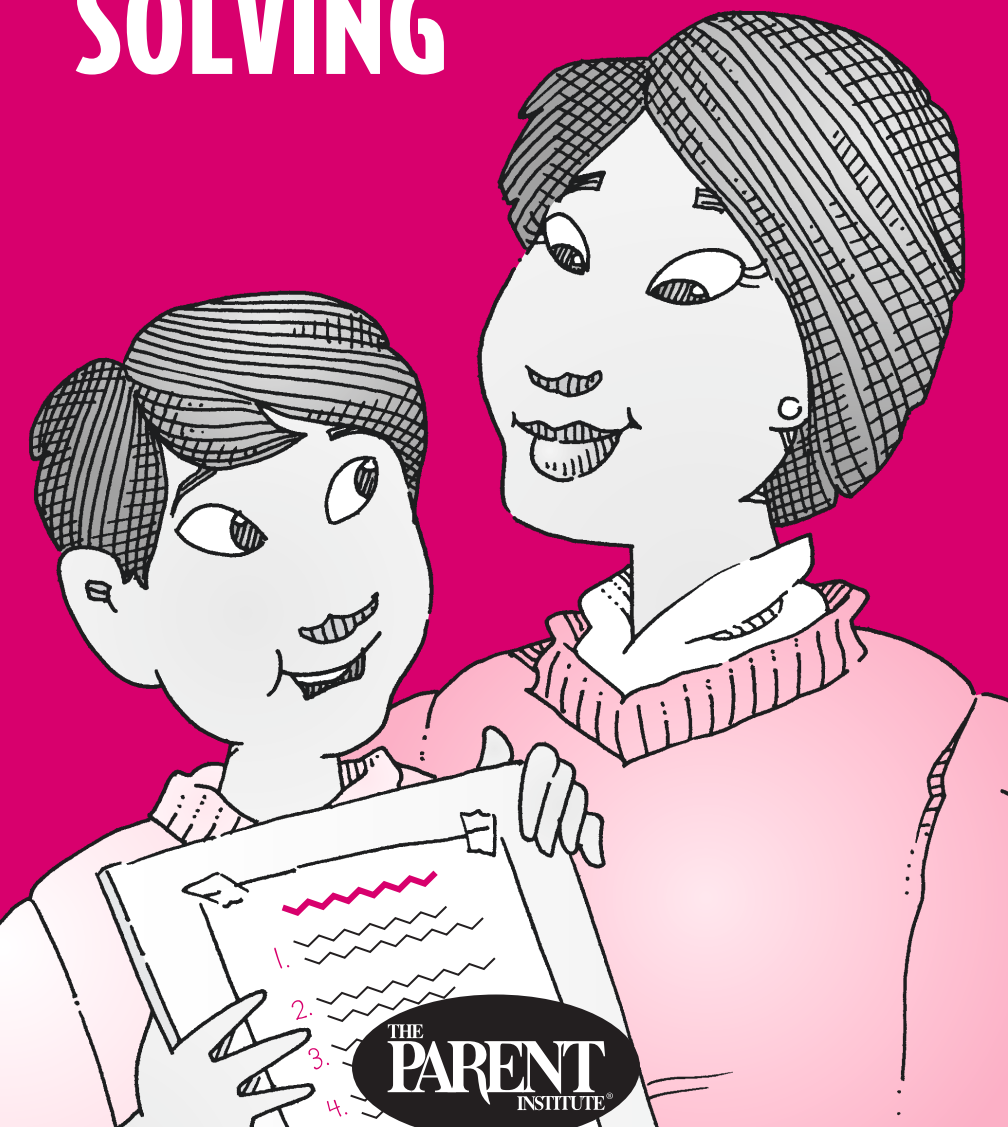


Skills *for* School Success

Ways Parents Can  
Help Their Children  
Do Better in School

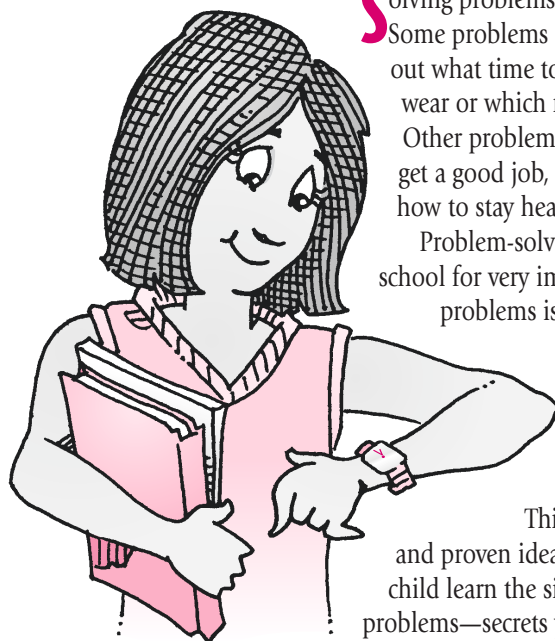
# PROBLEM SOLVING



THE  
**PARENT**  
INSTITUTE®

One of a Series of Booklets for Parents

# Solving Problems is an Important Way to Learn



**S**olving problems is part of everyday life. Some problems are simple—like figuring out what time to leave for school, what to wear or which radio station to listen to. Other problems are tougher—like how to get a good job, how to pay the rent or how to stay healthy.

Problem-solving skills are stressed in school for very important reasons. Solving problems is an effective tool for academic success.

Students also need to know how to solve the problems they will face in everyday life.

This booklet suggests practical and proven ideas you can use to help your child learn the simple secrets of solving problems—secrets your child can put to use every day at home and at school.



*Every child is unique, so we often use the singular pronoun. We'll alternate using "he/him" and "she/her" throughout this booklet.*

# You Can Help Build Your Child's Problem-Solving Skills

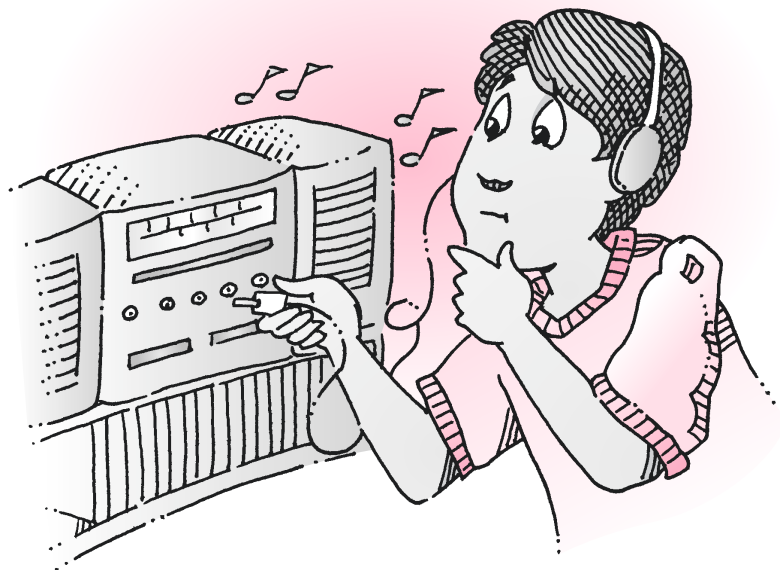
*"It's not that I'm so smart. It's just that I stay with problems longer."*

— Albert Einstein.

**Y**our child may not be the next Einstein. But learning how to solve problems will help train his brain for almost anything.

How do children learn problem-solving skills? Experts say that, like most other skills, the best way to learn is to practice, practice, practice! And one of the best places to practice problem-solving is right at home.

Best of all, the more your child practices solving the problems around him, the more confidence he will gain and the greater success he will have. With your help, problem solving can also be great fun!



# Help Your Child Practice Solving Everyday Problems

**P**roblems don't have to be monumental (like how to achieve world peace) to be effective. Start by helping your child practice solving common everyday problems at home. For example, ask your child:

- **What should we buy** at the grocery store today so that we stay within our budget?
- **How can we get everything** on our dinner menu ready to serve at the same time?
- **What's a fair way** to make family rules about bedtime?
- **How can you be sure** you have everything you need for school before you leave home each day?

|       | M | T | W | Th | F | Sa | Su |
|-------|---|---|---|----|---|----|----|
| Ellie | ~ |   | ~ |    | ~ |    | ~  |
| Sam   | ~ |   |   | ~  |   | ~  |    |
| Mom   | ~ | ~ | ~ | ~  | ~ | ~  | ~  |
| Dad   | ~ | ~ | ~ | ~  | ~ | ~  | ~  |

- **How can we distribute** household chores fairly among members of the family?
- **What can we do as a family** this weekend—that everyone will enjoy?
- **How can you make sure** your room is cleaned each week—and still have time to play with friends?
- **How can we develop rules** for going to friends' parties that we all agree upon?

For more practice, ask your child to help you think of more everyday problems to solve.

## Start With a Positive Attitude

**T**he fascinating thing about problems is that they are really opportunities in disguise. Nearly every advance in science, almost all inventions and most great ideas were the results of problems people were trying to solve.

Studies show that successful people never use the word “failure.” They may talk about a “glitch” or a “snag.” When an idea doesn’t work out, they try to learn something from the experience.

In schoolwork, after working on a problem and finally solving it, students usually find that they have learned something. And similar problems will be easier to solve in the future.

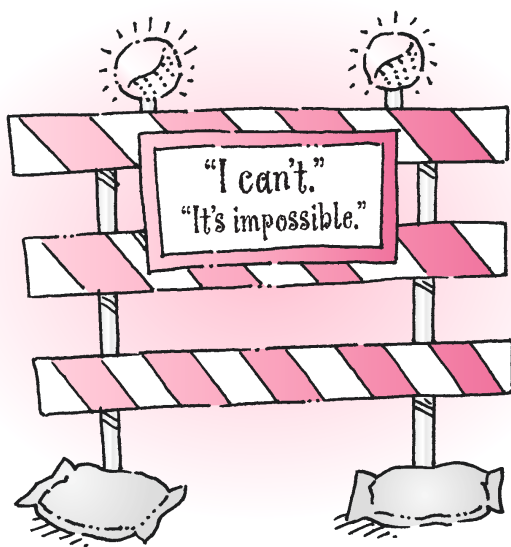
You can teach this “success mind-set” right at home. As a parent, your attitude is influential. Help your child understand that problems include learning opportunities. Teach her to find something positive in every problem that comes along.



## Encourage Positive Self-Talk

**T**alking to herself can help your child maintain the healthy, positive attitude she needs to solve problems. Help her say things like:

- I am making progress.
- I can do it.
- If I don't get it right the first time, I'm going to keep trying until I do.



## Watch Out for Roadblocks

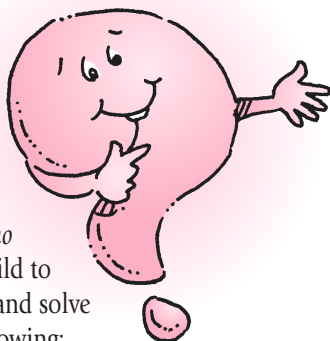
**H**elp your child avoid the following problem-solving roadblocks:

- **An "I can't" attitude.** If your child says, "It's impossible," it probably will be. Help him develop an "I can" attitude.
- **Fear of failure.** If your child is afraid of failing, he may become too scared to try. Tell him it's okay and normal if he doesn't succeed on the first try. Success comes after lots of tries.
- **Thinking there's only one way** to do it. Usually, there is more than one way to tackle homework assignments and solve problems.
- **Stopping too soon.** The first idea isn't always the best. Effective solutions take time and thought.
- **Tackling too much at once.** Some problems are quite complex. They need to be broken down into manageable chunks.

# Teach Your Child to Ask Good Questions

**T**o learn to solve problems, students must learn to ask good questions. This is another area where you can help.

As your child considers a problem, ask her open-ended questions—questions that require more than *yes* or *no* answers. The ultimate goal is for your child to ask questions that will help her analyze and solve problems. Suggest questions like the following:



- **Exactly what** is the problem?
- **Where should I start** to begin solving this problem?
- **What conditions** must the solution meet?
- **Can the problem** be divided into parts that can be solved separately?
- **Does one part** of the problem have to be solved before other parts can be solved?
- **Can I estimate** what the answer will be?
- **What are the pros and cons** of each possible solution?
- **What have I learned** from similar problems in the past?
- **How have similar problems** been solved?
- **What information** and other resources do I need to solve this problem?
- **How should I approach** this problem? Is there a process I can use?
- **Is there a time limit** for solving this problem?

Asking these questions can help your child begin the problem-solving process. Sometimes the right question makes the solution clear.

# Try Solving Problems in Steps

**T**here are a number of organized ways to solve problems. Here's a successful step-by-step process. Try it. It really works.

## Step 1: Decide what the problem is

Too often, people are in a hurry to solve problems. They want to find solutions right away. In their haste, they often solve the wrong problem.

Slow down. Make sure your child understands the problem. Have him summarize it in just a few words.

## Step 2: Generate possible solutions

Ask, "What are some ways to solve this problem?" Then have your child brainstorm some answers. Check the tips for brainstorming below.

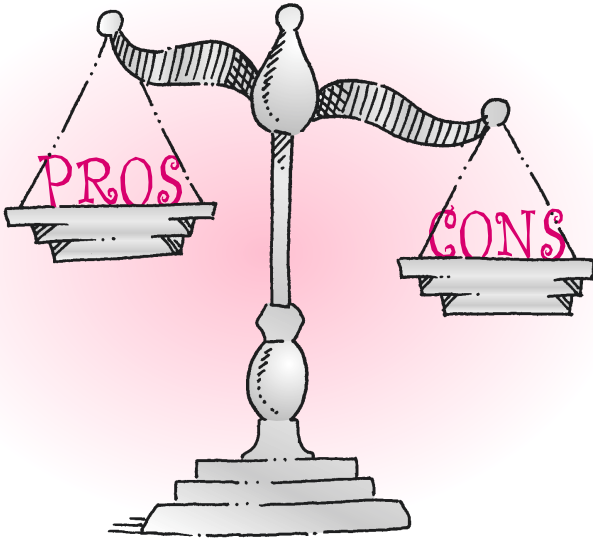
### Tips for Brainstorming

You cheat yourself when you stop with the first idea that comes to mind. In brainstorming, try to think of as many ideas as possible. You're not trying to decide yet which ones are correct or best. Tell your child:

- **Free your mind to think** about whatever comes up. Write it down.
- **Don't worry if the ideas seem funny** or strange. Sometimes these ideas turn into the best solutions—or help you think of better ones.
- **Don't judge or criticize the ideas now.** Don't say "no" to any of them. Just write them down.
- **Read the problem again** if you get stuck.







### **Step 3: Evaluate the solutions**

Ask, “What would be the positive and negative effects of each solution?” Have your child list the pros and cons for each possible solution.

### **Step 4: Decide on a solution**

Once your child has completed step three, this step becomes easy. Simply weigh the pros and cons for each solution.

There may be more than one correct answer. Several of the solutions may work fine. But now it’s time to decide on one.

### **Step 5: Develop a plan to make the solution work**

Often problem solving fails, not because your child’s solution wasn’t good, but because he didn’t carry it out. The problem is not solved until your child puts his plan into action and makes the solution work.

## Put Other Strategies to Work

**S**olving problems in steps is a logical approach. It's systematic. But a systematic method isn't the only way to solve a problem. Sometimes it helps to:

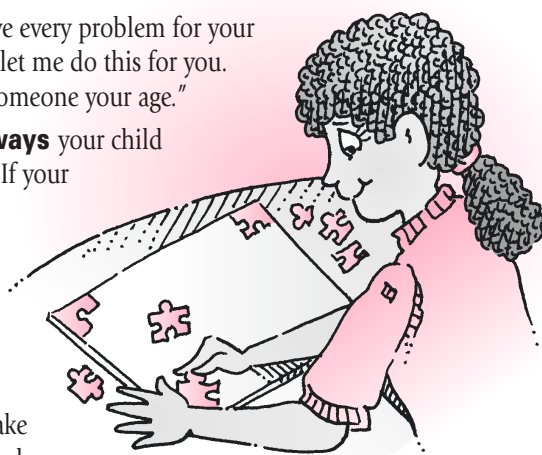
- **Take a break.** Solving problems can take a lot of energy. It's easy to get tired, then stuck. The mind needs a chance to rest and sort out information. How often a break is needed will depend on your child's energy level, the nature of the problem, and the level of your child's interest in it. When solving math problems, for example, a five- to 10-minute break every 30 minutes or so can help.
- **Sleep on it.** Sometimes a child gets completely stumped. No ideas come—not even poor ones. The mind is just one big blank. This is when the “pillow method” is needed. Sleeping on it (the pillow and the problem) can often clear the mental fog.
- **Draw a solution.** Sometimes people can picture a solution before they can put it into words. Drawing can free the mind.
- **Start at the end.** Sometimes a solution is clear. You know where you want to end up. But the problem is figuring out how to get there. In this case, have your child go backwards. It's like tracing your steps (in reverse) to find your keys.



# Teach Your Child to Learn From Mistakes

Everyone makes mistakes from time to time. When your child makes a mistake, avoid making negative comments. Instead, use this as an opportunity to help her learn. Here are some ways you can help your child use problem-solving skills to turn mistakes into successes:

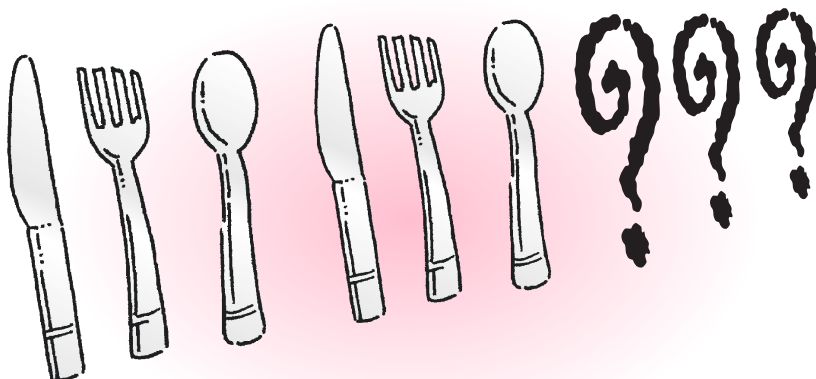
- **Don't jump** in to solve every problem for your child. Don't say, "Here, let me do this for you. It's really too hard for someone your age."
- **Suggest different ways** your child might solve a problem. If your child is having trouble putting a puzzle together say, "What if you started with the corners?"
- **Be encouraging.** "Don't worry. We all make mistakes." "What can we learn from this?" Never say, "I knew that you couldn't do it."
- **Boost your child's confidence** that she is a good problem solver. When she comes up with a solution or shows you a completed project, praise how hard she worked.
- **Encourage your child** to keep trying when she "messes up." Tell her that mistakes are okay. They help us learn.
- **Focus on things** your child does right—not always on what she does wrong.



# Recognizing Patterns Helps Your Child Learn

**L**earning to see patterns is an important problem-solving skill, especially in math. In fact, kids can't learn algebra if they don't know how to recognize patterns. Have fun with some of these activities to motivate your child to recognize patterns:

- **Use toys, silverware, dishes** or other household items to create patterns. How many different patterns can your child create using only knives, forks and spoons?



- **Take a family walk.** Collect leaves, rocks, acorns or pine cones. See how many patterns your child can make with items from nature.
- **Check the newspaper** each day to find out which phase of the moon is present. Help your child learn how long each phase lasts and how long it takes from full moon to full moon.

# Get Creative Through Practical Problem Solving

**B**eing a good problem solver is like being a good detective. That means thinking about things in new and different ways. Here's an activity that can motivate your child to see problems as fun challenges.

Together with your child:

- 1. Come up with a list of problems** that need a solution. They might be problems your child, a family member or a friend faces.
- 2. Choose one problem** from the list.
- 3. Brainstorm solutions.** Have your child think of as many ideas for solving the problem as possible. List every idea—no matter how silly it may seem.
- 4. Choose one solution** to try.
- 5. Ask questions** that may help solve it. (Say, "How can you fit these two parts together?" instead of, "I think you need some glue.")
- 6. Keep the activity fun** and relaxed.

Just a little encouragement can motivate your child to see problems as stimulating challenges, and to learn to use creativity, too. Here's a problem that requires creative thinking:

**Directions:** Draw nine dots on a piece of paper. Without lifting your pencil, draw through all nine dots using only four straight lines. To solve this problem, your child will need to let his mind roam outside the corners.  
(Check the answer on page 12.)



# Estimating & Anticipating—Two Important Problem-Solving Skills

## • Estimating

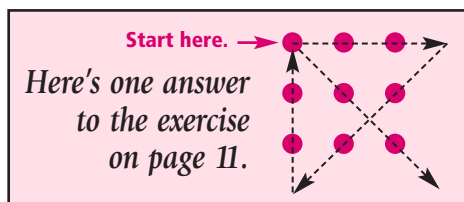
Your child can often guess at an answer by using knowledge she already has. She might know, for example, that eight times 10 is 80. Then, if she thinks about it, she will realize that eight times nine can't be 90.

For practice in estimating, take two glasses of the same size. Fill one with something small (beans). Fill the other with something large (cookies). Have your child estimate how many are in each glass. Then count to check. Next, try different sized containers.



## • Anticipating

Your child can also anticipate what an answer might be. When considering a solution, it's good to predict its consequences. Ask, "If I do this, what will happen?"



**Be sure to let your child know how proud you are as he practices problem solving at home. Before you know it, his practice and your encouragement will lead to greater success in school—and in life!**



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