

Fossilise!

A game showing how fossils form and survive

Ask the pupils, 'What is a fossil?'

It is any preserved evidence of life, animal or plant, usually regarded as more than 10,000 years old, i.e. very, very, very old. It may be the remains of the organism itself, like a sea shell, or it may be evidence of an organism, like a footprint or a burrow.

Print and cut out the fossil cards, (pages 3 and 4).

Put the Gold nugget to one side for the moment.

These are photographs of fairly common fossils.

Discuss the photos with the pupils so that they become familiar with the names.

- **ammonite** - extinct sea creature related to octopus and squid;
- **sea urchin** - sea creatures, similar to modern sea urchins, related to starfish;
- **coral** - similar to modern corals;
- **brachiopods** - sea creatures, fixed to the sea bed by a stalk, alone in their family group;
- **bivalve** - known as 'the devil's toe nail' because of its shape - similar to modern oysters;
- **sea snail** - similar to modern sea snails;
- **tree bark** - from an ancient extinct tree;
- **bivalve** - similar to modern cockle shells;
- **ichthyosaur vertebra** - part of the backbone of a large sea reptile;
- **trilobite** - ancient sea creature related to horseshoe crabs;
- **shark's tooth** - similar to modern sharks' teeth.

Now divide the pupils into small groups and give each group a copy of the **Fossilise Game**, (page 5). They will also need some counters, dice and shakers.

They play the game collecting a fossil card when their counter lands on the fossil. Encourage them to read what happens to them as they progress round the board. The winner of the game receives the **Gold nugget** card.



Ready to play
Photo: Elizabeth Devon

At the end, ask them:-

What helped the sea creature to become a fossil?

- *it was living in the sea*
- *it was a creature with a shell or skeleton which did not rot away*
- *it was buried under layers of sand*
- *the layers of sand slowly changed to rock*

What helped the fossil to survive?

- *some children find the fossil and take it into school*
- *a geologist finds the fossil and takes it to a museum*

What prevented the sea creature from becoming a fossil?

- *it was eaten by another sea creature*
- *it was a jelly fish which rotted away*
- *the sea was rough and it was washed away*

What destroyed the fossil?

- *the rock with the fossil was eroded away*
- *people break up the rock with the fossil and make it into cement*
- *the fossil is hammered to bits by a geologist.*

The back up

Title: Fossilise!

Subtitle: A game showing how fossils form and survive.

Topic: The game can be played in any science or geography lesson and has cross curricular links with literacy and numeracy.

Age range of pupils: 5 - 8 years

Time needed to complete the activity: about 20 minutes but varies according to ability.

Pupil learning outcomes: Pupils can

- explain what a fossil is;
- recognise some common fossils;
- realise that special conditions must exist for fossilisation to occur and also for fossils to survive;

- appreciate that there are many reasons why organisms are not fossilised and, even if they are, there are also many reasons why the fossils do not survive;
- accept that the player often has to go backwards and not everyone can win; this reflects the reality of fossilisation and preservation.

Context:

The chances of an organism becoming a fossil and then that fossil surviving for us to see are very small indeed.

Following up the activity:

Other Earthlearningideas could be used -
'Fossil or not?'
'What was it like to be there? - bringing a fossil to life'
'Running the fossilisation film backwards'
'How could I become fossilised?'

Underlying principles:

- The chances of a particular organism becoming fossilised are extremely small.
- Certain factors make fossilisation more likely, for example, living in a low energy marine environment where fine sediment is being deposited, or being overcome by a catastrophic event, e.g. mudslide, volcanic ash.
- The chances of a fossil being preserved for people to see and collect are also very small.
- Weathering and erosion destroys fossils.
- Human activity can destroy fossils.

Thinking skill development:

A pattern can be seen as the game is played. Discussion of what is happening involves metacognition. Cognitive conflict occurs when the sea creature or fossil is destroyed. Applying the game to fossilisation and preservation in the real world involves bridging.

Resource list:

- copies of the game (best if enlarged to A3)
- counters, dice and shakers
- scissors to cut out the fossil cards

Useful links:

'The Learning Zone', Oxford University Museum of Natural History
<http://www.oum.ox.ac.uk/thezone/fossils/intro/form.htm>
Fossil Hunting Guide, Natural History Museum, London
<http://www.nhm.ac.uk/kids-only/earth-space/fossil-hunting/>

Source:

The game is copyright free but from an unknown source. The activity was written by Elizabeth Devon of the Earthlearningidea Team.

© **Earthlearningidea team.** The Earthlearningidea team seeks to produce a teaching idea regularly, at minimal cost, with minimal resources, for teacher educators and teachers of Earth science through school-level geography or science, with an online discussion around every idea in order to develop a global support network. 'Earthlearningidea' has little funding and is produced largely by voluntary effort. Copyright is waived for original material contained in this activity if it is required for use within the laboratory or classroom. Copyright material contained herein from other publishers rests with them. Any organisation wishing to use this material should contact the Earthlearningidea team. Every effort has been made to locate and contact copyright holders of materials included in this activity in order to obtain their permission. Please contact us if, however, you believe your copyright is being infringed: we welcome any information that will help us to update our records. If you have any difficulty with the readability of these documents, please contact the Earthlearningidea team for further help. Contact the Earthlearningidea team at: info@earthlearningidea.com





AMMONITE



BRACHIOPODS



SEA URCHIN



BIVALVE 'DEVIL'S TOE NAIL'



CORAL



SEA SNAIL



TREE BARK



TRILOBITE



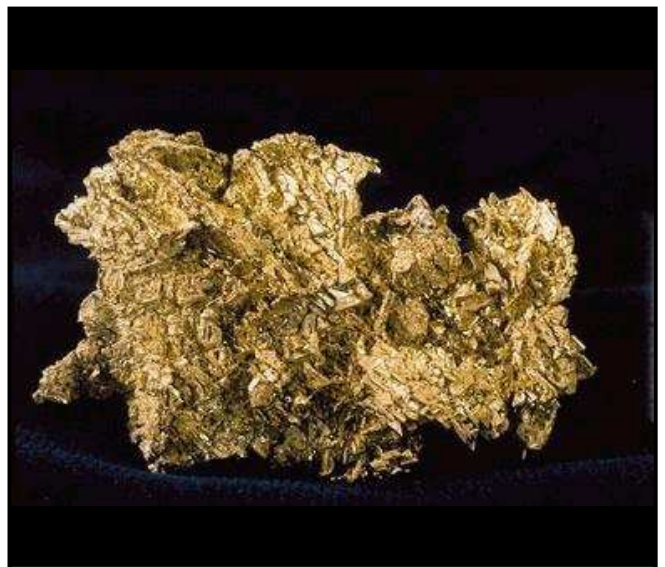
BIVALVE - COCKLE SHELL



SHARK'S TOOTH



ICHTHYOSAUR VERTEBRA



GOLD NUGGET - WINNER

