Giggles and Laughter ring through the hallways, the odor of popcorn drifts to your nose, colorful booths delight your eyes, and the tingling notes of music fill the air. It is time for the annual school carnival. But this year’s carnival has a different twist—it’s a science carnival! It’s a time and place where children and adults can share in the excitement of the carnival atmosphere and participate in doing science together.

How can you get started if you want to hold a science carnival? It’s easier than you think.

Creating a Carnival
Planning is the key to a successful event. In many communities, the parent-teacher organization may already have a working model for planning and holding an annual school carnival that can be adapted for your science carnival.

Start by selecting the date to hold the carnival and then work backward from that date to create your planning timeline. Nine to 12 months of planning, committee work, and research and development may seem like a long time, but it gives everyone the opportunity to accomplish the numerous tasks.

The carnival planning process should include:
- creating a budget;
- coordinating with the school faculty, administration, and maintenance departments;
- advertising;
- and setting up committees for carnival setup, cleanup, booth design, logistics and layout of the carnival space, booth construction, volunteers, booth manage-
Everyone learns at a science carnival.

If the carnival will be a schoolwide event, then activities must be designed for all age ranges—in elementary schools, this often means kindergarten through fifth or sixth grade. Many elementary students have preschool-age brothers and sisters who might attend the science carnival, so a few activities that can also be done by very young children should be included.

Involving teachers and students in the planning and presentation of the carnival can make this a school community event. Parents also play a vital role in the carnival planning and coordination. While working on committees, parents’ invaluable contributions of their ideas, time, and talents help create a fun event for the entire school.

Also, parents and adults that get involved during the science carnival have an important role. By participating in the carnival games, they become role models for children, showing that science is for everyone. Their ability to assist younger children with the carnival games and to share their own ideas and observations sends a message to the children that even adults must try different ways of doing something.

Gathering Ideas
To gather ideas for carnival booths, start by examining traditional carnival games held in previous school carnivals or the games found along the midway at an amusement park. In some cases, parents and adults may undertake the task of discovering the science concepts involved in these games and deciding which variables may be manipulated by the carnival participants. In other cases, teachers and students can work together to examine these games.

Studying these games from a scientific perspective and identifying the scientific phenomena associated with the games may lead to putting a new twist on the activity—one that allows participants to explore science concepts, experiment with variables, solve challenges, and have fun!

Traditional Booth Redesign
An analysis of the science concepts embedded in traditional carnival booths and games is an excellent class project. Classes could analyze and redesign booths, but it is also interesting for two classes to redo the same booth, coming up with two different approaches to the science embedded in the same game.

Here’s how two classes could redo the same game.

A traditional game in many carnivals is a coin-toss activity: the player...
tosses a coin or washer and tries to get it to land on the smooth surface of a plate. Friction is one of the scientific principles of this game. If you’ve tried to toss a coin onto a slick dinner plate, you know that there is not much friction to slow the coin.

One class might alter the game by allowing participants to use simple materials (such as masking tape) to alter the coin to increase its friction. Another class might take a different approach to this game—the lack of friction becomes an advantage to the player. The goal may be for the player to line up two, three, or four plates in a straight line. With this approach, the tossed coin must slide along the surface of each plate and come to a rest on the last plate. To achieve this goal, participants can adjust the distance between the plates, as well as how they toss the coin.

**Science Topic Booths**

Another way to create booths for your science carnival is to have each class construct a booth related to one of the science topics they have been studying throughout the year. This method provides an opportunity for students to teach someone else and to demonstrate learning in a different way.

For example, one third-grade class might have studied liquids, density, and sinking and floating. So, they design a booth where participants create small boats from one piece of aluminum foil. The participants design a boat that must be 15 cm long on one side and has a small sail. When blown by a house fan, the boat must be able to carry a load of several marbles from one side of a small wading pool to the other. Another challenge might be to design a boat that will carry the most marbles. The class members, who have become the experts through the study of the subject matter, can take turns operating the booth.

**More Booth Ideas**

The following booth ideas can also be used at the science carnival. The instructions are directed to the booth designer(s)—which can be students, teachers, parents, and/or other adult participants.

*Make Sense: What Do You Feel, Hear, Smell?* This booth idea takes advantage of the human senses. Take a box with a removable lid and cut two holes in the side of the box; make the holes large enough to accommodate a person’s hand and forearm. Place common objects, such as a pine cone, egg carton, or flashlight battery, inside the box. Create several different boxes filled with different objects. Participants put their arm through the holes and try to identify the objects using only their sense of touch.

To create the “hearing” part of the booth, tape record several ordinary sounds, such as water running from a faucet, a clock ticking, or popcorn popping. In the booth, play the tape and have the participants guess each sound.

To create the “smelling” activity, place common scents such as peppermint oil, clove oil, or vinegar. Then put each type of paper towel in the bottom of its own container (mustard and ketchup squeeze bottles work well). Write the name of each scent used—and several not used—on a chart. Participants squeeze the bottle to release the scent and try to match the smell with the name of the scent.

**Paper Airplane Designers.** For this activity, create two or three different challenges, or targets. A large hula hoop hanging from the ceiling, a large square of colored paper taped to the floor, and a big cardboard box make good targets. Participants create paper airplanes that can be tossed at each target. The goals are to fly the plane through the hoop, land the plane on the paper square, and land the plane in the big box. Ask participants, “Can one airplane do all three tasks? Does the plane need to be redone for the different tasks?”

*Missing Musical Jar.* Create this booth by filling bottles with water and adjusting the water level of each bottle to sound a certain tone when tapped with a small mallet, which can be made by gluing a large wooden bead to a wooden dowel or pencil. (Tinker Toys also work well.) A simple melody, such as “Mary Had a Little Lamb,” can then be played by tapping the bottles. Using a permanent marking pen, mark the bottles with letters to identify the tones and write out the correct tapping sequence that plays the tune on the bottles. Mark the water level of all the bottles except one, which is emptied. This empty bottle represents a “missing” musical note. Participants must experiment by varying the amount of water in the empty bottle to create the missing musical note.

**Down with Gravity.** This activity uses empty soda cans that have about 2.5 cm of plaster of paris in the bottom for weight. Stack three cans (with the plaster of paris at the bottom) in a pyramid—two on the bottom and one on the top. Standing about 6 m from the pyramid, participants throw a softball at the stack of cans and try to topple all three.

The participants try again, but this time, the cans are stacked with the plaster of paris weight at the top. Ask participants, “Is it easier or harder to knock the three cans over?”

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Apple Basket Physics. In this activity, participants toss a softball from 6 m and try to get the ball to stay in the bottom of a wooden bushel basket turned on its side at about a 45° angle. The springy bottom of these baskets makes it a challenge to get the ball to stay in the basket. Ask participants, “What could be done to soften the landing area for the ball?” (Perhaps a soft towel placed in the bottom of the bushel basket?)

Come One, Come All
Like the traditional school carnival, making the booths colorful and festive will add to the carnival atmosphere and create an environment where parents and their children can manipulate variables as they investigate scientific phenomena together. So, step right up to the science carnival in your school!

Resources

Also in S&C

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