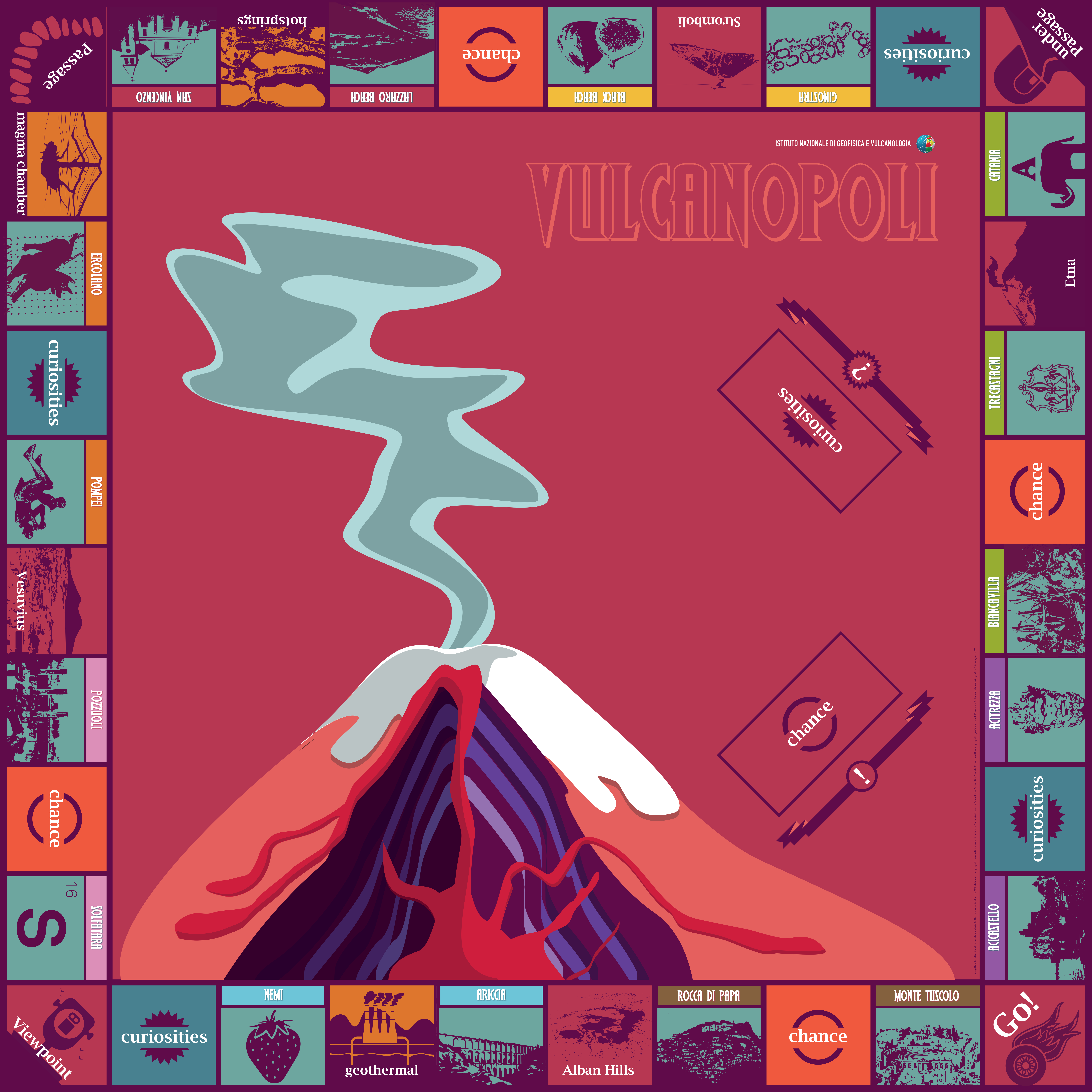

ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA
VULCANOPOLI
passage
SAN VINCENZO
hotsprings
LAZZARO BEACH
chance
BLACK BEACH
Stromboli
GINOSTRA
curiosities
under passage
CATANIA
Etna
TRECASTAGNI
chance
BIANCAVILLA
ACITREZZA
curiosities
ACICASTELLO
Go!
MONTE TUSCOLO
chance
ROCCA DI PAPA
Alban Hills
ARICCIA
geothermal
NEMI
curiosities
Viewpoint
S
16
SOLFATARA
chance
POZZUOLI
Vesuvius
POMPEI
curiosities
ERCOLANO
magma chamber
?
curiosities
chance
!

ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA

VULCANOPOLI

ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA

VULCANOPOLI

RULES

The game consists of a board divided into 26 squares:

- 1 Start box
- 4 Italian active volcanoes boxes
- 4 Curiosities boxes
- 4 Chance boxes
- 1 Viewpoint box
- 1 Underpass box
- 1 Passage box
- 1 Hotsprings box
- 1 Geothermal energy box
- 1 Magma chamber box
- 17 Cities boxes

Moreover there are:
18 CURIOSITIES cards, 18 CHANCE card, 17 CITIES cards and 4 VOLCANO cards.

The aim of the game is to finish the round before the other participants collecting as many city cards as possible. It can be played with 2 or more participants.
All players start from START box. In their turn, each team/players must roll the numbered die and advance by the number of boxes indicated on the die.

Depending on the box the team/players reach, different actions will correspond:

- By stopping on the curiosities and chance boxes, a corresponding card must be drawn. The cards, present in the center of the billboard, are divided into two categories of curiosities and chance categories. The former describe, in broad terms, the theories on volcanology over time and the latter ask questions about volcanology. The curiosities cards that contain the illustration of a historical epoch describe the peculiar events of the epoch and the other can make the tema/playes move from one box to another on the billboard. Chance card present questions. If the team/players answer correctly, can advance 1 box. If the team/players does not answer correctly, the opposing team can answer and advance one box.

- The underpass box take team/players back to the start

- The passage box leads to the first chance box encountered while advancing

- Stopping for the first time on a city box the team/players gains the corresponding city. If the opposing team/players land on city card alerady in another player's possession, he must ask a question relating to the information corresponsding to that city and if the opponent answers correctly he can win the card. Otherwise the card remains with the first player.

- Stopping for the first time on volcano box the team/players gains the corrsponding card. This card is worth three time the city card.

progetto educativo ideato e curato da Maria Di Nezza e Valeria Misiti INGV | elaborato del progetto scolastico a cura di Ludovica Giuliani e Lorenzo Orsini Liceo Scientifico Statale Primo Levi Roma | progetto grafico a cura di Francesca Di Laura Laboratorio grafica & immagini INGV

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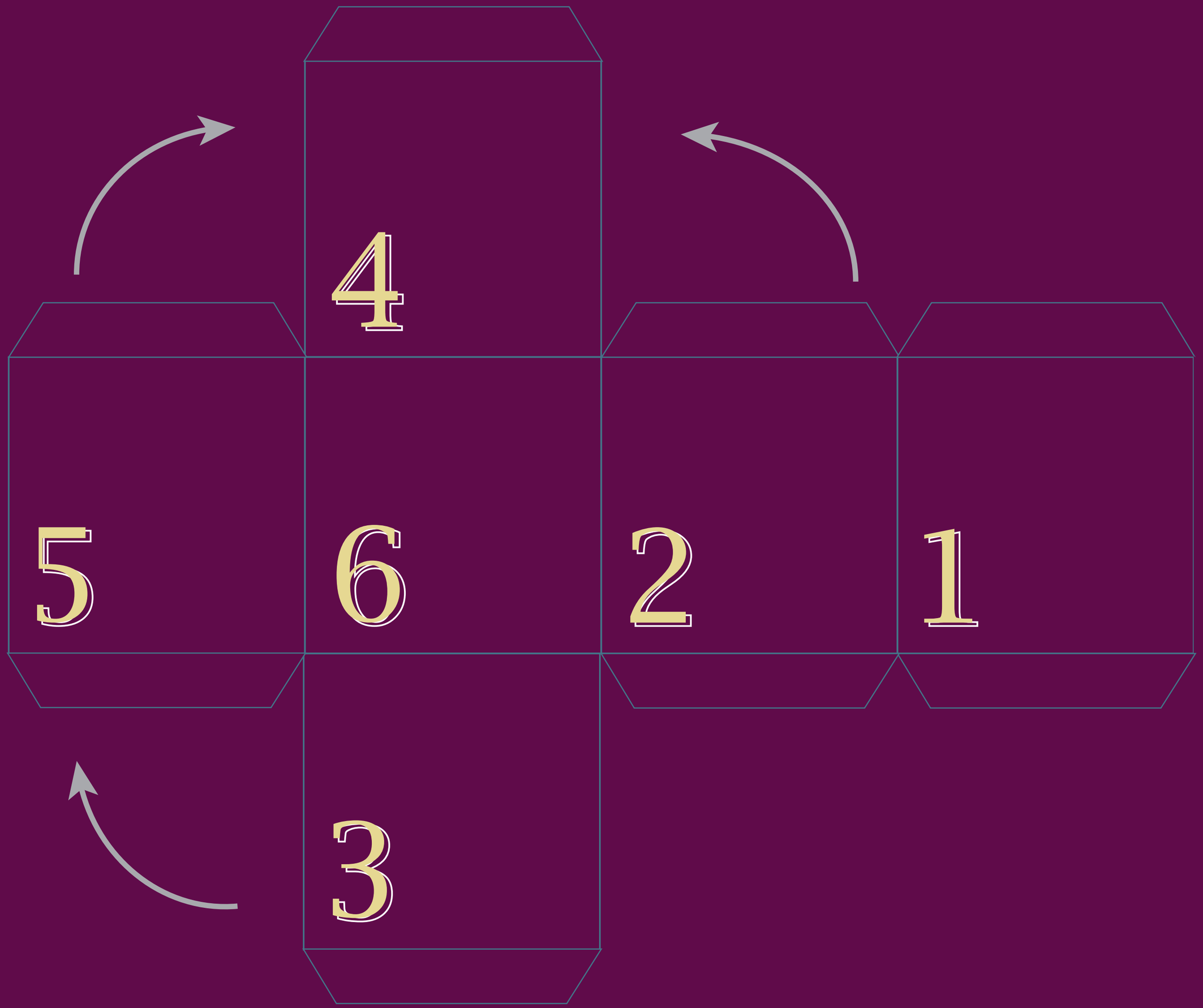
VULCANOPOLI


4
5
6
2
1
3

chance

chance

You have won a holiday
at the hot springs!

Stand still 1 lap

chance

Oh Oh!
Gas exhalation!

Stay still for 2 laps to recover

chance

You slipped!

Go forward 3 squares

Lava flow in front of you!

Go behind 5 squares to dodge it

chance

The ashes obscure the view!

Stand still for 1 lap
to let this storm pass

chance

There is geothermal energy!

Go forward 10 squares

Take three steps back

chance

Go to the viewpoint

chance

Straight into the magma chamber.

Stand still 1 turn

Take a CHANCE card

chance

What is the difference between effusive and eruptive eruption?

Explosive eruptions occur when the erupting magma is ejected as fragments into the air, as opposed to effusive eruptions producing lava flows. **Explosive eruptions are so called when the erupting magma is fragmented when exiting the conduit.**

chance

What are the products that come out during an explosive eruption?

An explosive eruption emits large quantities of rock fragments, solidified lava and ash. **Pyroclastic material volcanic ash, when their diameter is less than 2 mm; lapilli, when their diameter is between 2 and 64 mm; volcanic bombs, when their diameter is greater than 64 mm**

chance

What are the products that come out during an effusive eruption?

An effusive eruption is a volcanic eruption in which magma is ejected from the volcano in the form of rivers of lava, also called lava flows. To have an eruption of this type it is necessary that the gases contained in the magma are expelled in order to prevent the pressure of the gas from leading to an explosion.

chance

What is the caldera?

The caldera (Latin călĭdārĭus, hot) is a large basin or depression, often occupied by a lake and of a circular or elliptical shape, which normally forms after the sinking of the magma chamber of a volcanic building caused by its partial emptying following a massive eruption.

chance

Is there a volcano called "Noname"?

Yes

chance

What are the cities that were buried by the eruption of Vesuvius in 79 AD?

Herculaneum, Pompeii, Stabia and Oplontis,
whose ruins, buried under layers of pumice,
have been brought to light since the 18th century.

chance

What is a crater?

A volcanic crater is the circular depression (with a diameter of a few hundred meters), at the top of a volcanic cone, generated by the mechanisms for placing the volcanic material that is ejected around the crater itself from the chimney (the conduit that connects the magma chamber to the surface) during one or more eruptions.

chance

What is a solfatara?

A solfatara is a volcanic apparatus in which there is a more or less extensive fumarolic field, whose activity is mainly constituted by the emission of steam and gas with a strong sulfur component. This phenomenon is typical in quiescent or near extinction volcanoes.

MONTE TUSCOLO

Monte Tuscolo | Lazio

Volcano: Alban Hill Volcanic Complex
Type: Stratovolcano

Volcanic mountain of the Alban Hills.
The Tuscolani Mountains, together with Artemisio Mountains, constitute the ancient caldera of the Great Latium Volcano, which originated in the first evolutionary phase dating back to about 560.000/338.000 years ago.

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VULCANOPOLI

ROCCA DI PAPA

Rocca di Papa | Lazio

Volcano: Alban Hill Volcanic Complex
Type: Stratovolcano

In the municipality of Rocca di Papa, in a predominant position over all the Castelli Romani, the important INGV Geophysical Museum stands out, one of the first geodynamic observatories in Italy, where it will be possible to retrace the history of scientific progress in an interactive way. of our planet.

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VULCANOPOLI

ARICCIA

Ariccia | Lazio

Volcano: Alban Hill Volcanic Complex
Type: Stratovolcano

Ariccia is one of the sixteen municipalities of the Castelli Romani.
The historic core of the city of Ariccia is crossed by the ancient Via Appia. The current town developed around the original medieval village. Set on a tuff cliff, it is surrounded by hills of volcanic origin.

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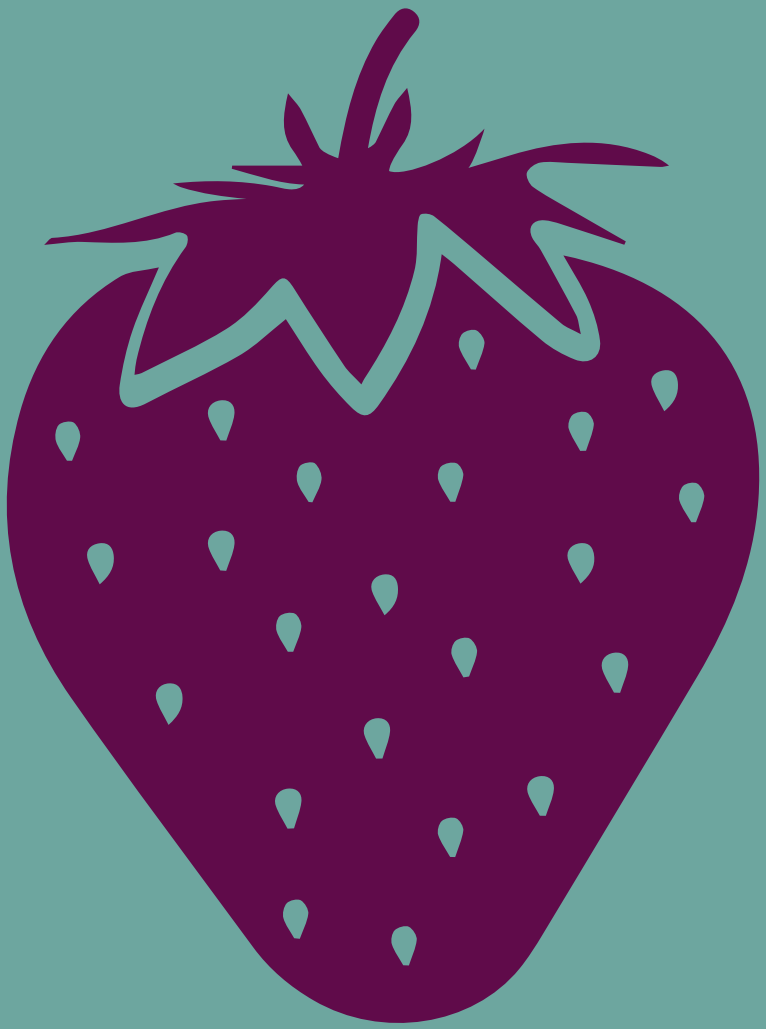
VULCANOPOLI

NEMI



Nemi | Lazio

Volcano: Alban Hill Volcanic Complex
Type: Stratovolcano

Nemi Lake is a small volcanic lake, 25 meters higher than Albano Lake, on the Alban Hills in the Castelli Romani area. It is a volcanic lake with characteristics similar to those of Albano Lake, compared to which it is considerably smaller.

From a geological point of view, it is part of the area known as the volcanic complex of the Alban Hills.

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VULCANOPOLI

SOLFATARA

16

S

Solfatara | Campania

Volcano: Phlegrean Fields
Type: Supervolcano

The Solfatara di Pozzuoli is one of the 40 volcanoes that make up the Campi Flegrei. Is located about 3 km from the city center of Pozzuoli.It is the crater of an ancient extinct volcano, in which fumaroles remain of sulfur dioxide, micro fractures of the ground, jets of boiling mud and a high soil temperature.

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VULCANOPOLI

POZZUOLI

Pozzuoli | Campania

Volcano: Phlegrean Fields
Type: Supervolcano

Bradyseism (from the Greek βραδύς bradýs, “slow” and σεισμός seismós, “shock”) is a phenomenon linked to volcanism consisting of a periodic lowering (positive bradyseism) or raising (negative bradyseism) of the soil level, relatively slow on the human time scale (normally it is in the order of 1 cm per year) but very fast compared to geological times. It is not perceptible in itself, but visually recognizable along the seashore, showing the progressive emergence or submersion of buildings, coasts, territories.

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POMPEI

Pompei | Campania

Volcano: Vesuvius
Type: Stratovolcano

The first seismic events already began in 62 a.C., with the collapse of several houses which were then rebuilt in the following years. Only a few years later, in 79, Vesuvius began its eruptive cycle which will then lead to the burial of some areas of Stabia, Pompeii, Herculaneum and many cities south-east of Vesuvius. The products first erupted by Vesuvius were basically pumice, then volcanic rocks originating from a magma filled with gas and cooled. Mixed with the pumice there are parts of rocks of another nature that were transported by the magma.

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HERCULANEUM

Herculaneum | Campania

Volcano: Vesuvius
Type: Stratovolcano

Herculaneum was first hit by burning clouds with a temperature of around 400° that traveled at a speed of over 80 km/h and then by mudslides that buried the city under a blanket of about 20m of volcanic material.

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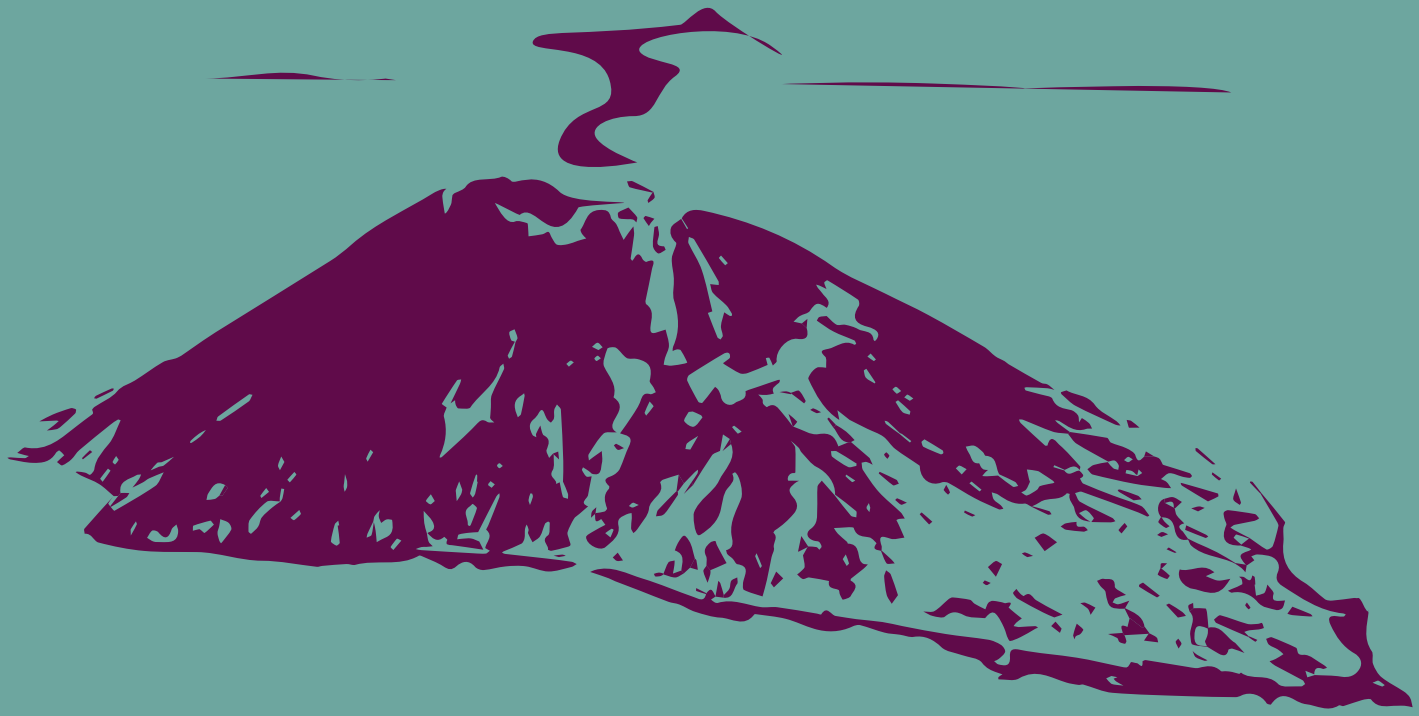
SAN VINCENZO



San Vincenzo | Sicily

Volcano: Stromboli
Type: stratovolcano

The village of San Vincenzo is a prehistoric settlement located in the north-eastern part of Stromboli, in Sicily. The village was discovered in 1980 and then investigated since 2009, detecting neolithic, bronze age (culture of Capo Graziano I and II) as well as in Roman and medieval times. The Bronze Age village consisted of a series of terraces maintained with stones. On the various terraces stood the oval or circular houses, the largest of which even exceeded 10 meters in diameter. The dry stone walls were made up of local lava stones.

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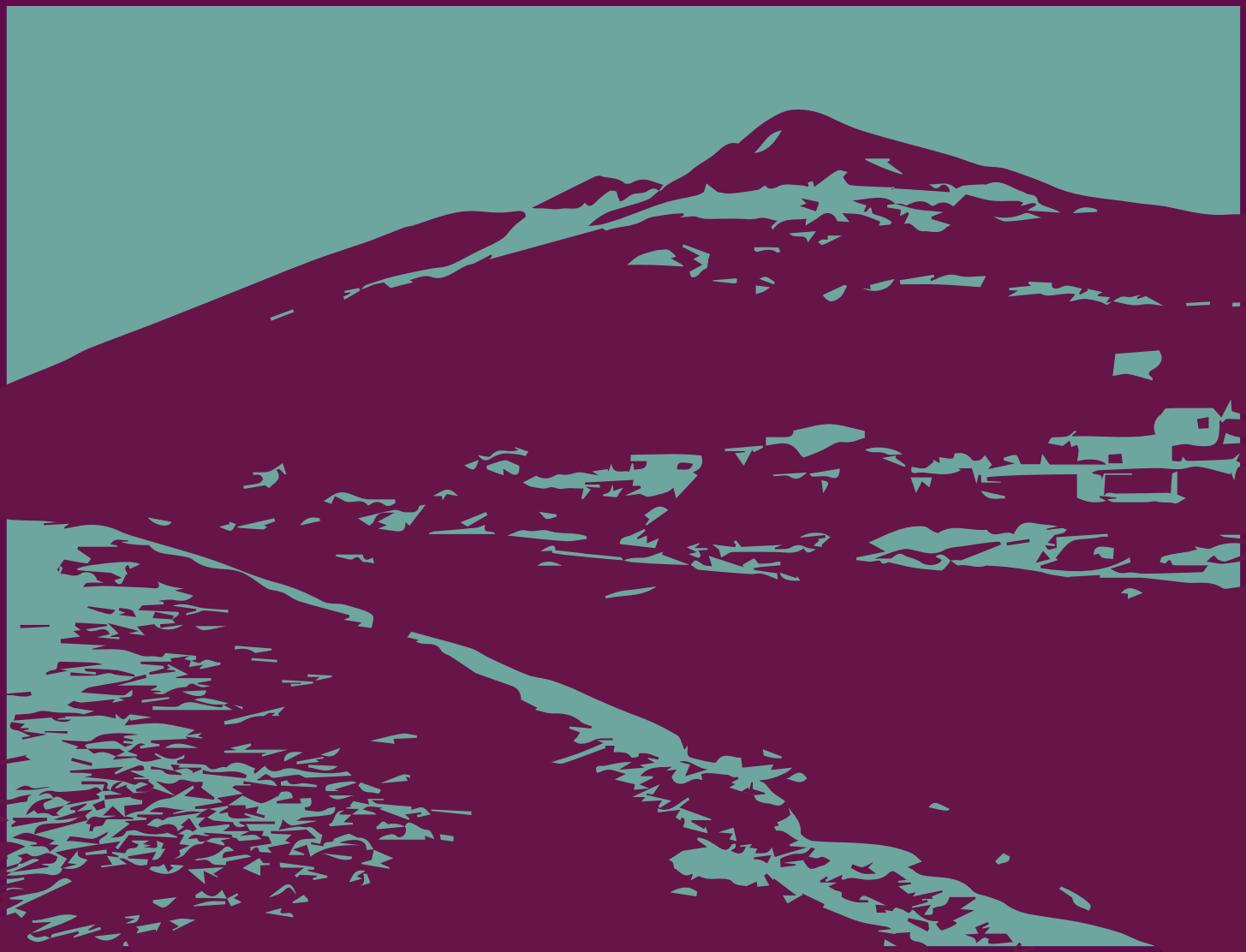
LAZZARO BEACH



Lazzaro Beach | Sicily

Volcano: Stromboli
Type: stratovolcano

Located in the southwestern part of the Stromboli island, it is made up of large boulders smoothed by the sea and the wind. The sea here is deep blue and slopes gently towards the open sea.

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BLACK BEACH

Black Beach | Sicily

Volcano: Stromboli
Type: stratovolcano

Is the Ficogrande beach, north of Scari in the Stromboli island.
It is located in front of the Strombolicchio and is made up of volcanic pebbles and black sand.

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GINOSTRA

Ginostra | Sicily

Volcano: Stromboli
Type: stratovolcano

The small village is arranged as an amphitheater in the south-western part of the island of Stromboli and offers a view of some islands of the Aeolian archipelago, the Calabrian coast and Mount Etna.
The upper part of the village is called Timpone. Here there is a prehistoric settlement of the Capo Graziano culture, dating back to the 17th - 16th century BC.

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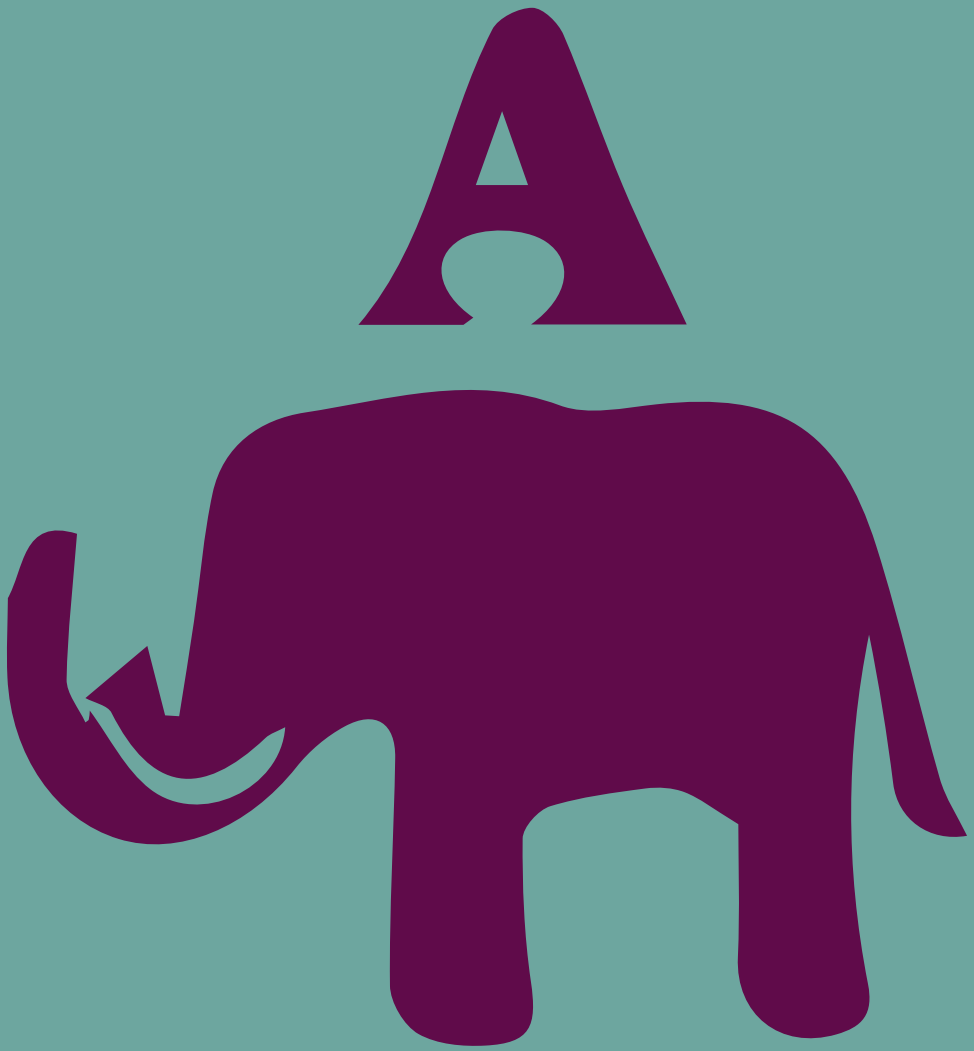
VULCANOPOLI

CATANIA



Catania | Sicily

Volcano: Etna
Type: stratovolcano

According to the Greek historian Plutarch, its name derives from the Sicilian *katane* (i.e. grater, a word of Indo-European origin), for the association with the roughness of the lava territory on which it stands, or also from the Latin catinum (basin, basin) for its natural conformation as a basin of the hills around the city or as a reference to the Piana basin.

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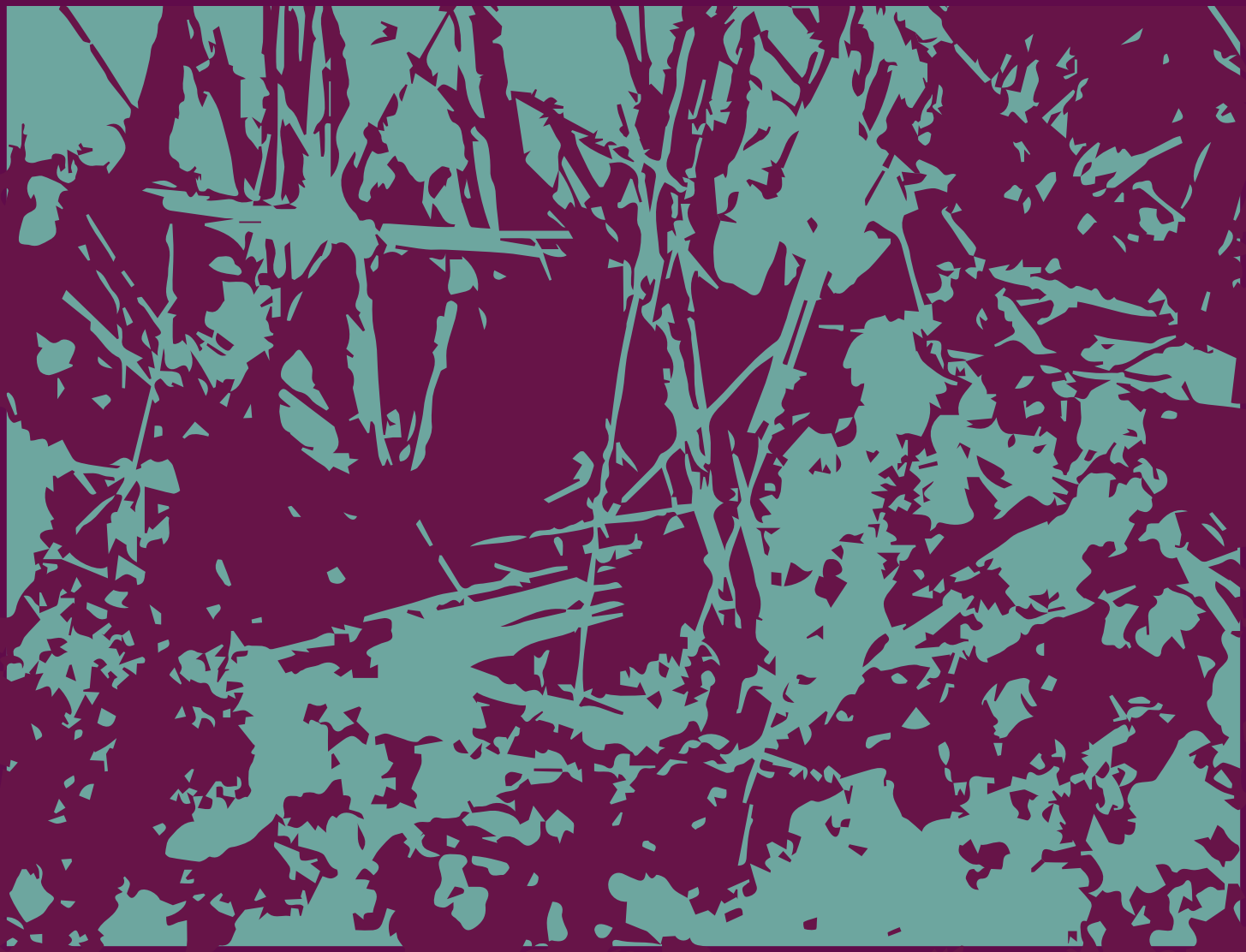
TRECASTAGNI

Trecastagni | Sicily

Volcano: Etna
Type: stratovolcano

Trecastagni rises on the slopes of the Etna volcano, and is one of the municipalities located at the highest altitude.
The territory is hilly and is surrounded by various volcanic cones of different ages and sizes (Monte Ilice, Monte Gorna, Monte San Nicolò, Tre Monti, Monte Serra).

BIANCAVILLA



Biancavilla | Sicily

Volcano: Etna
Type: stratovolcano

The municipality is located on the slopes of Etna, 513 meters above sea level, north-west of the city of Catania, on a magmatic slab that overhangs the Simeto valley, less than 4 km as the crow flies from the river.
famous for the presence of asbestos mineral called Gianfangite.

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ACICASTELLO

Acicastello | Sicily

Volcano: Etna
Type: stratovolcano

It is said that Aci Castello and the other Aci draw their origin from *Xiphonia*, a mysterious Greek city that has disappeared, probably today in the municipality of Aci Catena. The poets Virgil and Ovid gave birth to the myth of the foundation from the love story between a nymph called Galatea and a shepherd boy called Aci, but also from the cyclops Polyphemus (in turn in love with the beautiful Galatea).

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ACITREZZA

Acitrezza | Sicily

Volcano: Etna
Type: stratovolcano

A small fishing town, Acitrezza is famous for its magnificent stacks, eight basalt rocks which, according to legend, are nothing more than the boulders thrown by the Cyclops Polyphemus against Ulysses in the episode narrated by Homer in the Odyssey.

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VULCANOPOLI

curiosities

6000 B.C.

Neolithic Age

Volcanology, as a description of a volcanic phenomenon, was born in the Neolithic with the execution of a mural painting of a volcano with two peaks in eruption, probably Mount Hasan, in Çatal Hüyük (Turkey) and dating back to 6000 B.C.

122 B.C.

The classical period

In 122 B.C. the Roman government exempted the people of Catania from paying taxes for a decade given the extensive damage caused to the city by the products of the explosive eruption. This event constitutes the first institutional intervention for a natural disaster.

Ancient Greece

Greek period

The name Etna derives from the Greek word Aitne, which means “I burn”. According to Greek mythology, Aitna, daughter of heaven and earth, was the goddess of the volcano. Zeus is also believed to have buried Typhon under the mountain. Typhon was a hundred-headed monster whose restlessness caused eruptions.

GO AND VISIT THE PILLOW LAVAS OF ACITREZZA

Tommaso Fazello

After the Middle Ages, a new turning point took place in 1536 with the eruption of Etna. Both the chronicles of the time and Tommaso FAzello, a direct witness, describe it as one of the most violent.
Lavas erupted from the main cone on March 22.
On this occasion a new way of describing eruptions was born and new terms were introduced, such as “smoke” or “eruption”.

1536

Alfred Wegener

In 1912, Alfred Wegener proposed the theory of plate tectonics to explain continental drift and volcanism. Although imperfect and partly incorrect, his theory revolutionizes the perception that geologists and volcanologists have of volcanism, since it allows to unify the majority of geophysical phenomena.

1920

Francesco Ferrara

Francesco Ferrara aims to scientifically explain the origin of the lateral eruptions that frequently occurred on Etna. The lava ascending through the central conduit and reached the crater finds the way to be erupted through the flanks of the volcano. Thus he states in 1818 in the second edition of the Description of Etna: «The lateral eruptions therefore do not come from lava that had to pierce the soil of the Earth, and the body of Etna; they would have poured out of the crater if in rising through the central cavity they had not been determined to flow through underground channels before they could have come out, and poured over the surface».

1820

Teodoro Monticelli and Nicola Covelli

During the Vesuvian eruption of 1822
Teodoro Monticelli and Nicola Covelli observed some eruptive peaks of Vesuvius. They call these phases of intense activity “paroxysms”, a term still in use especially in recent years for the recent eruptions of Etna.

1822

Piero Gironi Conti

In 1904 Piero Gironi Conti exploited the steam from the boric acid fumaroles of Larderello, a Tuscan volcanic area, for the production of electricity, founding the first geothermal power plant.

1904

Giuseppe Mercalli

One of the greatest Italian volcanologists and seismologists ever, writes in the preface of his volume “The active volcanoes of the earth” (1907), “up to the end of the 16th century it cannot be said that there was a true science of volcanoes, not even in embryo, since historians and philosophers speak of them, but only incidentally and always very briefly to complete the civil chronicle of peoples or to illustrate philosophical theories.

1900

curiosities

The charm of the island has also made it the perfect setting for shooting the film **“Stromboli terra di Dio”** by Roberto Rossellini and the ideal location for the blossoming of a new love: the one between the director and the beautiful actress and Oscar winner. Ingrid Bergman, a relationship that caused scandal as they were both married. Furthermore, the volcano was the destination for the conclusion of Jules Verne’s science fiction novel, Journey to the Center of the Earth.

curiosities

To admire the “Sciara del fuoco” the best way
is on board a boat, perhaps during a romantic dinner!
In the Piscità area there are many hidden beaches,
often deserted, that we advise you to explore.
If, on the other hand, you have more free time, we recommend renting a boat to visit the other 6 islands as well.

curiosities

Originally the ancients, without knowing the real presence of a volcano, had given **Mount Vesuvius** a thousand names, including: Besùbio, Bèsuvio, Bèsbio, Bèbio, Bèmbio, Bisvio, Vèsulo, Vèsuro, Vèsulo, Vèsvio, Vesùbio, Vèsebio, Mèulo , Esbius, **all having as root “ves” that is fire, understood as sun, burning earth.**

curiosities

The **Albano lake**, also known as **Lake of Castel Gandolfo**, is located at 293 meters above sea level and is the deepest of the volcanic lakes in Italy with about 167 m depth. At present it is about 3.5 km long and 2.3 km wide, with an extension of about 6 square kilometers.

curiosities

The name **“Castel Gandolfo”** derives from the Latin
“Castrum Gandulphi” name of the castle from the Gandolfi family,
probably originally from Genoa.
Another hypothesis, supported in his Commentarii (1462)
by Pope Pius II, is that the town’s toponym derives
from a Gandulphi Sabinorum, from the name
of a member of the Savelli family.

curiosities

The king of the knights of the round table, the Morgana fairy and the sword in the stone, seems to have known Etna very well. Wounded by his son and nearly dying, the king wanted his sword broken in duel to be repaired. Archangel Michael wanted to fulfill Arthur's last wish and so he took him to Sicily: the king repaired his sword and then fell asleep in a cave on the volcano. Upon awakening, he found himself in front of a wonderful sight: the view of the sea, the blue sky, the scent of citrus fruits. Enraptured **by so much Sicilian beauty, the king prayed to the gods to make him live again in that paradise and to be able to watch over so that Etna would not erupt again and destroy that wonderful territory. The gods granted his request and the king built a cave inside Etna, with the help of his sister Morgana. Today it is said that the volcano wakes up and spits out lava, lapilli only when King Arthur returns to England to bring Sicilian fruits and flowers to English children.**

curiosities

Among the best known legends there is certainly that of the giant Enceladus, who one day took it into his head to take the place of Jupiter. So, helped by his giant friends, he built a ladder to reach heaven to conquer his kingdom. But Jupiter, realizing the attempt, threw a bolt of lightning at them and blinded them. **Enceladus was thus buried under Etna and, very angry, he began to spit fire and flames from the crater.** A custom that he repeats every time Etna erupts, to remember his never sedated anger.

curiosities

According to the story of 1700,
Pulcinella would have been born from the shell of a magical egg, which appeared on the summit of Vesuvius by the will of Pluto, the God of the Underworld and the Dead, following the request of two Neapolitan sorcerers, who would have prepared the dough magical because they wanted to receive a savior, a rescuer, an ally of the people who would heal situations of injustice and oppression that weighed so much on the city.

curiosities

According to a folk tale of the second half of the 19th century,
a man named Mauro who suffered from a strange disease for which
he was born with a black face, went to Vesuvius to ask him for a
grace: that of being transformed into a normal man.
Moved by his prayers, the volcano granted his request;
he sent an Angel who led him into the crater and blowing ash
on his face, Mauro acquired his white skin.
From that moment the two craters of Vesuvius
were called Angelo and Mauro.

curiosities