Reading the River

Summer 2003

WATERSHED CONSTRUCTION

9th Grade
Integrated Science I

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LAB: ISLAND WATERSHEDS

MATERIALS

- Modeling clay
- Waxed paper
- Thread
- Small beaker of water
- Graph paper
- Scissors
- Colored Pencils (to match thread colors)

PROCEDURE:

1. Lay the waxed paper on your table and then use the clay to build an island. Sculpt the island so that the maximum height is less than 3 cm.

A. The island should have at least four distinct drainage basins.
B. The shape and size of at least one basin should be much different than the others.
C. **Avoid cone-shaped peaks and unrealistic features**.

2. Use a medicine dropper containing water to determine the probable location of four (or more) of the island's largest rivers and their watersheds. Do this by gently dropping water from 3-6 cm above various parts of the island. Watch the path of the drops as they drain off the island.

A. If a drop gets stuck, add more water to the drop. Eventually it should flow off the island. If it still doesn't move, reshape the area to increase its slope.
B. Use the dropper to suck the water up once it has drained onto the waxed paper.
C. You may reshape the island to make the rivers where you want them located.

3. Once you are satisfied with the drainage of the island, use pieces of thread to mark the location of the island's four (or more) major rivers. Press the thread gently into the clay to keep it in place. Cut the thread with scissors.

4. Next, use another thread color to mark the boundaries of the watersheds of each river that you have identified (at least four). The watershed should include all the land that would drain into a particular river.

5. Have your instructor check your island before going on to the next step.
Teacher initials: _____

6. Lightly scratch the clay with the tip of a pen or pencil to show the possible location of at least two tributaries for each stream that you have identified with your thread. Keep in mind that rivers do not split apart on sloped surfaces----they join together.

7. Next, make a map of your island. Begin by removing the island from the waxed paper. Center it on a piece of graph paper, and then trace its coastline onto the paper. Set the model aside and then draw each of the following onto the map: major rivers (blue), tributaries (blue), boundaries of drainage basins (red).

8. Do the following to your map:
   a. Indicate which direction will be north.
   b. Give your island a name. Place the name at the top of the map.
   c. Put arrows on all of the rivers (including tributaries) to show flow direction.
   d. Name each of the major rivers (blue lines). Write these names along the river.
   e. Put a green U somewhere in the upper portions of each drainage basin.
   f. Put a green L somewhere in the lower portion of each basin.
   g. Put a green M at the mouth of your longest river.
   h. Put a red D on one of the divides located on your map.
   i. Put a green C at one of the confluence's shown on your map
   j. Put a green H at the headwaters of your longest river.
   k. Include some sort of scale on you map to show distance (km).

9. Assume that a city is located at the mouth of the longest river. The river serves as the primary source of water for the city. On the back of the map describe two possible threats to the city's water supply that might be present somewhere in the watershed.

10. Construction project is over…….how did you do??? ☺