation, earthworks, agriculture, irrigation, and buildings.

Aotearoa New Zealand's first people, Māori, modified the landscape in a number of ways. These include:

- Agriculture – clearing land, growing produce such as kumara, storage pits for kumara
- Earthworks for pā
- Urupā – burial sites for ancestors
- Rock art sites – often near campsites.

These landscapes are very important archaeological sites and are protected. Understanding how Māori changed and used their landscape tells us a lot about how they lived.

Pakeha settlers to New Zealand in the nineteenth century continued to modify landscapes with deforestation, irrigation, swamp drainage, and shoreline reclamation at harbours. Pre-1900 European sites are also classed as archaeological sites.

There are a number of ways for archaeologists to learn how a landscape has changed over time. These include:

- Oral traditions
- Looking at a landscape's resources and features through the lens of indigenous culture to reason how it was used.
- Documentary evidence such as maps, paintings, photos and newspaper reports.

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- New Zealand Archaeology Association ArchSite that records over 75 000 recorded archaeological sites in New Zealand
- Aerial views of a landscape – from aerial photographs or Google earth
- Geographic Information System maps (GIS) use location data and descriptive information to create incredibly detailed maps.
- Light Detection and Ranging (LIDAR) is a remote sensing method using lasers that gives a very accurate measure of ground elevation.
- Soil and pollen sampling, to see what grew in a landscape in the past.
- Excavation – but this is a last resort as it is destructive.

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Experimental Archaeology

Experimental Archaeology is learning how people did things in the past by trying it out ourselves. The aim is to try and understand past human's behaviours, decisions, and skills. Experimental archaeology tries to work out information that isn't available from an artefact or archaeological site.

Professional archaeologists will do this process as a science experiment – they test a hypothesis in controlled conditions. The archaeologists are trying to produce data that can be replicated again and fed back to other professional archaeologists.

There are three main types of experimental archaeology.

1. Historical re-enactment: where archaeologists re-create part of a past culture and test theories about building construction, transport systems, weapons, ceramics, metals, use of fire etc. They often reconstruct copies of historical buildings and tools, using historically accurate materials and technologies.
2. Living history approach: Archaeologists and anthropologists find a similar modern group of people living under the same conditions as the ancient group and observe how they live.
3. Educational experimental archaeology: this is used in museum and archaeology education. It's not an actual experiment – more a chance for the general public to try out historic techniques and technologies.

The nib pen activity is educational experimental archaeology. It helps us imagine what it was like for people in the past to use an older technology and think about how it impacted their lives and behaviour.

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There are other types of educational experimental archaeology activities we can do in Aotearoa New Zealand:

- Harakeke/flax weaving
- Stone tool flaking
- Using an old fish trap site
- Butter churning (shaking cream in a jar)

Questions: How is this older way of doing something different to what we do today? Does it take more effort and use different materials? How would this different way of doing things affect the way people lived their lives?

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Maritime Archaeology

Maritime archaeology studies past human's interactions with the sea, lakes, and rivers. This includes ships, port structures, cargoes, human remains, and underwater landscapes. Nautical archaeologists specialise in ship construction.

Maritime archaeological sites are often shipwrecks. Some ships are wrecked in disasters, but others are deliberately scuttled at the end of their life. These sites are like time capsules; they capture a moment in time. Underwater archaeologists will map out artefacts, cargo, the ship's structure, as well as construction methods.

Aotearoa New Zealand is an island nation. Before the arrival of commercial air travel, all of our economy, migration, and interaction with the world was based on shipping and voyaging. Maritime archaeological sites are very important to our history. In New Zealand, any wreck site of a vessel that was built prior to 1900 is protected as an archaeological site.

Working underwater is challenging. Maritime archaeologists dive with scuba gear in often cold and murky conditions. They need good time management and communication skills to keep safe.

Questions: What do you think is the most challenging thing about maritime archaeology? What helped you get the job done with limited time, communication difficulties, and poor visibility?

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Shell Middens

Shell middens are an archaeological feature consisting mainly of mollusc shells that are found around the world in coastal or lakeshore zones. They contain the waste products of where people processed food.

In Aotearoa New Zealand prehistoric middens give us valuable information about what kai early Māori ate and how they processed and cooked their food. The most common contents of Māori midden are often shellfish.

Archaeologists who excavate shellfish middens have found that Māori ate a huge variety of shellfish. Pipi, pāua, pūpū, mussels, cockles, oysters, scallops and mud snails, as well as more unusual shells, have all be found. Shells could also be used as tools for scaling fish or preparing flax. These activities would leave use-wear patterns on the shells.

There is always more to a shellfish midden than just shells. There may also be animal bones, wood, charcoal, pollen, oven stones and artefacts. Archaeologists might also investigate microscopic components such as pollen, grains, insect eggs and larvae.

Question: Have a look at your shells. Carefully observe the shells to see if any look modified (worn or ground away edges) or might be artefacts (drilled holes or carved) What does this tell you about how these shells might have been used?

Shell midden at Pauatahanui, Heritage New Zealand Pouhere Taonga

90 Mile Beach midden, Heritage New Zealand Pouhere Taonga

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Shell Sorting and Taxonomic Classification

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- Bag each group of shells and write a label. Include their English name, Māori name and scientific name, and where the shells come from.

Some shellfish traditionally eaten by Māori

Common Name	Māori Name	Scientific Name
Toheroa	Toheroa	Paphies ventricose
Pipi	Pipi	Paphies australis
Yellow foot pāua	Pāua	Haliotis iris
Black foot pāua	Pāua	Haliotis australis
New Zealand cockle	Tuangi	Austrovenus stutchburyi
Rock Oyster	Tio	Saccostrea glomerata
Dredge oyster, Bluff oyster	Tio	Ostrea chilensis
Green-lipped mussel	Kuku	Perna canaliculus
Blue mussel	Kuku	Mytilus galloprovincialis
Scallop and Fan shells	Tipa	Pecten novaezelandiae
Mud snail	Whētiko	Amphibola crenata
Cat's eye, bubu	Pūpū	Turbo smaragdus
Trough shell	Kuhakuha	Mactra discors
Turret Shell	Papatai	Maoricolpus roseus
Limpets	Mgākiki, kākihi	Cellana species
Whelks	Kawari	Cominella species
Ostrich foot	Totorere	Struthioloria papulose
Rock shell	Ngāei	Haustrum scobina
Shield Shell	Rori	Scutus antipodes

Further Resources:

Margaret S. Morley, Seashells of New Zealand, Auckland: New Holland, 2004

Andrew Crowe, Which New Zealand Seashell? Auckland: Penguin Random House (reprinted updated version), 2022

Maggy Wassilieff, 'Shellfish – Food and other uses', Te Ara – the Encyclopedia of New Zealand, http://www.TeAra.govt.nz/en/shellfish/page-7

https://www.mollusca.co.nz/

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Excavating

Draw and label a diagram to show the dimensions of your feature.

How deep was one of the artefacts you found? _____

What was the oldest artefact you found? The one thrown away earliest. _____

Cleaning

Write down which materials you used water on and which you dry brushed.

Wet _____

Dry _____

Sorting

Count up how many different piles you sorted. _____

Which pile has the most objects in it and how many are there? _____

Which pile has the fewest objects in it and how many are there? _____

Cataloguing

Fill in your Cataloguing Form on the back of this sheet.

Catalogue:

Artefact Number	Material	Colour	Shape	Function	Condition	Label	Extra Notes

What is this artefact?

What was it used for?

Who might have used it?

Why might they have thrown it away?

Illustrate: Choose an artefact to illustrate

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