Streams & Rivers

13.1

CH 13 Surface Water

Rivers, Streams & the Water Cycle

- 50% of water that falls to Earth's surface eventually ends up in a river or stream and then carried to the ocean
- Streams and rivers account for most erosion on Earth's surface

River Systems

- Tributary- stream that runs into another stream or river
- River system- a river and all its tributaries
- Drainage basin/watershed- includes all land that drains into river either directly or through tributaries

Divides

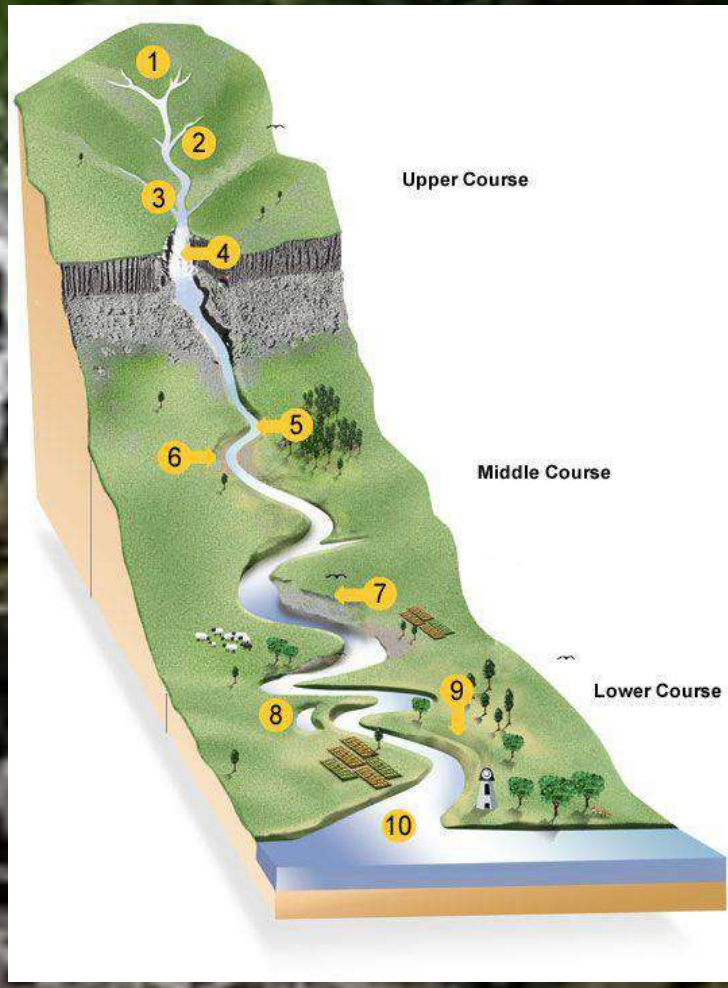
- Divide- high land that separates one drainage basin from another
  - Continental Divide – Rocky Mountains divide the United States
    - Rainfall E flows to Atlantic Ocean
    - Rainfall W flows to Pacific Ocean
- Mississippi River System – largest single drainage basin
  - West divide = Continental Divide; East divide= in Appalachian Mountains

Rivers, Streams & Erosion

- The ability of a river/stream to eroded and transport sediment is affected by:
  - Velocity of water
  - Stream's gradient
  - Discharge
  - And slope of channel

Velocity & Gradient

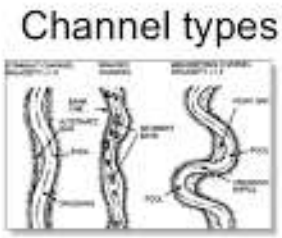
- Velocity- distance traveled by water in a given amount of time.
- Velocity related to energy
  - Fast-moving river = high energy
    - Can erode materials more quickly & carry larger particles
- Steepness of slope, amount of water traveling and shape of path through which water travels affect velocity
- Gradient- steepness of slope of a stream/river
  - Varies along its course



Discharge

- Amount, volume of water that passes a certain point in given amount of time.
- Not constant- many cases, discharge increases downstream b/c tributaries add water
- Also varies with season- more runoff, rain = increased discharge

Channel



- Channel- the path through which water flows in a stream/river
- size and shape of channel affects velocity
  - Ex. Shallow, winding stream w/ lots of boulders has great deal of surface area in contact with water= lots of friction (slows it down)
  - contrast- straight, narrow channel, wide + deep- less SA and therefore less friction (velocity =greater)