STORM DRAIN ITEM RETRIEVAL CHALLENGE

Engineering

Objective

Students will build a tool capable of retrieving their lost item from a storm drain.

Recommended Materials

Cardboard

TP / Papertowel Tubes

Paper Plates & Plastic Cups

Plastic Cutlery

Hangers

Egg Cartons

String

Pipe Cleaners

Clothespins

Paperclips

Rubber Bands

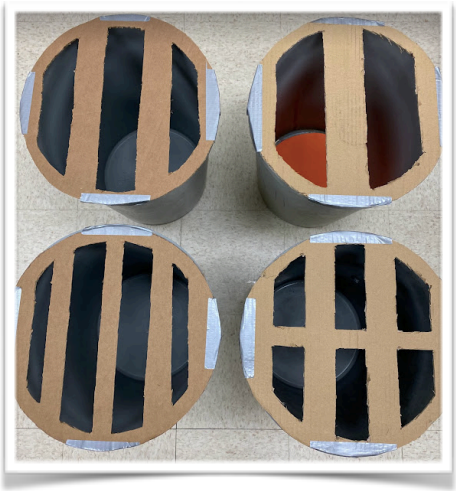
Trashcans or Paint buckets.

Time

Students will have 15 minutes to build their tool. Students will have 2 minutes to try and retrieve their item.

Lesson Overview

Begin the lesson by creating a theme around how you lost your item in the storm drain. I chose tripping & falling while rushing to make a flight to Disney World as my scenario. Theme your lost items around your scenario. I made sure to have some high value items you would not want to leave behind like iPhone, wallet, keys, magic band with your Disney tickets, and passport. Instruct students that they must use items they found in the dumpster nearby to create a tool capable of retrieving their item. For younger students you may need to discuss the purpose of storm drains. You may also need to discuss the importance of some items like passports, engagement rings, credit cards, etc.



Challenge Rules

"Lid is lava" - Students may not touch the lid of the storm drain. They may also not put their hand in the drain.

Dropped tools remain in the drain. If students have no way to retrieve them their turn is over.

Student groups may build more than one tool and can have multiple tools in the drain at the same time.

Retrieved items must be above the lid of the drain before students may grab them.

Reflection Questions

What was your groups strategy?

What worked will in your group?

What would you do differently next time?

What item from the "dumpster" did you think was most valuable? Why?

Helpful Tips

I recommend students work in pairs. Students were provided with a notecard with their item on it. That is the only item they were responsible for trying to retrieve.

Students did not have access to tape or glue. They had to rely on other connection methods.

Allow students to visit the "dumpster" as many times as they want. They may also take as many items as they want. However, they must clean up before they test. This helped prevent groups from taking hundreds of items.

Create different lids for each age group. To create the lids I traced the top side of a classroom trashcan on cardboard. I then placed the can in the center of the circle and traced the bottom. This gave me a nice rim to work with. I then used a meter stick to make accurate spaced slits in the lid.

I used classroom trashcan for 2nd-5th grade and paint buckets from K-1. This provided a better opportunity for success for younger students.