

# Teacher Guide To Making Word Problems Comprehensible

Word problems are an essential component of mathematics education. They provide students with real-life scenarios that require critical thinking, analytical skills, and the application of mathematical concepts. However, many students struggle with understanding and solving word problems. As a teacher, it is crucial to guide students in making these problems comprehensible to enhance their mathematical abilities.

## 1. Break Down the Problem

The first step in making word problems comprehensible is to break them down into smaller, more manageable parts. This helps students avoid feeling overwhelmed by the complexity of the problem. Encourage them to identify the key information, understand the question being asked, and determine the steps needed to find the solution.

# Solving Proportions

Kennedy practices her new cheer routine for 4 hours over the course of 3 days. If she continues at this rate, how long will she practice in one week?

**Identify** How long will Kennedy practice in one week?

**Construct**  $\frac{W}{\text{hours}} = \frac{K}{4} = \frac{U}{7}$

**Write** How many hours in 7 days?

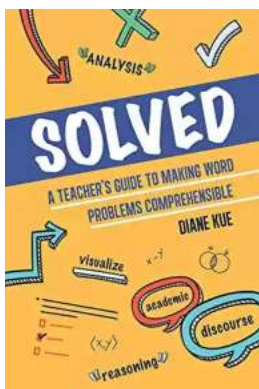
1. cross products      2. common denominator

**Solve**

$$\frac{4}{3} \times \frac{x}{7} = \frac{28}{3}$$

$$3x = \frac{28 \cdot 3}{3}$$

$$x = 9\frac{1}{3}$$



## Solved: A Teacher's Guide to Making Word Problems Comprehensible by Diane Kue (Kindle Edition)

★★★★★ 5 out of 5

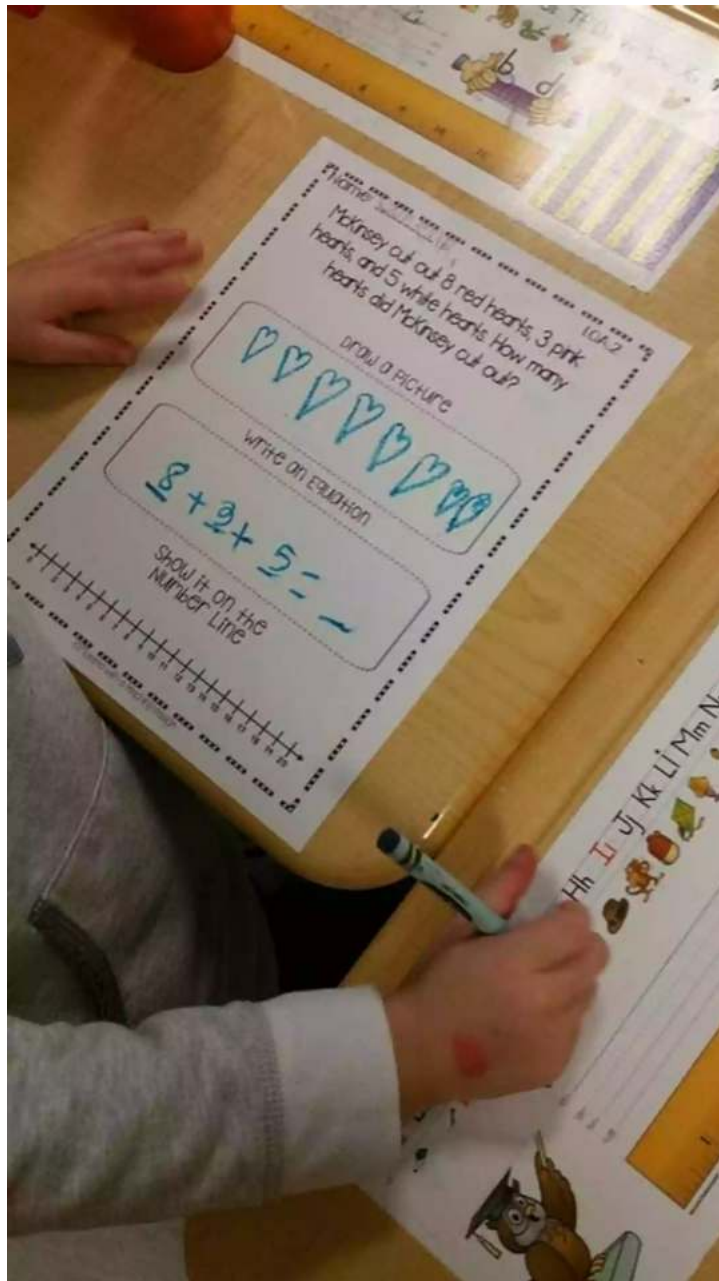
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## 2. Provide Visual Representations

Visual representations can greatly enhance students' understanding of word problems. Create diagrams, charts, or graphs that represent the given information and help visualize the problem. This visual aid enables students to analyze the problem more effectively and identify possible mathematical strategies to solve it.



### 3. Use Real-Life Examples

Connect word problems to students' real-life experiences to make them more relatable and engaging. Use examples that involve everyday situations, such as shopping, sports, or cooking. Discuss how mathematical concepts are utilized in these situations to solve problems. This approach helps students grasp the relevance and application of mathematics in their daily lives.

# X MULTIPLICATION WORD PROBLEMS TO 20

Trina added 2 marshmallows to each S'more treat. She made a total of 8 S'mores.

How many marshmallows did Trina use altogether?


While on the plane Diego played 4 games every hour.

If the trip lasted 3 hours, how many games did Diego play?


Rosey painted 3 flowers. Each flower had 6 petals.

How many petals did Rosey paint altogether?







free

PLAYDOUGH TO PLATO

## 4. Encourage Cooperative Learning

Collaborative learning environments can significantly improve students' comprehension of word problems. Encourage students to work together in groups to solve problems, discuss strategies, and explain their reasoning. This collaborative approach allows students to learn from one another, share different perspectives, and enhance their problem-solving skills.

# Cooperative Learning Strategies

<p><b>Think-Pair-Share</b></p>  <p><b>Groups:</b> Pairs of students, sometimes linked to one other pair.</p> <p><b>Teacher:</b> Poses initial problem or question.</p> <p><b>Students:</b> First, students think individually of the answer; second, they share their thinking with a partner; third, the partnership shares their thinking with another partnership.</p>	<p><b>Jigsaw Classroom 1</b></p>  <p><b>Groups:</b> 5-6 students per group and 5-6 groups overall.</p> <p><b>Teacher:</b> Teacher assigns students to groups and assigns one aspect of a complex problem to each group.</p> <p><b>Students:</b> Students in each group work together to become experts in their particular aspect of the problem; later the expert groups disband, and form new groups containing one student from each of the former expert groups.</p>	<p><b>Jigsaw Classroom 2</b></p>  <p><b>Groups:</b> 4-5 students per group, and 4-5 groups overall.</p> <p><b>Teacher:</b> Teacher assigns students to groups and assigns each group to study or learn about the same entire complex problem.</p> <p><b>Students:</b> Students initially work in groups to learn about the entire problem; later groups disband and reform as expert groups, with each group focusing on a selected aspect of the general problem; all later the expert groups disband and the original general groups reform to learn what the expert students can now add to their general understanding.</p>	<p><b>STAD</b> (Student Teams Achievement Divisions)</p>  <p><b>Groups:</b> 4-5 students per team (or group).</p> <p><b>Teacher:</b> Teacher presents a lesson to the entire class, and later tests on it; grades individuals based partly on individuals' and the team's improvement, not just on absolute level of performance.</p> <p><b>Students:</b> Students work together to insure that team makes improve their performance as much as possible. Students take tests as individuals.</p>	<p><b>Project-Based Learning</b></p>  <p><b>Groups:</b> Various numbers of students, depending on complexity of the project, could require entire class.</p> <p><b>Teacher:</b> Teacher or students pose a question or problem of interest to other students; teacher assists students to clarify their interests and to make plans to investigate the question further.</p> <p><b>Students:</b> Students work together for extended periods to investigate the original question or problem; project leads eventually to a presentation, written report, or other product.</p>
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## 5. Provide Scaffolded Support

Offer scaffolded support to students with different levels of mathematical understanding. Start with simpler word problems, gradually increasing the complexity and difficulty. Provide guiding questions or prompts to help students think critically and analyze the problem step by step. This scaffolding approach builds students' confidence and equips them with strategies to tackle more challenging problems independently.

# Draw a Picture #3

One strategy for solving problems is to draw a picture. Draw a picture to solve this 2-step problem.

## The Problem

Kennedy has 3 stickers. Alyssa has 6 more stickers than Kennedy. How many stickers do the girls have all together?

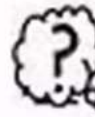


Two pieces of information are missing:

## The Parts



How many stickers does Alyssa have?



How many stickers do the girls have all together?

## Step 1

Alyssa has \_\_\_\_\_ stickers.

## Step 2

The girls have \_\_\_\_\_ stickers all together.

Use the answer from the first half of the problem to help you solve the second half.

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## 6. Emphasize Vocabulary

Word problems often involve specific mathematical vocabulary that students need to understand in order to solve them correctly. Dedicate time to teach and review relevant vocabulary terms before presenting a word problem. Encourage students to create a glossary of mathematical terms that they can refer to when


encountering unfamiliar words or concepts. This strengthens their mathematical language skills and improves their overall comprehension of word problems.

# Comprehending Word Problems

## Fill in the Blank

### Grades 1&2

By: Sarah B Elementary

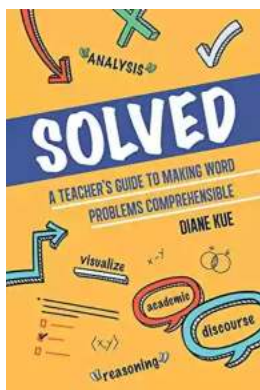


How many  
cookies  
are  ?

Making word problems comprehensible is a vital task for teachers seeking to enhance their students' mathematical abilities. By breaking down problems, providing visual representations, using real-life examples, encouraging cooperative learning, offering scaffolded support, and emphasizing vocabulary, teachers can guide students towards becoming proficient problem solvers.



Remember, improving students' comprehension of word problems not only strengthens their mathematical skills but also instills critical thinking abilities that they can apply in various real-world situations.



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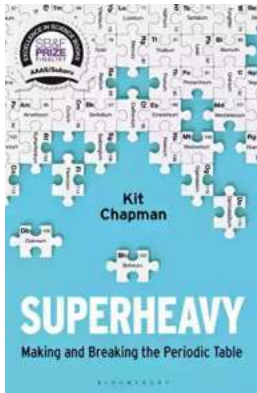
What mathematics teacher hasn't watched students struggle with word problems despite their best efforts? In *Solved: A Teacher's Guide to Making Word Problems Comprehensible*, Diane Kue applies pedagogical, research supported practices to unlock the word problem conundrum. These student-led tasks build on prior knowledge, encourage academic language acquisition, explore numerical relationships, and develop a collection of effective problem-solving approaches.

With *Solved: A Teacher's Guide to Making Word Problems Comprehensible*, educators will gain insight into how to foster life-long skills applicable beyond the mathematics classroom while keeping students engaged.



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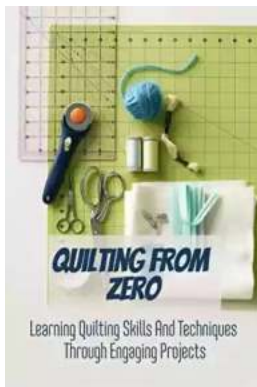
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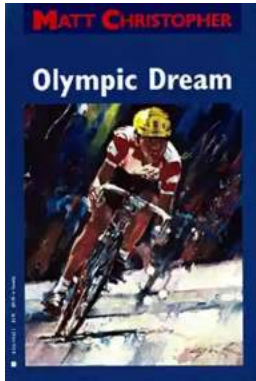
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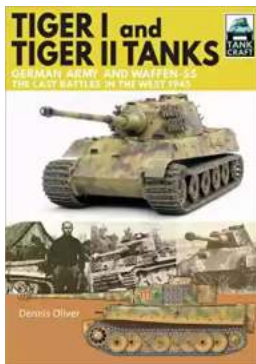
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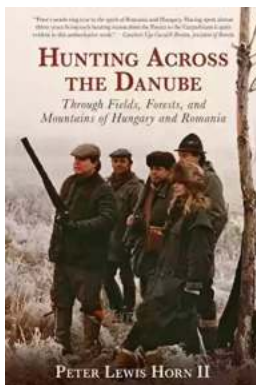
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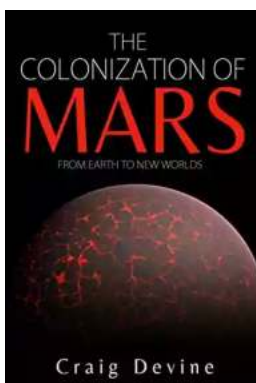
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