Australian Government
Geoscience Australia

EDUCATION PROGRAM

Making fossils at home

Fossils are a great window into the past because they preserve evidence of animals, plants or other living things that are no longer alive today. A scientist can use fossils to learn about extinct species, what they looked like, how they lived and even what they ate. They can also use fossils to understand evolution and why life looks and acts as it does today.

Would you like to make your own fossil? This activity sheet explores the process of fossilisation and ways to make pretend fossils using plaster of Paris. All activities can be undertaken using readily available materials.

Audience

Primary aged children with adult supervision.

Making a fossil

Materials

- Air dry clay (no firing required) or plasticine. You may also use play dough but less fine detail will be retained.
- Selection of potential 'fossils' – shells, leaves, bones, plastic animal toys etc. (must be strong enough to be pressed into the clay).
- Plaster of Paris *(please follow manufacture's Safety Directions)*
- Disposable cup/container
- Paddle pop stick/plastic teaspoon
- ¼ cup measure
- 30 ml water – roughly equivalent to 6 teaspoons

Method

Part one – making the fossil mould

1. Choose a shell, leaf or other object(s) that you want to ‘fossilise’.
2. Warm a palm sized piece of clay in your hands, knead it a little.
3. Break off about a quarter of the clay and put it aside.
4. Flatten or roll the main piece of clay so that it is larger than your ‘fossil’ and still has a reasonably thick base (Figure 1A).
5. Press your object into the clay then gently remove it – you now have a MOULD (Figure 1B).
6. Roll the other piece of clay into a ‘sausage’ then fit it around the edge of the mould like a ‘fence’; make sure there are not gaps at the bottom (Figure 1C).

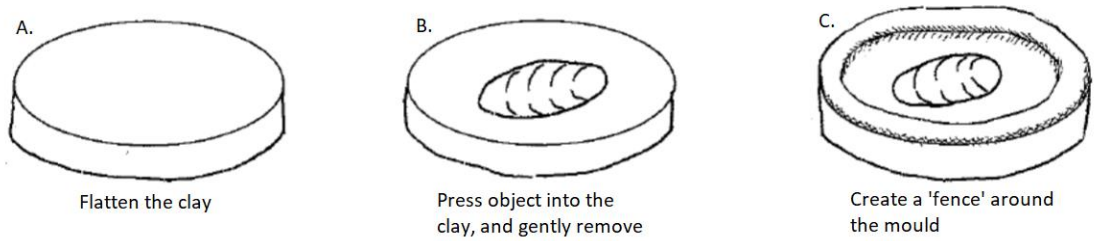

Figure 1: Steps to create a fossil mould.

Part two – making the body fossil

1. Put ¼ cup of plaster powder (75 g) in your cup.
2. Add 30 ml (about 6 teaspoons) of water to the plaster powder.
3. Use a paddle pop stick to mix until smooth like pouring custard and with very few bubbles.
   NOTE: when the plaster of Paris sets, it will get warm due to an exothermic reaction.
4. Gently pour into the prepared mould(s) – the surface may be convex.
5. Allow the plaster to dry for at least 15 minutes (but it takes even longer to become fully dry).
6. Remove the ‘fence’.
7. Gently loosen then separate the plaster cast from the clay mould. Leave both to become fully dry. The clay will become hard in 24 hours. Once hard you may find that the mould and body fossil do not fit together because the clay shrinks a little once dry.

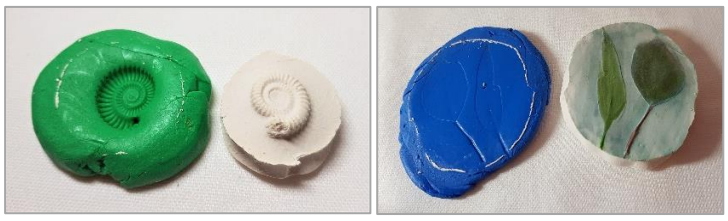

Figure 2: Completed fossil activity. Fossil mould (left in each panel) and body fossil (right in each panel).

Extension activities

1. Consider painting your fossil to add more detail.
2. Bury your fossil in sand and conduct an ‘excavation’.

Explanation

When a living thing dies it may be fossilised, but only if it is really, really lucky!

To become a fossil the creature must be buried by sediments (small fragments of rock, like mud or sand). Preservation of a fossil usually begins in a body of water, like an ocean or a lake. After many thousands, or millions of years the sediment builds up and the creature gets buried deep underground. Imagine being squished by hundreds of metres of wet mud at the bottom of the ocean! Eventually, under all this pressure, the sediment around the creature starts to stick together to form solid rock. Minerals in the wet sediment also start to replace hard parts of the creature, like a shell, and turning them into rock as well. If we are lucky the rock that contains the fossil will be pushed up to the surface and may be found one day by a future geoscientist like you!

There are two main types of fossils: **body** fossils and **trace** fossils. Body fossils are the preserved parts of living things like a bone, leaf or shell. Trace fossils are a little different, they record some sort of evidence that a living thing once existed such as a poo, a footprint, burrow or evidence of feeding. In this activity the mould represents the impression in the sediment around the body fossil and the plaster of Paris represents the body of the fossil itself. When we split open rock to reveal a fossil, we can sometimes see both components e.g. **https://youtu.be/goVpif5YBq4.**

Figure 3: Body fossil (left) and mould (right) of the trilobite *Batocara mitchelli*, the **A.C.T fossil emblem**.

Extension activities

1. Next time you're out in nature think about what would need to happen to fossilise the leaf/shell/bird that you see in front of you. Do you think that is likely to happen?
2. Experiment with other materials to create a different fossil, or maybe a whole collection.
3. If you repeat this activity, what would you use to make a 'trace fossil'?

Safety Warning

Adult supervision is required for this activity, especially when handling chemicals. Please adhere to the manufacturer's Safety Directions, this is the sole responsibility of each individual.

Further information

For more activities, visit **www.ga.gov.au/education**.

To learn more about fossils, check out this webpage and videos
https://www.ga.gov.au/education/classroom-resources/geological-time

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