

# Unit 2

## Weathering, Erosion, Deposition and Landforms



# Lesson 1 Weathering page 84

## How does weathering change Earth's surface?

**SC.6.E.6.1** Describe and give examples of ways in which Earth's surface is built up and torn down by physical and chemical weathering, erosion, and deposition.

# Engage Your Brain page 85

## True or False - TURN AND TALK

**True** Rocks can change shape and composition over time.

**False** Rocks cannot be weathered by wind and chemicals in the air.

**True** A rusty car is an example of weathering.

**True** Plants and animals can cause weathering of rocks.

# Engage Your Brain page 85

## #2 - TURN AND TALK

**Your class has taken a field trip to a local stream. You notice that the rocks in the water are rounded and smooth. How did this happen?**



# What causes physical weathering? Page 86-89

## Read and Textmark

### **Definition of physical weathering (pg 86)**

**Rock is broken down into smaller pieces by physical changes, without a change in the composition (make up) of the rock**

# What are the agents of physical weathering?

## Write this in your ISN

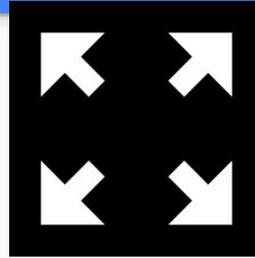
- *TEMPERATURE CHANGES*
- *PRESSURE CHANGES*
- *PLANT AND ANIMAL ACTIONS*
- *WATER*
- *WIND*
- *GRAVITY*

# 1) Temperature Change (pg 87)

## Read and Textmark

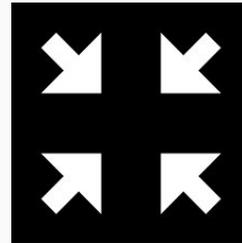


A rise in temperature will cause a rock to expand



News Flash!  
Water is weird...

A decrease in temperature will cause a rock to contract



Water expands when it freezes

# Page 87 - Complete Questions 6 & 7

**6. Describe the process of ice wedging.**

**Water gets into the cracks of rocks and freezes causing the rock to expand and break apart.**

**7. Where is weathering from temperature change least common?**

**Near the equator where temperature change is less drastic**

**Most common?**

**Deserts where temperature changes are more drastic**

## 2) Pressure Change (pg 88)

### Read and Textmark



Rocks formed under pressure deep within Earth become exposed at the surface pressure decreases, the rock expands, causing the outermost layers of rock to separate from the underlying layers

Exfoliation - outer layers of rock slowly peel away due to pressure changes

### **3) Animal Action (pg 88)**

## **Read and Textmark**



**Animals move soils and allow materials to be exposed at the surface**

**Materials are more likely to be weathered once exposed to the surface**

**Why? Turn & Talk**

**Because that is where most of the processes that break rock occur, on the surface**

### **3) Plant Growth (pg 89)**

**Read and Textmark**

**Plants grow inside small cracks in rocks**

**The larger a root grows, the more pressure it puts on rock**

**What could happen eventually? Turn & Talk**

**the rock expands and can break apart**



## 4) Wind 5) Water and 6) Gravity (pg 89)

### Read and Textmark

Abrasion - the breaking down and wearing away of rock material by the mechanical action of other rock

What are some other words you can use to describe abrasion?

Turn & Talk

**scraping, rubbing, sand blasting**

Glaciers rub as they move downhill because of \_\_\_\_\_

Moving water - rocks are tumbled in water

Wind - small particles blast away at surfaces

Landslides are caused by \_\_\_\_\_

# Complete #5 on Pg 86 - Agents of Physical Weathering

**Temperature  
Changes**

**Abrasion by  
Wind**

**Pressure Changes  
(exfoliation)**

**Abrasion by  
Water**

**Plant and Animal  
Actions**

**Abrasion by  
Gravity**

# What causes chemical weathering? Page 90-91

## Read and Textmark

### **Definition of chemical weathering**

**The breakdown of rocks by chemical reactions, changes both the composition and appearance of the rock**

# Reactions with Oxygen



Oxidation - oxygen in the air or water,  
reacts with the compounds that make up rock,  
causing chemical reactions

Example: **rust** (sometimes rock surfaces change color)

# Reactions with Acid Precipitation

Acid precipitation - acids in the atmosphere are created when chemicals combine with water in the air

rain is normally slightly acidic

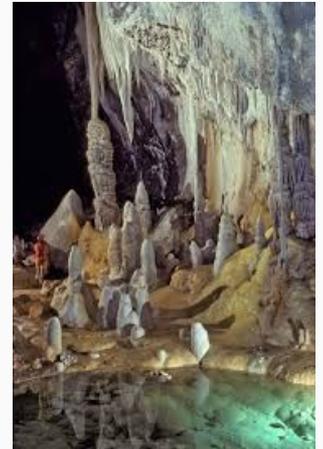
Example: a stone statue exposed to rain



# Reactions with Acids in Groundwater

As groundwater moves through spaces or cracks in rock, acids in the water can cause rocks to dissolve

Example: cave systems



# Reactions with Acids in Living Things

Acids are produced naturally by certain living organisms

As they grow on rocks, they produce weak acids that can weather a rock's surface

Example: lichens, mosses



## **Visual Summary pg 92**

**Complete #14 and #15**

## **Lesson Rev pg 93**

**#1-4 Vocabulary**

**#7 Compare**

**#8 Analyze**

**#9 Apply**

# Erosion and Deposition page 96

## Read and Textmark

**Sediment - tiny grains of broken-down rock**

**Erosion - the process by which sediment and other materials are moved from one place to another**

**Deposition - the process by which eroded material is dropped**

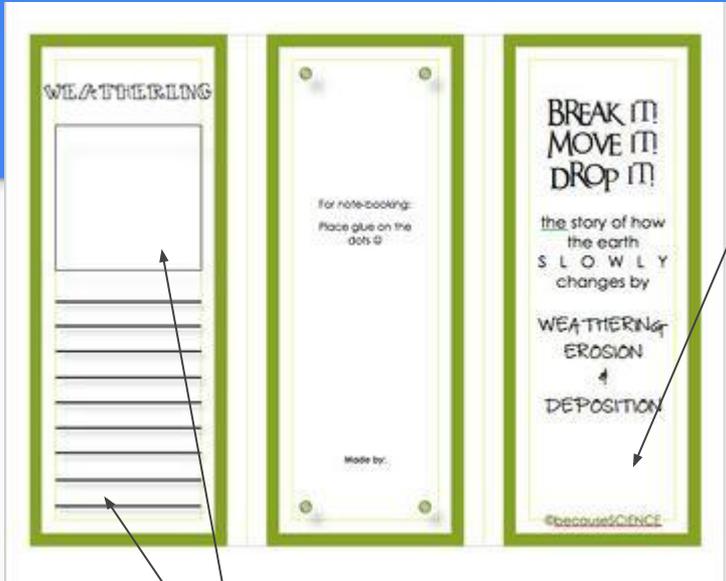
**This usually happens when wind or water slows down**

# What are the agents of chemical weathering?

## Write this in your ISN

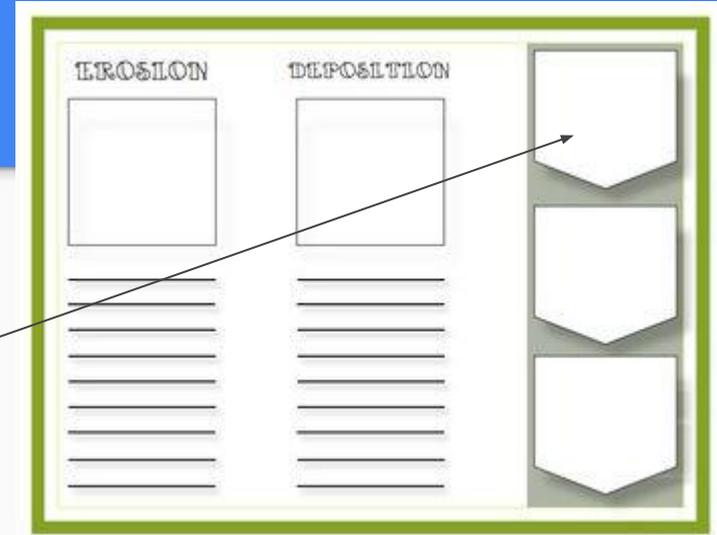
- OXIDATION (RUST)
- ACIDS (PRECIPITATION, GROUNDWATER, LIVING THINGS)

# Physical and chemical weathering brochure



## Name, Date, & Period

In the 3 pockets inside the brochure, write down your own way to remember the 3 processes.



In the box, draw a picture of what each process looks like to you.

On the lines below, give a description of what each process is in your own words. Also list any agents of weathering and erosion. List 3 examples of Landforms created by deposition.