



Co-funded by the  
Erasmus+ Programme  
of the European Union



Name of the lesson: **UNDER THE VOLCANO** (Prof. Piero Mammino)

Prerequisites	Present simple, present continuous, adverbs of time and place, dates, past simple, intentional future, indefinite quantifiers, discourse markers and question words
Aims	To provide students with a basic survival kit to read a map of Mount Etna To understand causes and consequences of a volcanic eruption To identify a place on a map (orienteeing)
Students' age	14-16
Steps	<b>Presentation</b>
	brainstorming ideas and vocabulary (caldera, lava) working on a jamboard building up vocabulary
	<b>Practice</b>
	group-work identifying places on a topographic and geological map
	<b>Production</b>
	To complete a crossword puzzle either digital or paper based
Time	Step 1. 45 minutes
	Step 2. 45 minutes
	Step 3. 30 minutes

The main topics of the lesson are volcanoes in general and Mt. Etna in particular.

The lesson is divided into three parts: Presentation, Practice and Production.

## **1. PRESENTATION STAGE**

**The main questions on a couple of key words are:**

**a. What is a “caldera”?**

**Answer:**

A caldera is a large depression formed when a volcano erupts and collapses. During a volcanic eruption, magma present in the magma chamber underneath the volcano is expelled, often forcefully. When the magma chamber empties, the support that the magma had provided inside the chamber disappears. As a result, the sides and top of the volcano collapse inward. Calderas vary in size from one to 100 kilometers (0.62 to 62 miles) in diameter.

Some calderas form a lake as the bowl-shaped depression fills with water. A famous example is Crater Lake, in Oregon. This caldera formed about 7,000 years ago when a stratovolcano, Mt. Mazama violently erupted. For several thousand years after this eruption, smaller volcanic eruptions continued inside the caldera. One of these eruptions was so large it formed an island in Crater Lake named Wizard Island.

Another type of caldera is a resurgent caldera. These broad, vast calderas result when very large magma chambers empty quite forcefully, causing a series of pyroclastic flows. Over time, the refilling of the magma chamber pushes up the caldera floor. This upward movement is why the caldera is called *resurgent*, which means “risen again.”

**b. What do we mean by the word Lava?**

**Answer:**

Lava (magma that has erupted onto the Earth's surface) is visually mesmerizing – as the molten rock flows downhill, lava exposed to the air cools to a deep black color, while the molten rock beneath glows bright orange



The language is introduced to the learners showing a picture of an eruption of Mt. Etna. The aim is to make sure the students understand the context. They start to remember the language and the vocabulary they already know about the topic. Using their own smartphones, they open an interactive board (Mentimeter) and they write labels on it.

Etna is the largest active volcano in Europe. It is one of the most active volcanoes in the world.

#### ETNA IS A NATURAL BORDER

Mount Etna is located in correspondence with the continental collision zone between the Euro-Asian plate to the north and the African plate to the south.

Etna is surrounded by two important rivers, the Simeto and the Alcantara. The main source of water is given by the melting of the snow that accumulates on the volcano during the winter.

The “Contessa” is a lenticular cloud that is generated when the prevailing and colder winds coming from the northwest meet the humid and warmer winds coming from the east while they are rising up the slopes of Etna within the Valle del Bove

#### ETNA IS A CHANGING LANDSCAPE

The top of Mt. Etna is made up of four active craters.

The four summit craters are:

- the Voragine and the Bocca Nuova, which were formed inside the Central Crater respectively in 1945 and 1968,

- the North-East Crater, which has existed since 1911,
- the South-East Crater, born in 1971, which has recently been the most active of the four craters.

The eruption of 1669 constitutes the most destructive eruptive event known of the historical period.

During this eruption the lava flow completely destroyed nine villages and only a small part of the western portion of the city of Catania. The lava flow reached the coast, surrounding the Ursino castle.

Etna also changes the underground landscape. The upper surface of the lava flow begins to cool, and the lava beneath continues to flow in tubular conduits beneath the surface.

The most recent cinder cone (called Cratere Barbagallo) was built during the eruption of 2003 at about 2,900 m

#### ETNA: BETWEEN MITH AND REALITY

In 1444, a severe lava eruption occurred at low altitude. The lava was about to hit a village located a few kilometers from Catania. The monk Peter Jeremiah, followed by the clergy and all the people, brought the Veil of the Holy to the fire. The lava, miraculously, changed direction.

In March 1669 (and until June), one of the most impressive lava eruptions of Etna that history remembers began. The magma came out quickly heading menacingly towards Catania. In April, the river of fire was at the gates of the city. The people of Catania gathered around the relics of Sant'Agata. The Ursino Castle was surrounded by lava but, with great surprise, it changed direction once again.

In 1886 an eruptive mouth had opened in Nicolosi, a town on the slopes of Etna. Blessed Cardinal Dusmet, on May 24, carried the veil of St. Agatha in procession and, although the procession had stopped in a downhill stretch, the lava magma stopped immediately

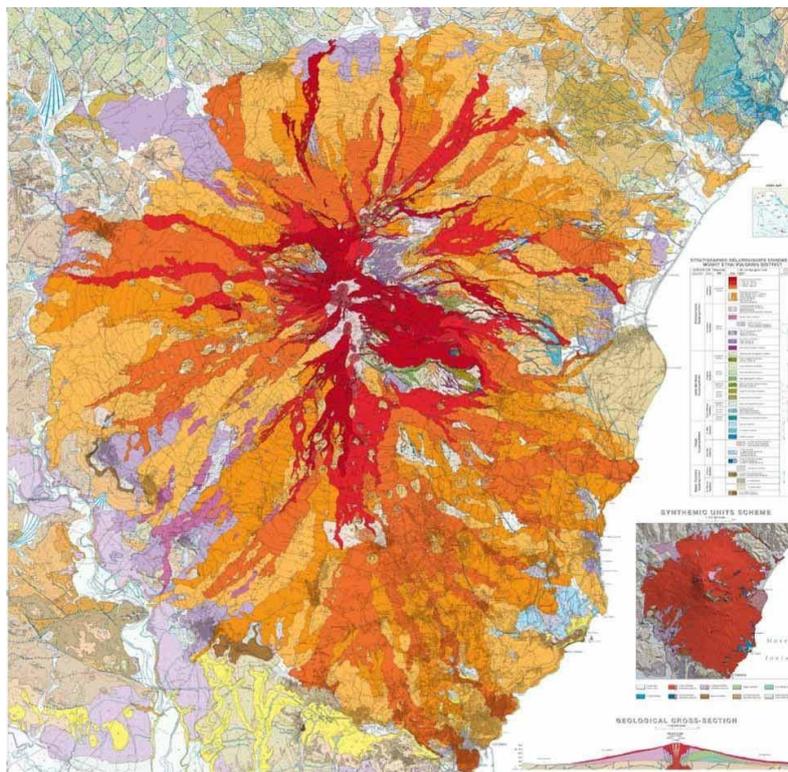
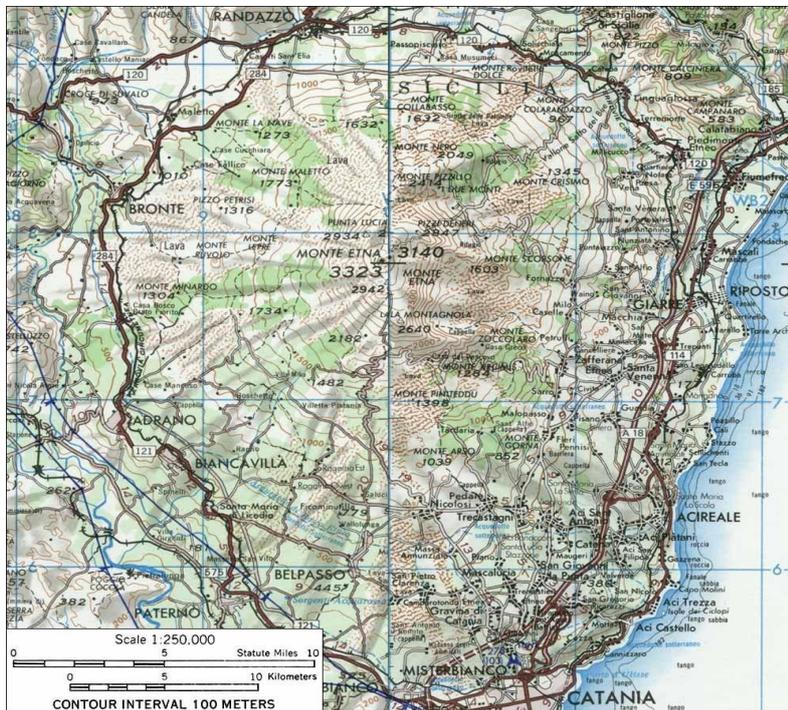
The required time for this stage is 45 minutes.

## 2. PRACTICE STAGE

By consulting both topographic and geological maps of Mt. Etna, students, divided in small groups, identify places and volcanic phenomena described during the presentation stage.

The aim of this stage is to monitor the students closely, supervise and guide them.

The required time for this stage is 45 minutes.



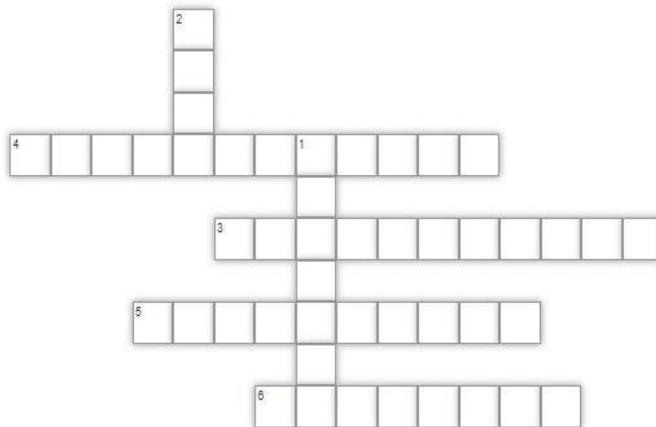
### 3. PRODUCTION STAGE

Students complete a crossword puzzle using text and images. The crossword puzzle is offered in both print and digital format.

The aim of this stage is using the language as naturally as possible, as students would do in their day to day life, in a playful context or during an excursion to a volcano.

The required time for this stage is 30 minutes.

#### A volcanic crosswords puzzle



1. A large volcanic depression generated by a collapse or by an explosion
2. Molten rock coming out of a volcano
3. A mixture of rock, mineral, and glass particles expelled from a volcano during a volcanic eruption
4. What's that? (picture n. 1)
5. What's that? (picture n. 2)
6. The name of this type of eruption on Mt. Etna (picture n. 3)



Picture no: 1



2



3