

Everyday Math Thinking Tools

For parents of students in the primary grades

What is a math thinking tool?

Think of a math thinking tool as a concrete object that your child can use to explain her math thinking.

What does the curriculum say?

“Manipulatives [thinking tools] are necessary tools for supporting the effective learning of mathematics by all students”. (The Ontario Curriculum: Mathematics; 2005; p. 25).

The tools teachers use

Teachers use thinking tools in classrooms all the time to help students explain and develop their mathematical thinking. Here are some examples of tools you might hear your child talk about or work on in their homework.

- ❖ base ten blocks
- ❖ pattern blocks
- ❖ geoboards
- ❖ spinners
- ❖ geometric solids

Here are some tools that teachers use that you can easily buy/print

- ❖ graph paper
- ❖ calculators
- ❖ cloak face
- ❖ money
- ❖ hundreds chart
- ❖ ruler

Base 10 Blocks

Solve these problems using Base 10 Blocks

a) $38 + 13$

b) $56 + 26$

If you are unfamiliar with a tool such as a base 10 blocks, don't hesitate to ask your child to explain it. Having your child *communicate* her understanding of the tool and how it is used is the best way to reinforce learning!

Why use a thinking tool?

Thinking tools

- ❖ give a visual and concrete representation of abstract ideas
- ❖ provide a way for your child to explain her/his thinking
- ❖ help your child to develop better understanding of abstract mathematical concepts
- ❖ allow your child to actively engage in their school work
- ❖ may make math more fun and meaningful

How to use a thinking tool

DO provide many different and variety of tools (example – blocks, toothpicks, Popsicle sticks, dices)

DO make it readily available and accessible in your child’s study space

DO encourage your child to verbally communicate how they used the tools to come up with the answers (example: Ask what they did)

DO explain and point out the connection between their manipulation and the abstract ideas (example: see, you used two red blocks, and two blue blocks, and counted four altogether, that’s the same thing as saying $2+2 = 4$)

*Some ideas for the DO list derived from:
www.oise.utoronto.ca/aphd/UserFiles/File/Manip.doc*

DO provide opportunities for your child to see and do math around the house (think back to some of the ideas presented in the workshop: cooking together, decorating, grocery shopping etc.)

DO read math books

- ❖ Polly’s Pen Pal by Stuart J. Murphy
- ❖ Perimeter, Area and Volume by David Adler
- ❖ Fractions by Joseph Midthun
- ❖ The best of times by Greg Tang
- ❖ You can, Toucan, Math by David A. Adler

Your library is a GREAT resource!

Toys and board games

Primary school aged children are still entertained by toys and board games. So why not invest in some toys that will help them practice math at home? Don’t be fooled by fancy video and high-tech toys claiming to be educational. Here are some toys and board games worth investing in:

- ❖ blocks
- ❖ snake and ladders
- ❖ monopoly

GREAT IDEA: sit together and play games. It is a great way to spend some quality time with your child while enhancing her/his skills in mathematics!

*Tip sheet prepared by and workshop presented
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