



OC STEM
INITIATIVE

A Collaboration Providing STEM Professional Development
for Orange County's Expanded Learning Programs

Orange County STEM Hub

Communities of Practice Created Resource

STEM Family Night

Expanded Learning Guide to "How to Plan and Create a STEM Family Night"
Planning Timeline & Guide | Key people to connect with | Sample activity with resources

Important Partnerships

Partnerships are important to the success of any Expanded Learning Program. These relationships should exist beyond the STEM Family Night; and should be well established to best support the planning process and the overall success of your Expanded Learning Program.

School Day Administrators and Staff

Set up regular meetings with the Site Administrator to discuss the program; its needs, its successes, its upcoming events/projects. One suggestion is to have 3 Family Nights throughout the year; one for STEM, one for Language Arts, and one on health & nutrition. Talk with the Site Administrator about your ideas, highlight the benefit this type of program can be to families and get dates on the calendar early, as to not interfere with already scheduled school events! School Day Staff may be able to help provide you and your program with resources, materials, new ideas, etc. Starting these conversations are a great way to strengthen a school day partnership and alignment. Invite your administration and teachers to attend these events; they would make great judges for your challenges.

Having regular meetings with a teacher liaison would be highly advised. Partnering with the school day staff will benefit and strengthen in and out-of-school alignment and content.

Community Organizations/Businesses

Local organizations or businesses are great partners to have, especially for Family Nights. They might have volunteers to help support your event or be able to donate prizes for families. They also may have something to offer that your families could benefit from. Find an appropriate win-win for both of you and move forward with the planning!

Restaurants are also great partners for your program. Sometimes they will donate snacks for these types of nights, something to help offset your costs. Talk with your organization's leadership to see what relationships might already be established that can benefit your family night.

This resource was created by members of the STEM Hub's Communities of Practice. After discussions of the intimidation of STEM for students, staff and parents; the group determined it would be beneficial for all programs to have a tool kit for a STEM focused Family Night. These nights are designed to ease the fear or intimidation of parents when doing STEM activities and build confidence of students by providing a quality hands-on activity for both to engage with each other.

Planning – Start planning at least 2 months out

- Know Your Community** – what do they like, what nights work better for them, would having food provided be a larger draw for them?
- Plan a date** that works for your school site and your program, also an event that starts in the early evening would be easier for parents to attend. 5:00 p.m. – 6:00 p.m. would be ideal.
- Coordinate with Custodial Staff** – make sure to discuss your dates/plan with your custodial staff. Ensure the space is still available and that you will have whatever else you may need for your event (extra trash bags, A/V support, etc).
- Inform Your Staff** – schedules may need to be adjusted to accommodate the day, give them as much notice as possible.
- Get Students Involved** – what do they want to do with their families? Create a committee of students to help plan, organize and execute the event. They can be MCs, greeters, explain the projects/activities, judges, etc.
- Create a Theme** based on student interest, and have your projects and decorations match that theme. Have your students/groups create the decorations for the event. Will your event have a STEM theme, for example, Engineering; or will your event have a holiday/seasonal theme: Pumpkin Science, Gingerbread Building, or Summer Sun Fun?
- What will your Family Night Look Like?** Will you have one large activity for them all to do, or smaller table top activities? Will there be food provided? Will you have prizes to be given away? You will need to start planning out these activities and gathering the needed materials. If you want to have families eat together, but are unable to provide food, encourage parents to bring their dinner to the event. Do you need to ask parents for material donations (i.e. paper plates, napkins, empty paper towel rolls, string, paper cups, etc)? If so, create a letter to ask parents to bring at least one of these if they are able. [See attached sample letter, pg. 10]
- Create Your Flyer** based on your theme, and highlight some of the activities that may occur. Make sure you include the Date and Time of your event. – **This needs to go out at least a month in advance!** Post the flyer at sign-out during the month leading up to the event. Send out a reminder flyer the week before! Parents may need to make additional arrangements, so the sooner they know, the better. Make sure you have enough time to get your flyer translated. [See attached sample flyers, pg. 5 and reminder flyers, pg. 8]
- Get all flyers/letters translated and approved** by program and district administration prior to distribution.

Planning - 1 month out

- ❑ **Plan your Tables/Area(s)** – You will need to have space for families to spread out and create their projects. Consider having material tables available throughout the sides of the room and have families work together at tables in the center. At these tables “working tables” have additional “everyday” supplies that might be needed (i.e. scissors, tape, paper, pencils, etc). Create a separate area for testing and competitions. [See Sample Layout, pg. 17]
- ❑ **Get your volunteers** – Depending on the event you may need more volunteers than others. For example, if you are planning on having food available, you will need more volunteers than if you do not offer food. How will the student leaders be supporting the event? Will your staff be circulating to support the families? Will you have judges for the event, if so, who will you ask? Will you need someone to take pictures? If so, ensure everyone knows their role, and has it secured on their calendar.
- ❑ **Invite your attendees** – Make sure your flyers have gone out to the families. Did you ensure that your administration, program management, other programs in your areas, and/or community partners have all been invited?
- ❑ **Follow up** on anything that hasn’t been finalized from the previous planning session. Continue to work with the students to create the posters/art/decorations for the event.
- ❑ **Know your day!** Make sure you have a “Run of Show” created so you and your staff know when everything is going to happen. This helps you stay on target and keep to a time schedule. [See sample provided on pg. 7]

Planning – 1 – 2 weeks out

- ❑ **Follow Up with RSVPs** – Ensure all your parents/families know about the event. Follow up with the families that you haven’t heard from. Send out the reminder flyers the week of your event! [See sample provided on pg. 9]
- ❑ **Preparation** – Gather and organize all your materials that you and your families will need. Do you have everything you need for the “testing” phase of the night – Do you need timers, or measuring tape? Do you have your camera charged and ready for pictures?
- ❑ **Printing** – Remember to ensure your area(s) for activities are clearly marked; print your signage and directions in multiple languages. Print any other materials needed for the activity.
- ❑ **Reminders** – Remind your school site, custodial staff, cafeteria managers and volunteers of your event, and anything they might have promised to support you with.

Family Night Event Planning Tool
(modified from the Boys & Girls Club of Garden Grove)

Date:	Time:		
Family Night Details: (Includes the hands-on activities, food, music, competitions, decorations, etc)			
Event Schedule:			
Event Promotion: How will you promote the event and invite attendees?			
Promotion (Flyers, Invitation, etc)	<table border="0" style="width:100%;"> <tr> <td style="padding: 5px;">Key Points of Contact & Invited Guest</td> </tr> <tr> <td style="padding: 5px;"> <input type="checkbox"/> School Day Administration <input type="checkbox"/> Custodial Staff <input type="checkbox"/> Teachers <input type="checkbox"/> Program Directors <input type="checkbox"/> Community/Business Partners <input type="checkbox"/> Co-workers <input type="checkbox"/> Volunteers <input type="checkbox"/> Parents/Families </td> </tr> </table>	Key Points of Contact & Invited Guest	<input type="checkbox"/> School Day Administration <input type="checkbox"/> Custodial Staff <input type="checkbox"/> Teachers <input type="checkbox"/> Program Directors <input type="checkbox"/> Community/Business Partners <input type="checkbox"/> Co-workers <input type="checkbox"/> Volunteers <input type="checkbox"/> Parents/Families
Key Points of Contact & Invited Guest			
<input type="checkbox"/> School Day Administration <input type="checkbox"/> Custodial Staff <input type="checkbox"/> Teachers <input type="checkbox"/> Program Directors <input type="checkbox"/> Community/Business Partners <input type="checkbox"/> Co-workers <input type="checkbox"/> Volunteers <input type="checkbox"/> Parents/Families			
Staff & Student Leader Responsibilities during the Planning Process :			
Responsible Party:	Tasks:		
Responsible Party:	Tasks:		
Responsible Party:	Tasks:		
Responsible Party:	Tasks:		
Responsible Party:	Tasks:		
Responsible Party:	Tasks:		

Recognition Plan: How will you recognize Competition participants and winning families?

How will you recognize your volunteers and/or student leaders?

Supply Lists:

Have at site:

Need to purchase:

Event Map: Draw a diagram of how the event will be set up. Feel free to write an explanation as well; think about if someone was helping you set up and you weren't there; they'd still understand your vision of the event.

Staff, Student and Volunteer Assignments Day of Event:

Responsible Party:

Assignment:

Responsible Party:

Assignment:

Responsible Party:

Assignment:

Responsible Party:

Assignment:

Responsible Party:

Assignment:

The following pages are the additional resources for the sample STEM Activity. Please make sure you get everything approved by your programs before sending anything out to your families.

Family Night in Action – Sample Activity

Stand Alone Event

This event is meant to be a stand-alone event, not to be combined with other events happening on campus the same day. This event would not be advised during Back to School Night or Open House. The purpose of this event was designed as its own program event on campus.

Zip Lining through the Cafeteria!

This is an engineering theme for families to participate in. There is a lesson online from Design Squad on PBS that has an activity sheet available in both Spanish and English. You can have them available for families to read or to take home with them to continue the challenge at home. For additional resources on the zip line challenge, visit:

http://pbskids.org/designsquad/parentseducators/resources/zip_line.html

<http://pbskids.org/designsquad/build/zip-line/>

This event would require a minimum of seven (7) volunteers. One (1) to oversee the testing area; one (1) to oversee the materials/supplies table; at least two or three (2 or 3) circulating supporting the families build their zip lines; and three (3) judges, 1 at each challenge.

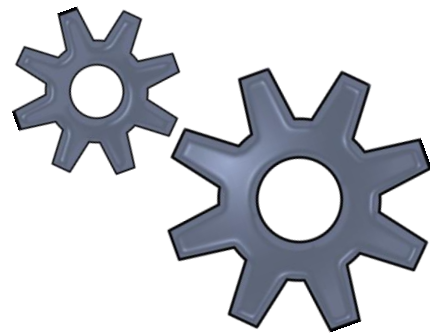
Simple Adjustments

- If metal washers are too hard to come by, use pennies or other small weights. Be cautious of marbles in this situation as they might be too easily lost on/under the tables.
- Materials and Supplies: Keep in mind that families will not need access to ping pong balls or the zip line string individually. Keep costs down by keeping those for the testing/competition phase only. You may consider having a “testing” area with three zip lines up, so families can see how their carrier is doing, and a different section for the official competition.

Sample Schedule – Day of Event

- 12:00 p.m. – 2:00 p.m. **Event prep** – ensure you have all the materials organized for the event, including plastic food gloves, serving utensils, etc.
- 3:00 p.m. – 4:30 p.m. **Set Up**
Event Space with help from your student leadership planning group; including setting up any of their event décor.
Materials Table – have at least two tables with materials that families can access with the sign of “Approved Materials”
Design Area – this is the space where families will design, build and redesign their projects. These tables should have the “everyday” supplies that would benefit their project build. (Scissors, Tape, Pencils, Paper)
Testing Area – have multiple zip lines ready for the families to test their carriers during the design process.
Competition Area - In the sample project idea, you’d need at least six zip lines, two per challenge. If you can have nine, three per challenge, that would be better. The less time families have to wait to participate, the better. Just make sure you have enough judges to have one at each line, and enough timers for them to keep accurate records.
- 4:50 p.m. **Parents start arriving** – Have food available (if providing any)
- 5:00 p.m. **Event Starts** – Welcome by Site Coordinator and Student Leadership Team, ensure that you thank those who donated materials to your event.
- 5:05 p.m. **Challenges are explained/overview of event is provided** – Post Challenge Statements on the Materials Table
Challenge: “Design and build something that can carry a ping pong ball from the top of a zip line to the bottom.”
Ask questions: “What are zip lines used for?” “Why do people use zip lines?”
- 5:10 p.m. – 5:30 p.m. **Families design, build, test and redesign their project**
Families decide which challenge they want to compete in (i.e. 3 challenges) and build their carrier addressing that challenge.
- 5:35 p.m. **Competitions Start** (staff/students/volunteers are at each station to support judging and recording, see pgs. 12-14 for recording sheets.)
- 5:50 p.m. **Regroup and Announce Winners** – prizes awarded, if there isn’t a budget for “prizes”, certificates would be a great award to be presented!
- 5:55 p.m. **Debrief with Families** – what did you like about today, what did you learn?
- 6:00 p.m. **Event Closure** – make sure you thank the parents for coming to Family Night.

[Include your program logo here]



[Expanded Learning Program Name] Presents

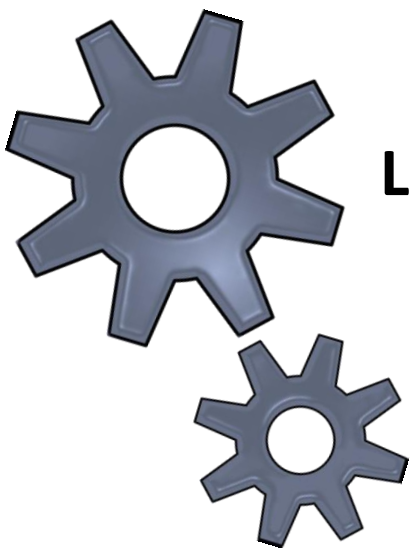
Family STEM Night

Zip Lining Through the Cafeteria

When: [Day, Date]

Time: [time] P.M.

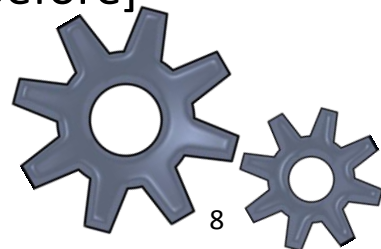
Location: [i.e. Cafeteria/MPR]



Join us as we Engineer our own Family Zip Lines!

[Especially if you are providing food, ask for an RSVP] Please RSVP with your child's program leader by [i.e. date 2 days before]

If you have additional questions,
please contact [Site Coordinator Name] at [Site Phone Number]



[To be distributed the week of; i.e. Monday if your event is Wednesday or Thursday]

[Include your program logo here]

Don't Forget our Family STEM Night
Zip Lining Through the Cafeteria
is THIS [Day, Date]

We hope you can make it!
Please RSVP if you haven't already!

If you have additional questions, please contact [Site Coordinator Name] at [Site Phone Number]



[Include your program logo here]

Don't Forget our Family STEM Night
Zip Lining Through the Cafeteria
is THIS [Day, Date]

We hope you can make it!
Please RSVP if you haven't already!

If you have additional questions, please contact [Site Coordinator Name] at [Site Phone Number]

SAMPLE – Donation Request Sheet

[Include your program logo here]

[date]

Dear Parent/Guardian,

The [Expanded Learning Program Name] is hosting a STEM Family Night on [day, date] at [time] in [the location]. We are creating a hands-on event with the help of the students. We are in need of a few items to make the event exciting; if you are able to help us and donate any of the materials listed below, we would greatly appreciate it.

Materials Include:

- Clean cardboard (i.e. cereal box, back of a note pad, top of a box)
- 3 ounce paper cups
- Ping-Pong balls
- Plastic Straws
- Fishing line or unwaxed dental floss
- Masking Tape
- Wooden Skewers/Popsicle Sticks
- Flat Steel Washers (1 inch)

If you are able to donate to the STEM Family Night, please bring your donations to [Site Coordinator name] before [prior date, I'd say at least 1 week prior to allow you to gather any additional materials needed].

Please be aware that donations are not a requirement of our program or of your families' ability to participate in the event.

If you have any questions please contact the Site Coordinator [Name] at [phone number].

Thank you,
[Expanded Learning Program Name]

[Sample Table Toppers – Zip lining Challenge]

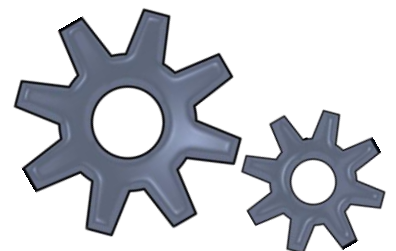
APPROVED MATERIALS

Each family can take the following materials back to their table:

- **Up to 3 paper cups**
- **Tape – leave enough for other families**
- **Up to 4 plastic straws**
- **Up to 2 skewers or wooden sticks**
- **Up to 8 paper clips**
- **Up to 5 other weighted objects (pennies, washers, etc)**

At each of the “testing areas” families will have access to the following:

- **Ping Pong Balls**
- **Zip Line**
- **Pre-planned Course**
- **Timer**





ENGINEERING CHALLENGE

Each family will need to **design** and **build** something that can carry a Ping-Pong ball from the top of a zip line to the bottom.

Families can enter into the following 3 competitions

Competition #1

The fastest
design:
4 seconds
or less

Competition #2

The
slowest
design:
10 seconds
or more

Competition #3

Carry the
heaviest
load within
8 seconds

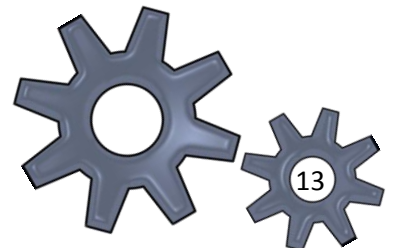
QUESTIONS TO CONSIDER

[have available at each family table area]

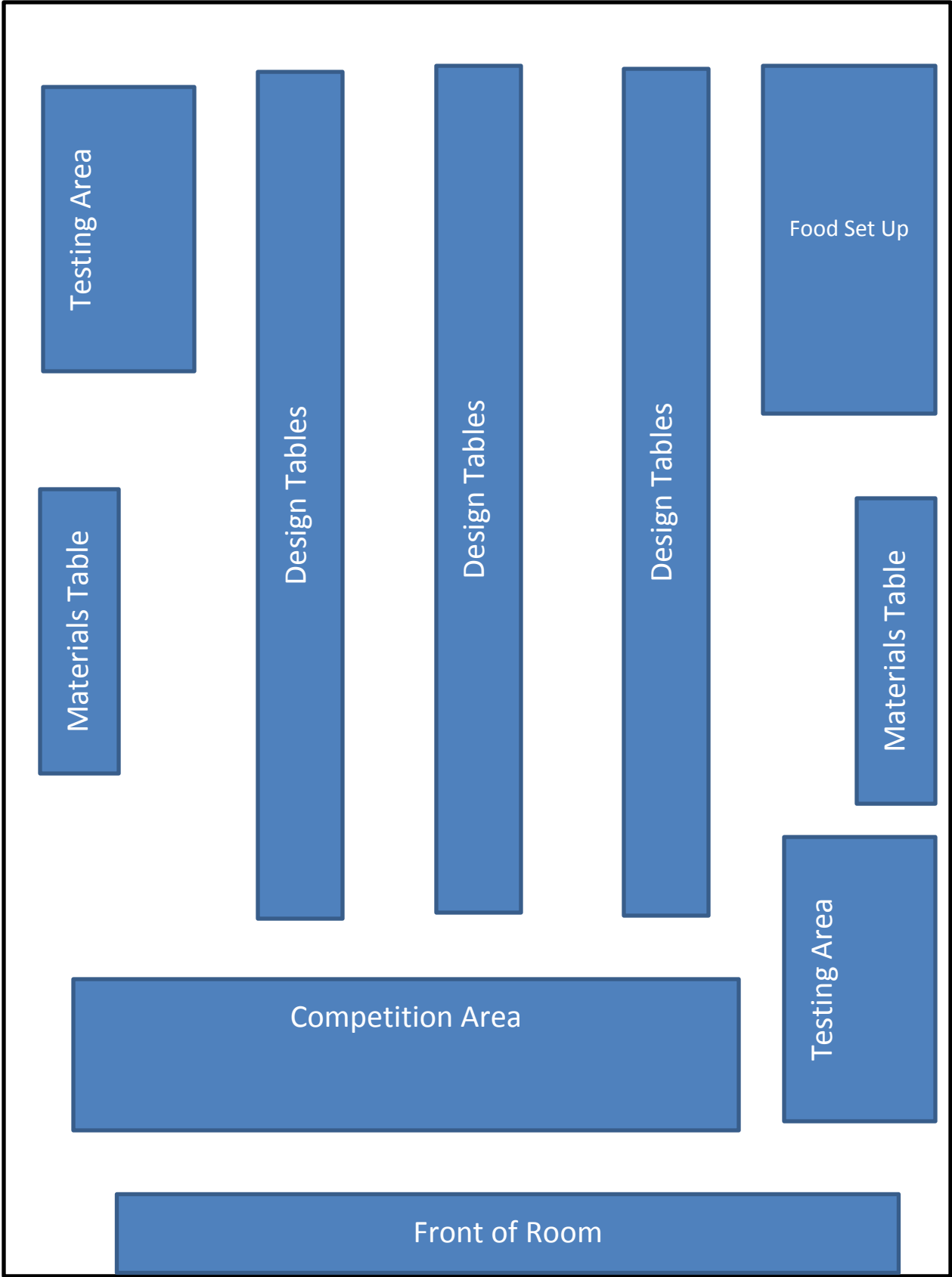
1. How can the ball carrier can stay on the line and not fall off?
2. How can you make sure the carrier will travel in the time limit?
3. What will you do to keep the ball inside the ball carrier?
4. What will help keep the carrier to stay balanced and not lose the ball?
5. How will the carrier attach itself to the line?
6. What weight system seems to work best?

After Testing:

1. What did you notice about your carrier? What issues do you need to address?
2. Can you change the center of gravity?
3. Did your carrier stop on the line? How can you make sure it won't stop again?



Mock Lay Out



STEM Family Night Sign-In Sheet

[Program/School Site]

Date & Time

[If you have an RSVP list, have that list already sorted out alphabetically by last name to help the process go quicker. It's a good idea to ask how many came with them as that might vary from the RSVP to the day of the event. That way you have an accurate number for your data.]

Family Name	Number of People Attending	Signature