

Pompeii Bodies – Teacher Notes



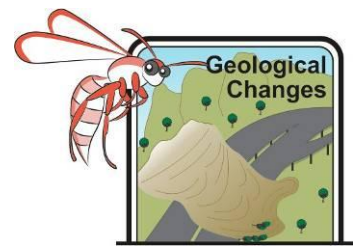
In 79AD, one of the most famous eruptions in Europe happened in what is now Italy. In this area the northward moving African plate is being subducted (slid under) the Eurasian plate. The volcano is fed by melted African plate. Because the melted material is made of silica rich materials from continental crust, lava is sticky and full of gas. Eruptions are accompanied by earthquakes, gas outpourings and deadly ash falls which smothered plant, animals and man made structures.

Pliny the Younger, a 17-year-old Roman administrator and poet, recorded events over two days of violent earthquakes, eruptions and ash falls. It has been estimated that about 16,000 people in and around the towns of Pompeii and Herculaneum died from the ash and pumice falls and volcanic gas clouds that were released from the volcano Mt Vesuvius.

People would have died instantly from breathing super heated air and from clouds of carbon dioxide gas. If they were in the open, their bodies were blanketed by ash. Layer upon layer of ash covered everything to a depth of several metres. Roofs collapsed and buildings, streets and squares disappeared. Heat from the ash vaporised some bodies instantly and others rotted away but their shapes were still retained within the ash that had cooled and solidified.

Almost immediately after the eruption looters tunneled down into the city to find any treasure, as Pompeii was a rich city with wealthy merchants, temples, palaces, baths, restaurants, theatres and sports grounds. The site of Pompeii was then forgotten for hundreds of years and the land given over to pasture. It was in the 18th century however that modern excavations commenced. Skeletons of those who had sought shelter inside stone houses were found. Many clutching treasures they had grabbed when they tried to shelter from the volcano. More recently, voids discovered in the solidified ash were examined and found to be moulds of people and animals that had died. These moulds were filled with plaster of Paris or rubber and the casts of victims and their treasures discovered. Fine ash moulds preserved details of faces and clothing. Pictures of these casts can be found on the Internet.

Plaster of Paris (common name gypsum) is the material that is used to set broken limbs and to make a smooth surface on interior house walls. When the white dust mixes with water a chemical reaction occurs (a new substance is formed) and the liquid hardens in about 20 minutes. There is a short research project for students to undertake during this time. Small plastic figures from student's own collections or from cheap "\$2.00 shops" can be used to represent bodies. Figures can be shared between students. Fill student trays, bowls, cut off bottoms of used cool drink bottles to the depth of about 20mm with damp sand. The bodies are pressed into damp (*NOT WET!*) sand to create a sand mould. If the sand is too wet, when the body is removed water will fill the void and plaster will not be able to enter the void. Some teachers permit their students to mix plaster themselves but I have found that messy. It is quicker and easier if the teacher makes a mix of approximately two parts plaster to one part water. It should form a thick custard or yoghurt consistency. This is spooned into the void in the sand mould and left to dry.



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Activity Pompeii bodies

We will be examining the process by which the Pompeii bodies were copied.

Materials per student:

- 1 plastic figure (to represent the body).
- Damp sand (NOT WET).
- Newspaper to protect the desk.
- Plaster of Paris mix provided by the teacher.
- Soft brush (borrowed from Art?) or tissue to brush off sand.

Method

1. Draw the original “body” to scale in the table below. Describe the body below this.

To create the mould:

2. Cover the work area with newspaper.
3. Firmly press the figure into the sand and then remove carefully.

To create the cast:

4. Fill the mould with liquid plaster and leave to dry. This may take 30 minutes.
5. Answer the research questions in the worksheet while it is drying.
6. Gently lift out the dried plaster cast and leave to dry for a further five minutes.
7. Answer the “Discussing the activity” questions.



Sand moulding



Unbrushed plaster cast (mirror image of original)

Observations

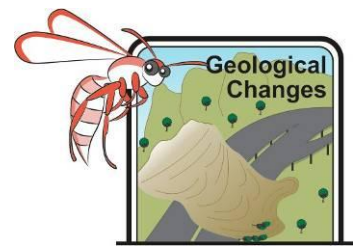
| | |
|----------------------------------|---------------------------------|
| | |
| Original body description | Cast of body description |

Discussing the activity

Is there any difference between the original “body” and its cast? Explain your answer or answers.

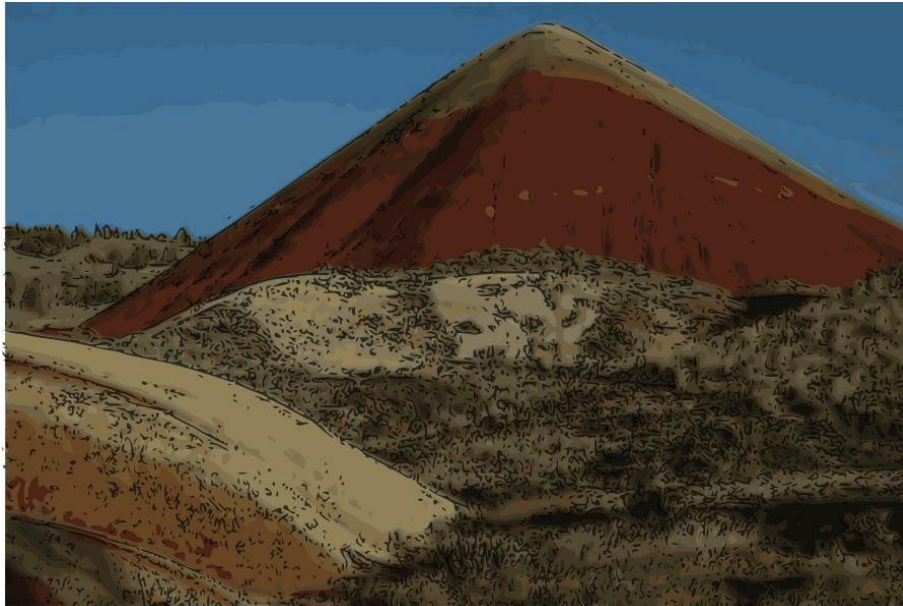
Yes. They are a different colour. Because they are made of different materials the shapes are different. The edges of the cast are not as sharp as the original. The cast may be misshapen due to mishandling or differences in materials used. The cast is a mirror image of the original body.

Why do you think that the casts in Pompeii are better than yours? The ash was much finer than sand so it was able to give more detail. The ash was hot and melted together to form solid rock almost immediately.



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Which kind of volcano must Mt Vesuvius be? *It must be a stratovolcano as it released explosive clouds of ash accompanied by earthquakes. Its magma must be very sticky/viscous/silica rich.*

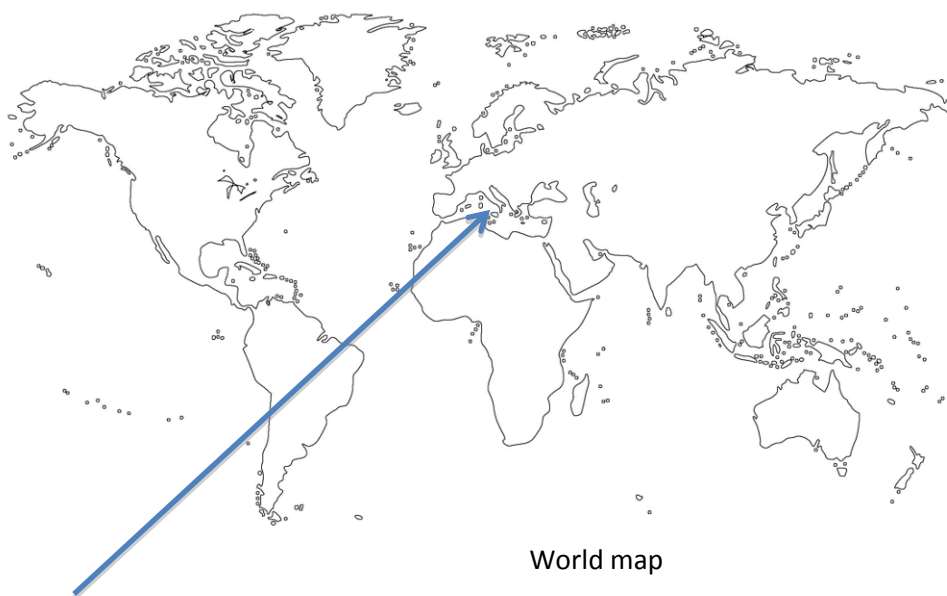


Research questions

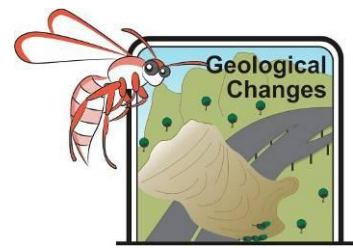
Look at the picture of the volcano above. What kind of volcano must this be? Explain your answer. *It must be a stratovolcano as it has steep sides (an angle above 10°)*

Using an atlas, books and the Internet answer the following questions.

Place Italy on the World map and mark Pompeii on the map of Italy. (HINT Pompeii is on the Bay of Naples in Italy.)



ITALY



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When did this terrible eruption occur? **79AD**

What was the name of the Roman administrator and historian who wrote about the last two days of Pompeii? **Pliny the younger**

What happened to his uncle? **He went to rescue someone but died. He was gassed**

How did the historian describe the eruption? **It was like a pine tree of ash rising above the volcano.**

What did the local people think was happening? **It was the end of the world.**

What did they think caused the eruption? **The anger of the gods.**

How was the Earth's surface changed because of this sudden geological change?

The volcano increased in size

Earthquakes disturbed natural and manmade waterways (rivers, sewers etc).

Everything was deeply covered in ash. Buildings, roads etc. disappeared,

Vegetation and animals also disappeared.