

Growing Scientists: Engagement for Preschoolers and Families through STEM

By Margaret Stawowy
Children's Librarian, San Rafael Public Library
margaret.stawowy@cityofsanrafael.org

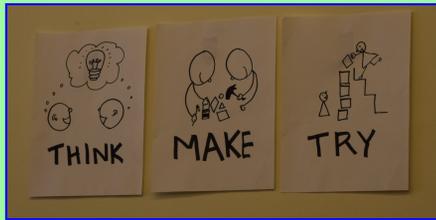
Abstract

San Rafael Public Library's children's services librarians became enthusiastic about presenting STEM programs for preschoolers after attending an Association of Library Services for Children (ALSC) conference in 2014. In the San Rafael community, due to hectic schedules, families with preschoolers are a challenging demographic to significantly engage in recurring library programs. STEM programs (also referred to as STEAM) have proven successful right from the start. When designing programs for preschoolers, it is imperative to consider best practices for preschool learning by incorporating age appropriate education elements, such as stories, songs, games, experiential activities, and experiments. Families responded to the programs enthusiastically as reflected in attendance statistics and a mention on a local mother's website. The program was also covered in a local newspaper feature article. San Rafael Public Library will continue to present preschool STEM programs, both staff-developed and in partnership with local organizations such as the Bay Area Discovery Museum.

How to Get the Attention of a Busy Family with Preschoolers?

The Situation:

- We wanted to revitalize our programming for preschoolers. Our weekday preschool storytime had been losing attendance.
- In a high cost-of-living area, both parents usually work and are not available during weekdays. Evenings also proved to be problematic.
- What kind of programming would capture the interest of families? What day would bring in the most families?



Libraries are trusted, welcoming places where children make discoveries, deepen common interests, expand words and knowledge, and connect their natural curiosity to the wider world. Neuroscientists tell us that the type of learning that occurs in libraries — self-directed, experiential, content-rich — promotes executive function skills that can shape a child's future. The experiences, resources, and interactions provided by libraries build brains and fuel a love of learning.

ELF 2.0 website, sponsored by the California State Library
<http://elf2.library.ca.gov/why/learning.html>

Learning from Others

While attending the Association of Library Services to Children (ALSC) Professional Institute 2014 and the Early Literacy with Families (ELF) 2.0 Summit (2014), librarians had opportunities to attend various sessions where speakers presented experiences with STEM programs in their libraries:

At the ALSC Professional Institute, Amy Koester of Skokie Public Library reminded us that we have competency greater than or equal to a preschooler, and that librarians are the experts when it comes to resources. She then presented numerous program possibilities that would engage children in technology, math, art, and engineering, to name a few areas.

At the ELF 2.0 Summit 2014, Bridget Alexander of ArtBeast in Sacramento brought numerous art/science projects which attendees could test drive, inspiring us to "try this at home."

Finally, this past summer, San Rafael Public Library partnered with the Bay Area Discovery Museum and were able to observe and learn from their format.

Starting Out



- Scheduling is important. Previously, preschool programs were presented on weekdays. Many program-attending children came with caregivers. To attract families, we tried switching to Saturdays, late morning.
- Space Considerations: We have a very small meeting space with no child-sized tables and chairs.
- Librarians designed 5 initial programs for 3rd quarter 2014, 5 for 1st quarter 2015.
- Programs included: Tool Technology, Earth Science, Water Ways, Winter Solstice, Gravity, Dinosaurs, Fun in the Pond, Music and Sound, Smell, and Light/Darkness.

To raise the next generation of innovators, thought leaders and problem-solvers, we must provide children rich activities, risk-friendly challenges, and positive messages to intentionally boost creative development.

Bay Area Discovery Museum, The Center for Childhood Creativity
<http://www.centerforchildhoodcreativity.org/about-us/>

Bringing It Together

When designing programs for preschoolers, how can we ensure maximum engagement? How can we demonstrate to families that libraries have the resources to assist in raising children ready to read, learn, and go on to become creative problem solvers in tomorrow's world.

- Design programs with the understanding that children's primary mode of learning is through play and exploration.
- Incorporate pre-literacy building skills: read, write, talk, sing, play.
- Since programs are offered to 3 - 6 year olds, and because every child is an individual with his/her own unique abilities, create programs that are flexible and open-ended, regardless of where a child is in his/her development. Include sensory experiences to reach children with learning differences and/or who are on the autism spectrum.
- Use STEM to introduce new vocabulary. Close the 30 million word gap for all children!
- Support parents in their roles as their children's first teachers.
- Create positive experiences so that children view learning and science as interesting, fun activities.

At San Rafael Public Library, we include songs, games, movement, books, stories, and experiments/activities for parents and children to enjoy together. We strive to choose topics that appeal to a preschooler's curiosity. We make every effort to present in such a way that children feel free to engage at whatever level they feel comfortable. If possible, materials that can't be re-used are sent home to continue the fun, such as playdough, water beads, etc.

Comments from Participants

"A lot of older kids don't like science because they think it's dry and boring. Getting them at an early age keeps them interested and shows them how the world works."

Skip Sauls, Parent

"We were really excited to see this was happening (on Saturday) because she (my daughter) wants to be an environmental scientist. She wants to help nature."

Nicole Nelson, Parent

Excerpted from the Marin Independent Journal
March 7, 2015



How Did We Do?

Children and families were receptive and appreciative of STEM programs. Our autumn and spring sessions were consistently filled to capacity. We had many repeat participants and enthusiastic feedback. We were also designated as an editor's pick on a local family website. All to the good!

Moving Forward

In the next series of programs, follow the example of my colleague and fellow STEM presenter Jill Harris, and avoid seating participants at tables as much as possible. Our event space is quite small and children need to move freely. Give them space!

Learning from the example of our summer STEM partner, The Bay Area Discovery Museum, consider having stations with separate activities, so that children can move about and engage with various aspects of a scientific concept.

Library staff can inspire and nurture a sense of wonder, discovery and self-efficacy that encourages families and their children to become life-long learners and library users.

ELF 2.0 website, sponsored by the California State Library
<http://elf2.library.ca.gov/what/goalsvalues.html>

