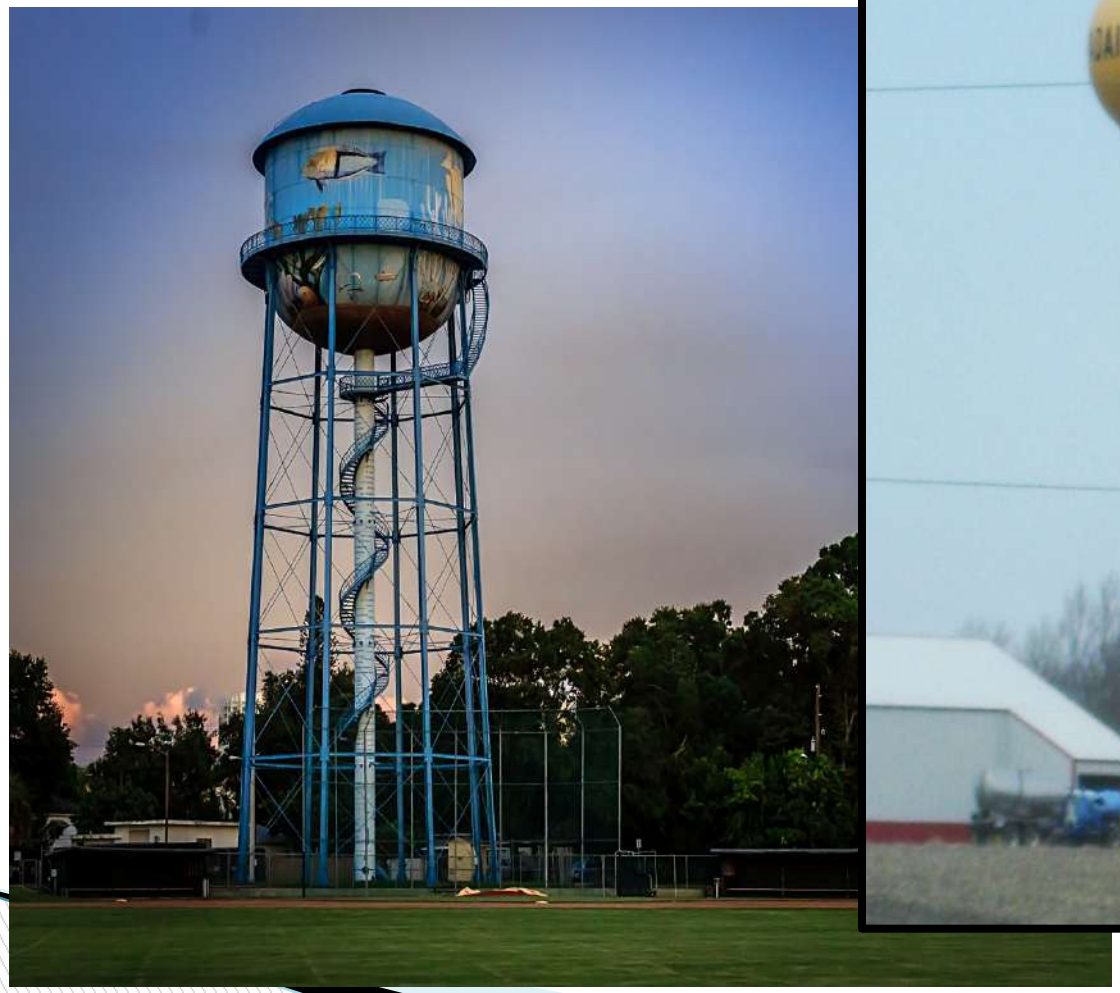
Engineering a water tower

The Process of Design

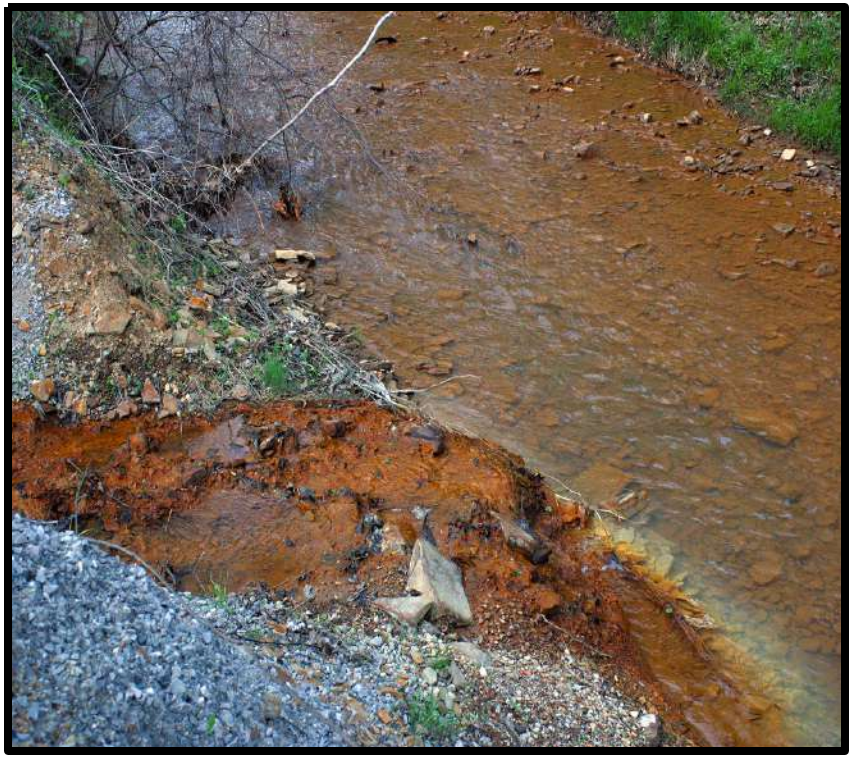



AIR

- Why are water towers important to communities & living things ?
- What are the characteristics of water towers?
- Why are they elevated?
- What are the functions of water towers?

SCENARIO

- You are in a village that NEEDS clean water stored in a water tower.
- You have been tasked to design and build a model of a water tower using only 5 sheets of paper (8.5”x11”) and a water bottle.



RULES

- ONLY use the items provided
- CANNOT ask for more items if you destroy the items
- CANNOT open or destroy the water bottle
- ALL water must remain in the bottle
- The bottle **must be elevated OFF the table**
- Elevate bottle as HIGH as possible off the table

STEP 1: 5 minutes!

- Individually, draw a model of the water tower you would build using the supplies
- Estimate the height in centimeters to TOP of the bottle

STEP 2: 15 minutes!

- Form into groups (2 to 5/group)
- Discuss and agree on a model to build
- Build the water tower

STEP 3: 5 minutes!

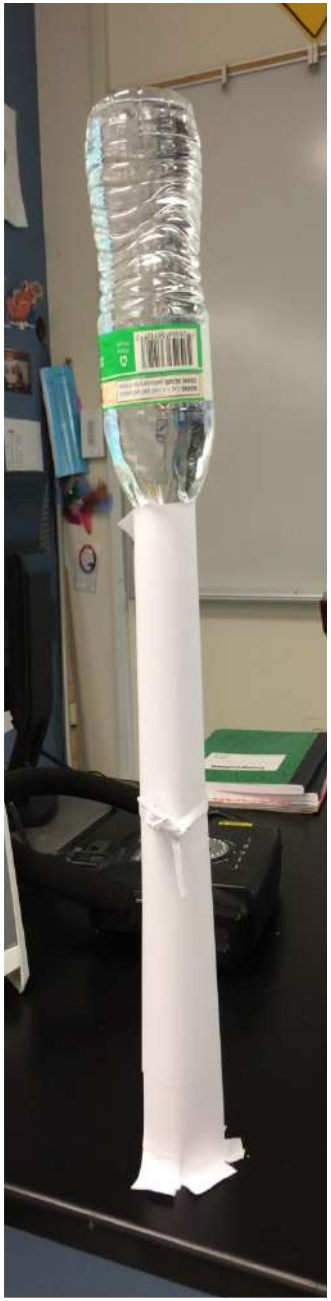
- Draw the final model
- Measure the height in centimeters to the top of the water bottle

STEP 4: 10 minutes!

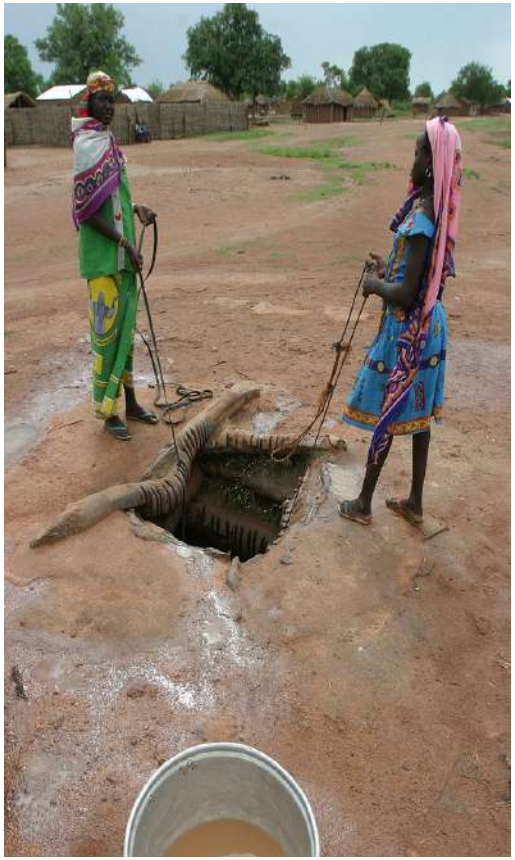
- Collect the data from each group
- Make a BAR graph of the data

GROUP	Estimated Height	Actual Height

- If you ended up making something different than the agreed upon drawing, WHY?
- Which water tower was the most successful? WHY?
- If you could use ONE additional office supply material which would you use and why?



Engineering Challenges



https://www.youtube.com/watch?v=PbarOQ1TLUY