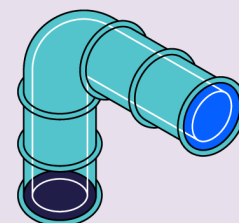


BUILD A PIPELINE

Key Concepts: Water, Engineering, Water Distribution System, Hydraulics



Water pipes are critical to a lot more than getting water to and from houses and businesses. The average household pushes about 2 gallons of water per minute through a half-inch pipe, but some water systems, like the Space Launch Systems at the Stennis Space Center, require about 335,000 gallons of water per minute!

In this STEM challenge, students will make a pipeline using straws to transport water from the main tank to a smaller tank by gravity. You must also carefully connect the pipes and make sure those connections are watertight.



Materials (check the boxes if you have all)

- Plastic bendy straws
- Paper tape
- Plastic or Styrofoam cups
- Scissors
- Cleaning tissue
- A Notebook

Instructions

- **STEP 1:** Poke a small hole in the bottom side of one cup and another hole at the top of another cup.
- **STEP 2:** Figure out a way to build a stand for one cup, so that it is higher than the other. Use the straws and tape. Be creative. (It should look like a water tower).
- **STEP 3:** Connect the two cups together using a straw pipeline. Poke a bendy straw through one hole and then through the hole in the other cup.
- **STEP 4:** Pour water into the higher cup and watch it flow into the lower cup. Plug any leaks with tape. If your first try doesn't work, try a different design.

Glossary

Water Distribution System: A part of water supply network with components that carry potable water from a centralized treatment plant or wells to consumers to satisfy residential, commercial, industrial and fire fighting requirements.

Write Your Observations

How many times did you try it?

What were some of the challenges you discovered along the way?

What worked well and what did not work well?

What would you do differently next time?