

# A PARENTS' AND TEACHERS' GUIDE TO MATH NIGHT

## What is Math Night?

Math Night is a fun event for kids in elementary school and their parents. It lets kids show off their math skills and introduces them to mathematical topics beyond their everyday schoolwork. Meanwhile, their parents see what their kids are learning in math and maybe learn something new about mathematics themselves.

## What happens during Math Night?

During Math Night, kids and their parents can walk around and participate in displays and activities on different mathematical topics. For example, they might visit a display about pi, where they could find out about the history of pi and try several hands-on methods for approximating the value of pi. Some of the displays have problems for the kids to solve (and their parents can try solving them as well). Some activities have crafts that the kids can make and take home with them. Also during Math Night, kids can become contestants in math games, like Math Jeopardy, which lets them work in teams to solve math problems. Parents and teachers can learn a lot during Math Night as well. Besides being involved in their kids math education, parents and teachers can examine math resources like books and math toys at a resource display. Parents and teachers have a chance to talk to each other about their school's math curricula. Parents and teachers might learn a thing or two about math applications from the displays and activities as well.

## Why have a Math Night?

Why would you want to hold a Math Night at your school?

- Math Night helps kids overcome their anxiety about math, with unusual topics to spark their interest and volunteers to help them when they get stuck.
- Math Night introduces math topics in a different way than they are introduced in class, appealing to the kids' differing learning styles.
- Math Night helps kids understand how math applies to many different kinds of problems in the real world.
- Math Night teaches kids about mathematicians and their discoveries and contributions.
- Math Night gives busy parents and teachers one more chance to connect with each other, and with resources in their community.
- Math Night shows parents what their kids are learning about math.
- Math Night gives teachers feedback about their school's math curriculum.
- Math Night shows kids that math is fun!

## How to put on your own Math Night

Along with the modules available for downloading, this guide will help you, as a parent or teacher of elementary school kids, put on a Math Night at your own school.

### Scheduling Math Night

#### *Picking a date and time*

If you can, you should try to schedule Math Night during an evening or weekend, so that parents can attend with their kids. Check to see if the date you want doesn't overlap with other big school or community events.

#### *Finding a good location*

When it comes to picking a location for your Math Night, your school is an obvious choice. It's usually a central location for the neighborhoods where the kids live, parents know where to find it, and it probably has a large cafeteria or gym or hallway for setting up the displays and activities, along with resources like pencils and paper, chalk and bulletin boards, tables and desks, and computers. However, many other places

can serve as a location for Math Night - community centers or church basements, for example. The main criteria for picking a place is that it have enough walking-around room for all the kids and parents you expect to come.

#### *Advertising Math Night*

Once you have arranged a time and place for Math Night, you should think about ways to advertise it. You can post announcements on school bulletins boards or Internet sites, get it mentioned on school calendars or in school newsletters, or send memos home with the kids. You can also make announcements at school-related meetings like the Scouts or the PTA. Your local paper may have a section for schools and community news items, often with instructions on how to submit items for publication.

#### Deciding on activities

The modules and math games, which make up the two main activities during a Math Night, are available for download from the same web site as this guide. Each module contains the printouts for the display, instructions and problem solutions for the volunteers manning the display, and lists of equipments or supplies needed for the hands-on activities or crafts.

#### *How to pick suitable mix of modules and games*

As you pick and choose what modules and games you would like to use during your Math Night, you need to keep several considerations in mind --- how many displays and activities you have room for, choosing a mix of modules that will provide activities that cover all grade levels, and choosing modules that you are able to obtain the supplies and equipment for.

#### *How to write your own modules*

Although the modules on the web can be used "as is", you may want to customize them or even create new modules based on how math is used in your community. Kids may be more interested in math about subjects they already know something about.

For example, the names used in a module may be changed to reflect people, places, trends, or events that your kids would be familiar with. For example, the module about the best locations for ATM machines could use the street map from your own town.

If you want to add new modules, consider asking representatives from local businesses or organizations how math is used in their work. For example, the local pasta making plant could supply recipes which could be used in a module about how math is used when changing recipe amounts.

#### Deciding on prizes

Math Night can be an opportunity for kids to earn prizes by solving math problems. As you plan your Math Night event, you'll need to decide if you want use prizes, and if so, how you will use them.

#### *Pros and cons of prizes*

There is one big pro and a couple large cons to using prizes. The benefit to giving prizes is the motivation factor. Kids that aren't usually attracted to math will be much more interested. The cons to having prizes is the presence of overcompetitive parents, and the tendency for volunteers to give out points too easily to all those adorable children.

#### *Prize Scenarios*

One way to award prizes is to have a point amount assigned to each problem or activity. As kids solve the problems or participate in the activities, they earn points, which they may then spend as they wish on prizes at a Prize Table. (Figuring out how many points they have and which prizes they can obtain with those points is another chance for them to practice their math skills.)

If you don't want to worry about obtaining individual prizes, you can still keep track of the points the kids earn. You could give individual recognition for the point totals, perhaps giving high scorers a certificate or printing the names of all the kids who achieved a certain number of points in the next school newsletter.

You may also want to keep track of points by group or class, awarding a prize to the class with the highest total, like a pizza lunch one school day.

Even if you decide not to have prizes, having a number of activities that allow kids to make and take home math related crafts will get many kids excited about attending Math Night.

## Getting prizes

If you decide to have a Prize Table where the kids can trade in points for prizes, try to have a variety of prizes available.

### *Types of prizes*

Just about anything that you can think of that kids would enjoy winning and that your budget can afford makes a good prize. Candy is a easy prize to obtain - check out the big bags from local warehouse stores. Small toys are also popular. Things that kids collect are good prizes too, from action figures to trading cards. Consider the hottest new toys and trends when deciding on toys. For example, Harry Potter stuff may go over better than Cabbage Patch stuff. Also good prizes are stuff that kids can really use -- T-shirts with cool images, books and toys about math (perhaps from the resource table), art and school supplies, etc. Gift certificates and coupons for local businesses are also good. Consider gift certificates from a bookstore or toy store, or coupons for free activities at a local amusement park or attraction.

### *Getting donations/sponsors for prizes*

Consider asking parents to donate old toys - many parents are happy to get rid of duplicate toys from fast-food restaurant kid's meals, while the kids are eager for a chance to obtain the toys they missed. Businesses may donate gift certificates or prizes if their name is mentioned in the advertisements.

### *How to decide on how many points each prize is worth*

In general, how many points it would take to get each prize should depend on its rarity. If you have a lot of candy, make each piece worth 1 or 2 points. If you have only one or two math games to give as prizes, make them worth 10 or 15 points or more.

## Volunteers

### *Types*

You'll need to volunteers for several types of duties. Besides having one or more volunteers for each display or activity, you will also need volunteers to help with setup and cleanup, to man the prize table (if you decide to have one), and to act as chaperones to keep kids from running in the halls, etc.

### *Qualities*

Hopefully, you will find volunteers that have patience, lack of math anxiety, have patience, are cheerful, have patience, are good with kids, have patience,...

### *Finding*

One place to start looking for volunteers is among the parents of kids at the school. You can also ask high school kids to help out, or try service organizations such as the Scouts. If you have a local college that offers degrees in education, see if their students can use helping out with Math Night as a class project. (They also might be able to write up new modules for you.)

### *Training*

Before Math Night itself, you should make sure that each volunteer has a chance to go over the material for the display or activities they will be manning, as well as the instructions for being a volunteer. If you can get all of your volunteers to meet ahead of time, that is good because you can answer questions about the volunteer instructions only once. If you are using points for prizes, make sure the volunteers understand that they shouldn't be too generous with the points. If possible, have someone good with math there to answer questions about the math used in each module; if not possible, the volunteers can help each other understand the math. Also, you may want to have a teacher or someone speak who can give some guidelines for working with elementary school kids, such as how to give encouragement and how to handle frustrated kids.

## Math Night itself

Hopefully you have had success with arranging a time and place for your Math Night, deciding on the activities and if and how to have prizes, and getting enough volunteers. Now it is time for Math Night itself.

*Prep and set up*

Make sure that you have sufficient volunteers on hand to help set up the display boards and equipment for the modules and activities, as well as the resource table and prize table. You should also have signs put up directing people from the parking lot into the building, and towards the activities, prize table, etc. For your volunteers, it is a good idea to provide them with name badges so that the kids and parents can readily identify the people running the show.

*Clean up*

After Math Night is over, have your volunteers ready to take down the display boards and return the equipment. Make sure to clean up any trash or mess. Also, you should make arrangements for a lost-and-found, as it is likely that some kids will leave their coat, mittens, etc. behind.

**Wrap up**

*Announce successes*

It is a good idea to plan an announcement after Math Night, to let everyone know what went well. You should use the same methods to announce your successes as you used to advertise Math Night in the first place. Don't forget to thank any businesses that provided prizes or supplies. You may want to thank your volunteers as well.

*Leave notes for next year's organizer*

To help the next person who organizes an event at your school, you should try and make some notes about what didn't go well. Also, leave a list of which activities you used, so they might choose different ones for next year, and contact information for businesses or volunteers who were especially helpful.