

Grave Concern – Teacher Notes

It is hard to measure the rate of weathering. Against our human life scale it appears to work very slowly. Gravestones and their inscriptions can be used to gain an estimation of relative age.

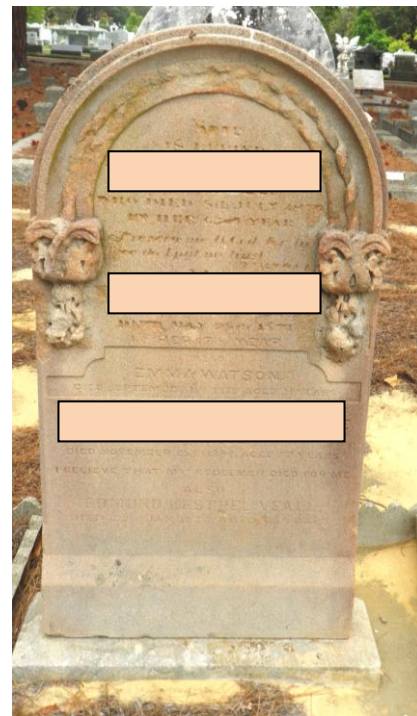
Gravestones have to be beautiful and yet soft enough to carve inscriptions into them. They also have to be able to withstand weathering. These three gravestones below are from Fremantle Cemetery. I have obscured the names of those interred. All stones three were erected between 1876 and 1887 face the same direction and are in the same part of the graveyard.



Slate
1876

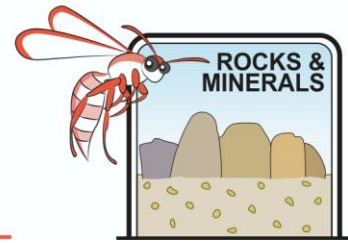


Marble
1889



Sandstone
1887

1. How old are these gravestones now? **Present date minus 1876 to 1889**
2. Which has stood the test of time best? Explain your answer. **The sandstone gravestone is most affected by weathering. Its shape and lettering are badly affected even though it is not the oldest. It has had to be set in cement to stay upright. The slate gravestone has kept its shape but the engraved lettering has become difficult to read because parts of the rock have flaked off along bedding planes. The marble gravestone has kept its shape and most of its lettering well but has superficial colour change due to moss and lichens.**
3. Why did I make sure all three gravestones are about the same age, are from the same part of the cemetery and are facing in the same direction? **To ensure a "Fair Test". All would be equally affected by the same kind of weather. Same sun, rain, wind direction. The only variable which changed was the type of rock.**



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4. What do you think the main agents of weathering in this graveyard were? There are at least three. Sun (heating and cooling), oxidation, rain & acid rain, moss and lichens. Elsewhere acid soil from decomposing leaves eats away at the stones at ground level.
5. Can you tell which gravestone is the oldest? Explain your answer. No because the rocks are different - OR - Only by reading the dates engraved in the stone.

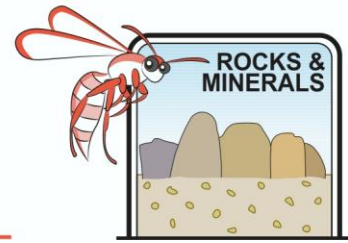
In the twentieth century diamond coated saws were used to cut and polish gravestones. This meant that very hard rock such as granite could be used. Engraving granite is difficult because it chips easily so monumental masons used softer, but more expensive marble to carve the inscriptions



Marble dedication slabs on granite

In this family grave, which memorial tablet is the oldest? Explain your answer.
The left tablet is oldest because there is more evidence of colonisation by mosses and lichens

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In other parts of the world there are different agents of weathering. Use your library or internet and find out about “The Elgin Marbles”. They were “rescued” from the Parthenon in Greece by Lord Elgin and held by the British Museum. What extra factors were these marble sculptures affected?

1. Longer exposure to weathering – 447BC to present
2. People directly damaging them by breaking them up for building stone
3. Explosions when the Turkish gunpowder store exploded
4. Removal and travel by archaeologists and their workers
5. Acid rain
6. Politics/greed

The source of this information should be cited by students.