Teaching Resources
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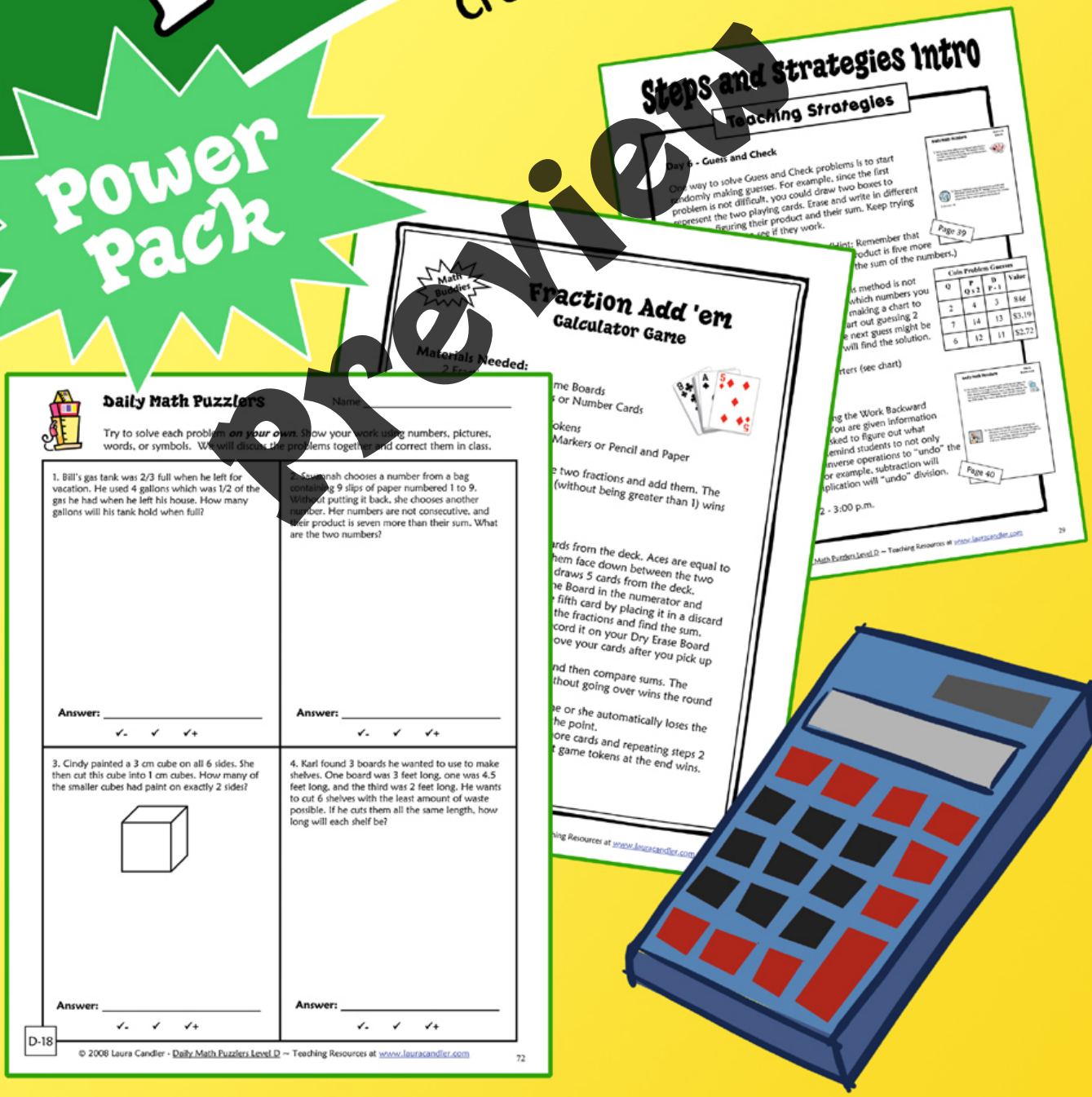
Daily Math Puzzlers

Level D
Grades 5-7

Created by Laura Candler

Power Pack



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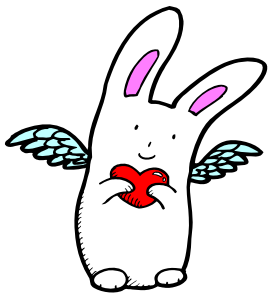
Acknowledgements

I would like to thank all the students and teachers listed below who field tested these Daily Math Puzzlers. Your thoughtful suggestions and ideas resulted in many improvements to the program. Your enthusiastic response was deeply appreciated! In particular I would like to thank Kathy Brewer's 6th grade class for testing ALL the Daily Math Puzzler worksheets and finding lots of errors!



Kathy Brewer's 6th Grade Class
Petersburg, NJ

Karen Surowiec's 5th graders
Alamogordo, NM

Heidi Kilkenny's 6th grade problem solvers
Highland School, Fresh Meadows, New York

Jill Slayton's 5th grade
Farmington, CT

Cynthia VanLandingham's 5th Grade Class
Gilbert, AZ

Krissie Theodore's 5th Grade Class
Aurora, IL

Bev Strayer's 5th Grade Class
Red Lion, PA

Lisa Kitson's 5th Grade Class
Woodland Park, CO

Kerri Allen's 5th Grade Class
East Boston, MA

Kay Reppen's 5th Grade Class
Oak Creek, WI

Denice Dodge's 6th Grade Class
Bethel, PA

Renee Arner's 7th, 8th & 9th Graders
Salt Lake City, UT

Cossondra George's 7th grade Math Classes
Newberry, MI

Chrisy Francescutti, 6th Grade Class
Lake Forest Park, WA

Kathy Renfrew's 5th/6th Grade Class
Peacham, VT

Linda Schuman's 3rd/4th Grade Class
Delray Beach, FL

Daily Math Puzzlers

Contents and Introduction

Power Pack Contents

What If Kids Actually Liked Solving Math Problems????

Problem solving is one of the most important, yet most neglected, areas of math instruction. Many math skills are relatively easy to teach, but teaching kids how to think through a problem in a logical manner is most definitely NOT easy! Yet why should we teach math at all if our students can't apply their knowledge to everyday life?

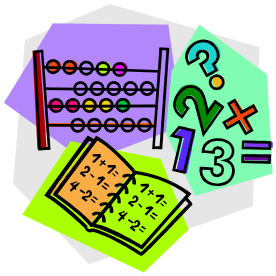
What if you could significantly improve your students' problem-solving abilities in just 15 minutes a day? A mere 15 minutes per day adds up to 45 hours of instruction on problem solving! Even 10 minutes a day would result in 30 hours of problem-solving instruction. What if you found a method that involved very little preparation yet provided a clear and sequential approach to problem-solving? And what if your students began to look forward to those 10 to 15 minutes of math instruction? What if they actually enjoyed the problems and asked you for MORE????

No need to wonder . . . Daily Math Puzzlers is that program! These math problems were field-tested by dozens of teachers all over the world, and their kids were actually asking for more! The program helped students develop confidence in their problem-solving abilities. As a teacher, you'll enjoy the step-by-step instructions for reviewing calculator skills, teaching problem-solving steps and strategies, and providing a variety of challenging and engaging math problems.

Puzzler Program Overview

Introduction Continued

Meeting NCTM Standards



When using Daily Math Puzzlers, you can feel confident you are meeting the National Council of Teachers of Mathematics (NCTM) standards for math instruction. In addition to addressing all of the content strands, this program targets the process standards such as problem solving, reasoning and proof, communication, and connections. One easy program meets all the standards!

Time Requirements

The Daily Math Puzzler program is designed to take 10 to 15 minutes per day. It's not necessary to adhere to the timeline below; some teachers may spread the introductory lessons out over 2 or 3 weeks, while others may skip them altogether. Not ready to start a daily problem-solving program? Check out the Alternative Strategies section on page 45 and you'll find many other uses for the Daily Math Puzzler worksheets. You can have students complete the activity pages in one lesson, use them for cooperative learning, or even send them home for homework.

Suggested Timeline

Week 1: Introduction to Calculator Skills
Weeks 2 & 3: Introduction to Problem Solving
Week 4: Start Daily Math Puzzler Program

Daily Math Puzzler Power Pack Levels

The Daily Math Puzzler program is leveled according to word problem difficulty rather than for specific grade levels. The entire series consists of materials suitable for students in 2nd grade through 7th grade, but the program has also been used with older students who have special needs. Across the levels, you'll find a wide variety of calculator lessons, enrichment games, problem-solving lessons, and student activity pages. For more information on how to utilize the various Daily Math Puzzler Power Pack levels, just turn the page and read on!

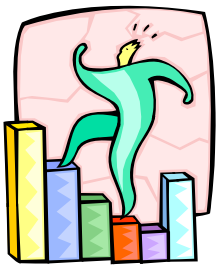
Daily Math Puzzler Program

Program Levels

The Daily Math Puzzler program is available in four different levels, A to D. Using a system of letters instead of grade levels gives you great flexibility when implementing the program. Each student activity page is coded with a letter and a number, so you always know which worksheet set you are currently using. Each Power Pack also comes with different calculator lessons, quizzes, enrichment games, and a unique problem-solving introduction. You can mix and match the lessons and activities to meet the needs of your students.

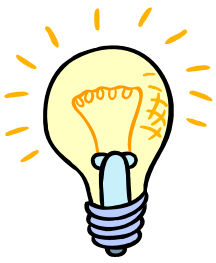
Puzzler Pack	Grade Levels
Level A	2, 3 and 4
Level B	3, 4 and 5
Level C	4, 5, and 6
Level D	**5, 6 and 7**

How can you use the different levels to your advantage?



1. **Gradual Implementation** - When you first introduce the program, start with the lowest level that's appropriate for your grade level. For example, a 5th grade teacher may want to start with Level B for the first few weeks to ensure that students are successful as they learn the basics. Then move them up to Level C and later to Level D.

2. **Differentiation** - Even though the Daily Math Puzzler program was designed for whole class instruction, it can be used in small groups or stations to differentiate instruction. One method is to pair students with a buddy performing at the same instructional level and use the cooperative learning strategies described on page 48. Within one class you might have several students on Level B, a few on Level C, and the majority on Level D. If your math class is structured around small group instruction and stations, you have even more options for using different levels. Have students complete the worksheets while at a station, and use small group instruction time to work with each level. See Math Stations for Middle Grades at www.lauracandler.com for more information on math stations.



Introduction to Calculator Skills Preview

Optional Activities to Teach or Review Basic Calculator Skills

Calculator Introduction

Rationale

Is Calculator Instruction Needed?

If your students will be allowed to use calculators with the Daily Math Puzzler program, it's worth taking time to instruct them in how to use this tool properly. Don't assume that your students already know how to use a calculator! At the very least, give the Calculator Quiz to make sure. You may be surprised at the results!

By this age your students should be familiar with the calculator, so the lessons in Level D are not as explicit as those in the other books. If your students are having trouble using their calculators, you may want to start with the lessons in **Daily Math Puzzlers Level C** and then use these pages as a review later in the school year.

Notes:

- There are so many different versions of calculators that it would be impossible to address them all. The lessons do not explain how to use a calculator to solve fraction problems and other advanced problems since those directions are specific to certain calculators. Be sure to address these concepts as you review how to use a calculator.

- Many calculators come with teacher guides that contain an illustration of the calculator. Just do an online search for the specific calculator your class is using and you'll be amazed at the resources you'll find!

- Make a transparency of the calculator you are using or use an overhead projector version. Most calculator teacher guides come with an illustration that you can use to make this transparency. Better yet, check to see if your set of calculators comes with a teaching poster.

- Make a transparency of each page that you plan to use for student instruction. These visuals will help kids focus on your instruction.

Calculator Introduction

Lesson 1

Introduce the Basic Calculator Functions

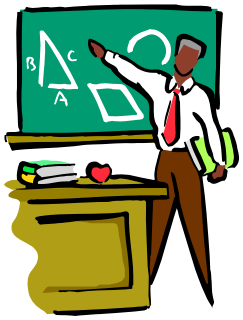
- Start by distributing the calculators and displaying your overhead calculator or transparency. Point out the various number and function keys you'll be using in the lesson. Be sure to include features such as fraction functions, exponents, percents, and any other keys that students will need to complete the practice pages and quizzes.
- Place **Calculator Confusion - Tricky Situations (page 11)** on the overhead projector and cover the answers. Ask your students to try to solve the problems at the top of the page. Suggest that they experiment with different keys or refer to the instructions that came with the calculator. Have them write their answers on individual dry erase boards or paper. Walk around and observe them as they try to solve the problems. Tell them not to worry if they get confused—they can just write a "?" for the ones they can't figure out. Stop the activity if your students get too frustrated and tell them that this activity is designed to show how tricky the calculator can be! Reassure them that these problems will soon seem easy.
- Reveal the answers at the bottom of the page and discuss the issues that are raised by each situation. Remind students that they need to work each problem at least 2 times to check for accuracy!
- Make a note of difficult areas and problems that confuse students. Provide a few more practice problems as needed.

Calculator Quiz

Administer the **Calculator Quiz (page 12)** at the end of Lesson 1 or the next day. Use the Answer Key (page 13) to score the results. You may want to grade this one quite strictly if you plan to retest those who have difficulty. I generally count off points for missing commas, decimal points, dollar signs, etc. You will be surprised at the number of students who need a retest! Note: A blank Calculator Quiz template (page 14) has been provided so that you can create your own calculator test to meet your students' needs.

Calculator Introduction

Lesson 2



Feedback, Reteaching, and Enrichment*
Divide the class into two groups based on mastery level. Provide further instruction as described below:

- **Enrichment** - Students who scored 90% or higher can be given one of the Enrichment activities described on page 19. Students who scored below 90% correct need additional instruction from you.
- **Reteaching** - Place a transparency of the **Calculator Quiz** on the overhead projector and have students rework each problem as you review the proper techniques. Then display a transparency of the **Calculator Practice Problems (page 15)** and have the students do them one at a time. Ask your students to display their answers on dry erase boards or paper so you can check for understanding. Provide additional practice problems as needed. Or you can assign this worksheet as independent practice and then score it and review the answers later.

Administer Retest
Administer the **Calculator Retest (page 17)** to give students an opportunity to improve their original test scores. Even if some kids still have a little trouble, you can proceed with the problem-solving lessons and they will generally improve their calculator skills naturally over time.

* **Mastery Learning Model** - The calculator lessons are based on the Mastery Learning model. Teach a lesson or unit quickly, then test your students to see who has mastered the content. Next divide the class into two groups and provide differentiated activities for each group. Give the students who have mastered the material an enrichment activity. While they are working independently or with a math buddy, gather the other students together in a small group and reteach the content using a different method of instruction. When you retest this group, you'll see significant improvement in their knowledge and understanding. For more information on Mastery Learning, visit www.lauracandler.com.

Calculator Confusion

Tricky Situations

Can you solve these with your calculator?

Remember to reduce all fractions to lowest terms.
Round decimal answers to the nearest hundredth.

1) $\$2.37 + \$5.13$

2) $45¢ + \$1.35$

3) $7 \div 8$

4) $3\overline{)20}$

5) $48 \div (4^2 - 4)$

6) 0.7×10^3

7) Simplify $\frac{24}{72}$

8) $\frac{1}{2} \times 3\frac{3}{4}$

9) 28% of 50

10) $-24 + 15$

Tricky Situation Answers

1) $7.50
2) $1.80
3) 0.88
4) 6.67
5) 4
6) 700
7) $\frac{1}{3}$
8) $1\frac{7}{8}$
9) 14
10) -9

Name _____ Date _____

Calculator Quiz

Solve. Simplify all fractions and round decimals to the nearest hundredth.

1) 7,298+ 3,904	11) Write $\frac{5}{8}$ as a decimal
2) 64.5 x 39.2	12) $\frac{2}{5} \times 5\frac{1}{4}$
3) $6\overline{)48.36}$	13) $\frac{3}{7} \div \frac{2}{3}$
4) $92.85 – $48.15	14) $4\frac{2}{7} \times 5\frac{1}{2}$
5) $75.28 + $11.52	15) $\frac{2}{3} + \frac{6}{8}$
6) $8^2 – (5 \times 3)$	16) $9 - 3\frac{7}{8}$
7) $4^3 \div (4 + 4)$	17) Write $\frac{7}{20}$ as a percent
8) 0.9×10^4	18) $15\overline{)85}$
9) Simplify $\frac{28}{84}$	19) 45% of 80
10) Simplify $\frac{36}{8}$	20) -35 + 18

Name _____ Date _____

Answers: Calculator Quiz

Solve. Simplify all fractions and round decimals to the nearest hundredth.

1) 7,298+ 3,904 **3,394**	11) Write $\frac{5}{8}$ as a decimal **0.63**
2) 64.5 x 39.2 **2,528.4**	12) $\frac{2}{5} \times 5\frac{1}{4}$ **$2\frac{1}{10}$**
3) $6\overline{)48.36}$ **8.06**	13) $\frac{3}{7} \div \frac{2}{3}$ **$\frac{9}{14}$**
4) $92.85 – $48.15 **$44.70**	14) $4\frac{2}{7} \times 5\frac{1}{2}$ **$23\frac{4}{7}$**
5) $75.28 + $11.52 **$86.80**	15) $\frac{2}{3} + \frac{6}{8}$ **$1\frac{5}{12}$**
6) $8^2 – (5 \times 3)$ **49**	16) $9 - 3\frac{7}{8}$ **$5\frac{1}{8}$**
7) $4^3 \div (4 + 4)$ **8**	17) Write $\frac{7}{20}$ as a percent **35%**
8) 0.9×10^4 **9,000**	18) $15\overline{)85}$ **5.67**
9) Simplify $\frac{28}{84}$ **$\frac{1}{3}$**	19) 45% of 80 **36**
10) Simplify $\frac{36}{8}$ **$4\frac{1}{2}$**	20) -35 + 18 **-17**

Name _____ Date _____

Calculator Quiz

Solve. Simplify all fractions and round decimals to the nearest hundredth.

1)	11)
2)	12)
3)	13)
4)	14)
5)	15)
6)	16)
7)	17)
8)	18)
9)	19)
10)	20)

Name _____ Date _____

Calculator Practice Problems

Solve. Simplify all fractions and round decimals to the nearest hundredth.

1) 4,673 + 2,986	11) Write $\frac{7}{8}$ as a decimal
2) 48.5 x 29.8	12) $\frac{2}{3} \times 3\frac{1}{5}$
3) $8\overline{)48.64}$	13) $\frac{3}{4} \div \frac{6}{8}$
4) \$69.65 – \$29.15	14) $2\frac{5}{7} \times 3\frac{1}{2}$
5) \$38.28 + \$21.62	15) $\frac{2}{3} + \frac{4}{9}$
6) $7^2 - (6 \times 3)$	16) $7 - 4\frac{3}{8}$
7) $5^3 + (32 \div 8)$	17) Write $\frac{3}{20}$ as a percent
8) 0.4×10^5	18) $18\overline{)95}$
9) Simplify $\frac{48}{96}$	19) 65% of 40
10) Simplify $\frac{45}{7}$	20) -25 + 18

Name _____ Date _____

Calculator Practice Answers

Solve. Simplify all fractions and round decimals to the nearest hundredth.

1) 4,673 + 2,986 **37,659**	11) Write $\frac{7}{8}$ as a decimal **0.88**
2) 48.5 x 29.8 **1,445.3**	12) $\frac{2}{3} \times 3\frac{1}{5}$ **$2\frac{2}{15}$**
3) $8\overline{)48.64}$ **6.08**	13) $\frac{3}{4} \div \frac{6}{8}$ **1**
4) \$69.65 – \$29.15 **\$40.50**	14) $2\frac{5}{7} \times 3\frac{1}{2}$ **$9\frac{1}{2}$**
5) \$38.28 + \$21.62 **\$59.90**	15) $\frac{2}{3} + \frac{4}{9}$ **$1\frac{1}{9}$**
6) $7^2 - (6 \times 3)$ **31**	16) $7 - 4\frac{3}{8}$ **$2\frac{5}{8}$**
7) $5^3 + (32 \div 8)$ **129**	17) Write $\frac{3}{20}$ as a percent **15%**
8) 0.4×10^5 **40,000**	18) $18\overline{)95}$ **5.28**
9) Simplify $\frac{48}{96}$ **$\frac{1}{2}$**	19) 65% of 40 **26**
10) Simplify $\frac{45}{7}$ **$6\frac{3}{7}$**	20) -25 + 18 **-7**

Name _____ Date _____

Calculator Retest

Solve. Simplify all fractions and round decimals to the nearest hundredth.

1) 5,291+ 8,069	11) Write $\frac{2}{7}$ as a decimal
2) 9.5 x 40.4	12) $\frac{3}{4} \times 2\frac{1}{3}$
3) $5\overline{)45.25}$	13) $\frac{3}{8} \div \frac{1}{2}$
4) \$62.83 – \$45.23	14) $2\frac{2}{9} \times 3\frac{3}{5}$
5) \$59.28 + \$27.42	15) $\frac{4}{5} + \frac{3}{8}$
6) $9^2 - (7 \times 3)$	16) $6 - 2\frac{1}{3}$
7) $2^5 + (8 \div 2)$	17) Write $\frac{4}{25}$ as a percent
8) 0.6×10^5	18) $15\overline{)93}$
9) Simplify $\frac{18}{72}$	19) 72% of 50
10) Simplify $\frac{44}{6}$	20) -43 + 38

Name _____ Date _____

Answers: Calculator Retest

Solve. Simplify all fractions and round decimals to the nearest hundredth.

1) 5,291+ 8,069 **13,360**	11) Write $\frac{2}{7}$ as a decimal **0.29**
2) 9.5 x 40.4 **383.8**	12) $\frac{3}{4} \times 2\frac{1}{3}$ **$1\frac{3}{4}$**
3) $5\overline{)45.25}$ **9.05**	13) $\frac{3}{8} \div \frac{1}{2}$ **$\frac{3}{4}$**
4) $62.83 – $45.23 **$17.60**	14) $2\frac{2}{9} \times 3\frac{3}{5}$ **8**
5) $59.28 + $27.42 **$86.70**	15) $\frac{4}{5} + \frac{3}{8}$ **$1\frac{7}{40}$**
6) $9^2 – (7 \times 3)$ **60**	16) $6 - 2\frac{1}{3}$ **$3\frac{2}{3}$**
7) $2^5 + (8 \div 2)$ **36**	17) Write $\frac{4}{25}$ as a percent **16%**
8) 0.6×10^5 **60,000**	18) $15\overline{)93}$ **6.2**
9) Simplify $\frac{18}{72}$ **$\frac{1}{4}$**	19) 72% of 50 **36**
10) Simplify $\frac{44}{6}$ **$7\frac{1}{3}$**	20) -43 + 38 **-5**

Calculator Extensions

Enrichment Activities

Benefits of Using Enrichment Activities:

- Students who have attained mastery of basic calculator skills can extend their understanding through higher level thinking and reasoning. It also keeps them from getting bored and disruptive!
- Providing enrichment activities motivates students to do their best on the first test so that they may participate in the activity.
- Dividing the class this way reduces the number of students in your "reteaching" group, allowing you more individual contact with them.

Enrichment Ideas:

1. Fraction Add 'em Calculator Game - Prior to the lesson, duplicate the game materials (pages 21 - 23). Make sure you have enough decks of cards, or duplicate three pages of the number card pattern for each pair. Before introducing the game, make sure that your students know how to add fractions on a calculator and that they can compare fractions with different denominators.
2. Independent Enrichment Assignments - Use your textbook or the Internet to locate a quiet independent activity for students to do.
3. Computer Software - Permit students to practice skills by using software or by going to a favorite math website.
4. Math Stations - Set up math activities in "stations" or centers. See Math Stations for Middle Grades (www.lauracandler.com) for more ideas!

Classroom Management

When you allow students to work independently on Enrichment Activities, you need to establish ground rules. See the Golden Rules mini poster on the next page for ideas. Assign each person a Math Buddy or partner so they have someone they can ask for help if they need it. To avoid chaos and confusion, avoid activities that require more than 2 or 3 students to work together. If they are going to play a game, make sure they have full directions or have been introduced to the game previously so they can work without assistance. Have a back-up independent seatwork plan in the event the game doesn't work out!

Golden Rules for Enrichment Activities

- Stay on task at all times.
- Don't bother anyone or call attention to yourself.
- Don't talk to the teacher while he or she is working with another group.
- Quietly ask someone if you need help. If that person can't help you, signal the teacher and do something else until help arrives.

Math Buddies

Fraction Add 'em
Calculator Game

Materials Needed:

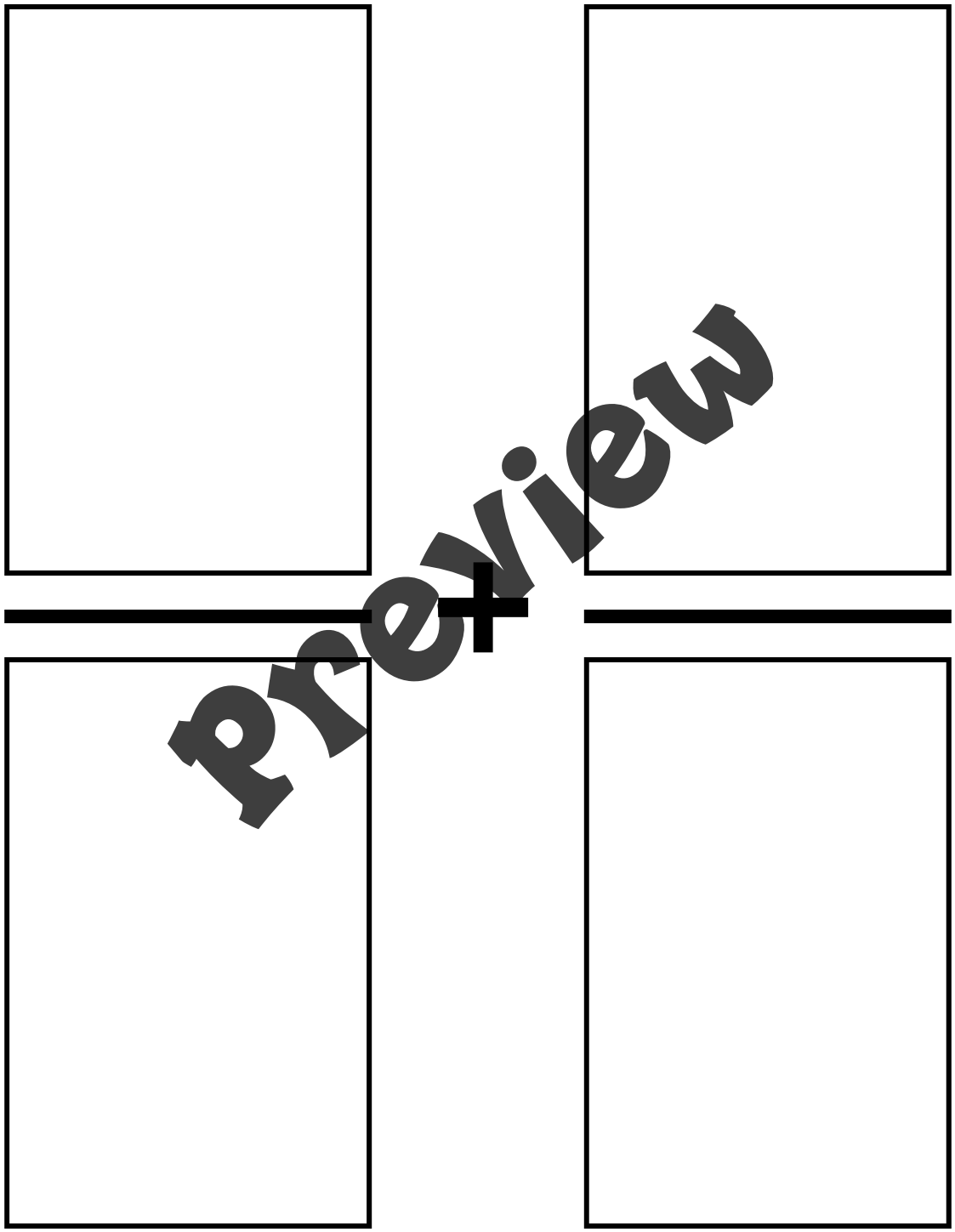
2 Fraction Add 'em Game Boards
1 Deck of Playing Cards or Number Cards
2 Calculators
Plastic Chips or Game Tokens
2 Dry Erase Boards and Markers or Pencil and Paper

Objective: Players will create two fractions and add them. The player whose sum is closer to 1 (without being greater than 1) wins the round and scores a point.

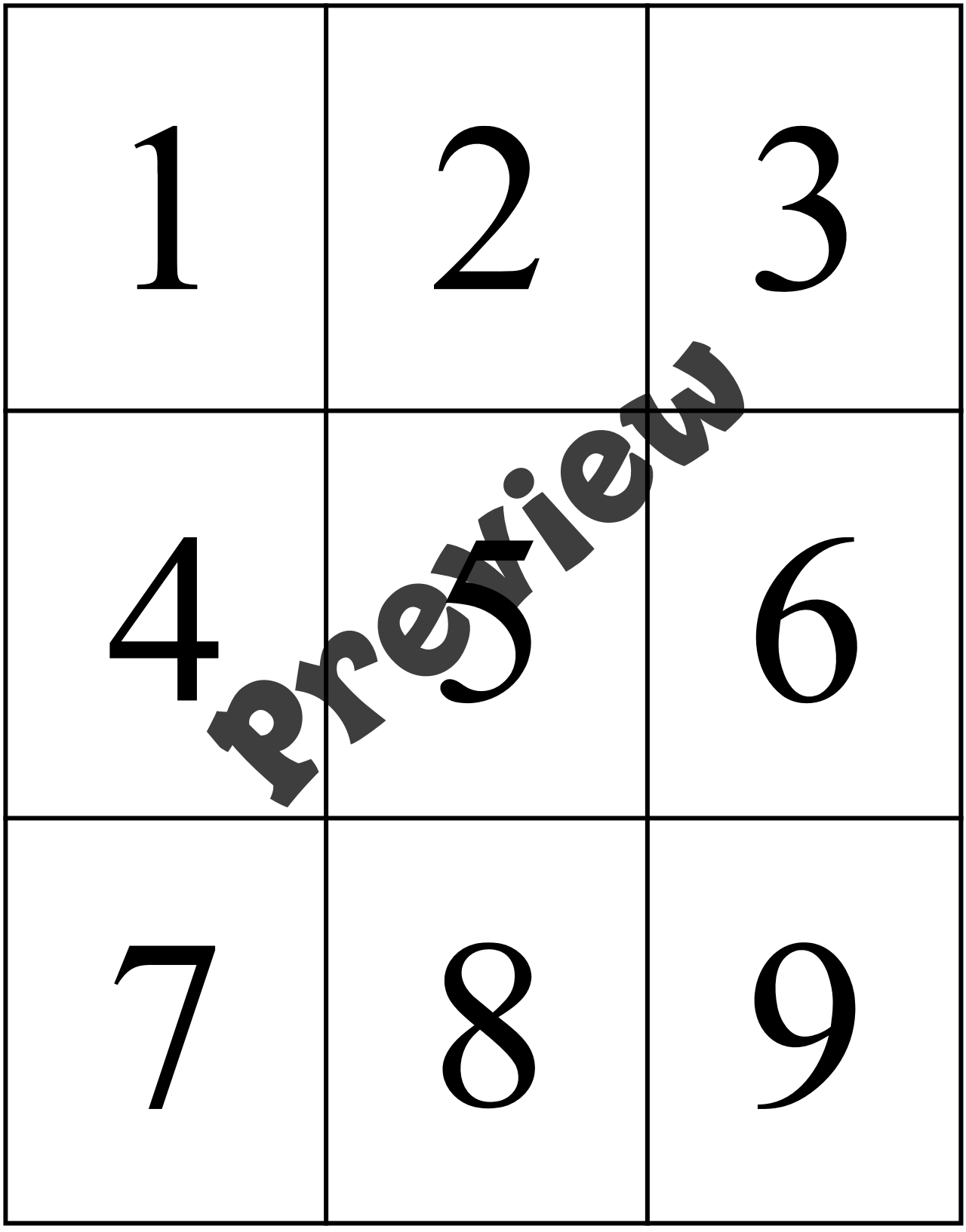
Directions:

1. Remove the jokers and face cards from the deck. Aces are equal to 1. Shuffle the cards and place them face down between the two players. To begin, each person draws 5 cards from the deck.
2. Place 4 of the cards on the Game Board in the numerator and denominator boxes. Discard the fifth card by placing it in a discard pile. Use your calculator to add the fractions and find the sum. Reduce it to lowest terms and record it on your Dry Erase Board or paper. (Note: You may not move your cards after you pick up your calculator.)
3. Players check each other's work and then compare sums. The player whose sum is closer to 1 without going over wins the round and takes a game token.
4. If a player's sum is greater than 1, he or she automatically loses the round and the other player scores the point.
5. Continue the game by drawing 5 more cards and repeating steps 2 through 4. The player with the most game tokens at the end wins.

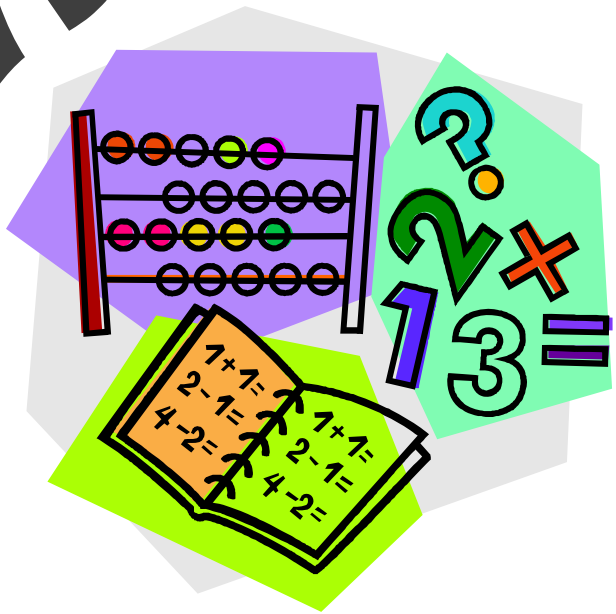
Fraction Add 'em



Fraction Add 'em Cards



Introduction to Problem Solving Preview



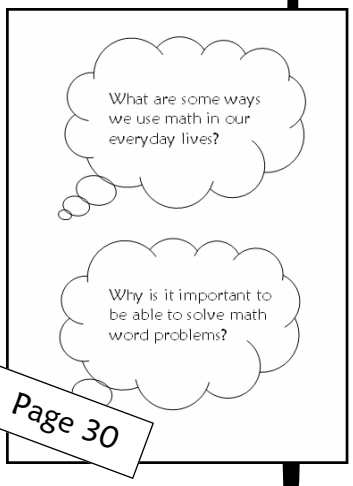
Activities to Teach
Problem Solving
Steps and Strategies

Steps and Strategies Intro

Teaching Strategies

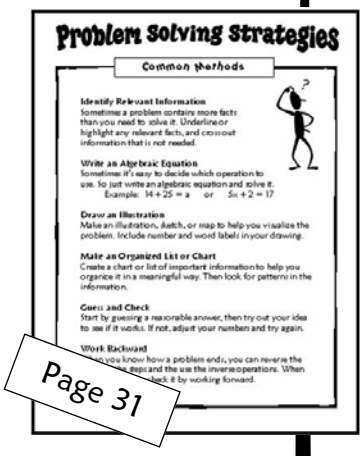
When introducing your students to problem solving, you'll find it helpful to begin by focusing on a different strategy each day. There are probably a dozen strategies you could teach, but to keep things simple we'll focus on just 6 different methods. Each one has a blackline master with a few problems that can be solved using that strategy. Make a transparency of each blackline master and let your students work the problems on individual dry erase boards or scrap paper.

Day 1 - Introduction



Display or ask the first question shown on the blackline master: "What are some ways that we use math in our everyday lives?" Ask students to think about their own responses, and then give them 3 minutes to work with a partner and list their ideas. Then ask volunteers to share their ideas and create a class list on chart paper. Examples include time, money, measurement, etc.

Next discuss the related question, "Why is it important to be able to solve math word problems?" Students usually mention reasons like being on time, being able to figure out how much change you'll receive, knowing how much food to buy for a party, and so on.

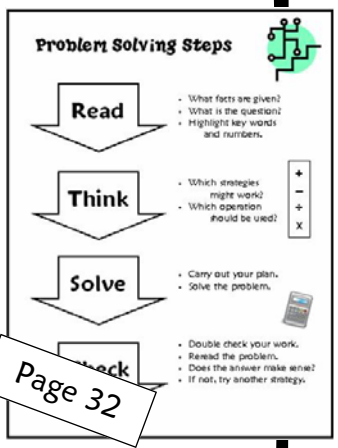


Explain that even though many students find word problems to be tricky, they can be fun if you think of them as puzzles or brainteasers. Tell them that you are going to share 6 different methods commonly used to tackle word problems. Display a transparency or chart showing the Problem Solving Strategies and briefly mention each method. (Hint: You might want to duplicate this page for your students or create a poster of the strategies since it's difficult to show them on the overhead when you are using the projector to work out math problems!)

Steps and Strategies Intro

Teaching Strategies

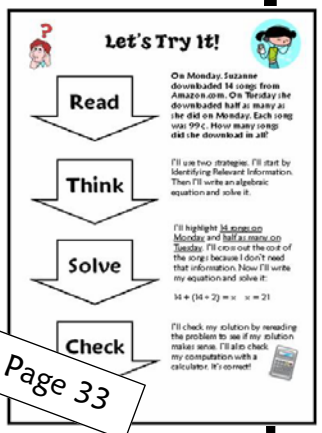
Finally, tell them that you are going to share four basic steps for solving almost any word problem. Display a poster or transparency of the steps (Read, Think, Solve, and Check). Read the steps and briefly explain the strategies for each step. Tell them that tomorrow they will learn to use those steps to solve some math puzzles.



Page 32

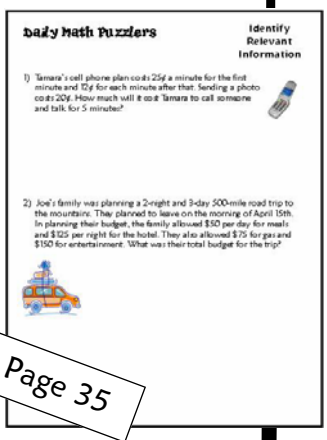
Day 2 - Identify Relevant Information

The next day, begin by reviewing the Strategies and the Steps. Give the students a copy of the steps or have students draw the 4 arrows and write the 4 key words on paper or in a journal. Display a transparency of the "Let's Try It" page and explain how that problem was solved using the steps. In this problem, two strategies are used - Identify Relevant Information and Write an Algebraic Equation.



Page 33

Now your students are ready to tackle their first problems! Display a transparency of the Identify Relevant Information problem page. Cover the bottom problem so they can focus on the top one. Read the problem aloud and model the 4 steps as you begin to solve it. For example, highlight clue words and underline the question. Then ask them if there's anything in the problem that is NOT needed to solve the problem. (Ex: cost of sending a photo by email). After they cross out irrelevant information, they will still need to use another strategy to solve it, such as writing an equation. Repeat this procedure for the second problem, discussing the relevant and irrelevant information. For the second problem, they may want to make an itemized list of the trip expenses.



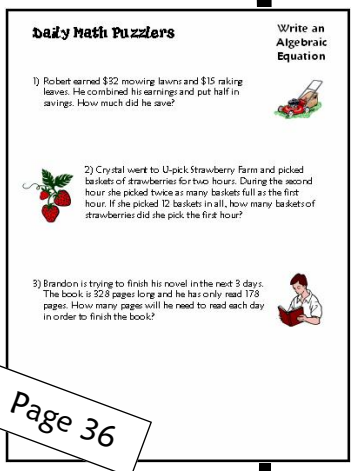
Page 35

Practice Problem Answers: #1 - 73 cents #2 - $625

Steps and Strategies Intro

Teaching Strategies

Day 3 - Write an Algebraic Equation


Daily Math Puzzlers

Write an Algebraic Equation

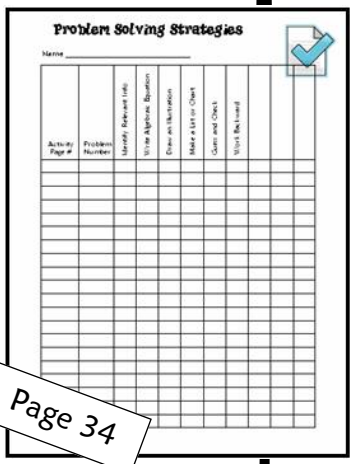
1) Robert earned $32 mowing lawns and $15 raking leaves. He combined his earnings and put half in savings. How much did he save?

2) Crystal went to U-pick Strawberry Farm and picked baskets of strawberries for two hours. During the second hour she picked twice as many baskets full as the first hour. If she picked 12 baskets in all, how many baskets of strawberries did she pick the first hour?

3) Brandon is trying to finish his novel in the next 3 days. The book is 328 pages long and he has only read 178 pages. How many pages will he need to read each day in order to finish the book?

Page 36

Writing a number sentence or algebraic equation isn't really a problem-solving strategy at all. It's just a way to record mathematically how you solved the problem. However, you'll want to introduce or review this topic early because students at this level should probably be writing number sentences or algebraic equations for most of the problems they solve in math. This might also be a good time to introduce the Problem Solving Strategies checklist as a way of recording the different methods that are used to solve each problem.


Problem Solving Strategies

Name _____

Page 34

Middle grade students should be able to write simple number sentences with little difficulty, but writing algebraic equations that include parentheses can be tricky. Writing an equation for a multi-step problem is challenging because of those pesky "Order of Operation" rules. Before you begin, you may want to review the PEMDAS acronym (Parentheses, Exponents, Multiplication or Division, and Addition or Subtraction) which outlines the correct order of operations.

Remind students that even for multi-step problems, algebraic equations should be written in a single horizontal line using parentheses to show which steps to complete first. For a two-step problem, you might have them start by writing two separate numbers sentences and then combining them into one sentence which can be solved using the PEMDAS rules. For example, in Problem #1, they could write $\$32 + \$15 = x$ and $\$47 \div 2 = x$. Finally, they can combine those to read $(\$32 + \$15) \div 2 = x$. Providing multiple opportunities to practice will help students develop this skill.

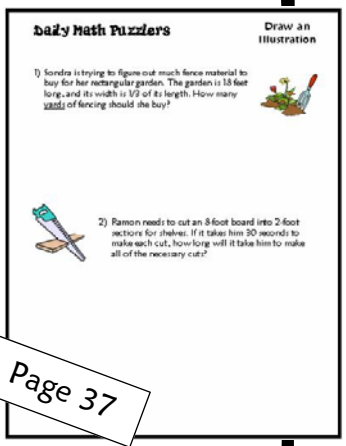
Practice Problem Answers:
#1 $(\$32 + \$15) \div 2 = x$, $x = \$23.50$
#2 $x + 2x = 12$, $x = 4$ baskets
#3 $(328 - 178) \div 3 = x$, $x = 50$ pages a day

Steps and Strategies Intro

Teaching Strategies

Day 4 - Draw an Illustration

Sometimes older students think drawing a picture is too elementary and they just want to write equations. However, many geometry problems are difficult to solve without some type of picture or visual representation. When you introduce this strategy, let your students know that you are not looking for artistic illustrations—you are looking for simple ways to picture the important elements of the problem. Walk around and observe students as they work. Encourage students to share their ideas with the class in your follow-up discussions.


Daily Math Puzzlers
Draw an Illustration
1) Sondra is trying to figure out much fence material to buy for her rectangular garden. The garden is 18 feet long, and its width is 1/3 of its length. How many yards of fencing should she buy?
2) Ramon needs to cut an 8-foot board into 2-foot sections for shelves. If it takes him 30 seconds to make each cut, how long will it take him to make all of the necessary cuts?
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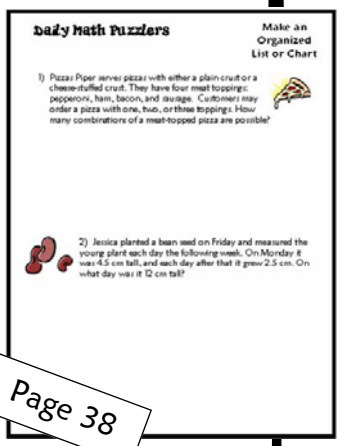
Problem #1 - 16 yards #2 - 1 minute 30 seconds

Day 5 - Make an Organized List or Chart

Sometimes the best strategy is to create an organized list or make a chart of the important facts and numbers. For combinations problems like the pizza problem, teach your students to make an organized list like the one below. Remind them that they can use letters or symbols to represent the elements of the problem. Also, in some problems such as this one, you only have to figure out the combinations for one part of the problem and then double your answer.


Daily Math Puzzlers
Make an Organized List or Chart
1) Pizza Piper serves pizzas with either a plain crust or a cheese-stuffed crust. They have four meat toppings: pepperoni, ham, bacon, and sausage. Customers may order a pizza with one, two, or three toppings. How many combinations of a meat-topped pizza are possible?
2) Jessica planted a bean seed on Friday and measured the young plant each day the following week. On Monday it was 4.5 cm tall, and each day after that it grew 2.5 cm. On what day was it 12 cm tall?
Page 38

Problem #1
Plain Crust, One Topping: P, H, B, S
Plain Crust, Two Toppings: PH, PB, PS, HB, HS, BS
Plain Crust, Three Toppings: PHB, PHS, HBS
13 combinations for plain + 13 for cheese crust = 26 possible combinations

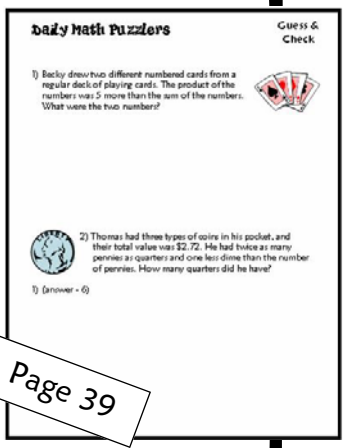
Problem #2
Create a chart like this one to solve the problem. Answer = Thursday

Day	Mon	Tues	Wed	Thurs
Height of Plant	4.5	7	9.5	12

Steps and Strategies Intro

Teaching Strategies

Day 6 - Guess and Check


Daily Math Puzzlers — Guess & Check

1) Becky drew two different numbered cards from a regular deck of playing cards. The product of the numbers was 5 more than the sum of the numbers. What were the two numbers?

2) Thomas had three types of coins in his pocket, and their total value was $2.72. He had twice as many pennies as quarters and one less dime than the number of pennies. How many quarters did he have?

1) (answer - 6)

Page 39

One way to solve Guess and Check problems is to start randomly making guesses. For example, since the first problem is not difficult, you could draw two boxes to represent the two playing cards. Erase and write in different numbers, figuring their product and their sum. Keep trying different guesses to see if they work.

☐ + ☐ = ? ☐ x ☐ = ?

(Hint: Remember that the product is five more than the sum of the numbers.)

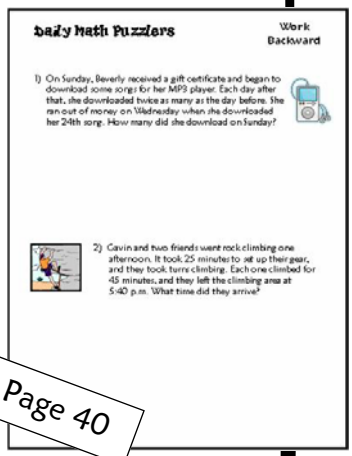
However, students should notice that this method is not very efficient because you lose track of which numbers you have tried. Hopefully they will suggest making a chart to solve the next problem. They might start out guessing 2 quarters and see that it's too low. The next guess might be too high. However, eventually they will find the solution.

Coin Problem Guesses

Q	P Q x 2	D P - 1	Value
2	4	3	84¢
7	14	13	$3.19
6	12	11	$2.72

Problem #1 - 3 and 4 #2 - 6 quarters (see chart)

Day 7 - Work Backward


Daily Math Puzzlers — Work Backward

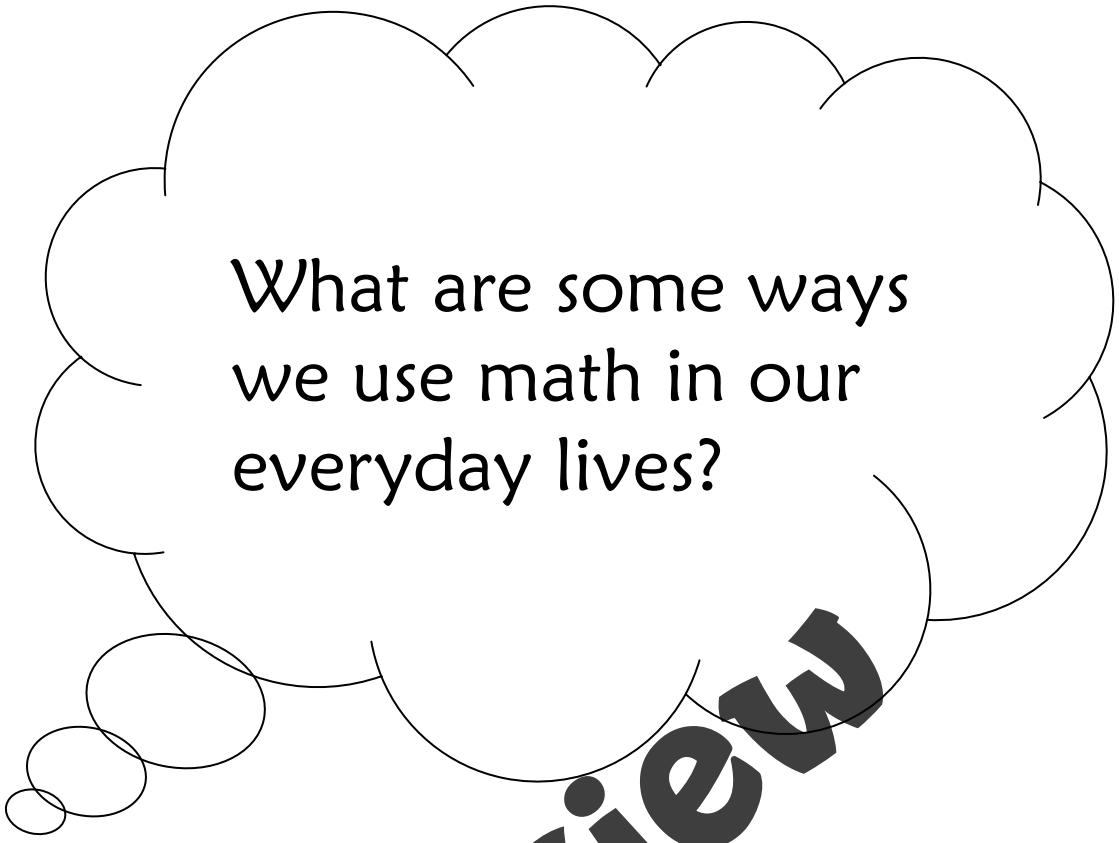
1) On Sunday, Beverly received a gift certificate and began to download some songs for her MP3 player. Each day after that, she downloaded twice as many as the day before. She ran out of money on Wednesday when she downloaded her 24th song. How many did she download on Sunday?

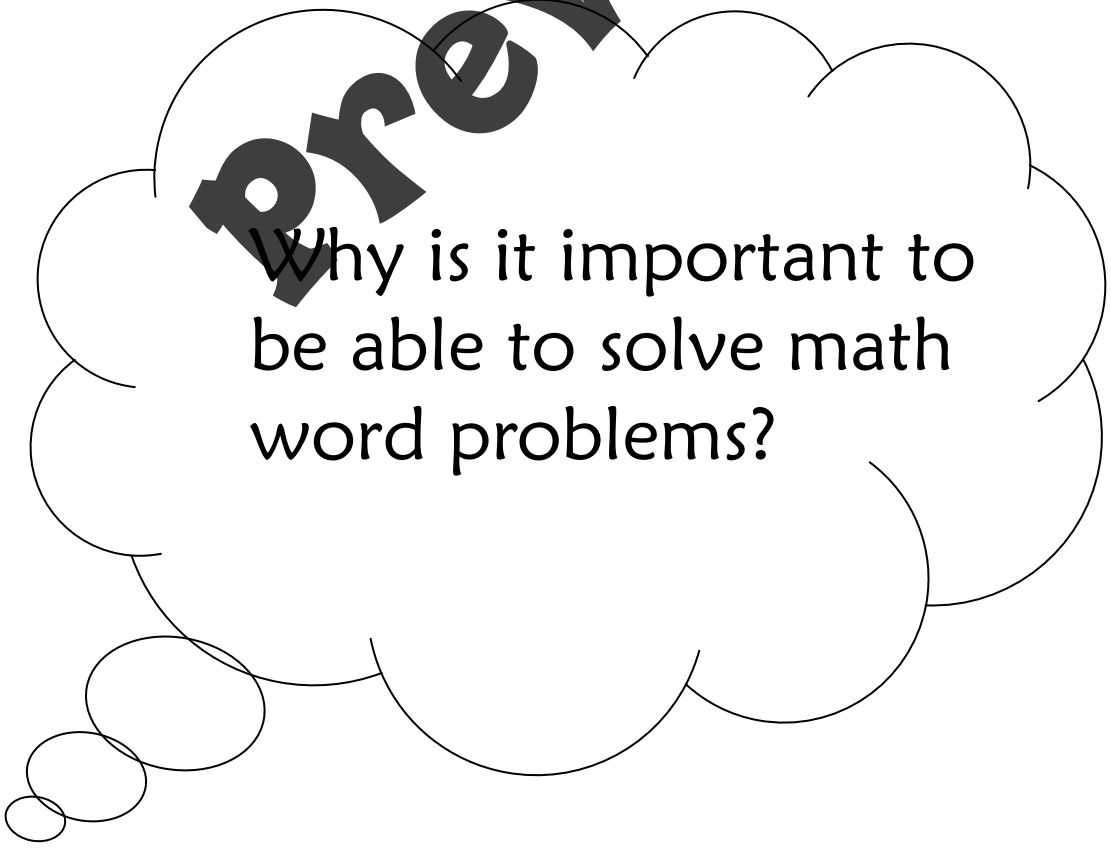
2) Gavin and two friends went rock climbing one afternoon. It took 25 minutes to set up their gear, and they took turns climbing. Each one climbed for 45 minutes, and they left the climbing area at 5:40 p.m. What time did they arrive?

Page 40

Problems that can be solved using the Work Backward strategy are solved in reverse. You are given information about the end result and are asked to figure out what happened at the beginning. Remind students to not only reverse the steps, but to use inverse operations to "undo" the mathematical procedures. For example, subtraction will "undo" addition, and multiplication will "undo" division.

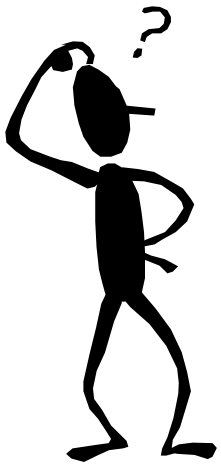
Problem #1 - 3 songs #2 - 3:00 p.m.


What are some ways we use math in our everyday lives?


Why is it important to be able to solve math word problems?

Problem Solving Strategies

Common Methods



Identify Relevant Information
Sometimes a problem contains more facts than you need to solve it. Underline or highlight any relevant facts, and cross out information that is not needed.

Write an Algebraic Equation
Sometimes it's easy to decide which operation to use. So just write an algebraic equation and solve it.

Example: $14 + 25 = a$ or $5x + 2 = 17$

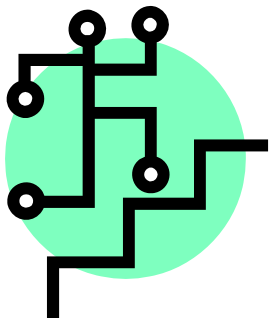
Draw an Illustration
Make an illustration, sketch, or map to help you visualize the problem. Include number and word labels in your drawing.

Make an Organized List or Chart
Create a chart or list of important information to help you organize it in a meaningful way. Then look for patterns in the information.

Guess and Check
Start by guessing a reasonable answer, then try out your idea to see if it works. If not, adjust your numbers and try again.

Work Backward
When you know how a problem ends, you can reverse the order of the steps and the use the inverse operations. When find the solution, check it by working forward.

Problem Solving Steps



Read

- What facts are given?
- What is the question?
- Highlight clue words and important numbers.

Think

- Which strategies might work?
- Which operation should be used?

+
−
÷
x

Solve

- Carry out your plan.
- Solve the problem.

Check

- Double check your work.
- Reread the problem.
- Does the answer make sense?
- If not, try another strategy.

Let's Try It!

Read

On Monday, Suzanne downloaded 14 songs from Amazon.com. On Tuesday she downloaded half as many as she did on Monday. Each song was 99¢. How many songs did she download in all?

Think

I'll use two strategies. I'll start by Identifying Relevant Information. Then I'll write an algebraic equation and solve it.

Solve

I'll highlight 14 songs on Monday and half as many on Tuesday. I'll cross out the cost of the songs because I don't need that information. Now I'll write my equation and solve it:

$14 + (14 \div 2) = x \quad x = 21$

Check

I'll check my solution by rereading the problem to see if my solution makes sense. I'll also check my computation with a calculator. It's correct!

Problem Solving Strategies

Name _____

For each problem, think about the strategies you used and mark the chart accordingly.

Activity Page #	Problem Number	Identify Relevant Info	Write Algebraic Equation	Draw an Illustration	Make a List or Chart	Guess and Check	Work Backward			

Identify Relevant Information

1) Tamara's cell phone plan costs 25¢ a minute for the first minute and 12¢ for each minute after that. Sending a photo costs 20¢. How much will it cost Tamara to call someone and talk for 5 minutes?

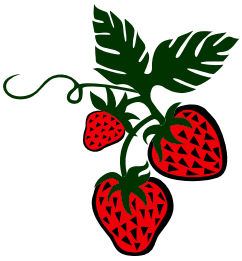
2) Joe's family was planning a 2-night and 3-day 500-mile road trip to the mountains. They planned to leave on the morning of April 15th. In planning their budget, the family allowed $50 per day for meals and $125 per night for the hotel. They also allowed $75 for gas and $150 for entertainment. What was their total budget for the trip?

D

Daily Math Puzzlers

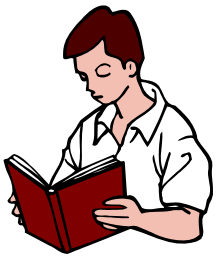
Write an Algebraic Equation

1) Robert earned $32 mowing lawns and $15 raking leaves. He combined his earnings and put half in savings. How much did he save?



2) Crystal went to U-pick Strawberry Farm and picked baskets of strawberries for two hours. During the second hour she picked twice as many baskets full as the first hour. If she picked 12 baskets in all, how many baskets of strawberries did she pick the first hour?

3) Brandon is trying to finish his novel in the next 3 days. The book is 328 pages long and he has only read 178 pages. How many pages will he need to read each day in order to finish the book?



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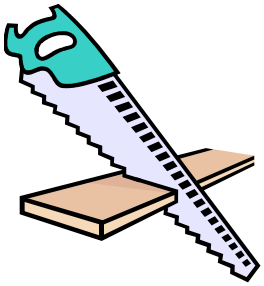
Daily Math Puzzlers

Draw an Illustration

1) Sondra is trying to figure out much fence material to buy for her rectangular garden. The garden is 18 feet long, and its width is 1/3 of its length. How many yards of fencing should she buy?



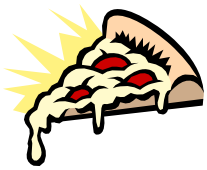
2) Ramon needs to cut an 8-foot board into 2-foot sections for shelves. If it takes him 30 seconds to make each cut, how long will it take him to make all of the necessary cuts?

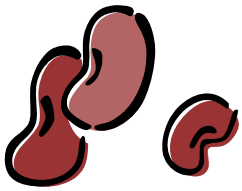
D

Daily Math Puzzlers

Make an Organized List or Chart

1) Pizza Piper serves pizzas with either a plain crust or a cheese-stuffed crust. They have four meat toppings: pepperoni, ham, bacon, and sausage. Customers may order a pizza with one, two, or three toppings. How many combinations of a meat-topped pizza are possible?





2) Jessica planted a bean seed on Friday and measured the young plant each day the following week. On Monday it was 4.5 cm tall, and each day after that it grew 2.5 cm. On what day was it 12 cm tall?

D

Daily Math Puzzlers

Guess & Check

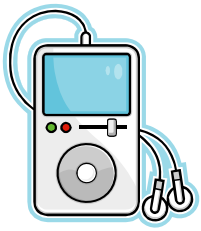
1) Becky drew two different numbered cards from a regular deck of playing cards. The product of the numbers was 5 more than the sum of the numbers. What were the two numbers?

2) Thomas had three types of coins in his pocket, and their total value was $2.72. He had twice as many pennies as quarters and one less dime than the number of pennies. How many quarters did he have?

D

Work Backward

1) On Sunday, Beverly received a gift certificate and began to download some songs for her MP3 player. Each day after that, she downloaded twice as many as the day before. She ran out of money on Wednesday when she downloaded her 24th song. How many did she download on Sunday?



2) Gavin and two friends went rock climbing one afternoon. It took 25 minutes to set up their gear, and they took turns climbing. Each one climbed for 45 minutes, and they left the climbing area at 5:40 p.m. What time did they arrive?

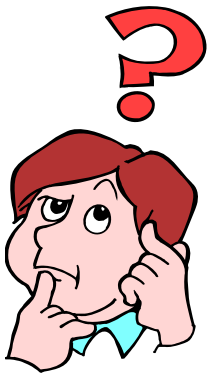
D

Daily Math Puzzler Program Preview

Program Description and Strategies

Daily Math Puzzler Program

Teaching Suggestions



After several weeks of introductory activities, you are finally ready to get started with your Daily Math Puzzler Program! The following strategies are to be regarded as suggestions only. Feel free to modify the program to suit your own needs.

Problem-Solving Worksheets

This Power Pack includes 20 problem-solving worksheets that are coded according to level and page number. The code appears in the lower left corner of the activity page. Level D denotes the level of all problems in this packet, which are on a 5th through 7th grade level. The number refers to the numerical sequence of the worksheets, but they can be used in any order. For example, D-3 refers to Level D, worksheet #3. If you purchase more than one level, it will be helpful to know the worksheet level in the event they become mixed together.

Should you use the activity pages in order? Not necessarily. You're the best judge of what page to use each week. Review the problems to make sure your students are ready for them. The problems should be somewhat challenging, but they shouldn't be completely frustrating. To be successful, your students should have had some previous experience with those mathematical concepts. For example, if a worksheet contains problems that require students to calculate elapsed time, they will be lost, even after you explain the answer. In general, as the page number increases, the problems become progressively more difficult. However, the difficulty also depends on when you introduce concepts like fractions and measurement. If you don't use the activity pages in order, you'll want to use the Tracking Chart on page 89 to keep track of when and how you use them.

Student Progress Charts

Several charts are included to help you track student progress. You'll find these forms in the supplementary material at the end of the book.

Daily Math Puzzler Program

Program Sequence

Daily Math Puzzler Program Snapshot

1. Distribute weekly activity page on Monday.
2. Students solve Problem #1 independently.
3. Teacher checks problem #1 (optional).
4. Whole class instruction on Problem #1.
5. Individuals correct problem #1 independently.
6. Repeat with a new problem on Tuesday, Wednesday, and Thursday.
7. Collect papers on Friday for final review and/or grading.

Strategies and Suggestions

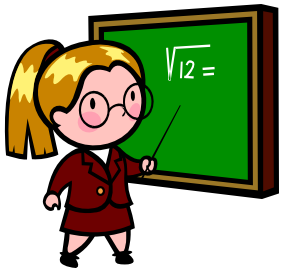
1. **Introduce Weekly Activity Page** - On Monday, give each student a copy of the worksheet and explain that they will work on one problem each day. You will discuss each day's problem the next day, after you have had a chance to review their work. Following this sequence, in a normal 5-day week, the final problem will be discussed on Friday.

2. **Independent Work** - After being given the activity page, students should try to solve the first problem without help. They should NOT take the worksheet home to get extra help because it's too easy for them to let someone else do all the work. Also, tell them not to work ahead and do all the problems - they need to focus their thoughts and energies on the first problem only. They should show all work and write the solution on the answer line.

3. **Quick Check** - If you want to review their work on a daily basis, there are two options you may want to consider:
   A. Collect their worksheets before they leave each day. Check over their answers and explanations before they return to class. If anyone has the correct answer and a logical explanation or illustration to show their work, circle the ✓+. If they don't have the right answer or don't show their work, don't circle anything.

Daily Math Puzzler Program

More Strategies



B. Or wait until students arrive in the classroom the next morning. Either collect the papers or walk around the room to do a quick check before you start the lesson. Circle the ✓+ if the problem is completely correct.

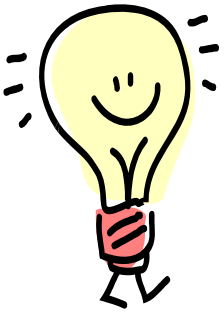
4. **Mini Lesson and Discussion** - After students have tried the problem on their own, ask them to put their pencils down while you teach a mini-lesson on one method of solving the problem. Demonstrate by drawing pictures, acting it out, using guess and check, etc. Involve them in the lesson, but don't let them blindly copy the answer from the overhead projector. Ask students if they can think of other ways to solve the problem. Use the Math Money coupons to reward students for creatively thinking of other methods for solving the problem. (Note: You may want to excuse those who earned a ✓+ from this portion of the lesson. However, they can be valuable contributors to the lesson if they have other strategies to share.)

5. **Students Revise Answers** - Now, turn off the overhead projector and have students use one of the methods to correct their work and write the answer. They need to do more than put a new answer on the line - they also need to show work that reflects the correct answer. Circle a ✓ for anyone who successfully solves the problem. As they finish this problem, they may begin working on the next one. You can use this time to circulate through the room and begin reviewing their work.

6. **Repeat and Review Work** - Repeat these steps for each problem, completing one per day. Collect the papers on Friday for a final review and/or grading. Any grade should be based on effort and participation as well as correctness of answers. If students aren't able to correct some of their answers, circle the ✓- to show that they made an attempt but never successfully reworked the problem.

Daily Math Puzzler Program

Alternative Strategies



Homework - Send one worksheet home each week for homework, then collect them to review and discuss at school.

Problem of the Week Challenges - Why not include one Daily Math Puzzler problem on your weekly newsletter? Students can work with their parents to solve the problem and submit their answers by a certain due date. Offer Math Money to students who get the problem correct!

Problem Solving Focus Days - Devote one day a week to solving all four problems. Use a cooperative learning strategy and spend one class period a week on problem solving rather than 15 minutes a day.

Paper Saver Option - To save paper, make a transparency or display the problems on an interactive whiteboard. Have students work the problems on dry erase boards or their own paper. Then choose a student to work the problem in front of the class on the overhead projector or whiteboard.

Written Explanations - Does your state require students to write out explanations when they solve word problems? If so, you will want to add that component to your problem-solving routine. You can use the Solve and Write blackline master on page 87 and duplicate it on the back of each worksheet. Or just have students write explanations on lined paper and staple their papers to the back of the activity page.

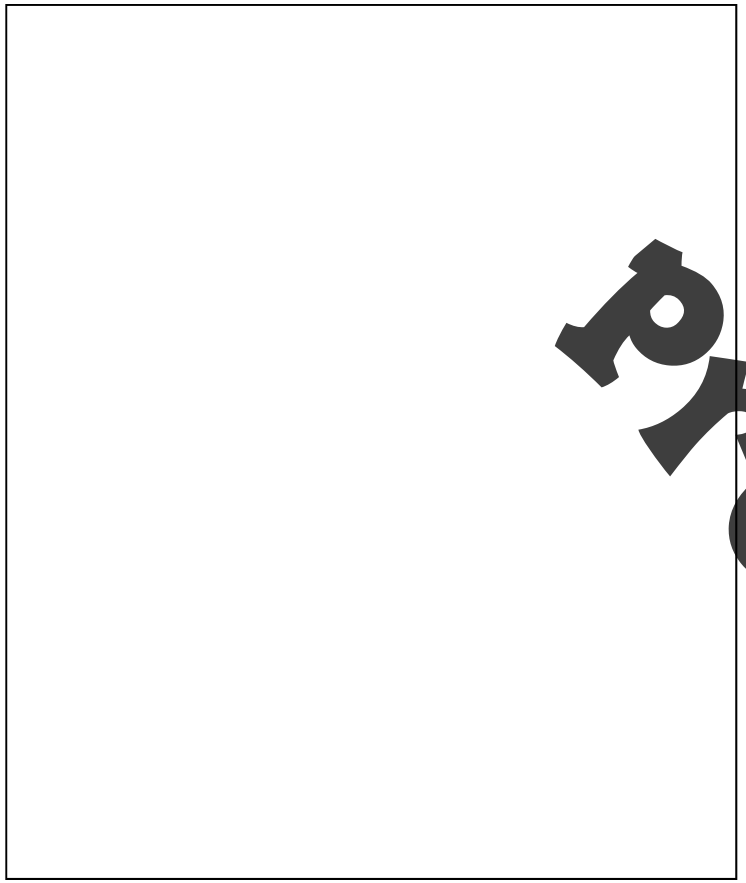
Modifications - If you are working with students with special needs, you may want present just one problem per day to students rather than overwhelming them with four on a page. If so, cut out and paste one problem on the single page template found on the next page and then duplicate it for students. This template provides more work space as well as a Checkpoint system for checking off each step of the problem-solving process. After students become comfortable with the system, you can use the regular worksheets with four problems per page and just use the Checkpoint slips on page 47 to reinforce the steps.

Daily Math Puzzler

Name _____

Date _____

Work Space:



Checkpoint

- ❑ I read the problem twice.
- ❑ I underlined key words.
- ❑ My work shows my thinking.
- ❑ I checked my answer.
- ❑ I wrote a complete answer.

Answer _____

✓- ✓ ✓+

Problem Solving Checkpoint

- ❑ I read the problem twice.
- ❑ I underlined key words.
- ❑ My work shows my thinking.
- ❑ I checked my answer.
- ❑ I wrote a complete answer.

Problem Solving Checkpoint

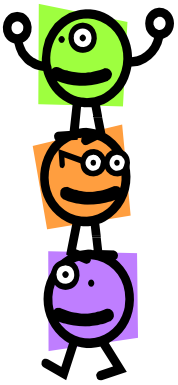
- ❑ I read the problem twice.
- ❑ I underlined key words.
- ❑ My work shows my thinking.
- ❑ I checked my answer.
- ❑ I wrote a complete answer.

Problem Solving Checkpoint

- ❑ I read the problem twice.
- ❑ I underlined key words.
- ❑ My work shows my thinking.
- ❑ I checked my answer.
- ❑ I wrote a complete answer.

Daily Math Puzzler Program

Cooperative Learning



Stretch mathematical thinking by involving students in Cooperative Learning problem-solving tasks.

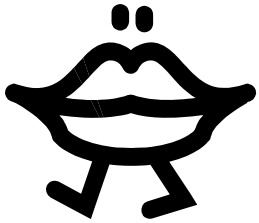
Math Buddies - Divide your class into Math Buddies and duplicate one worksheet per pair. Have them work the problems together and take turns recording their answers on the page. Form new Math Buddies each week. (This option is just for practice and does not lend itself to grading.)

Math Talk - Frequently when students work together in teams, one person does all the work and the others simply copy the answer. However, Math Talk offers a perfect remedy for this problem! It's designed to encourage discussion and discourage copying. To get started:

- Make a transparency of the Math Talk directions (page 49). Put a sturdy plastic cup in the center of each team, and give each person one copy of the same Daily Math Puzzler worksheet. They will complete this worksheet in one class period rather than over an entire week.
- At first, you'll need to model the Math Talk activity for students and guide them through it in a step-by-step manner. After that, they will want to progress through the worksheet at their own pace.
- Remind students that they may only talk when their pencils are in the cup. When they have their pencils in their hands, they must work on the problem on their own without talking! This step ensures individual accountability and discourages cheating.
- Since students have to explain every problem in their own words, this assignment does lend itself to individual grading or evaluation.

Show 'N Tell - For a new twist on teamwork, cut out the 4 problems to make a set of problem "cards." Give each team one set of word problem cards, and put a transparency of the Show 'N Tell directions (page 48) on the overhead projector. Everyone will need an individual dry erase board or chalkboard for this activity. Lead students through the process in a step-by-step manner until they are comfortable with this activity.

Math Talk

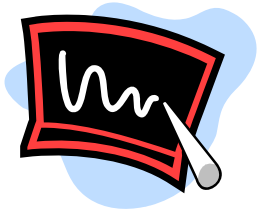


Directions

1. Team members have identical worksheets.
2. Each person places his or her pencil in the cup.
3. Person #1 is the first Leader. The Leader reads the first problem only and everyone discusses strategies for finding a solution. Do not actually solve the problem at this time, and don't reveal the answer!
4. The Leader asks, "Is everyone ready to start working on the problem?"
5. If the answer is "No," continue the discussion.
6. When ready, everyone picks up their pencils.
7. ***Without talking***, everyone solves the first problem and writes their answer on the line. Everyone must show how the problem was solved.
8. Pencils are placed back in the cup.
9. Person #2 becomes the new Leader. Continue rotating Leaders for each question.

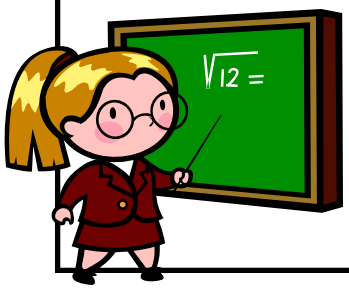
Pencils In = Talking
Pencils Out = No Talking

Show 'N Tell



Directions

1. One set of problem cards is needed per team. Stack the problem cards face down in the middle of the team.
2. Person #1 is the first Leader. The Leader reads the first problem aloud and places the card in the middle of the team where everyone can see it. (It's okay for team members to pick up the card and read it again.)
3. Everyone tries to solve the problem on their own. They work out their solutions on individual chalkboards or dry erase boards. If they can't finish the problem, they should try their best and do as much as they can.
4. When everyone has solved the problem or tried their best to solve it, they place their dry erase boards face down in front of them.
5. The Leader says "Show 'N Tell!" and everyone flips their boards over to show their work. They take turns explaining how they solved the problem.
6. The team agrees on one correct answer. The Leader writes the team answer on the card. (Drawings and explanations are not needed on the team answer card).
7. A new person becomes the Leader for each round. Steps 2 - 6 are followed for each problem card.



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Money

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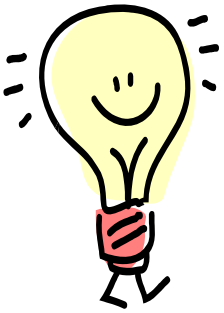
Daily Math Puzzler Program

Teacher Tips*



Highlighters - I wanted to share what I have my kids do when they are doing these kind of problems. They read the problem twice. The second time they use two color highlighters. They highlight key info with one color and the question with another. They love using highlighters and they are much more focused on the problem. ~ Sharyn Powell

Spiral Notebooks - I have the students cut out the problems and paste them into a spiral notebook, one problem per page. This way they have space for working out the problem as well as a written explanation if required. ~ Suzann Falgione

Sentence Answers - When my kids answer word problems, after the computation they then answer the question in a simple sentence, such as "Ronald had 247 more cards than Brad." This way, they can "self-check" if their answer makes sense. They are not just looking at the numbers in the problem and choosing an operation. Putting the answer into words also helps the kids with language issues (ESL or ESE.) ~ Linda Schuman

Problem-Solving Bulletin Board - Something I've done before was to have a bulletin board area with the Problem of the Week posted. When students have completed their answers (pictures, words, symbols), they post them face down. At the end of the week, or the Thursday night before, I "reveal" all the submitted answers. The kids are excited to compare and see what everyone else posted. We then discussed the correct answer and some of the ways it was solved. I've also seen something similar done as a whole school. The problem was posted, answers submitted to a sealed box, then posted at the end of the week. The display remained up for a week after for parents, community members, and other staff and students to view. ~ Rose Carre

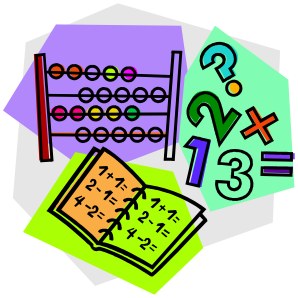
* Teacher Tips submitted by field testers and teachers who are using the Daily Math Puzzler program. Feel free to send your teacher tips to Laura at lauracandler@att.net.

Daily Math Puzzler Program

Dear Parents,

Math problem solving is challenging for most students, but it's also extremely important. Knowing how to add, subtract, multiply and divide is meaningless if you can't solve problems in everyday life. That's why I'm excited to introduce Daily Math Puzzlers, a new weekly math program that will take just a few minutes a day but will help your child build a solid foundation in math.

Here's how the program works. Every Monday I will give my students a worksheet containing four math word problems. One problem will be completed each day, Monday through Thursday. Each day before they do another problem, we will discuss the problem from the previous day. We've been learning a variety of problem-solving steps and strategies, and now it's time to apply what we've learned.



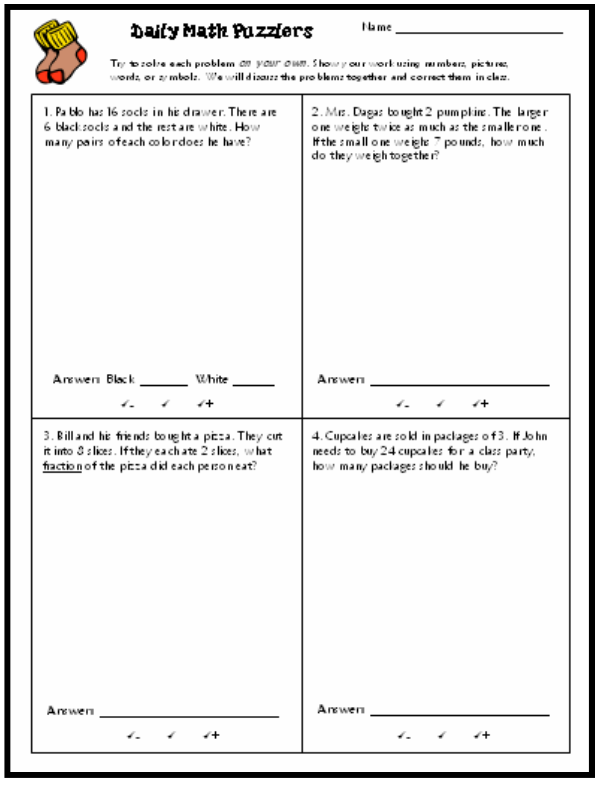
Daily Math Puzzler Guidelines:

- Students solve one problem per day, and they must show their work with numbers, pictures, symbols, or words.
- Students should attempt to work each problem on their own first without receiving outside help. Each day we will discuss the previous day's problem as a class, and your child can make corrections at this time.
- Your child may use a calculator if he or she knows how to solve the problem but is not comfortable with the computation needed for the solution.
- The Daily Math Puzzler activity sheet will be graded on effort and participation as well as work quality. Students might not have all the problems correct at first, but they can still do well if they ask questions, share ideas, and correct their answers in class.

Even though I'm requesting that you do not assist your child at home with this assignment, I wanted you to be aware of this program and how I will evaluate your child's performance. If you have any questions, please feel free to contact me and I'll explain the program in more detail. Thanks for your support!

Sincerely,

Daily Math Puzzler Activity Pages Previews


Daily Math Puzzlers

Name _____

Try to solve each problem on your own. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Pablo has 16 socks in his drawer. There are 6 black socks and the rest are white. How many pairs of each color does he have?

Answer: Black _____ White _____

✓- ✓ ✓+

2. Mrs. Dagas bought 2 pumpkins. The larger one weighs twice as much as the smaller one. If the small one weighs 7 pounds, how much do they weigh together?

Answer: _____

✓- ✓ ✓+

3. Bill and his friends bought a pizza. They cut it into 8 slices. If they each ate 2 slices, what fraction of the pizza did each person eat?

Answer: _____

✓- ✓ ✓+

4. Cupcakes are sold in packages of 3. If John needs to buy 24 cupcakes for a class party, how many packages should he buy?

Answer: _____

✓- ✓ ✓+

20 Activity Pages for Daily Problem Solving

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Tommy's cell phone plan costs $0.18 per minute to talk and 5¢ to send each text message. If he has $6.95 in his account and sends 35 text messages, how many minutes can he talk?

Answer: _____

✓- ✓ ✓+

2. Xavier works 20 hours a week at the library and is paid $7.35 per hour. If he takes 2 weeks of unpaid vacation and works the remaining weeks, how much money will he make in a year?

Answer: _____

✓- ✓ ✓+

3. Susan's class conducted a survey of the one hundred fifty students in 6th grade. They learned that 70% of the students bought school lunch. How many students don't buy school lunch?

Answer: _____

✓- ✓ ✓+

4. Reginald created a mosaic from 6" square tiles. If the completed mosaic was 2 feet by 3 feet, how many square tiles did he use?

Answer: _____

✓- ✓ ✓+

D-1

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Lucy needs to buy two dozen hot dogs for the class picnic. Food Fair sells packages of 8 hotdogs for $2.99 and Snack City sells packages of 12 hot dogs for $3.99. Which store has the better buy?

Answer: _____

✓- ✓ ✓+

2. Celia's rectangular birthday cake was cut into 36 pieces. Her guests ate 12 pieces at her party, and her family ate half that many the next day. What fraction of the cake was left? (Express the answer in lowest terms.)

Answer: _____

✓- ✓ ✓+

3. A can of paint will cover 100 square feet of wall space. Diego wants to paint 4 walls that measure 12.5' x 8.5' each. How many cans of paint does he need to buy?

Answer: _____

✓- ✓ ✓+

4. Branson earned the following scores on his math tests: 67, 89, 95, 90, and 84. How does the mean of his scores compare to the median?

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Zane owns 6 striped t-shirts, 8 white t-shirts, and 4 solid colored t-shirts. If Zane picks a t-shirt at random, what is the probability of picking a white or a solid colored t-shirt?

Answer: _____

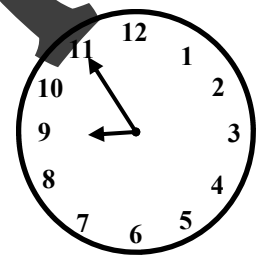
✓- ✓ ✓+

2. A rectangular swimming pool measures 15 feet by 30 feet. What is the perimeter of the pool in yards?

Answer: _____

✓- ✓ ✓+

3. The drive to Clarktown takes 3 hours and 45 minutes. If the Jemisons leave in the morning at the time shown below, when will they arrive in Clarktown?



Answer: _____

✓- ✓ ✓+

4. Destiny waters her cacti every 8th day and her other houseplants every 6th day. How many days will pass before she waters them all on the same day?

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Tony, Martin, and Alfredo play together on a basketball team. During practice one day, they each shot 20 free throws. Tony made 14 out of the 20, Alfredo made 3/4 of his shots, and Martin made 60% of his shots. Who should the coach choose to shoot free throws during the game? Explain.

Answer: _____

✓- ✓ ✓+

2. The 375 sixth graders at Sandy Hills Middle School are taking a field trip to the space center. Each bus holds 52 students and costs $815 for the day. How much money does the school need to collect for transportation?

Answer: _____

✓- ✓ ✓+

3. While playing a game with 6-sided dice, Angelica rolls two different numbers and adds them. How many different sums are possible?

Answer: _____

✓- ✓ ✓+

4. Samuel asked his friends to guess his age. He said that if you divide his age by the only even prime number and add 4, the result is the least common multiple of three and five. How old is Samuel?

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Justin received three $50 i-Tunes™ gift cards for his birthday. He wants to purchase 115 songs at $0.99 per song and 4 movies at $14.99 per movie. Will he have enough money on his gift cards? Explain or show your work.

Answer: _____

✓- ✓ ✓+

2. Who earned the highest average on the assignments shown below? What was that student's average if all grades are weighted equally?

Name	Test 1	Home work	Test 2	Home work
Cody	95	78	85	99
Ariel	100	87	83	92
Omar	78	76	95	79
Jillian	100	0	95	92

Name: _____ **Average:**_____

✓- ✓ ✓+

3. Austin feeds the fish in a pet store. Each month he uses two 50-g packages in each of the 7 large aquariums. At this rate, how many packages of fish food will Austin use in a year?

Answer: _____

✓- ✓ ✓+

4. Judi promised to increase the amount of time she spends practicing her violin. She decided to start out with 10 minutes on Monday, and each day she planned to double the amount of time she practiced the day before. Was her plan reasonable? At this rate, how many hours will she be practicing on Sunday?

Answer: _____

✓- ✓ ✓+

D-5

Daily Math Puzzlers

Name _____

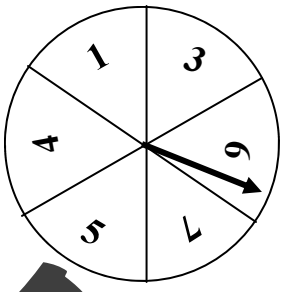
Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Adrian bought a dozen doughnuts. Five were frosted, four had sprinkles, and the rest were plain. What percent of the doughnuts were plain?

Answer: _____

✓- ✓ ✓+

2. If Crystal spins this spinner 24 times, how many times should she expect to land on an even number?



Answer: _____

✓- ✓ ✓+

3. For an art project, Patricia wanted to cover a wooden box with 1" square tiles. The box was a cube measuring 6 inches on all sides. How many square inch tiles will be needed to cover the box?

Answer: _____

✓- ✓ ✓+

4. A recipe that makes 2 dozen cookies calls for 2 eggs, 1¾ cup flour, and 2/3 cup sugar. Joey needs to make at least 40 cookies for the class party. How much flour and sugar will he need?

Flour: _____ **Sugar:** _____

✓- ✓ ✓+

D-6

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Jill specializes in making birthday cakes. Customers may choose chocolate or vanilla frosting with one or two colors for the decorations. Colors for the decorations include red, blue, green, and pink. How many different frosting combinations are possible?

Answer: _____

✓- ✓ ✓+

2. Jade is buying lace to stitch around the edge of two round tablecloths. The diameter of each tablecloth is 5.5 feet. If lace is sold by the yard, what's the smallest number of whole yards she can buy to have enough lace for the tablecloths?

Answer: _____

✓- ✓ ✓+

3. Darryl wanted 1¾ pounds of sliced ham at the deli, but the scale was digital and did not display fractions. The salesperson measured out 1.25 pounds and asked how much more Darryl needed. What should he reply?

Answer: _____

✓- ✓ ✓+

4. Brandon buys two tacos, a soda, and a cookie. How much change should he get if the sales tax is 4% and he gives the waiter a $10 bill?

Taco Heaven

Burrito	$2.95
Taco	$1.35
Nachos	$0.99
Soda	$1.20
Cookie	$0.85

Answer: _____

✓- ✓ ✓+

D-7

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Carla ran a half mile in 4.08 minutes. Gregory ran a mile in 8.2 minutes. Who ran faster? Explain or show how you know.

Answer: _____

✓- ✓ ✓+

2. Ricky lives 6 miles directly west of Wendy. Sonny lives 8 miles north of Wendy. What's the shortest distance between Sonny's and Ricky's homes? Show how you solved the problem.

Answer: _____

✓- ✓ ✓+

3. Kamil needed to finish his book by Friday, so he recorded his daily reading to stay on track. After the third day, he realized that he was only half way through it. How many pages should he read on each of the next two days to finish?

Day	Pages
Monday	16
Tuesday	22
Wednesday	28
Thursday	
Friday	

Answer: _____

✓- ✓ ✓+

4. At Joshua's school, the name of one boy and one girl will be randomly selected to win a $50 gift certificate. His school has 560 students, and 55% of them are boys. What are his chances of winning?

Answer: _____

✓- ✓ ✓+

D-8

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Darian painted one wall of his room with two colors. The wall was 9½ feet high and 12 feet long. He drew a diagonal line from one corner to the other and painted the top half blue and the bottom half red. What was the area of each half of the wall?

Answer: _____

✓- ✓ ✓+

2. Victor and Felisha enjoy kayaking a 2-mile stretch of the Little River. It takes them 2½ hours to travel upstream, but the return trip only takes half as long. If they start paddling upstream at 9:45 a.m., take a 15-minute lunch break, and then paddle back to where they began, what time will they return?

Answer: _____

✓- ✓ ✓+

3. Tamera needs to put a fence around her square flower garden. Her garden measures 4 yards on each side, and she plans to put a fence post in each corner, as well as every 4 feet along all sides. How many fence posts must she buy?

Answer: _____

✓- ✓ ✓+

4. Emily baked two dozen cupcakes for her class. She frosted 8 of them green and the rest red. She put sprinkles on 3/4 of the green ones and 1/2 of the red ones. How many cupcakes did not have sprinkles?

Answer: _____

✓- ✓ ✓+

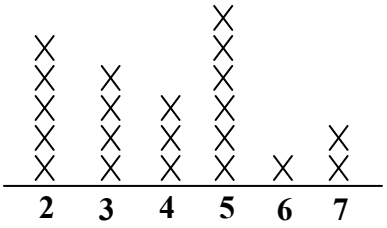
Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Mrs. Simpson's class created this line plot from data collected about books they read over vacation. How many books were read in all by the class? What is the mean of the data?

Books Read



Answer: Total _____ Mean _____

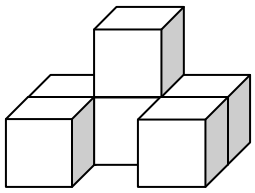
✓- ✓ ✓+

2. Lucy bought 8 books from www.books4us.com. Each book weighed 12 ounces and cost $4.95. Shipping fees were $0.95 per pound. What was the total cost of her order including shipping?

Answer: _____

✓- ✓ ✓+

3. Ian built the shape below from 1" cubes and spray-painted the outside of the entire structure. What was the total area of all painted surfaces?



Answer: _____

✓- ✓ ✓+

4. Charles signed up for a text messaging plan that allows him to send or receive 500 messages for $6.00. Each message after that costs 10¢. Last month he sent 384 messages. He also received half as many messages as he sent. How much did he pay in all for messaging?

Answer: _____

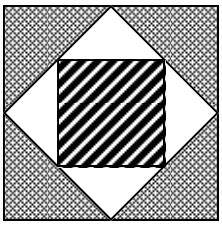
✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Sofia created the quilt pattern below and drew it on paper. If the large quilt block is 1 foot square, what is the area of the white space in her pattern?



Answer: _____

✓- ✓ ✓+

2. Julian noticed that one chapter of his book contained 5 pages and that the sum of those page numbers was 5^3. What were the 5 page numbers?

Answer: _____

✓- ✓ ✓+

3. Sheldon bought a box of three dozen candy bars for $25.00. He sold 75% of them for $1.25 each and gave the rest to his friends. How much profit did he make?

Answer: _____

✓- ✓ ✓+

4. Tyra is landscaping her rectangular backyard which is 10 yards wide and 15 yards long. She will build a 10' by 12' storage building and create a 12' by 14' vegetable garden. She plans to plant grass on the rest of the yard. How many square feet of grass will she plant?

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Micah can pick 5 quarts of strawberries in 30 minutes. His little sister Shay can only pick 3 quarts in 30 minutes. If they both start picking together, how long will it take them to fill a one-gallon bucket with strawberries?

Answer: _____

✓- ✓ ✓+

2. Teresa made the following test scores on her first 5 tests: 98, 87, 85, 96, and 86. If she makes a 100 on the next two tests, will it be enough to pull her average up to a 93? Show how you know.

Answer: _____

✓- ✓ ✓+

3. Alicia is making a rectangular tablecloth for a table that is 2 feet wide by 4 feet long. She wants to make it large enough to cover the top and have 6" to hang over each edge. If she buys a piece of fabric 45 inches wide and 50 inches long, will she have enough? Explain or show how you know.

Answer: _____

✓- ✓ ✓+

4. Samuel is trying to decide which pizza is the better buy. The 12" square pizza and the 13" round pizza are the same price. Which one will give him the most pizza for his money?

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Lisa can buy a CD in a local store for $13.70 plus 6% sales tax. She can buy it online for $10.95. She doesn't have to pay sales tax, but she does have to pay $4.95 shipping. Which store, local or online, has the better buy? What is the difference in cost between her two options?

Better Buy: _____ **Difference:**_____

✓- ✓ ✓+

2. Greg bought some goldfish and needs to fill his aquarium which is 30 cm wide, 60 cm long, and 32 cm tall. How many liters of water will he need to fill the aquarium 3/4 of the way to the top?

Answer: _____

✓- ✓ ✓+

3. Mark, Ray, and Sharon spent an hour collecting cans for recycling. Sharon collected the most, but she gave half her cans to the boys who shared them equally. Mark then gave one can to Ray. After these exchanges, they each had a dozen cans. How many cans did Ray collect on his own?

Answer: _____

✓- ✓ ✓+

4. In a recent school fundraiser, 5th graders raised $2,400 which was 1/3 of the total collected by the school. The 7th graders collected only half as much as the 5th graders, and the 6th graders collected the rest. What percent of the money was raised by the 6th graders?

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

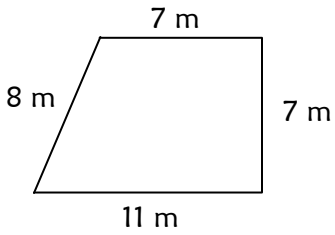
Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Shawn earned $62.00 mowing lawns. He saved 30% of his earnings, bought a gift card for $15.00, and spent the rest on two video games which cost the same amount. How much did each video game cost?

Answer: _____

✓- ✓ ✓+

2. Linda was trying to decide how many bags of fertilizer to buy for the garden shown below. If each bag will cover 20 square meters, how many bags should she buy? Justify your answer by showing how you solved the problem.



Answer: _____

✓- ✓ ✓+

3. Darius read 25 books during the school year. He read 15 graphic novels and 3 classic novels. The rest were nonfiction books. What percent of his books were nonfiction?

Answer: _____

✓- ✓ ✓+

4. Brandy and Erin solved the equation below. Brandy's answer was 4 and Erin's answer was 13. Who was correct? Describe the error made by the student whose answer was not correct.

$$2^4 - (18 \div 3 \times 2) = x$$

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Carrie's class was selling T-shirts to save the rain forest. The shirts were $15.00 each, and they figured that if everyone sold 4 shirts, they would meet their class goal of 100 shirts. As it turned out, 5 students didn't sell any, two-fifths of the class sold exactly 4 shirts each, and the rest sold 8 shirts each. Did they make their class goal? Explain.

Answer: _____

✓- ✓ ✓+

2. Lindy earned the following scores on 6 math tests: 95, 93, 100, 80, 78, 100. Her teacher said Lindy could choose to record either the median or the mean of her test scores. Which should she choose? Why?

Answer: _____

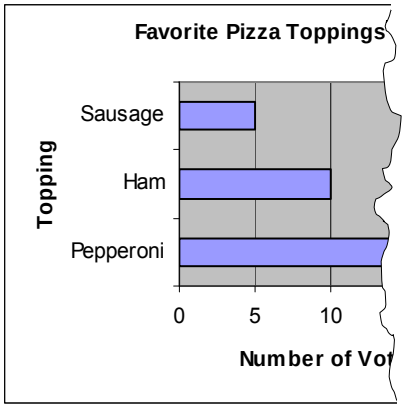
✓- ✓ ✓+

3. Samantha knows that the area of her square garden is twice its perimeter. She also knows that the area is less than 100 ft square. If one bag of fertilizer covers 25 square feet, what's the smallest number of bags she needs to buy? Explain or show how you know.

Answer: _____

✓- ✓ ✓+

4. Karen accidentally tore the results the survey below and was trying to redraw it. She forgot how many students voted for pepperoni, but she knew that it was 2/3 of the total. How many students chose pepperoni for their favorite pizza topping?



Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Jane had some jellybeans in a bowl. She gave 1/4 of them to her mom and then gave 1/2 of the remaining candies to her father. If there were 12 jellybeans left, how many did she start with?

Answer: _____

✓- ✓ ✓+

2. Phyllis and Betty started walking the quarter mile trail in the park at the same time. Phyllis can walk the loop in 3 minutes, but it takes Betty 5 minutes to walk the same distance. What is the total distance they will walk after 45 minutes?

Answer: _____

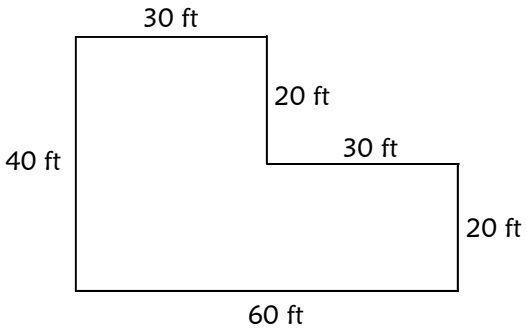
✓- ✓ ✓+

3. Jen, Ken, and Ben each ordered a pizza, soup, or a salad. They also each ordered a dessert. Each person ordered something different. Their deserts were hot apple pie, ice cream, and cake. Ken and Ben did not order a frozen dessert. Ben's entrée was cold, but his dessert was hot. Ken and Ben's entrée started with the same letter of the alphabet. What did Ken order?

Answer: _____

✓- ✓ ✓+

4. Carson needs to order sod for his yard. He measured his yard and drew the diagram below. If sod is sold in 18" by 12" pieces, how many pieces will he need to order?



Answer: _____

✓- ✓ ✓+

D-16

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Crystal is making lemon punch for her class. The recipe calls for a ratio of two parts lemonade to three parts ginger ale. If she uses 6 quarts of ginger ale and the corresponding amount of lemon juice, how many gallons of punch will she have?

Answer: _____

✓- ✓ ✓+

2. Stanley's gas tank holds 13.5 gallons of gas. On his last trip, he calculated that his car got 26.4 miles to the gallon. He's planning a trip to the beach which is 205 miles away. If he starts with a full tank, will he have enough gas to get to the beach and back? Explain.

Answer: _____

✓- ✓ ✓+

3. Gayle bought 4 bags of topsoil to create a garden, and the directions said one bag would cover 18 square feet. She created the largest rectangular garden possible from that amount of soil, and her garden was twice as long as it was wide. What were the dimensions of her garden?

Answer: _____

✓- ✓ ✓+

4. Raymond bought his mom a dozen roses for Mother's Day. There were twice as many yellow roses as red roses, and three times as many pink roses as red roses. What percent of the roses were pink?

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Bill's gas tank was 2/3 full when he left for vacation. He used 4 gallons which was 1/2 of the gas he had when he left his house. How many gallons will his tank hold when full?

Answer: _____

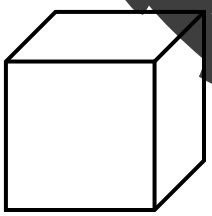
✓- ✓ ✓+

2. Savannah chooses a number from a bag containing 9 slips of paper numbered 1 to 9. Without putting it back, she chooses another number. Her numbers are not consecutive, and their product is seven more than their sum. What are the two numbers?

Answer: _____

✓- ✓ ✓+

3. Cindy painted a 3 cm cube on all 6 sides. She then cut this cube into 1 cm cubes. How many of the smaller cubes had paint on exactly 2 sides?



Answer: _____

✓- ✓ ✓+

4. Karl found 3 boards he wanted to use to make shelves. One board was 3 feet long, one was 4.5 feet long, and the third was 2 feet long. He wants to cut 6 shelves with the least amount of waste possible. If he cuts them all the same length, how long will each shelf be?

Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. Carl can ride his bike twice as fast as he can jog. He jogged three times around a 1-mile trail in 24 minutes and then rode the same trail with his bike. How long did it take him to bike the trail once?

Answer: _____

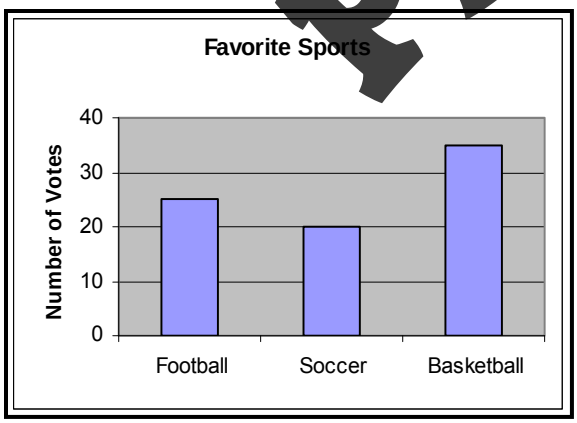
✓- ✓ ✓+

2. Madison bought a new cell phone for $37.50 plus $2.25 sales tax. What percent sales tax did she pay on this transaction?

Answer: _____

✓- ✓ ✓+

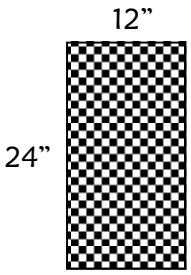
3. In the survey below, about what percent of those surveyed prefer basketball?



Answer: _____

✓- ✓ ✓+

4. Sabrina cut the piece of decorative paper below to wrap a gift, but it wasn't big enough. She cut another piece 50% longer and twice as wide. How many square feet is the larger piece?



Answer: _____

✓- ✓ ✓+

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1. It took Carmen 45 seconds to download 5 songs. She noticed that it took her 4 times as long to download a music video as a song. At this rate, how many minutes would it take to download 10 videos?

Answer: _____

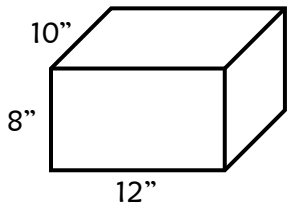
✓- ✓ ✓+

2. A recipe for 4 servings of mashed potatoes calls for 1⅓ cups potato flakes and 1 cup boiling water. If James wants to make 6 servings instead of 4, how much of each ingredient will he need?

Potato Flakes: _____ **Water:** _____

✓- ✓ ✓+

3. For a project, Angela needed to cover a box with paper. The box was a rectangular prism 8" tall, 10" wide, and 12" long. She found a piece of paper that was 1 yard long and 12 inches wide. Will it be large enough to cover the box? Explain.



Answer: _____

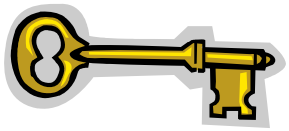
✓- ✓ ✓+

4. Denzel earned the following grades on his first five tests: 94, 87, 74, 98, 92. What is the lowest grade he can score on the next test to bring his average up to 90%?

Answer: _____

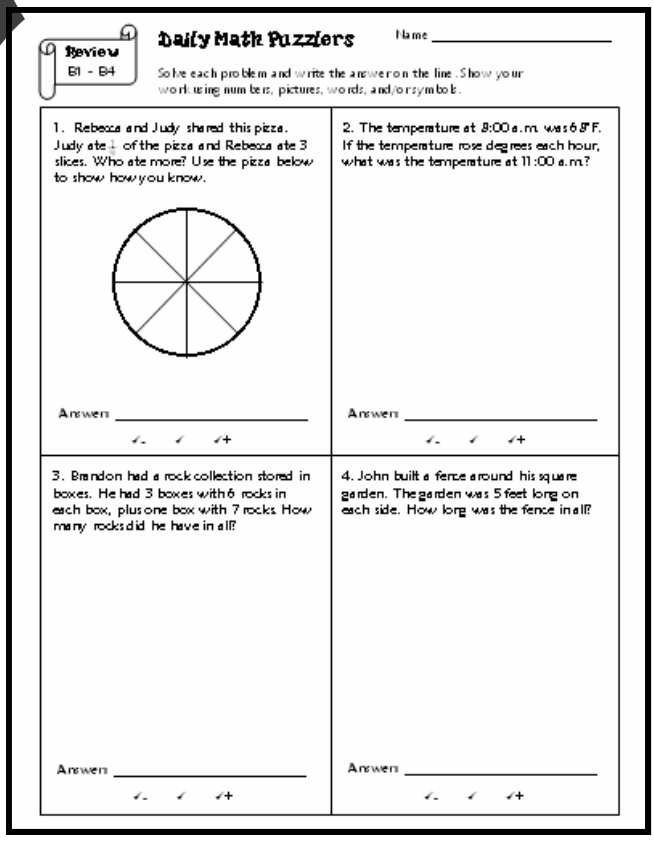
✓- ✓ ✓+

Answer Key



Activity Page	Problem #1	Problem #2	Problem #3	Problem #4
D-1	28 min	$7,350	45 students	24 tiles
D-2	Snack City	1/2	5 cans	Median is 4 pts higher than Mean
D-3	2 out of 3	30 yards	12:40 p.m.	24 days
D-4	Alfredo	$6,520	9 different sums	22 years old
D-5	No	N- Ariel Av- 90.5	168 packages	No - 10 hr 40 min
D-6	25%	8 times	216 tiles	Fl - 3½ S - 1⅓
D-7	20 combinations	12 yards	0.5 or 1/2 lb	$5.06
D-8	Carla	10 miles	33 pages	1 in 308 chances
D-9	57 ft²	1:45 p.m.	12 posts	10 cupcakes
D-10	84 & 4	$45.30	26 in²	$13.60
D-11	36 in²	23 - 27	$8.75	1,062 ft²
D-12	15 minutes	Yes	No	Square Pizza
D-13	Local; $1.38	43.2 liters	5 cans	50%
D-14	$14.20	4 bags (65 m²)	28%	Brandy
D-15	Yes; 120 shirts sold	Median (94 > 91)	3 bags (a = 64 ft²)	30 students
D-16	32 jellybeans	6 miles	Salad and Cake	1200 pieces
D-17	2.5 gallons	No	6 ft x 12 ft	50%
D-18	12 gallons	2 & 9 or 3 & 5	12 cubes	1.5 ft or 18”
D-19	4 min	6%	44%	6 sq ft
D-20	360 sec = 6 min	Fl: 2 c. W: 1½ c.	No	95

Daily Math Puzzler Review Pages Previews



Review
B1 - B4

Daily Math Puzzlers Name _____

Solve each problem and write the answer on the line. Show your work using numbers, pictures, words, and/or symbols.

1. Rebecca and Judy shared this pizza. Judy ate $\frac{1}{2}$ of the pizza and Rebecca ate 3 slices. Who ate more? Use the pizza below to show how you know.

Answer _____

✓- ✓ ✓+

2. The temperature at 8:00 a.m. was 68°F. If the temperature rose degrees each hour, what was the temperature at 11:00 a.m.?

Answer _____

✓- ✓ ✓+

3. Brandon had a rock collection stored in boxes. He had 3 boxes with 6 rocks in each box, plus one box with 7 rocks. How many rocks did he have in all?

Answer _____

✓- ✓ ✓+

4. John built a fence around his square garden. The garden was 5 feet long on each side. How long was the fence in all?

Answer _____

✓- ✓ ✓+

Daily Math Puzzler Review

Using the Review Pages

Overview

While using the Daily Math Puzzler program, you may feel the need for periodic review and assessment. There are five review pages, one for every four activity pages in the program. Each review page contains problems that are similar to problems on the corresponding activity pages. For example, Review Page D1-D4 contains four problems, one problem for each of the activity pages D1-D4.

Assessment and Grading

Scoring

✓- = 19 points
✓ = 22 points
✓+ = 25 points

You can use the review pages as you've been using the regular activity pages, or you may want to use them for assessment. If so, you can have students complete the review page in one session rather than spreading it out over a week. Any grading system should give credit to students who try to solve each problem and who show their work, even if their answers are not completely correct. An easy way to grade the worksheet is to circle the check minus, check, and check plus for each problem and then assign the points shown above. This system will result in 100 points for four check pluses, 88 points for four checks, and 76 points for four check minuses. You may also want to use the grading rubric shown on page 88.

Activity Page	Problem #1	Problem #2	Problem #3	Problem #4
D1 - D4	104 students	4 cans	2:30 p.m.	$4,625
D5 - D8	216 packages	FL: 3 c S: 1½ c	$1.52	5 miles
D9 - D12	2:15 p.m.	$35.40	$5.40	No; avg = 90
D13 - D16	Local; 97¢	4 bags	median	$72
D17 - D20	7 quarts	16 gallons	5%	Fl: 1⅓ c. M: 1 c.

Review D1-D4

Daily Math Puzzlers

Name _____

Solve each problem and write the answer on the line. Show your work using numbers, pictures, words, and/or symbols. Simplify all fractions!

1. Becky's class conducted a survey of the two hundred sixty students in 6th grade. They learned that 60% of the students bought school lunch. How many students don't buy school lunch?

Answer: _____

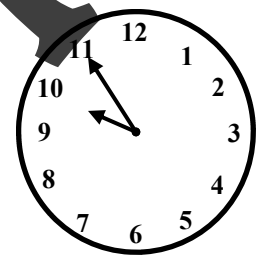
✓- ✓ ✓+

2. A can of paint will cover 120 square feet of wall space. Darius wants to paint 3 walls that measure 14.5' x 9.5' each. How many cans of paint does he need to buy?

Answer: _____

✓- ✓ ✓+

3. The drive to Jamestown takes 4 hours and 35 minutes. If the Bryan family leaves in the morning at the time shown below, when will they arrive in Jamestown?



Answer: _____

✓- ✓ ✓+

4. The 248 sixth graders at Rocky Road Middle School are taking a field trip to the space center. Each bus holds 56 students and costs $925 for the day. How much money does the school need to collect for transportation?

Answer: _____

✓- ✓ ✓+

Review
D5-D8

Daily Math Puzzlers

Name _____

Solve each problem and write the answer on the line. Show your work using numbers, pictures, words, and/or symbols. Simplify all fractions!

1. Patrick feeds the turtles in a pet store. Each month he uses three 25-g packages in each of the 6 turtle habitats. At this rate, how many packages of fish food will Patrick use in a year?

Answer: _____

✓- ✓ ✓+

2. A recipe that makes 2 dozen brownies calls for 3 eggs, 1½ cups flour, and ¾ cup sugar. Angelo needs to make at least 45 brownies for the class party. How much flour and sugar will he need?

Flour: _____ **Sugar:** _____

✓- ✓ ✓+

3. Catrina buys two burritos, a soda, and a cookie. How much change should she get if the sales tax is 6% and she gives the waiter a $10 bill?

Taco Heaven

Burrito	$2.95
Taco	$1.35
Nachos	$0.99
Soda	$1.20
Cookie	$0.90

Answer: _____

✓- ✓ ✓+

4. Ramon lives 3 miles directly east of Celia. Vincent lives 4 miles south of Celia. What's the shortest distance between Vincent's and Ramon's homes?

Answer: _____

✓- ✓ ✓+

Review D9-D12

Daily Math Puzzlers

Name _____

Solve each problem and write the answer on the line. Show your work using numbers, pictures, words, and/or symbols. Simplify all fractions!

1. Cindy and Barb enjoy kayaking a 3-mile stretch of the Snake River. It takes them 3½ hours to travel upstream, but the return trip only takes half as long. If they start paddling upstream at 8:45 a.m., take a 15-minute lunch break, and then paddle back to where they began, what time will they return?

Answer: _____

✓- ✓ ✓+

2. Tim bought 8 books from ww.books4us.com. Each book weighed 8 ounces and cost $3.95. Shipping fees were $0.95 per pound. What was the total cost of his order including shipping?

Answer: _____

✓- ✓ ✓+

3. Ryan bought a box of twenty candy bars for $15.00. He sold 85% of them for $1.20 each and gave the rest to his friends. How much profit did he make?

Answer: _____

✓- ✓ ✓+

4. Suzann made the following test scores on her first 4 tests: 89, 97, 78, and 86. If she makes a 100 on the next two tests, will it be enough to pull her average up to a 93? Show how you know.

Answer: _____

✓- ✓ ✓+

Review
D13-D16

Daily Math Puzzlers

Name _____

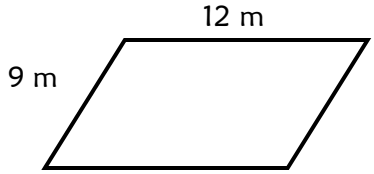
Solve each problem and write the answer on the line. Show your work using numbers, pictures, words, and/or symbols. Simplify all fractions!

1. Ashley can buy a CD in a local store for $13.95 plus 7% sales tax. She can buy it online for $11.95. She doesn't have to pay sales tax, but she does have to pay $3.95 shipping. Which store, local or online, has the better buy? What is the difference in cost between her two options?

Answer: _____

✓- ✓ ✓+

2. Barry was trying to decide how many bags of fertilizer to buy for the garden shown below. If each bag will cover 30 square meters, how many bags should he buy? Justify your answer by showing how you solved the problem.



Answer: _____

✓- ✓ ✓+

3. Bailey earned the following scores on 6 math tests: 90, 96, 100, 82, 78, 100. Her teacher said she could choose to record either the median or the mean of her test scores. Which should she choose? Why?

Answer: _____

✓- ✓ ✓+

4. Bradley earned some money mowing lawns and immediately put 1/2 of the money in savings. He used 1/3 of what was left to buy a video game and put the rest in his wallet. If he put $24 in his wallet, how much did he earn mowing lawns?

Answer: _____

✓- ✓ ✓+

Review D17-D20

Daily Math Puzzlers

Name _____

Solve each problem and write the answer on the line. Show your work using numbers, pictures, words, and/or symbols. Simplify all fractions!

1. Sheila is making tropical punch for her class. The recipe calls for a ratio of three parts orange juice to four parts lemonade. If she uses 12 cups of orange juice and the corresponding amount of lemonade, how many quarts of punch will she have?

Answer: _____

✓- ✓ ✓+

2. Ray's gas tank was 3/4 full one morning. After he had used 4 gallons, his tank was 1/2 full. How many gallons will his tank hold when full?

Answer: _____

✓- ✓ ✓+

3. Jacob bought a new MP3 player for $87.40 plus $4.37 sales tax. What percent sales tax did he pay on this transaction?

Answer: _____

✓- ✓ ✓+

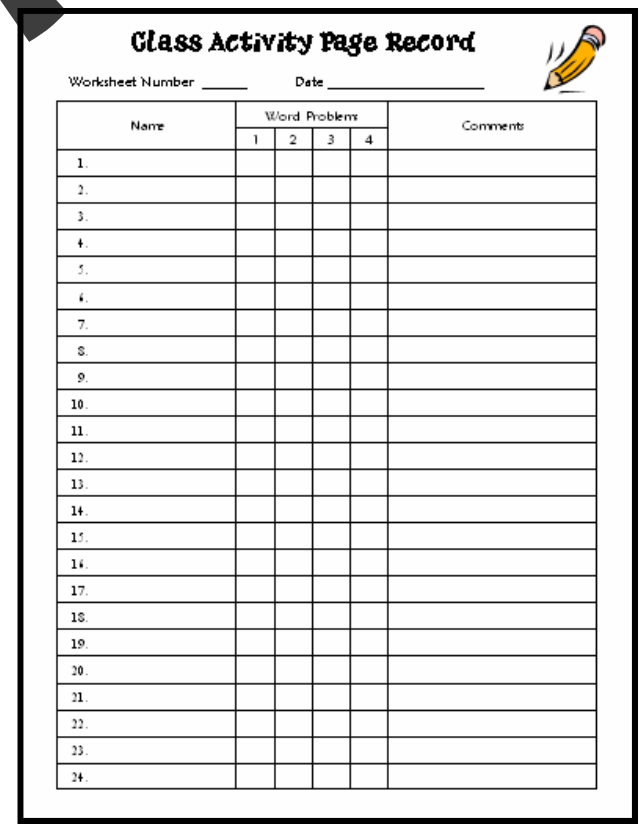
4. A recipe for 6 servings of waffles calls for 2 cups of flour and 1½ cups milk. If James wants to make 4 servings instead of 6, how much of each ingredient will he need?

Answer: Flour _____ **Milk** _____

✓- ✓ ✓+

Additional Resources Preview

Blackline Masters
& Record-Keeping



Class Activity Page Record

Worksheet Number _____ Date _____

Name	Word Problems				Comments
	1	2	3	4	
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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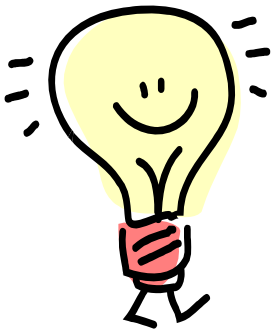
Daily Math Puzzler Program

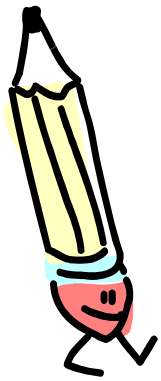
Additional Resources



This section includes several additional resources you may find useful. Use these templates and record-keeping charts to customize the program and track student progress. Read on for a brief overview of each item and suggestions for how to use it with your class. For easy access, keep copies of the record-keeping charts in a 3-ring notebook.

1. Math Problem Template (Page 86)
Copies Needed: One per class
Purpose: To customize the Daily Math Puzzler worksheets
Suggestions: If you downloaded this blank template form when you purchased your Power Pack, you can type create new word problems and type them directly onto the page. If you don't have a digital copy of the blank template, just write or type your problems into each block. You can use this page to make a set of review problems on a particular topic such as fractions or measurement. You can also modify the existing word problems to make them easier or more challenging.

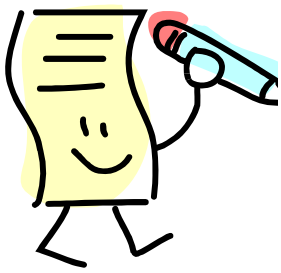
2. Solve and Write (Page 87)
Copies Needed: One per student
Purpose: To provide a place for written explanations
Suggestions: You can duplicate this on the back of your Daily Math Puzzler worksheet to give your students a place to write their explanations in sentence form.



3. Daily Math Puzzler Rubric (Page 88)
Copies Needed: One half page per student
Purpose: To assess work quality and effort
Suggestions: You can use this rubric "as is" or create your own based on the overall concept. There are many rubric-creation sites available such as Rubistar (http://rubistar.4teachers.org) that you can use for this purpose. If you don't want to use the grading scale at the bottom of the page, just remove it before copying.

Daily Math Puzzler Program

Additional Resources



4. **Activity Page Tracking Sheet (Page 89)**
   Copies Needed: One per class
   Purpose: To keep track of which problem-solving activity pages have been used
   Suggestions: Record the date you use each page and make notes about any difficulties your students experienced. You'll be able to tell at a glance which pages are still available for use.

5. **Student Activity Page Record (Page 90)**
   Copies Needed: One per student
   Purpose: To record individual progress throughout the program
   Suggestions: Record the Activity Page letter and number in the first column. Then record a ✓-, ✓, or ✓+ for each problem on the worksheet. Use the comments section to notate any difficulties experienced by the student or improvements made over time. At the end of the year, you can place the Student Activity Page Record in the student's portfolio or include it with other assessment documentation.

6. **Class Activity Page Record (Page 91)**
   Copies Needed: One per class for each Activity Page
   Purpose: To identify trends in student performance
   Suggestions: Before duplicating the Class Activity Page, list your students' names in the first column. Then duplicate one copy of the recording sheet for each Activity Page. Each day record a ✓-, ✓, or ✓+ for each student in the column under that day's problem number. At the end of the week, you'll be able to see at a glance which problems were difficult and which ones were easy for your students, allowing you to provide additional instruction on some topics as needed. You may even want to supplement with another Daily Math Puzzler book such as Level B or Level C.

Daily Math Puzzlers

Name _____

Try to solve each problem ***on your own***. Show your work using numbers, pictures, words, or symbols. We will discuss the problems together and correct them in class.

1.

Answer: _____

✓- ✓ ✓+

2.

Answer: _____

✓- ✓ ✓+

3.

Answer: _____

✓- ✓ ✓+

4.

Answer: _____

✓- ✓ ✓+

Solve and Write

Name _____

Use the space below to write an explanation of how you solved each Daily Math Puzzler problem. Be sure to use complete sentences and explain your answer clearly!

1. Answer: _____

Explanation

✓- ✓ ✓+

2. Answer: _____

Explanation

✓- ✓ ✓+

3. Answer: _____

Explanation

✓- ✓ ✓+

4. Answer: _____

Explanation

✓- ✓ ✓+

Daily Math Puzzler Rubric

Name _____

Criteria	4	3	2	1	0	Totals
Facts & Questions	Correctly identified the question and/or the important facts in all problems	Correctly identified the question and/or the important facts in most problems	Correctly identified the question and/or the important facts in some problems	Correctly identified the question and/or the important facts in one problem	Did not identify the question and/or the important facts in any of the problems	
Strategies	Used a variety of effective strategies and showed work for all problems	Used a variety of strategies and showed work for most problems	Had difficulty applying effective strategies and/or did not show work	Was unable to apply strategies without assistance and/or did not show work	Was unable to apply strategies and/or did not show work for any problems	
Solutions	Solved all problems correctly and labeled answers	Solved most problems correctly and labeled answers	Many solutions were incorrect (may have been due to careless errors)	Solved at least one problem correctly	Was unable to solve any problems correctly	
Effort	Showed effort and persistence in solving all problems	Showed effort and persistence in solving most problems	Put forth reasonable effort in solving some problems	Demonstrated very little effort or persistence in solving problems	Did not put forth any effort to follow directions or solve problems	

Overall Score: **4-5 = F** **6 - 7 = D** **8 - 10 = C** **11 - 13 = B** **14 - 16 = A** **Total Points**

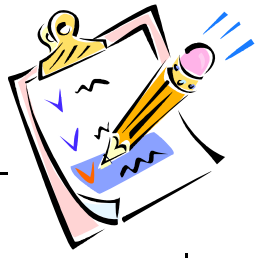
Daily Math Puzzler Rubric

Name _____

Criteria	4	3	2	1	0	Totals
Facts & Questions	Correctly identified the question and/or the important facts in all problems	Correctly identified the question and/or the important facts in most problems	Correctly identified the question and/or the important facts in some problems	Correctly identified the question and/or the important facts in one problem	Did not identify the question and/or the important facts in any of the problems	
Strategies	Used a variety of effective strategies and showed work for all problems	Used a variety of strategies and showed work for most problems	Had difficulty applying effective strategies and/or did not show work	Was unable to apply strategies without assistance and/or did not show work	Was unable to apply strategies and/or did not show work for any problems	
Solutions	Solved all problems correctly and labeled answers	Solved most problems correctly and labeled answers	Many solutions were incorrect (may have been due to careless errors)	Solved at least one problem correctly	Was unable to solve any problems correctly	
Effort	Showed effort and persistence in solving all problems	Showed effort and persistence in solving most problems	Put forth reasonable effort in solving some problems	Demonstrated very little effort or persistence in solving problems	Did not put forth any effort to follow directions or solve problems	

Overall Score: **4-5 = F** **6 - 7 = D** **8 - 10 = C** **11 - 13 = B** **14 - 16 = A** **Total Points**

Activity Page Tracking Chart



Activity Page	Date of Use	Notes
D-1		
D-2		
D-3		
D-4		
D-5		
D-6		
D-7		
D-8		
D-9		
D-10		
D-11		
D-12		
D-13		
D-14		
D-15		
D-16		
D-17		
D-18		
D-19		
D-20		

Student Activity Page Record

Name _____

Activity Page	Word Problems				Comments
	1	2	3	4	
D-1					
D-2					
D-3					
D-4					
D-5					
D-6					
D-7					
D-8					
D-9					
D-10					
D-11					
D-12					
D-13					
D-14					
D-15					
D-16					
D-17					
D-18					
D-19					
D-20					

Class Activity Page Record

Worksheet Number _____ Date _____

Name	Word Problems				Comments
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More Teaching Resources from Laura Candler

Daily Math Puzzler Program (Levels A - D)

I just implemented Laura's Math Puzzlers, and after two weeks I can already see changes in my class. They are picking up good habits like underlining key words, and writing complete answers already! Each day when we take out the sheet, they know what to do and enjoy doing it. I think part of the fun comes from the program's title "Math Puzzlers". Somehow, they seem to think puzzles are way more fun than math word problems. I also have to say that the breadth of topics and strategies covered in just one weekly sheet is impressive. It is a great way to keep math topics fresh, and have kids apply them to real situations. Each problem could be solved using different strategies, so it has been great for my kids to see all the different ways they could have approached the problem.
~ Dawn, Minnesota

Math Stations for Middle Grades

I just downloaded your Math Stations for Middle Grades, and it is EXACTLY what I was looking for! This is my second year teaching math, after eleven years as a communications teacher. I don't feel I made math fun or interesting for my students last year, which means they didn't learn the things I wanted them to learn about setting goals for themselves and enjoying the challenge for its own sake. Now I finally know how to do that, and I will be able to not only use your activities but build from them and tailor them to my own students' specific needs. Your math stations provide exactly that element of fun practice and social sharing that I hoped to add this year. I can't wait to get started! ~ Shari Miller, Texas

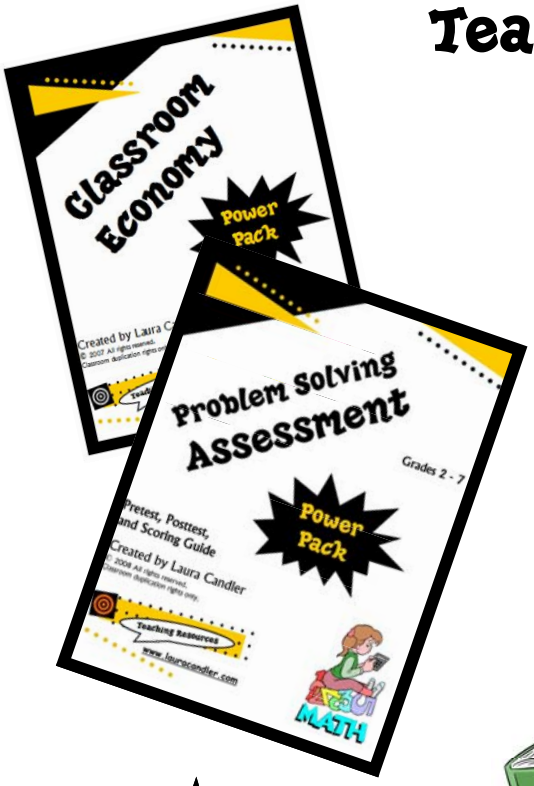
Classroom Goal Setting

WOW! Thank you so MUCH! I just downloaded your Goal Setting Power Pack and I LOVE it! I was most pleasantly surprised because I teach a combination class of grades 6-7-8, and wasn't sure if your pack would be "old" enough for my students! No need to worry....it's perfect! Thank you for a wonderful, quality product!
~ Nancy Berner, Pennsylvania

Visit www.lauracandler.com to learn more!

Teaching Resources Website

www.lauracandler.com



Free Resources for Teachers!

- Blackline masters and activity sheets
- Lesson plans and teaching strategies
- Cooperative learning methods
- Classroom management and motivation
- Literacy and Literature Circle strategies
- Mathematics instructional resources
- Bi-weekly Newsletters

NEW!

Receive the **Classroom Economy** and **Problem Solving Assessment Power Pack** for FREE when you sign up for Laura Candler's bi-weekly newsletters at **www.lauracandler.com**!

Workshop Information

- Invite Laura to your school or district to energize your teachers with powerful strategies!
- Workshops available:
  - * The Dynamic Duo: Putting the Punch in Math Instruction
  - * Innovative Approaches to Literacy Instruction
- Teachers walk away with specific strategies to implement in their classrooms the next day.

Contact Laura for more information: lauracandler@att.net