Support at Home: Questions to Ask Your Child

The first step for providing math support is to ask your child questions. Questions help your child reflect upon what they already know and scaffold your child's thinking. Remember, do not take over your child's thinking and allow your child to hold onto that pencil!!!

1. What do you notice about this problem?
2. What sense can you make of this?
3. What part do you understand?
4. What do you know for sure?
5. What are you wondering about?
6. If you did know, what might you say?
7. What made you think of that?
8. What patterns are you noticing?
9. Tell me more about what you are thinking…
10. How might you describe the problem in your own words?
11. Can you draw me a picture of your thinking?
12. How does your thinking match the picture you drew?
13. How is your thinking related to what you see here?
14. How else might you solve this problem?
15. Does your method/strategy always work? Why? Why not?
16. What happens if we…?
17. What do these solutions have in common?
18. What predictions can you make?
19. Explain your strategy…
20. How do you know your answer is correct?

Adapted from: Garner, B. K. (2007). *10 Guiding Questions; and Promoting Mathematical Thinking and Discussions with Effective Questioning Strategies.*

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Math Websites for Students

ICT Games http://www.ictgames.com
A free website that supports early elementary math concepts.

SET Enterprises INC. www.setgame.com
Award winning math games of fun, perception and challenge.

Math Playground http://www.mathplayground.com
K-12 students engage in problem solving, creative thinking, and logical reasoning to solve mazes, logic puzzles, brain teasers, word problems, and connect art to math.

ABCYa www.abcya.com
Presents online computer games for kids in K-5 sorted by grade level. Games incorporate areas such as math and language arts while introducing basic computer skills.

Visual Fractions http://www.visualfractions.com/
This interactive World Wide Web (WWW) site aims to reduce fraction anxiety in adults and students by helping the user visualize fractions with accompanying operations.

Pattern Blocks: Exploring Fractions http://math.rice.edu/~lanius/Patterns/
The learner can experiment with fractional parts of a whole with online pattern blocks. Pattern blocks - either virtual or real--can be used in conjunction with activities from No Matter What Shape Your Fractions Are In

A Math Dictionary for Kids http://www.amathsdictionaryforkids.com/
Children can access an animated and interactive online dictionary. It explains over 600 math vocabulary words in simple language. This site includes definitions, examples, activities, practice and calculators.

Educational Games for Kids https://www.education.com/games/
Free on-line math and literacy games once you register. Games include counting, time, money, operations, graphing, etc.

Websites for Parents

The **NCES Kids' Zone** https://nces.ed.gov/nceskids/
Provides information to help you learn about schools; decide on a college; find a public library; engage in several games, quizzes, and skill building activities related to the word of the day, probability, graphing, and problem solving. You can learn many interesting facts about education.

Figure This! Family Corner and Math Challenges for Families http://www.figurethis.org
Based upon work supported by the National Science Foundation, this site supports parents in helping their child get the most out of math. Specific information is given about families and school, families and math, homework, math and literature connections, etc...

The Child Development Tracker www.pbs.org/parents/childdevelopment
Offers a detailed snapshot of children ages 1-8 in eight developmental domains, including mathematics.

Parent Actions to Support Children's Development of Mathematical Reasoning, Number Sense, and Computational Fluency

by Carrie Zielinski

You may have asked your child's teacher at one time or another, "What can I do at home to help my child learn mathematics?" Helping your child with school subjects is a natural desire many parents have. Likewise, your child may have asked you for help with his/her math homework. Yet, you may be unsure how best to support your child's learning and his/her completion of homework.

J. Michael Shaughnessy, past president of National Council of Teachers of Mathematics, advises parents of three important action steps. The first action step is to acknowledge that mathematics is a vital part of everyday life and that everyone can do math! It's important to realize that understanding math is not inherited (Boaler, 2016) and there is no such thing as a math gene. In fact, it does more harm when parents share with their child, "I was never good at math" or "You've got my math gene!" or "It's alright that you are not good at math". These statements undermine students' self-confidence and learning. Understanding and applying mathematical concepts takes time, sense-making, effort, perseverance, practice, and a "growth mindset".

The second action step is to work as a team with your child. Children often know more than you think they do (Shaughnessy, 2010). Instead of showing your child how to solve a problem, patiently ask your child questions. As examples, ask, "Tell me what you already know about this problem."; "What do you know for sure?"; "What sense are you making of this?"; "What might this problem remind you of?"; "What if we looked at an easier problem first?" Waiting patiently for your child to make sense of the problem and talking through his/her existing knowledge, often supports your child solving the problem by him or herself. Furthermore, as you listen attentively, you will gain further insights for how best to support your child without taking over your child's thinking.

The third action step is to ask your child's teacher for assistance when needed. Teachers appreciate parents supporting their children in productive ways. One way parents can greatly support children's learning of mathematics is by playing games that develop their mathematical reasoning, problem solving, and strategy acquisition. As parents play games with their children, students are better equipped for learning in general and better prepared for learning mathematics (Sharma, 2008).

The games provided in Table 1 support children's development of critical thinking skills, their abilities to communicate ideas, and their understanding of mathematical concepts. Thinking skills include visualization, visual memory, spatial orientation, pattern recognition, sequencing, classification, comparison, and logical reasoning and deduction. Mathematical concepts include number recognition, one-to-one correspondence, basic facts, estimation, counting, graphing, etc. This list of games and activities is not exhaustive and more can be added at each grade level. In fact, depending upon the mathematical development of your child, some games and activities are appropriate across grade levels. Most importantly, *enjoy* this time with your child!

Table 1

Grade	Activities	Board Games	Card Games
K	Number Books Number Songs Floor Puzzles Dominos	Hi-Ho, Cherry Oh! Candy Land Chutes and Ladders	Sort cards by color, number, or suit Memory Match Go Fish! Compare Blink
1	Number Books Number Songs Floor Puzzles Cootie Dominos	Chutes and Ladders Trouble	Tens, Go Fish! Compare Blink War Addition War
2	Books Puzzles Tangram Puzzles Tri-ominos Dominos	Yahtzee Tri-ominos Checkers Blokus Mankalah Score Four	Twenty, Go Fish! SET Junior Blink Subtraction War
3	Books Puzzles Tangram Puzzles Scramble Squares Tri-ominos	Yahtzee Checkers Blokus Score Four Mankalah Cribbage	SET SkipBo Multiplication War
4	Books Puzzles Tangram Puzzles Scramble Squares Tri-ominos	Checkers Blokus Score Four Othello Quarto Chess Mankalah Cribbage	SET SkipBo Multiplication War 24 Game
5 +	Books Puzzles Scramble Squares Ken Ken Sudoku	Checkers Blokus Score Four Othello Chess The Pig Party Battleship Cribbage	SET SkipBo Rook 24 Game

Boaler, J. (2016). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching.* San Francisco, CA: Jossey-Bass.

Sharma, M. (2008/2012). *Games and their uses in mathematics learning*. Framingham, MA: CT/LM.

Shaughnessy, M. J. (2010) *Support for parents and families: Helping your math students*. Reston, VA: National Council of Teachers of Mathematics.

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