



SEA COUNTRY STORIES

Ngarrindjeri Ruwi



Teacher Resources - Lesson Plan





Australian Curriculum Objectives



Science - Years 5 & 6 (Stage 3)

[AC9S5U04](#)

Explain observable properties of solids, liquids and gases by modelling the motion and arrangement of particles

[AC9S5H01](#) / [AC9S6H01](#)

Examine why advances in science are often the result of collaboration or build on the work of others

[AC9S6U04](#)

Compare reversible changes, including dissolving and changes of state, and irreversible changes, including cooking and rusting that produce new substances

[AC9S5I03](#) / [AC9S6I03](#)

Use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.

This resource is designed for students of all ages from Years 5-10, in line with the Australian Curriculum cross-curriculum priorities: **Aboriginal and Torres Strait Islander Histories and Cultures**

[A_TSICP1](#)

First Nations communities of Australia maintain a deep connection to, and responsibility for, Country/Place and have holistic values and belief systems that are connected to the land, sea, sky and waterways.

[A_TSIC2](#)

First Nations Australians' ways of life reflect unique ways of being, knowing, thinking and doing.



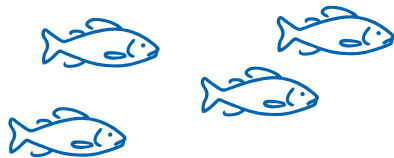
In this 50-60 minute lesson for ages 10+, learners explore different adhesives that were used by Aboriginal and Torres Strait Islander peoples. Learners will then make their own adhesive and determine how much weight it can hold.

Key terms

- Aboriginal and Torres Strait Islander
- Adhesives
- Reversible changes
- Irreversible changes
- Hafting
- Resin
- Liquids & solids

You will need

- [AIATSIS Map of Indigenous Australia](#)
- [Sea Country Stories](#) film
- Factsheet (page 5)
- Activity sheet (page 6)
- Experiment ingredients & materials (page 6)



Key questions

- What is an adhesive?
- What are common adhesives used by Aboriginal and Torres Strait Islander peoples?
- Why is making this adhesive an example of an irreversible change?

Class Activities

- Learners participate in an Acknowledgement to Country
- Learners watch a short clip from the [Sea Country Stories](#) film
- Learners read through the factsheet in groups of 3-4 (page 5)
- Learners make their own adhesive and experiment with it using the Activity sheet (page 6) as a guide



Lesson plan: Sea Country Stories

Appropriate Terminology

Language is a powerful tool for communication. The words we use are active, and can impact on the attitudes of those we speak to. Reconciliation Australia has created the following guidance around appropriate and respectful terminology to use when teaching about Aboriginal and Torres Strait Islander histories and cultures. Below is an abridged version of this guidance, however teachers are encouraged to read the entire document at <https://www.reconciliation.org.au/wp-content/uploads/2021/10/inclusive-and-respectful-language.pdf>

Aboriginal and Torres Strait Islander peoples

Using 'Aboriginal and Torres Strait Islander' is most often considered best practice.

- 'Aboriginal' (and less commonly accepted variants such as 'Aboriginals' or 'Aborigines') alone is also not inclusive of the diversity of cultures and identities across Australia
- As a stand-alone term, 'Aboriginal' is not inclusive of Torres Strait Islander peoples, and reference to both peoples should be spelt out where necessary.

First Nations and First Peoples

Other pluralised terms such as 'First Nations' or 'First Peoples' are also acceptable language, and respectfully encompass the diversity of Aboriginal and Torres Strait Islander cultures and identities.

Acknowledging diversity

Pluralisation should extend to generalised reference to Aboriginal and Torres Strait Islander 'histories,' 'perspectives,' 'ways of being,' 'contributions,' and so forth. This acknowledges that Aboriginal and Torres Strait Islander peoples are not homogenous.

Indigenous

In some parts of the country, the term 'Indigenous' can be considered offensive. That is, it has scientific connotations that have been used historically to describe Aboriginal and Torres Strait Islander peoples as part of the 'flora/fauna' rather than the human population of Australia. It can be seen as a problematically universalising or homogenising label for what are, in reality, highly diverse identities.

Unacceptable terms

Assimilationist terms such as 'full-blood,' 'half-caste' and 'quarter-caste' are extremely offensive and should never be used. Other terms which carry negative connotations and should never be used include Aborigines, native/native Australians, disadvantaged, lost (e.g. Lost language, cultures).





Starter (5 - 10 mins)

Begin this lesson with an Acknowledgement to Country. You can find out which country you are on by using the [AIATSIS Map of Indigenous Australia](#).

Note: The difference between a Welcome to Country and an Acknowledgement to Country is that a Welcome is only given by a First Nations person who is local to the country you are on. A person of any background can make an Acknowledgement to Country.

Next, inform learners that they are going to watch a short clip from South Australia, in which a Ngarrindjeri elder Major Sumner explains how he makes spears out of natural materials in the environment. Show learners the [Sea Country Stories](#) film from 03:06 to 08:52.

Main activity (35 - 40 mins)

Explain to learners that they are going to learn and experiment with ‘adhesives’ in this lesson. You can start by telling learners what an adhesive is and provide some examples. You could say:

An adhesive is a substance that sticks to something and is often used to join objects or materials together. An adhesive could be tape, glue, cement or even flour and water mixed together.

In groups of 3-4, learners read the factsheet (page 5) about ways that Aboriginal and Torres Strait Islander peoples used natural adhesives such as resin and beeswax. In the same groups, learners will then make their own adhesive with milk powder and vinegar. Learners will then experiment with how much weight their adhesive can hold by placing varying weights of water onto popsicle sticks joined with their homemade adhesive. Learners will use the activity sheet (page 6) to help guide them in their experiment. It is recommended that the experiment part of this lesson be completed outside in case any water spills.

Discussion (10 mins)

As a class, determine what the maximum weight was that the adhesive was able to hold. Explain to learners how the process of making this adhesive is an example of an irreversible process as the milk needs to curdle in order for the adhesive to be made.



Factsheet: The Use of Adhesives

Remember: An adhesive is a substance that sticks to something and is often used to join objects or materials together.

Adhesives have been used for thousands of years across many different cultures in many different ways. Aboriginal and Torres Strait Islander peoples used natural adhesives such as resin and beeswax. Resin was often harvested from spinifex, acacias and grasstrees.



From left to right: spinifex grass, acacia, grasstrees

The most common uses of resin by Aboriginal and Torres Strait Islander peoples includes weapon crafting, tool hafting (the process of attaching an artifact like bone or stone to a handle), container sealing and waterproofing. As resin glue on its own isn't very strong, it would be combined with other materials such as plant fibres or animal sinew to add strength.



An axe hafted with adhesive



Major Sumner - an Ngarrindjeri elder crafting a 'kaiki' spear

Instructions: Making an Adhesive

Ingredients:

- 1/4 cup hot water
- 1 tbsp vinegar
- 2 tbsp powdered milk
- 1/2 tsp baking soda
- Water

Materials:

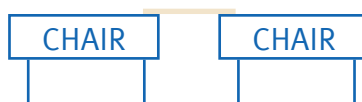
- Measuring jug
- Coffee filter paper (cone-shaped)
- Tall glass
- Bowl/container
- Popsicle sticks
- Paper cup

Instructions:

1. Mix hot water with powdered milk in a measuring jug until its dissolved.
2. Stir your vinegar into the mixture and watch as the milk begins to separate into a liquid and solid.
3. Pour your milk mixture into a coffee filter placed over a tall glass. Slowly lift your coffee filter as the liquid drains and squeeze it to remove any excess liquid.
4. Place your milk solids (from the coffee filter paper) into a bowl/container and break into smaller pieces.
5. Add another 1 tsp of water and add 1/8 to 1/4 tsp of baking soda to the milk solids.
6. Mix well until the adhesive becomes smooth. If the mixture is too thick, add a small amount of water. If it's too lumpy, add more baking soda.
7. Now it's time to test it! Use your adhesive to stick two popsicle sticks end to end, like so:



8. Then, place your glued popsicle sticks between two chairs like so:



9. Pour some water in a paper cup and weigh it on a scale. Place your cup of water on your popsicle sticks where they are joined together to see if your adhesive can hold the weight. You can keep adding water to your cup to make the weight heavier, just make sure you weigh your paper cup first and note down the weight in the table below:

Weight (grams)	Did the adhesive hold? (Yes/no)
Heaviest weight:	