



The Red Bayou Irrigation Challenge

Materials

- Graph Paper (blank paper is OK)
- Pencils
- 1 large paper cup
- 3 small paper cups
- Ruler
- Scissors
- Straws (bendy, spoon, and precut)
- Holepunch
- Popsicle Sticks
- Buckets
- Clay
- Masking Tape
- Water
- Pitcher or measuring cup

Procedure

1. Using your pencil and paper, sketch the design for your irrigation project using the following guidelines:
 - a. There should be one large cup to represent the Bayou.
 - b. There should be three small cups representing the three farms that need water.
 - c. Each of your three farms should be at least 10 inches from the Bayou.
 - d. Each of your three farms should receive about the same amount of water.
 - e. You should use at least three of the materials listed above, or similar materials.
2. Build your project following the design you created.
3. Check that your project meets all of the guidelines listed above. You may need to adjust your model to make sure the guidelines are followed. (Note: You will not know if all of the farms get the same amount of water until you test the project in the next steps.)
4. After building your irrigation system, make predictions about how it will perform. What are the potential strengths and weaknesses of your model?
5. Test your model by slowly pouring water into the Bayou (large cup). Try to add water until at least one of the small cups is full.



Hydrological Modifications - Interactive Video
Accompanying Material

6. Make observations about how your model performed. Did all three farms (small cups) get the same amount of water? Were there any leaks?
7. Compare your predictions to the results of your test. Were your predictions correct?
8. Reflect on what changes you might need to improve your irrigation system.
9. If you would, redesign your irrigation system and test it again. Compare the results of the two different tests to see if your model was improved.

Challenge yourself with design restrictions:

- A specific budget for your project, and costs associated with each material to limit how many materials you can use
- A limit on the availability of certain materials (eg. tape)
- Limits on the length/size of the irrigation channels (shorter straws)
- Any others you wish to implement

Email us at education@scienceforourcoast.org to share your designs and models!