

Minerals and Rocks

Stage 6 Earth & Environmental Science



**Australian Fossil
and Mineral Museum**
HOME OF THE SOMERVILLE COLLECTION

Name

In the Mineral Gallery go to the panel Minerals and Rocks

Describe the difference between a mineral and a rock _____

Use the information in the cross section diagram to complete the information below. Describe the ways different minerals and rocks form below and state whether the process forms sedimentary, igneous or metamorphic rocks.

Rock forming method	Description of method	Sedimentary, igneous or metamorphic?	Mineral/Rock specimen
Above ground volcano			
Black smoker			
Underground rocks			
Cooked rocks			
Layered rocks			

Locate the Granite specimen in the showcase. List the minerals the specimen is made of

What sort of rock is it? (Sedimentary, Metamorphic, Igneous?)

Looking at the size of the crystals in the specimen, do you think it cooled quickly or slowly? Why?

Geological Time Line

Stage 6 Earth & Environmental Science



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In the MasterFoods Fossil Gallery go to the text panel Geological Time

What does Ma stand for? _____

What events mark the boundaries between subdivisions on the geological timeline? _____

Use the information on the panel to label the table below. Gather information in the fossil gallery to complete the table.

Eon	Era	Period	Date	Major Event(s)	Fossil specimen (name, age, location)	
Phanerozoic	Cenozoic					
	Mesozoic					
	Palaeozoic					
Proterozoic Eon—Precambrian						
Archeon Eon—Precambrian				Early life		
Hadean Eon				Formation of Earth		

What is a Fossil?

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At school, discuss why the fossil record is biased towards certain animals and plants. Which sorts of animals and plants are more likely to be fossilised and where they would have lived.?

In the MasterFoods Fossil Gallery, Go to the showcase Rocks and Fossils

Write down a definition of a fossil. _____

Describe the most common process of fossilization. _____

From the showcase, write down the name and age of a fossil formed by the process described above.

Use the information in the showcase to complete the table below

Fossil Type	How it is formed	Specimen Name, Age & Location
Trace fossils		
Cast fossil		
Petrified fossils		
Carbonised fossils		
Unaltered fossils		
Whole body fossils		

Back at school, discuss why fossils are useful and what they tell us about life on Earth.

Extinctions

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At school discuss the term mass extinction.

In the Masterfoods Fossil Gallery, go to the panels *Trilobites—Extinction of a Success Story* and *Ammonites Extinction of a Success Story*.

Use information from these panels to complete the tables below

Date when mass extinction occurred	End of ____ Era	End of _____ Period	% of life on Earth extinct	Name of a successful life form which became extinct

The end of which period marked the greatest mass extinction of life on Earth so far? _____

Go to the showcase *Australia In Isolation*

Describe the changing climate in Australia over the Cainozoic era

List factors which may have caused the extinction of Australian Megafauna

Go to the text panel *Learning from the Past*

How many species of animals and plants are threatened by extinction?

Back at school discuss ways in which the threat of the next mass extinction of life on earth can be reduced.

Early Life

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In the MasterFoods Fossil Gallery go to the Early Life section

Name _____ Age _____
Location _____

Find the fossil specimen Stromatolite and draw and label an image.

What is Cyanobacteria? _____

What does cyanobacteria produce? _____

Describe how a stramotalite is formed _____

Where can stramotalites be found today? _____

In 2004, a new period of time (dates) was named Ediacarian

What is meant by the term Ediacarian fossil? _____

Name an Ediacarian fossil _____ Age _____ Location _____

Found _____

Explain what is meant by the term Cambrian Explosion _____

Edicarian Fossil _____

Cambrian Fossil

Differences in bodily structure

Go to the showcase Moving onto Land. In what period of the geological timeline is there evidence of the transition to life on land? Period _____ Date _____

Name a fossil specimen of animal which is thought to have left tracks on Silurain rocks in WA

Fossil name _____ Fossil Date _____ Location found _____

Back at school discuss some of the modifications in body type that occurred for animals to live on land

Minerals of Broken Hill

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In the Mineral Gallery, go to the panel Rocks and Minerals

Write a definition of black smokers _____

Go to the showcase Broken Hill—the Silver City

Use the information on the text panel and the showcase to complete the table below. Broken Hill's silver-, zinc- and leadsulphide deposit was formed 1800 million years ago when the area was the floor of an inland sea. Over time the original minerals have undergone chemical and physical changes in three major geological events. The minerals are displayed in groupings of the these events.

Description of Event	When did it happen?	Minerals formed
Mountain building —		
Factures and Faults ——		
Weathering ——		

Back at school, discuss theories about how the mineral deposit was originally formed. Is it explained by the definition of black smokers?