# *What are "mental mathematics"?*

The new math curriculum expects a student to be able to do lots of math in his head, or use "mental mathematics". As adults, we do a lot of math in our heads! Most people estimate in their heads at the grocery store, fast food restaurants or department stores. Very few of us take out a pencil and paper to solve problems we might have. We are able to do this because of *many years of practice* doing mental math in real life situations.

In your child's classroom, students will be encouraged to find ways to use mental math when solving problems. For example, a teacher might pose the following problem:

***I had some coins in my pocket that made 39¢. Fourteen cents fell out. How much money do I have left in my pocket?***

Students will be encouraged to find a way to solve it in their head that makes sense to them! Following are 3 possible strategies that students might use:

| | | |
|---|---|---|
| ***I know that 39¢ take away 4¢ is 35¢. 35¢ take away 10¢ is 25¢.*** | ***I know that 39¢ can be made up with a quarter, a dime, and four pennies. A dime and four pennies is 14¢. So, 39¢ minus 14¢ is a quarter or 25¢.*** | ***I know that 39¢ is close to 40¢. 40¢ take away 10¢ is 30¢. Take away 4¢ more and that's 26¢. Now take off the 1¢ that made 40¢.*** |

All of these ways came up with the right answer, but they've done it different ways… in their head! Having students talk about how they think about numbers in their head will allow them to find ways that make sense for them.

Calculators and computers are only useful when people know two things: (1) what information must be entered, and (2) if they know the answer *is reasonable*. Usually people look at the answer to determine if it makes sense; this is one reason why students should do "mental mathematics" in their heads.

**How might I support my child with "mental mathematics"?**

- Help your child do mental mathematics with small numbers. It is most important to praise children for being accurate with their answer. As they improve, praise them for being quick to answer. Questions might be like: *If I have 4 cups, and I need 7, how many more do I need?* or *If we need to take 12 drinks for the class, how many packages of 3 drinks will we need to buy?*
- Ask often, "Is your answer reasonable?" Ask questions such as, "Is it reasonable that I added 17 and 35 and got 367? Why? Why not?"
- Allow your child to use strategies that make sense to them.
- Talk to your child about when you use estimates and when you work out the exact answer.

| Alberta Education Implementation Schedule | 2008-2009 | 2009-2010 | 2010-2011 |
|---|---|---|---|
| **Provincial** | **Grades K, 1, 4, 7** | **Grades 2, 5, 8** | **Grades 3, 6, 9, 10** |
| Optional | Grades 2, 5, 8 | Grades 3, 6, 9 | |

This newsletter article is produced by the Alberta Regional Professional Development Consortia as a result of a grant from Alberta Education to support implementation of mathematics.