

Sample Exhibitor Letter

Dear Potential Exhibitor:

Like you, we at the Center for Mathematics, Science, and Technology (CeMaST) care about the communities in which we live and work. **That is why we are inviting you to support our 4th Annual Family Science Day event**, which will be held on Saturday, April 5th, 2014 from 11 a.m. to 4 p.m. at Redbird Arena.

Family Science Day is a public outreach event designed to educate and inspire K-8 students in the fields of science, technology, engineering, the arts, and mathematics (STEAM). This family-friendly event encourages scientific discovery through hands-on activities, challenges, and demonstrations while providing the opportunity to learn about scientific careers from actual research scientists and science educators. In addition, the event helps to raise awareness of the importance of STEAM in our society.

Last year, more than 2000 people participated in our event at Redbird Arena. Past events have included more than 80 hands-on interactive exhibits each year from groups such as NASA, State Farm, St. Louis Science Center, and the Museum of Science and Industry, to name a few. The event also hosts the Central Illinois Robotics Club BotBrawl Tournament, a regional robotics tournament for hobbyists and students alike.

Our goal is to continue to offer a fun, engaging, and safe event for families throughout Central Illinois, but we need your help. **We would like to offer your organization the opportunity to participate in our Interactive Exhibit Gallery.** In this area, we highlight a variety of STEAM topics through *hands-on, interactive stations*. By participating, you have the opportunity to support an educational event in your community and promote your organization to thousands of families.

Please join us in making a difference by completing our Exhibitor Registration Form. The cost to exhibit at our event is **FREE**, and we accept booths on a first-come, first-serve basis until full. We simply ask that you agree to our terms and conditions, which state that your exhibit must be interactive and that you are responsible for addressing any safety concerns specific to your booth activities. We realize that you have difficult decisions regarding the best use of your limited resources, and we appreciate your consideration. We are very excited to host such a valuable educational event in our community, and we hope you will join us in making Family Science Day 2014 a success!

Blending Art and Science

Shadow Puppets

When objects are projected on a screen using light they cast a shadow that can take on different shapes and characters. Demonstrating this idea is easy to do by cutting various pieces of paper of animals, people, and creatures adding a rod and projecting a light.

Safety Tip

Remove the sharp skewer tips using scissors and safety goggles. Adult supervision required.

Materials

Cardstock paper

Brads

Scissors

Two skewers (tips removed)

Clear scotch tape

Various colored markers

Staging and Lighting Setup

To create a shadow puppet stage use a white shower curtain liner to help defuse the light and stretch the curtain around a frame. The frame can be anything from a wooden frame, a cardboard box, or even a door. You will also need three light sources with a dimmer for each of the lights such as a clip light, a projector, or a lamp. Each of these lamps should include a colored light bulb or a gel that filters a colored light into the primary colors of light: Red, Green, and Blue.

Create

Use the cardstock to draw or trace an image of your choice. To add moving appendages overlap the moveable limb and insert a brad to allow movement. Students may add detail to their puppet with markers. Then add a skewer or two to your puppet so you can operate the puppet from below.

Explore and Apply

Predict what will happen when the puppet is used on the stage. Will the maker detail be observable in the shadow?

Observe what happens when the puppet is operated close to the stage and farther away from the stage. What happens?

Try to mix the light colors. What happens if just the blue and red light are on? What color is the shadow stage? Does it affect the shadow? Why or Why not?

Concept Development

Objects in the path of light waves block the flow of light and therefore creates shadows. When the puppet is closer to the lamp the shadow becomes larger and blocks more of the light waves. Moving the puppet closer to the stage results in fewer light waves blocked resulting in a smaller shadow. Color mixing in light is very different in color mixing in pigment. The primary colors of light are red, blue, and green with secondary colors of yellow, cyan, and magenta. When beams of light are mixed an additive process is created moving closer to white light.

Extensions

Record your findings and draw conclusions. Discover other sources of light and methods used for shadow puppetry around the world.

Sample Exit Survey

1. Have you been to this event before? Circle One: Yes No
2. How did you hear about the event?
 - a. Radio

- b. Colleague/friend
- c. Flyer through school
- d. Poster around town
- e. Facebook
- f. Other (please specify): _____

3. What was your purpose for coming to this event?

4. How often does your child participate in science-related activities OUTSIDE of school?

- a. A few times a year
- b. Once a month
- c. A few times a week
- d. Once a week
- e. More than once a week

5. Would your child recommend this event to his/her friends?

- a. Definitely
- b. Probably
- c. Probably not
- d. Definitely not

6. Would you recommend this event to other parents/guardians?

- a. Definitely
- b. Probably
- c. Probably not
- d. Definitely not

7. What exhibits did you and your child/children enjoy the most?

8. How could we improve our event for next year?