

The Nuts & Bolts of a Family STEM Night

A Blueprint for Success
with
Ideas, Timelines, and Resources

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Introduction

WHY DO IT?



Family STEM Night or an Engineering Day is one of the most exciting community events that a school or museum can plan. With planning and community support, you will not find a more fantastic hands-on learning experience of 21st century skills for students and families. As soon as you finish, we can almost guarantee that parents and children will begin asking you when the next STEM event will be scheduled!



WHY?

- It is educational and lots of fun!
- Students love to show parents what they have learned.
 - Important adults in students' lives are included.
- Parents actively participate in a students learning.
- It is an excellent outreach opportunity for culturally diverse families in the community. Language is not a barrier if activities are hands-on.

It can seem overwhelming, but we have gathered and prepared, many ideas for a successful community event for elementary students and their families. Ideas, a timeline, resources, and tips from two experienced teachers who have done this for many years at elementary schools and museums are shared in this packet.

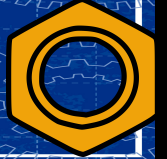
It is truly the ultimate community outreach!

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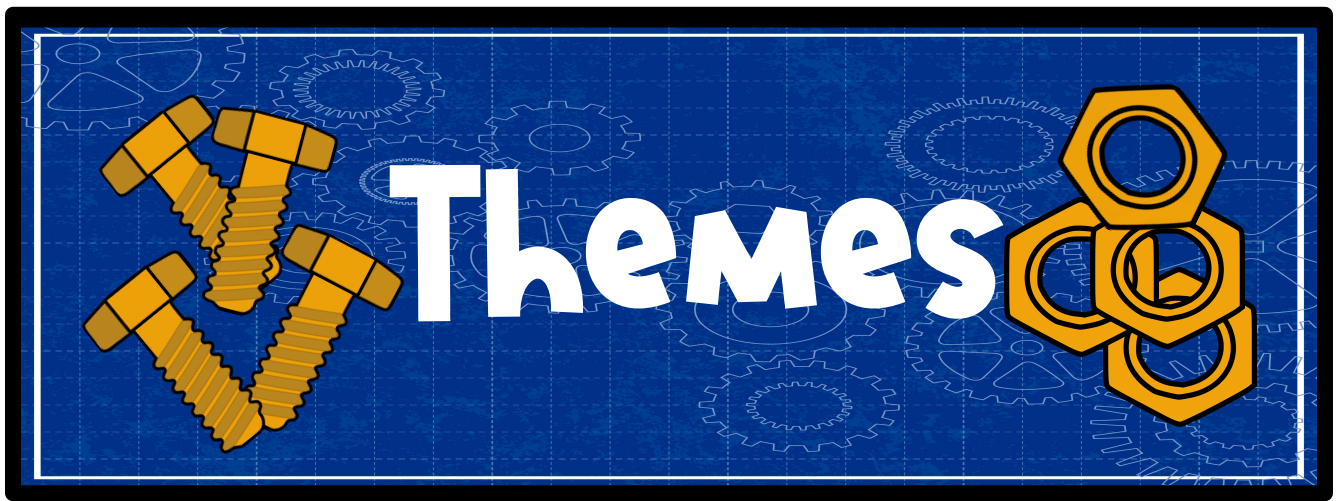


Planning Your Event


Two or More Months Before



- After consulting with the principal, lead teachers and other staff decide the type of STEM event you will be putting on this year. Now is a good time to begin to choose a theme for your event.
- Choose a date and time and put it on the school calendar. Be sure to have an alternate date due to inclement weather.
- Present the concepts theme and ideas to the staff and enlist volunteers to serve on a planning committee. This committee will immediately meet to choose activities, locate resources, and determine supplies needed.
- Write letters to local businesses requesting exhibits, supplies or donations to purchase materials.
- Write letters to local universities, local engineering societies, and businesses for volunteers. Contact museums to see they would like to set up a activity. Some are free and have a fee.
- Send an information flyer home with students inviting parents to volunteer as well as a list of supplies needed that can be donated. Be sure that you have a collection site and have a plan to organize the materials as they arrive.
- Send an email to the staff requesting volunteers for the event.
- Verify and notify anyone else who might be using rooms that night i.e. Scout Meetings, HOA Meetings, PTA Committees etc.**



We have found that having a theme, whether it is the **ocean, superheroes, robots, space, diners, history connections, nature, travel or amusement parks**, has helped to consolidate decorations, activity ideas, volunteers, and promotion. We have competed family events with a wide variety of themes and each time have been delighted with an atmosphere that supported our goals of family STEM interactions. From the earliest planning stage it has always focused the committee, added excitement for advertising and provided a framework for event. Is it necessary? No Does it help ? Yes! We think it always helps and we encourage you to incorporate a theme for your event.



*For this event we used a compass rose for our theme graphic and emphasized the many parts and aspects of **STEM**.*

Planning Your Event One Month Before



- Invite other school administrators and special guests.
- Notify the local press about your event. Ask for them to cover the event well as send a photographer.
- Make sure the event is advertised on the PTA website, school website, and school outdoor sign if there is one.
- Create a schematic drawing of where each activity will be completed and inventory tables needed in order to decide if more tables are needed



Planning Your Event Three Weeks Before



Assign volunteers their tasks. Make sure you have people to help set up and clean up. **Note: at least two people (preferably those who have been most involved in all aspects of planning) should not be assigned a specific center so they can keep an eye on everything and deal with issues if they arise.**

Give staff members and other volunteers their design briefs and activities. Remind them to actually do the activities so that any problems or questions are understood and can be answered.

Begin to make activity packets for each center.

Purchase materials still needed.

Arrange for any refreshments for volunteers- if applicable.

Continue to advertise: posters in school, PTA newsletter, community newsletter, school website and Facebook page.

Develop a system for distribution of attendees. You don't want them all heading to one area. We use colored- coded fliers that are distributed by greeters at the door. Each color has families heading to different locations so the population is spread though out the event and we don't end up with bottlenecks in areas.

Planning Your Event One Week Before



- Make sure your custodial staff knows of any furniture, tables or equipment that they will need to move.
- Draw a master floor plan that includes furniture and labels for activities. Make duplicates so these can be given to volunteers who will be setting up.
- Inventory trash cans that will be needed.
- Create a check-in system and schedule for volunteers.
- Verify volunteers via email or phone
- Prepare thank you notes for volunteers so those are ready for the day after the event.



Planning Your Event

The Day Before



- ❑ Decorate. Posters of engineers at their jobs, descriptions of engineering careers and quotes from engineers about engineering are all possibilities. Adding some balloons at the registration table or the entrance not only adds a festive atmosphere, but also designates where the families should stop first and get information.
- ❑ Organize materials in boxes for each area and add garbage bags to each box.
- ❑ Create a central location for extra supplies such as scissors and tape.



Planning Your Event

The Big Day!



- ❑ Assign one person to be the photographer who will rotate through the activities throughout the evening.
- ❑ Don't forget to keep the office staff informed of important aspects of the event, especially those involving outside volunteers so that she or he can field phone calls.
- ❑ Order pizza for the volunteers who are staying after school and won't have time to go home for dinner before the events starts.
- ❑ Set up should begin at least three hours before the actual event.



Planning Your Event

Donation Letter



Dear Parents,

Families at _____ will be putting their problem solving skills to the test as they design and construct solutions to challenges at our Family STEM Night.

What does STEM stand for?

Science, Technology, Engineering, and Math

In order for everyone to be successful, we will need lots of recycled materials. And that is where you come in- we need your CLEAN trash!

Please send the following materials to school by _____ in a clean bag labeled “STEM STUFF for STEM Night”

All materials must be empty and VERY clean please

Empty toilet paper rolls or paper towels rolls (all residue removed please)

Empty cereal boxes (inner lining removed) and pieces of cardboard

Styrofoam any size or shape

Cotton batting or foam

Tissue paper

Newspaper

Empty oatmeal cylinders, yogurt cups, or berry baskets

Small empty boxes

Plastic containers for strawberries, blueberries etc.

Bubble wrap

Grocery bags

Questions? Want to help? Please contact: _____

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Planning Your Event

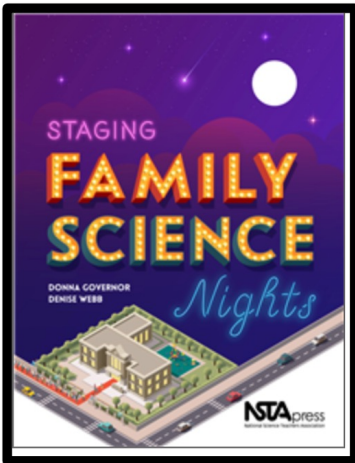


Tips and Hints

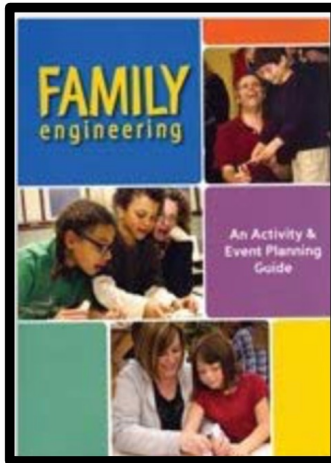


- ✓ Food trucks are a great addition that provides a way for families to get dinner or snacks in the evening. We had several different types of food trucks to provide for dietary differences.
- ✓ Goodie bags for attendees to be given as they leave add a nice extension to the evening. We asked for donations from companies and museums and prepared the goody bags in the weeks prior.
- ✓ Use QR Codes on posters at each activity to provide background and additional information.
- ✓ Invite engineers and scientists in the community to attend and have them wear a nametag that says “ I’m an engineer!(or scientist) Ask me a question.”
- ✓ Watch for parents taking over activities. We added a handout guide with suggested inquiry questions that really helped.
- ✓ Drawings for prizes adds excitement . We usually held prize drawings the next day during morning announcements. We have had passports that get stamped at each activity and gets handed in when they leave . Those are used for the drawings for STEM kits.

Planning Your Event Resources



https://www.nsta.org/store/product_detail.aspx?id=10.2505/9781681406237



FamilyScienceandEngineering.org

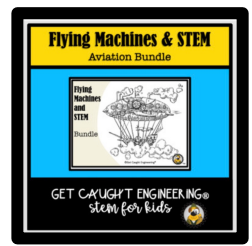
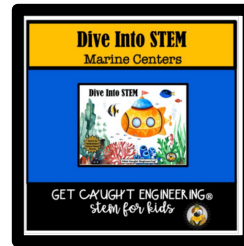
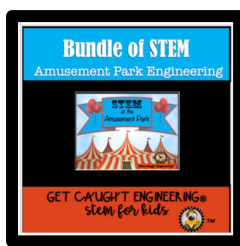


https://common.nsta.org/resource/?id=10.2505/4/sc12_050_04_67

Get Caught Engineering- STEM for Kids

Ideas and lessons for STEM event themes and activities

<https://www.teacherspayteachers.com/Store/Get-Caught-Engineering-Stem-For-Kids>



GET CAUGHT ENGINEERING®

stem for kids ™

Get Caught Engineering® was created to inspire elementary students to explore the world of engineering and apply the design process to problem solving. After investigating what is already available in this area, we found there are some great materials but they are either dedicated to gifted and talented classes, for after school programs, or are lengthy units that are too expensive or too time consuming.

Get Caught Engineering® has been developed to introduce all children to engineering concepts in a teacher friendly approach that easily integrates into subject areas. Simple low cost materials, lesson templates, and teacher tips all add up to user friendly activities that will inspire children to consider engineering as a cool career choice, and a reason to pursue math and science classes during their school years.

Visit our Blog, Instagram, Pinterest, and Facebook page for more ideas

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- <https://www.pinterest.com/getcaughtengin/>

And to be notified when we add more lessons be sure to follow us at:

- <http://www.teacherspayteachers.com/Store/Get-Caught-Engineering-Stem-For-Kids>

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stem for kids



thank you

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credits

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<http://nicadez.blogspot.com>