UNIT
IV

EARTH and SPACE

OBJECTIVES OF THIS CHAPTER

- Explain the processes that shape the surface of the Earth
- Identify the causes of weather disturbances
- Discuss the effects of the moon in our everyday lives
- Describe some characteristics and patterns of stars

BIG QUESTION

- ❑ What are the different processes that continually shape the Earth's surface?
- ❑ How do weather disturbances affect living things and the environment.

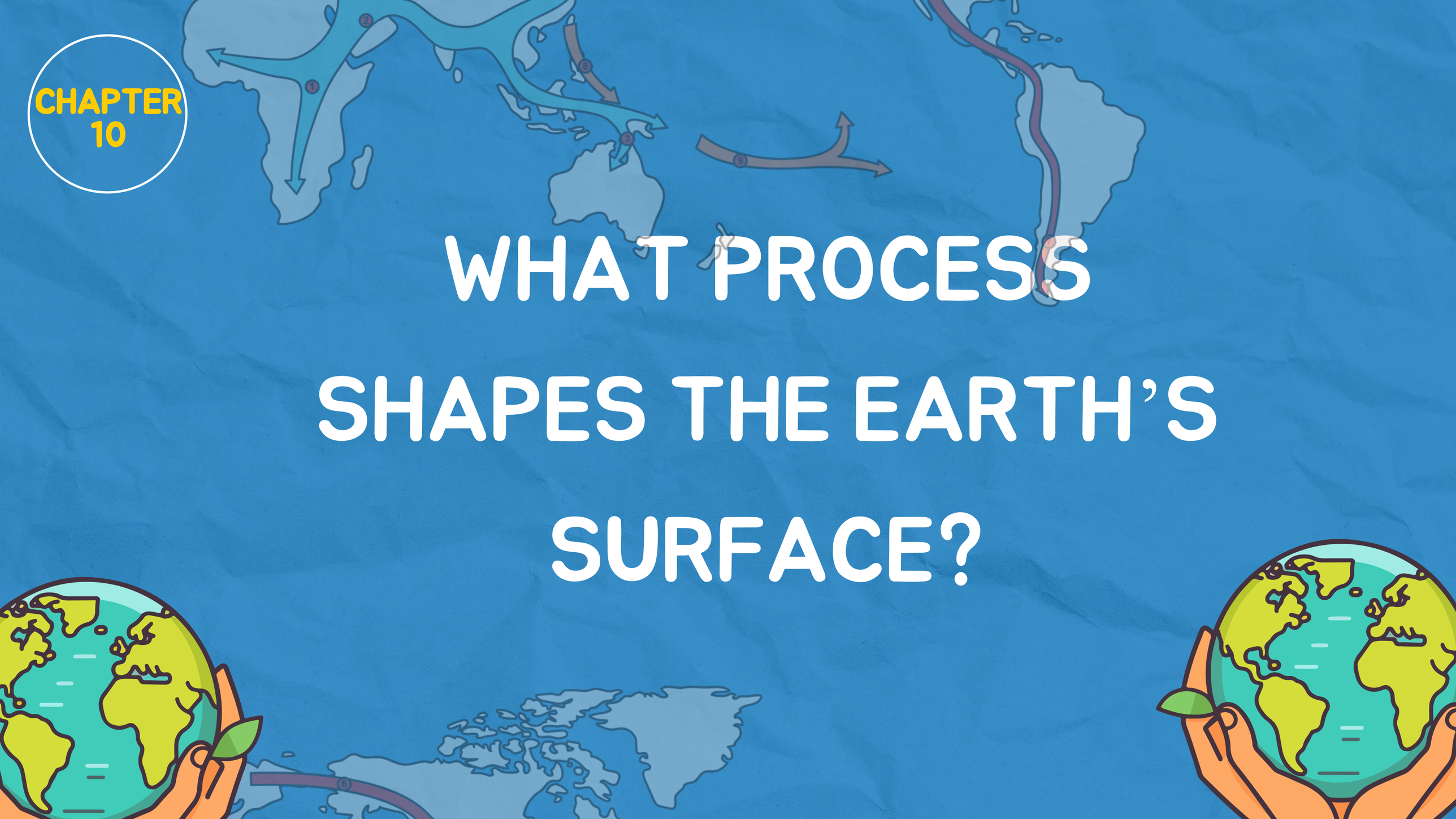
Earth or home, just one of the eight planets that make up the Solar System. It is a terrestrial planet with the moon. It has different landforms and bodies of water, most of which are inhabited by living things.

The Earth’s surface continually changes of the processes that take place on and around it. These processes include weathering, soil erosion, and Weather disturbances that occur on Earth’s atmosphere also affect living things and the environment .

In this unit, you will learn how rocks undergo weathering and soil is carried away by erosion. You will also learn how weather disturbances affect the community. You will also describe what happens before, during, and after a typhoon. In a addition, you will also look into the changes in appearance of the moon and the pattern of stars that can be seen on certain times of the year.

CHAPTER 10

WHAT PROCESS SHAPES THE EARTH'S SURFACE?



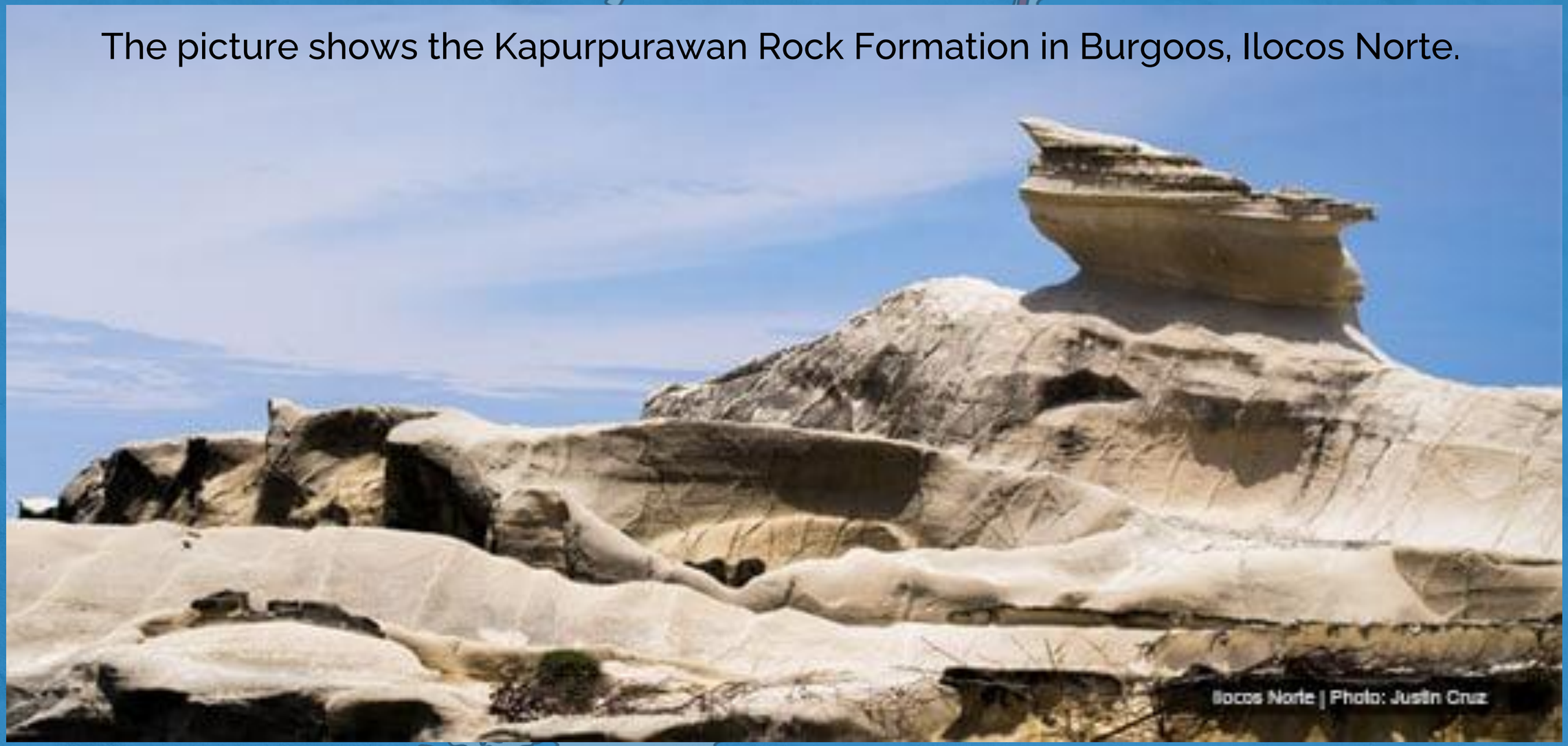
OBJECTIVES OF THIS CHAPTER

- Define weathering
- Define soil erosion
- Explain the effects of soil erosion
- Enumerate and explain the different ways to control soil erosion

BIG IDEA

- Some processes like weathering and erosion continually shape the Earth's surface

The picture shows the Kapurpurawan Rock Formation in Burgoos, Ilocos Norte.



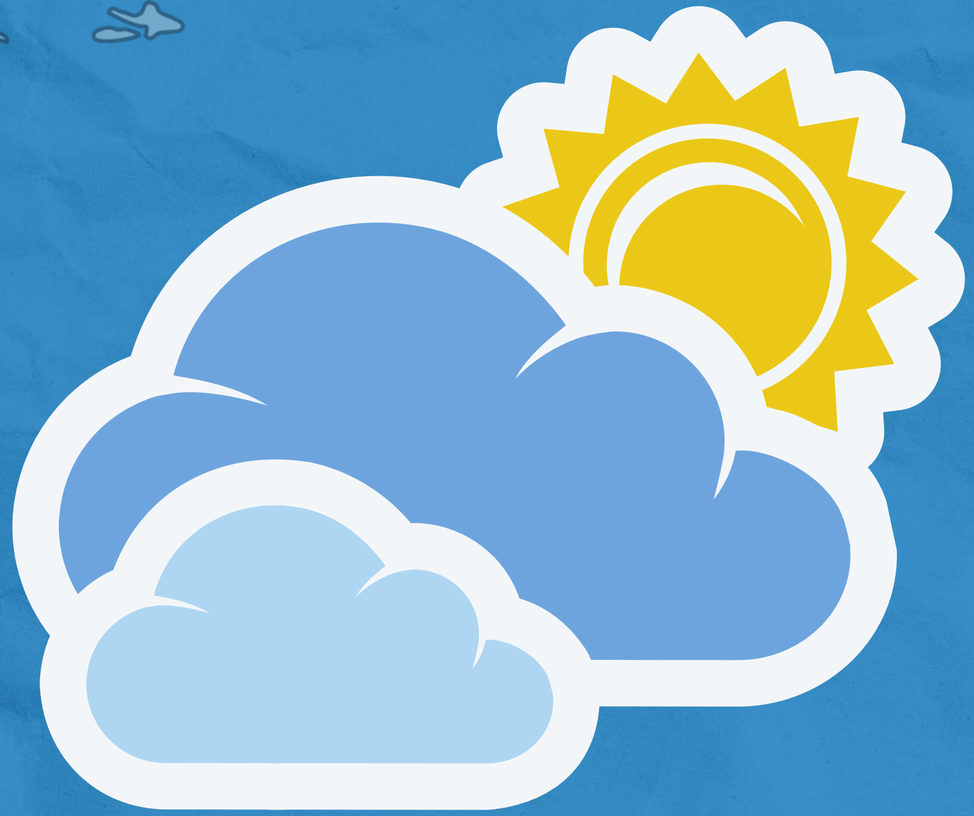
The picture shows the Kapurpurawan Rock Formation in Burgoos, Ilocos Norte.

Our country is a well known tourist spot because of its beautiful beaches and historical places. It also has breathtaking rock formations that are really amazing to look at. Its rock have very peculiar shapes, sizes, and patterns. Have you wondered how these rocks were formed and how look it took them to form?

In this chapter, you will learn more about the changes on Earth's surface brought about by weathering and erosion. You will study and discuss how rocks undergo weathering and soil is carried away by erosion. You will also infer that the surface of the Earth changes over time.

LESSON 32

WEATHERING



Earth is mainly composed of rocks that differ in terms of sizes, shapes, and colors. Though rocks see to be very hard, dense, and indestructible, they still break. The breaking of rocks into fragments is known as weathering.

Weathering is an important process that helps shape the Earth's surface. The breaking of rocks result in the formation of soil and different landforms. This is also the reason we have amazing rock formations.

Weathering can either be mechanical or chemical. **Mechanical weathering** is the physical wearing away of rocks, while **chemical weathering** involves a change in the composition of rocks that allows them break down into pieces.

Agents of Weathering

The different agents of weathering includes water, wind, temperature, plants, animals, and people. It causes rocks to break into pieces.

- ***Water***

Water can break rocks in different ways. The strong waves hitting the rocks can make it break. Water cab seep into the cracks of the rocks. When it gets colder, these water can expand and turn into ice, This can trigger rocks to break as well.

➢ *Wind*

Wind is another agent of weathering that causes many beautiful formations like Mahayaw Arch in Sabtang Island, Batanes, Philippines.

As the wind blows, it carries sand or small rock particles that scratch the rocks' surface. This can bring about mechanical weathering which can also result to different rock formations.

➢ *Temperature*

When rocks are exposed to varying temperature, it expands. If rocks are exposed to a low temperature, it contracts. The repeated expansion and contraction of rocks due to changes in temperature results in weathering.

- ***Plants***

Some plants, like lichens, ferns, and mosses, can also trigger weathering. It can grow on rocks and cause it to break into pieces. Eventually, metabolic or life process of these plants will cause the gradual breakage of rocks into smaller pieces.

Trees can also trigger weathering. Its growing roots can break the cemented ground in search for more minerals in the soil.

- ***Animals***

Animals that live underground also contribute to weathering. As burrowing animals dig deeper, they cause rock to break into pieces, too.

Burrowing animals such as the rabbit contribute to weathering by digging deeper that cause rocks to break into pieces.

Wind causes rocks to form different shapes like the Mahayaw Arch in Sabtang Island, Batanes, Philippines

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➢ *Humans*

Humans also contribute to the weathering of rocks.

Subdivision developers use a bulldozer to flatten mountains or hills to build houses. Some construction workers use jackhammer to break boulders of rock as they repair roads. Mining companies extract stones or rocks from a quarry or an open-pit mine. Some miners throw dynamites and other explosives on quarry sites to get more rocks or stones. This mining activity can trigger landslides.

THANK YOU!!