

STEAM stands for *Science, Technology, Engineering, Arts, and Mathematics*. STEAM is important to learn because it affects every aspect of our lives; from the world we live in, to the chairs we sit in.

STEAM week will take place on the week of October 29th, 2018. Each day will correspond with a part of STEAM, for example, Monday is science, Tuesday is technology, etc.

The Bridgewater-Raritan Robotics Team is giving out prizes for each of the activities in this packet. For a chance to win, tag us on Instagram and Twitter with a picture of your child's finished project, and use the hashtag #STEAMWeek303. Winners will be announced on Wednesday, November 8th. The winner will come to the Wade Administration Building on Friday, November 10th to collect their prize. There will be one winner per activity.

Follow us on social media:

Facebook- FRCTeam303

Twitter- FRCTeam303

Instagram- FRCTeam303

To save paper this year, we put all the activities on our website:
Team303.com

Kindergarten-Fourth Grade

Monday-Science: Oobleck

Tuesday-Technology: Popsicle Stick Catapult

Wednesday-Engineering: Marshmallow and Spaghetti Buildings

Thursday-Art: Tessellation

Friday-Math: 3-D Geometric Nets



Oobleck

What you need

- 1 part water
- 1.5 to 2 parts cornstarch
- Small amount of food coloring (optional).

How to Make It

- Start with the water in a bowl (or wading pool!) and add the cornstarch a bit at a time.
- Keep stirring until it has a gooey consistency. You may want to use your hands.
- When the oobleck is just right, slowly add food coloring, if you want. This can be a challenge to get it mixed properly.



Things to do with oobleck

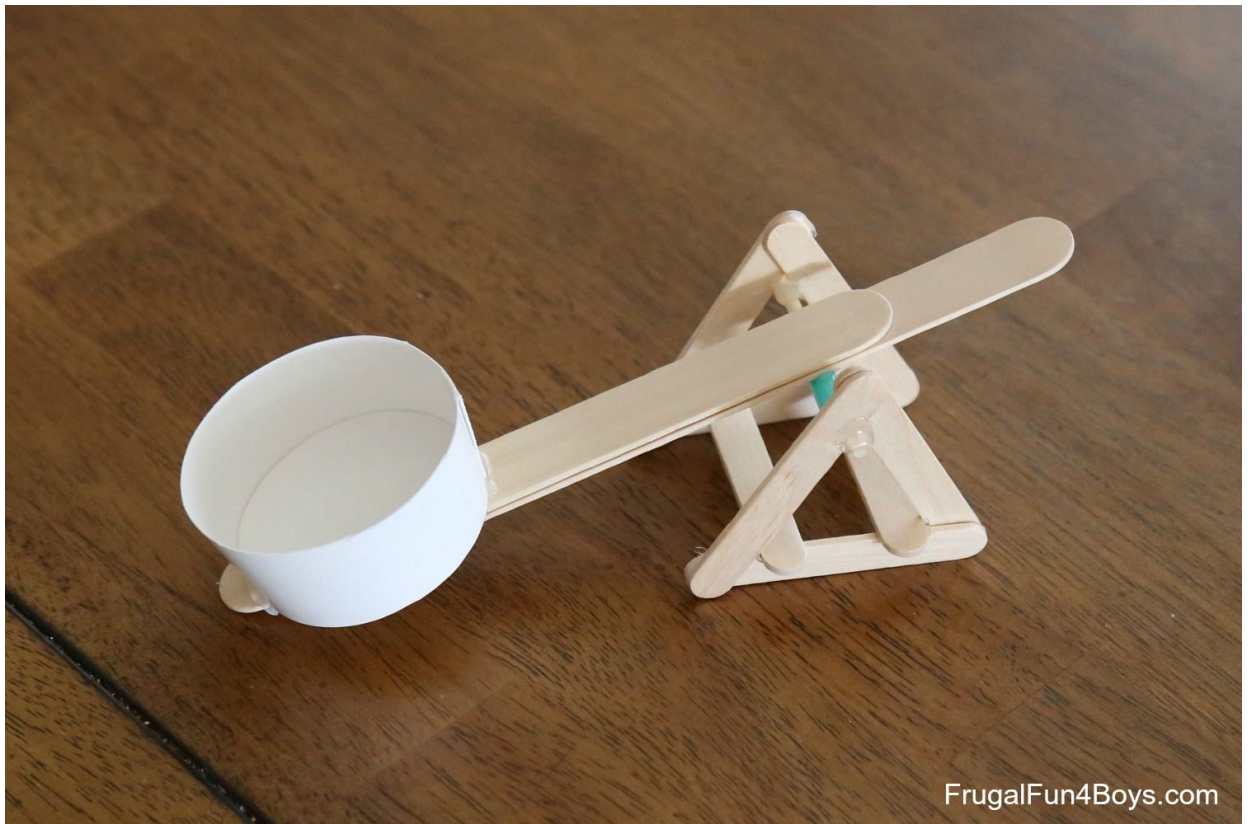
- Grab a handful and squeeze it. Let it ooze through your fingers.
- Make a puddle and quickly drag your fingers through it.
- Put it into a plastic container and shake it or quickly bump it against a table.
- Jab at the oobleck and then slowly let your finger sink in.
- Roll some oobleck into a ball. It becomes solid, but when you stop moving it, it will melt back into your hand.

Share your final product with us on social media (@FRCTeam303), using #STEAMWeek303, to enter the chance to win a prize!

Popsicle Stick Catapult

What you need

- Popsicle sticks - 8 to 9 per catapult
- Wide craft sticks - 2
- A bamboo skewer
- A straw - either plastic or paper
- A paper cup
- Hot glue gun
- Scissors



How to Make It

Step 1: Grab 6 sticks and warm up the glue gun. I actually used some mini popsicle sticks for my instruction photos and then made a catapult with full-size popsicle sticks afterward. The process is the same. I think I like the full-size popsicle stick catapult better, but both of them work well.

Share your final product with us on social media (@FRCTeam303), using #STEAMWeek303, to enter the chance to win a prize!

Step 2: Make two triangles by gluing three craft sticks together. Then grab a straw and a bamboo skewer.

Step 3: Cut a piece from the bamboo skewer. Then cut a shorter segment from the straw.

Step 4: Hot glue the skewer to each of the triangles.

Step 5: Glue a couple of sticks to the base of the catapult for stability.

Step 6: Glue a wide craft stick to the straw to create the shooting arm of the catapult.

Step 7: Cut a paper cup so that there is just an inch or two left at the bottom. Glue a second wide craft stick to the catapult and then glue on the cup.

Marshmallow and Stick Building

What You Need:

- Spaghetti
- Marshmallows

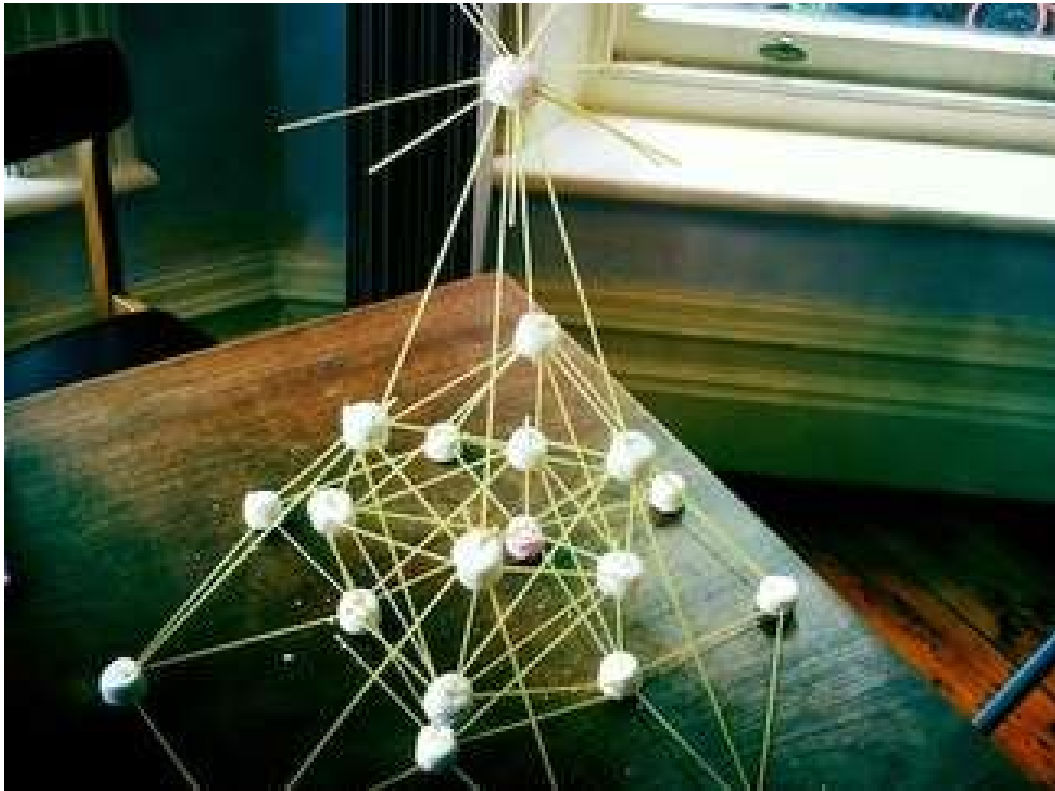
What You Do:

You are going to try to build the tallest tower you can. The spaghetti provides the framework and support for the tower and mini marshmallows are used to make the connectors.

Hints and Tips

- The more the marshmallow can grip the spaghetti, the stronger the joint.
- If there is a heavy load on a marshmallow, it may change shape until the joint fails so be careful!
- Use shorter pieces of spaghetti or put in braces to strengthen squares and rectangles in your structure.
- Where you choose to use shortened pieces of spaghetti, make sure you cut them accurately.
- If you don't use pieces of equal length on each side, your tower may start to twist and topple.
- There will be the most strain on the base of the tower - think about how you can add strength here.

Share your final product with us on social media (@FRCTeam303), using #STEAMWeek303, to enter the chance to win a prize!

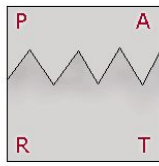


Share your final product with us on social media (@FRCTeam303), using #STEAMWeek303, to enter the chance to win a prize!

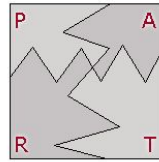
STEAM Week Activities, presented by BRHS Robotics Team



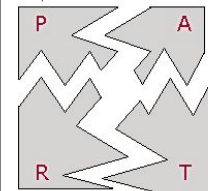
1. Write "PART" in the corners like this.



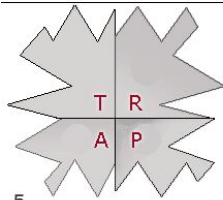
2. Draw a random line on the paper left-to-right.



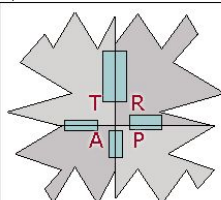
3. Draw a second random line on the paper top-to-bottom.



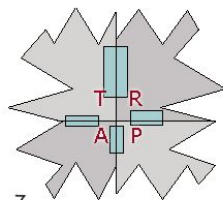
4. Cut out your shapes on the lines you drew.



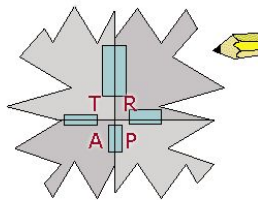
5. Put the pieces together so corners are in the middle and they spell "TRAP" like this.



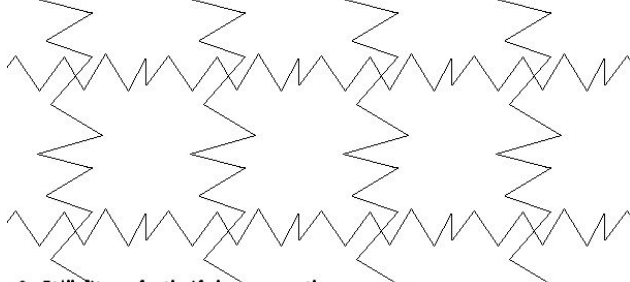
6. Tape the pieces together.



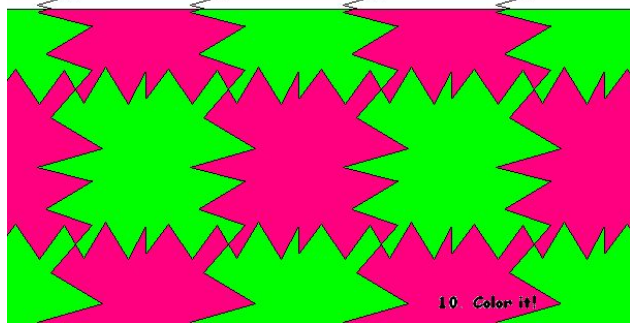
7. Decide what the heck it looks like.



8. Start tracing with your stencil.



9. It'll fit perfectly if done correctly



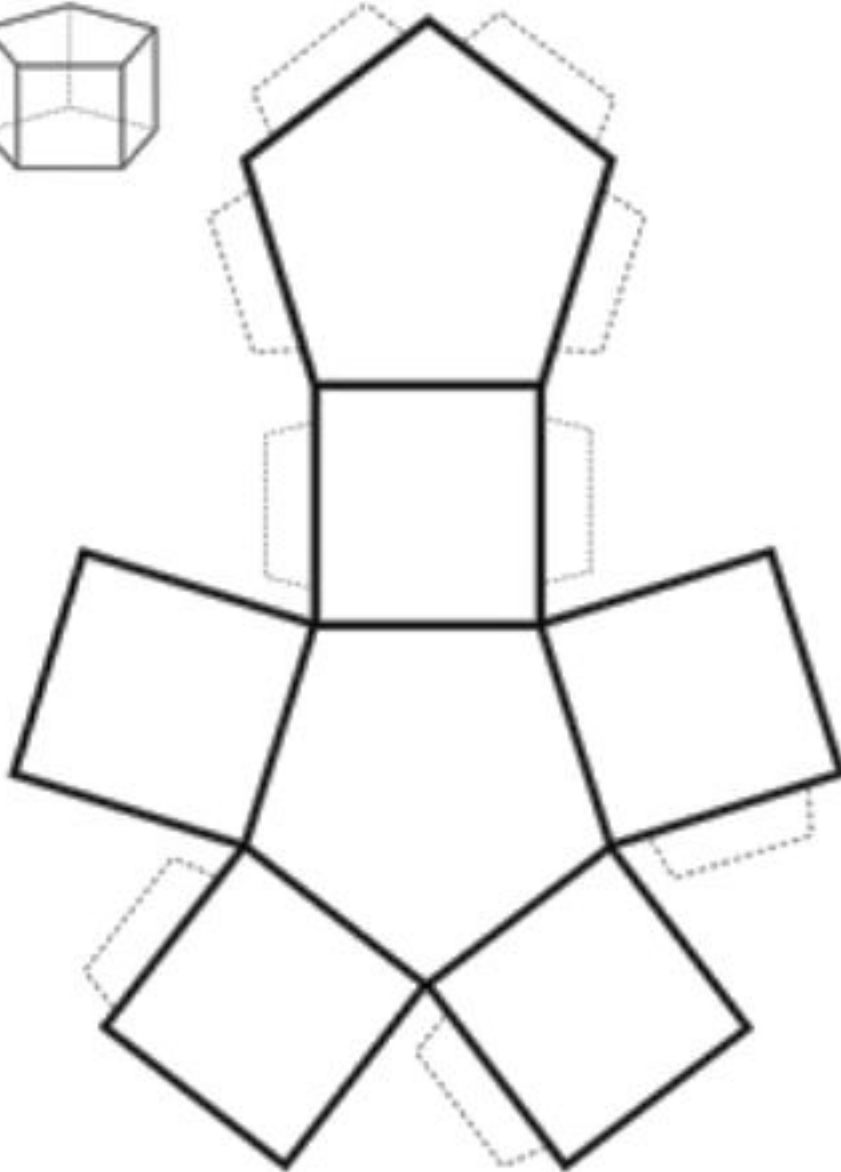
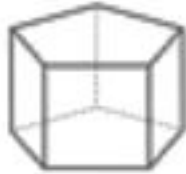
10. Color it!

Tessellations

Share your final product with us on social media (@FRCTeam303), using #STEAMWeek303, to enter the chance to win a prize!

3-D Geometric Nets

Construct a solid shape
Instructions: Cut out the net below then construct the shape.



Share your final product with us on social media (@FRCTeam303), using #STEAMWeek303, to enter the chance to win a prize!