

Name _____

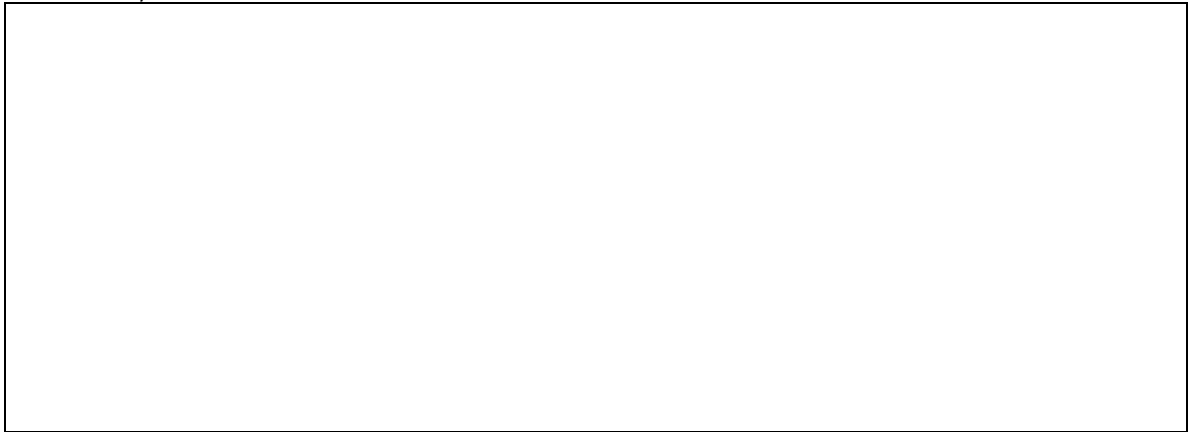
Stream Table Data Sheet

Background

Every year, insurance agencies and governments spend millions of dollars helping people whose homes and property have been damaged by floods. People continue to live on flood plains because they provide wonderful farmland, good commerce, and beautiful places to live. Some places along the flood plain might be safer than others. In this experiment, you will determine which part of a meander is safer to live on in normal conditions and which side is safer in a flood.

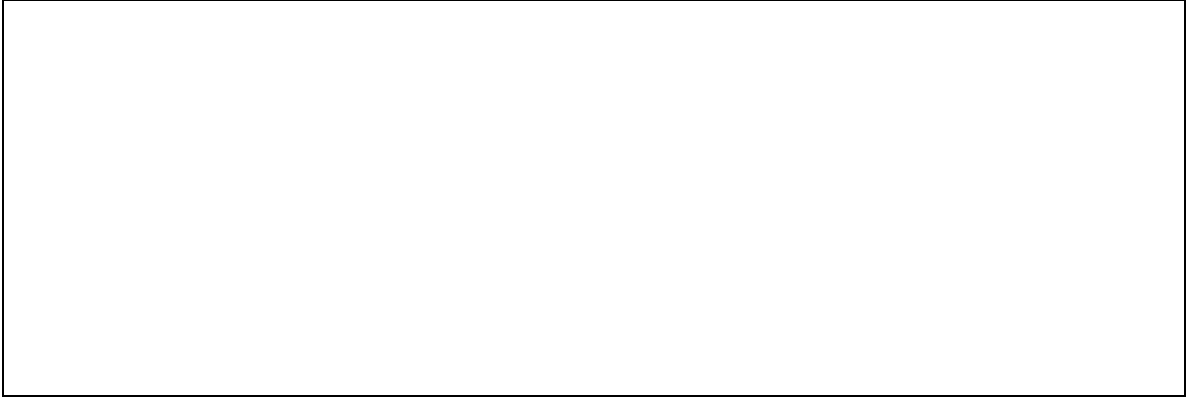
Classroom Activity (In groups of 3-4)

1. Sketch below your blueprint for the stream table watershed: Make sure that your river meanders and that you place two towns on the inside and outside of your meander, also include tributaries to the main river



2. Set up your stream table:
 - Place 2 to 3 inches of sand in the table.
 - Sand should slope upwards toward the water source and ends in a lake towards the bottom.
 - Create a meandering river by drawing an S in the sand two fingers wide and about a one inch deep.
 - Use materials dredged out of the river to create levees along the sides of the river.
 - Place 4-6 houses on each side of the meander, based on your blueprint above.
3. Run water into the table at a low rate (there should be water constantly flowing in the river channel, but it should not be gushing). Start your stopwatch at the same time.
4. Note on your blueprint in a different color where you see erosion (sediment being carried away from the riverbanks) and areas of deposition (where sediment is put down again).
5. Time how long it takes for one of the houses to fall into the river. Note which town it was and how long it took. If no house falls in after 2 minutes, stop the experiment and note that nothing happened to the houses.

Flood Experiment



1. Repeat steps 1-5, but this time, increase the water velocity to represent a river at high water levels.
2. Clean up your station and answer the following questions.

Questions:

- Under normal river conditions, did erosion occur on the inside or on the outside of the levee. Under these conditions, where would you want to build your house?
- When you increased the volume of water, did it change the pattern of erosion and deposition?
- When the river floods, what happened to the meander? If it got completely abandoned, label it an oxbow lake on your map.
- In a flood, what might happen to people living on the outside of a meander? On the inside?
- What safety precautions might you suggest for people living close to rivers?