Name: _____ Date: _____

Weathering

Weathering- _____

_____

Sediments- _____

_____

Causes of Weathering

- Weathering occurs when rocks are exposed to:
  - _____
  - _____
  - _____
- Chemical Weathering- _____

_____

Examples of Chemical Weathering

- Oxidation- when iron combines with oxygen to make iron oxide (rust)
- Effect of water on rock
  - Sometimes called the _____, because with enough time water can dissolve almost everything!
  - Water can combine with CO_2 to form _____
  - Carbonic acid can dissolve most rocks---especially _____

Physical Weathering

- Physical Weathering- _____

_____

Examples of Physical Weathering

- Abrasion- _____
  - Occurs as sediments are moved by _____

    _____
  - Characteristic: _____
- Frost Action/_____-
  - When water freezes it expands approx. _____%
  - Water gets trapped in cracks, _____
  - After many cycles of thawing and refreezing, the cracks enlarge and break apart

    Example: _____
- Plant Root Growth-
  - Plant roots grow underground and_____
  - After they die and decay it allows for water and oxygen to _____ deeper into the earth
  - _____ and _____ speed up the breakdown of rock
  - As plants grow they can also spread cracks apart even farther
- Abrupt Temperature Changes-
  - Rocks _____ when heated
  - If temperature increases too _____ the rock will actually _____.

Name: _____ Date: _____

Erosion Notes

- **Erosion**-_____

  _____

  - The driving force behind most types of erosion is _____.
- Energy from the sun plays an indirect role in erosion
  - Sun's energy drives the _____, which produces running water and glaciers

Gravity Erosion

- **Mass Movement**- _____

  _____

  Mass Movement involves two forces:
  - _____
  - _____
    - When rain weakens the force of friction gravity then pulls rock and sediment down a slope

Running Water and Streams

- Running water is _____.
  - During a rainstorm, thin sheets of water often flow over the land and are confined to a _____.
- **Stream**- _____
- **Tributary**- _____
- **Watershed**- _____

- Streams carry sediments in various ways:
  - _____
  - Solid particles (clay sized) _____ in water
  - Larger particles are usually carried by rolling, bouncing, or sliding on the streams bottom
- Steam Abrasion- _____
- V-Shaped Valley- _____

  _____
- Stream Velocity- three factors are need to determine average velocity (speed)
  - _____- the slope of the stream
  - Discharge- _____
  - Steam Channel Shape- the shape of the bed of rock that the stream is confined to
- Variation in stream velocity:
  - When a steam channel is _____ the greatest velocity is in the middle
  - When a stream channel curves is _____ velocity is on the outside curve
  - Velocity is also the _____ just below the surface

- Mature Streams:
  - Meanders- _____
    _____
  - As it moves from side to side it causes a larger flood plain

Wind

- Loose sediment such as sand or smaller particles effect nearby solid surfaces
- Deflation- _____
  _____
  - The lowering of the land surface will continue until there is no more loose sediment
- _____- when wind blows sand or silt against rock or other object
  - The pelting of sand grains wears away rock

Glaciers

- Glacier- _____
  _____
- Glacier Movement:
  - As more snow and ice _____ the glacier moves forward
  - As snow and ice melt the glacier _____.
- Its movement is plastic-like
  - The glacier ice acts like a fluid
  - Its sometimes called a "_____"

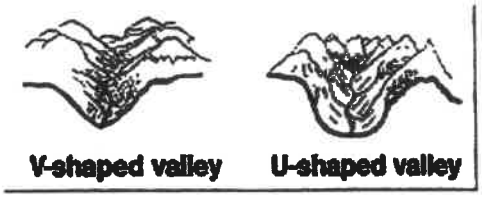
    Fragments can be as big as a house

- Fragments can be carried hundreds of miles

- Alpine Glaciers- _____

_____

  - The wide thick ice of the glacier erodes the bedrock and the confining valley walls
  - ** _____ - characteristic of glaciers as they erode the valley walls



V-shaped valley U-shaped valley

- Continental Glaciers- _____

_____

  - When a glacier moves over land loose rock and material are frozen to the bottom and dragged along
  - These loose rocks are called _____ once they are deposited!
  - This material frozen to the bottom acts like sandpaper and scrapes the bedrock
  - Glacial Grooves- _____

_____

Waves and Currents

- Where lakes and oceans meet land, waves and currents act as agents of

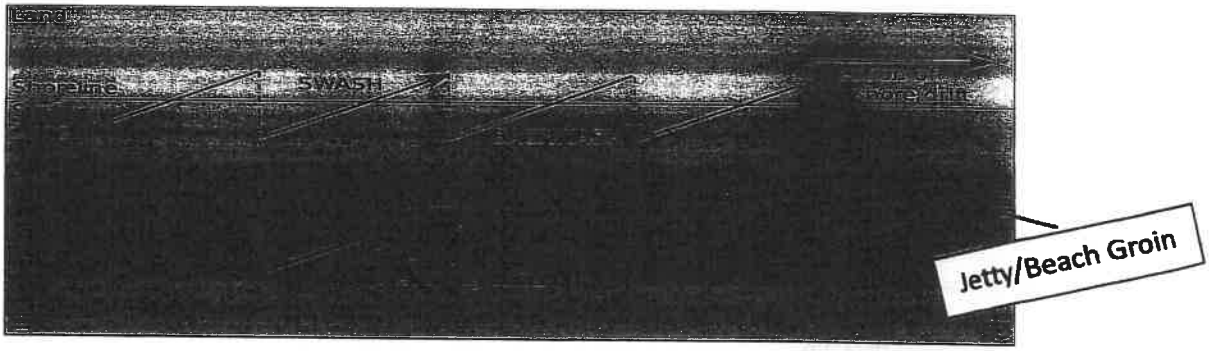
_____

  - As a wave approach the shore it _____ upon the bottom

- The wave becomes unstable and "breaks"

- As waves approach the shore a great amount of energy is released
- Usually waves approach at an _____
- Water comes in at one angle and leaves in at another creating a zigzag pattern
- This zigzag pattern cause a flow of water along the beach called a _____

  _____
- The waves constantly hit the shore and erode the sand while the long shore current _____ the sand down the beach



Deposition

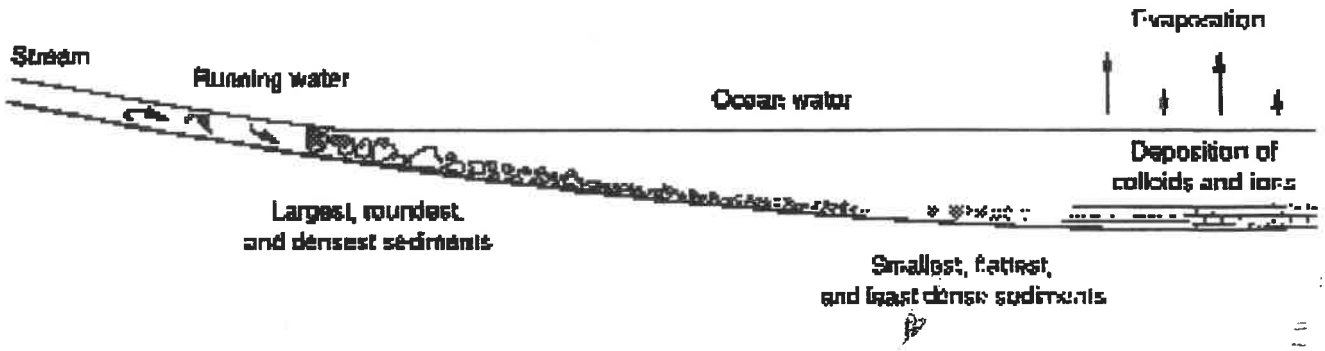
- Deposition- _____

  _____
  - In deposition, materials are placed in locations where they may form beds or layers of sedimentary rock
- Factors Causing Deposition
  - Velocity of an erosional system decrease
    - As wind _____ it cannot hold blow sediment anymore so it is deposited

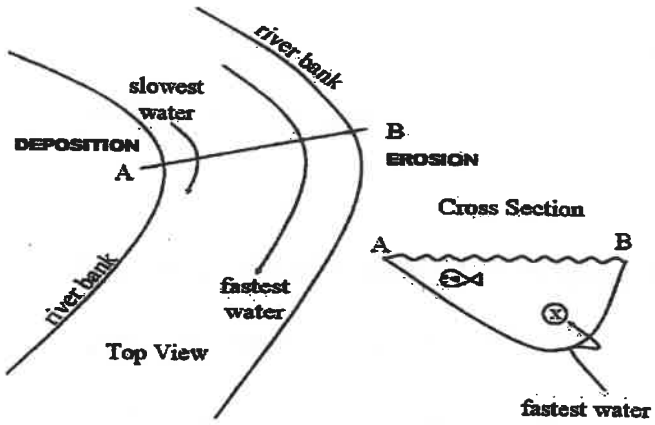
- As a stream slows down sediment cannot be suspended so it falls to the stream bed

- The sediments themselves determine how fast they are deposited
  - Size- _____
  - Shape- _____ sediments will settle faster and _____ sediments will take longer
  - Density- sediment that is _____ will settle faster

- Sorting of Sediment
  - During deposition, sediments of similar size, shape, and density get separated or sorted by types
  - Sorted Sediment- _____
    _____
  - _____- layers of sediment that are mixed in size, shape, and density
  - Horizontal Sorting- when the velocity of a wind or water erosional system gradually decreases, the larger, denser particles settle out first
    - Size, roundness, and density gradually _____ as you move farther out



- **Streams Deposition**
  - Streams deposit their material in many different ways
    - Sediment is deposited on the _____ of a meander



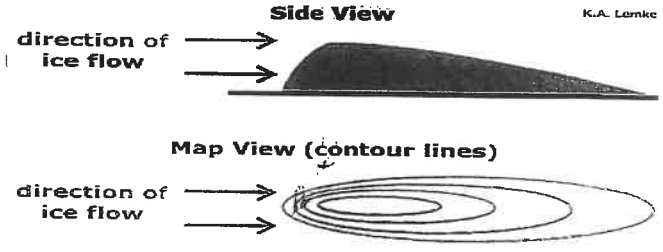
    - Levee- _____

      _____

    - When a stream floods and overflows most of the sediment is deposited over a _____.
    - Flood Plain- _____

      _____

- **Glaciers**
  - Where the glacier stops forward movement sediment is dropped in an unsorted pile called a _____
  - Drumlins- _____
    - Shows a glaciers direction of movement



- Kettle Lakes- large blocks of ice that leave a depression in the ground and after they melt fill the hole
- Outwash Plain- a broad delta-like feature of sorted sediment deposits

- Waves
  - Beach- _____
  - Barrier Island- a sandbar that rises above sea level (ex. Fire Island)
- Wind
  - Sand Dune- sand deposited in layers or in mounds
    - Gentle slope facing the wind
    - Steep slope on the side the wind is blowing towards
- Gravity
  - Mass Movement- after an avalanche or landslide the sediment tends to be **_____&_____**