

WEEK 3: ENGINEERING



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I AM STEM

presents...



WAKANDA FOREVER: BETTER TOGETHER

Monday, July 3, 2023

Wakandan Ship STEM Challenge

Materials:

- 3 aluminum foil sheets
- 4 straws
- Tape
- Metal washers or pennies
- Tub of water or large bowl

Instructions:

1. Using only the supplies provided, build a boat that you believe will carry the most weight without sinking in water. What keeps boats afloat? Discuss while you design.
2. How many sea animals and metal washers can your boat hold before it sinks?



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Click Image For Wakanda
Ship Challenge



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Wednesday, July 5, 2023

Catapult STEM Challenge

Materials:

- 10 jumbo craft sticks
- 3 rubber bands
- Marshmallows or pom poms
- Bottle cap
- Glue gun

Instructions:

1. Use a pair of scissors to make 2 v notches on either side of two jumbo craft sticks towards the ends of the sticks.
2. Take the remaining 8 craft sticks and stack them on top of the other. Wind a rubber band tightly around each end of the stack.
3. Push one of the notched sticks through the stack under the top stick of the stack. Flip the stack over so that the stick you just pushed in is on the bottom of the stack.
4. Lay the second notched stick on top of the stack and secure the two popsicle sticks together with a rubber band, the v notches that you cut help to keep the rubber band in place.
5. Glue the bottle cap like the image to the left and test your catapult!





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Thursday, July 6, 2023

STEM Airplane Challenge



Materials:

- ☐ Copy paper

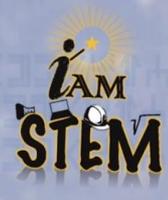
Instructions:

1. Make a paper airplane, take care to fold your paper carefully, and use your thumbnail or a ruler against the folds to make them as sharp as possible.
2. Go to the space you'll be flying your plane. Mark your starting line, place your toes on the starting line, and throw your plane! Write down the distance your plane traveled by using a meter stick or a measuring app. In order to truly test it, throw it four more times. Try to be in the same position and throw it with the same power every time.
3. It's time to mix it up! There are several things you can do from here to continue the experiment to alter the plane you have already made! Try cutting flaps into the back of the wings, add paper clips to the front of the plane, or make a whole new airplane! You can either try your own design or look for inspiration [here](#).



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Friday, July 7 2023

Robotic Hand

Materials:

- Straws
- String
- Rubber bands

Paper clip

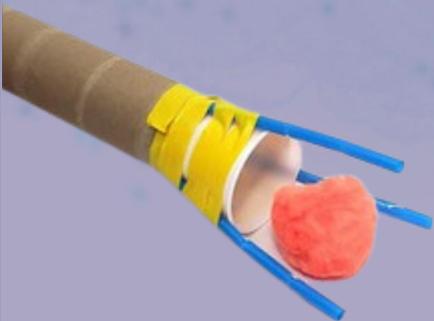
Tape

Paper towel roll

Small cup

Instructions:

1. Watch [this video](#) 
2. Cut a small triangle into a straw without cutting the straw in half. Bend the joint to increase the flexibility.
3. Poke a hole in the straw above the joint and thread a string to the bottom of the straw. Make sure the finger works well.
4. Cut and tape a small cup to the paper towel roll.
5. Tape the straw fingers to the inside of the paper towel rolls. Tie the loose strings to the paper clips.
6. Try to pick up a small object with your robotic hand.



Click Image For Video