Weathering, Soil, Ice Ages, Glaciers

Name:

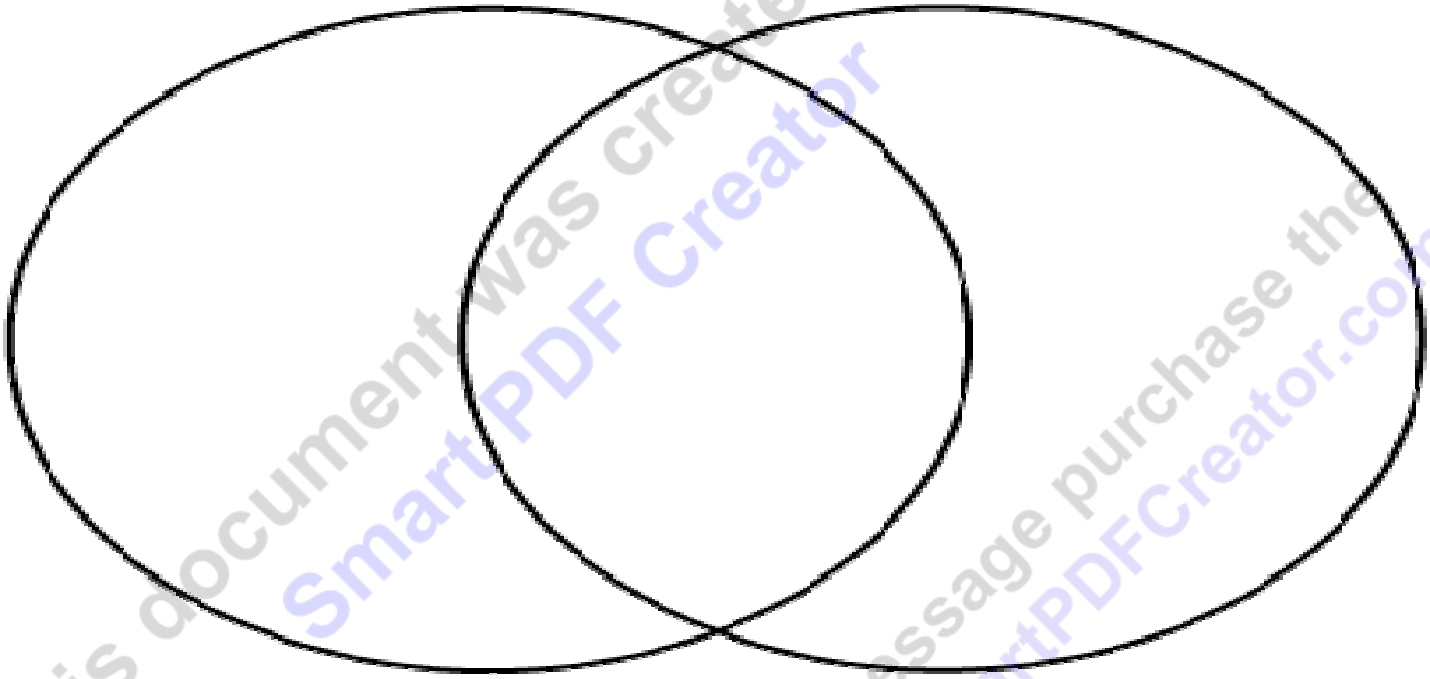
Why should we study soil? What is the importance of this unit?_____

_____

_____

What are the similarities and differences between mechanical and chemical weathering.

Mechanical Weathering Similarities Chemical Weathering



Please describe the type of mechanical weathering represented by the pictures below.

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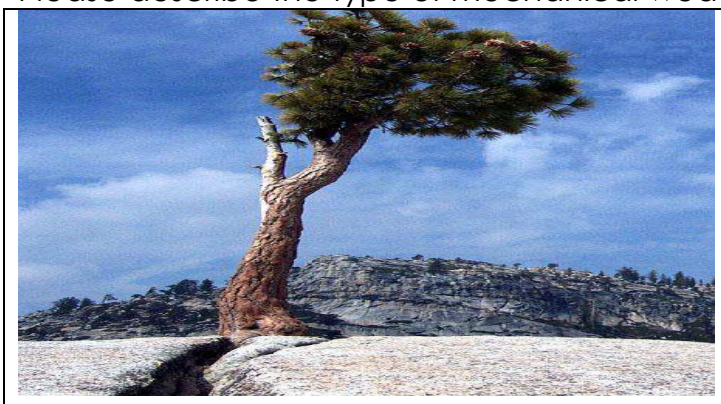
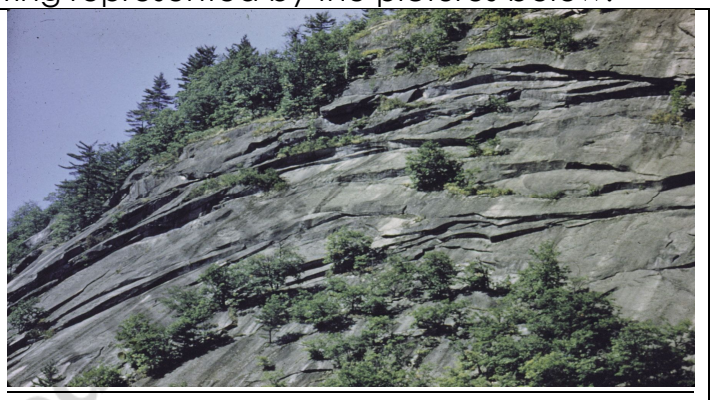
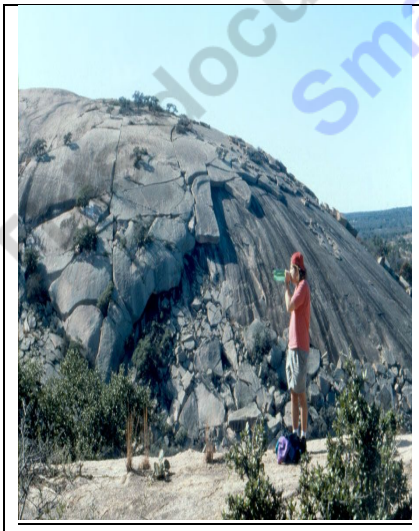
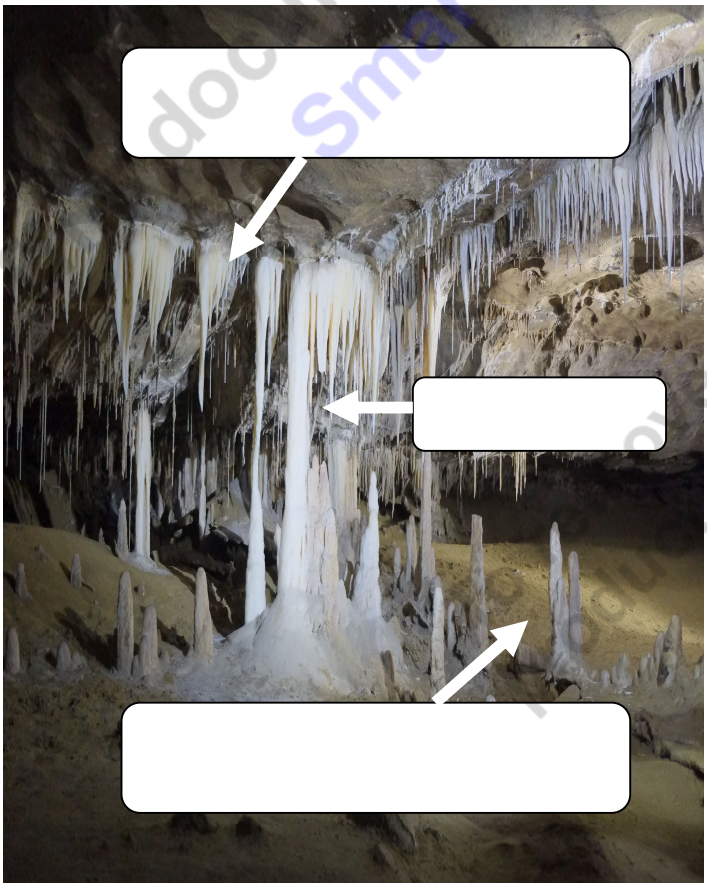






HOT THEN COLD

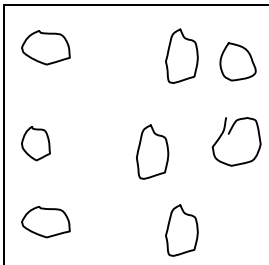
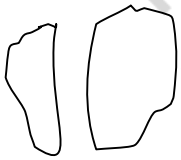
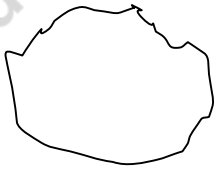
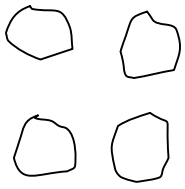
Describe the picture below. Use illustrations to support text.



_Warning! Two part question -Please describe the types of weathering that is occurring on this tombstone, Next, describe the synergism between mechanical and chemical weathering?

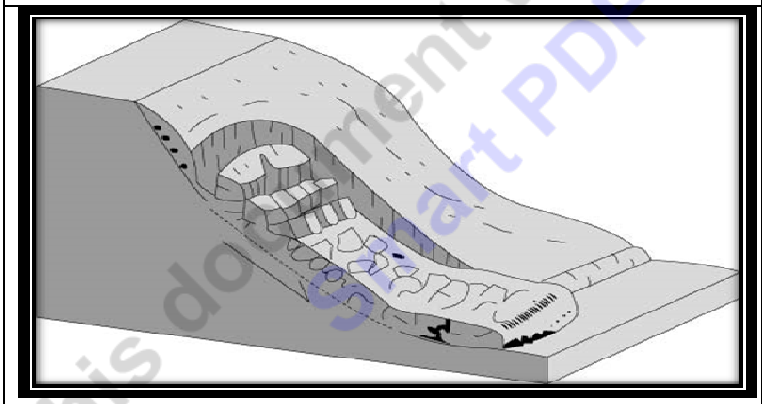
Synergy: the interaction or cooperation of two or more organizations, substances, or other agents to produce a combined effect greater than the sum of their separate effects

Please label 1-5the order that the rocks below will weather


Please describe the type of mass movement below. Please provide a sentence about the speed of the movement and water content.

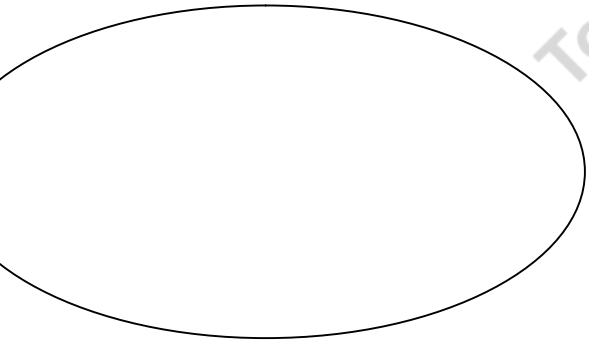
Word Bank: Soil Creep, Mud Flow, Rock Fall, Debris Slump, Debris Slide, Debris Flow

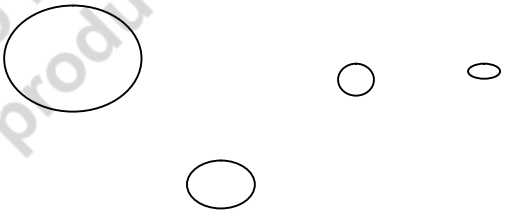


What's the difference between dirt and soil?_____

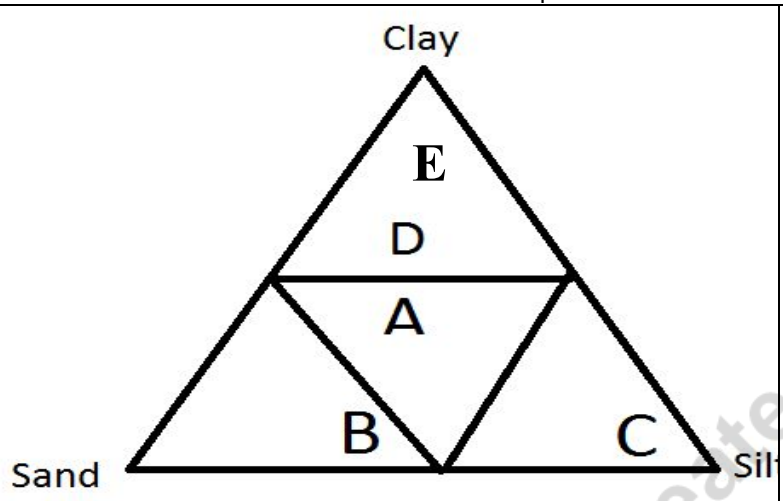
Please color the box below to represent poor soil. Explain why you colored it the way you did?	Please color the box below to represent healthy soil. Explain why you colored it the way you did?
	

Measure the soil particles below and name them as accurately as possible





Describe the soil content of soil sample A, B, C



A_____

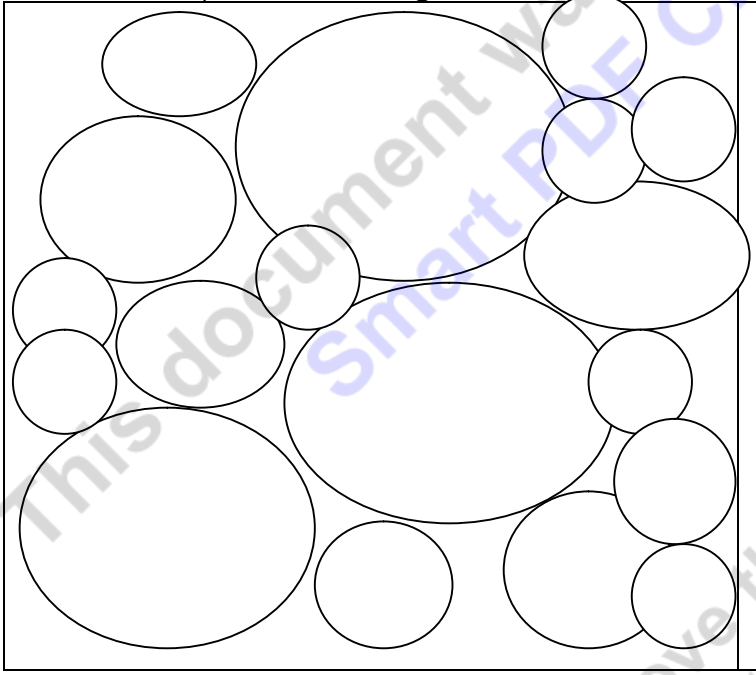
B_____

C_____

D_____

E_____

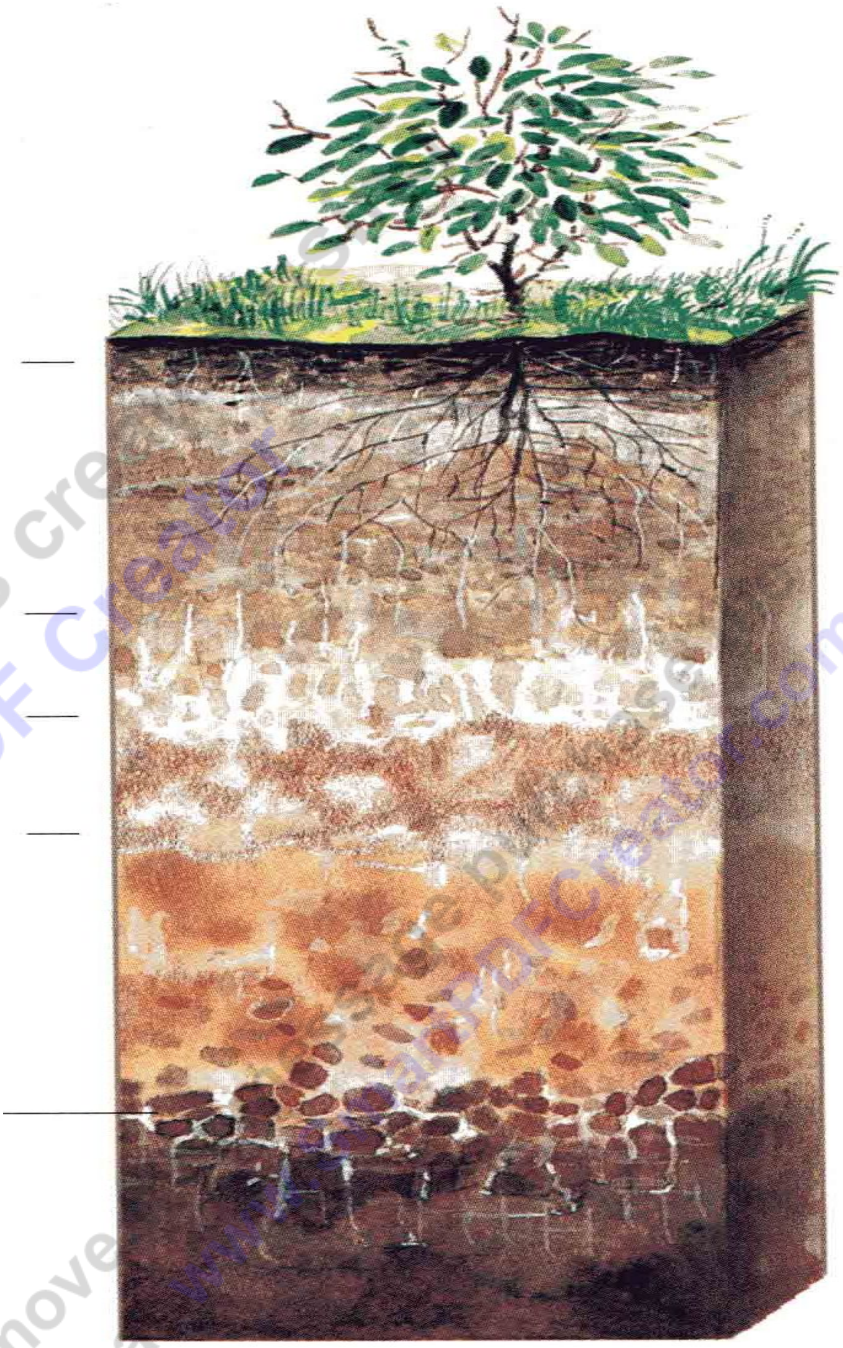
I've created a sample that shows _____ on the left. Please create your own in the space to the right and tell me about how water travels through it.



Please label as Boulder, Gravel, Sand, Loam, Silt, or Clay

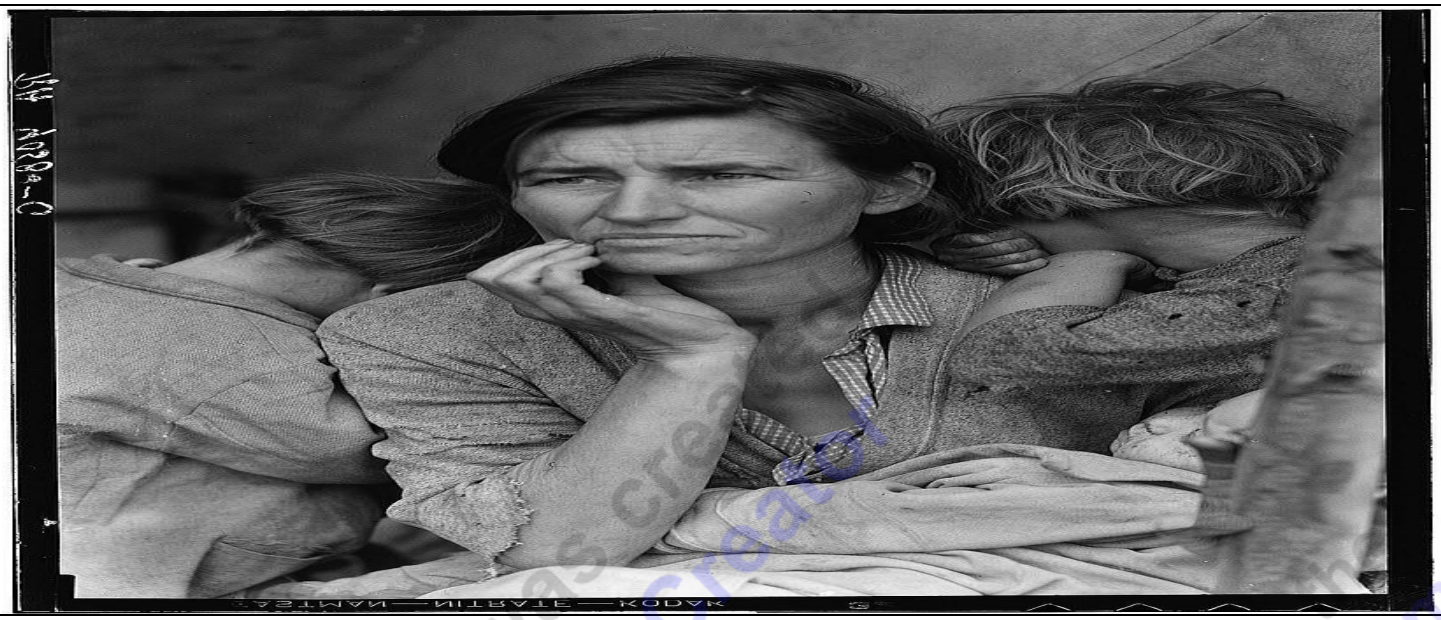
I am the best at holding nutrients? _____
I am the largest particle in this group? _____
I am the smallest particle in the group? _____
I have the greatest porosity and permeability? _____
I have the least porosity and permeability? _____
I am the best for growing plants? _____
I am very easy to work and move _____ _____
I am very difficult to work and move? _____ _____
I am 33% Sand, Silt and Clay? _____
I am larger than Clay but smaller than Sand _____

Describe the layers in the soil horizon below.



What is erosion, and why is it so important to protect soil?_____

Please tell me about this "mystery" photograph below with some accurate information. Feel free to discuss the D_ _ _ B_ _ _ , its causes, hardships, and what came out of it.



Please name and then **describe** the correct soil conservation method beneath the pictures below.

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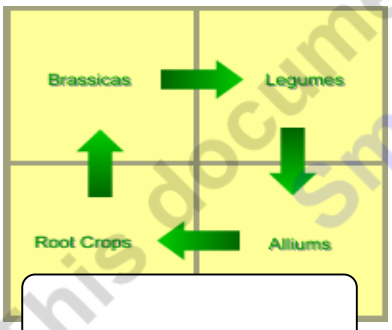
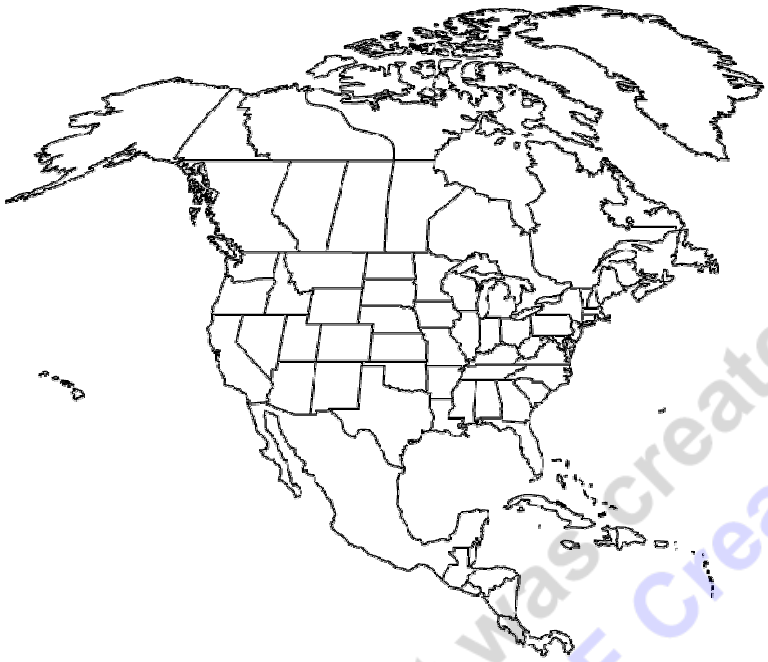


What are some pros and cons of fertilizers? Con's would be mismaganement.

Use the map below to describe the Laruentide Ice Sheet in North Amercia between 95,000 and 20,000 years ago. Please draw the extent of the massive ice sheet.



How do glaciers form?_____

_____

_____

_____

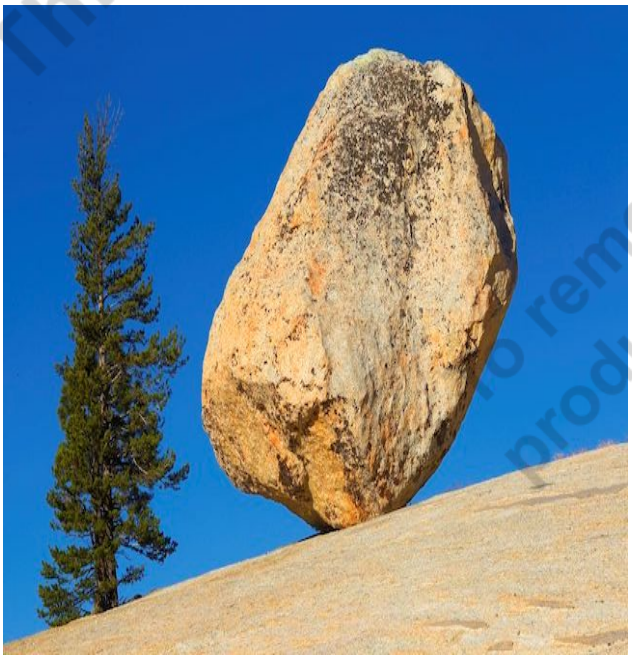
_____

_____

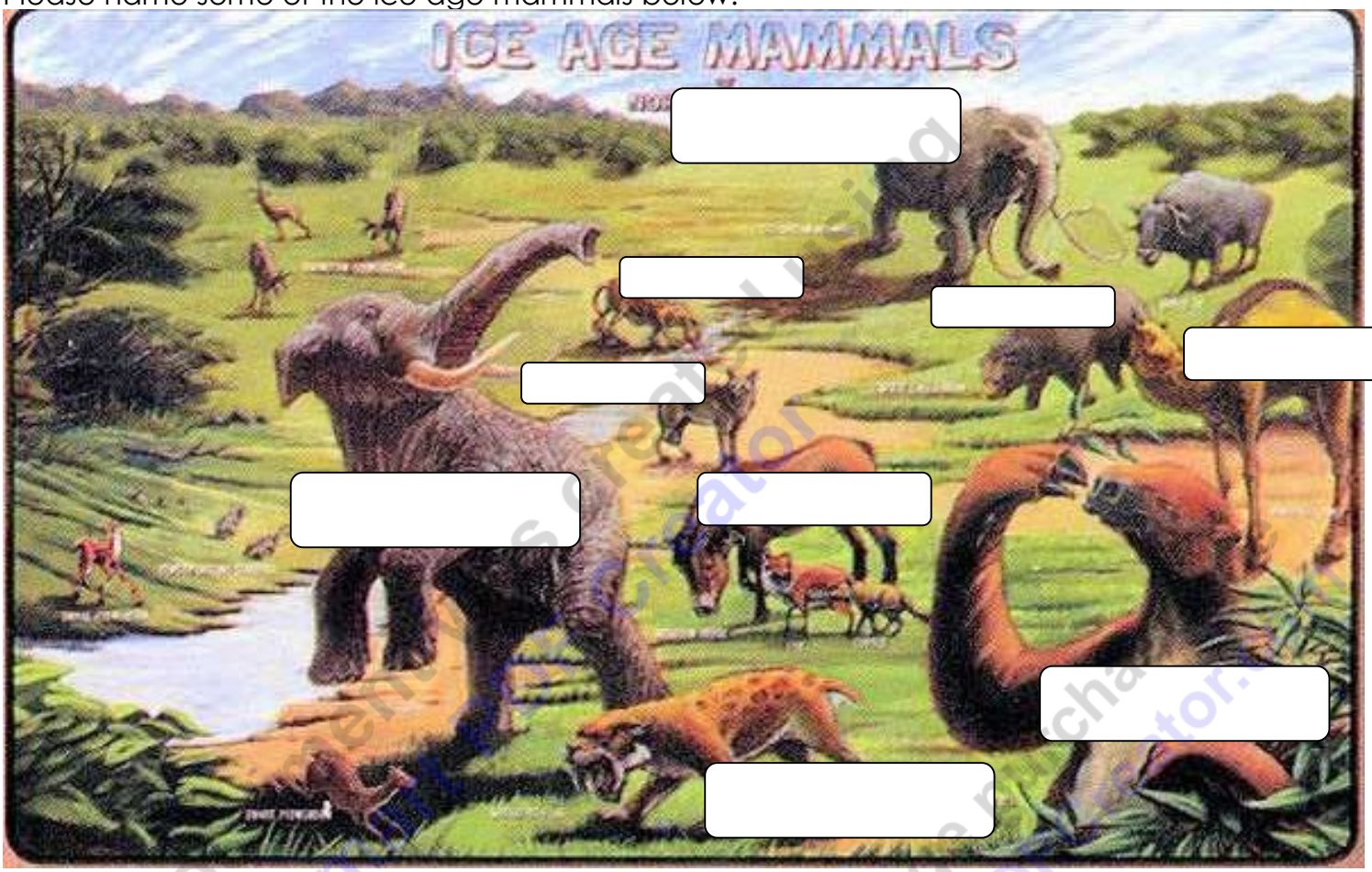
_____

Which is an alpine and which is a continental glacier.

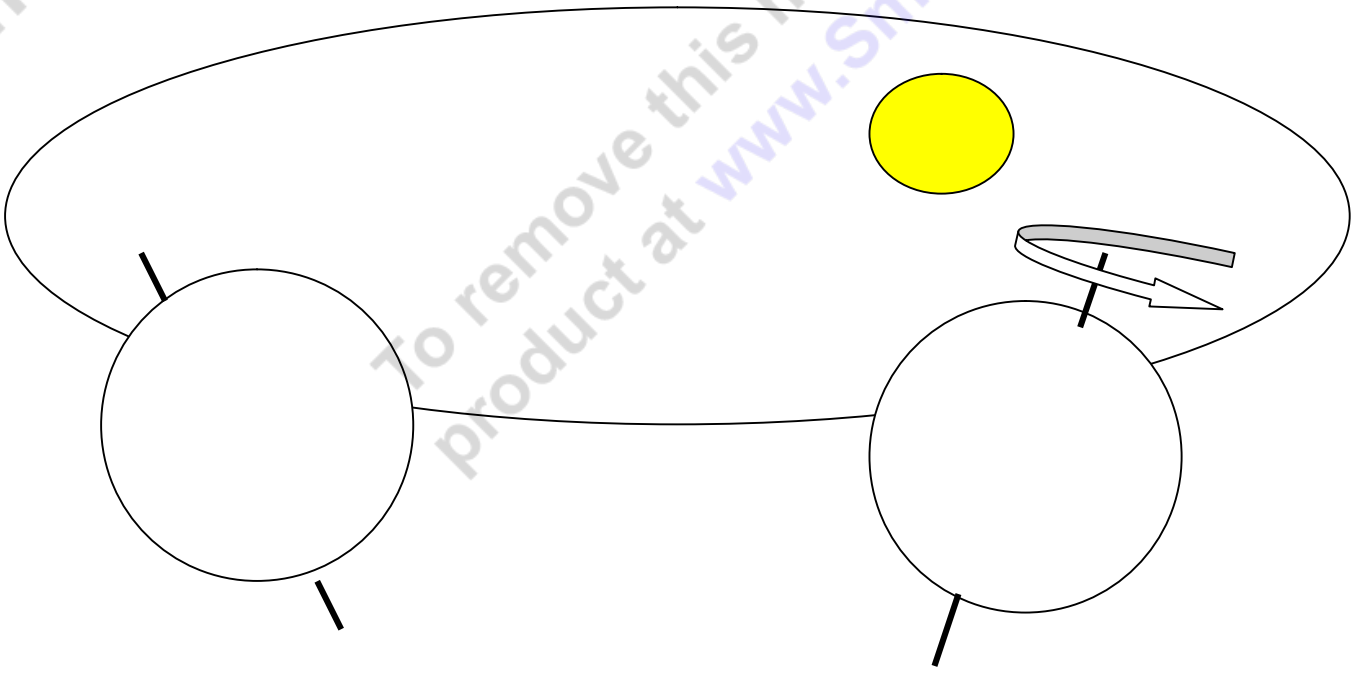
Please discuss how this rock arrived at this position. Why is it shaped the way it is?



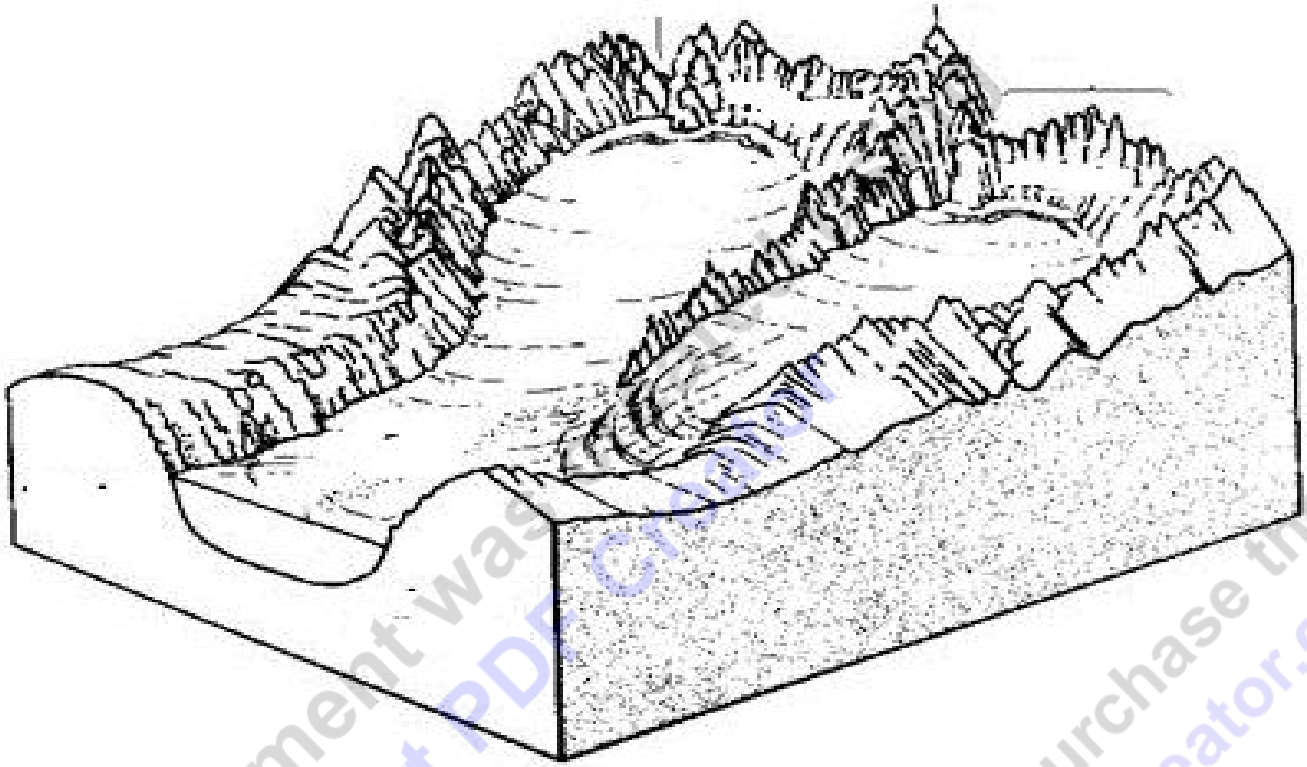
Please name some of the ice age mammals below.



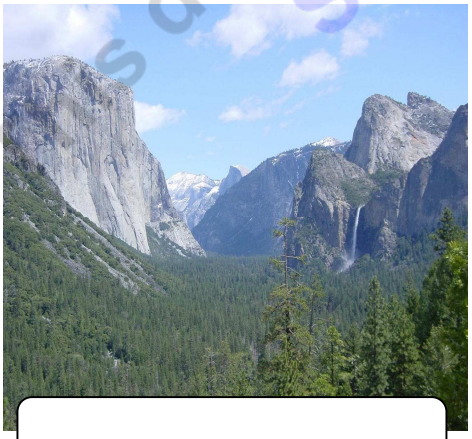
Describe some of the pictures below. Think Milankovitch! How often do they occur?

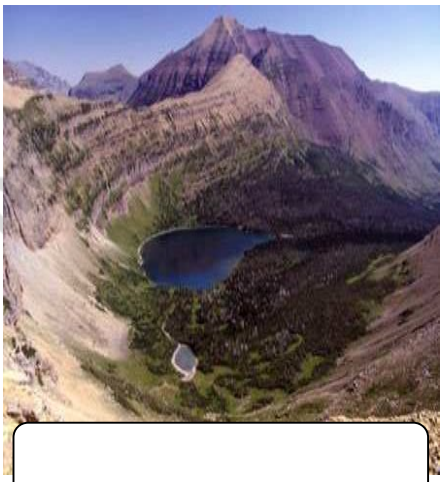


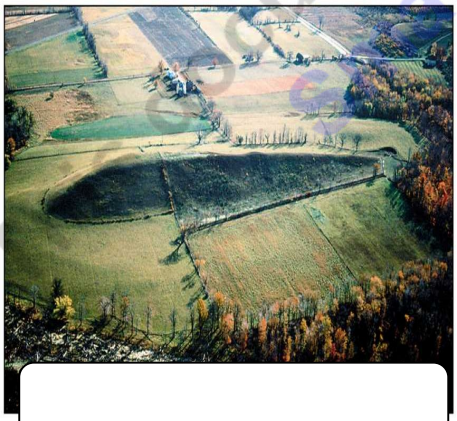
Please try and identify at least four glacial landforms below.



Please identify and **then describe** the specific type of the glacial landforms below. In some cases more than one can be identified.







Find and circle words associated with soil, weathering, ice ages, and glaciers. 30+ can be found! They can go forward and backwards.

EROGSOILGHYLMECHANICALWEATHERINGUGHQMSCHEMICALGH
O
IDLWFRFROSTWEDGINGMGARCHHGLOROOTWEDGINGHEMOLEKH
R
TGFOLIATIONHNMOMUHOYRPRCKSVHKTHERMALEXPANSIONYTW
O
THRELICHENSCARBONATIONGHANGLEOFREPOSENMYHJERETYES
R
ETYEMYEAREOXIDATIONHUSTALAGMITERTILOVEOFESITHJSOI
L
ISOSSLUMPHDIRTMNBOULDERJHYCOBBLEMNFGGRAVELIYPPEERC
L
YTYCLAYYGDUSDUSTUPERMEABLEUGYRPOROSITYJUHORIZONER
O
ETEROSIONANDDEPOSTIONTGDUSTBOWLTERRACINGGYINGNOI
W
INDBREAKJNMANUREGLACIERJERRATICGICEBERGMAMMOTHDRS
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RNGHHORNTCIRQUEESKERUMORAINEJDRUMLINEILOITOUTWAS
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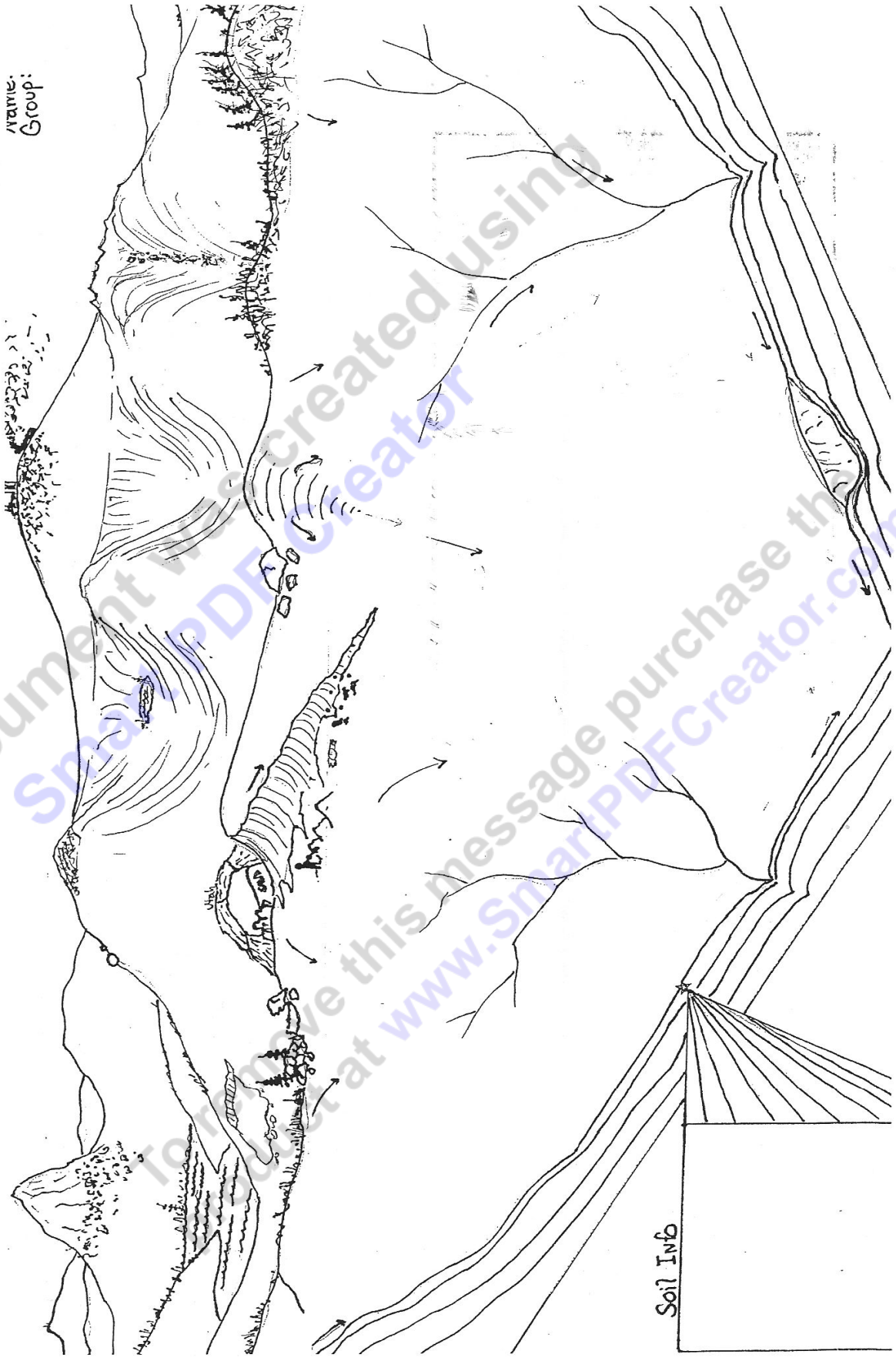
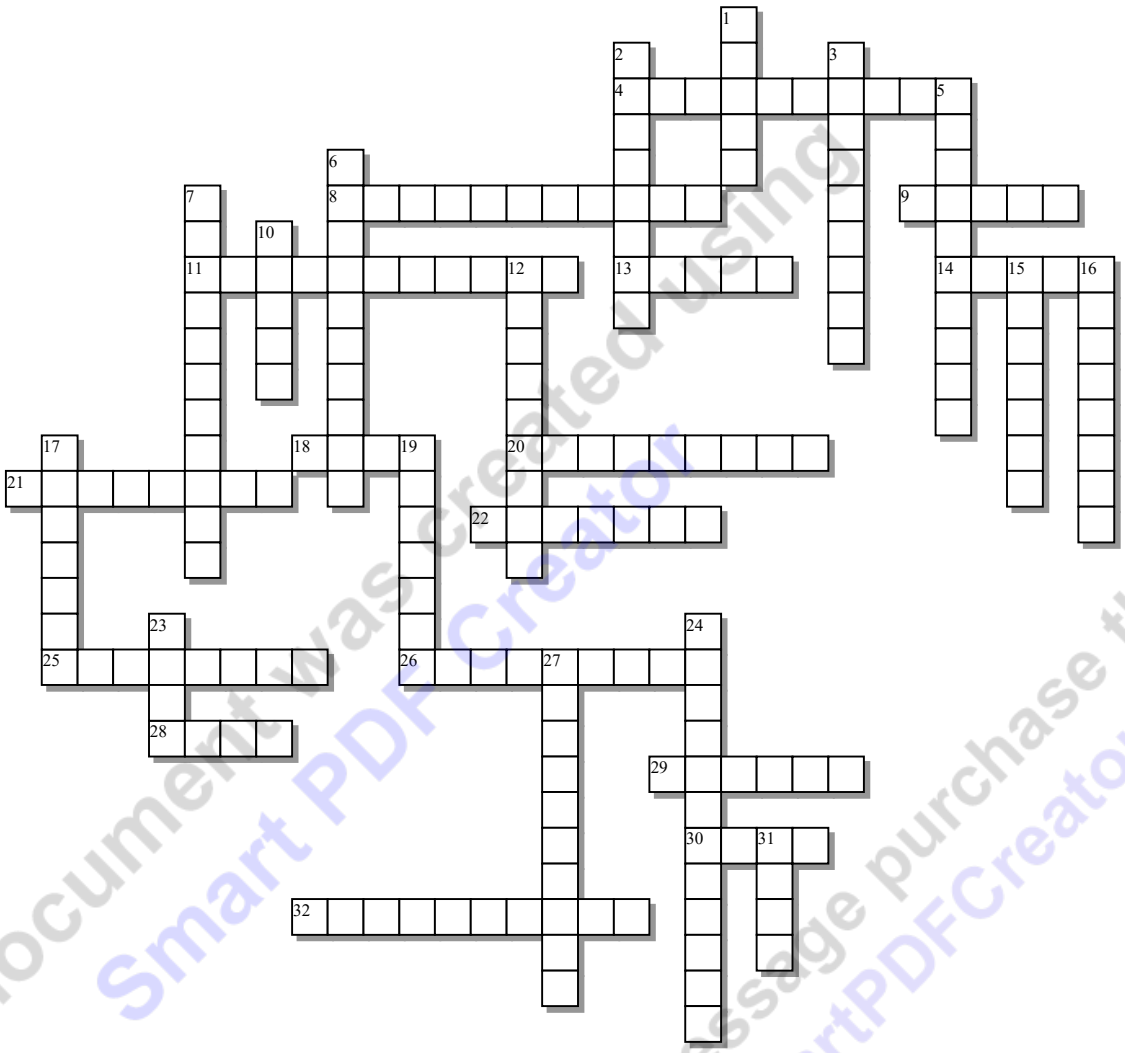
ADITSOVERWOWMADISONBOULDERKRLAKEMISSOULAKETTLELK



Weathering, Soil, and Soil Conservation



Across:

4 - Chemical reaction between the minerals in the rock and hydrogen in rain water (H_2O) wear down rock

8 - Rock layers fall off like an onion.

9 - A landslides in which the moving material moves in a block, more or less.

11 - Water and CO_2 create carbonic acid which wears down rock

13 - Plant trees in between ground crops Provides shade, wind break, and prevents water loss. _____ cropping

14 - The slow, steady downhill movement of soil and loose rock. Soil _____

18 - Plant roots enter crack, grow and expand the crack. _____ wedging

20 - Creating steps against water erosion.

21 - Process by which minerals in the rocks dissolve directly in water.

Down:

1 - Alternate the type of plant on each row to control water and nutrient uptake. _____ cropping

2 - Type of weathering where chemical processes dissolve and decay earth materials.

3 - Process where minerals in the rock absorb water and expand, creating stress

5 - A cylindrical mass of calcium carbonate hanging from the roof of a limestone cave:

6 - The natural process of laying down a deposit of something. (Sediment)

7 - Dam gullies to trap silt .Plant ground vegetation to stabilize slopes. Gully Re_____

10 - Water enters cracks in the rocks, freezes, expands and breaks rocks. _____ wedging

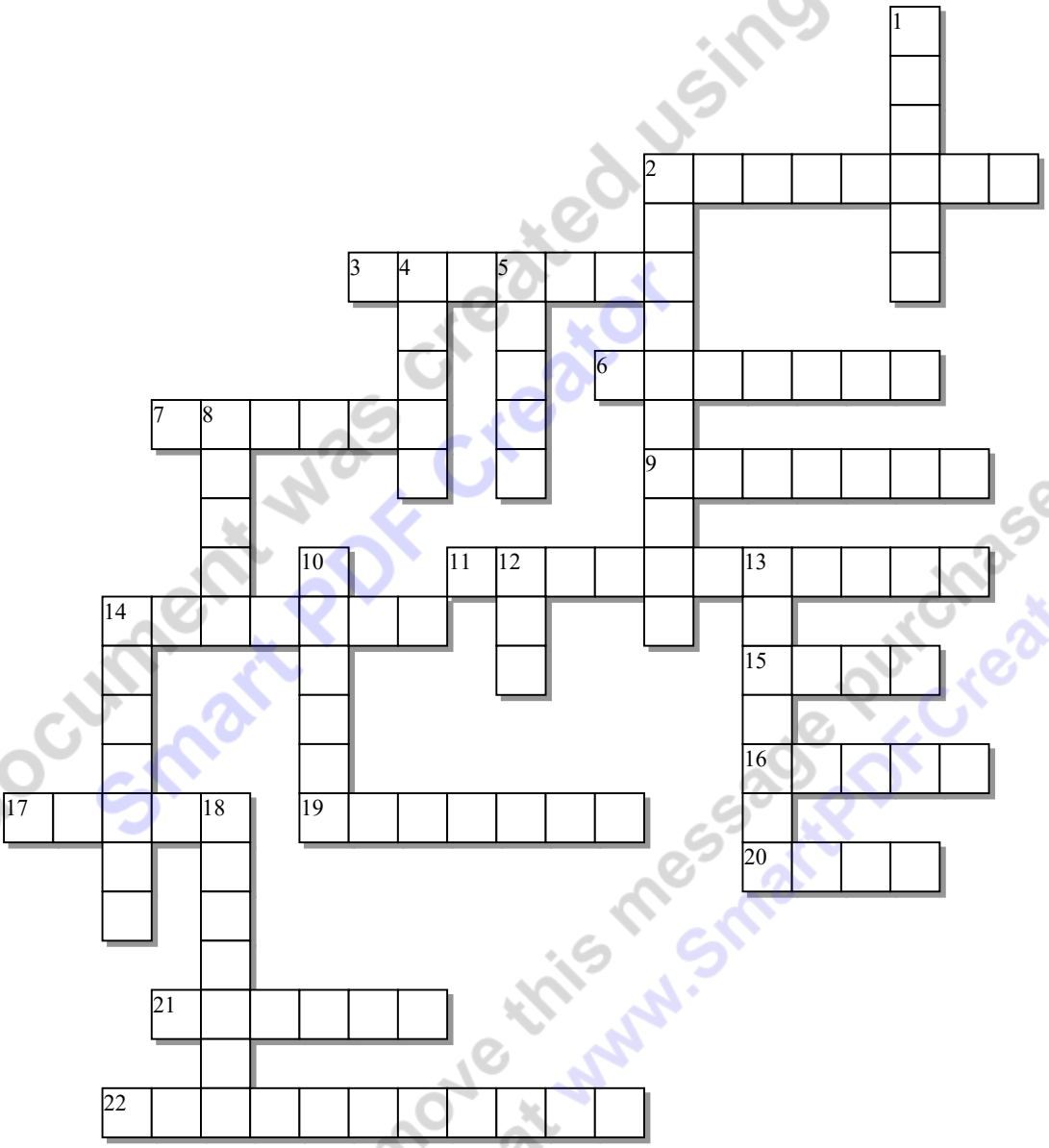
12 - The process by which oxygen combines

22 - Layers of different types of soil
25 - Planting different crops each year. Changes nutrient uptake (increased soil fertility over a long period) Crop _____
26 - A slide of a large mass of dirt and rock down a mountain or cliff.
28 - A mixture of weathered rock and decaying organic material
29 - The maximum angle of a stable slope determined by friction, cohesion and the shapes of the particles. Angle of _____
30 - Poor soil conservation methods and environmental conditions lead to this event in the mid 1930's. Dust _____
32 - This is the breaking of rock into smaller pieces.
with water and minerals in the rock to weaken it
15 - Process of wearing or grinding something down
16 - The spaces that allow air and water to move through the soil.
17 - A practice of slowing water run-off by planting across a hills contours. _____ Plowing
19 - Repeated heating and cooling of rocks will induce stress and breakage. _____ Expansion
23 - The down slope movement of earthen materials from gravity. _____ Movement
24 - The rate at which water and air move through the soil.
27 - A type of speleothem that rises from the floor of a limestone cave due to the dripping of mineralized solutions and the deposition of calcium
31 - Type of weathering where particles of sand, pebbles, and dust are carried by wind and cause abrasion and slowly break down rock.

Possible Answers:
Alley, Bowl, Carbonation, Chemical, Contour, Creep, Deposition, Erosion, Exfoliation, Frost, Horizon, Hydration, Hydrolysis, Landslide, Mass, Oxidation, Permeability, Porosity, reclamation, Repose, Root, Rotation, Slump, Soil, Solution, Stalactite, Stalagmite, Strip, Terracing, Thermal, weathering, Wind

Name:_____

Ice Ages and Glaciers Unit Crossword



Across:

2 - Name for a specific saber toothed car

3 - A moving mass of snow and ice that moves downhill

6 - This modern weather phenomenon is believed to melting many glaciers worldwide. Global _____

7 - Type of Lake. A depression filled with water left by a glacier.

9 - A giant piece of freshwater ice that broke

Down:

1 - Early clovis hunters were believed to cross a land _____ into the Americas.

2 - Multiple, straight parallel lines which represent the movement of the sediment loaded base of a glacier. Glacial _____.

4 - Sea level was much _____ during the ice age.

5 - Manmade pile of stones, usually conical, and often marks the path of an alpine trail.

off of a glacier or ice shelf.
11 - Tilt theory for why ice ages occur?
14 - Material transported by a glacier and then deposited. Many types of Moraines.
15 - A glacial lake produced by scouring. These are often found in cirques.
16 - A knife edge caused by glaciers and erosion.
17 - U-Shaped valley near the sea
19 - A piece of rock carried by glacial ice some distance from the rock outcrop from which it came.
20 - A sharp peak on a mountain cut by glaciers.
21 - A glacier that starts in a mountain and moves into a valley. _____ Glacier
22 - A Giant ice sheet that spreads out from a center of accumulation. _____ Glacier

8 - A narrow, steep-sided ridge of sediment, the remains of sediment piling up in a winding river under the glacier.
10 - A steep-sided carve into a mountain by a glacier.
12 - A cold period marked by episodes of extensive glaciation alternating with episodes of relative warmth. _____ Age
13 - Material deposited by the debris-laden glacial valley.
14 - Large mammal of the ice age with curved tusks.
18 - Formed glacial till (sediment). They are elongated features that can reach a kilometer or more in length.

Possible Answers:
Alpine, Arete, bridge, Cairn, Cirque, Continental, Drumlin, Erratic, Esker, Fjord, Glacier, Horn, Ice , Iceberg, Kettle, Lower, Mammoth, Milankovich, Moraine, Outwash, Smilodon, Striations, Tarn, Warming