

ENGINEERING EXPO

VOLUME 2
ISSUE 3

NOV 2019

SAVE THE DATE
FOR EXPO:
MARCH 28TH
2020!

[Check out our
new BLOG!](#)

Pumpkin Facts

1. Pumpkin in a can is usually made from the Cucurbita Moschata variety of squash like Butternut squash. It's more likely that you are eating a Butternut squash or Dickinson squash pie at Thanksgiving.
 2. Pumpkins are actually a fruit because they have seeds in them.
 3. Pumpkins are native to North America (NE Mexico and southern US). There is evidence that they have been used as early as 7500 to 5000 BC.
 4. It is thought that the origin of Jack-o'-lanterns comes from Ireland and the Scottish Highlands where people would carve faces into root veggies like a turnip to ward off evil spirits during Samhain which happened at the beginning of winter.
- Look for more facts on

[Wikipedia!](#)

Hexaflexagons

Flexagons are flat models that can be rearranged to show new faces other than the original ones displayed.

Materials needed:

- Computer paper
- Glue stick
- Scissors
- Pencils or crayons to decorate
- Ruler

Cut a strip of paper. Your strip should be at least 12 times as long as it is wide. Construction paper will hold the folds better than standard notebook paper .

Fold equilateral triangles into your paper. Equilateral means that all 3 sides are the exact same length. Make your first triangle by marking in about one knuckle. This will be the top point of your triangle. Make a diagonal fold, starting at this mark, with the long side of your strip.

When you do so, you'll see an equilateral triangle. There will be some excess paper on the top left of your triangle: cut this off. Open your fold to reveal an equilateral triangle.

Repeat this 19 times. You want to finish with a strip of paper that has 19 equilateral triangles. If you started with a rectangular strip, be sure to cut off the triangles from the edges—you'll recognize them as being different because they won't be equilateral.

Label your triangles 1-3. Flip your strip so that the first triangle is pointing upward. Label this "1." Your next triangle is pointing downward: label this "2" and the next one "3." Your next one is once again pointing downward, label it "1." Continue labeling 1-3 all the way to the 18th triangle. You will have one extra triangle. This won't get a number.

Label your triangles 4-6. Flip over your strip. Skip the first triangle. The next triangle is

pointing upward: label this "4." The next triangle is also labeled "4." The next two are both "5" and then the next two are both "6." Repeat this pattern to the final triangle on your strip .

Fold your back numbers to face their partners. Take the first two "4" triangles and fold them into one another. Next, fold the two "5" triangles like this, then "6," and so on down your entire strip. In effect, you've folded a flattened spiral.

Fold between the second set of 1's and 2's. With your strip flipped so that the lower numbers are toward you, find the second set of triangles that read 1-1 and 2-2. Make a fold between the two: you should fold the longer side under so that you're looking at triangles "2," "2," and "3."

Fold between your 1's and 2's

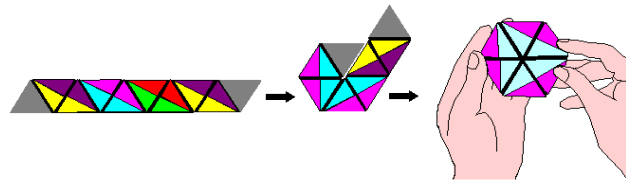
again. When you made the last fold, you'll notice that you made a cane shape. The corner of

your cane is made up of four adjoining "2" triangles. Under your fourth one, make another fold: once again, folding the "1" toward the back. When you do this, slide the end above the end of the cane to cover the lone "3" triangle. Your product should now have 6 "2" triangles forming a hexagon and a "1" triangle as an extra flap on the top right of your hexagon.

Glue your blank triangles together. Flip your hexagon over. The extra "1" triangle that is attached to the top should have a blank face on the back of it. You'll see the other blank-faced triangle to the left of it. Fold it down and glue the pieces together.

[Click here](#) for the source of these instructions.

[Click here](#) for a YouTube video with visuals as well as explanations. (Recommended)



Q&A with Expo's very own award

winner: Shaina Shapiro

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Expo Newsletter had the opportunity to interview Shaina Shapiro who received a 2019 Diversity and Inclusion award here in Wichita. She happens to also be Expo's Materials Chair!

Q. Shaina, you recently received a Diversity and Inclusion award. Can you talk

about what the award is and how does receiving an award make you feel?

A: The Wichita Business Journal honors individuals or groups who have demonstrated respect and inclusive treatment for others and a commitment to the advancement of diversity in our community. It

was an honor to be recognized along with so many other wonderful people for this award, and I am proud to be one of many supporting diversity and inclusion in Wichita.

Q. Why is diversity and inclusion important? Why is it important in STEM career fields?

A: Diversity and inclusion help to bring unique perspectives, ideas, and experience together in a collaborative way. When people feel respected and free to voice their ideas, a team performs better. This is very important in STEM career fields, where new and innovative ideas are needed constantly to

improve or develop new technology.

Q. How can I help promote diversity and inclusion in my home life or at school?

A: Keep in mind that everyone has different experiences and sees things differently. Listen to others, include them in your discussions, and be open to new ideas. No one should be singled out or bullied for being different. Be accepting, and a unique perspective could help to teach you something new or give you a new idea to approach a problem that you've been having.

For more Q & A visit the [Website!](#)

"No one should be intimidated away from exploring certain career paths whether that's being a Doctor, an Engineer, a Nurse, or something else entirely."

-Shaina

Gingerbread Twist



Building a gingerbread house is often a fun family activity for the holidays. While building the house, setting up the walls and roof, layering frosting to make the structure stay, you go through unconscious and conscious decisions to make your gingerbread house stay up and hold all the decorations. You use supports to hold the walls up while the frosting solidifies. You determine how strong the frosting is based on trial and error. You make a series of judgements during the process just like all engineers do during their projects. Decision making and learning based on previous experiences are vital for anyone's career and definitely in STEM careers.

So this year, when you build and decorate your own gingerbread structure, can you identify decisions you make to keep your house up?

Expo	Z	E	R	W	M	W	I	N	T	E	R	O	I	O	O	C	M	F	G	L
Music																				
Winter	Y	T	I	S	R	E	V	I	D	R	E	P	T	I	L	E	I	G	A	A
Flight																				
Pumpkin	Z	K	T	H	G	I	L	F	K	F	J	X	N	U	H	Q	J	S	M	X
Diversity																				
Hexaflexagon	E	Z	E	J	F	Q	W	M	W	H	R	E	H	B	X	F	M	E	U	Q
Reptile																				
	H	E	X	A	F	L	E	X	A	G	O	N	I	K	P	M	U	P	D	M

Pomanders

You will need:

- An orange for each participant
- A jar of whole cloves
- Toothpicks
- Ribbon or twine (optional)

During the middle ages pomanders were used to mask bad smells. Often they were perforated boxes or ball filled with flower petals and/or herbs. They were used as air fresheners, worn to make the wearer

smell nice, freshen clothes, or mask a bad smell while traveling through the city.

You can make your own Christmas Pomander with the list to the left.

Using the toothpick, poke holes into the skin of the orange. In each hole, place the thin end of a clove. Often, the cloves are inserted by a pattern to create a pretty design, almost like an ornament.

pattern to create a pretty design, almost like an ornament.

If you leave your pomander in a room for a while, what happens? Why?



Family Fun STEM Activities

Little Aviators

Children get to explore flight at the Kansas Aviation Museum. Every Friday 10-12 . For more

[Click Here](#)

Mystery Science Theater

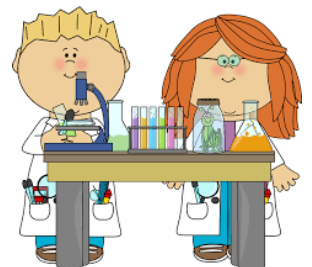
The award winning TV comedy Mystery Science Theater 3000 is coming to Wichita Live. Tues. Nov. 19th 8-10 pm at the Orpheum Theatre. (For teens)

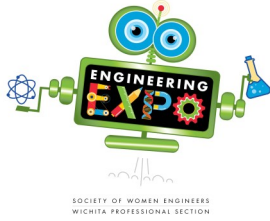
[Click Here](#)

Kansas Reptile Expo

Learn about reptiles, amphibians, and invertebrates at this family event. Saturday Dec. 14 and Sunday Dec. 15 at 10 am.

[Click Here](#)





2020 Vision

We have some exciting new things coming soon from the Engineering Expo team. Keep up with what is going on by visiting our website and following our social media.

www.wichitaengineeringexpo.org

Our Other Social Media to follow:
Follow the event on Facebook: [Here](#)
Follow SWE on Facebook at [Here](#)
Follow us on Instagram [Here](#)

We want to hear from you! Give us your thoughts on Expo or submit your favorite science podcast, youtube channel, Instagram, etc so we can follow it too! Send us an email at:

ExpoNewsletter@wichitaswe.org



Wichita SWE at WE19

The first week of November was an exciting week for the Engineering Expo team. The Expo Team are members of the Society of Women Engineers and were able to go to the SWE national conference in Anaheim, California. At the convention team members were able to learn from other professionals about work place practices, setting goals, developing great teams, time management, leadership and many other topics for development. Also, during the conference SWE Next hosted an Invent it Build it (<https://swe.org/k-12-outreach/invent-it-build-it/>) session for middle and High school girls to participate in hands-on engineering experience, learn from engineering leaders, and become aware about resources for future careers, scholarships, and college.



Above: Members of the Wichita SWE section that also includes Expo Committee members at the awards banquet. Left: SWE Expo Committee members at WE19



This year Tamara Robertson from Mythbusters Jr. lead the High School

group in the hands on activity where teams invented cars and elevators out of a bunch of household supplies. Deysi Melgar from Design Squad led the Middle School group where teams of two designed, built, and tested wind turbines out of cardboard, paper cups, skewers, straws, and duct tape.

At the conclusion of the conference, Wichita SWE was honored as one of three sections to win the award for "Best Practice - Outreach - Professional" at the Celebrate SWE banquet. We are very excited for Engineering Expo to be recognized with the Society's highest outreach award.

Want to Sponsor EXPO? Contact us at exposponsorship@wichitaswe.org