

# THE VOLCANO ERUPTS!

## **The Purpose Of The Activity:**

To explore the structure and functioning of volcanoes. To observe how the reactions in the experiment create gases that generate pressure and lead to eruptions. To discover how volcanic eruptions affect nature and human life.

## **Theme Beyond Disciplinaries:**

How we express ourselves  
How the world works



**CURIOUS  
BOX** 



# INQUIRY CYCLE

## TUNING IN

Let's Arouse  
Curiosity



## FINDING OUT

What Should Little  
Science People  
Discover?



## SORTING OUT

Let's Start  
Discovering!  
Scientific  
Explanation  
For The Curios,  
Video



## GOING FURTHER

What else can  
we do?



## TAKING ACTION

Question of the day?



## MAKING CONCLUSIONS

Activity pages,  
Exit Card



# THE VOLCANO ERUPTS!

## Let's Arouse Curiosity



Following questions will be directed to students:

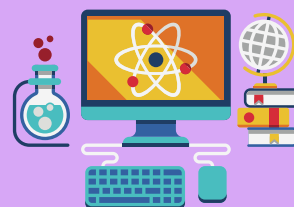
- What is a volcano? What do volcanoes look like? Has anyone seen one before?
- Why should people be careful in areas where there are volcanoes?

“Imagine there is a huge oven deep in the Earth. In this oven, boiling rocks and gases are building up. Sometimes this oven accumulates too much pressure and erupts to release it. So, what causes this eruption? How does the magma beneath the Earth surface rise? Volcanoes are powerful structures of nature. Today, we will discover how volcanoes form and what happens when they erupt. Let’s explore this powerful natural phenomenon together!” Then, the materials for the activity are taken out.

## Let's Start Discovering!

The activity video is watched by pausing. Before proceeding with the activity the content of the set is checked. All lid and package opening stages are done at the same time with students.

Watch the video by pausing!



## Content Of The Set

- |  |  |
|--|--|
| <input type="checkbox"/> Experiment tray           | <input type="checkbox"/> Liquid soap                     |
| <input type="checkbox"/> Experiment mat            | <input type="checkbox"/> Stirring stick                  |
| <input type="checkbox"/> Bottle                    | <input type="checkbox"/> Water (not included in the set) |
| <input type="checkbox"/> Base (sodium bicarbonate) | <input type="checkbox"/> “Fun Discoveries” activity page |
| <input type="checkbox"/> Citric acid               |  |
| <input type="checkbox"/> Play dough                |  |

## How Do We Do It?



1. Place the experiment tray and mat on the table.
2. Put the bottle on the tray.
3. Take some play dough and shape it around the bottle to look like a mountain.
4. Fill the bottle halfway with water.
5. Pour all of the base into the bottle and stir.
6. Add the liquid soap and stir.
7. Pour all of the acid onto the mixture and observe the chemical reaction.  
(At this stage, since the acid and base will react, there will be an overflow)

## What Should Little Scientist Discover?

The following questions are asked to the students:

- How is the eruption of a volcano similar to opening the cap of a shaken soda?
- How are experiments conducted?
- What should scientists pay attention to while conducting experiments?

Scientists are always curious, careful, and patient when conducting experiments. They start by asking questions to discover what will happen and observe carefully. They follow the steps in order and take care to do things correctly without rushing. Even if they make mistakes during the experiment, they don't give up and try again. They also pay great attention to safety to protect themselves and their surroundings. At the end of the experiment, they examine the results and try to understand what they have learned. Conducting an experiment is a journey of discovery and learning for scientists.



Conducting an experiment is like a game. First, we decide what to do, and then we gather the necessary materials. For example, we might use water, soap, or baking soda. We do everything step by step and carefully watch what happens. If there's a change, it's very exciting. At the end of the experiment, we discuss what we learned.

A chemical reaction is when two different things come together to create something new. For example, when we mix flour, eggs, and milk, and then put it in the oven, it turns into a cake. So, its old state is different, and its new state is different. Chemical reactions work like that too. Some substances combine to produce a brand new substance. In the activity we did, when we mixed citric acid and base, a new gas was released. Just like the lava that comes out of volcanoes, it's like the fizzing of a shaken soda.

## For the Curious: Scientific Explanation

The following questions are asked to the students:

- What could be the effects of a volcanic eruption on the animals and plants around it?
- How do volcanoes form?
- What is a volcano?

A volcano is like a door through which molten rocks and gases from beneath the earth can escape.

How do volcanoes form?

There is a very hot area beneath the Earth called the "mantle." Inside the mantle, there are molten rocks (magma) and gases. Sometimes these hot rocks rise towards the Earth's surface. When they reach the surface, a volcano emerges. These events are called "volcanic activity." Volcanoes are special places that release heat from inside the Earth. They can erupt for very long periods, even millions of years. When volcanoes erupt, the gas and rocks inside burst out with a loud noise.

### Effects of Volcanoes on Living Things

When volcanoes erupt, ash and gases can mix into the air. This can make it hard for people to breathe and disrupt air traffic. Additionally, eruptions can sometimes change the temperature of the air. Volcanoes can damage surrounding agricultural areas and homes. They can also create large waves (tsunamis) and tremors (earthquakes). Volcanic eruptions can contaminate water sources, affecting the lives of animals and plants. Because of this, animals may be forced to leave their habitats.

## What Else Can We Do?

### Dear Teacher,

While learning how volcanic eruptions occur, you conducted a chemical experiment.

You can carry out the “Paint the Lava Path” activity.

### Materials:

- Large white cardboard or paper
- Red, orange, yellow finger paint
- Plastic spoons
- Water spray

- 1.The teacher informs the students about the activity.
- 2.Students are asked to draw a volcano on the cardboard, designing it according to their imagination.
- 3.Students place red, orange, and yellow finger paints on the top of the volcano with spoons. These colors represent the flow of lava.
- 4.The water spray is used to spray the volcanic peaks. This action allows the paints to flow and represents the movement of lava.
- 5.The teacher provides information about the flow of lava, allowing students to observe and discover the eruption processes of volcanoes.

## What Did We Discover? / Exit Card

“Today we did a very fun experiment together. It was just like a volcano, right? So, how did you feel during this activity?” The activity page and exit card are prepared.

Günün Sorusu



Are there active volcanoes in Turkey?

# WHAT DID YOU LEARN TODAY?



# CURIOUS BOX



miniskop

[www.curiousbox.co](http://www.curiousbox.co)