



*Putting the
"M" in Your
School STEM
Nights*



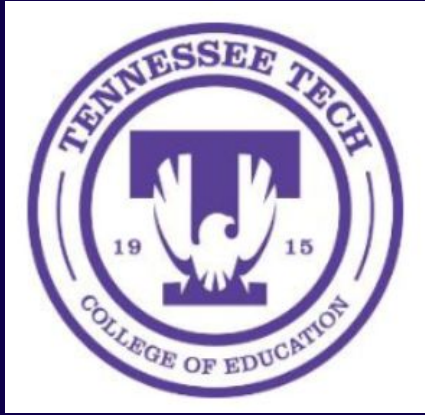
Hello!

Jennifer Meadows

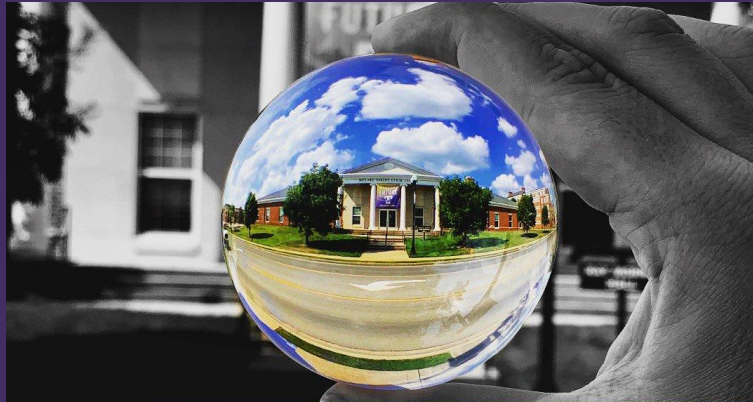
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The Oakley STEM Center on the Tennessee Technological University (TTU) campus in rural Cookeville, Tennessee, “**enriches student STEM learning** with hands-on inquiry, **enhances the STEM preparation** of new and practicing teachers, **models innovative instructional design**, **conducts rigorous STEM education research**, and **collaborates with industry and organizations** to strengthen STEM education initiatives” (<https://www.tntech.edu/stem/about/>).



Family Outreach Events At the TTU STEM Center

Fab Fridays

- ★ Geared toward children in grades 3–8
- ★ 2 times each semester
- ★ Friday 6–8 pm
- ★ Previous Themes:
 - The Amazing Human Body
 - Kitchen Kaboodle
 - Spooky STEM














Safari Saturdays

- ★ Geared toward children in grades PreK–3
- ★ 2 times each semester
- ★ Saturday 9 am–12 pm
- ★ Previous Themes:
 - Rockin' Robots
 - Seussical STEM
 - Groundhog Day

Passports

BODACIOUS BONES

Visit the stations in any order and return to the registration table for a door prize before you leave.

Just a Bag of Bones Rm. 135 	I've Got a Bone to Pick with You Rm. 139 
Spine-Tingling Sorting Rm. 131 	Let's Blow this Joint Rm. 135 
Make No Bones About It Rm. 137 	Shivers Down my Spine Lobby 
Bad to the Bone Rm. 139 	Become a Bone-ified Expert Lobby 
X-Citing X-Rays Rm. 131 	Rib-Ticking Fun Rm. 137 
Get it Through Your Skull Rm. 135 	Out of One's Skull Lobby 
	Close to the Bone Rm. 137 

Rockin' Robots

Visit the stations in any order and return to the registration table for a door prize (even if you don't get the chance to sit every station).

Our definition of a robot:

- A machine designed by people
- Completes a task by itself
- Can make decisions
- Has moveable parts

Claw Clean-Up Auditorium	Strawberry Strategy Auditorium	Robot Soccer Lobby
Where in the World is Dash? Lobby	Scribbling Spheros Lobby	Move Like a Robot Rm. 139
If I Only Had a Heart Rm. 139	Make a Bee Line Rm. 137	Pillow Pick-n-Pack Rm. 137
Robot Storytime Rm. 137	Hopsotch Coding Rm. 135	The Force Awakens Rm. 135
Design a Robot Rm. 135	Code, Code as Fast as You Can Rm. 131	A-maze-ing Bugs Rm. 131
Say Cheese Rm. 131	Droid Repair Bay Lobby Green Room	Recommended Coding Apps Kodable Box Island Scratch Jr. Swift Playgrounds








Sweet STEM

Sweet Talk Tower Location: Room 135 	Rock Stars Location: Room 137 
The Love Boat Location: Room 137 	Candy Construction Location: Room 135 
See the Rainbow Location: Room 131 	Love Triangles Location: Lobby 
Candy DNA Location: Lobby 	Choose Your Chocolate Location: Room 137 
Is It Safe to Eat? Location: Room 139 	Are My Hands Really Clean? Location: Room 139 

A guide will mark your passport at each station. When you're done, come to the registration table to receive a prize!

Welcome to Majestic Measurement!

Start your journey at the **Coronation Station**. From there you may visit any of the stations below in any order. After you visit each station, be sure to get a jewel for your crown. Before you leave, check back at the registration table for a small gift.

Princess Potions Location: Room 131 Concept: Capacity/Volume 	Frog Prince Jumps Location: Lobby Concept: Distance 
How Big? How Tall? How Long? Location: Lobby Concept: Length 	Castle Blueprints Location: Room 131 Concept: Area 
Pond Perimeter Location: Lobby Concept: Perimeter 	Show Some Respect Location: Lobby Concept: Time 
Heavy Treasures Location: Room 131 Concept: Weight 	If you have to wait for a station, you may visit the table in the lobby that holds children's literature related to measurement. There is also a table in the lobby with various measurement tools to explore. No jewels are earned at these tables however.

Questions for Planning

1. Does the activity appeal to a variety of age groups?
2. Could the activity be replicated in the home?
3. Is the activity fun and engaging for children and families?
4. Does the activity promote mathematical and/or scientific thinking?
5. Is the activity safe?
6. Does the activity promote interactions between parents and children?
7. Is the activity messy?

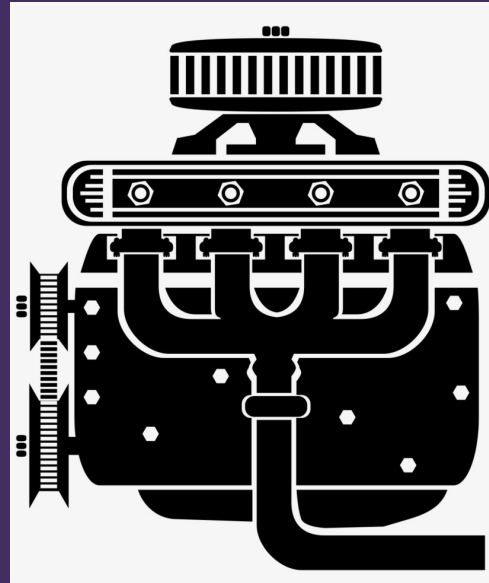
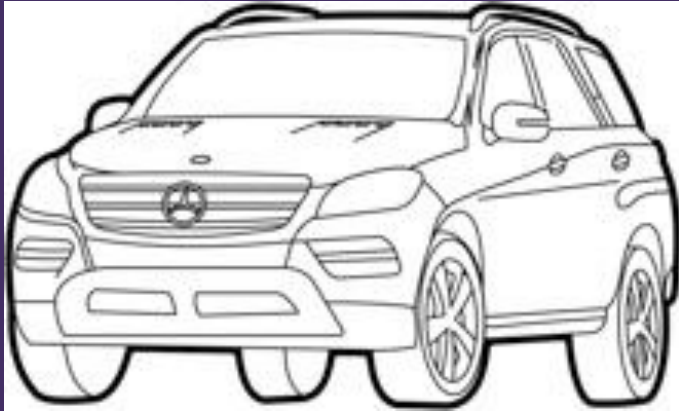
Tips and Lessons Learned

- Themes
- Organization
- Volunteers
- Communication
- Marketing
- Community partners
- Accessibility
- Cost
- Fun!



Sample Math Activities

Is the Theme the Vehicle or the Engine for Math Learning?



Ground a Groundhog



Children practice counting and operation skills while whacking groundhogs into the ground.

Love Triangles

Children identify types of triangles (equilateral, isosceles, scalene) while biting off ends of three Twizzler candy sticks.



Princess Potions



Children develop the concept of conservation as they observe how the volume of a liquid does not change if you change its container. Children predict the number of small bottles of liquid that can be poured into a larger bottle.

Candy Cauldrons

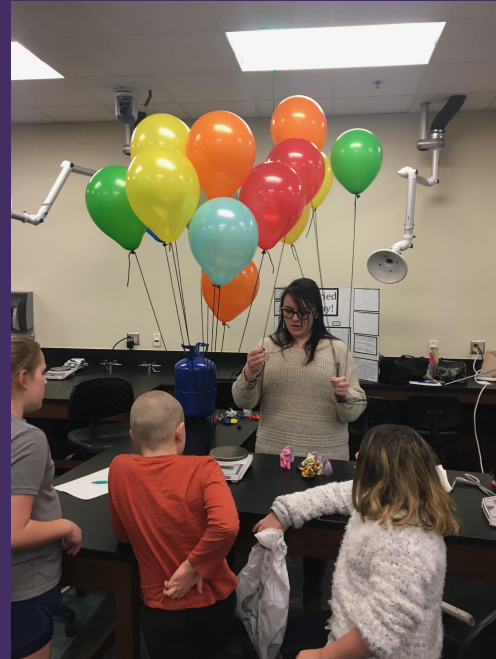
Children practice calculation skills by throwing and catching candy.

- Catching Cranberries
- Snowball Fight



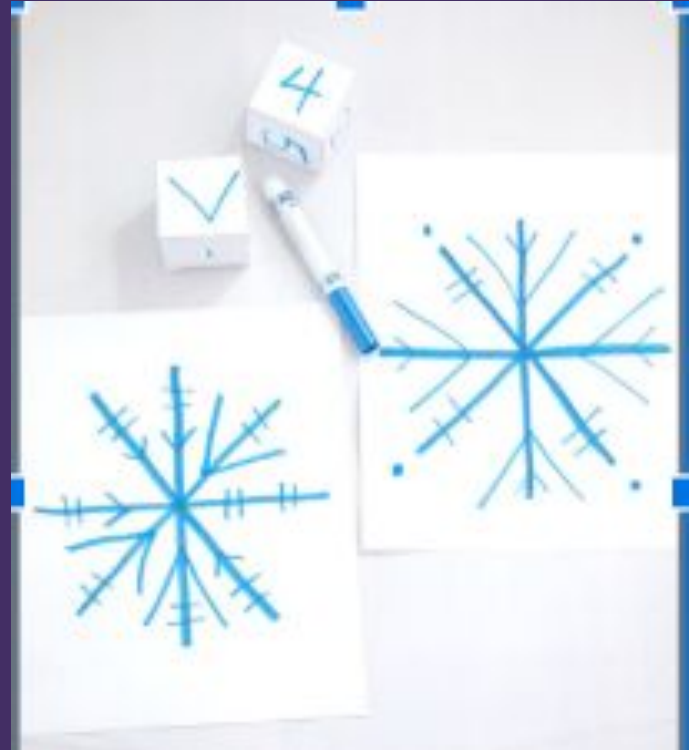
Can You Go Up?

Children determine if they could really float away holding onto a handful of helium balloons by testing the possibility with an action figure and scaling the possibility to a human.



Shake n' Flake

Children create their own snowflakes (ensuring they are symmetrical) with a fun drawing game.



Candy Construction



Children learn about solid shapes and their parts while making structures with candy and toothpicks.

Dino Tracks

Children use their own feet to measure life-size dinosaurs' feet.



Your Turn!



Here are some themes we're considering for the 2020/21 school year.

Choose a theme.

What are some math-specific activities?

Is the theme the vehicle or the engine?

- STEM Magic (Harry Potter)
- Simply the Best (simple machines)
- 100 Acres of STEM (Winnie the Pooh)
- Sporty STEM (sports)
- Freaky Fractions
- Naturally STEM (nature)





Thanks!

Any questions?

<https://tinyurl.com/tbmt568>