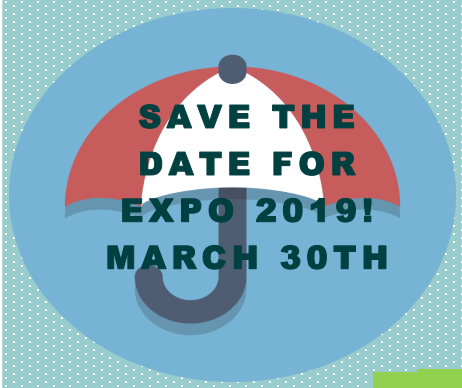

ENGINEERING EXPO

VOLUME I
ISSUE 3

MARCH
2019

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Society of Women Engineering Wichita Section

@wichiaswe

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Hello to Engie !

This Valentines Day you all selected a name for the Engineering Expo Bot. Meet Engie!

Q: Engie, how do you like your new name?
A: I love my new name! It means so much to me that everyone that participated in the Facebook poll. I've got to be honest, out of all the choices– My name is my favorite!

Q: Are you excited for Expo?
A: Absolutely! I am excited to meet everyone there!

Q: What are your helpful tips for those who are going to Expo?
A: I plan on wearing really comfy shoes and eating a good wholesome breakfast before I go. I am excited to spend all day there and learn as much as I can. I will also dress for the weather– I know some booths may be outside!

Rainbow Catapult

Make a marshmallow catapult with the following items:

- Popsicle sticks
- Rubber bands
- Plastic spoon
- Tape
- Multicolored marshmallows

First: Lay 7 popsicle sticks on top of each other and rubber band them together on both ends real tightly.

Second: rubber band 2 popsicle sticks together on one end. Open the other end and place the 7 layer sticks in between the two, creating a plane.

Third: Secure both sets of sticks to each other with rubber bands.

Fourth: Tape a spoon on the top most popsicle stick. When you press down on the spoon there is tension and it will spring up. Use marshmallows to see how strong your catapult is.

For more visit here

Spotlight: Engineering Expo Leaders

Society of Women Engineers
Wichita

This month the Newsletter got together with some Expo Event leaders. Vickie, Michelle, and Sarah.

Q. What are some Crazy-Cool things you have seen or been a part of during the planning, preparing, and execution of Expo?

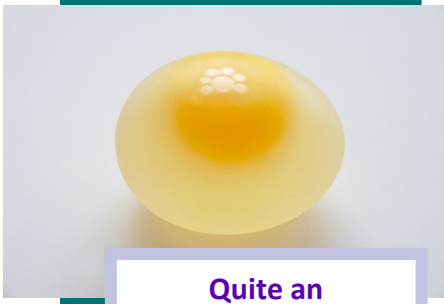
M. I really love how infectious the joy of attending expo is. It makes me happy to see people in our community with the same excitement. For example, one student came in with a map he had already printed from our website and had marked the booths he was going to go to first. Talk about being prepared!

S. One of the coolest experiences I've had since being a part of the Expo has been the kids' faces on the day of the event. Nothing compares to having them actually doing the activity and getting so excited about STEM.

V. Slime is always one of the most popular booths. The Tornado! Inside Century II last year A weather team created a tornado. And the Boy Scout trebuchet shooting balls across the room!

"Well, first of all, explore and have fun! Be creative and try new things at the Expo. And ask questions! For the parents, try to prepare for a lot of people and a lot of standing, so wear comfy shoes and clothes you won't mind getting a little slime on. "

-Sarah



Quite an EGGs-ploration!

A Naked Egg

An egg shell is mostly calcium carbonate which dissolves in vinegar. The process takes about 24 hours, but the result is pretty fascinating.

DO NOT EAT THE EGG!

What you need:

- A few eggs
- A tall glass for each egg
- 16 Oz of vinegar for each egg

Pour 16 Oz of vinegar into a glass. Then carefully add the egg. Now wait!

After a few moments you should start to see some bubbles on the surface of the shell. This means the reaction is happening, but you have to wait a full 24 hours.

After you have waited 24 hours it is time to remove the egg. It will be very slimy and squishy. It is very delicate. The best way to remove the egg would be to pour the liquid out through your hand and catch the egg with your hand. If there is any white powder on the egg you can rub that off carefully.

If your egg does not have it's shell dissolved, you can re-soak the egg in some vinegar for another 24 hours.

So, what happened?

The egg shell is described in chemistry as $CaCO_3$ which is calcium carbonate, the vinegar is described as $2HC_2H_3O_2$. When you add them together the vinegar grabs onto the calcium (Ca) on the shell and makes calcium acetate ($Ca(C_2H_3O_2)_2$). The vinegar also releases water (H_2O) and carbon dioxide (CO_2). Putting that all together—it looks like:

$CaCO_3+2HC_2H_3O_2 \rightarrow Ca(C_2H_3O_2)_2+H_2O+CO_2$.

Can you figure out where the calcium acetate went? What about the CO_2?

- Be careful with your naked egg. If it pops– there will be egg everywhere! Make sure you are ready for a mess!
- Try making a naked egg that was dyed? What happened to the dye color?
- What about a hard boiled egg?
- You can shrink you egg by putting it in some corn syrup and waiting a day. Why does the egg shrink?
- If you are ready for a mess, you can make several eggs and test how strong they are by dropping them at varying heights.
- Be sure to throw you egg away before it smells!

You can find more here.

Vocabulary Word Find

V	Q	C	M	E	T	S	C	H	H	D	C	V	E	I	N	O	V	L	I
C	K	T	N	I	E	L	P	A	P	S	X	R	W	H	G	Q	P	M	G
N	T	G	X	X	N	B	W	N	L	P	O	R	S	K	D	O	B	X	J
E	I	W	D	I	S	D	B	V	V	C	F	E	L	C	W	V	W	E	E
E	G	K	K	C	I	A	O	O	U	O	I	D	O	X	E	Y	K	T	T
F	Z	Z	M	C	O	O	A	B	F	O	C	U	A	B	I	H	D	V	O
X	M	J	Q	G	N	I	N	F	I	P	N	M	M	F	G	X	C	E	L
K	R	N	H	J	Q	L	I	Y	Z	D	C	K	R	E	Y	M	Y	D	C
H	B	O	Z	H	F	A	X	M	V	R	C	H	E	M	I	S	T	R	Y
T	C	Z	P	B	D	B	Y	M	P	S	A	G	P	E	Q	A	Z	M	S

Chemistry- The study of different materials and how those materials react with each other.

Tension– The act of stretching or being stretched. When you pull on both ends of a rope it is putting it in Tension.

Engie- The name of our new adorable bot!

Can you find these bonus words?
STEM **SWE** **Expo**

Easter Egg Rockets

Really SPRING into spring with this fun rocket activity!

Supplies

- **Plastic Easter eggs that break in half and stand upright**
- **Alka-Seltzer tablets**
- **Water**
- **Eye Protection**

This activity can be a bit of a mess so head outside and find an open, level surface. Don't forget your safety gear! Make sure to wear eye protection and stand clear of the rocket!

Instructions

Step 1

Set the bottom of the Easter egg on the ground and fill it with water.

Step 2

Drop in 1-2 Alka-Seltzer tablets and quickly fasten the top half of the Easter egg on top.

Step 3

Step back and watch what happens!

This experiment can be found at https://thestemlaboratory.com/easter-egg-rockets/

STEM Events Around Wichita

Hands-On Engineering

March 2 at Advanced Learning Library 10 am to 11:30 am. Be a S'more Engineer!

Click Here

Sensory Friendly Fun

March 10 at Exploration place 10 am to 11:30 am.

Click Here

Mini—Used Book Sale

Sat. Mar. 23 10 am Wichita Art Museum. Gently used books and art.

Click Here

We All Eat

March 28th 3-7 pm Free

Learn about really Yummy and Healthy Foods.

Click Here

Engineering Expo

March 30th at Century II Free

STEM activity for kids K-8th. Click Here

Sign up to volunteer or host a booth! We want individuals, groups or companies. Everyone is welcome!

Visit at:

www.wichitaengineeringexpo.org

We want to hear from you!

Submit your favorite science podcast, youtube channel, Instagram, etc so we can follow it too! Send us an email at:

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