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Top-Ten Ways to Strengthen the Mathematics in Your Classroom

Welcome back to yet another exciting school year! Whether it is your first year of teaching or your thirty-first, sometimes we all need a little help before plunging into a new school year. The *Teaching Children Mathematics* Editorial Panel has assembled a list of activities to strengthen the classroom mathematics program. The ideas range from organizing mathematics materials to working with parents to taking a leadership role in mathematics. We hope our suggestions spark your thinking and planning as you wade into another school year.

1 **Create a mathematics environment.** Fill your classroom with examples of mathematics being used in the real world. Perhaps you can dedicate a bulletin board to mathematics. You may want to include a "problem of the week"; for ideas, turn to our regular "Math by the Month" and "Problem Solvers" departments for a steady source of rich problems each month. You could also use a bulletin board to illustrate a particular theme, such as "Math in Nature: Mathematical Patterns in the World around Us," or display pictures that connect mathematics to other subject areas. A mathematics center could also be created that includes puzzles, thinking games, and manipulatives that could be explored by students.

2 **Make mathematics a priority within your classroom.** Plan to integrate mathematics with other subject areas. An easy way to get started is to collect children's literature that promotes mathematical concepts. A few NCTM resources that may be helpful are *Exploring Mathematics through Literature: Articles and Lessons for Prekindergarten through Grade 8; New Visions for Linking Literature and Mathematics;* the classic *The Wonderful World of Mathematics: A Critically Annotated List of Children's Books in Mathematics, Second Edition;* as well as *How to Use Children's Literature to Teach Mathematics.* The April 2005 focus issue of *Mathematics Teaching in the Middle School,* titled "Connecting Mathematics and Literature in the Middle Grades," has several ideas that can be modified for use in the lower grades. Connections can also be made to your science and social studies curriculum by analyzing data that can be extended into a real-life problem-solving situation.

3 **Plan to connect with parents.** Try providing parents with a monthly newsletter that includes a brief overview of mathematical topics and vocabulary that you intend to teach each month. The newsletter could include informative messages written by students, with clear explanations for parents about how to complete various types of problems and algorithms. A take-home "manipulative of the month" made out of sheets of craft foam or other inexpensive material could also be shared. Suggested activities for parents to do at home with their children would reinforce the concepts and activities that the students are investigating during the day. For more ideas, watch for a new

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Top-Ten Ways to Strengthen the Mathematics in Your Classroom

1. **Create** a mathematics environment.
2. **Make** mathematics a priority within your classroom.
3. **Plan** to connect with parents.
4. **Take** an inventory of your mathematics materials.
5. **Seek** opportunities for professional growth.
6. **Make** problem posing an integral part of your mathematics curriculum.
7. **Work** with your parent organization.
8. **Share** your success.
9. **Take** a leadership role in mathematics.
10. **Become** an advocate for mathematics.

TCM department, "At Home with Mathematics," debuting this spring.

4 **Take an inventory of your mathematics materials.** The start of a new year is a good time to get organized and find out what mathematics resources you have and what you might need. Sort through the manipulatives that you have collected over the years and develop a method for organizing your resource books by topic. Make a prioritized list of the materials that you do not have and decide what you would like to purchase this year to enhance your classroom instruction. Also be sure to share materials that you think other teachers would find useful.

5 **Seek opportunities for professional growth.** Set a goal to add at least one new book to your professional library, such as a mathematics dictionary that will assist you in your daily teaching. You might also consider investing in a comprehensive mathematics history book like *A History of School Mathematics* (a two-volume set). Other avenues of professional growth may include taking a course or workshop online and looking for opportunities to attend professional development sessions offered within your school district or at a local university. You can also plan to attend a local, regional, or national conference.

6 **Make problem posing an integral part of your mathematics curriculum.** Problem posing reaches beyond the scope of problem solving by instilling within students the curiosity to question and create mathematically rich problems. This curiosity stretches a student's mind beyond the walls of the teacher-posed problem by having students continually seek the solution to what-if types of questions. Look for more information on this topic in the upcoming October issue of *TCM*.

7 **Work with your parent organization.** Plan a mathematics fair that is created and conducted by students. It will give parents and children the opportunity to experience mathematics together. You may also want to develop a

mathematics brochure to share with your parent organization that includes a list of suggestions on how to help children with mathematics. You might use the new book *A Family's Guide: Fostering Your Child's Success in School Mathematics* for ideas to share with parents. Parent organizations may also be helpful in funding mathematics-related field trips to museums and observatories.

8 **Share your success.** Everyone has a favorite mathematics lesson or research project. Why not write an article describing the lesson for a professional journal like *TCM?* You may also want to consider sharing your ideas with *TCM*'s "From the Classroom" department or contributing solutions to the problem posed in the "Problem Solvers" department found in every issue.

9 **Take a leadership role in mathematics.** Start a professional reading group to discuss mathematics teaching and learning. Involving beginning teachers in a mathematics-related reading group would help everyone involved grow as a teacher. You may want to consider reading the book *Empowering the Beginning Teacher of Mathematics: Elementary.* Also be sure that your principal has a copy of the *Administrator's Guide: How to Support and Improve Mathematics Education in Your School.*

10 **Become an advocate for mathematics.** Celebrate the mathematics learning that is taking place in your school by sharing your experiences with the local newspaper as well as school board members, the superintendent, and city and state officials. Letting others know about your school may result in a tremendous boost to your school's mathematics program.

As you dive into the waters of a new school year, we wish you great success as you provide many mathematics opportunities that will help your students move forward. Throughout the year, your swim will certainly create many new adventures that you will be able to share with your students. When a special lesson or activity takes place, remember that you can share it through "Readers' Exchange" or through an article that you write. Contact us at *Teaching Children Mathematics*, 1906 Association Dr., Reston, VA 20191-1502; or send a message to tcm@nctm.org. *TCM* is a great resource for teaching, learning, and sharing. ▲