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Introduction

Teachers need to provide their students with opportunities to practice their maths skills in real-life situations. This resource book was created to meet that need. It can be used with students in years five to seven.

The practice pages are divided into four sections. The first section provides an opportunity for teachers and students to solve the problems together. These are referred to as ‘whole-class’ sheets. The second section contains ‘independent practice cards’. Students may work on these cards with partners and when they are completed, they bring them up to get immediate feedback. The third section contains individual ‘practice sheets’ for use in the classroom. Students can seek help from other classmates while solving the problems on these practice sheets. The fourth section contains worksheets to assign as homework. The homework pages allow the students opportunities to practice the skill of problem solving without the support of classmates and the teacher. Some students will need more support at home so included in this resource is a letter to the parents explaining the purpose of this type of maths assignment and suggestions for helping their child.

Finally, there are tests you can administer to assess a student’s mastery and use of some of the problem-solving methods they have learned throughout the book. Students have been encouraged to work with others to solve the problems, but it is important to measure how well they can solve problems on their own. Students should be reminded to do their own work so that the test serves as an accurate measurement of each student’s ability to tackle this type of question. A range of levels for the assessment tests has been provided in this section.



Getting started

Here is some information about how to use a multiple-step approach to solving word problems.

Four-step plan

1. Read and understand the problem.

Trying to solve a problem without understanding it would be like jumping into the deep end of a pool without knowing how to swim. Ask yourself these questions to help understand the problem better:

- Why is this problem important?
- What do I need to find out?
- What information do I know?
- Do I have all the information I need to solve it?

2. Make a plan.

Consider planning your swimming lesson. After you decide what you need to find out, decide how to go about discovering the answer. Some valuable problem-solving strategies include the following:

- | | |
|-------------------------|---------------------------|
| – acting it out | – working backward |
| – drawing a picture | – making a list |
| – looking for a pattern | – making a table or chart |
| – guessing and checking | – using logical reasoning |

3. Solve the problem.

Now you can jump into the pool and put those swimming lessons to use. Use the strategy you think best to solve the problem. Then find the answer.

4. Check to be sure your answer makes sense.

If you've applied your lessons correctly, you are swimming by now. Check your answer. Does it make sense? Check to make sure your answer is not unreasonable. Estimation is an important skill. If you expected the answer to be about 400 and you come up with 2000, chances are you did something wrong.

Also, be sure you answered the question that was asked. If a problem asks you to identify the fruit you are most likely to randomly select from a bowl, the answer isn't 32 or $\frac{5}{9}$, it's perhaps 'an apple' or 'a banana'.

Refer to this four-step plan with each word problem you encounter in this book. If you do, you'll be ready to swim through the challenge of solving word problems without any assistance!

Whole-class practice

Help students build their problem-solving skills by solving some problems as a whole class. You can make a transparency copy of the problems on the 'whole-class practice' sheets or write them on the board. It is best not to hand the problems out to students on paper at this point. Students who are skilled at problem solving and enjoy it will have the problems solved before you've had a chance to even begin your instruction. This is a good time to explain why partial credit is given when students get an answer wrong but have shown correct thinking in their work.

If you are using an overhead projector, cover all but the directions to begin your lesson. Before starting, discuss the importance of showing your work, checking your maths and making sure you have answered the question. Then model this in your lesson.

Display the 'four-step plan' Poster and guide students through the process as you solve the problems together. In this way, students are set up for success as you model the steps.



Whole-class practice 1

Show your work. Let the person who is checking your paper know what you were thinking as you solved the problems. Read each problem carefully. When you are done solving each problem, check your maths and make sure you answered the question.

1. In the first week it is open, a toy store sells 45 cricket balls. In its second week, the store sells 20 cricket balls more than it sold in the first week. How many cricket balls did the toy store sell in the two weeks?

2. James collects football cards. He recently added two dozen cards to his collection. If James had 345 cards in his collection before, how many does he currently have?



Whole-class practice 2

Show your work. Let the person who is checking your paper know what you were thinking as you solved the problems. Read each problem carefully. When you are done solving each problem, check your maths and make sure you have answered the question.

1. The Amazon River is 6437 km long. The Nile River is 234 km longer than the Amazon. The Yangtze River is 293 km shorter than the Nile River. How long is each of the rivers?

2. Sally has \$20 to spend at the store. She buys a notebook that costs \$2.90, a stuffed animal that costs \$5.95 and a game that costs \$5.75. What change should she receive if she pays with a \$20 note?