What are personal strategies and formal algorithms?

The revised Mathematics Kindergarten to Grade 9 Program of Studies calls attention to the use of personal strategies. Personal strategies can be explained as meaningful steps students take to solve a problem. When we learned to solve computation problems most of us learned to solve them through formal algorithms, or step-by-step procedures. We did not always understand why we did each step or why we did the steps in a specific order. The program of studies emphasizes students understanding concepts they learn, not simply memorizing procedures or facts.

The revised Mathematics Kindergarten to Grade 9 Program of Studies states, “Students need to explore problem-solving situations in order to develop personal strategies and become mathematically literate. They must realize that it is acceptable to solve problems in a variety of ways and that a variety of solutions may be acceptable.” In classrooms, this will be seen when students individually share how they solved a problem, when students work together to try to solve a problem, or when groups share their strategies with the whole class. For example, students may be working on the problem 645 + 230.

Here are some solution methods:

645 + 230 = ?

645 + 200 = 845
845 + 30 = 875

645 + 230 = 875

645 + 230 = ?

600 + 200 = 800
40 + 30 = 70
5 + 0 = 5
800 + 70 + 5 = 875

645 + 230 = 875

645 + 230 = ?

645
+230
875

645 + 230 = 875

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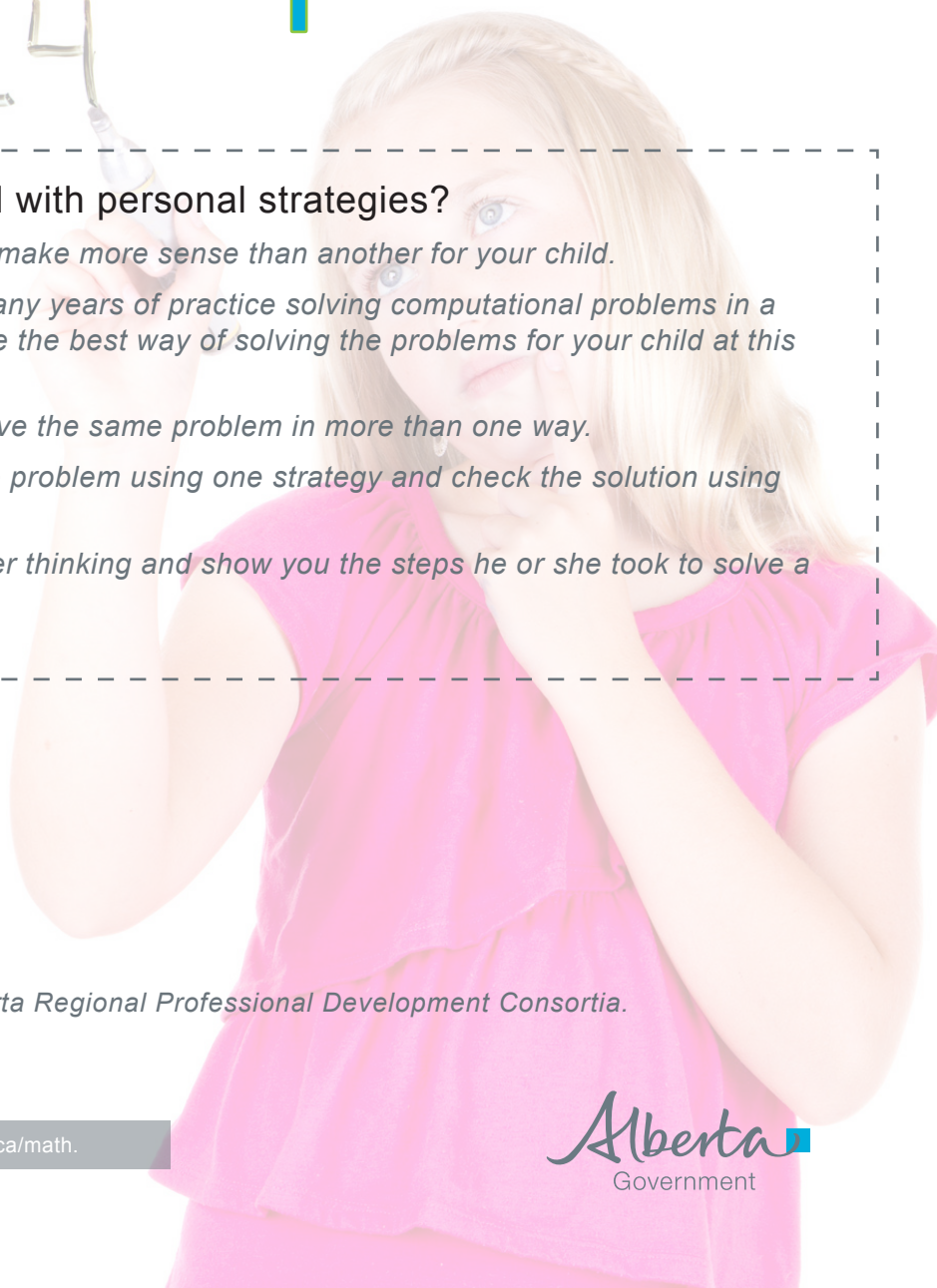
When students bring work home that involves solving problems, it is okay for you to share how you can solve the problem. Recognize, though, that your child may not solve the same problem exactly as you do! Be accepting of other methods your child may use and emphasize that the way you solve a problem is one way of solving it, not the only way.

Recognize that your child may not solve the same problem exactly as you do!

How might I support my child with personal strategies?

- *Recognize that one method may make more sense than another for your child.*
- *Understand that you have had many years of practice solving computational problems in a particular way but that may not be the best way of solving the problems for your child at this time.*
- *Encourage your child to try to solve the same problem in more than one way.*
- *Encourage your child to solve the problem using one strategy and check the solution using another strategy.*
- *Ask your child to explain his or her thinking and show you the steps he or she took to solve a problem.*



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