



HELPING  
YOUR CHILDREN  
LEARN AND ENJOY  
MATHEMATICS

## BUILDING A MATH TOOL-KIT

**W**hen elementary and middle school students work on math, they sometimes need a little help getting organized. Math requires a few basic tools, and it can be frustrating when children are doing math homework and those tools aren't readily available.

You can encourage and support math learning at home by building a “math tool-kit” with your child. A tool-kit is a collection of just about every tool your child will need for math homework—all contained in a handy box.

To create the tool-kit, you'll want to find or purchase the following list

of supplies. All of these items can be purchased cheaply at discount or drug stores.



Photo by Ross Hause

- **A CARDBOARD OR PLASTIC BOX THAT CLOSSES.** A box about a foot long will hold all the tool-kit items.
- **A COUPLE OF SHARPENED PENCILS**—one never seems to be enough.
- **SMALL PLASTIC PENCIL-SHARPENER.** It's amazing how long it can take to find a sharpener if there's not one in the box.

- **ONE LARGE PINK ERASER.** In math, mistakes are part of the learning process and the small eraser on the end of a pencil just doesn't last long enough.

- **SMALL PAD OF SCRATCH PAPER.** This is helpful for figuring things out and writing down calculations that don't need to go on your child's homework paper.
- **PLASTIC OR WOODEN RULER.** Make sure to get one that's marked in *both* inches and centimeters.
- **PAIR OF SCISSORS.** The ones with plastic handles and metal blades are best.

- **GLUE STICK.** You'll be surprised how often your child uses this for math projects.
- **COMPASS FOR DRAWING CIRCLES.** Get the kind that holds a real pencil. This tool is used by students in grades 4 to 8.
- **PLASTIC OR METAL PROTRACTOR** for measuring angles. This tool is also used by grade 4-8 students.
- **ABOUT 20 "COUNTERS" FOR SOLVING PROBLEMS.** Counters can be buttons, pennies, lima beans, or any other small objects.
- **SOLAR-POWERED POCKET CALCULATOR** (no batteries needed) that adds, subtracts, multiplies, and divides. This is helpful for checking work and doing complex calculations. Your child will probably begin using a calculator in fourth grade.

The math tool-kit will be more meaningful if you enlist your child's help finding the tools on a "math shopping trip." Once home, your son or daughter can make the tool-kit their own by decorating it with stickers and cut-out pictures.

By the way, another great idea is to suggest that your child occasionally use the math tool-kit *just for fun* to draw a math picture or write a math story—even when there's no assigned homework.

## PICKING THE BEST MATH TOOL

Part of being "good" at math is choosing the right math tool for the job. What would be the best math tool (estimation, mental math, calculator, or pencil and paper) to solve each of these math problems?

1.  $3256.98 \div 78$ 

<input type="checkbox"/> Estimation	<input type="checkbox"/> Mental math
<input type="checkbox"/> Calculator	<input type="checkbox"/> Paper and pencil
2.  $500 \times 30$ 

<input type="checkbox"/> Estimation	<input type="checkbox"/> Mental math
<input type="checkbox"/> Calculator	<input type="checkbox"/> Paper and pencil
3. Which is closer to 1,000?  
 $398 + 607$  or  $292 + 655$ 

<input type="checkbox"/> Estimation	<input type="checkbox"/> Mental math
<input type="checkbox"/> Calculator	<input type="checkbox"/> Paper and pencil
4.  $312 \times 7$ 

<input type="checkbox"/> Estimation	<input type="checkbox"/> Mental math
<input type="checkbox"/> Calculator	<input type="checkbox"/> Paper and pencil

*Answers:*

1. A calculator is often the best tool for a complex division problem such as this, although upper grade students should be able to find the correct answer using paper and pencil.
2. Whenever a problem can be done quickly in your head, there should be no need for a calculator or pencil and paper. In this problem, basic knowledge of multiplication is all that's needed, so mental math is a good tool.
3. Since an exact calculation of these addition problems isn't required, this problem can be done using estimation. By "rounding off" the numbers, it's easy to tell that  $398 + 607$  is closer to 1,000.
4. For most people, pencil and paper is probably the best tool for this problem. The multiplication is not so difficult that a calculator is needed to get a correct answer quickly. Mental math would probably not be successful since most people can't hold this many numbers in their head. Finally, because an exact answer is required, estimation would not be appropriate.