

# Learning Objective

Today we will be able to describe the 5 types of mechanical weathering

Will a mountain last forever?



Rocks at the top of mountains are jagged, like this:



Rocks at the bottom of mountains are more rounded, like this:



Why do you think the rocks look different?  
What happened?

# Sugar Shake Lab!!



# What is weathering?

-Weathering is the process that breaks down rock and other substances on Earth's surface.



Weathering is divided into 2 different types.

**Mechanical & Chemical**  
(or Physical)

**Mechanical Weathering:** The type of weathering in which rock is physically broken into smaller pieces



Open your textbooks to  
page 57.

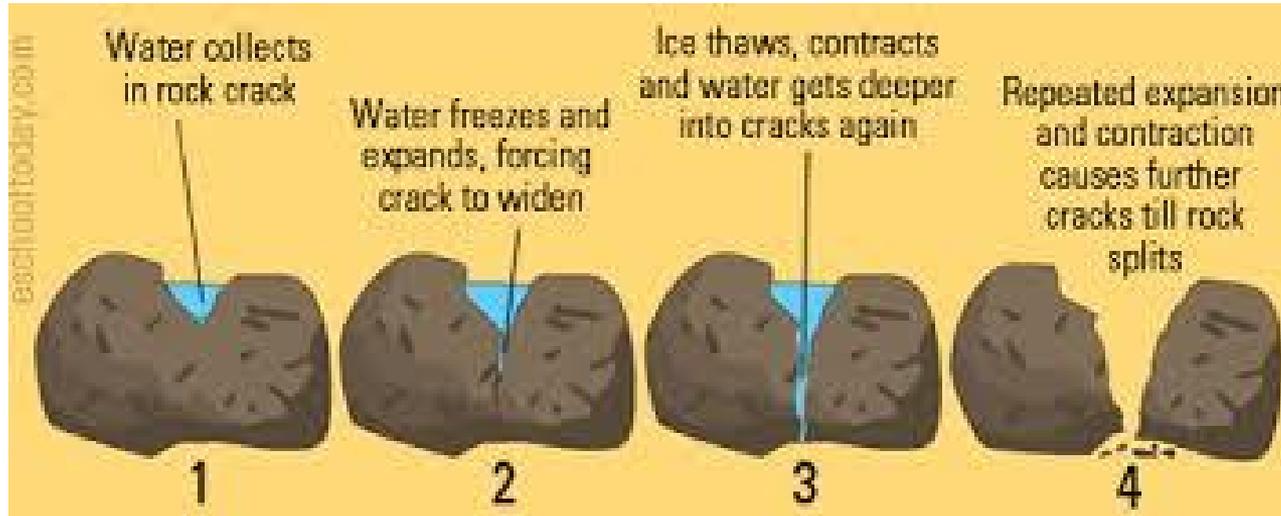
# Pair Share:

Give an example of mechanical weathering

       *is an example of mechanical weathering*  
*because* \_\_\_\_\_

# Ice Wedging

When water freezes in a crack in a rock, it expands and makes the crack bigger. This process is called ice wedging. It repeats until the rock finally breaks apart.



# Release of Pressure

As surface rock erodes, pressure on the rock is reduced. This causes the rock to crack and flake off like layers of an onion.



Figure 10.19  
Understanding Earth, Fifth Edition  
© 2007 W. H. Freeman and Company



Pressure Release



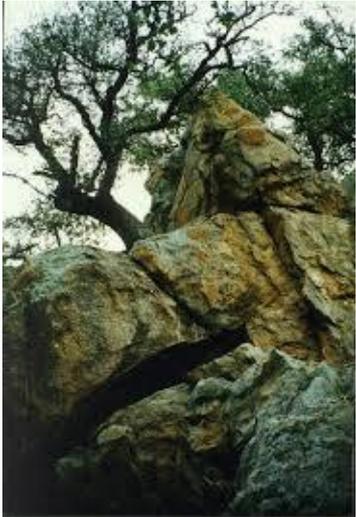
FIGURE 10.3 Pressure release fracturing contributed to the fracturing of granite in California's Sierra Nevada.

# Release of Pressure



# Plants

Roots of plants enter cracks in rocks. As roots grow they force the cracks farther apart.



# Animals

Animals that burrow in the ground loosen and break apart rocks in the soil



# Abrasion

Sand and other rock particles are carried by wind, water or ice to wear away rock surfaces.



# Pair Share:

Give two examples of mechanical weathering and describe them.

       *is an example of mechanical weathering. In the process it \_\_\_\_\_.*

       *is an example of mechanical weathering. In the process it \_\_\_\_\_.*

## ***Exit Ticket:***

Describe “ice wedging” and the effect it has on rocks.

# Learning Objective:

Today we will be able to describe 5 types of chemical weathering



**Chemical Weathering:** The process that breaks down rock through chemical changes.



Open your textbooks to page 60-61. Use the book to fill in the chart in your notes.

# Water

When a rock or other substance dissolves in water, it mixes to make a solution. Over time, many rocks will dissolve in water. This often happens in beaches, rivers, and streams



# Pair Share:

**What happens to rocks that are left in water for a VERY long time?**

# Oxidation

A chemical change in which a substance (iron in rocks) combines with water and oxygen to form rust. You can identify this type of weathering by looking for rust which causes the rock to be a reddish or brown color. Rust makes rock soft and crumbly.



# Pair Share:

When oxygen, iron, and water come together it forms \_\_\_\_\_.

That process is called \_\_\_\_\_.

# Carbon Dioxide

Carbon dioxide dissolves in water, creating carbonic acid. If a rock is exposed to carbonic acid it will develop little holes where it came in contact with the acid.



Weathering  
<http://www.geosci.unc.edu>



# Pair Share:

**How can you tell that a rock has been exposed to carbonic acid?**

*I can tell a rock has been exposed to carbonic acid because \_\_\_\_\_*

# Living Organisms

Plants produce a weak acid that slowly dissolves rock around the roots.



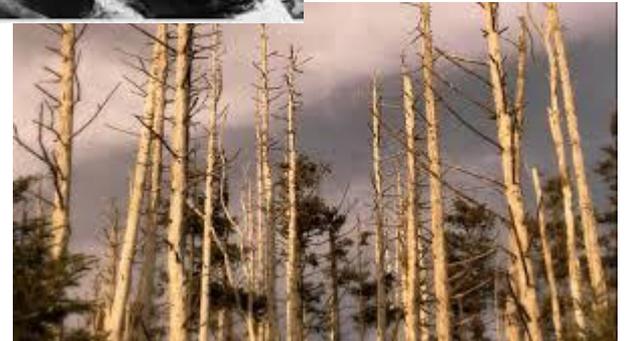
# Pair Share:

**What happens when plant roots come in contact with rocks?**

*When roots come in contact with rocks, the acid in the roots*  
\_\_\_\_\_.

# Acid Rain

When the pollution mixes with the air, it creates acid. If this acid mixes with rain water, it causes acid rain which can put holes into rock.



# Pair Share:

**What happens air pollution mixes with rain water?**

*When pollution mixes with rain water it forms*

\_\_\_\_\_.

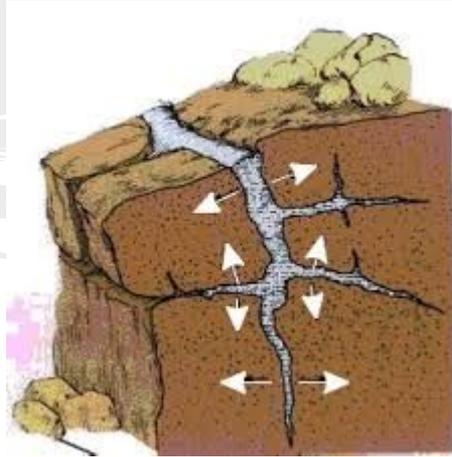
# Pair-Share

What is the difference between mechanical and chemical weathering?



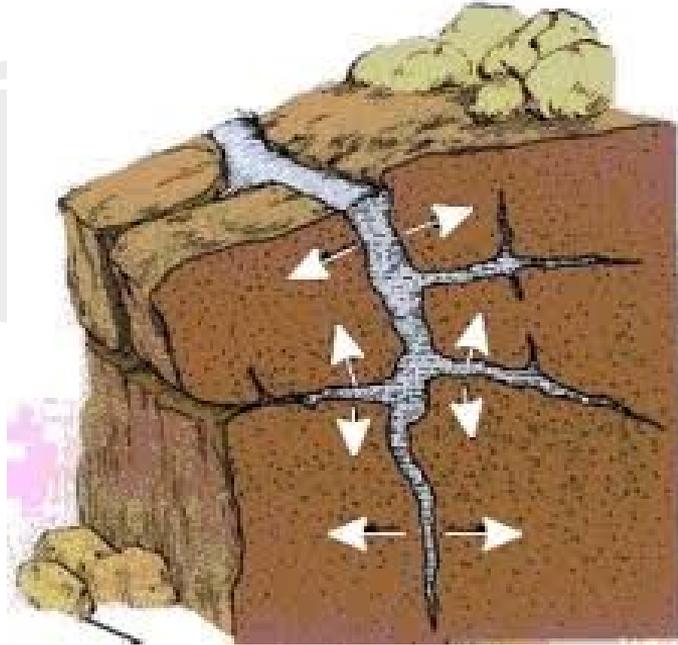
## Pair-Share

Is this an example of mechanical or chemical weathering? How do you know?



*This is an example of \_\_\_\_\_ because \_\_\_\_\_*

Whiteboard: What caused this?



# Whiteboard: Chemical or Mechanical?



# Pair-Share

Is this an example of mechanical or chemical weathering? How do you know?



# Whiteboard: Chemical or Mechanical?



**Whiteboard:** What caused this?



## Pair-Share

Is this an example of mechanical or chemical weathering? How do you know?



*This is an example of \_\_\_\_\_ because \_\_\_\_\_*

## Pair-Share

Is this an example of mechanical or chemical weathering? How do you know?



*This is an example of \_\_\_\_\_ because \_\_\_\_\_*

## ***Exit Ticket:***

Where does acid rain come from? How is it harmful?

## ***Exit Ticket:***

Describe the difference between mechanical and chemical weathering.