

## Why fossils are rare? Compression and compaction

Fossils also have to survive compaction and cementation processes which turn sediments into rock. You will create sedimentary sandwiches containing replica fossils, compact them and then drill into them to try and intersect a fossil.

### You will need:

- Board and knife to cut shapes and to remove bread crusts
- 4 slices of bread with the crusts removed
- Processed cheese slices
- Optional margarine or butter
- Optional jelly lollies
- Cling wrap
- Drinking straws
- Ruler

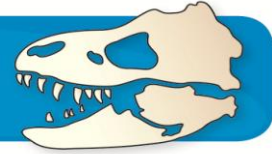


### You will:

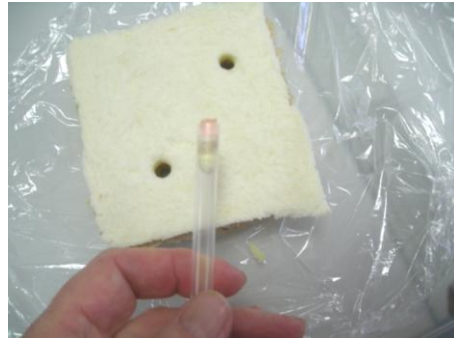
1. Wash your hands before putting down a layer of cling wrap on a clean surface.
2. Place a slice of bread on cling wrap. This is a layer of sediment on the sea bottom.
3. Cut cheese into small shapes and randomly place three of these on the bread. These are the bodies of dead animals which fell to the bottom of the sea and was unaffected by scavengers and microorganisms.
4. Covered with another slice of bread and more fossils .
5. Repeat until a stack of sediments with some fossils is created. At least one fossil free layer should be included. As you stack up the layers of sediments and bodies make a note of what was placed in each layer.
6. When stack is complete, wrap with cling wrap and mark the top of the sandwich pile "T".



# fossils



7. Measure the height of the sandwich. \_\_\_\_\_
8. Remember to measure twice and put in the units).
9. Place these sandwich columns on a flat surface, cover and compress with a heavy weight to represent compaction (crushing) under the weight overlying sediment within the Earth.
10. Estimate the degree of compaction by dividing the compacted height by the original height.



of

**Compacted height** \_\_\_\_\_

**Original height**

11. Use the plastic straw to drill down into the sediment and see if you intersect (cut through) a fossil. When you withdraw the straw you will see a sedimentary sequence similar to the rock sequence seen in diamond drill core.
12. Open compacted sandwich, observe the effects of compaction and count the numbers of fossils intersected.

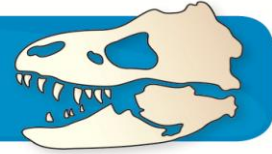


*Diamond drill core through rocks*

How had your fossils changed because of the forces of compaction applied to them?

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## Why are fossils rare? Revision and wordsleuth



*Fossil crinoid or sea lily from near Geraldton WA*

*Photograph courtesy of Enza*

**You have been studying why it is difficult for dead plants and animals to become fossils. Use your notes to answer the following questions.**

What is a fossil? \_\_\_\_\_

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**What are the three things which attack and destroy plants and animal bodies at the surface of the Earth? Name an example of each.**

1. P \_\_\_\_\_ example \_\_\_\_\_

2. S \_\_\_\_\_ example \_\_\_\_\_

3. D \_\_\_\_\_ example \_\_\_\_\_

**Under which conditions would a dead body last longer? Circle the correct answer.**

a. Warm and wet

c. Cold and wet

b. Warm and dry

d. Cold and dry

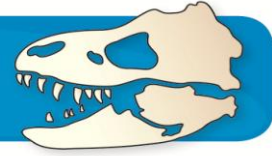
**Once the bodies have been buried in sediment, what else can change them?**

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# fossils



Why are fossils rare?

E L B A T A E P E R L D P S M  
R K G R O U N D W A T E R C E  
O C A S T X H S I D T C A A A  
S O D E E M Y R U R C O L V S  
I M E D M M U G I H O M K E U  
O P P I P B E F E G M P A N R  
N R O M E U I Y T N P O L G A  
F E S A R C Q N M I A S I E B  
M S I N A G R O O R C I M R L  
F S T T T K D L I E T T L S E  
B I I A U C I O S H I I I T I  
K O O R R O C C T T O O S R G  
N N N Y E R A R U A N N S A N  
R N C E L B A V R E S B O T U  
S T E R I L I S E W K E F A F