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WA SHIPWRECKS MUSEUM
ADVENTURES IN ARCHAEOLOGY
LEARNING RESOURCE

Years 4 – 7

A range of activity sheets that can be used
by students or as springboard ideas for teachers.

WA Shipwrecks Museum is on Whadjuk Nyoongar land.
We recognise and respect the Traditional Owners
of this Country and their connection to the lands,
waters and skies.



WA
SHIPWRECKS
MUSEUM

Adventures in Archaeology

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Introduction



The WA Shipwrecks Museum is the perfect destination for students exploring the fascinating world of maritime archaeology.

This learning resource can be used for teachers to familiarise themselves with the Museum content, to plan how students explore and view the collection, and to follow the visit with related classroom activities.

The theme of maritime archaeology can be linked to the following learning areas and classroom topics:

- Science – maritime archaeology research processes
- Science – testing materials and designs for model building
- History – ship journeys (from ancient through to modern times) and famous shipwrecks
- English – writing about journeys and shipwreck accounts/stories in various genres
- Design and Technologies – model building

About the WA Shipwrecks Museum



The WA Shipwrecks Museum is internationally recognised for its contributions to maritime archaeology and shipwreck conservation.

Journey through its galleries to learn about Western Australia's treacherous coast, first European encounters, the riches of maritime trade and one of the deadliest mutinies in maritime history.

Located on Whadjuk Nyoongar land, the Museum is housed inside Fremantle's historic Commissariat buildings. Originally built to store the food, clothing and building supplies of the Swan River colony, these buildings are among the first Western Australian sites built using convict labour.

With the creation of the Commonwealth Historic Shipwrecks Act 1976, the Western Australian Museum became the delegated authority for management of Commonwealth historic shipwrecks and relics in Western Australia.

As a result, the State Government funded the conversion of the heritage Commissariat Buildings into what is now known as the WA Shipwrecks Museum. It opened to the public in 1979.

Entrance Gallery

The Entrance Gallery contains artefacts from Australia's first known shipwreck, the *Trial*, as well as the *Rapid*, *James Matthews* and stories from shipwrecks off the Ningaloo Coast.

Batavia Gallery

The *Batavia* Gallery is the centrepiece of the Shipwrecks Museum. The gallery houses the reconstructed remains of the VOC ship *Batavia*, excavated by archaeologists in the 1970s.

After an extensive treatment and restoration process, remains of the ship's stern were rebuilt in this gallery.

The gallery also features a skeleton of one of the people killed during mutiny conflict on the Abrolhos Islands, a replica of the impressive portico façade—carried as cargo to be used as a grand entrance to the city of Batavia—a reconstruction of the Captain's cabin, and numerous other artefacts recovered from the wreck.

There is an elevated viewing deck to look down upon the stern of the *Batavia*, allowing viewers to appreciate the size and scope of the wreck and gallery.

Hartog to de Vlamingh Gallery

This gallery features artefacts, charts, documents and books from Australia's early Dutch explorers. It explores the journeys of Dirk Hartog through to Willem de Vlamingh showcasing 100 years of Dutch explorations of Australia.

The Hartog to de Vlamingh Gallery also features the de Vlamingh plate, the model *Duyfken*, and a replica of Commandeur Francisco Pelsaert's expedition journal – which documented the horror of the *Batavia* mutiny.

The gallery's floor is built from wooden blocks made of jarrah, a local Western Australian timber crucial to the development of the State. These formed part of the Museum's original convict-constructed building.

Dutch Wrecks Gallery

Discover the fascinating stories and relics from the Dutch wrecks *Zuytdorp*, *Zeewijk*, *Vergulde Draeck* and *Batavia*.

This gallery includes coins, lace, cannons, maps, and pottery recovered from these wrecks.

Xantho Gallery

See the conservation and restoration of the SS *Xantho* steam engine after it spent more than a century underwater, and learn about the remarkable story of the Broadhurst family.

How to Explore the Museum



Several self guided trails and activities are available on the Shipwrecks Museum website.

Links are below. Please select the one that best suits your students' needs.

visit.museum.wa.gov.au/sites/default/files/2021-05/Exploration_and_Discovery_Student_Activity_WASM.pdf

visit.museum.wa.gov.au/sites/default/files/2021-05/A_is_for_Artifact_Student_Activity_WASM.pdf

visit.museum.wa.gov.au/sites/default/files/2021-05/Object_Analysis_Student_Activity_WASM.pdf

visit.museum.wa.gov.au/sites/default/files/2021-05/Teachable_Moments_Student_Activity_WASM.pdf

Professional Profile



Maritime Archaeologist

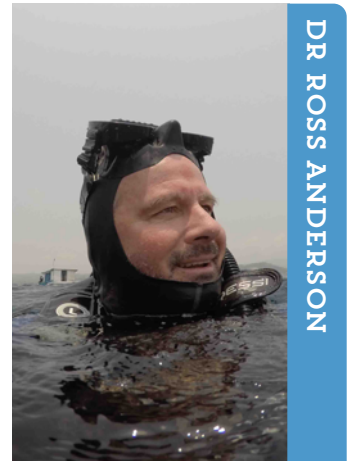
Dr Ross Anderson is a maritime archaeologist at the Western Australian Museum.

Maritime archaeologists explore sites underwater or close to bodies of water, such as shipwrecks, sunken submarines, aircraft wrecks, submerged cultural sites, even sunken cities. They study sunken vessels and the objects that were 'on board' to learn about the story of that wreck (where it was from, what the ship was being used for and how it sank), and what life was like at that point in history.

As a key part of his work, Ross goes out on a special boat, uses SCUBA diving equipment (and sometimes special underwater vehicles called remotely operated vehicles or ROVs), takes photos (with waterproof cameras) of wreck sites, records the details of sunken objects and carefully brings some of those objects to the surface for research or museum collections. Back at the lab, he studies the objects, researches their history, and often passes them onto the conservation team to remove 'concretion' that has built up on the object, restore damage or to use special techniques to protect the objects from further deterioration.

What skills and knowledge did Ross need to get this job? He has a degree in History, a Postgraduate Diploma in Maritime Archaeology and a PhD in Archaeology. His degree in History helps him to know about the period of time the ship comes from to be able to guess what the objects on board might be. Science knowledge also helps Ross to understand how different materials are affected by sea water, and how they change when brought to the surface after decades or even centuries of being submerged.

The highlights of Ross' career include excavating the wreck of HMS *Pandora* (1791) on Queensland's Great Barrier Reef. Ross was also involved in finding the colonial whaling shipwreck *Cheviot* (1857) at Wilsons Promontory in Victoria; excavating the SS *City of Launceston* (1865) in Port Phillip, Victoria, which is the most intact steam shipwreck in Australia (it still had pots on the galley stove!); and finding and excavating the well-preserved wreck of the American whale ship *Samuel Wright* (1841) in Bunbury.



Professional Profile



Maritime Historian

Dr Christine Porr is a curator and Collection Manager in the Maritime Heritage Department at the Western Australian Museum, with a focus on Maritime History.

Maritime history researches how people interacted with the sea, oceans and waterways, and how this has changed over time. Maritime historians study the history of ships and ship building, navigation, sea exploration, trade, navigation, lighthouses, fishing, whaling, pearling, maritime law, naval history, yachting and maritime art.

In Christine's job, she oversees the Maritime History collection by managing its storage and preservation, as well as the display of objects and new acquisitions. She researches artefacts and images to better understand our maritime past and how people interacted with the sea, the technology and science they used and how these relationships have changed. She also creates exhibitions by choosing objects that tell stories of our maritime past, while creating digital records like catalogues to add to the museum's collection of resources. Christine also looks at maritime related objects that people wish to donate to the Museum. An Acquisition Committee meeting carefully considers each donation. Some of these objects become part of the WA State Collection and a few very significant objects may even go on display for museum visitors to see.

What skills and knowledge did Christine need to get this job? She has a Masters degree in History and Art History and a PhD in Art History. Her research skills help her to study maritime objects and put them within the right context and time. Working with historical subjects and objects has taught her to be mindful and careful when handling old and delicate artefacts and the importance of preserving them for future generations.

Christine's career highlights include participation in creating exhibitions on the Bronze Age, crusaders and the Royal Australian Navy when HMAS *Sydney* (I) sank the German cruiser SMS *Emden* at Cocos Island in 1914. Christine has been studying the wreck of SMS *Emden* alongside maritime archaeologists to help tell this story.



DR CHRISTINE PORR

Back at School



Now that your class has visited the museum, you can explore some ideas in the classroom. Choose your focus areas and look through the activities to find ones that suit your class.

All activities are open ended to suit a wide range of year levels. Activities are linked to the Australian Curriculum. Links can be found in the table at the back of this document.

Maritime Archaeology (Science and History):

These ideas span the Science and History curriculum areas and look at how shipwreck objects are affected by water, how they are found and how they are conserved.

Maritime History (History):

These activities delve deeper into the History curriculum, and examine how shipwrecks reveal information about the past. This section is divided up into year levels with corresponding History themes.

Writing (English and History):

Using an historical perspective, this section suggests a range of writing styles/genres that can be used to express the information that they have researched.

Model Building (Technology and Design):

These ideas are presented as a series of worksheets (found in the appendices), which can guide you and your students through the process of designing and building their own model ships.



Science and HASS/History

The activities below can be adapted to various year levels by studying shipwrecks in the relevant historical period.

Job description:

What is a maritime archaeologist? Do some online research (use maritime museum websites as a starting point) and write a job description for one, including a list of the skills needed. Include a diagram of their outfit and equipment. What special equipment is required for extreme conditions e.g. ice, deep water, dark conditions, storms, sharks etc.? Once you have written your job description, swap with a partner and 'apply' for each other's jobs with a letter of application and a resume.

Diving design:

Design the ultimate diving suit or Remotely Operated Vehicle (ROV) for a maritime archaeologist. Consider some of the challenges you may have learned about during your visit to the Museum eg visibility, buoyancy, warmth, etc. Get inspired by researching existing outfits/machines but also the features of deep-sea creatures. Draw your design, or even make it out of recycled materials.

Submerged:

Maritime archaeologists find lots of objects that have been affected by their time underwater. Put different materials under water for a week and discuss the effects it would have for centuries. Include metal nails, food, pieces of wood, written letters, coins etc. Put some sand in the bottom of your water and bury some objects underneath. After a week, compare the state of the buried items to the ones that were simply submerged. Compare the results from fresh water to water that has been heavily salted. What do you observe? Which materials do you think would survive well in a centuries-old shipwreck? Now do some research and find out what happens to different materials if they are submerged in water for years or centuries.

Money matters:

Coins are one of the most interesting things that can be found on an old shipwreck. Brainstorm the information that coins can give us (from the materials they were made from, the way they were made, where they are made and the country they are from, how they are dated, which rulers are depicted, what other images are on them). Find out how they are affected under water (Google 'coin concretion shipwrecks') and how they are conserved when discovered. Design your own coin. What would you put on it? Do you think we will have coins in 20, 50, 100 years?

Pick a bone:

Bones from animals and humans are also found on some shipwrecks. In some instances, skeletons are found nearby a shipwreck (on land near where the ship sank, such as on the islands near the *Batavia* wreck). What can we learn from looking at skeletons? Consider things like height, gender, DNA, teeth, broken bones, diet and facial features. Imagine a person from one of the shipwrecks you are studying and using a standard picture of a skeleton, trace the outline and then add some features like missing teeth, broken bones, to identify that person.

On-board objects:

Research a shipwreck and the items on board. Where are they from? How can you tell? Where are the materials from? How can we find out an object's origin today and in the past? Research shipwrecks and objects found on board and the clues they give you.

Tiny things:

Sometimes very small items can be found on shipwrecks, such as a mouse jaw or a button. Find five to ten tiny objects that can all fit inside a match box. What do they tell us about our world today?

Exploring ethics:

When shipwrecks are discovered, who do they 'belong to'? Who should keep the objects found on the wreck? Hold a class debate on two opposing views on this and then find out about wreck protection and the different laws that exist. Hold other discussions and debates on things like: Should items on a shipwreck be brought to surface or left where they are? If brought to the surface, should we try and repair/restore or conserve things or should we keep them as they are?

Ships in the past:

Choose a shipwreck from the past and look closely at the design of the ship (what it is made from, how it is powered, how navigation works on the ship) and compare to a modern ship or another modern form of transport such as a bus, a car or a plane. Make a class list to discuss these differences.

Objects in the past:

Explore images of museum objects from shipwrecks (using online sources or photos taken from your Museum visit). Find or draw pictures of something from today that is used for the same purpose. Talk about the similarities and differences. How have changes in technology changed how this object is made or used?

Then and now:

Looking at a map of the world, hold a class discussion on why there are more shipwrecks from the past than there are today. Talk about things like the fact that people used to have to travel further to get certain things that were not available in their own country. Also talk about how plane travel did not exist in the past centuries. Talk about how ship design, on-board technology and navigation has improved, resulting in fewer shipwrecks.



HASS/History

Year 4 History

Big companies:

The *Batavia* was a Dutch trade ship from the Dutch East India Company (VOC). Find out about the VOC and the other major trading companies during the 17th and 18th Centuries, such as the British East India Company. How and why did they start? How did trade impact on exploration and ship technology? Why was it important that faster trade routes (such as the Brouwer route) were found? How did these new routes change how and where ships were wrecked?

Trade fair:

What was on the *Batavia* and other trade ships of that time? Research all of the things that were traded in the 17th Century such as spices, textiles, ceramics, foods, jewellery, etc. Find out what countries these items were from and mark these locations on a map. Use this as an introduction to why trade ships had to travel so far and why many shipwrecks are from this era. Discuss how the distance travelled to obtain items affected their cost. Source these items from home or make models of them in class and set up a trade market. Create copies of coins to trade the items.

Finding your way:

Learn about the history of navigation and the tools used to navigate. Include finding out about how Aboriginal peoples and other cultures use the sun and stars for navigation. Turn your research into a timeline. For each technique or tool, draw a picture and write down what it can and can't do. Think about how each one might result in a shipwreck (for example, tools that only reveal latitude don't tell ships how far east or west they are travelling, resulting in a lack of knowledge that allows ships to 'run into' coastlines). Use materials to make simple versions of some of these tools e.g. simple magnetic compass, lead line, log line, etc.

Impact of encounters:

Before permanent European settlement, many interactions with Aboriginal and Torres Strait Islander peoples were brief sightings or fleeting encounters. However, there still would have been impacts made on these peoples as a result of these interactions. Brainstorm all of the possible impacts, for example: how Aboriginal or Torres Strait Islander peoples may have felt when they saw European ships arriving; anything that might have been left behind such as fires and campsites set up by explorers, remnants of shipwrecks and diseases etc.; as well as the longer-term impacts of the mapping and naming of these areas on Aboriginal and Torres Strait Islander peoples.

First contacts:

Some early contacts between Europeans/ Americans and the Aboriginal and Torres Strait Islander peoples in Australia and other First Nations peoples of other places in the world have occurred as a result of shipwrecks. Early known shipwrecks along the WA coast included the *Batavia* (1629) the *Vergulde Draeck* (1656) and the *Zuytdorp* (1712). Compare Inuit oral histories of HMS *Terror* and HMS *Erebus* (1845) to the Aboriginal stories of Dutch wrecks from the 1600s and 1700s. Find out what evidence actually exists of these encounters and what people have theorised over the years.

Mutiny mayhem:

The planned mutiny on the *Batavia* (1629) led to some very famous Australian shipwreck stories. Write a newspaper article or a script for a live report on it.

On objects:

Research a range of shipwrecks between the 1500s and the late 1700s. Find images of objects found from these wrecks. What is the object? What was it made from? How was it used? Who owned/used it? What does it tell us about that time? Make a poster comparing the objects to their modern equivalent.

Year 5 History

Colonial characters:

The British Navy's HMS *Pandora* was wrecked in 1791 whilst searching for another ship, called the HMS *Bounty*, which was on a mission to transport breadfruit to the West Indies, but was side-tracked because of a mutiny. The captain of the *Bounty*, William Bligh, was recommended to British Naval authorities to command the *Bounty* expedition by botanist Joseph Banks. Find out about William Bligh and Joseph Banks and write a resume for them, outlining their role in the colonies.

Local lore:

Colonial shipwrecks contain a wonderful time capsule of information. Research one of the following ships that got wrecked or almost wrecked off the coast of WA, including the *Parmelia*, *Marquis of Anglesea*, *Eglinton*, *James Matthews*. Find out who was on board, how and why the ship was wrecked, and what happened afterwards. Use the information you found to make a poster, write a report or a digital display or a newspaper article.

Early migrants:

Find out some of the reasons why early migrants came to live in Australian colonies in the 1800s. Include specific groups of people who made a large contribution to the colony, such as Japanese pearl divers and Chinese gold miners. Find out more about the journey of these people as they came to Australia to find work in these industries.

Convict transport:

Find out about the conditions on board convict transport ships in the 1800s. Draw a picture of a cross section of a ship with convicts on board. Once the cross sections have been drawn by all class members, talk about what might have happened if any of these ships became wrecked. This link might be a good starting point for research:

nla.gov.au/research-guides/convicts/the-voyage

Year 6 History

Migrant stories:

Early ships to WA had many migrants on board. Can you find out about and retell one of their stories? Present your findings in the form of a letter, a diary entry, a model of a suitcase or short play. Find other migrant stories, for example, people who came from overseas to live in your home city/state. Learn as much as you can about their journey to their new home and write another piece about their experience. Some examples of migrant stories can be found here:

museum.wa.gov.au/explore/stories-shore-stories-sea

Continental connections:

There are many connections that Australia had with other countries between 1900 and 2000. Research some of the shipwreck events in Australian waters that happened in your state in the 20th century. Record where each ship was coming from and why they were travelling on a map of the world (mark each route with a coloured line showing the country of origin and the site of the wreck. Along the line, write the date and the reason for the journey). Search online for "List of shipwrecks of Australia" to find a starting point. How many different reasons can you identify for travel by ship to and from Australia?

Year 7 History

Mapping matters:

Use a map that you find online to describe the pattern of movement of humans "out of Africa" and across other continents over time and looking at the types of evidence of these movements (for example, stone tools, human remains and cave paintings). Consider what parts of this movement may have required vessels to cross bodies of water. Create some graphics to show where boats would be required.

Cultural connections:

The cultures and heritage of Aboriginal and Torres Strait Islander peoples of Australia can be traced back for tens of thousands of years. Find out the sustainable ways that Aboriginal and Torres Strait Islander peoples have made watercraft. Look at your local area and talk about what resources you could use (do not actually use them). How would you know or find out if these materials are native plants? How could you know if these materials have the right properties to make a safe and reliable vessel? Use this link to find out more:

sea.museum/2016/12/15/australias-first-watercraft_

Long ago:

Choose an ancient shipwreck and research to find out what daily life was like at the time, what materials and technology were being used, how far away the key materials used to make things came from, and what the trade patterns were like at the time.

Preserving the past:

There are several different ways that objects from ancient times can be preserved. Compare the ways that ancient tombs, volcanic eruptions and shipwrecks have preserved artefacts from ancient cultures from more than 3000 years ago. You might like to use the following as specific examples to compare in a table: The eruption of Vesuvius over the city of Pompeii nearly 2000 years ago, the sinking of the Uluburun ship around 3,300 years ago and the construction of the tomb of Tutankhamun, also around 3,300 years ago. How did each event preserve objects from the past? When and how was each one rediscovered? What objects were found to be preserved and what can we learn about the past from each?



English

The activities below can be adapted to various year levels by studying shipwrecks in the relevant historical period.

Oral history:

Learn about how oral histories are passed down through generations and how they are recorded. Using found items or recycled materials, make a replica or model of a suitcase of items carried by a passenger on a chosen ship. Write a script for an oral history, describing the event of a shipwreck, and use props to perform it.

Captain's journals:

Research captain's journals and what they can tell us about related shipwrecks. Find out about life on board a ship, the roles of the crew, the equipment that they used and the things they encountered and saw. Think about how they might describe their own shipwreck and the events that surrounded it. Look at examples like Pelsaert's journal from the *Batavia* and write your own version of a captain's journal.

museum.wa.gov.au/maritime-archaeology-db/maritime-reports/batavia-journal-francisco-pelsaert

Passenger diary:

A passenger's diary might look very different to a captain's journal. They would be filled with personal details, and whilst they might contain some information about the events on a ship, they might also leave out large chunks of information or present a very biased point of view. As a class, decide on a specific shipwreck, such as the *Batavia*. Find out about the ship and the events leading up to the wreck. Each person can research a different surviving passenger on board. For some people there might not be much information. Write some diary entries of the chosen person, outlining the days before and after the wreck.

Letters:

Letters are a very important first-hand account of events such as shipwrecks. Shipwreck survivors often wrote to their loved ones describing the terrifying or exciting experience they had in surviving the event. Search online to find some examples of letters written by shipwreck survivors (search for "shipwreck survivor letters") and then research a famous shipwreck and write your own letter. You may wish to do an image search of these letters and then write with calligraphy pens for an authentic effect. Try also to look at the letter format and language used at the time of the wreck so you can imitate it.

Report it – Part 1:

News reports are usually aimed at presenting the most accurate facts of an event, but this is not always the case, especially if you are relying on witness accounts to write your piece. Create a mock disaster scenario in the classroom (for example, ask another teacher, without prior warning, to burst into the room, drop a whole pile of papers or the like). After the event, collect a variety of eyewitness accounts for the students about what happened, what the teacher said, what they were wearing, etc. Compare each student's version of the event. What facts are varied? What does this tell us about historical accounts?

Report it – Part 2:

Write a news report on a famous shipwreck by imagining that you arrive at the scene of the wreck or the place where survivors are arriving after being rescued. Consider different points of view, how you get your information, who you interview, the tone and purpose of your piece. For background information, search online for news of shipwrecks and search the National Library of Australia's historical document database Trove for articles about the older wrecks (try searching for the term 'wrecked' under 'Newspapers and Gazettes'). See if you can find any letters that describe shipwrecks and think about how individuals describe the event.

Just the facts:

News reports can often be biased and can reflect the opinions or views of the writer or the people they interview. Other articles or papers, such as those found in scientific or historical journals or encyclopedias, are more careful about only including the facts, often backed up with solid evidence. Research a famous shipwreck using the best sources you can find (e.g. museum websites, government websites or encyclopedias) and write a factual article or essay using whatever structural requirements you usually use in your classroom.



Design and Technologies

Use the sheets in the appendices to guide your students through the design process and encourage them to keep all the sheets, along with photos or pictures of each stage, in a design portfolio.

Here is a summary of the stages:

Plan your model

Students use these pages to decide the following:

1. What the purpose of their model will be:
 - To help it could be used in a puppet-style show or in a stop-motion animation film.
2. The type of ship their model will represent, for example: trading/cargo, exploration, war, passenger travel, leisure, science, fishing.
3. The real ships that will inform and inspire their model design.
4. The main features that their model will have, for example: Does the model need to be waterproof, float, be mounted for display?

Research your model

Students use this page to gather more information on the type of ship they are modelling and will choose one ship to research, finding out details such as its name, where and when it was built, what it was made from, how it was powered and what technology was on board.

Draw a diagram of your model

Students use this page to plan a diagram, with all parts labelled, materials and scale considered.

Gather materials, equipment and safety

This page will help students decide on the properties (eg malleable, sturdy, waterproof, floatable) and availability of the materials, as well as thinking about whether any of these materials require testing, and which materials are sustainable choices.

They will also consider the tools they will need to build the model, and any safety considerations required when building.

Test and record

These pages help students to go through the scientific method of testing properties of materials, shape, movement, cargo and more. A template is provided to enable students to write their question, prediction, materials, testing methods, observations and evaluation.

Build your model

A checklist is provided to help students finalise their plans and record things as they build.

Evaluate your model

A range of questions are provided to help students evaluate if the model's purpose was achieved, and if the appearance, features and materials met expectations.

Use your model

Once students have built their model, they can display it or use it for testing or demonstrating ideas. Included in the appendices are some ideas for how students can interpret, use or add to their models.

Other Resources



Visit the Education pages for the WA Maritime Museum and WA Shipwrecks Museum on the WA Museum website to find out more about our facilitated programs.

visit.museum.wa.gov.au/maritime/education-programs

visit.museum.wa.gov.au/shipwrecks/education-programs

Online resources:

These pages on our website also contain a lot of useful information that can be used for further research:

museum.wa.gov.au/immerse/

museum.wa.gov.au/marine-maritime-studies-student-resources/year-12-unit-3

museum.wa.gov.au/marine-maritime-studies-student-resources/

museum.wa.gov.au/marine-maritime-studies-student-resources/year-11-unit-1/

museum.wa.gov.au/explore/hmas-sydney-ii-introduction/history-hmas-sydney-ii/legal-protection

museum.wa.gov.au/explore/sydney

museum.wa.gov.au/explore/education/shipwrecks/deep-light-learning-resources

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Build a Model Ship | Plan



Your model's purpose

People build models for all sorts of reasons. Here are a few examples below.

To test a science concept, such as:

- What shapes work best to keep a ship afloat?
- What is the best shape and sail design to make a ship sail fast?
- How do keels and rudders make a ship go faster?
- What sorts of things make a ship sink?

To create an interesting display:

- For your classroom or library
- For a museum or a school science fair
- To be shown online

To help tell a story:

- To be used in a puppet-style show
- To be used in a stop-motion animation film

What is the purpose of your model ship?

Write your ideas here:



The type of ship

There are lots of different types of ships. Your design will depend on what the ship (in real life) is used for. (If your model is just to test a concept, like the best shape or sail design, this stage is not as important, but it could still help).

- Trading/Cargo: Taking lots of trade items to or from another country
- Exploration: Exploring a new part of the world
- War: Protecting your country at sea
- Passenger travel: Taking people (such as migrants) from one place to another
- Leisure: Taking passengers on a fun cruise
- Science or Research: Investigating marine life, ocean patterns or shipwrecks
- Fishing: Catching deep sea fish

What type of ship will your model be? Write your ideas here:

Build a Model Ship | Plan



Your model's inspiration

You will need to do some research to help you design your ship. Finding images of real ships is an important part of your design process. Answering these questions will help you find the right images.

Is it a model of a real ship that you have been researching? OR Is it a made-up ship that just looks similar to ships from a certain time?

What year or time period did your model ship come from (eg 3,000 years ago, 1700s, 1912)?

Is your ship a sailing ship, a steamer or an engine-powered ship?

Make a list of your research sources here (eg books, websites, real life ships, etc). Use the next activity page to carry out your research.



Your ship's features

When planning your model, you will need to think about all the questions you have answered, like your model's purpose, the type of ship and your model's inspiration, to decide on some major features for your model.

- Does your model need to be waterproof?
- Does your model need to float?
- Does your model need to be mounted on something for display?
- Does your model need to move (or have some moving parts)?
- Is the appearance of your model important (if just being used to test an idea, then perhaps it does not need to 'look good')?
- Will your model need a storage container?

Using the space below, make a list of some of the other features that you would like your model to have:



Researching your model

You will now need to do some research to find some ships that are similar to the one you want to model. Here are some ideas:

- Take photos of model boats in the WA Shipwrecks Museum.
- Use these links to find the names of ships that have sunk. This will give you the name and type of ship eg "Three-masted iron sailing barque" which you can then do an image search for online.

museum.wa.gov.au/research/departments/maritime-archaeology/wreck-finder
museum.wa.gov.au/explore/month-shipwrecks

From your research, choose ONE ship which you can use as your inspiration for your model.

What is the name of the ship you are basing your model on?

What year was it built?

In which country was it built?

What materials was it made from?

How will you replicate these materials in your model?

How was it powered?

How will you demonstrate or show this on your model?

What technology was on board?

How will you demonstrate or show the technology on your model?

What are some of the main parts of the ship and what is their purpose? E.g. keel, rudder, sail, etc.

Draw a rough sketch of the ship on the back of this page, labelling as many parts as you can.



Draw a diagram of your model

For your ship model, use this page (or additional pages) or a digital drawing application/program to create a planning diagram.

What are the parts of the ship that you can label? Find diagrams to get ideas and use words like: deck, hull, hold, bow, bowsprit, stern, keel, tiller, rudder, mast (foremast, main mast), sail.

What materials was the real ship made from and what materials could you make them from in a model? Include both in your diagram labelling.

The real ship is made from:

My model will be made from:

What scale will your ship model be? Find out how big the ship was in real life and choose the best scale:

1:50 (1cm = 50cm) may work well for a ship like the Uluburun ship, which was 15m long

1:100 (1 cm = 1m) may work well for a ship like *Batavia*, which was 46m long

1:500 (1 cm = 5m) may work well for a ship like RMS *Titanic*, which was 269m

My ship's scale will be:

Build a Model Ship | Gather



Plan materials, equipment and safety

For your ship model, decide what materials you will use to make it. You will need to think about what you need and what you have available to you.

What properties are required for the materials that you use? Tick the boxes next to each word:

- ☐ Malleable/mouldable
- ☐ Sturdy
- ☐ Light
- ☐ Waterproof
- ☐ Easy to join/attach
- ☐ Buoyant (it floats)

What materials can you obtain at school/home? Tick the ones that you can use. Place a star next to materials that can be recycled.

- ☐ Cardboard/ boxes/tubes/milk cartons
- ☐ Light wood/pop-sticks
- ☐ Aluminium foil/foil containers
- ☐ Recycled plastic bottles/containers
- ☐ Plasticene/dough
- ☐ Papier-mâché

Are there any materials you need to test? Use the Testing and Recording sheets to do this.

What tools might you need to use to manipulate your materials:

Cutting tools e.g. scissors, Stanley knives.

Adhesives e.g. glue, tape, hot glue gun.

What safety considerations do you think need to be considered? e.g. cutting carefully, using hot glue gun safely, etc.

Gather your materials and equipment ready to build.



Testing and recording

There are various things you can do to test your model as you build it. Read these questions below and then use the next sheet to test and record your findings.

Testing materials:

Think about what you will be using your model for and decide if you need to test any materials. Choose one or more questions below to guide your testing:

- Which materials are waterproof?
- Which materials are malleable (can be moulded into shape)?
- Which materials float?
- Which materials are strong enough to take weight? (if you plan to fill your ship with "cargo")
- Which materials are strong enough to avoid damage?

Testing shape:

Once you have decided on your materials, you may wish to test various shapes to make sure you have the best one for your model. Choose one or more questions below:

- Which shapes float for the longest?
- Which shapes move fastest through water?
- Which shapes hold the most weight?

Testing movement:

After you have your basic shape, you can test some different things to see if they make your ship move faster.

- Which sail designs make the ship move fastest?
- Which keel or rudder shapes make the ship move fastest?

Testing cargo:

Find something to represent cargo (e.g. marbles, metal washers, LEGO® bricks) and test the best placement to keep your ship balanced and floating.

- Which part of the ship is the best place to place cargo?

Testing shipwrecks:

Think about some things that might cause a shipwreck and test some ideas to think about what might happen in this event.

- Which "surfaces" cause the most damage to my ship?
- What designs can prevent my ship from sinking (explore design ideas to create and test watertight compartments)?



Testing and recording sheet

Question:

Prediction:

Materials required:

Test 1:
Observations:

Test 2:
Observations:

Test 3:
Observations:

Evaluation:



Build your model

Now for the fun part!

Before you build your ship, make sure you have completed the following:

- Decided my model's purpose
- Decided on the type of ship
- Researched the type of ship I am building
- Included any features my ship needs
- Drawn a labelled diagram of my ship (and decided my model's scale)
- Planned and gathered the materials I need to build my ship
- Tested the materials, shape, movement or cargo

You are ready to build your ship!

You might like to make some drawings or take photos along the way.

You also might like to record any changes on your original diagram or in the space below:



Use your model

Once you have built your model, you can now display it or use it. Here are some ideas:

- What would people learn from your shipwreck? Can you write some interpretive text as if it was a museum display? Who is your audience? If you have recently been to a museum, look at some of the photos to get an idea of how to write labels and text panels for a display.
- Search online for more information on your chosen ship. You might find some photos or paintings. You may discover passenger lists or a captain's log. Can you add a backdrop, some figurines or some extra items on board to your model that helps bring it to life?
- Find out about the crew on your ship. Add small figures to your ship models doing the different jobs. What skills would they have and how would they come in handy if the ship was wrecked?
- Turn part of your model into an internal cutaway: Look at class structure – what different people were on board and where did they work/eat and sleep? How can you depict this in a model?
- Can you use your model to tell a story? Use it like a 'stage' to move the ship or the people on it. You may even wish to use small figures (eg LEGO® or plasticene) to make a short stop-motion animation film?
- Add ideas for making the ship safer in the event of a shipwreck. For example, lifeboats, flotation devices, beacons, safety rations kit, etc.
- Develop some ideas to prevent shipwrecks in the future. For example, watertight compartments, better storage for cargo, stronger materials on the hull, etc.
- Include electrical energy (small circuits) to make the ship move or create light on board.
- Make a large 'iceberg' out of a balloon or another container filled with water. Use your model to explore how the ship might encounter the iceberg.

Write your idea for how you will use your model below:

Build a Model Ship | Evaluate



Evaluate your model

Now it is time to evaluate your model ship. Use these questions below to write some comments. Then come up with some of your own criteria to evaluate your model:

My model achieved the original purpose that I set for it:

My model looked like the type of ship I was building:

My model had all the features that I needed to make it work or to tell its story:

My model and my labelled diagram looked similar:

My materials all worked how I wanted them to on my model:

My model helped me to test the things I wanted to test:

Write some ideas here on what else you wanted to achieve with your model:

Curriculum Links



The following links can be made between the classroom activities and the Australian Curriculum.

DESIGN AND TECHNOLOGIES

Year	Content Descriptions	Activity
4	<p>Knowledge and Understanding</p> <p>Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs (ACTDEK010)</p> <p>Investigate how forces and the properties of materials affect the behaviour of a product or system (ACTDEK011)</p> <p>Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (ACTDEK013)</p> <p>Processes and Production Skills</p> <p>Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions (ACTDEP014)</p> <p>Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (ACTDEP015)</p> <p>Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions (ACTDEP016)</p> <p>Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment (ACTDEP017)</p> <p>Plan a sequence of production steps when making designed solutions individually and collaboratively (ACTDEP018)</p>	<p>Model Building: All activities</p>

Year	Content Descriptions	Activity
5–6	<p>Knowledge and Understanding</p> <p>Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions (ACTDEK031)</p> <p>Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment (ACTDEK034)</p> <p>Processes and Production Skills</p> <p>Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas (ACTDEP035)</p> <p>Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques (ACTDEP036)</p> <p>Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions (ACTDEP037)</p> <p>Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability (ACTDEP038)</p> <p>Use project management processes when working individually and collaboratively to coordinate production of designed solutions (ACTDEP039)</p>	<p>Model Building: All activities</p>

Year	Content Descriptions	Activity
4	<p>Science Understanding: Chemical Sciences Natural and processed materials have a range of physical properties that can influence their use (ACSSU074)</p> <p>Science Understanding: Physical Sciences Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)</p> <p>Science Inquiry Skills – All</p> <p>Science as a Human Endeavour: Nature and development of Science Science involves making predictions and describing patterns and relationships (ACSHE061)</p> <p>Science as a Human Endeavour: Use and influence of Science Science knowledge helps people to understand the effect of their actions (ACSHE062)</p>	<p>Model Building: Testing & recording</p> <p>Maritime Archaeology: Job description</p>
5	<p>Science Inquiry Skills – All</p> <p>Science as a Human Endeavour: Nature and development of science Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE081)</p> <p>Science as a Human Endeavour: Use and influence of Science Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE083 – Scootle)</p>	<p>Model Building: Testing & recording</p> <p>Maritime Archaeology: Job description</p>
6	<p>Science Understanding: Chemical Sciences Changes to materials can be reversible or irreversible (ACSSU095)</p> <p>Science Inquiry Skills – All</p> <p>Science as a Human Endeavour: Nature and development of Science Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE098)</p>	<p>Maritime Archaeology: Submerged; Money matters, Pick a bone</p> <p>Model Building: Testing and recording</p> <p>Maritime Archaeology: Job description</p>
7	<p>Science Inquiry Skills – All</p> <p>Science as a Human Endeavour: Use and Influence of Science Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE223)</p>	<p>Model Building: Testing & recording</p> <p>Maritime Archaeology: Job description</p>

Year	Content Descriptions	Activity
4	<p>History</p> <p>The journey(s) of AT LEAST ONE world navigator, explorer or trader up to the late eighteenth century, including their contacts with other societies and any impacts (ACHASSK084)</p> <p>Stories of the First Fleet, including reasons for the journey, who travelled to Australia, and their experiences following arrival (ACHASSK085)</p> <p>The nature of contact between Aboriginal and Torres Strait Islander Peoples and others, for example, the Macassans and the Europeans, and the effects of these interactions on, for example, people and environments (ACHASSK086)</p>	<p>Maritime History</p> <p>Year 4 Activities</p>
5	<p>History</p> <p>The nature of convict or colonial presence, including the factors that influenced patterns of development, aspects of the daily life of the inhabitants (including Aboriginal Peoples and Torres Strait Islander Peoples) and how the environment changed (ACHASSK107)</p> <p>The reasons people migrated to Australia and the experiences and contributions of a particular migrant group within a colony (ACHASSK109)</p>	<p>Maritime History</p> <p>Year 5 Activities</p>
6	<p>History</p> <p>Stories of groups of people who migrated to Australia since Federation (including from ONE country of the Asia region) and reasons they migrated (ACHASSK136)</p> <p>Geography</p> <p>Australia's connections with other countries and how these change people and places (ACHASSK141)</p>	<p>Maritime History</p> <p>Year 6 Activities</p>

Year	Content Descriptions	Activity
7	<p>Overview of the ancient world</p> <p>The theory that people moved out of Africa around 60 000 BC (BCE) and migrated to other parts of the world, including Australia (ACHASSK164)</p> <p>The evidence for the emergence and establishment of ancient societies (including art, iconography, writing tools and pottery) (ACHASSK165)</p> <p>Key features of ancient societies (farming, trade, social classes, religion, rule of law) (ACHASSK166)</p> <p>Investigating the ancient past</p> <p>How historians and archaeologists investigate history, including excavation and archival research (ACHASSK167)</p> <p>The range of sources that can be used in an historical investigation, including archaeological and written sources (ACHASSK168)</p> <p>The methods and sources used to investigate at least ONE historical controversy or mystery that has challenged historians or archaeologists, such as in the analysis of unidentified human remains (ACHASSK169)</p> <p>The importance of conserving the remains of the ancient past, including the heritage of Aboriginal and Torres Strait Islander Peoples (ACHASSK171)</p> <p>The Mediterranean world</p> <p>The significant beliefs, values and practices of ancient Greece, Egypt or Rome, with a particular emphasis on ONE of the following areas: everyday life, warfare, or death and funerary customs (ACHASSK174)</p> <p>Contacts and conflicts within and/or with other societies, resulting in developments such as the conquest of other lands, the expansion of trade, and peace treaties (ACHASSK175)</p>	<p>Maritime History Year 7 Activities</p>

ENGLISH

Year	Content Descriptions	Activity
All	<p>Language</p> <p>Text Structure and Organisation; Expressing and Developing Ideas</p> <p>Literacy: Creating Texts</p> <p>The natural, managed and constructed features of places, their location, how they change and how they can be cared for (ACHASSK031)</p>	<p>Writing</p> <p>All</p>