

**Set-Up!**

**Warm-Ups: Week 3** Page # \_\_\_

Mon. - 2/2

Tue. - 2/3

Wed. - 2/4

Thur. - 2/5 (Test Day!)

Fri. - 2/6 (Notebook Check)

Please set-up your warm-up page for the week!

February 2, 2015

### Warm-Up

Today you will need your notebook and pencil.

- Review from Friday's article: When do the tallest/biggest ocean high tides occur?

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**During New and Full Moons**

**New & Full Moon = Spring Tide**

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# River Systems

February 2, 2015

## Riddle Me This.... ?

- Why are rivers so rich?
- Because they have two banks!

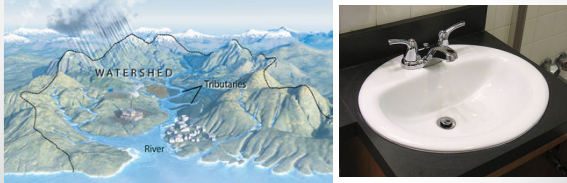
## Watershed

- Watershed:** An area of land that catches water and drains in to a common body of water, such as a marsh, river, lake or groundwater.

[http://bcs.whfreeman.com/saes/#805751\\_814023](http://bcs.whfreeman.com/saes/#805751_814023)

## Watershed Analogy

- Another name for a watershed is a drainage basin
- Another name for a basin is a sink
- How is a watershed like a sink?
- They both **drain** to a common body of water



## North Carolina's River Basins

**River Basin:** HUGE! The land that water flows across (or under) on its way to a major river.



**Example:** Durham is located in both the Cape Fear River and Neuse River basins



<http://www.eenorthcarolina.org/riverbasins-gis-map.asp>

## So What's the Difference?

1. **What is the relationship between a watershed and river basin?**



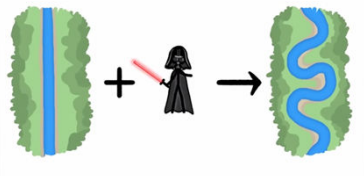
- Both are areas of land that drain to a particular water body.
- River basin, all the water drains to a large river.
- Watershed describes a smaller area of land that drains to a small river/lake.
- There are many watersheds within a river basin.

## Let's Make a River Basin!

1. Take a piece of scrap paper from your bin.
2. Crumple it up into a ball
3. Gently open up the paper, but don't flatten it completely
4. The highest points on the paper represent the *mountain tops* and the lowest wrinkles the *valleys*
5. **Choose one color** and use it to mark the highest points on the map, the mountain ridgelines.
6. **Choose a second color** and mark the places where different bodies of water might be: creeks, rivers, and lakes.
7. **Can you identify more than one watershed on your map?**

## River Systems


- **Why do rivers curve?**  
<https://www.youtube.com/watch?v=8a3r-cG8Wic>
- Disturbances in nature by river banks along with the passage of time direct the flow of water to promote creating curves.



## Oxbow Lake?

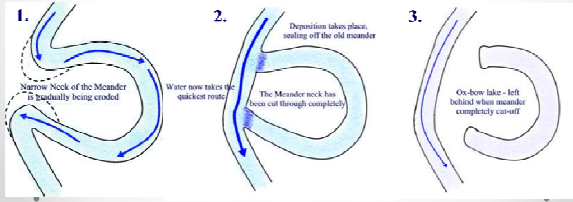


## Oxbow Lakes



**2. How do oxbow lakes form?**


When two river meanders (bends) join together the thalweg (fastest water) shifts and does not travel around the old meander. The shift causes deposition on the outside of the river cutting off the old meander and creating an oxbow lake.

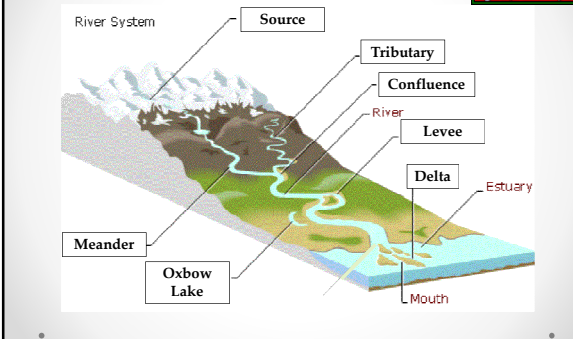


The diagram illustrates the three stages of oxbow lake formation:

- 1.** A river meander with a narrow neck. Text: "Narrow neck of the meander is gradually being eroded".
- 2.** The neck is cut off. Text: "Deposition takes place, sealing off the old meander." and "Water now takes the quickest route." and "The meander neck has been cut through completely".
- 3.** The old meander loop is isolated. Text: "Oxbow lake - left behind when meander complexity cut-off".

## River System





The diagram shows a 3D cross-section of a river system with the following labeled parts:

- Source:** The origin of the river, shown as snow-capped mountains.
- Tributary:** A smaller river joining the main river.
- Confluence:** The point where a tributary joins the main river.
- River:** The main channel of water.
- Levee:** A raised embankment on either side of the river.
- Delta:** The landform at the river's exit to a larger body of water.
- Estuary:** The area where the river meets the ocean.
- Mouth:** The end of the river.
- Meander:** A bend in the river's path.
- Oxbow Lake:** A lake formed from a former meander loop.