Family Engagement Events

Promoting Early Math and Science Skills

Count Play Explore (CPE) believes a natural way to engage families and young children in math, science, and computer science exploration is through literature. Integrating math, science, computer science, and literature at family engagement events supports families' confidence and comfort in participating in math and science activities with their children.

What is a family engagement event?

A family engagement event that promotes early math and science skills is a school- or community-oriented event designed to engage families in fun, hands-on math and science-related activities. These events are typically hosted by schools, community centers, libraries, museums, or educational organizations with the goal of fostering positive attitudes about math and science and to help children and families explore math and science concepts together in meaningful and enjoyable ways.

These gatherings not only provide opportunities for children to explore math and science through hands-on experiences, but also support family members in building their own comfort and confidence. By participating alongside their children, families can build more positive attitudes toward math and science and see how they connect to everyday life. This shift in mindset can encourage families to continue math- and science-related explorations at home and in the community.

While the focus may begin with math and science, these events can be expanded to integrate learning opportunities across multiple domains. Consider designing activities that connect Science, Technology, Engineering, the Arts, and Mathematics (STEAM), providing a variety of entry points for children and family members of different interests and comfort levels. This integrated approach helps ensure that every family sees a door open to learning — whether through building, creating, observing, coding, problem-solving, storytelling, or exploring nature.

By offering a wide range of engaging, culturally responsive, and accessible activities, family engagement events become inclusive community celebrations of learning, curiosity, and family connection.

Benefits of a Family Engagement Event:

1. **Reinforces Classroom Content**: A Family Engagement Event can directly connect the work occurring in a child's classroom to family interactions. These events provide

opportunities for children to practice and improve their math and science skills in a fun and engaging setting, reinforcing concepts learned in school.

2. **Positive Attitudes Toward Math and Science:** By presenting math and science in an enjoyable and interactive manner, family engagement events can help reduce math and science anxiety and foster a positive attitude toward math and science.
3. **Increased Confidence:** Children and parents can gain confidence in their math and science abilities by participating in accessible and achievable activities.
4. **Allows for Designing, Building, and Creating:** Family Engagement Events provide a time for families to think, plan, and create together. Hands-on activities give children and families the opportunity to use their own thinking and understanding. These experiences also support diverse learners.
5. **Builds strong family-school partnerships:** These events encourage parents to become actively involved in their children's education, fostering a supportive home learning environment and strengthening the parent-child relationship. These events can incorporate culturally relevant math and science activities, making learning more relatable and meaningful for children from diverse backgrounds.

Beginning Stages of Planning

- Get a planning team ready.
    - The planning team may include administrators, educators, family members, or community members.
    - Plan to gather this team at least two months before you want to host the Family Engagement Event.
- Survey families to gain information about preferences, backgrounds, and strengths.
    - Since the focus is on families attending it is important to uplift their voices. Survey families about their preferences in terms of date and time for a family engagement event. When are most families available, in the afternoon after school or in the evening? You may consider surveying families about their children's likes and interests.
    - You may want to speak with families before and after school to learn more about their strengths when it comes to supporting math and science development. Are there areas of growth you can support through a family engagement event?
- Choose the Theme and Age Span
    - Themes may include math topics like Geometry or Data and Graphs. They could also be topics children are focusing on in the classroom or topics many students are interested in, such as sea animals or space.
    - What will be the age(s) of the children attending? Do you need to include activities that span ages? Will older or younger siblings attend? For example, if your program serves infants to preschoolers, you may think about having three

stations that focus on preschoolers and two stations that are developmentally appropriate for infants and toddlers.

- Choose the Date and Time:
    - Choosing a date is not a difficult task, and you want to keep a few things in mind. Two engagement events a year (in addition to other family/school events) is a great way to promote Math and Science in the home and not overwhelm your families. Think about the following:
        - Offering a Family Engagement Event early in the school year encourages a positive family view of math and science early in the school year.
        - Consider other school events that may conflict with or be too near a Family Engagement Night.
        - Think about holidays and vacation times. You want your event to be during a time when few families are traveling.
        - Mid-week events tend to work best. Friday events are often difficult if families have weekend plans, and staff may be less inclined to extend their workday. Most people prefer a Tuesday, Wednesday, or Thursday event.
        - Consider the weather. Inclimatic weather will dissuade people from attending. For example, people might not come to an engagement event if there is heavy rain or snow.

Choosing Stations

- What is a CPE station?
    - Each station includes the book, Discovering the Math: Book Guide or STEAM Explorer: Book Guide (first two pages), related activity, and the materials.
        - Activities usually involve low-cost to no-cost materials. Some may involve more complex materials that can be substituted with recycled materials.
- How many Stations?
    - Consider how many families you are expecting. If you are expecting 15 families, having four stations will work, while if you are expecting 30 families, having 6 to 8 stations may be better.
        - Remember that you can have duplicate stations if it is a large group. Families rarely have time for more than 4 stations in an hour.
- How to choose which books to include?
    - Consider your theme and the age range of the children attending. A theme will help you narrow down the book and activity choices.

    - Consider family demographics—uplift diversity and families' unique backgrounds by including books focusing on different cultures and ideas.
- Other ideas for stations?
    - You may consider other station ideas to include .
    - For example, you may include CPE Interactive Exhibits. Discover the Exhibit guides here.
    - Your agency or program may already have math, science, or STEAM-based activities you're piloting or using with children and families. You're welcome to include these in the event as well, either in their own designated area or alongside the other stations.
        - For example, at the **Lighthouse for Children** in Fresno, California, staff incorporated a **Mobile Magnetic Wall** that was typically located in the lobby. During their Family Engagement event, it was set up in a way that encouraged families to explore and interact with it, alongside the other activities.

Making the Family Engagement Event a STEAM event

- Family Engagement STEAM events can look the same. Each station might be related to the same topic (math or science) or all be STEAM-related.
    - Count Play Explore has STEAM-specific guides called "STEAM Explorers" that are written to include the broader topic of STEAM. Consider these for a STEAM night.
- Consider books like these to increase the science and engineering at your event:
    - *Rosie Revere, Engineer.* The CPE activity for this book involves engineering paper airplanes with different weights of paper and using scissors, take, and paper clips.
    - *Who Sank the Boat?* The CPE activity for this book involves weights and building a boat out of typical craft materials.
    - *Just a Little Bit,* the CPE activity for this book involves weight and comparing on a balance.
- Adding in science, engineering, or art can require a few more materials but increases the hands-on portion of the event.

Getting Staff, Families, Children, and the Community Involved

- Families
    - Involving families in these plans ensures that family voices are uplifted and showcased throughout the event. One opportunity is to have families

sit on the planning team. You may partner with the PTA or other parent volunteers to plan or set up the event.

- During the Events
  - Things to consider:
    - Most families are able to visit four stations during one event. If you have more than four stations, you should let families know that they may not make it to each station.
  - Provide tips for family members on participating in the station.
    - Tip #1: Read the book with your child and use the Book Guide to support math and/or STEAM explorations during reading.
    - Tip #2: Use the Book Guide to ask questions, explore vocabulary found in the book, and explore thinking about the STEAM topics.
    - Tip #3: Read activity instructions to your child (or if your child is old enough, ask them to read them to you).
    - Tip #4: Gather the materials and encourage your child to lead the activity, and engage in the activity alongside them.
      - As your child engages in the activity, ask open-ended questions about what they are doing. For example, how can you rebuild the tower to make it taller?
      - Use vocabulary to support your child's learning, you may lean on the vocabulary from the book, book guide, or activity sheet. For example, in a book about spatial relationships, you may use spatial vocabulary to describe what your child is doing. You are gluing the square next to the circle.
    - Tip #5: Clean up and move to the next station.

- Teachers/Staff
  - Support teacher and staff buy-in from the beginning. Include them in decisions regarding date and time, theme, and what books are included. You may consider brainstorming with them how they can be involved in the different stages of planning. Do they want to sit on the planning committee? Would they like to provide suggestions? Would they like to pre-record a video about why it is important to send out family engagement in early math and science to families before the event?
  - If staff and teachers are asked to lead a station during the night, make sure you set up meetings with them beforehand so they are comfortable with

the station's activity. You may also want to involve them in gathering the materials and setting them up prior to the event.

- Older children (siblings or older children at the school)
    - Inviting families means inviting the entire family. Expect older siblings, possibly a cousin, and maybe a grandparent. Use your welcome message to remind people that this is focused on a specific grade span and that we are all here to learn together.
    - Older children at the school may be in charge of one of the stations or in charge of guiding people to different stations. Consider your student council or student leadership group.
- Community Partners
    - Collaborate with community partners to host and support family and community engagement events that promote early STEAM learning experiences.
    - As you plan, consider intentional ways to introduce your community partners to the Count, Play, Explore (CPE) principles and the importance of fostering early learning in these areas. Help them understand how early experiences with STEAM concepts can support young children's school readiness, problem-solving skills, and curiosity about the world around them.
    - Work together to brainstorm a variety of ways partners can actively participate, contribute resources, and meaningfully engage with families during these events. Encourage them to:
        - Host an interactive booth or hands-on activity connected to their field or expertise.
        - Provide materials, giveaways, or STEAM-related resources for families to take home.
        - Offer guest presentations, demonstrations, or storytelling connected to math, science, or computer science.
        - Share how their organization uses STEAM concepts in their work and everyday life, helping families make real-world connections.

Planning Continues

- Room Layout: General Ideas
    - Have a staffed Greeting and Welcome Table
    - Activity tables should be large enough (or grouped) to allow more than one family to work to promote conversation and idea-sharing

    - Covering tables gives a festive feel, creates cleanliness, and allows easy setup and take down.
- Consider the kind of space you can use:
    - Idea #1: A large room, such as a multi-purpose room/cafeteria
        - 4 to 8 large tables for interactive activities (be sure to have room between each table to allow for free-flow movement between stations)
    - Idea #2 Various classrooms
        - Each classroom has a unique station/activity for families to interact with. This allows families to see how each classroom is designed and learn from the teacher in the specific room.
    - Idea #3 Outside
        - If you have a station with water, bubbles, or other liquids, you may want to have that station outside or have the entire event outdoors.
- **Set up**
    - Besides the basics like tables and chairs, consider the following ideas:
        - Have a sign-in table that is welcoming for families.
            - Include a pre and post-survey
        - Ask your site administrator to greet families. This shows buy-in from the administration regarding the importance of math and science.
        - Inexpensive tablecloths protect the tables and make for easy clean-up.
        - Consider where people will be eating and where the activities will take place. Families walking around with food can make the stations more difficult.
- Starting Your Event
    - Welcome your families
        - If you are serving a meal, we recommend that families are encouraged to sit and eat soon after entering the event.
        - Once a majority of families have finished eating (15-20 minutes), begin a short welcome.
            - Share an appreciation for placing this event as a priority.
            - Share the importance of early Math/Sci/STEAM skills
            - Explain the flow of the event (if it is free-flow or if families will be moving as cohorts).
            - Remind families that this is meant to be an evening of exploration and creativity, a time for children and families to think together.
    - Families moving from station to station. - Consider how families can move…
        - Parents are given a station number upon entering where they will START (After their first station, it will become free flow)
        - After welcoming families, ask them to move to their assigned station and begin exploring.

        - Encourage participants to stay at each station for the total amount of time allotted (12-18 minutes)
            - *Let families know that they might not be able to experience every station.*
        - If wanted, signal for movement to the next station (bell, alarm, song)
            - Signal transition time to encourage participants to move to the next station of choice.
            - You can also have station helpers who encourage families to either stay longer or experience more stations before the event ends.
        - Offer families a 10-minute warning that the event is coming to a close.
        - Thank the families either as a group or as they exit.
- Should you include a presentation?
    - Click here for a sample presentation to welcome your families with
    - Consider having these quotes around the room or at the stations to remind parents of their importance and that they are their child's first teacher.

Promoting the Event

- Promoting a Family STEAM event increases awareness, attendance, and excitement!
- Here are some promotional ideas to consider:
    - Newsletters and email that begin two months prior to the event. ***Click here for templates*** and ideas.
    - Create a short video that can be sent home prior to the event. This can consist of a verbal invitation and a small sampling of the stations that will be used on the evening of your event. ***Click here for templates*** and ideas. Consider using videos from https://www.countplayexplore.org/ to show how math is all around us and how math will be promoted at the event.
    - Student ambassadors can be trained in the event's format and travel into classrooms to promote it. These same students can also help run the stations that you choose to use during the event.
    - Offer dinner for attending families. Taking time out in the evening causes a time crunch for families. Providing dinner allows families to join the event and have one less thing to think about after they leave. Ideas include hot dogs, pizza, and other child-friendly options.
    - Consider holding a prize giveaway for attendees. The prize can be a children's book used at one of the stations.

Getting Ready for the Event

- Prior to the event, ask your teachers to read the books to your children. This provides reminders and creates excitement. Some books might be too long to fully read during an evening event - if families are rotating between stations, they might not have time to read each book and actively participate. Reading the book to the students that morning, and having it out as a reminder helps families be engaged on the hands-on portion of the event.
- Start some projects before families arrive. If an activity involves painting, you can have this as an art activity prior to the Family Engagement Event, and then the dried artwork can be used for the event.

After the event

- Share photos through the school communication system
- Highlight the event in newsletters.
- Share the giveaway winner(s). This gets people excited about attending the next event.

Suggested Station Starter Pack

Infant/Toddler/Preschool Event

- *Baby Goes to Market* by Atinuke: How Many Ways?
- *What will Fit?* by Grace Lin: Storytelling Structures
- *Thank You Omu* by Oge Mora: Omu's Town
- *The Very Hungry Caterpillar* by Eric Carle: Hungry Caterpillar Sensor Tub
- *Bee-bim Bop* by Ho Baek Lee: Taste Test
- *Stack the Cats* by Susie Ghahremani: Cat Stack
- *Circle, Sphere!* by Grace Lin: Bubble Frames or Find that Shape

TK to 3rd Grade Event

- *I Love All of Me* by Lorie Ann Grover: Finish a Face or Rice Cake Faces
- *Who Sank the Boat* by Pamela Allen (water required at this station): Build a Boat that Floats
- *Rosie Revere, Engineer* by Andrea Beaty: Paper Airplane Engineer
- *Just a Little Bit* by Ann Tompert: Which is Heavier?
- *Remainder of One* by Elinor J. Pinczes: None Left Over
- *Spaghetti and Meatballs for All* by Marilyn Burns: Table For Forty
- *Counting on Frank* by Rod Clement: Contain your Estimation

STEAM Pack

- *Bird Count* by Susan Edwards Richmond: Creature Counts
- *Mazie's Amazing Machines* By Sheryl Haft: Machines to the Rescue
- *Worm Weather* by Jean Taft: Puddle Science
- *Doggies* by Sandra Boynton: Sound Patterns
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Possible Quotes for around the room

- STEAM education involves students who take thoughtful risks.
- STEAM education involves students engaging in experiential learning.
- STEAM education involves persistence in problem-solving.
- STEAM education involves embracing collaboration
- STEAM education involves working through the creative process.
- STEAM stands for science, technology, engineering, art, and math – all of which are important lifelong skills to start developing in early childhood.
- “The best way to predict the future is to invent it.”–Alan Kay
- “Do the research. Ask questions. Find someone doing what you are interested in! Be curious!”–Katherine Johnson
- “Remember to look up at the stars and not down at your feet. Try to make sense of what you see and wonder what makes the universe exist. Be curious.” – Stephen Hawking
- “The true sign of intelligence is not knowledge but imagination” – Albert Einstein
- “It’s not that I’m so smart, it’s just that I stay with problems longer.” – Albert Einstein