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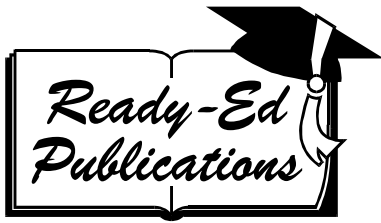
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Problem Solving Math for Primary Students Book 1

**Stimulating problem solving
activities for students aged
6 to 9 years.**

**(Uses both customary and metric
measurements.)**

Written by Lynn Stephenson. Illustrated by Rod Jefferson.

© Ready-Ed Publications - 2001

Published by Ready-Ed Publications P.O. Box 276 Greenwood WA 6024

Email: info@readyed.com.au Website: www.readyed.com.au

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ISBN 1 87526 824 3

SAMPLE

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Teachers' Notes

The Problem Solving Math books represent a response to current syllabus trends and the considerable emphasis which is placed on the development of problem solving skills in primary school students, particularly with reference to national standards requirements.

Essentially activities in this book are designed to interest and stimulate children in the 6 - 9 years age range. They are presented as activity pages which are able to be photocopied for use in the classroom.

IMPLEMENTING PROBLEM SOLVING MATH ACTIVITIES

A variety of factors will be considered by a teacher when he/she plans a unit of work including, aspects such as the previous problem solving experience of the students, their level of ability and the resources available. The use of an appropriate teaching strategy is often an area of concern when undertaking to implement a different emphasis in a new curriculum.

The following considerations may assist:

* Time taken to solve the problem prior to presenting it to students often proves to be valuable.

It provides the opportunity ...

- to be fully aware of the requirements of the problem;
- to attempt the solution using a variety of problem solving strategies;
- to reduce the problem into stages with appropriate hints for students to use, rather than giving an answer;
- to identify possible alternative solutions and their acceptability;
- to evaluate the suitability of the activity to the particular class, group or individual.

* Initially problem solving activities could be worked through step-by-step with the students. This provides a framework which individuals can use when required to work more independently. Further, it may reduce the frustration at times encountered by mathematically able students or creative thinkers who experience difficulty with reading. During these initial sessions a teacher is able to demonstrate a plan or procedure such as the one below which students can follow, e.g.

- Step 1 Read and discuss the problem.
- Step 2 Think about it.
- Step 3 Ask questions about it.
- Step 4 Try and use a strategy.
- Step 5 Check the answer.

Working through a number of problems in a structured, step-by-step approach allows students to become familiar with a range of problem solving strategies:

- estimating
- organizing information into lists, table, etc.
- identifying patterns
- thinking logically
- checking results
- simplifying the problem
- drawing pictures or diagrams
- predicting
- evaluating the strategy used, the solution
- working backwards

STRUCTURE OF PROBLEM SOLVING BOOK 1

For convenience the booklet has been divided into four sections. In each section a particular aspect of problem solving is in focus, although it is recognized that a great deal of overlap exists. It is felt that more effective use would be gained by selection of activities from each section rather than working through the package in page number sequence.

Generally, within each section a number of similar activities have been provided in order that skills can be introduced and consolidated. Sections are headed by a brief summary of the skill being covered in the pages to follow.

Section 1 - Developing Logical Thinking

The activities in this section encourage the ability to think clearly and to reason logically. A number of activities require students to organize their information in table format, i.e. matrix logic problems.

Procedure for Matrix Logic Problems

1. Names are listed down the left side of the table.
2. Across the top of the grid the features are listed, e.g. position, color, sport, etc.
3. The information is tabled by ticking the appropriate box.

Once a box is ticked all other boxes across from, and above or below, the feature are crossed.

e.g. A Running Race

		Position				
Names	1st	2nd	3rd	4th	5th	
Joe		X				
		X				
		X				
		X				
Patrick	X		X	X	X	

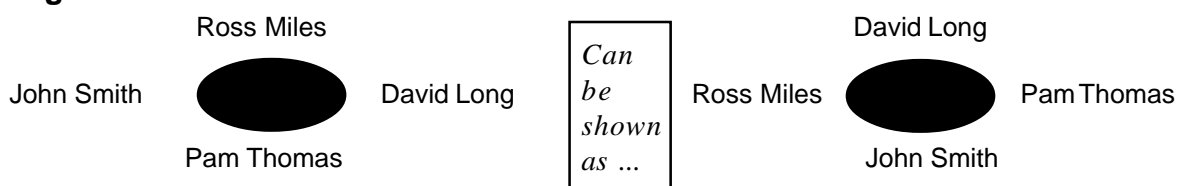
N.B. Further information is entered as clues are used to solve the problem.

Table Logic Problems

In **Table Logic Problems** diagrams must show the correct seating around a table. Students need to know that:

- * **Partners** always sit **opposite** each other.
- * People sit **facing** the table. (This is important when working out who sits to the left or right of a person.)
- * A person's first (given) name is written on the top line, surname on the bottom.
- * Answers may **appear** to be different from your solution. Make sure that each person has the correct partner and the correct person to the left and right.

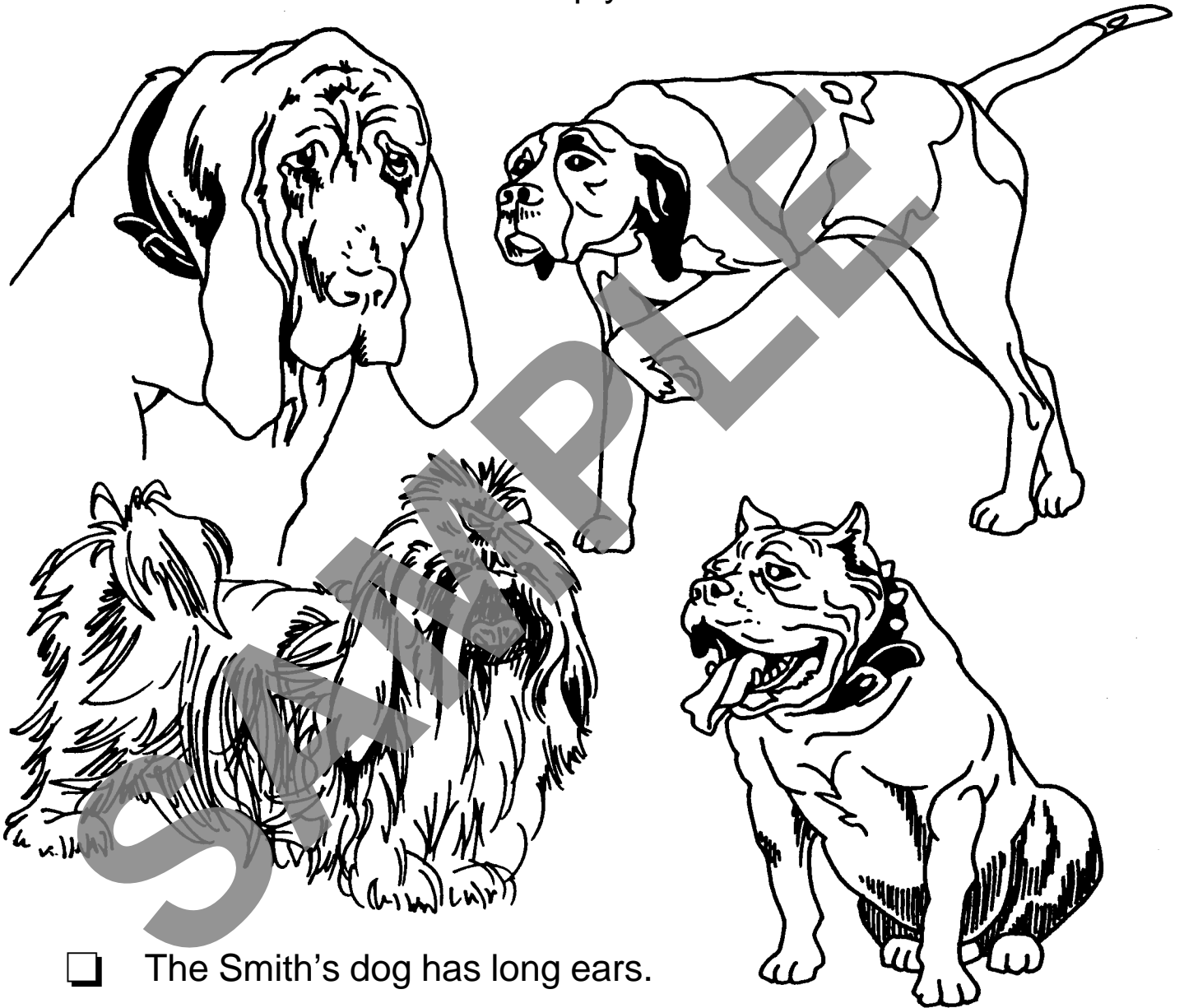
e.g.



Name:

Which Dog Belongs To The Smiths?

Use the clues below to help you decide.



The Smith's dog has long ears.

It does not have a collar.

It has short hair.

Color the Smith's dog **brown** and **white**.

Color the other dogs in your favorite 'dog colors'.