

Problem Solving ~ Information for Parents

Problem Solving, What & Why?

One of the main reasons for studying mathematics is to develop the ability to solve problems. Problem solving is the process of applying what we already know to new and unfamiliar situations. This ability is not only critical to our children's future needs, but also to a productive society and even human progress itself. In these early years, children develop attitudes and beliefs as to their ability to learn mathematics. By learning mathematics through problem solving, children can make sense of why they need to know their basic facts.

How Can Parents Help?

- **Be enthusiastic.** Let your child see how excited you are about solving a problem.
- **Provide time and talk about problem solving.** Be patient with your child. Let them work at their own pace. Talk, talk, talk! Talk about options, strategies and ideas for problem solving.
- **Reinforce risk taking.** Children need a great deal of security to risk being wrong. When they begin to realize that they can learn from their mistakes, they will try harder to complete the problem.
- **Reward perseverance.** Instant success is not always possible in learning mathematics. Encourage children to keep trying by asking them questions that will lead them in the right direction.
- **Use children's experiences.** As often as possible, base problems on children's everyday experiences at school and at home.

The best way for your children to become good problem solvers is for them to solve problems, lots of problems! Also, it benefits children to think about how they solved the problem afterwards. In this way they may use their particular strategy to solve similar problems in the future. There are no best ways of solving a problem. We are interested in what makes sense to each individual.

Here are some strategies to try with your child:

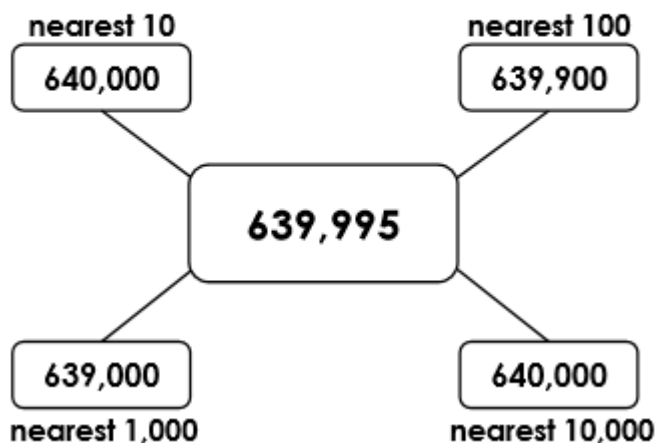
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| ~ act it out | ~ use objects or models |
| ~ make a drawing | ~ make a graph or chart |
| ~ make a list | ~ guess and check |
| ~ sort and order items | ~ look for a pattern |
| ~ look for all possibilities | ~ solve a simpler problem |
| ~ choose an operation | ~ think logically, use what you know |

Here is how we tackle problem solving in the classroom:

1. **Think.** Make sure that you know what the problem is all about. Do you understand all the vocabulary? Do you know what information is given? Is anything missing? Can you restate the problem in your own words? Do you understand exactly what you are asked to do or to find out?
2. **Plan.** Think of some strategies to try, that might help you find the answer.
3. **Do.** Try to solve the problem using the strategy from your plan. If your plan doesn't work try again with another strategy.
4. **Look back.** Think about and talk about how you solved the problem. Can you think of another way that you could have solved the problem?
5. **Communicate.** Explain your work clearly, using words, pictures and numbers. Explain the thinking and processes that you used to solve the problem.

Some example problem solving questions:

9b. Spot the errors. Do they all round to the same number? Prove it.



6. Emma goes out for a walk each day. On Monday she walked 1,679 steps. When she got up on Friday she had already walked 4,985 steps.

Her brother George says,



You could have walked 1,102 steps on Tuesday, Wednesday and Thursday.

Is George correct? Explain why.