



K-8 Mathematics Education **A Resource Guide** **for Parents**

Tips, Activities &
Internet Resources



Introduction

Parents have many opportunities every day to help their children develop and refine their mathematics skills. Like reading, mathematics is a subject that is necessary for functioning adequately in society. Helping children enjoy mathematics along with nurturing their confidence to apply their mathematical knowledge to solve real-life problems, is a challenge facing every parent today.

This short booklet is designed to help parents develop their children's abilities to do mathematics, while at the same time cultivating a more positive attitude toward mathematics.

Each grade level contains "Tips and Activities" developed by the Ohio Department of Education. They are fun, helpful, and easy to use with children.

There are also websites listed to help children do mathematics in a fun, non-threatening way. These sites have been carefully selected and checked for ease of use and appropriateness for each grade level. They are all free of charge, require no log-in information and at the time of this printing, did not contain any inappropriate advertising.

The SMART Consortium encourages all parents to participate in their children's learning process and especially to encourage a positive attitude toward the study and learning of mathematics.

For more on helping your child learn mathematics visit www.figurethis.org

Kindergarten Tips and Activities for Parents

- Play number games and do mathematics activities with your child. When you empty a grocery bag, count the number of items or the number of apples in a bag. Count the number of steps from the door to a chair. Ask your child to find 5 triangles and rectangles on signs and everyday objects.
- Ask your child questions like "Which object is bigger or smaller?" "Which person is taller or shorter?" "Which object is heavier?"
- Put things into groups. For example, when sorting laundry have your child put all the socks in one pile, all the shirts in one pile and all the pants in another pile. Sort and count the socks by color. For example, 4 red socks, 10 blue socks and 8 white socks.
- When taking a walk or while shopping, ask your child to point to objects that are the same shape, ones that are shaped like a cone or ones that are shaped like a square.
- Draw circles on paper. Write a numeral in each circle. Have your child place that number of small objects such as crayons or candies in each circle.
- Using a small glass, trace circles onto colored construction paper, cut them out and ask your child to tape them on other circles in the house (e.g., plates, doorknobs). Do the same with rectangles, triangles and squares.



Internet Resources for Kindergarten Students

Kindergarten Math Websites Math - This website provides math practice for the kindergarten students including addition facts - an introduction and practice - number train, counting sets and subtraction.

<http://www.montgomeryschoolsmd.org/schools/takomaparkes/TPES%20BF%20Website/Kindergarten%20Websites.htm>

Parents can help to create virtual learning environments that engage students and help them visualize relationships and applications.

www.wellesley.mec.edu/wes/pages/curriculum/Kcurr/KMath.htm

The contents of this website are intended to be used for the enhancement of instruction only and are especially helpful for parents who wish to help their young child with mathematics.

<http://www.picadome.fcps.net/lab/interactive/kindergarten.htm>

This site contains a large number of interactive mathematics activities and resources for the kindergarten students.

www.pitt.edu/~poole/kindergarten.html

Math for Kids in Kindergarten, 1st Grade, 2nd Grade

www.kids.aol.com/homework-help/junior/math

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

Grade One Tips and Activities for Parents

- Count by 2s (2, 4, 6...) or 5s (5, 10, 15...) with your child. Use a calendar to show the patterns of counting by 2s, 5s and 10s. Circle the numbers counting by 2s. Circle the numbers counting by 5s. Circle the numbers counting by 10s.
- Put small objects or candies in plastic eggs or other containers. Have your child sort objects by colors and size if appropriate. Then count how many there are of each set. Ask your child to open any two and find the sum or difference of the number of objects in the two containers.
- Ask your child to divide a slice of cheese or a sheet of paper into halves or fourths. Use a group of 12 pretzel sticks to represent halves, thirds and fourths by forming groups of equal size.
- Make a “clock” using a paper plate and “hands” cut from paper. Have your child move the hands on the clock to show and tell the time for getting up in the morning, lunchtime and other similar timeframes.
- Cut cents off coupons out of the newspaper. Ask your child to show a combination of coins that matches the value of the coupon.
- Identify and compare the shape and characteristics of everyday objects. Make a book of shapes using pictures from magazines, newspapers or photographs.
- Arrange objects in order by size or events based on time and use ordinal numbers (e.g., first, second, third, fourth) to describe them.



Internet Resources for Grade One Students

First Grade Math Practice is a comprehensive, award-winning site that makes math practice a joy! www.ixl.com

Here are great sites for first grade students-*Numbertime* and some fun math games for practice. There are more math games and many worksheets from which to choose.

www.geocities.com/enchantedforest/tower/1217/math1.html

ToonUniversity.com is an elementary education portal for K-8 students. www.toonuniversity.com/aol/aol_math_k2.asp

This site contains 1st grade math games for enrichment including addition and a basic addition game - count bugs and worms to add; addition facts and a memory game. teach.fcps.net/trt2/links/1stmath.htm

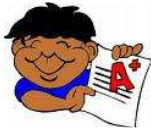
Fun interactive math games for kids. www.iknowthat.com

This is a great site for first graders to sharpen their math skills. Timed practice for addition, subtraction, multiplication and division. www.playkidsgames.com/mathGames.htm

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

Grade Two Tips and Activities for Parents

- Ask your child to use the numbers to find as many different results as possible. For example, use the cards in 2s or 3s to find sums and differences ($7 - 6 = 1$; $7 + 2 - 6 = 3$; $6 - 2 = 4$; $7 - 2 = 5$; $6 + 2 = 8$; $7 + 2 = 9$, etc.)
- Practice counting money and making change. For example, ask your child questions like: “I have some coins in my pockets that equal 90 cents. What combinations of coins could be in my pocket?” Practice writing the value of money using the cent sign (¢) and in decimal form using the dollar sign (\$).
- A grocery store is filled with geometric shapes. Ask your child to find an item that has circles for faces, an item shaped like a cone, or shapes that stack well and those that take up lots of space.
- Practice measuring things by using tools around the house. Set out a ruler, yardstick or scale and ask your child to measure or weigh something using the correct tool.
- Ask your child to draw a timeline that puts the events of his or her day in order.
- Cut out pictures from magazines of whole pieces of food such as whole sandwiches, pies and pizzas. Have your child cut the pictures to show halves, thirds and fourths.



Internet Resources for Grade Two Students

Math Facts can be a timed math facts drill or you can select practice mode without the timer. Elementary Math Grade 2 - 180 Days of Daily Math Questions.

www.internet4classrooms.com/skills_2nd.htm

Students can practice addition (numbers to 50) · addition (numbers to 100) · subtraction (numbers to 12) · subtraction (2 digit numbers) · multiplication (numbers to 12).

www.kidport.com/grade2/Math/MathIndex.htm

A comprehensive, award-winning site makes math practice a joy!

www.ixl.com

Games you can play online, interactive tutorials, fun math websites and more. ... Free Math Worksheets for Grade 3.

www.homeschoolmath.net/worksheets/grade

Free math worksheets to print for preschool through fifth grade and a great math site for parents. Three Digit Multiplication - multiplication drill sheet.

www.tlsbooks.com/mathworksheets.htm

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

Grade Three Tips and Activities for Parents

- Tell your child that you will be ready to go at 2:10 p.m. Have him or her show you or describe the position of the hands for the time on a dial clock. Have your child write down the time he or she started a chore or activity and the time he or she finished. Ask your child to determine the amount of time he or she needs to complete the chore.
- Create a set of cards to help your child practice basic multiplication and related division facts. For example, write a "fact" such as 5×7 on one card, draw matching arrays on other cards (5 rows of 7 circles on one, and 7 rows of 5 triangles on another).
- Have your child practice counting money and making change. Using prices in ads or catalogs, ask your child to show you different combinations of coins or bills equal to the price or the amount of change from a \$5 or \$10 bill. Count the change with your child.
- Use a trip to the grocery store to help your child try out estimation and measurement skills. Show your child the scale and explain the markings (pounds and ounces). Ask your child to estimate the weight of the produce and then weigh it for you. Have your child create a measurement journal to record these measurements and other kinds of measures.
- Ask your child to point out different kinds of angles — angles greater than 90° , less than 90° and exactly 90° — on everyday objects.



Internet Resources for Grade Three Students

This is a portal to thousands of free, online learning games and activities for Pre-School through Grade 6.

www.gamequarium.com

This site contains math games free for first grade, second grade & third grade elementary students. Math: Comparing Number Values · Math: Multiplication with 2 and 3.

www.toonuniversity.com/free/math-games-1st-3rd.asp

This site is the location of free interactive lessons, exercises and worksheets, educational games. Site provides K - 6 grade activities, printable math worksheets and activities.

fcit.usf.edu/math/websites/math35.html

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

Grade Four Tips and Activities for Parents

- Have your child search the newspaper ads for new car prices. Cut the prices out and arrange these numbers from least to greatest and vice versa. Tell your child to line the numbers up; then look to see what place the digits are in to determine how they should be arranged.
- Create a matching game that matches words for geometric shapes with pictures of the shapes. Ask your child to create the cards for the game.
- Understanding and using fractions are an important part of fourth grade. Have your child identify fractional parts of an object or group of objects. Help your child make a set of fraction cards.
- Engage in estimations with your child. Ask “How far do you think it is from here to the corner? The mall? School?” “How tall do you think that tree is?” When you go shopping, say “I can only spend \$25, so you try to estimate when we are close to the limit.”
- Show your child how to make hand shadows on a wall using a lamp or flashlight. Have your child cut a shape such as a square out of heavy paper. Ask your child to use the square to make a square-shaped shadow on the wall. What happens when your child holds the square at various angles? What other shapes can he or she make using the square?



Internet Resources for Grade Four Students

This site is sorted by grade level. Fourth graders can study basic math skills using unlimited interactive practice explanations and examples. The site also includes challenge games.
www.aaamath.com/grade4.html

This site contains grade 4 mouse lessons. Be sure you have a paper copy of the follow-up exercises. For some more great math games there many links provided on this site.
www.cemc2.math.uwaterloo.ca/mathfrog/english/kidz/Games4.shtml

There are many fourth grade activities on this fun brain site.
www.funbrain.com/cgi-bin/getskill.cgi

For students in the fourth grade who want to improve their mathematics skills - try these pages.
www.kidport.com/Grade4/Math/MathIndex.htm

Free 3rd grade and 4th grade worksheets and games for math, science and phonics including addition online practice, subtraction online practice and more.
www.softschools.com/grades/3and4.jsp

A site of third and fourth grade math games including Math Magician, Spacey Math Video Game for addition, subtraction, division, multiplication.
www.nksd.net/admin/isdata/Websites/thirdfourth.html

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

Grade Five Tips and Activities for Parents

- Have your child lift a variety of household objects and identify the best weight unit in both standard and metric systems. For example, a kitchen spoon would be measured in ounces or grams and a chair in pounds or kilograms.
- Ask your child questions requiring conversions that relate to things they see or experience on a regular basis. For example, “It is _____ miles to your school. How many feet (or yards) would that be? This bag of sugar weighs 80 ounces. How many pounds is that?”
- Together, make an appropriate graph of the color of cars and makes of cars in a parking lot or on your street. Try it several different times. Based on the data shown in your graph, make generalizations about what you might find if you continued your observations.
- Create problems such as “Bill ran 50 yards in 12 seconds. How many feet did he run per second?”
- Search through newspapers and magazines for lists, tables and graphs containing numerical information. Find specific information and ask your child to locate it. For example, ask “What percent of the students like pizza for lunch?”



Internet Resources for Grade Five Students

Math games to help your children learn math faster and retain their math knowledge through math games that increase the attention span.

www.toonuniversity.com/free/math-games-4th-6th_a.asp

This site provides a variety of grade 5 mathematics games. For more great math games, check out the links!

www.cemc.uwaterloo.ca/mathfrog/english/kidz/Games5.shtml

The Cyberchase contains great games that challenge in many concept areas. Check out the grade level challenges.

www.geocities.com/EnchantedForest/Tower/1217/math.html

Want to improve 5th grade mathematics skills? Try these pages.
www.kidport.com/Grade5/Math/Mathindex.htm

This site contains Fraction Frenzy Equivalent Fractions, Fraction Man Equivalent Fractions, Compare Three Comparing Fractions, decimals and percentages and more.

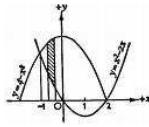
www.mtisd.org/lincoln_elementary/fifthgrademathgames.asp

Free 5th grade math worksheets and games for learning place value, roman numerals, measurements, percent calculations, algebra, and more. www.softschools.com/grades/5thgrade.jsp

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

Grade Six Tips and Activities for Parents

- Play tic-tac-toe, dots, checkers, board games, chess and increasingly complex card games with your child. All involve problem-solving and logic and all are based on mathematics.
- Ask “How could we figure out how tall our house is?” What about a local church or the school? Expect your child to come up with many suggestions for figuring out the height.
- Make up problems. For example: “It takes us 5 hours and 15 minutes to get to Aunt Ruth’s house if we average 55 miles per hour. How long would it take if we went 60 miles per hour? How about 50 or 45 miles per hour?”
- Take your child to the grocery store for comparison shopping. Ask questions such as “Are 3 oranges for \$.79 or a dozen oranges for \$3.19 the better buy?”
- Help your child find the sales tax rate for your city. Have your child select items from a sales ad in the newspaper or a catalog book. Use the sales tax rate to find the total cost of items to be purchased.



Internet Resources for Grade Six Students

Sorted by grade level, this site provides practice in basic math skills using unlimited interactive practice, explanations and examples, and challenge games. Hundreds of Pages ...
www.aaamath.com/grade6.htm

Elementary mathematics links for grades 4-6 mathematics practice, including Fill and Pour · The Fruit Game · Mastermind · Math Maven's Mysteries · Math Teaser Challenge. Number Sense ...
www.sowashco.k12.mn.us/virtualmedia/elementary/math/4-6math.htm

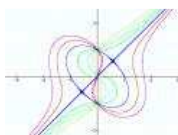
Interested in mathematics, check out these mathematics pages.
www.kidport.com/Grade6/Math/MathIndex.htm

An assortment of math brain activities - 25 Board Games to teach skills. www.k111.k12.il.us/King/math.htm

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

Grade Seven Tips and Activities for Parents

- Present a problem to your child such as finding the number of games to be played in a tournament with 60 teams. Have him or her come up with different strategies to solve the problem.
- Help your child find a simple architectural design and make drawings from different views.
- Find tables of salaries of possible careers for your child from newspapers, magazines and the Internet and have your child compare the data and draw conclusions.
- Play a game with your child using a number cube or cubes. Have your child predict who will win the game. Based on the prediction and playing of the game, have your child determine the fairness of the game and how to make the game fair.



Internet Resources for Grade Seven Students

A free website created for students and teachers that includes grade 7 games and lessons.

www.cemc.uwaterloo.ca/wired_math/english/grade7.shtml

Free math games for elementary school kids including grade six math games and grade seven math games

www.dr-mikes-math-games-for-kids.com/elementary-math-games.html

Mathematical Brain Teasers, Mathematical Problem Solving, Math Games, Math Help. ... Math Fact Cafe: Provides elementary grade math fact sheets

www.kidinfo.com/Mathematics/Mathematics.html

This is a site of interactive practice and estimation games sorted by grade level and math topic.

www.jc-schools.net/tutorials/interact-math.htm

Great site to practice solving equations

<http://www.321know.com/equ725x6.htm#section2>

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

Grade Eight Tips and Activities for Parents

- Have your child analyze past population trends for your city, predict what the population will be in 10 years and write convincing arguments based on the data.
- Have your child design a garden with various geometric shapes to fit in a given space, then build the garden.
- Calculate the amount of discount and sale price for items using advertisements, coupons and other special offers. For example, find the final cost or total amount of savings when buying a jacket on sale for 40% off the regular price of \$45. What would be the cost and savings using a coupon for an additional 20% off the sale price?
- Discuss the meaning of data and information presented in the media. For example, discuss the meaning of "median income." Identify different ways for selecting a sample for a survey and how each might influence the results (e.g., a survey about a favorite sport might be different for persons leaving a baseball game than for persons selected at random).



Internet Resources for Grade Eight Students

Wiredmath.ca is a free website created for students and teachers.

cemc3.math.uwaterloo.ca/wired_math/english/grade8.shtml

Sorted by grade level, this site provides the grade 8 student with an opportunity to practice basic math skills through unlimited interactive practice explanations and examples. It also includes challenge games. www.aaamath.com/grade8.html

If your interested in mathematics, check out these mathematics pages. www.kidport.com/Grade8/Math/MathIndex.htm

This site provides games and puzzles that require mathematics to solve.

www.awesomelibrary.org/Classroom/Mathematics/Middle-High_School_Math/Middle-High_School_Math.html

AAA Math features a comprehensive set of interactive arithmetic lessons form Kindergarten through the Eighth grade level.

www.aaamath.com/

Cool Math is a network of sites for teachers, students, and parents dedicated to the idea that math is FUN. Enter the KIDS portal for math games, fun lessons, and educational calculators.

<http://www.coolmath.com/>

Set Game gives students practice in attribute recognition – color, number, shading and shape. <http://2n1.org/applets/set/>

The SMART Consortium

Formed in 1998, the SMART Consortium represents the collective efforts of more than 50 public school districts in four northeast Ohio counties (Cuyahoga, Lake, Lorain, and Geauga) to foster continuous, dramatic improvement in K-12 science and mathematics teaching and learning.

At present, 55 northeast Ohio school districts are members of SMART. The K-12 population in these districts ranges from 620 to 68,000 students. Members include 3 large city, 9 urban, 34 suburban, 4 rural, and 2 joint vocational districts, as well as 3 Educational Service Centers. Minority students constitute approximately 40 percent of the Consortium's total student population.

SMART is a member-driven, member-governed organization that consists of school districts, educational service centers and private, civic, and government/public sector organizations. Its Management Council consists of the superintendents of SMART's member school districts, as well as representatives of partnering organizations and the regional business community. An Executive Committee directs the work of the consortium at the senior/policy level.

SMART's momentum derives from the strong commitment of its members to improving mathematics and science teaching and learning. SMART has developed a compelling vision and has adopted stretch goals, recommendations and implementation strategies that will enable K-12 public schools to continue to improve mathematics and science teaching and learning in a consistent, sustained, stable manner. Through SMART, school districts can leverage the risks inherent in systemic change while maximizing the results.

The SMART Consortium

Executive Committee Members

Marty Motsco, Superintendent, Bedford City Schools
Harry Eastridge, Superintendent, Cuyahoga County ESC
Joffrey Jones, Superintendent, Euclid City Schools
Linda Williams, Superintendent, Lake County ESC
David Estrop, Superintendent, Lakewood City Schools
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