

● Organizing a Family Science Night at Your School

by Lloyd H. Barrow, Ph.D.

Lloyd H. Barrow is a professor of science education at the University of Missouri-Columbia, in Columbia, Missouri. Some of the areas Barrow is interested in are staff development in science, Earth science education, and preservice elementary science teacher preparation. He has presented at regional and national NSTA conventions for more than 20 years, and he served as the research director for NSTA from 1996–1998. In addition, Barrow has 9 years experience as a science teacher for grades 7–9 and 3 years of experience as a science coordinator for grades K–12. His experience with family science night programs spans more than 6 years.

Picture an event at your school in which parents and their children participate in hands-on activities to test ideas, solve problems, and learn about science. Imagine a forum in which assumptions are set aside and discovery is the rule and parents and children surprise one another with their determination and teamwork. Sound impossible? Well, it's not. What follows explains how to organize a successful family science night at your school.

What Are Family Science Nights?

Family science nights are catching on in schools all over the country as a way of bringing families together to learn about science. Unlike science fairs, in which students share their expertise with judges and visitors, everyone involved in a family science night plays a role in scientific discovery. While parents and students explore the world of science by participating in hands-on activities, teachers perform demonstrations and answer questions. The end results of such an event are your students' increased confidence in their ability to do science and more parental involvement in science education. In addition, everyone usually has a lot of fun!

So how do you organize a successful family night at your school? It is easier than it sounds, especially if you follow these simple steps:

- | | |
|---|--|
| <ul style="list-style-type: none">• Find a colleague• Choose a theme• Hold a meeting• Choose activities• Plan the program | <ul style="list-style-type: none">• Invite the families• Request materials• Encourage participation• Keep up the interest• Enjoy the big night |
|---|--|

● Organizing a Family Science Night at Your School *continued*

Find a Colleague and Choose a Theme

The first step in organizing a family science night is to find a fellow teacher who is willing to help you with planning. Make certain that this teacher is not only willing but committed to helping you. Together you will choose a theme for the family science night. The goal is to select a theme that is broad enough to include a variety of activities from the major branches of science—life science, Earth science, and physical science. Keep in mind that every activity you choose must relate to the theme, so refrain from making the theme too narrow. Some possible themes are “Science in Our Environment,” “How Things Work,” “Stars and Planets,” and “Water in Science.” Once you’ve chosen a theme, it is important to meet with the building principal to establish his or her support for the event.

Hold a Meeting and Choose Activities

The next step is to invite other teachers to attend a planning meeting for the family science night. At this meeting a number of other teachers will likely volunteer to join your efforts and see them to fruition.

During this meeting you should pick a date for the event, or at least narrow it down to a few possible dates. You will need the building principal’s approval for the date as well, so presenting a few possibilities is a good idea. Don’t spend too much time picking dates; it is best to keep this meeting short and use the bulk of the time for coming up with activity ideas. Because the activities you choose are the focal point of a family science night, the more time you can invest in coming up with ideas the better.

Conduct a brainstorming session during the meeting in order to generate a list of activity ideas. Then enlist the help of one or two group members who can follow up on the ideas and further develop the list. There are many resources in the library and on the Internet that you can use to find a variety of activities.

In order to pick the best activities among the many you are likely to encounter, consider the following questions:

- ? Does the activity focus on problem solving?
- ? Will the activity appeal to boys and girls and adults?
- ? Is the activity a good springboard for families to do further exploration at home?
- ? Will the activity be able to accommodate teams of two or three family members?

● Organizing a Family Science Night at Your School *continued*

When you find the ideal activity, you will be able to answer the questions on the previous page with a resounding yes. Also, it is best to keep the activities simple in order to keep costs down and minimize cleanup time. Choose one or two activities that you can present to the attendees as a warm-up for the evening's events. These activities might be impressive demonstrations that take longer to set up and use more expensive materials. Then choose six additional activities for families to perform on their own. These activities should require about 15 minutes each to complete.

Given the variety of ages and backgrounds of the participants in a family science night, it is important that all the activities are gender-neutral and assume little or no prior understanding of the subject matter. However, even the most knowledgeable parents can come away with valuable experiences from a family science night. Parents who don't learn new scientific information will enjoy the opportunity to watch their children discover new and exciting things about science.

Plan the Program

When it comes to planning the program, consider opening the event with a presentation, such as a brief slide show or video; a large group activity such as a physics circus (a performance that uses physics concepts to pique interest); or one of the warm-up activities you chose for this very purpose. Even if there is no opening presentation, plan to have a meeting at the beginning of the evening so that the rules can be explained to all participants.

The structure of your program will vary depending upon the room or rooms you choose to use. As a result, there are numerous ways to plan the program. A simple plan for structuring the evening is to use a single room, such as your school's gymnasium or cafeteria. At the start of the evening families are separated into two large groups by last name. These groups will meet at opposite sides of the gym to allow you and a fellow teacher to present the warm-up activities to a more manageable number of people. During the introduction and demonstration, try to focus on the drama and wonder inherent in science as it relates to the activities. The goal is to leave the families eager to perform the activities. Once the introduction and demonstrations are complete, families will move to activity stations set up around the gym that are equipped with all the materials needed to perform the activity. At this point families are free to move at their own pace through the activities, and you and your fellow teachers can circulate through the gym and answer any questions that might arise. As an

● Organizing a Family Science Night at Your School *continued*

alternative, you may choose to set up the activities in individual classrooms and have families circulate from room to room.

It is a good idea to keep your first family science night as simple as possible but it is important to make sure it is well adapted to your surroundings. Once you have a definite plan in place for the evening, you are now ready to write a formal invitation to parents and request materials.

Invite the Families and Request Materials

The next step is to design a letter that will serve the dual purpose of inviting families to the family science night and requesting donations for materials. Send out these letters well in advance—about 4 or 5 weeks before the event—and include a tear-off portion so that parents can respond. The number of responses will help you determine the quantity of materials you will need. It will also give you enough time to assess whether you have enough materials and make arrangements to procure more if you are running short.

The first half of the letter you send home with students should be the invitation to the event. Probably the most important point to make on the invitation, after the date and time, is the fact that all students must be accompanied by a parent or guardian. There should also be a space for designating just how many people will be attending.

Ideally, students will bring their parents or guardians, but students should be encouraged to attend with another adult if their parents or guardians are unable to attend. Adult family members, siblings of a responsible age, or neighbors can also participate. As long as students are interacting one-on-one with an adult, they will be able to participate fully in the event.

Since you have already planned the program, you should be able to draw up a complete list of materials you will need. This list should include every item you will need to perform the activities, but don't be concerned with exact amounts at the moment. Defining your needs will allow you to be specific when asking for donations of these materials.

The letter might read something like that on the following page:

● **Organizing a Family Science Night at Your School** *continued*

The honor of your presence is requested on

Tuesday, March 16

6:00 to 8:00 P.M.

at Steele Middle School

for a

Family Science Night

about

Water in Science!

Please note: All students must be accompanied by a parent or guardian.

My family will/will not (please circle one) be attending the Family Science Night on March 16.

The total number of people attending is _____. (please fill in the appropriate number)

(please cut along the dotted line and return by February 19)

Dear Family,

We hope you can join us the evening of March 16 for our very first Family Science Night. The theme of the event is *Water in Science!* and should prove to be some good, clean (if not a little wet!) fun exploring the world of science. You will have the opportunity to perform your very own experiments in a comfortable and relaxed atmosphere.

In order to hold such an event we need some help from you. What follows is a list of materials that we need. If you have any items to donate, please bring them to the school office before March 9.

Parents of Steele Middle School students have always been eager to support our special events. The faculty would like to thank you for all of your support and any donations you might be able to make towards our first Family Science Night.

Materials List: disposable plastic spoons; disposable plastic cups; 1 and 2 L plastic soda bottles; coffee filters; drinking straws; pipe cleaners; masking tape; plastic containers from cream cheese, margarine, and cottage cheese; baking soda; baking powder; food coloring; colored balloons

Thank You!

● Organizing a Family Science Night at Your School *continued*

Encourage Event Participation

How do we involve busy parents who do not have time to accompany their children to school, sports club, or youth group events? One idea is to use a variety of incentives, such as food or contests with prizes. These types of incentives can also help to create a more festive atmosphere during the event. Possible sources for these incentives are your students' families and local businesses.

Some of your students' parents may own a business or hold a position in a company that would be willing to donate prizes or supplies for the activities.

These businesses may be willing to donate in exchange for an advertisement in the event program or permission to set up a booth during the event. Another source of funding are small grants that are often made available by community organizations and local businesses. You may find it worthwhile to take time to make some telephone calls with these possibilities in mind. (For information about seeking larger grants, please see the article "[Applying for Education Grants](#)," by Ernest W. Brewer and Connie Hollingsworth.)

Keep Up the Interest

Once you get parents to attend a family science night, there is still the potential for them to socialize while the students engage in the activities. One way to keep parents actively involved is to provide them with a handout that briefly explains the science behind each activity, so they can answer questions from their children. On the handout you can also list related scientific information, challenging questions, and any other items that might spark conversation between parent and student during the course of the evening. Don't hesitate to include a list of resources on the handout that families can use in order to get more information about the theme of your science night. Such resources might encourage families to pursue further study or even perform activities at home.

Another way to engage parents is to entrust them with the more complicated parts of the activity or the parts that require delicate motor skills. These directions should be added to the parents' handout and posted at each activity station.

Enjoy the Big Night

Hours before the big night you should prepare the room(s) you will be using by setting up the demonstrations and the activity stations. Be certain you have enough supplies based on the returned invitations, but always plan for a few "walk-in" families. Start with at least five complete setups per activity station.

● **Organizing a Family Science Night at Your School** *continued*

By taking the time to mix and count the necessary items beforehand, you will ensure a more enjoyable time for the participants. This allows the participants to focus on performing the activities and enjoying themselves, rather than on setup.

After the initial demonstrations, you and the other volunteers should circulate around the room, in case there are any questions. You may need to restock an activity station's supplies or help a family set up an activity correctly. For the most part, however, this is the time to enjoy the fun as you watch students and parents delve into the world of science. It is also a chance to meet family members you may not have had the opportunity to meet before.

As the evening draws to a close and you begin to say goodbye to families, ask them what they liked about the event and what changes or improvements they might suggest. Ask those parents who really enjoyed the event to consider helping in the production of future science nights.

Building Bridges

A family science night takes careful planning, but you need not do it alone. Tap into the ideas and efforts of fellow teachers and your students' parents.

Remember that your first family science night need not be a fancy and complicated production. Starting out small leaves plenty of room for improvement for the next event, so consider each one a learning experience. The goal of the evening is to get your students and their parents actively involved in science in a comfortable environment. Such an event just might be the bridge that brings students, teachers, and parents together in a way you never thought possible.