Name _____ Date _____

# SURFACE PROCESSES VOCABULARY

_____ 1. continental glacier

_____ 2. internal plastic flow

_____ 3. alpine glacier

_____ 4. crevasse

_____ 5. basal slip

a. a crack or fissure in a glacier

b. the process that causes the ice at the base of a glacier to melt and the glacier to slide

c. a massive sheet of ice not confined by topography

d. a narrow mass of ice confined by topography

e. the process by which glaciers flow slowly as grains of ice deform under pressure and slide over each other

_____ 1. erratic

_____ 2. horn

_____ 3. moraine

_____ 4. arête

_____ 5. kettle

a. a sharp, pyramid-shaped peak formed by glacial erosion

b. a large rock transported from a distant source by a glacier

c. a bowl-shaped depression in a glacial drift deposit

d. a jagged ridge that forms between cirques

e. a ridge of unsorted sediment formed by glacial deposition

_____ 1. horizon

_____ 2. erosion

_____ 3. oxidation

_____ 4. abrasion

_____ 5. mechanical weathering

_____ 6. soil profile

_____ 7. chemical weathering

_____ 8. differential weathering

_____ 9. topography

_____ 10. solifluction

a. the process by which rocks break down as a result of chemical reactions

b. a process in which the materials of Earth's surface are loosened, dissolved, or worn away and transported from one place to another by a natural agent, such as wind, water, ice, or gravity

c. a vertical section of soil that shows the layers, or horizons

d. the process by which a metallic element combines with oxygen

e. the process by which softer, less weather-resistant rocks wear away at a faster rate than harder, more weather-resistant rocks do

f. the elevation or slope of the land surface; influences the rate of weathering

g. the process by which rocks break down into smaller pieces by physical means

h. the grinding and wearing away of rock surfaces through the mechanical action of other rock or sand particles

i. the slow, downslope flow of soil saturated with water in areas surrounding glaciers at high elevations

j. a horizontal layer of soil that can be distinguished from the layers above and below it

_____ 1. erosion

_____ 2. mass movement

_____ 3. arctic soil

_____ 4. laterites

_____ 5. solifluction

_____ 6. surface area

_____ 7. chemical weathering

_____ 8. soil

_____ 9. differential weathering

_____ 10. hydrolysis

a. the part of a rock exposed to air, water, and other weathering agents

b. a chemical reaction between water and another substance to form two or more new substances

c. thick tropical soils containing iron and aluminum minerals

d. soil that is thin and consists mostly of regolith

e. the process by which rocks break down as a result of chemical reactions

f. the process in which materials of Earth's surface are loosened, dissolved, or worn away and transported by natural agents

g. the sliding of a large area of sediment or land down a slope, caused, in part, by gravity

h. the process by which softer, less weather-resistant rocks wear away faster than harder, more weather-resistant rocks do

i. a loose mixture of organic materials and rock fragments that can support the growth of vegetation

j. the slow, downslope movement of soil saturated with water in areas surrounding glaciers at high elevations

_____ 1. permeability

_____ 2. water table

_____ 3. aquifer

_____ 4. porosity

_____ 5. groundwater

a. a body of rock that stores groundwater and allows it to flow

b. the ability of rock to let fluids pass through its pores

c. the percentage of the total volume of rock that consists of open spaces

d. the upper surface of underground water

e. the water beneath Earth's surface

_____ 1. hard water

_____ 2. soft water

_____ 3. sinkhole

_____ 4. cavern

_____ 5. karst topography

a. water with low concentrations of dissolved minerals

b. a natural cavity that forms in rock as a result of the dissolution of minerals

c. water rich in dissolved minerals

d. irregular landforms created by the chemical weathering of rock by groundwater

e. a circular depression that forms on the surface when rock dissolves, overlying sediment fills a cavity, or an underground mine collapses

_____ 1. artesian formation

_____ 2. groundwater

_____ 3. permeability

_____ 4. porosity

_____ 5. aquifer

_____ 6. water table

_____ 7. karst topography

_____ 8. cavern

_____ 9. sinkhole

_____ 10. hard water

a. water with high concentrations of dissolved minerals

b. a large cave consisting of many smaller connecting chambers

c. a circular depression that forms at the surface when rock dissolves, sediment is removed, or caves collapse

d. topography formed on limestone characterized by caverns, sinkholes, and underground drainage

e. water beneath Earth's surface

f. a body of rock that stores and allows the flow of underground water

g. the percentage of the total volume of rock consisting of open spaces

h. the ability of rock to let water flow through its open spaces

i. the upper surface of underground water

j. the sloping layer of permeable rock between two layers of impermeable rock that is exposed at the surface

_____ 1. permeability

_____ 2. cavern

_____ 3. porosity

_____ 4. sinkhole

_____ 5. karst topography

_____ 6. artesian formation

_____ 7. groundwater

_____ 8. aquifer

_____ 9. water table

_____ 10. gradient

a. the steepness of a slope

b. a natural cavity that forms in rock

c. a sloping layer of permeable rock sandwiched between two layers of impermeable rock

d. the percentage of the total volume of rock consisting of open spaces

e. a circular depression that forms when rock dissolves

f. the ability of rock to let water pass through its pores

g. a body of rock that stores underground water and allows it to flow

h. irregular landforms created by chemical weathering on soluble rock characterized by caverns and sinkholes

i. the upper boundary of the zone of saturation

j. water beneath Earth's surface

_____ 1. evaporation

_____ 2. evapotranspiration

_____ 3. desalination

_____ 4. condensation

_____ 5. precipitation

a. the process of removing salt from ocean water

b. any form of water that falls to Earth's surface

c. the change of state from gas to liquid

d. the process by which liquid water changes into water vapor

e. total loss of water from an area, from the land, and from organisms

_____ 1. gradient

_____ 2. discharge

_____ 3. watershed

_____ 4. tributary

_____ 5. meander

a. a stream that flows into a lake or larger stream

b. a bend in a low-gradient stream or river

c. the steepness of a river's slope

d. volume of water moved by a stream over a period of time

e. the land from which water runs off into a river system

_____ 1. floodplain

_____ 2. natural levee

_____ 3. delta

_____ 4. alluvial fan

_____ 5. dam

a. a fan-shaped mass of rock that forms on land

b. a method of direct flood control

c. a fan-shaped mass of rock deposited at a stream mouth

d. an area formed from sediments deposited when the river overflows its banks

e. a raised bank along a river formed by deposits of sediments

_____ 1. interglacial period

_____ 2. ice age

_____ 3. precession

_____ 4. glacial period

_____ 5. eccentricity

a. the wobble of Earth's axis

b. changes of the shape of Earth's orbit from nearly circular to elongated and back again

c. a colder climatic period of glacial advance

d. a period of climatic cooling during which the continents are glaciated repeatedly

e. a warmer climatic period of glacial retreat

_____ 1. snowfield

_____ 2. ice shelf

_____ 3. cirque

_____ 4. esker

_____ 5. glacier

_____ 6. internal plastic flow

_____ 7. erratic

_____ 8. interglacial period

_____ 9. precession

_____ 10. alpine glacier

a. a narrow glacier formed in a mountainous region

b. part of an ice sheet that moves over the ocean

c. the circular motion of Earth's axis over thousands of years

d. a large rock transported by a glacier from a distant source

e. the process by which glaciers flow as ice grains deform under pressure and slide over each other

f. a bowl-shaped depression formed by glacial erosion

g. a long, winding ridge of stratified drift deposited by meltwater flowing within a glacier

h. a large mass of moving ice

i. an almost motionless mass of permanent snow and ice

j. a period of warmer climate during which glaciers retreat

_____ 1. glacier

_____ 2. moraine

_____ 3. cirque

_____ 4. basal slip

_____ 5. eccentricity

_____ 6. crevasse

_____ 7. kettle

_____ 8. ice age

_____ 9. erratic

_____ 10. alpine glacier

a. the process by which a glacier slides due to the melting of ice at its base

b. a large crack in a glacier

c. a large mass of moving ice

d. a long period of cooling during which the continents are repeatedly glaciated

e. a large rock transported by a glacier

f. a ridge of unsorted sediment

g. an ice mass formed in a mountainous area

h. a deep, bowl-shaped depression produced by glacial erosion

i. changes in the shape of Earth's orbit between nearly circular and elongated

j. a bowl-shaped depression in a glacial drift deposit

_____ 1. sheet erosion

_____ 2. mesa

_____ 3. solifluction

_____ 4. mass movement

_____ 5. erosion

a. an eroded, table-shaped plateau

b. the process by which products of weathering are transported by agents such as water

c. the process by which water flows over a layer of soil and removes the topsoil

d. the slow, downslope flow of soil saturated with water in areas surrounding glaciers at high elevations

e. the movement of a large area of sediment or a section of land down a slope

_____ 7. parabolic dune

_____ 8. transverse dune

_____ 9. longitudinal dune

_____ 10. barchan dune

a. shaped as a straight ridge that forms parallel to wind direction

b. shaped as a crescent with an opening that faces the wind

c. shaped as a straight ridge that forms at a right angle to wind direction

d. shaped as a crescent with an opening that faces away from the wind

| | | |
|---|---|---|
| _____ | 1. barrier island | a. wide, shallow bay where salt water and fresh water mix |
| _____ | 2. fiord | b. narrow, deep bay with steep walls |
| _____ | 3. emergent | c. type of coastline that forms when land rises or sea level falls |
| _____ | 4. lagoon | d. narrow ridge of sand that lies parallel to the shore |
| _____ | 5. estuary | e. small body of water between the shoreline and a barrier island |

_____ 1. lagoon

_____ 2. deflation

_____ 3. beach

_____ 4. estuary

_____ 5. loess

_____ 6. headland

_____ 7. ventifact

_____ 8. fiord

_____ 9. transverse dune

_____ 10. saltation

a. fine-grained sediment formed by the accumulation of windblown dust

b. deep bay with steep walls

c. sand ridge that forms at a right angle to wind direction

d. region of shallow water between a barrier island and the shoreline

e. form of erosion in which fine, dry soil particles are blown away

f. resistant rock formation that projects out from shore

g. process by which wind moves sand along the ground

h. area of shoreline made up of deposited sediment

i. bay in which salt water and fresh water mix

j. rock smoothed by wind erosion

_____ 1. beach

_____ 2. estuary

_____ 3. loess

_____ 4. dune

_____ 5. saltation

_____ 6. headlands

_____ 7. longshore current

_____ 8. ventifact

_____ 9. lagoon

_____ 10. deflation

a. rock smoothed by wind abrasion

b. sediment deposited along the shore of an ocean or a lake

c. movement of water parallel to and near the shoreline

d. mound of wind-deposited sand

e. process by which wind moves sand grains in a series of jumps and bounces

f. bay where salt and fresh water mix

g. process by which wind removes the top layer of fine, dry soil particles

h. resistant rock formations that project out from shore

i. fine-grained sediment deposited by the wind

j. narrow region of shallow water between the shoreline and a barrier island

_____ 1. condensation

_____ 2. floodplain

_____ 3. watershed

_____ 4. tributary

_____ 5. evapotranspiration

_____ 6. discharge

_____ 7. desalination

_____ 8. delta

_____ 9. precipitation

_____ 10. alluvial fan

a. any form of water that falls to Earth's surface from the clouds, including rain, snow, sleet, and hail

b. change of state from a gas to a liquid

c. the process of removing salt from ocean water

d. area along a river formed by sediments deposited when the river overflows its banks

e. fan-shaped mass of rock material deposited by a stream on land where the slope decreases sharply

f. area of land drained by a river system

g. fan-shaped mass of rock material deposited at the mouth of a stream

h. volume of water moved by a stream in a given time period

i. the total water loss from an area by evaporation and transpiration

j. stream that flows into a lake or into a larger stream

_____ 1. floodplain

_____ 2. evaporation

_____ 3. watershed

_____ 4. alluvial fan

_____ 5. evapotranspiration

_____ 6. precipitation

_____ 7. condensation

_____ 8. transpiration

_____ 9. delta

_____ 10. desalination

a. land area drained by a river system

b. total water loss from an area, given off by the land and bodies of water

c. water that falls to Earth

d. the process by which plants release water vapor into the atmosphere

e. the process of removing salt from ocean water

f. land area that may be covered with water when a river overflows

g. fan-shaped mass of rock deposited at the mouth of a stream

h. the change of state from a gas to a liquid

i. the process by which liquid water changes into water vapor

j. fan-shaped mass of rock that forms on land

_____ 1. topography

_____ 2. surface area

_____ 3. silicates

_____ 4. differential weathering

_____ 5. quartz

a. minerals resistant to mechanical and chemical weathering

b. the part of the rock that is exposed to agents of weathering

c. the process by which softer rocks wear away at a faster rate than harder rocks do

d. a strong “glue” that enables sedimentary rock to resist weathering

_____ 1. horizon

_____ 2. soil

_____ 3. regolith

_____ 4. laterites

_____ 5. pedalfer

a. the layer of weathered rock fragments that covers most of Earth's surface

b. a horizontal layer of soil that is clearly different from the layers above and below it

c. soil formed in temperate areas that receive more than 65 cm of rain per year

d. thick, tropical soil containing iron and aluminum minerals that do not dissolve easily

e. a complex mixture of minerals, water, gases, and organic material

_____ 1. hydrolysis

_____ 2. mechanical weathering

_____ 3. carbonation

_____ 4. oxidation

_____ 5. chemical weathering

a. the process by which rocks break down as a result of chemical reactions

b. the formation of new substances when water reacts chemically with another substance

c. the process by which a metallic element combines with oxygen

d. the conversion of a compound into a carbonate, which promotes chemical weathering

e. the physical process by which environmental agents disintegrate and decompose rocks

_____ **6.** friction

_____ **7.** energy

_____ **8.** load

_____ **9.** potential energy

_____ **10.** abrasion

_____ **11.** kinetic energy

_____ **12.** turbulence

**a.** the amount of sediment a river carries

**b.** the movement of water every which way

**c.** the ability to do work

**d.** the force that opposes the motion of one surface as it moves across another

**e.** the energy an object has due to its motion

**f.** the wearing away of rock by grinding action

**g.** energy that is stored and waiting to be used later

**mudflows** **rock** **gravity** **ice**

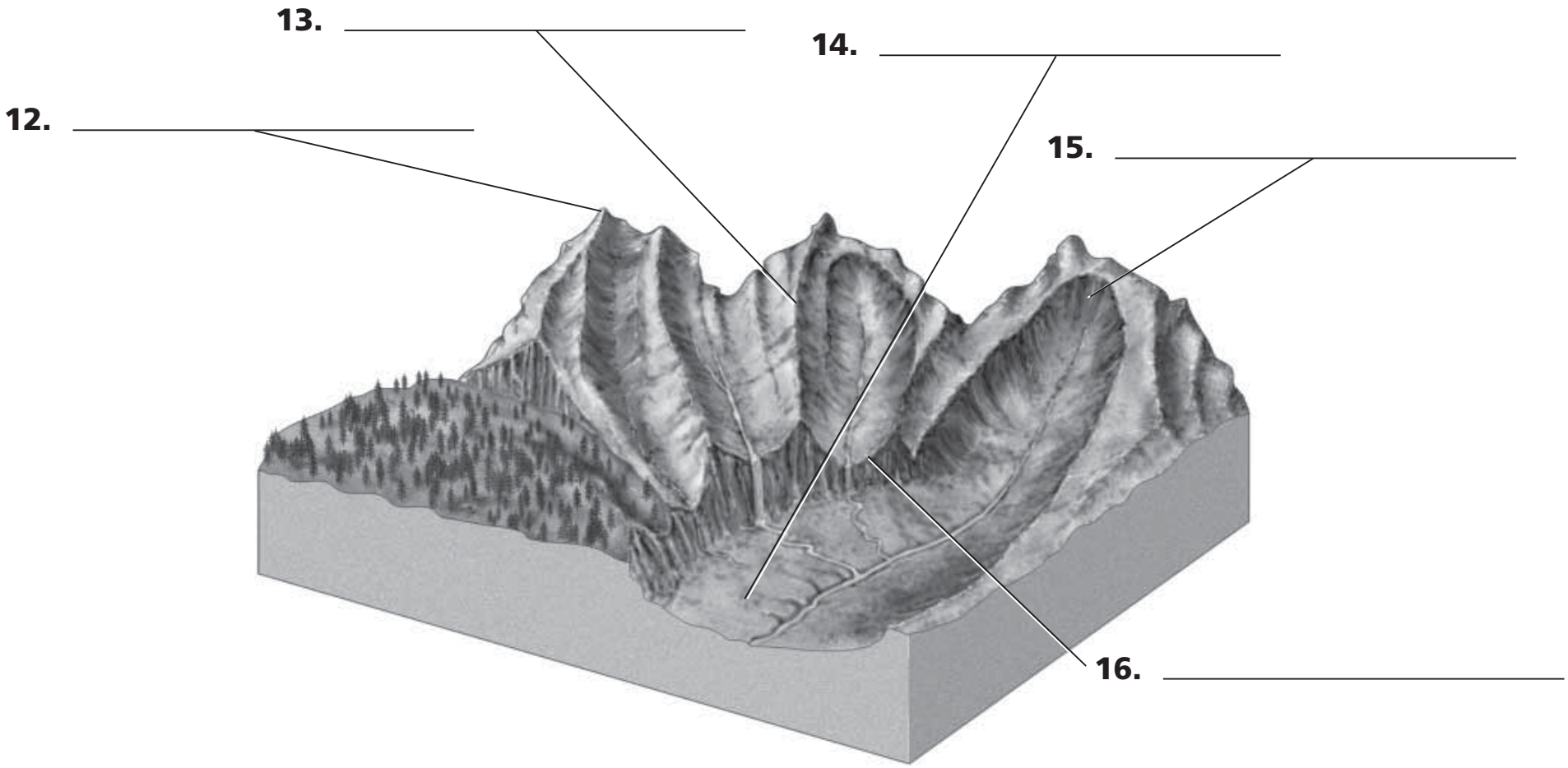
**glaciers** **mass movement** **erosion**

**rock slides** **water** **slump** **cirques**

**6.** _____ is the wearing away and removal of **7.** _____ material. Erosion occurs because **8.** _____, **9.** _____, wind, and **10.** _____ sculpt Earth's surface. Gravity causes different kinds of **11.** _____ such as **12.** _____, creep, and **13.** _____. Gravity also causes **14.** _____, layers of rock breaking loose and sliding down slopes.

In cold regions, snow can accumulate over many years to form huge masses of ice called **15.** _____. They can remove rock from mountain tops, leaving depressions called **16.** _____.

**Label the diagram below. Choose from the following: cirque, arête, horn, hanging valley, U-shaped valley.**



| | | | |
|---|---|---|---|
| **stream piracy** | **small** | **lengthening** | **gains** |
| **waterfalls** | **loses** | **headward erosion** | |

The process by which small streams erode their forward paths through rock is called **(7)** _____. This process involves **(8)** _____ the stream at the valley head. At this point in their development, streams are relatively **(9)**_____ . These streams flow swiftly over rough terrain and often form **(10)** _____ and rapids as they flow over steep inclines.

Sometimes, a stream erodes its way through the high area separating two drainage basins, joins another stream, and then draws away its water in a process known as **(11)** _____. The lower portion of the captured stream **(12)** _____ its water source, while the invading stream **(13)** _____ a source of water.

| | |
|---|---|
| **1.** slump | mixture of weathered rock, organic matter, water, and air |
| **2.** mechanical weathering | erosion caused by wind that can lower the land's surface |
| **3.** runoff | gravity causing rock or sediment to move downhill |
| **4.** soil | thick layers of loose sediment moving downhill along a curved surface |
| **5.** mass movement | process in which composition of the rock changes |
| **6.** creep | wearing away and removal of rock material |
| **7.** topography | sediments moving slowly downhill due to freezing and thawing |
| **8.** chemical weathering | breaks rocks into pieces without changing their composition |
| **9.** erosion | erosion, caused by wind, that produces smooth, polished rocks |
| **10.** deflation | surface features of land that influence type of soil |
| **11.** abrasion | water that flows over Earth's surface |

_____ **1.** A depression in the landscape that collects and holds water

_____ **2.** The successional process that begins with the addition of nutrients and continues with the filling in of a lake

_____ **3.** A periodically saturated area that develops after a lake fills in with vegetation

_____ **4.** Low-lying areas often located near streams that develop from filled-in marshes

_____ **5.** A dominant bedrock in areas where lakes can be common

_____ **6.** A type of lake formed when meanders get cut off

**a.** swamp

**b.** wetland

**c.** lake

**d.** oxbow

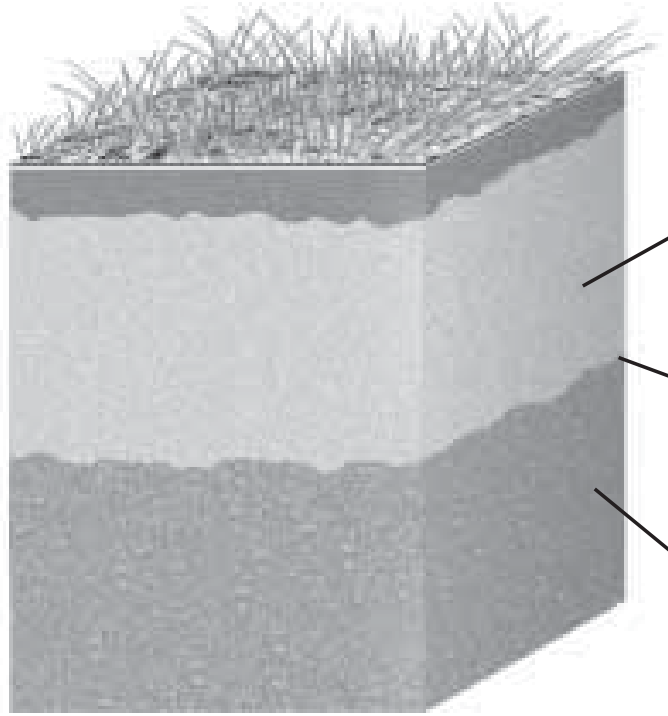
**e.** eutrophication

**f.** limestone

| | | | |
|---|---|---|---|
| **freshwater** | **hydrosphere** | **infiltration** | **polar ice caps** |
| **porosity** | **precipitation** | **water vapor** | **weather systems** |

1. About 97 percent of the _____ is contained in the oceans.
2. The _____ and glaciers hold about 90 percent of Earth's freshwater.
3. Only a very small amount of all of Earth's liquid _____ is contained in rivers, streams, and lakes.
4. Water evaporates from seawater and forms invisible _____ and visible clouds.
5. The winds and _____ move the atmospheric water all over Earth.
6. _____, mostly in the form of rain and snow, falls into the oceans and on the land.
7. Precipitation that falls on land enters the ground through the process of _____ and becomes groundwater.
8. Small openings in subsurface Earth materials are pores, and the percentage of pore space in a material is its _____.

**zone of saturation** **zone of aeration** **water table**



**10.** _____

**11.** _____

**12.** _____

_____ **13.** Depth below Earth's surface at which groundwater completely fills all the pores of a material

_____ **14.** Permeable layers through which groundwater flows

_____ **15.** Upper boundary of the zone of saturation

_____ **16.** Ability of a material to let water pass through it

_____ **17.** Water found in the zone of saturation

_____ **18.** Zone below the surface, but above the zone of saturation, where materials are moist

**a.** aquifer

**b.** groundwater

**c.** permeability

**d.** water table

**e.** zone of aeration

**f.** zone of saturation

**stalactite** **stalagmite** **dripstone column**

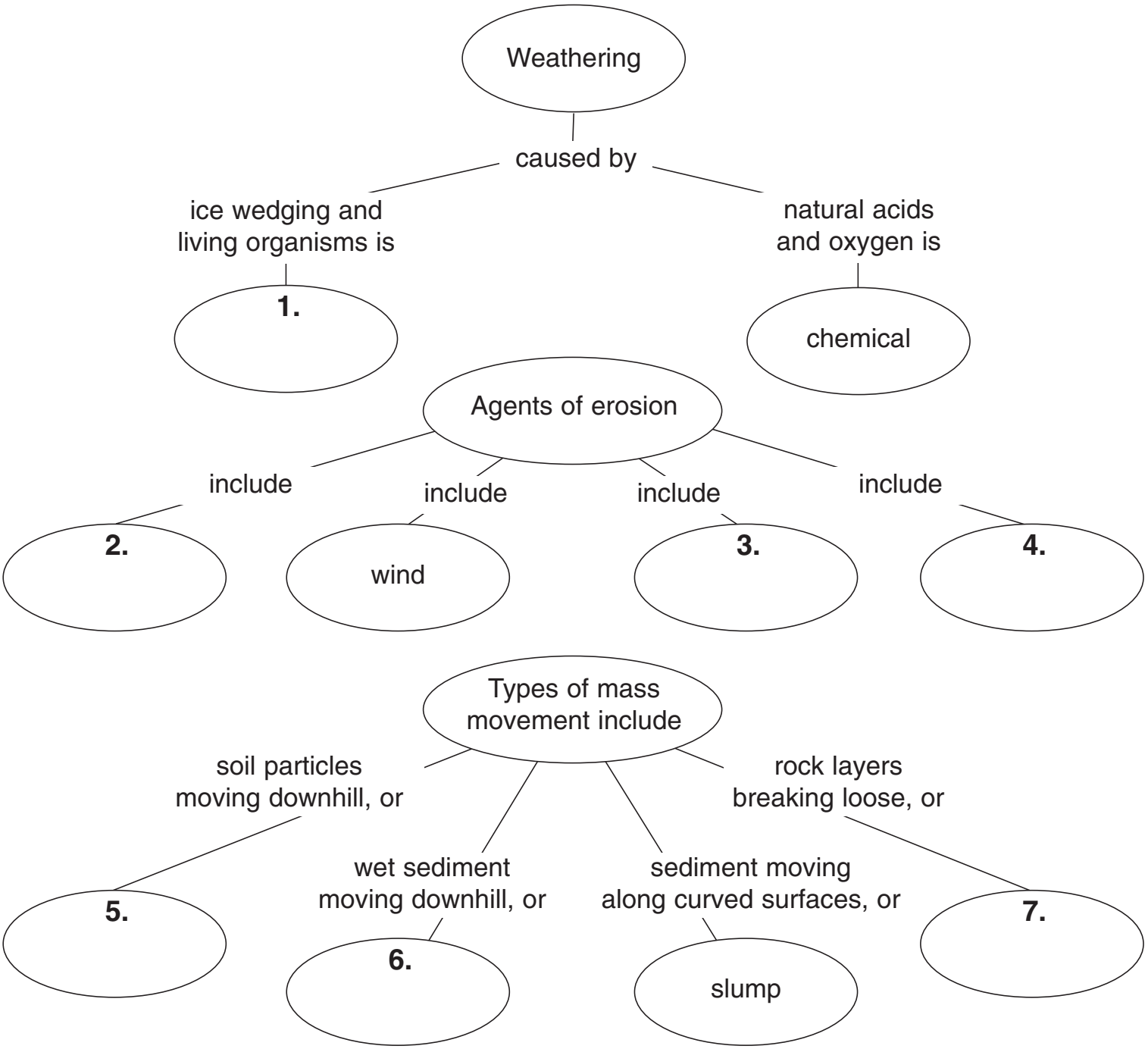

9. A _____ B _____ C _____

| | | |
|---|---|---|
| contract | expand | mechanical weathering |
| chemical weathering | pressure | ice wedging |
| root action | weathering | |

1. The process by which rocks on Earth's crust are broken down is called _____ .
2. Physical changes in rocks, such as size and shape, occur during _____ .
3. The chemical makeup of rocks is changed during _____ .
4. During the day, heat causes the outside of rocks to _____ , or become larger.
5. At night, the outsides of rocks cool and _____ .
6. When water inside rocks freezes and melts over and over again, _____ occurs.
7. The roots of trees can exert _____ on a sidewalk and cause it to crack.
8. If a tree causes a sidewalk to crack, mechanical weathering called _____ has taken place.

**gravity** **water** **rock slides** **mudflows**

**creep** **mechanical** **ice**



**geysers** **hot springs** **springs**

Natural discharge sites for groundwater on Earth's surface are **(1)** _____. In contrast to air temperature, groundwater is colder in the summer and warmer in the winter. However, in some regions of the United States, **(2)** _____ will give off very warm or hot water. Explosive hot springs that erupt on a regular basis are **(3)** _____.

**artesian well** **drawdown** **recharge** **well**

To obtain water, a(n) **(7)** _____ must tap into an aquifer. The difference between the original water-table level and the water level in the pumped well is called the **(8)** _____. In order for the water supply of the wells to be replenished, water from precipitation and run-off must **(9)** _____ the zone of saturation. A(n) **(10)** _____ contains water that is under pressure, which may cause the well water to spurt into the air.

_____ **7.** humus

_____ **8.** subsoil

_____ **9.** decomposers

_____ **10.** bedrock

_____ **11.** topsoil

_____ **12.** loam

_____ **13.** soil horizon

_____ **14.** soil

_____ **15.** litter

**a.** the loose, weathered material on Earth's surface in which plants can grow

**b.** crumbly, dark brown soil that is a mixture of humus, clay and other minerals

**c.** a layer of soil that differs from the layers above and below it

**d.** decayed plant and animal remains

**e.** organisms that break down animal and plant remains and wastes

**f.** the solid layer of rock beneath the soil

**g.** a loose layer of leaves and other plant material on top of soil

**h.** a layer of soil made mostly of clay and other particles, but with little humus

**i.** soil made of about equal parts clay, sand, and silt

| | | | |
|---|---|---|---|
| **water** | **acid precipitation** | **carbonic acid** | **carbon dioxide** |
| **temperature** | **mechanical** | **composition** | **pressure** |

The process by which rocks and minerals break down into smaller pieces is **(16)** _____ weathering, also called physical weathering. Two factors that play a significant role in this type of weathering are **(17)** _____ and **(18)** _____. To some extent, the **(19)** _____ of rocks determines the effects that chemical weathering will have on them. **(20)** _____ is an important agent in chemical weathering because it can dissolve many kinds of minerals. An atmospheric gas that contributes to the chemical weathering process is **(21)** _____, which is produced by living organisms. When this gas combines with water, it produces a weak acid called **(22)** _____. Another agent of chemical weathering is **(23)** _____, which is caused mainly by emissions of sulfur dioxide and nitrogen oxides.

_____ **1.** The final stage of the erosional process in which materials are dropped in another location

_____ **2.** The force that tends to pull all materials downhill

_____ **3.** The steeper the _____, the greater the potential for flowing water to erode earth materials.

_____ **4.** Coastal areas undergo erosion by _____ and wind.

_____ **5.** Erode by scraping, gouging, and picking up large rocks and debris piles

_____ **6.** A major erosional agent in areas with limited precipitation and high temperatures

**a.** slope

**b.** ocean waves

**c.** wind

**d.** glaciers

**e.** gravity

**f.** deposition

_____ **11.** Determines how much material is available for mass movement

_____ **12.** A force that works to pull material downslope

_____ **13.** Acts as a lubricant to reduce friction between soil grains

_____ **14.** Occurs when a sheet of rock moves downhill on a sliding surface

_____ **15.** Can trigger a sudden mass movement

_____ **16.** Where all mass movements occur

**a.** rockslide

**b.** earthquake

**c.** gravity

**d.** slopes

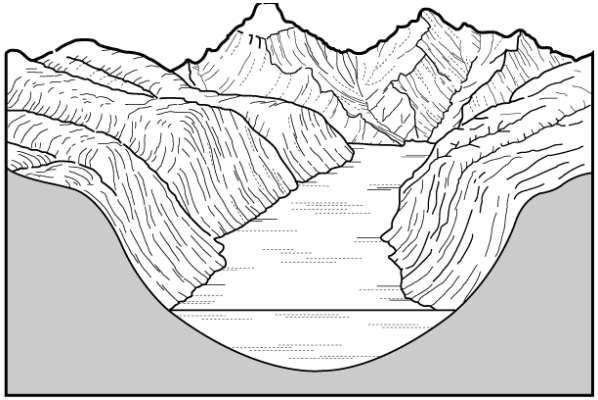
**e.** water

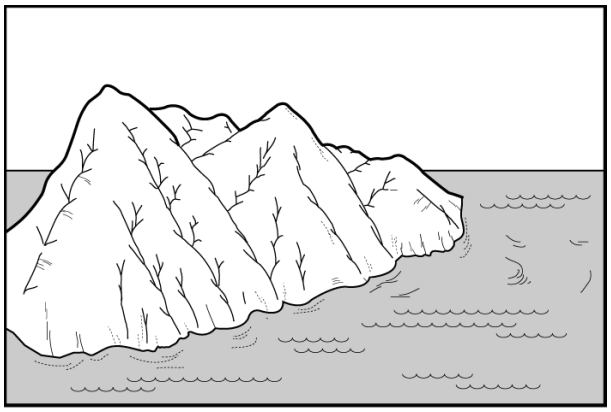
**f.** climate

| | | | |
|---|---|---|---|
| _____ | 1. change that produces new substances | **a.** | moss |
| _____ | 2. causes chemical changes in rocks | **b.** | oxidation |
| _____ | 3. reaction between oxygen and another substance | **c.** | carbonic acid |
| _____ | 4. iron oxide | **d.** | chemical change |
| _____ | 5. mineral containing iron | **e.** | pyrite |
| _____ | 6. chemical reaction between water and another substance | **f.** | carbon dioxide |
| _____ | 7. a gas in the air | **g.** | chemical weathering |
| _____ | 8. carbon dioxide dissolved in water | **h.** | rust |
| _____ | 9. rock made of calcite | **i.** | hydrolysis |
| _____ | 10. acid-producing plant | **j.** | limestone |

| | | | |
|---|---|---|---|
| _____ | 1. moving river of ice and snow | a. | iceberg |
| _____ | 2. glacier that forms in mountains | b. | glacier |
| _____ | 3. glacier that forms near the poles | c. | ice age |
| _____ | 4. large piece of floating ice | d. | valley glacier |
| _____ | 5. period of very cold climatic conditions | e. | ice cap |

Label each diagram as a *valley glacier*, an *ice cap*, or an *iceberg*. Write your answer in the space provided.





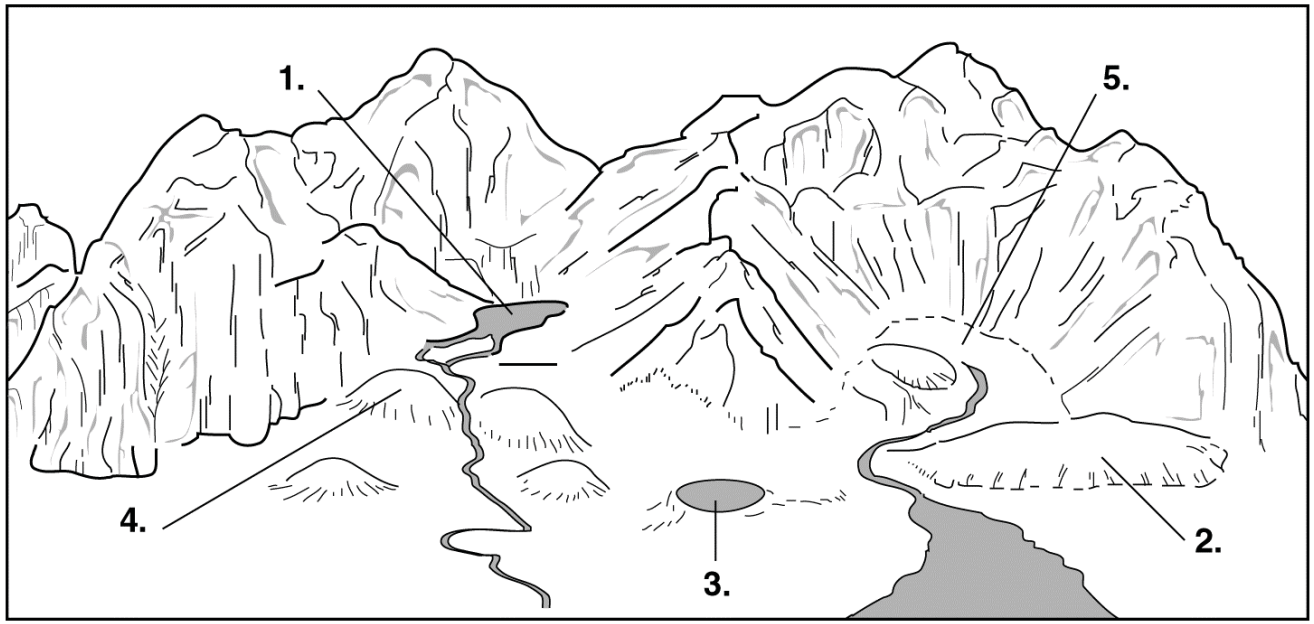
1. _____ 2. _____ 3. _____

1. A moving river of ice and snow is (a glacier / an erratic).
2. As a glacier moves over bedrock, small pieces of the bedrock may be carved away by (erosion / abrasion).
3. As a glacier scrapes away the floor of a valley, the valley becomes (V-shaped / U-shaped).
4. Small valleys left high above a main valley are called (hanging / talus) valleys.
5. Rock and sediments that are left behind by a melting glacier are called (talus / till).
6. Large boulders that are left behind by a retreating glacier are called (till / erratics).
7. Till can best be described as (melted / loose) pieces of rock and sediment.

**abrasion** **deflation** **dunes** **loess** **ventifacts**

The lowering of the land surface caused by the wind's removal of surface particles is called **(1)** _____. The process of erosion in which wind causes particles such as sand to rub against rocks is **(2)** _____. Rocks shaped by this process are called **(3)** _____. Over time, wind-blown sand accumulates to produce **(4)** _____. If the wind carries and drops finer particles such as silt, then deposits known as **(5)** _____ form.

| kettle lake | U-shaped valley | glacial lake | drumlin | moraine |
|---|---|---|---|---|




1. _____
2. _____
3. _____
4. _____
5. _____

1. When a glacier retreats, it deposits (till / talus).
2. The Great Lakes and New York's Finger Lakes are (glacial / kettle) lakes.
3. When till is deposited at the sides of a glacier, a (terminal / lateral) moraine is formed.
4. Oval-shaped mounds of till left by a retreating glacier are called (drumlins / moraines).
5. If a glacier moved south, the tip of a drumlin formed by the glacier would point (north / south).

_____ 1. gap formed when waves cut completely through a section of rock

_____ 2. up-and-down movement of water

_____ 3. column of rock remaining after the collapse of a sea arch

_____ 4. flat section of rock formed by erosion of a sea cliff

_____ 5. steep rock face caused by wave erosion

_____ 6. hollowed-out part of a sea cliff

a. wave

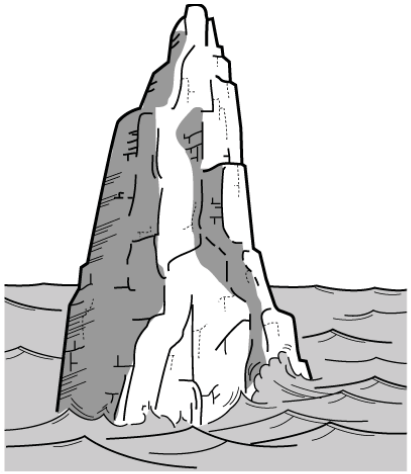
b. wave-cut terrace

c. sea arch

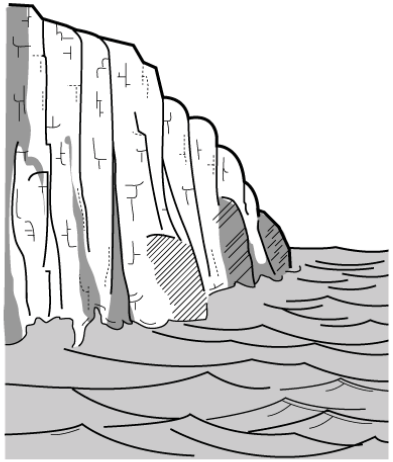
d. sea stack

e. sea cliff

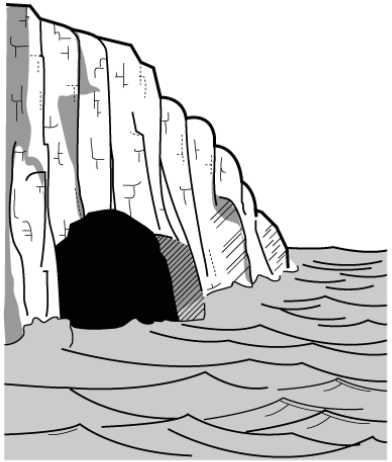
f. sea cave



A. _____



B. _____

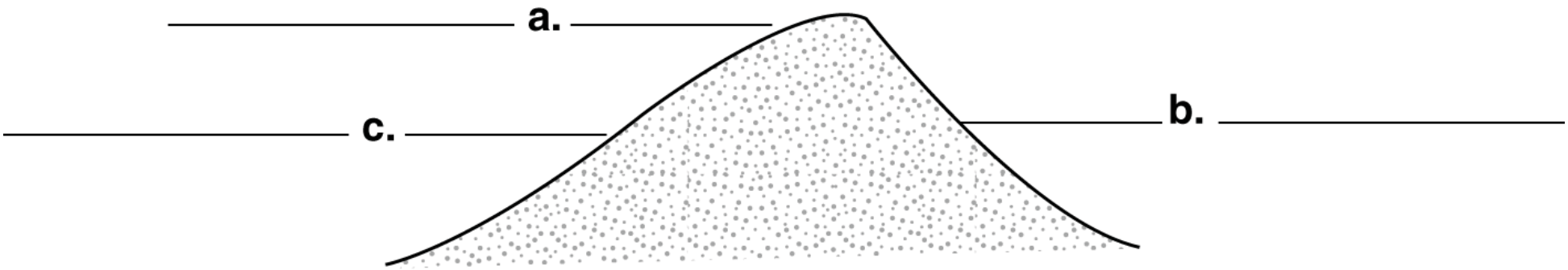


C. _____

D. _____

1. Label each structure as one of the following: *sea cave, sea cliff, sea arch*, or *sea stack*.

**PART A** Label the *windward side*, the *crest* and the *slipface* of the sand dune shown below. Then, draw an arrow to show the direction that the wind is blowing.



**avalanche** **creep** **landslide** **mass movement** **mudflow** **slump**

**(1)** _____ is downward movement that results from gravity acting on loose sediments and weathered rock. If the downward movement of loose material is slow, it is called **(2)** _____, whereas the rapid movement of a mud and water mixture is known as a(n) **(3)** _____. A rapid downslope slide of a thin sheet of earth materials is a(n) **(4)** _____. If these materials rotate and slide along a curved surface, it is called a(n) **(5)** _____. A(n) **(6)** _____ occurs in mountainous areas with thick accumulations of snow.