The Basic Mental-Math Strategies

The three mental-math strategies for grades 2–4 are:

- MAKE EASY NUMBERS
- BREAK UP NUMBERS
- COMPENSATE

Mental computation may use one strategy or a combination of these three strategies. For example, in making easy numbers, you may have to break up numbers. Or, to make easy numbers you may have to compensate.

Students should be aware of these strategies and be able to identify which ones they’re using. Below are examples of each strategy:

1 MAKE EASY NUMBERS

Easy numbers are numbers that are easy to compute without using a calculator or pencil and paper. Examples of easy numbers are numbers that end in 0, like 10, 20, 30, 40, 50. Here are some examples of numbers that are easy to add, subtract, multiply, and divide:

10 + 20
Add 1 + 2 = 3
Put 0 next to the 3
10 + 20 = 30

50 − 30
Subtract 5 − 3 = 2
Put 0 next to the 2
50 − 30 = 20

96 × 10
Multiply 96 × 1 = 96
Put 0 next to the 96
96 × 10 = 960

360 ÷ 9
Divide 36 ÷ 9 = 4
Put 0 next to the 4
360 ÷ 9 = 40

You can regroup numbers to make easy numbers:

3 + 76 + 7
= (3 + 7) + 76
= 10 + 76
= 86

5 × 47 × 2
= (5 × 2) × 47
= 10 × 47
= 470

87 − 12
= 87 − 10 − 2
= 77 − 2
= 75
**THE BASIC MENTAL-MATH STRATEGIES**

2 **BREAKING UP NUMBERS**
Breaking up numbers means separating numbers to make them easier to compute. Here are some examples:

\[38 + 46\]
\[= (30 + 8) + (40 + 6)\]
\[= (30 + 40) + (8 + 6)\]
\[= 70 + 14\]
\[= 70 + 10 + 4\]
\[= 80 + 4\]
\[= 84\]

\[93 − 16\]
\[= 93 − 10 − 6\]
\[= 83 − 6\]
\[= 77\]

\[4 × 18\]
\[= 4 × (10 + 8)\]
\[= (4 × 10) + (4 × 8)\]
\[= 40 + 32\]
\[= 40 + 30 + 2\]
\[= 70 + 2\]
\[= 72\]

\[48 ÷ 4\]
\[= (40 + 8) ÷ 4\]
\[= (40 ÷ 4) + (8 ÷ 4)\]
\[= 10 + 2\]
\[= 12\]

**3 COMPENSATION**
To compensate, you can do one of the following:

- Adjust one of the numbers and then adjust the answer.
- Adjust both numbers. Then it’s not necessary to adjust the answer.

Here are examples when one of the numbers and the answer are adjusted:

\[46 + 19\]
Add 1 to 19 to make 20:
\[19 + 1 = 20\]
Then add 46 and 20: \[46 + 20 = 66\]
Subtract 1 from 66 to compensate: \[66 − 1 = 65\]
So \[46 + 19 = 65\]

\[137 − 98\]
Add 2 to 98 to make 100:
\[98 + 2 = 100\]
Then subtract 137 and 100: \[137 − 100 = 37\]
Add 2 to 37 to compensate: \[37 + 2 = 39\]
So \[137 − 98 = 39\]

Here are examples when both numbers in the equation are adjusted:

\[46 + 19\]
Add 1 to 19: \[19 + 1 = 20\]
Compensate by subtracting 1 from 46: \[46 − 1 = 45\]
Add 45 + 20 = 65
So \[46 + 19 = 65\]

\[137 − 98\]
Add 2 to 98: \[98 + 2 = 100\]
Compensate by adding 2 to 137:
\[137 + 2 = 139\]
Subtract 139 − 100 = 39
So \[137 − 98 = 39\]
Look for Easy Numbers for E-Z Addition

Directions: Solve the problems below by making easy numbers. Look for numbers that add to 10, 20, 30, or other easy tens numbers. See the examples here.

Examples:

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1. 7 + 3 + 5 = ______  
2. 5 + 9 + 5 = ______  
3. 4 + 4 + 6 = ______  
4. 9 + 8 + 1 = ______  
5. 2 + 7 + 8 = ______  
6. 7 + 18 + 2 = ______  
7. 29 + 10 + 1 = ______  
8. 17 + 6 + 3 = ______  
9. 25 + 8 + 5 = ______  
10. 36 + 4 + 7 = ______  
11. 52 + 7 + 1 + 8 = ______  
12. 75 + 3 + 5 = ______

Write About It

What do you look for when making easy numbers?
Look for More Easy Numbers in Addition

**Directions:** Solve the problems below by making easy numbers. Look for numbers that add to 10, 20, 30, or other easy tens numbers. Before you start, look at the examples.

### Examples of easy numbers:

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<th>60 + 7</th>
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1. 8 + 12 + 2 = ______ 8. 95 + 14 + 5 = ______
2. 8 + 17 + 2 = ______ 9. 9 + 110 + 21 = ______
3. 23 + 14 + 6 = ______ 10. 22 + 8 + 160 = ______
4. 14 + 25 + 6 = ______ 11. 37 + 14 + 3 + 6 = ______
5. 32 + 8 + 40 = ______ 12. 5 + 23 + 55 + 10 = ______
6. 87 + 6 + 4 = ______ 13. 6 + 122 + 8 + 4 = ______
7. 25 + 25 + 12 = ______ 14. 340 + 3 + 7 + 12 = ______
8. 13 + 418 + 7 + 4 = ______

**Write About It**

How did you solve problem 12?
Make Easy Numbers

Using 10 and 100

To make easy numbers, first multiply numbers that result in either 10 or 100. Then multiply the rest of the numbers in the equation.

For example:

\[
\begin{align*}
2 \times 9 \times 5 &= (2 \times 5) \times 9 \\
&= 10 \times 9 \\
&= 90
\end{align*}
\]

Directions: Make easy numbers to solve the problems below. Draw a line to match the problem to the answer.

1. 2 \times 9 \times 5 =  a. 300
2. 10 \times 3 \times 10 =  b. 800
3. 5 \times 13 \times 2 =  c. 250
4. 2 \times 5 \times 37 =  d. 600
5. 50 \times 7 \times 2 =  e. 700
6. 4 \times 8 \times 25 =  f. 90
7. 50 \times 9 \times 2 =  g. 500
8. 5 \times 5 \times 5 \times 2 =  h. 370
9. 2 \times 2 \times 5 \times 3 =  i. 60
10. 2 \times 10 \times 5 \times 5 =  j. 900
11. 1 \times 2 \times 4 \times 2 \times 5 =  k. 130
12. 2 \times 3 \times 5 \times 4 \times 5 =  l. 80
MENTAL-MATH STRATEGIES: BREAKING UP NUMBERS

Using Patterns of 10

Directions: To solve the problems below, break up the numbers into groups of 10. See the examples here.

Examples:

\[
\begin{array}{c|c}
23 + 30 & 87 - 20 \\
\hline
\text{Break up 30 into} & \text{Break up 20 into} \\
10 + 10 + 10, or 23 + 10 + 10 + 10 & 10 - 10, or 87 - 10 - 10 \\
\text{Count forward by 10s:} & \text{Count backward by 10s:} \\
23, 33, 43, 53 & 87, 77, 67 \\
23 + 30 = 53 & \text{87 - 20} = 67 \\
\end{array}
\]

1. 42 + 20 = _____
2. 87 - 20 = _____
3. 63 - 30 = _____
4. 21 + 40 = _____
5. 50 + 30 = _____
6. 82 - 20 = _____
7. 42 + 40 = _____
8. 111 + 50 = _____
9. 133 - 30 = _____
10. 487 - 50 = _____
11. 599 - 60 = _____
12. 614 + 40 = _____
13. 832 + 30 = _____
14. 765 - 30 = _____
15. 1,425 + 50 = _____
16. 3,214 + 60 = _____
17. 5,555 - 50 = _____
18. 7,892 - 40 = _____

Write About It

Can you think of an even faster way to add or subtract tens numbers?
MENTAL-MATH STRATEGIES: BREAKING UP NUMBERS

Breakup Numbers
Is Easy to Do!

Directions: Solve each problem by breaking up numbers into easier numbers. Then regroup them for easier addition and subtraction. Look at the examples here.

Examples:

\[
\begin{align*}
32 + 47 & = (30 + 2) + (40 + 7) \\
& = (30 + 40) + (2 + 7) \\
& = 70 + 9 \\
& = 79 \\
\text{or} \\
32 + 47 & = 32 + (40 + 7) \\
& = (32 + 40) + 7 \\
& = 72 + 7 \\
& = 79 \\
\end{align*}
\]

65 – 23
\[
= 65 – 20 – 3
= 45 – 3
= 42
\]

1. \(41 + 37 = \_\_\_\_
\)
2. \(86 + 13 = \_\_\_\_
\)
3. \(55 + 43 = \_\_\_\_
\)
4. \(23 + 15 = \_\_\_\_
\)
5. \(37 + 22 = \_\_\_\_
\)
6. \(74 + 25 = \_\_\_\_
\)
7. \(62 + 47 = \_\_\_\_
\)
8. \(46 + 43 = \_\_\_\_
\)
9. \(81 + 14 = \_\_\_\_
\)
10. \(64 + 35 = \_\_\_\_
\)
11. \(78 – 43 = \_\_\_\_
\)
12. \(65 – 32 = \_\_\_\_
\)
13. \(49 – 36 = \_\_\_\_
\)
14. \(56 – 25 = \_\_\_\_
\)
15. \(76 – 41 = \_\_\_\_
\)
16. \(59 – 36 = \_\_\_\_
\)
17. \(37 – 21 = \_\_\_\_
\)
18. \(45 – 24 = \_\_\_\_
\)
19. \(68 – 43 = \_\_\_\_
\)
20. \(87 – 62 = \_\_\_\_
\)
### Directions:
Solve each problem by breaking up numbers. Then regroup the numbers for easier multiplication and division. Look at the multiplication and division examples here.

### Examples:

- **4 x 12**
  \[
  = 4 \times (10 + 2) \\
  = (4 \times 10) + (4 \times 2) \\
  = 40 + 8 \\
  = 48
  \]

- **3 x 56**
  \[
  = 3 \times (50 + 6) \\
  = (3 \times 50) + (3 \times 6) \\
  = 150 + 18 \\
  = 168
  \]

- **36 ÷ 4**
  \[
  = (20 + 16) ÷ 4 \\
  = (20 ÷ 4) + (16 ÷ 4) \\
  = 5 + 4 \\
  = 9
  \]

- **56 ÷ 4**
  \[
  = (40 + 16) ÷ 4 \\
  = (40 ÷ 4) + (16 ÷ 4) \\
  = 10 + 4 \\
  = 14
  \]

### Write About It
Explain what shortcuts you used for one of the problems.
MENTAL-MATH STRATEGIES: COMPENSATION

10 Is a Friend!

Directions: Solve the problems below by using compensation. Make tens to help you solve each problem. To make a ten, subtract from one number and add it to the other. Look at the examples below.

Here are some number combinations for which a ten can easily be made:

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</table>

1. 9 + 8
2. 4 + 7
3. 6 + 8
4. 4 + 9
5. 6 + 7
6. 4 + 8
7. 9 + 6
8. 7 + 5
9. 3 + 8
10. 9 + 5
9 Is Fine!

Look at the numbers being added below:

Examples:

\[
\begin{align*}
9 + 3 & = 12 \\
9 + 5 & = 14 \\
8 + 9 & = 17 \\
4 + 9 & = 13
\end{align*}
\]

What do you notice about the number being added to 9 and the ones-place digit in the answer? Make up a rule for adding 9 to a number and write it in the rule box at right.

Here's My Rule

Directions: Complete problems 1–5 by filling in the ones-place digit in the circle. In problems 6–10, solve the problems using your new rule.

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Strategies for Adding 9 to a Number

Ms. Sousa: Adding 9 to a number is really simple.

Tyrone: Really, Ms. Sousa? Tell me more about it.

Ms. Sousa: OK, Tyrone. Watch what I write on the board. All of these examples can be done mentally.

27 + 9 = 36
483 + 9 = 492
756 + 9 = 765

Lattifa: Oh! Oh! Ms. Sousa, I see what you did to add those numbers quickly and mentally!

Ms. Sousa: Great, Lattifa! Please explain what you think I did.

Lattifa: You added 10 to the 27 and then took 1 away. You did the same thing with the others—you added 10 and subtracted 1.

Juan: I just did the endings. For example, with 27 and 9, I add the 7 and 9 and I know it is 16. I keep the 6 and then jump to the next tens number, which is a 3. That gives me 36.

Ms. Sousa: Very good! Both strategies work beautifully.

Write About It

Explain the strategy you used to solve the problems.
Easy Numbers
Make Happy Faces!

Directions: Look at the addition problems below. See how you can make easy numbers by subtracting from one number and adding the same amount to the other? On the next page, fill in the eyes in the happy faces with easier numbers. Then solve the problems and write the correct answers in the space next to the happy face.

Add: 13 + 9

13 + 9 = 12 + 10 = 22

Subtract 1 from 13 and add it to 9 to make 10.
12 + 10 is easier! The answer is 22.

Add: 12 + 36

12 + 36 = 10 + 38 = 48

Subtract 2 from 12 to make 10, and add it to 36.
10 + 38 is easier! The answer is 48.

(Continued on next page)
Easy Numbers Make Happy Faces!

1. \(46 + 19\) = \(45 + \_\) = 

2. \(21 + 63\) = \(\_ + 64\) = 

3. \(23 + 44\) = \(20 + \_\) = 

4. \(72 + 21\) = \(\_ + \_\) = 

5. \(67 + 12\) = \(\_ + \_\) = 

6. \(14 + 81\) = \(\_ + \_\) = 

19
Train Your Eyes to Memorize

**Directions:** Look at the first number below for about 4 seconds. Then cover it with your hand or a piece of paper. In the blanks next to the number, write the number you remember seeing. Do the same for the rest of the numbers. Do only one number at a time.

- 347
- 439
- 3,621
- 5,556
- 13,579
- 87,592
- 37,738
- 69,971
- 132,156
- 261,008
- 402,619
- 796,215

**On Your Own**

Repeat the activity, except this time write the numbers backward.

**Write About It**

What numbers do you use almost every day that you have to memorize?

________________________

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## One-Hundred Chart

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Patterns in the One-Hundred Chart

Directions: Use the One-Hundred Chart on page 21 to answer the questions below.

1. Notice that the first row contains numbers ending in 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. Does the second row have the same pattern? What about row 3? What about each of the remaining rows?

2. Look at the first column. What number appears in each number in the column? Is there a pattern in the column?

3. Look at the second column. What number appears in each number in the column?

4. Are there even-number columns and odd-number columns? Which ones are even? Which ones are odd?

5. If you count by twos starting with 2, are the numbers you count odd or even? What if you started with 3 and counted by twos? Are the numbers you count odd or even?

6. Look at the chart diagonally, going from 1 to 12 to 23, etc. What pattern do you see?

7. Look at the column that starts with 8. From there, count by 10s. For example: 8, 18, 28. How much more is the number below any given number on the chart? Why would you say that counting downward is like counting by 10s? What about counting upward?

8. Starting with 5, count nine spaces more. What number do you land on? Continue to the end of the chart. What pattern do you notice?

9. Starting with 8, count nine spaces more. What number do you land on? Continue to the end of the chart. What pattern do you notice?

10. Find all of the double-digit numbers, such as 11, 22, 33. What pattern do they make?

Write About It

Of all the patterns that you have seen on the One-Hundred Chart, which one interests you the most?
### Directions:
Look at the numbers in each column below. Can you figure out the pattern? Complete each column, using what you remember of the One-Hundred Chart.

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<td>4</td>
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<td>14</td>
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</tbody>
</table>
No Looking! What’s Missing?

Directions: Use what you remember of the One-Hundred Chart to fill in the squares below with the correct numbers. Look at the example here.

Example: 43 44 45
         51 52 53

1. 74
2. 40
3. 85
4. 99
5. 24
6. 69
7. 70
8. 95
9. 13
10. 13
## Visualizing Numbers & Patterns

### After and Before Numbers

**Directions:** Use mental math and your knowledge of the One-Hundred Chart to solve the problems below.

<table>
<thead>
<tr>
<th>What number comes</th>
<th>What number comes</th>
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<tbody>
<tr>
<td>1. 1 after 20?</td>
<td>21. 3 before 5?</td>
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<tr>
<td>2. 2 after 44?</td>
<td>22. 2 before 8?</td>
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<tr>
<td>3. 3 after 52?</td>
<td>23. 5 before 12?</td>
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<tr>
<td>4. 4 after 34?</td>
<td>24. 10 before 15?</td>
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<tr>
<td>5. 5 after 67?</td>
<td>25. 2 before 22?</td>
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<td>6. 2 after 75?</td>
<td>26. 2 before 18?</td>
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<td>7. 4 after 91?</td>
<td>27. 8 before 38?</td>
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<td>8. 6 after 80?</td>
<td>28. 5 before 30?</td>
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<td>9. 8 after 96?</td>
<td>29. 7 before 49?</td>
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<td>10. 9 after 100?</td>
<td>30. 1 before 51?</td>
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<td>11. 3 after 50?</td>
<td>31. 5 before 76?</td>
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<td>12. 5 after 25?</td>
<td>32. 4 before 50?</td>
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<td>13. 7 after 87?</td>
<td>33. 3 before 63?</td>
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<td>34. 5 before 72?</td>
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<td>18. 7 after 53?</td>
<td>38. 9 before 81?</td>
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<td>19. 8 after 94?</td>
<td>39. 6 before 95?</td>
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<tr>
<td>20. 10 after 100?</td>
<td>40. 10 before 98?</td>
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</tbody>
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### Write About It

How did you use mental math to figure out the number that comes 8 after 96?

________________________
________________________
________________________
Directions: List the next five numbers in each pattern below. Count by 2s. We started the first one for you.

1. 2, 4, 6, 8, 10, ____, ____
2. 20, 22, 24, ____, ____
3. 42, 44, 46, ____, ____
4. 74, 76, 78, ____, ____
5. 98, 100, 102, ____, ____
6. 3, 5, 7, ____, ____
7. 21, 23, 25, ____, ____
8. 53, 55, 57, ____, ____
9. 79, 81, 83, ____, ____
10. 97, 99, 101, ____, ____
Skip to My 2s

... BACKWARD!

**Directions:** List the next five numbers in each pattern below. Count backward by 2s. We started the first one for you.

1. 16, 14, 12, _10_, __, __, __, __
2. 40, 38, 36, __, __, __, __, __
3. 88, 86, 84, __, __, __, __, __
4. 100, 98, 96, __, __, __, __, __
5. 108, 106, 104, __, __, __, __, __
6. 150, 148, 146, __, __, __, __, __
7. 17, 15, 13, __, __, __, __, __
8. 21, 19, 17, __, __, __, __, __
9. 37, 35, 33, __, __, __, __, __
10. 65, 63, 61, __, __, __, __, __
Ladders and Chutes

**Directions:** Count by 10s to climb the ladders and slide down the chutes.
Follow the Winding Brick Road!

**Directions:** Look at the winding roads below. Each one increases or decreases by 25 or 50. Fill in the spaces in each road.
Lucky 7

Directions: There are 19 numbers between 0 and 100 that have a 7 in them. List all of those numbers below.

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

Write About It
How many 7s in all did you find?
Do this activity with a classmate. With your partner, study the shopping list below. Next to each item, you’ll find its cost. Take the list and test your partner to see if he or she remembers the cost of each item.

Ask: How much does the TV set cost? Let your partner keep guessing the price until getting the correct answer. Help your partner by saying whether the guess is lower or higher than the answer.

Let the exchange continue until your partner gives the correct answer. Then move on to the next item. When you’ve gone through the entire list, work with your partner to change the price of each item. Then, give your partner the list and switch places.

Example:

Student 1: How much does the TV cost?
Student 2: $300
Student 1: No. The price is lower.
Student 2: $225
Student 1: Higher.

TV set $268.00
Crayon set $3.25
Bar of soap $2.19
Sneakers $24.95
1-pound jar of peanut butter $2.49
1 gallon of gas $1.41
1 gallon of milk $2.79
Sweater $13.50
**NUMBER FACTS**

**Doubles Are No Trouble!**

**Directions:** Find the sums of the doubled numbers below.

1. \(5 + 5 = \_\_\_\_\_\_ = \)   4. \(3 + 3 = \_\_\_\_\_\_ = \)
2. \(2 + 2 = \_\_\_\_\_\_ = \)   5. \(1 + 1 = \_\_\_\_\_\_ = \)
3. \(7 + 7 = \_\_\_\_\_\_ = \)   6. \(4 + 4 = \_\_\_\_\_\_ = \)
7. \(8 + 8 = \_\_\_\_\_\_ = \)

Fold your paper here before doing the exercises below.

The sums below are the results of doubled numbers. Fill in the blanks with the doubled numbers.

10. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 8\)
11. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 4\)
12. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 18\)
13. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 10\)
14. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 16\)
15. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 6\)
16. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 2\)
17. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 14\)
18. \(_\_\_\_\_\_ + _\_\_\_\_\_ = 12\)
Double the Number, Double the Fun!

Directions: Follow the arrows and double each number as you move along. We did the first one for you.

1. 2. 3. 4. 8
2. 9
3. 7
4. 10
5. 1
6. 3
7. 4
8. 6
9. 5
10. 

Name
E-Z Strategy Using Doubles

Did you ever try to remember the answer to $8 + 7$ and couldn’t remember what it was? Here is a strategy that can help you remember the answer:

Use doubles to help learn other facts. For example: use $6 + 6 = 12$ to help learn $6 + 7 = 13$ and $6 + 5 = 11$.

If you know that $6 + 6 = 12$, then it’s easy to figure out that $6 + 7 = 13$ because 7 is one more than 6.

You’ll also know that $6 + 5 = 11$ because 5 is one less than 6.

Directions: Solve each problem below.

1. $8 + 8 = \underline{\hspace{1cm}}$
   $8 + 9 = \underline{\hspace{1cm}}$
   $8 + 7 = \underline{\hspace{1cm}}$

2. $7 + 7 = \underline{\hspace{1cm}}$
   $7 + 6 = \underline{\hspace{1cm}}$
   $7 + 8 = \underline{\hspace{1cm}}$

3. $5 + 5 = \underline{\hspace{1cm}}$
   $5 + 6 = \underline{\hspace{1cm}}$
   $5 + 4 = \underline{\hspace{1cm}}$

4. $9 + 9 = \underline{\hspace{1cm}}$
   $9 + 8 = \underline{\hspace{1cm}}$
   $9 + 10 = \underline{\hspace{1cm}}$

5. $6 + 6 = \underline{\hspace{1cm}}$
   $6 + 5 = \underline{\hspace{1cm}}$
   $6 + 7 = \underline{\hspace{1cm}}$

6. $10 + 10 = \underline{\hspace{1cm}}$
   $10 + 11 = \underline{\hspace{1cm}}$
   $10 + 9 = \underline{\hspace{1cm}}$
### You Can Half It!

**Directions:** Answer the questions below.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. What is half of 4?</strong></td>
<td>2. What is half of 6?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. What is half of 10?</strong></td>
<td>4. What is half of 20?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. What is half of 60?</strong></td>
<td>6. What is half of 80?</td>
</tr>
<tr>
<td></td>
<td><strong>7. What is half of 100?</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>8. What is half of 400?</strong></td>
<td>9. What is half of 600?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>10. What is half of 800?</strong></td>
<td></td>
</tr>
</tbody>
</table>

---

---
How Many Beans Are in the Pot?

Say there are 4 beans in the first pot. There are a total of 7 beans. How many beans are in the second pot below? Figure out what’s in the second pot by looking at this drawing:

```
4 + ? = 7
```

Did you figure out the answer? Here’s a strategy we used:

Subtract the number of beans in the first pot from the total number of beans \( (7 - 4) \). The answer is the number of beans in the second pot \( (7 - 4 = 3) \). So, there are 3 beans in the second pot.

### Directions:
How many beans are in the blank pots below? Fill in the correct number of beans in each pot.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>+</td>
<td></td>
<td>= 7</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>+</td>
<td>4</td>
<td>= 9</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>+</td>
<td></td>
<td>= 11</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>+</td>
<td>7</td>
<td>= 12</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>+</td>
<td>9</td>
<td>= 16</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>+</td>
<td></td>
<td>= 17</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>+</td>
<td></td>
<td>= 13</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>+</td>
<td></td>
<td>= 14</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>+</td>
<td>9</td>
<td>= 12</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>+</td>
<td></td>
<td>= 13</td>
</tr>
</tbody>
</table>
What's the Missing Number?

Directions: Find the missing number to complete each addition fact. See the example below.

Example:

When you see 3, 4, 7, think \(3 + 4 = 7\).
So when you see 3, __, 7, think \(3 + \_ \_ = 7\).
The missing number is 4.

1. 5, _____, 10
2. 4, _____, 6
3. 5, _____, 8
4. 6, _____, 10
5. _____, 7, 9
6. 4, _____, 12
7. _____, 8, 12
8. 9, _____, 12
9. 5, _____, 12
10. 3, _____, 12

11. 8, _____, 15
12. 6, _____, 14
13. _____, 7, 15
14. 4, _____, 11
15. _____, 6, 15
16. 8, _____, 13
17. _____, 9, 18
18. 5, _____, 14
19. _____, 7, 13
20. 8, _____, 17
It's All in the Number Family

Directions: Write in the missing three family members for each equation below. Before you start, look at the examples.

Examples:

Here is the number family for $3 + 4 = 7$:
- $3 + 4 = 7$
- $4 + 3 = 7$
- $7 - 3 = 4$
- $7 - 4 = 3$

Here is the number family for $9 + 5 = 14$:
- $9 + 5 = 14$
- $5 + 9 = 14$
- $14 - 9 = 5$
- $14 - 5 = 9$

1. $5 + 4 = 9$

2. $3 + 8 = 11$

3. $4 + 6 = 10$

4. __________

5. __________

6. $6 + 5 = 11$

7. $9 + 7 = 16$

8. __________

9. $7 + 6 = 13$

10. __________

11. $8 + 5 = 13$

12. __________
Here’s an addition-and-subtraction flash card:

The number at the top of the triangle is the sum of the two numbers along the bottom of the triangle: $14 = 6 + 8$

**Directions:** Complete the triangles below by filling in the missing number. Notice that some of the triangles are upside down.

When you’ve finished filling in the missing number, cut out the triangles, including the sample above. For more addition practice, cover the top number of a completed triangle with your thumb. Have a classmate guess the number hidden by your thumb. For subtraction practice, cover one of the corner numbers, and have a classmate guess the hidden number.
**NUMBER FACTS**

**x/÷ Flash Cards**

Here's a multiplication-and-division flash card:

The number at the top of the triangle is the product of the two numbers along the bottom: $18 = 3 \times 6$.

The number in either the left corner or right corner of the triangle is the quotient of the number at the top of the triangle divided by the number at the other corner: $18 \div 3 = 6$ and $18 \div 6 = 3$.

**Directions:** Complete the triangles below by filling in the missing number. Notice that some of the triangles are upside down.

**On Your Own**

When you've finished filling in the missing number, cut out the triangles, including the sample above. For more multiplication practice, cover the top number of a completed triangle with your thumb. Have a classmate guess the number hidden by your thumb. For division practice, cover one of the corner numbers, and have a classmate guess the hidden number.
**Don’t Carry That 10!**

Say you’re adding a one-digit number, like 5, to a two-digit number, like 27. You probably add the ones column first, then carry over to the tens column. Try this mental-math strategy of jumping to the next 10 instead:

**Take 27 + 5:**

First, add 7 + 5 = 12. Instead of 12, think 2 (the ones column). Then, think of the next 10s: 20 → 30. The final answer is 32.

**Directions:** Mentally add the number inside the circle to each of the numbers outside. Instead of carrying over, jump to the next 10s.

1. __38__
   - 88
   - 19
   - 29
2. __4__
   - 44
   - 75
3. __17__
   - 73
   - 68
4. __27__
   - 85
   - 85
5. __29__
   - 77
   - 87
6. __87__
   - 79
   - 68
**Add 100s And 1,000s**

**Directions:** Add 100 to each of the numbers below. Write the answers in the spaces. We did the first one for you.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>32</td>
<td></td>
<td>11.</td>
<td>900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>42</td>
<td></td>
<td>12.</td>
<td>2,614</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>67</td>
<td></td>
<td>13.</td>
<td>1,405</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>100</td>
<td></td>
<td>14.</td>
<td>8,888</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>107</td>
<td></td>
<td>15.</td>
<td>5,421</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>313</td>
<td></td>
<td>16.</td>
<td>5,015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>601</td>
<td></td>
<td>17.</td>
<td>4,900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>728</td>
<td></td>
<td>18.</td>
<td>3,027</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>899</td>
<td></td>
<td>19.</td>
<td>1,111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>524</td>
<td></td>
<td>20.</td>
<td>6,490</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Add 1,000 to each of the numbers below.**

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>195</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>440</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>457</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

**Add 2,000 to each of the numbers below.**

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>27.</td>
<td>4,516</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>5,041</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>6,507</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>3,007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>1,234</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>3,773</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Number Facts

Hit the Target Number

Directions: Look at the target number in each bull’s-eye. Then fill in the blank with the missing number that will add up to the target number. See the example:

Example:

\[
\begin{align*}
50 &+ 50 \\
30 &+ 70 \\
10 &+ 90 \\
45 &+ 55
\end{align*}
\]

1. \( 200 + \_ \_ \) 
   \( 100 + \_ \_ \) 
   \( 125 + \_ \_ \) 
   \( 300 + \_ \_ \) 
   \( 150 + \_ \_ \) 
   \( 50 + \_ \_ \) 

2. \( 100 + \_ \_ \) 
   \( 300 + \_ \_ \) 
   \( 500 + \_ \_ \) 
   \( 450 + \_ \_ \) 
   \( 350 + \_ \_ \) 
   \( 475 + \_ \_ \) 

3. \( 800 + \_ \_ \) 
   \( 100 + \_ \_ \) 
   \( 600 + \_ \_ \) 
   \( 1,000 + \_ \_ \) 
   \( 50 + \_ \_ \) 
   \( 550 + \_ \_ \) 
   \( 300 + \_ \_ \) 

4. \( 825 + \_ \_ \) 
   \( 800 + \_ \_ \) 
   \( 850 + \_ \_ \) 
   \( 750 + \_ \_ \) 
   \( 725 + \_ \_ \) 
   \( 700 + \_ \_ \) 

5. \( 690 + \_ \_ \) 
   \( 600 + \_ \_ \) 
   \( 692 + \_ \_ \) 
   \( 680 + \_ \_ \) 
   \( 650 + \_ \_ \) 
   \( 675 + \_ \_ \)
**NUMBER FACTS**

## Subtracting From 100 Is Easy!

**Brian:** I wish there were an easy way to subtract numbers from 100.

**Bella:** There is!

**Brian:** Really?

**Bella:** Yes, and I can teach it to you in a minute!

**Brian:** How are you going to do that?

**Bella:** There’s a pattern. Let me show you. I’ll write some problems on the board. See if you can find the pattern.

### Examples:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>- 38</td>
<td>- 53</td>
<td>- 86</td>
<td>- 24</td>
</tr>
<tr>
<td>62</td>
<td>47</td>
<td>14</td>
<td>76</td>
</tr>
</tbody>
</table>

**Brian:** I see part of the pattern. For the tens-place number, you think 3 plus what number makes 9. The answer is 6. But how do you get the ones-place number so quickly?

**Bella:** Easy! Just think 8 plus what number makes 10. The answer is 2.

**Brian:** Wait, Bella. Let me do the next example. For the tens digit, 5 plus what number makes 9? The answer is 4. Then, for the ones digit, 3 plus what number makes 10? The answer is 7. The final answer then is 4 and 7, or 47.

**Bella:** Does the pattern work for the next two examples?

**Brian:** It sure does! See for yourself.

### Write About It

Explain how Brian got 14 for the third problem and 76 for the last problem.
## Subtracting From 100 Is Easy – Part 2

**Directions:** Use the pattern strategy from page 44 to solve the subtraction problems below.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>100</td>
<td>5.</td>
</tr>
<tr>
<td></td>
<td>− 43</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>100</td>
<td>6.</td>
</tr>
<tr>
<td></td>
<td>− 51</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>100</td>
<td>7.</td>
</tr>
<tr>
<td></td>
<td>− 87</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>100</td>
<td>8.</td>
</tr>
<tr>
<td></td>
<td>− 68</td>
<td></td>
</tr>
</tbody>
</table>
Pick a Pair of Pears

Directions: Fill in the blanks with a number from a pear at right. You can use each number more than once.

1. $15 + _____ = 25$
2. $16 + _____ = 46$
3. $5 + _____ = 75$
4. _____ + 30 = 40
5. _____ + 43 = 93
6. $31 + _____ = 61$
7. $29 + _____ = 79$
8. _____ + _____ = 80
9. _____ + _____ = 60
10. _____ + _____ = 100
11. _____ + _____ = 100
12. _____ + _____ = 120
13. _____ + _____ = 120
14. _____ + _____ = 160

Write About It

Tell why it’s impossible to pick 2 pears to make 75.
## Number Chain Links

**Directions:** Follow the numbers and signs on each chain link, then write the correct answer in the last, empty link.

1. $4 + 2 + 5 - 2 = 9$
2. $3 + 2 + 4 - 7 = \_\_\_\_\_
3. $10 - 6 + 4 - 2 = \_\_\_\_\_
4. $10 + 20 + 5 - 10 = \_\_\_\_\_
5. $15 - 7 + 8 + 4 = \_\_\_\_\_
6. $25 - 5 + 10 - 8 = \_\_\_\_\_
7. $40 - 8 - 2 - 10 = \_\_\_\_\_
8. $80 + 20 + 200 + 300 = \_\_\_\_\_

---

**On Your Own**

On a separate sheet of paper, make your own number chain links.
Follow the Finger

Directions: Practice addition and subtraction with the following activity: Point to one of the numbers in the chart below. Then, point to either the plus sign or the minus sign. Next, point to a second number in the chart. What's the answer? For example, point to the number 4. Then, point to the plus sign. Now, point to the number 3. You've created the problem 4 + 3. The answer is 7.

On Your Own

Make this activity more challenging by adding or subtracting more than three numbers. You can also replace the plus and minus signs with the multiplication (x) and division (÷) signs.
### Mental Math

**Can Save Time**

**Directions:** Which of the problems below can you solve in your head? Circle the ones you can do mentally, and then write in the answers.

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>100</td>
<td>5.</td>
<td>150 + 151</td>
<td>9.</td>
</tr>
<tr>
<td></td>
<td>– 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>99 + 1</td>
<td>6.</td>
<td>1,000 – 300</td>
<td>10.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>92 + 2</td>
<td>7.</td>
<td>100 – 90</td>
<td>11.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>98 + 2</td>
<td>8.</td>
<td>100 + 44</td>
<td>12.</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>100 – 20</td>
<td>14.</td>
<td>100 – 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>50 + 50</td>
<td>16.</td>
<td>1,000 – 200</td>
<td></td>
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</tbody>
</table>

**Write About It**

Explain how you solved problem #16 mentally.
Letters Have Values, Too!

Directions: The chart here gives number values to letters. Use the chart to figure out the value of the words listed below.

Example:

fad
f = 25, a = 10, d = 25

Add the numbers in your head. One way is to add numbers to make easy numbers: 25 + 50 = 75. Then, add 10: 75 + 10 = 85. Finally, add 100: 85 + 100 = 185. Or, you can add the numbers from largest to smallest to get the answer: 100 + 50 + 25 + 10 = 185.

<table>
<thead>
<tr>
<th>Letter</th>
<th>Number Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>10</td>
</tr>
<tr>
<td>b</td>
<td>25</td>
</tr>
<tr>
<td>c</td>
<td>50</td>
</tr>
<tr>
<td>d</td>
<td>10</td>
</tr>
<tr>
<td>e</td>
<td>100</td>
</tr>
<tr>
<td>f</td>
<td>25</td>
</tr>
<tr>
<td>g</td>
<td>50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Word</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. fad</td>
<td></td>
</tr>
<tr>
<td>2. add</td>
<td></td>
</tr>
<tr>
<td>3. ebb</td>
<td></td>
</tr>
<tr>
<td>4. fade</td>
<td></td>
</tr>
<tr>
<td>5. ace</td>
<td></td>
</tr>
<tr>
<td>6. cad</td>
<td></td>
</tr>
<tr>
<td>7. deaf</td>
<td></td>
</tr>
<tr>
<td>8. fed</td>
<td></td>
</tr>
<tr>
<td>9. café</td>
<td></td>
</tr>
<tr>
<td>10. deed</td>
<td></td>
</tr>
<tr>
<td>11. gab</td>
<td></td>
</tr>
<tr>
<td>12. fee</td>
<td></td>
</tr>
<tr>
<td>13. bag</td>
<td></td>
</tr>
<tr>
<td>14. dead</td>
<td></td>
</tr>
<tr>
<td>15. gag</td>
<td></td>
</tr>
<tr>
<td>16. feed</td>
<td></td>
</tr>
<tr>
<td>17. dad</td>
<td></td>
</tr>
<tr>
<td>18. bee</td>
<td></td>
</tr>
<tr>
<td>19. cab</td>
<td></td>
</tr>
<tr>
<td>20. bad</td>
<td></td>
</tr>
</tbody>
</table>

On Your Own

Make up your own letter-values activity on a separate sheet of paper. Remember to use numbers that can easily be added mentally.
**Calculate on Your Calculator**

**Directions:** Look at how the number changes in each box. Circle the plus or minus sign to show whether you add or subtract to get the new number. Finally, write the number that you add or subtract to get the new number in the space. Look at the example below.

<table>
<thead>
<tr>
<th>Example:</th>
<th>To change 346 to 376, + / – 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To change 346 to 347, + / – _____</td>
<td>6. To change 4295 to 7295, + / – _____</td>
</tr>
<tr>
<td>2. To change 632 to 652, + / – _____</td>
<td>7. To change 1243 to 1249, + / – _____</td>
</tr>
<tr>
<td>3. To change 9876 to 9976, + / – _____</td>
<td>8. To change 6820 to 6880, + / – _____</td>
</tr>
<tr>
<td>4. To change 5123 to 5103, + / – _____</td>
<td>9. To change 9876 to 9800, + / – _____</td>
</tr>
<tr>
<td>5. To change 3778 to 1778, + / – _____</td>
<td>10. To change 4378 to 4078, + / – _____</td>
</tr>
</tbody>
</table>

**Write About It**

Explain how you solved problem #9.
Exercise Your Number Sense

Directions: Change each number below by mentally adding and subtracting. We did the first one for you. Finish one column completely before you move on to the next.

<table>
<thead>
<tr>
<th></th>
<th>+10</th>
<th>-10</th>
<th>+5</th>
<th>-5</th>
<th>+9</th>
<th>-9</th>
<th>+11</th>
<th>-11</th>
<th>+100</th>
<th>+99</th>
<th>+1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>34</td>
<td>14</td>
<td>29</td>
<td>19</td>
<td>33</td>
<td>15</td>
<td>35</td>
<td>13</td>
<td>124</td>
<td>123</td>
<td>1,024</td>
</tr>
<tr>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>105</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>130</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>165</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>392</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>499</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Write About It

What strategy did you use to find the answer to 90 minus 11?
**Circle the Largest Answer**

**Directions:** For each number, circle the equation with the largest answer. You should be able to explain why you chose your answer.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>35 + 1</td>
<td>4.</td>
<td>18 + 5</td>
<td>8.</td>
<td>100 + 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35 + 0</td>
<td></td>
<td>19 + 5</td>
<td></td>
<td>100 + 20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35 + 2</td>
<td></td>
<td>17 + 5</td>
<td></td>
<td>100 + 40</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>13 – 6</td>
<td>5.</td>
<td>25 + 5 + 4</td>
<td>9.</td>
<td>95 + 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13 – 5</td>
<td></td>
<td>25 + 10</td>
<td></td>
<td>100 – 0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13 – 7</td>
<td></td>
<td>25 + 2 + 3</td>
<td></td>
<td>11 + 90</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>145 – 6</td>
<td>6.</td>
<td>100 – 10</td>
<td>10.</td>
<td>1,000 + 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>145 – 16</td>
<td></td>
<td>100 – 20</td>
<td></td>
<td>1,000 – 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>145 + 0</td>
<td></td>
<td>100 – 30</td>
<td></td>
<td>1,000 – 100</td>
<td></td>
</tr>
</tbody>
</table>

7. 20 + 30
   20 + 40
   20 + 20
Skill Builders

The Largest Number in a Diamond

Directions: Look at the problems and numbers in each diamond below. Circle the one that has the largest answer. Remember to solve the problems using mental math.

1. 34 × 10
   340 + 1
   350 – 2

2. 20 + 2
   10 + 10 + 3
   25

3. 100
   5 × 25
   11 × 10

4. 400 × 3
   300 × 4
   301 × 4

5. 500 + 400
   1,000 – 101
   1,200 – 301

6. 6 × 7
   40 – 5
   2 × 10 × 2

7. 25 + 25 + 10
   10 + 25 + 25 + 6
   50 + 25

8. 1/2 of 100
   40 + 11
   60 – 8

9. 2 × 200
   600 – 150
   500 – 150

10. 10 + 10 + 12 + 2
    20 + 4 + 1
    20 + 20

11. 3,000 + 8,000
    12,000 + 100
    13,000 – 200

12. $3.95 + $3.95
    $3.95 + $3.90
    $2.95 + $3.95
1. Circle the examples that have answers greater than 100.
   a. $4 \times 50$
   b. $505 \div 5$
   c. $10 \times 12$
   d. $342 - 200$
   e. $8 \times 12$

2. Circle the examples that have answers greater than 2,000.
   a. $543 + 678 + 925$
   b. $1,256 + 324$
   c. $5,000 - 4,125$
   d. $872 + 100 + 562 + 129$
   e. $3,215 - 1,214$

3. Write the number of digits (not the actual answer) that would be in the answer for each problem in the blank.
   a. $25 + 50 + 975$
   b. $345 + 50 + 692$
   c. $(3 \times 50) + 25$
   d. $25 + 50 + 25$
   e. $3,000 - 275$
   f. $5,000 - 4,526$

4. Circle the plus sign if the estimated answer is an overestimate. Circle the minus sign if the estimated answer is an underestimate.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Estimated Answer</th>
<th>Over</th>
<th>Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $4 \times 39$</td>
<td>120</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>b. $501 \times 4$</td>
<td>2,000</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>c. $648 + 250$</td>
<td>1,000</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>d. $4,325 - 2,951$</td>
<td>1,000</td>
<td>+</td>
<td>–</td>
</tr>
</tbody>
</table>
Shape Up With Numbers!

Directions: Fill in the geometric shapes with numbers that will make each equation correct. In each problem, a shape stands for the same number in both equations. See the example below.

Example:

\[ \triangle + \bigcirc = 12 \]
\[ \triangle - \bigcirc = 2 \]

The numbers that solve the first equation are the same numbers that solve the second equation:

\[ 7 + 5 = 12 \]
\[ 7 - 5 = 2 \]

1. \[ \square \times \triangle = 24 \]
   \[ \square + \triangle = 11 \]

4. \[ \bigcirc \times \triangle = 56 \]
   \[ \bigcirc - \triangle = 1 \]

7. \[ \bigcirc \times \square = 54 \]
   \[ \bigcirc + \square = 15 \]

2. \[ \square \times \bigcirc = 28 \]
   \[ \square - \bigcirc = 3 \]

5. \[ \triangle \times \square = 15 \]
   \[ \triangle - \square = 2 \]

8. \[ \bigtriangledown \times \square = 32 \]
   \[ \bigtriangledown - \square = 4 \]

3. \[ \bigcirc \times \bigcirc = 81 \]
   \[ \bigcirc + \bigcirc = 18 \]

6. \[ \square \times \square = 49 \]
   \[ \square - \square = 0 \]

9. \[ \bigcirc \times \square = 48 \]
   \[ \bigcirc - \square = 2 \]
**CONCENTRATION: Mental-Math Style**

**Directions:** Play this game with a friend. First, cut out the cards below. Some cards contain problems, while others have answers to those problems. Place the cards facedown in three rows on a table. With players taking turns, flip over two cards. If you turn over a card with a problem and another card with its matching answer, you get to keep both cards. Take another turn. Otherwise, turn the cards facedown again and the other player takes a turn. Keep playing until no cards remain. The person with the most matching cards wins.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(7 × 6) + 5</td>
<td>59</td>
<td>(6 × 6) + 3</td>
<td>49</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>27</td>
<td>(8 × 5) + 9</td>
<td>37</td>
<td>(7 × 7) + 2</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
<td>G</td>
<td>H</td>
</tr>
<tr>
<td>(5 × 4) + 7</td>
<td>80</td>
<td>47</td>
<td>(8 × 9) + 8</td>
</tr>
<tr>
<td>I</td>
<td>J</td>
<td>K</td>
<td>L</td>
</tr>
<tr>
<td>39</td>
<td>(7 × 4) + 9</td>
<td>(9 × 6) + 5</td>
<td>51</td>
</tr>
<tr>
<td>M</td>
<td>N</td>
<td>O</td>
<td>P</td>
</tr>
</tbody>
</table>
What’s Left?

Directions: When you solve the division problems here, each will have a remainder that’s equal to one of the numbers below. Write the remainder for each problem in the space provided.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>7 ÷ 2</td>
<td></td>
<td>11.</td>
<td>27 ÷ 5</td>
</tr>
<tr>
<td>2.</td>
<td>6 ÷ 3</td>
<td></td>
<td>12.</td>
<td>15 ÷ 7</td>
</tr>
<tr>
<td>3.</td>
<td>10 ÷ 3</td>
<td></td>
<td>13.</td>
<td>5 ÷ 2</td>
</tr>
<tr>
<td>4.</td>
<td>12 ÷ 5</td>
<td></td>
<td>14.</td>
<td>16 ÷ 4</td>
</tr>
<tr>
<td>5.</td>
<td>12 ÷ 6</td>
<td></td>
<td>15.</td>
<td>11 ÷ 2</td>
</tr>
<tr>
<td>6.</td>
<td>7 ÷ 3</td>
<td></td>
<td>16.</td>
<td>10 ÷ 4</td>
</tr>
<tr>
<td>7.</td>
<td>14 ÷ 4</td>
<td></td>
<td>17.</td>
<td>21 ÷ 5</td>
</tr>
<tr>
<td>8.</td>
<td>10 ÷ 5</td>
<td></td>
<td>18.</td>
<td>10 ÷ 6</td>
</tr>
<tr>
<td>9.</td>
<td>20 ÷ 6</td>
<td></td>
<td>19.</td>
<td>9 ÷ 9</td>
</tr>
<tr>
<td>10.</td>
<td>15 ÷ 6</td>
<td></td>
<td>20.</td>
<td>12 ÷ 4</td>
</tr>
</tbody>
</table>
**What’s Your Change?**

**Directions:**
How much change will you get from $1.00 if you spend 5¢ on a piece of bubble gum? __________

How much change will you get from $1.00 if you . . .

<table>
<thead>
<tr>
<th>Spend</th>
<th>Change from $1.00</th>
<th>Spend</th>
<th>Change from $1.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 10¢</td>
<td>__________</td>
<td>10. 50¢</td>
<td>__________</td>
</tr>
<tr>
<td>2. 80¢</td>
<td>__________</td>
<td>11. 25¢</td>
<td>__________</td>
</tr>
<tr>
<td>3. 75¢</td>
<td>__________</td>
<td>12. 20¢</td>
<td>__________</td>
</tr>
<tr>
<td>4. 98¢</td>
<td>__________</td>
<td>13. 99¢</td>
<td>__________</td>
</tr>
<tr>
<td>5. 90¢</td>
<td>__________</td>
<td>14. 94¢</td>
<td>__________</td>
</tr>
<tr>
<td>6. 8¢</td>
<td>__________</td>
<td>15. 91¢</td>
<td>__________</td>
</tr>
<tr>
<td>7. 85¢</td>
<td>__________</td>
<td>16. 60¢</td>
<td>__________</td>
</tr>
<tr>
<td>8. 30¢</td>
<td>__________</td>
<td>17. 61¢</td>
<td>__________</td>
</tr>
<tr>
<td>9. 15¢</td>
<td>__________</td>
<td>18. 40¢</td>
<td>__________</td>
</tr>
</tbody>
</table>

**Write About It**

Say you have $1.00. Would you get more or less change if you spend 61¢ instead of 60¢? Explain your answer.
How Much Is in the Piggy Bank?

Directions: Six students in Mrs. Ramon’s class save money in a piggy bank. Below are the students’ piggy banks. How much does each student have in his or her piggy bank? Write your answer in the blank.

Karen’s piggy bank

Thomas’s piggy bank

Alvin’s piggy bank

Rosita’s piggy bank

Ricky’s piggy bank

Marta’s piggy bank
Directions: Below are items found in a grocery and their cost. Read each person’s shopping list and use mental math to figure out how much each person spent.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereal O’s</td>
<td>$2.00</td>
</tr>
<tr>
<td>Soda</td>
<td>$1.50</td>
</tr>
<tr>
<td>Milk</td>
<td>$1.25</td>
</tr>
<tr>
<td>Peanut butter</td>
<td>$1.50</td>
</tr>
<tr>
<td>Coffee</td>
<td>$3.00</td>
</tr>
<tr>
<td>Bread</td>
<td>$1.50</td>
</tr>
<tr>
<td>Toothpaste</td>
<td>$2.50</td>
</tr>
<tr>
<td>Chewing gum</td>
<td>$.25</td>
</tr>
</tbody>
</table>

Ken’s Shopping List
2 liters of soda
1 carton of milk
Total cost: ____________

Olivia’s Shopping List
1 jar of peanut butter
1 box of cereal
1 can of coffee
1 loaf of bread
Total cost: ____________

Annette’s Shopping List
1 jar of peanut butter
1 box of cereal
1 carton of milk
1 loaf of bread
Total cost: ____________

(Continued on next page)
Write About It

Explain how you figured out how much Brian spent at the supermarket.
Who Has Enough Money?

Directions: Each of the shoppers below has $25 to spend at a store. The store receipts show how much each person spent on the items he or she bought. Use estimation to help you decide who has enough money to pay for the purchases. Circle the names of the people who have enough money.

<table>
<thead>
<tr>
<th>TJ</th>
<th>Bev</th>
<th>Carl</th>
<th>Patty</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3.75</td>
<td>$10.14</td>
<td>$15.12</td>
<td>$3.40</td>
</tr>
<tr>
<td>4.28</td>
<td>6.21</td>
<td>3.00</td>
<td>2.50</td>
</tr>
<tr>
<td>9.50</td>
<td>.72</td>
<td>2.00</td>
<td>8.90</td>
</tr>
<tr>
<td>.75</td>
<td>4.02</td>
<td>2.00</td>
<td>7.80</td>
</tr>
<tr>
<td>.82</td>
<td>5.00</td>
<td>3.00</td>
<td>2.21</td>
</tr>
<tr>
<td>2.91</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emelio</th>
<th>Sally</th>
<th>Frankie</th>
<th>Andrea</th>
</tr>
</thead>
<tbody>
<tr>
<td>$18.75</td>
<td>$12.50</td>
<td>$14.44</td>
<td>$.19</td>
</tr>
<tr>
<td>4.37</td>
<td>10.50</td>
<td>2.50</td>
<td>.72</td>
</tr>
<tr>
<td>1.48</td>
<td>.50</td>
<td>.12</td>
<td>15.99</td>
</tr>
<tr>
<td>2.56</td>
<td>.50</td>
<td>9.99</td>
<td>6.98</td>
</tr>
<tr>
<td></td>
<td>.25</td>
<td>.39</td>
<td>.98</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Write About It
How did you estimate how much Andrea spent?
**Counting Coins**

**Directions:** For three months, the Zuk family saved coins in a jar. Each month, a family member saved only one kind of coin. Each month, each family member selected a different coin to save. Below is a chart of what each person saved for each of the three months. What is the total amount each person saved each month? We started the first month for you.

### September Savings

<table>
<thead>
<tr>
<th>Family Member</th>
<th>Number of CoinsSaved</th>
<th>Type of Coin Saved</th>
<th>Total Amount Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Zuk</td>
<td>16</td>
<td>Half dollar (50¢)</td>
<td>$800</td>
</tr>
<tr>
<td>Mrs. Zuk</td>
<td>13</td>
<td>Quarter (25¢)</td>
<td>$325</td>
</tr>
<tr>
<td>Frannie</td>
<td>39</td>
<td>Dime (10¢)</td>
<td></td>
</tr>
<tr>
<td>Stella Ann</td>
<td>11</td>
<td>Nickel (5¢)</td>
<td></td>
</tr>
<tr>
<td>Tyrone</td>
<td>160</td>
<td>Penny (1¢)</td>
<td></td>
</tr>
</tbody>
</table>

### October Savings

<table>
<thead>
<tr>
<th>Family Member</th>
<th>Number of Coins Saved</th>
<th>Type of Coin Saved</th>
<th>Total Amount Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Zuk</td>
<td>30</td>
<td>Quarter</td>
<td></td>
</tr>
<tr>
<td>Mrs. Zuk</td>
<td>10</td>
<td>Nickel</td>
<td></td>
</tr>
<tr>
<td>Frannie</td>
<td>98</td>
<td>Penny</td>
<td></td>
</tr>
<tr>
<td>Stella Ann</td>
<td>8</td>
<td>Half dollar</td>
<td></td>
</tr>
<tr>
<td>Tyrone</td>
<td>10</td>
<td>Dime</td>
<td></td>
</tr>
</tbody>
</table>

### November Savings

<table>
<thead>
<tr>
<th>Family Member</th>
<th>Number of Coins Saved</th>
<th>Type of Coin Saved</th>
<th>Total Amount Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Zuk</td>
<td>25</td>
<td>Nickel</td>
<td></td>
</tr>
<tr>
<td>Mrs. Zuk</td>
<td>316</td>
<td>Penny</td>
<td></td>
</tr>
<tr>
<td>Frannie</td>
<td>10</td>
<td>Half dollar</td>
<td></td>
</tr>
<tr>
<td>Stella Ann</td>
<td>20</td>
<td>Dime</td>
<td></td>
</tr>
<tr>
<td>Tyrone</td>
<td>12</td>
<td>Quarter</td>
<td></td>
</tr>
</tbody>
</table>

**Write About It**

Explain how you figured out how much 13 quarters are worth.
Unmasking Numbers

A bunch of numbers went to a masquerade ball. The host, Count Numero Uno, decided to have a contest and award a prize to any guest who could name every other guest. Each number was required to provide a clue about his or her identity. See how many numbered guests you can name using the clues provided.

**MASKED GUEST #1:**
4 more than me would give you 10. Who am I? _____

**MASKED GUEST #2:**
One half of me is 8. Who am I? _____

**MASKED GUEST #3:**
I am 12 more than 15. Who am I? _____

**MASKED GUEST #4:**
20 years ago, I was 8 years old. Who am I? _____

**MASKED GUEST #5:**
I am one half of 24. Who am I? _____

**MASKED GUEST #6:**
You can name me if you multiply 6 and 8, then add 2 more to that number. Who am I? _____

**MASKED GUEST #7:**
I am 30 minus 12. Who am I? _____

**MASKED GUEST #8:**
If you know 7 x 7, then you know me. Who am I? _____

**MASKED GUEST #9:**
I am 15 less than 36. Who am I? _____

**MASKED GUEST #10:**
Double me and I’m 30. Who am I? _____
PROBLEM SOLVING

Mental Math: Lightning Round!

Directions: Answer each question below as quickly as you can.

1. How many dimes equal a dollar? __________________
2. How many legs do 7 hippopotamuses have? __________________
3. How many quarters equal $5? __________________
4. How many fingers do 12 people have? __________________
5. How many paws do 10 dogs have? __________________
6. How many tires do 300 cars have? (Include the spare tire in the trunk.) __________________
7. How many eggs are in 4 dozen eggs? __________________
8. How many nickels equal $2? __________________
9. How many ounces are in 2 pounds? (16 ounces equal 1 pound) __________________
10. How tall is Richard if Bob is 6 feet tall and Richard is half his size? __________________
11. How many eyes do 9 bees have if each bee has 5 eyes? __________________
12. How many teeth do two average people have if the average person has 32 teeth? __________________
13. How many pages did I read if I started at the beginning of page 41 and stopped at the end of page 91? __________________
14. How much will Leon spend on 3 bunches of flowers that cost $2.95 a bunch? __________________
15. How many faces are there on 7 dice if each die has 6 faces? __________________

Write About It

How did you use mental math to solve problem 14?
Number Search

Directions: Look at the group of numbers below. For each problem, search through the numbers and list those that solve the problem. There can be more than one answer for each problem.

1. Which numbers have a sum of 15?
   __________________________

2. Which numbers have a difference of 7?
   __________________________

3. Which numbers have a product of 21?
   __________________________

4. Which numbers have a sum that is 2 less than 12?
   __________________________

5. Which numbers have a product of 70?
   __________________________

6. Which numbers have a sum of 8 and a product of 15?
   __________________________

7. Which numbers have a sum that is equal to 3 \times 9?
   __________________________

8. Which three numbers have a sum of 13?
   __________________________

9. Which numbers have a sum that is an odd number ending in 1?
   __________________________

10. Which three numbers have a product of 21?
    __________________________

11. If you divide one number by another number, the answer is 6. What are the two numbers?
    __________________________

12. If you divide these two numbers and multiply the quotient by 2, you get 8. What are the two numbers?
    __________________________
Batter Up!

Directions: Solve the baseball problems below.

1. There are 5 baseball players. The numbers on their uniforms are 1, 2, 3, 4, and 5. Arrange them in the field so that if you add their uniform numbers going across or up and down, the sum is 8. There are four ways to arrange the numbers.

2. Arrange the same players so that when you add their uniform numbers across or up and down, the sum is 10.

3. Arrange the same players so that when you add their uniform numbers across or up and down, the sum is 9.
Name

PROBLEM SOLVING

Time, Please?

Look at the clock here. What time does it say?

Directions: Write the answer in the space provided.

1. If it is 8:00 now, what time will it be in
   a. 10 minutes? __________
   b. 15 minutes? __________
   c. 55 minutes? __________
   d. 1 hour and 10 minutes? __________
   e. 2 hours and 10 minutes? __________
   f. 1 hour and 2 minutes? __________
   g. 45 minutes ago? __________
   h. 1 hour and 5 minutes ago? __________
   i. 1 hour and 45 minutes ago? __________
   j. 3 hours ago? __________

2. If it is 8:00 now, what time was it
   a. 10 minutes ago? __________
   b. 15 minutes ago? __________
   c. 13 minutes ago? __________
   d. 1 hour and 30 minutes ago? __________
   e. 25 minutes ago? __________
   f. 30 minutes ago? __________
   g. 45 minutes ago? __________
   h. 1 hour and 5 minutes ago? __________
   i. 1 hour and 45 minutes ago? __________
   j. 3 hours ago? __________

3. If it is 8:06 now, what time will it be in
   a. 5 minutes? __________
   b. 10 minutes? __________
   c. 25 minutes? __________
   d. 30 minutes? __________
   e. 33 minutes? __________

4. If it is 8:06 now, what time was it
   a. 5 minutes ago? __________
   b. 10 minutes ago? __________
   c. 25 minutes ago? __________
   d. 30 minutes ago? __________
   e. 33 minutes ago? __________

Write About It

Explain how you subtracted 30 minutes from 8:06 to get the answer.
What Page Is Zeena on?

Directions: Answer each question below. Write your answer in the blanks.

1. Zeena is reading an exciting story about spaceships. She is on page 46 of the story. What page would Zeena be on if she read
   a. 3 more pages? __________
   b. 10 more pages? __________
   c. 20 more pages? __________
   d. 40 more pages? __________
   e. 50 more pages? __________

2. What page was Zeena on for each day of the week?
   a. On Friday, she was 10 pages back from page 46. She was on page __________.
   b. On Thursday, she was 20 pages back from page 46. She was on page __________.
   c. On Wednesday, she was 25 pages back from page 46. She was on page __________.
   d. On Tuesday, she was 28 pages back from page 46. She was on page __________.
   e. On Monday, she was 36 pages back from page 46. She was on page __________.

3. Justin is reading a book about caring for a pet dog. He is on page 95.
   a. If he reads 15 more pages, he will be on page __________.
   b. If he reads 10 more pages, he will be on page __________.
   c. If he reads 23 more pages, he will be on page __________.
   d. If he reads 39 more pages, he will be on page __________.
   e. If he reads 50 more pages, he will be on page __________.
   f. When he was 5 pages back from page 95, he was on page __________.
   g. When he was 10 pages back from page 95, he was on page __________.
   h. When he was 25 pages back from page 95, he was on page __________.
   i. When he was 50 pages back from page 95, he was on page __________.
   j. When he was 65 pages back from page 95, he was on page __________.

Write About It

Explain how you figure out what page Justin was on 50 pages ago, if he is on page 95 now.
Once Upon a Math

Directions: Solve each problem using mental math. Write the answer in the blank after each problem.

1. Little Red Riding Hood bought 5 bouquets for her grandmother, Mrs. Wolf. Each bouquet cost $3. How much did she spend on the bouquets for Granny Wolf? ___________

2. A Fredmobile holds 4 students going on a field trip to the dinosaur museum. How many Fredmobiles will Fred Flintstone need to transport Pebble’s class of 28 students to the museum? ___________

3. Snow White won $35 playing Bingo. She wants to give an equal amount of her winnings to each of the 7 dwarfs. How much does each dwarf receive? ___________

4. Each page of Cinderella’s photo album can hold 8 pictures. How many photos can she put in her album if the album has 9 pages? ___________

5. Miss Piggy decided to buy Kermit a scarf and Elmo a hat for their birthdays. The scarf cost $6 and the hat cost $5. She gave the store clerk $15. How much change did she get back? ___________

6. Pinocchio is having a pizza party. If one pizza feeds 6 people, how many pizzas are needed to feed 54 people? ___________

7. Goldilocks is saving money for a new red cape that costs $27. She has saved $15 so far. How much more money does she need to save to buy her new red cape? ___________

8. Sleeping Beauty needs her beauty sleep. She sleeps an average of 9 hours a day. At that rate, how many hours of beauty sleep does she get in one week? ___________

9. Hansel and Gretel walk at the rate of 3 miles per hour. If they walked for 7 hours in the forest, did they walk more or less than 20 miles? ___________

10. Humpty Dumpty measured his waist and found that it was 350 centimeters around. Old King Cole, the merry old soul, did the same. He measured 310 centimeters around. How many centimeters smaller around the waist is Old King Cole than Humpty Dumpty? ___________
Math Tales

Directions: Figure out the year when the fairy-tale character did or will do his or her deed. Remember to use mental math.

1. It's the year 2000. The Three Little Pigs will wear wigs in 25 years. In what year will the pigs wear wigs?

______________

2. It's the year 2000. The Goose That Laid the Golden Egg got a peg leg 10 years ago. In what year did the goose get the peg leg?

______________

3. It's the year 2000. Tom Thumb will eat some plums 50 years from now. When will Tom Thumb start to eat plums?

______________


______________

5. It's the year 2000. Mary's Little Lamb never ate ham until 50 years ago. In what year did the lamb start to eat ham?

______________

6. It's the year 2000. Little Bo Peep lost her sheep named Beep 35 years ago. In what year was Beep the sheep lost?

______________

7. It's the year 2000. Cinderella will meet her fella, Jella, 125 years from now. In what year will Cinderella and her fella, Jella, meet?

______________

8. It's the year 2000. In 201 years, Mother Hubbard, who will go to the cupboard to get her dog a bone, will find a stone instead. In what year will Mother Hubbard find a stone instead of a bone?

______________

9. It's the year 2000. Babe the Blue Ox chased a fox from a box 90 years ago. When was the fox chased from the box by the ox?

______________

10. It's the year 2000. Peter Piper will pick a peck of pickled peppers 40 years from now. When will that peck of pickled peppers be picked?

______________

Write About It

How would you use mental math to find out how old 25-year-old Peter Piper was 13 years ago?
1. The number is less than 160.
The number is greater than 145 + 5.
The last digit is between 0 and 3.
The number is odd.
What is the number? _________

2. The number is more than 3 x 25.
The number is less than 8 x 10.
The sum of the digits is 14.
The number is odd.
What is the number? _________

3. The number is more than 2 x 17.
The number is less than 2 x 19.
The number is even.
The number ends in a figure greater than 4.
The number can be divided by 9.
What is the number? _________

4. The number is greater than 3 x 100.
The number is less than 400 – 50.
The number is odd.
The number does not end in 1, 3, 7, 9.
The second digit is an even number less than 4, but more than 1.
What is the number? _________

5. The number has two digits.
The number's digits are the same.
The number is odd.
The sum of the digits in the number is less than 20, but greater than 17.
What is the number? _________

6. The number is more than
4 x 6 x 25.
The number ends in two zeros.
The number is less than 800.
The first digit is odd.
What is the number? _________

7. The number is more than 7 x 9.
The number is less than 8 x 9.
The ones-place digit is greater than 6.
The number is even.
What is the number? _________

8. The number is less than 1,000.
The number's digits are triplets.
The digits are greater than 6.
The number is even.
What is the number? _________

Directions: Read each clue carefully and figure out the secret number for each set of clues.
Subtraction Magic

Check out this subtraction magic. Amaze your friends by instantly subtracting a number from 1,000,000! Here's an example of how it's done:

Example:

Think: 2 + ? = 9

1,000,000

Think: 7 + ? = 10

- 246,087

753,913

Step 1: Start on the left. You get the first digit in your answer by thinking 2 + ? = 9. The answer is 7.

Step 2: For the next digit, think 4 + ? = 9. The answer is 5.

Step 3: For the next digit, think 6 + ? = 9. The answer is 3.

Step 4: For the next digit, think 0 + ? = 9. The answer is 9.

Step 5: For the next digit, think 8 + ? = 9. The answer is 1.

Step 6: For the last digit, think 7 + ? = 10. The answer is 3.

Directions: Try solving these problems using the trick above.

1. 10,000
   – 4,862
   _______

2. 1,000
   – 348
   _______

3. 100
   – 12
   _______

4. 100,000
   – 36,987
   _______

5. 1,000,000,000
   – 427,678,914
   _______

6. 10,000
   – 7,461
   _______
Magic Mind-Reading Cards

Here’s an easy trick for you to do for your friends.

**Step 1:** Give a friend a copy of the magic cards below.

**Step 2:** Ask your friend to pick a number from 1 to 31, but not to tell you.

**Step 3:** Tell your friend to point to all of the cards that have his or her number.

**Step 4:** Wave your hands over the magic cards and, in a mysterious voice, chant these words:

“Oh magic cards! Oh magic cards! Tell me which number my friend is thinking. Give me an inkling. Lucky 7, rabbit’s foot, the owl says give me a hoot! Hocus Pocus let me find what’s in my friend’s mind, if you would be so kind.”

How will you know what number your friend has picked? It’s easy! Just add up the first numbers in each card that your friend pointed to. The sum of those first numbers is the number that your friend chose!

**Here’s an example:** Say your friend, Joe, chose the number 9. He will point to the cards that have the number 9 in them. One of those cards starts with the number 1 and the other card starts with the number 8. You add 1 + 8 and get the answer 9! After you make your chant, tell Joe that he picked the number 9.

Now, try the trick on your friends and family. Remember: To do the trick successfully, you should practice adding the first numbers on each card.

### Magic Mind-Reading Cards

<table>
<thead>
<tr>
<th>1</th>
<th>3</th>
<th>5</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>11</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>17</td>
<td>19</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>25</td>
<td>27</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>11</td>
<td>14</td>
<td>15</td>
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<td>18</td>
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<td>22</td>
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<td>26</td>
<td>27</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
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<tr>
<td>12</td>
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<td>14</td>
<td>15</td>
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<td>20</td>
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<tr>
<td>28</td>
<td>29</td>
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<td>31</td>
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</table>

<table>
<thead>
<tr>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>13</td>
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<td>15</td>
</tr>
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<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
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<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
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<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
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<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
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<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
</tr>
</tbody>
</table>
Magic Number Cards

Here’s an easy number trick you can do for your friends.

Step 1: Cut out the cards below and give them to a friend.

Step 2: Ask your friend to pick a card and tell you the number above the box. Tell him or her that you will then reveal the number that is in the box.

Here’s how the trick is done: Add 8 to the number your friend gives you. Then reverse the digits of the answer you get. If you get a 0 in an answer after you add 8, keep the 0 when you reverse the digits. For example, 20 becomes 02. Next, add the two digits to get the third and last digit of the number in the box.

Example: Your friend picks card #10. Add 8 + 10 to get 18. Then reverse the digits so 18 becomes 81. 8 and 1 are the first two digits of the number in the box. Finally, add 8 + 1 to get the last digit of the number: 9. So, the number in the box that your friend picked is 819.
Name

NUMBER TRICKS

Math Marvel

Here’s a fun addition trick you can do for your friends. You will be able to give the answer to a problem before the numbers in the problem are added together! Here’s how:

**Step 1:** You’ll need at least four people to do this trick.

**Step 2:** Ask Person A to write a three-digit number on a piece of paper. Make sure everyone can see the number he or she wrote. Say, Person A wrote the number 847.

**Step 3:** On another piece of paper, you write 2,845. Fold it and give it to Person B to hold. Tell Person B not to look at the number. No one should look at the number until you complete the trick. Why do you write 2,845?

**Step 4:** Ask Person C to write a three-digit number on the same piece of paper that Person A wrote his or her number. Make sure that Person C’s number is below Person A’s number. Say Person C wrote 258. So the piece of paper would look like this:

847 258

**Step 5:** Write 741 underneath 258. Why? You need to subtract each of the digits in Person C’s number from 9. So you subtract 9 – 2 to get 7, 9 – 5 to get 4, and 9 – 8 to get 1. Your number is 741.

**Step 6:** Ask Person D to write a three-digit number below your number. Say Person D writes 307.

**Step 7:** Using the same strategy you used in Step 5, you write 692 underneath 307. To get 692, you subtract 9 – 3, 9 – 0, and 9 – 7.

**Step 8:** Ask all the people participating to add all the numbers on the first piece of paper together:

<table>
<thead>
<tr>
<th>847</th>
<th>258</th>
<th>741</th>
<th>307</th>
<th>692</th>
<th>2,845</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Person A’s number)</td>
<td>(Person C’s number)</td>
<td>(Your first number)</td>
<td>(Person D’s number)</td>
<td>(Your second number)</td>
<td>(Sum)</td>
</tr>
</tbody>
</table>

**Step 9:** Ask Person B to unfold the piece of paper you gave him or her and read the number on it. Your audience will be amazed that it’s the same number as the sum of all the other numbers.

**Step 10:** Take a bow and enjoy the applause.
Easy Numbers Make a Number (page 17)
1. 2, 12, 22, 32, 42, 52, 62, 72, 82, 92
2. 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
3. 5, 15, 25, 35, 45, 55, 65, 75, 85, 95
4. 8, 18, 28, 38, 48, 58, 68, 78, 88, 98
5. 4, 14, 24, 34, 44, 54, 64, 74, 84, 94
65, 75, 85, 95
6. 15 + 80 = 95
7. 69 + 10 = 79
8. 73 + 20 = 93
9. 20 + 47 = 67
10. 20 + 64 = 84
1. 45 + 20 = 65
2. 20 + 64 = 84
3. 20 + 47 = 67
4. 103 + 105 = 208
5. 102, 100, 98, 96, 94
6. 144, 142, 140, 138, 136
7. 11, 9, 7, 5, 3
8. 15, 13, 11, 9, 7
9. 31, 29, 27, 25, 23
10. 59, 57, 55, 53, 51

Ladders and Chutes (page 28)
Ladders:

Chutes:

Follow the Winding Brick Road (page 29)
### Lucky 7 (page 30)
- 1.7
- 11.73
- 2.17
- 12.74
- 3.27
- 13.75
- 4.37
- 14.76
- 5.47
- 15.77
- 6.57
- 16.78
- 7.67
- 17.79
- 8.70
- 18.87
- 9.71
- 19.97
- 10.72

There are twenty 7s in all.

### Doubles are No Trouble! (page 32)
1. 10. 9 20. 9
2. 10. 4, 8, 16
3. You Can Half It! (page 35)
4. Doubles (page 34)
5. 4. 7 9. 6
6. 3. 7 8. 7
7. 2. 6 7. 6
8. 1. 5 6. 5
9. 10. 7 + 8 = 15
10. 9 + 6 = 15
11. 8 + 5 = 13
12. 7 + 4 = 11
13. 6 + 3 = 9
14. 5 + 2 = 7
15. 4 + 1 = 5
16. 3 + 0 = 3
17. 2 + 1 = 3
18. 1 + 0 = 1
19. 1 + 0 = 2
20. 9 + 1 = 10

### E-Z Strategy Using Doubles (page 34)
1. 50 + 50
2. 300 + 300
3. 100 + 100
4. 250 + 250
5. 500 + 500
6. 750 + 750
7. 1,000 + 1,000
8. 1,250 + 1,250
9. 1,500 + 1,500
10. 1,750 + 1,750

### How Many Beans Are in the Pot? (page 36)
1. 15
2. 30
3. 45
4. 60
5. 75
6. 90
7. 105
8. 120
9. 135
10. 150

### What's the Missing Number? (page 37)
1. 1.5
2. 2.2
3. 3.3
4. 4.4
5. 5.5
6. 6.6
7. 7.7
8. 8.8
9. 9.9
10. 10.10

### It's All in the Number Family! (page 38)
1. 5 + 4 = 9
2. 4 + 9 = 13
3. 9 + 5 = 14
4. 9 + 4 = 13
5. 5 + 5 = 10
6. 5 + 10 = 15

### Hit the Target Number! (page 43)
1. 100 + 200 = 300
2. 250 + 50 = 300
3. 500 + 100 = 600
4. 750 + 150 = 900
5. 1,000 + 200 = 1,200

### +/- Flash Cards (page 39)
1. 1 + 2 = 3
2. 2 + 3 = 5
3. 3 + 4 = 7
4. 4 + 5 = 9

### Exercise Your Number Sense (page 52)
1. 15. 70 + 50 or 90 + 30
2. 12. 90 + 30 or 70 + 50

### What's the Largest Answer? (page 53)
1. 24
2. 33
3. 42
4. 51
5. 60
6. 69
7. 78
8. 87
9. 96
10. 105

### Mental Math Can Save Time (page 49)
1. 99
2. 100
3. 101
4. 102
5. 103
6. 104
7. 105
8. 106
9. 107
10. 1,000 + 50

### Letter Have Values, Too! (page 50)
1. 1.5
2. 30
3. 150
4. 145
5. 160
6. 30
7. 145
8. 135
9. 185
10. 220

### Calculate on Your Calculator (page 51)
1. 1. + 1 = 2
2. + 2 = 3
3. + 3 = 4
4. + 4 = 5
5. + 5 = 6

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**Note:** The table above contains a mix of arithmetic problems and exercises designed to enhance number fluency and mental math skills.
What's Your Change? (page 59)
1. 90 cents 10. 50 cents
2. 20 cents 11. 75 cents
3. 25 cents 12. 80 cents
4. 2 cents 13. 1 cent
5. 10 cents 14. 6 cents
6. 92 cents 15. 9 cents
7. 15 cents 16. 40 cents
8. 70 cents 17. 39 cents
9. 85 cents 18. 60 cents

Mental Math: Lightning Round (page 66)
1. 10 dimes
2. 28 legs
3. 20 quarters
4. 120 fingers
5. 40 paws
6. 1,500 tires
7. 48 eggs
8. 40 nickels
9. 32 ounces
10. 3 feet
11. 45 eyes
12. 64 teeth
13. 50 pages
14. $8.85
15. 42 faces

Number Search (page 67)
1. Answers will vary
2. Answers will vary
3. 7 x 3, 7 x 3 x 1
4. Answers will vary
5. 10 x 7
6. 3 and 5
7. 8 + 19 and 9 + 18
8. Answers will vary
9. Answers will vary
10. 1 x 3 x 7
11. 12 and 2 or 18 and 3
12. 12 and 3 or 8 and 2

Batter Up! (page 68)
1. Answers will vary
2. Answers will vary
3. 7 x 3, 7 x 3 x 1
4. Answers will vary
5. 10 x 7
6. 3 and 5
7. 8 + 19 and 9 + 18
8. Answers will vary
9. Answers will vary
10. 1 x 3 x 7
11. 12 and 2 or 18 and 3
12. 12 and 3 or 8 and 2

In Your Estimation . . . (page 55)
1. a, b, c, d
2. a, c
3. a, b, b, c, 3
4. a, underestimate
b, underestimated
c, overestimate
d, underestimate

Shape Up With Numbers! (page 56)
1. square = 8; triangle = 3
2. square = 7; circle = 4
3. circle = 9; triangle = 7
4. triangle = 8; square = 4
5. square = 7; circle = 4

Calculator-Free Shopping (pages 61–62)
Ken $4.25
Olivia $8.00
Annette $6.25
Bella $5.75
Brian $18.00
Vicky $7.30
Tucker $4.00

What's Your Change? (page 59)
Frannie saved $3.90
Stella Ann saved $1.50
Tyrone saved $2.00

Calculator-Free Shopping (pages 61–62)
Marta $3.52
Ricky $17.30
Rosita $7.38
Alvin $1.01
Thomas $.75
Karen $2.27

What Page Is Zeena On? (page 70)
1. a. page 49
2. a. page 56
3. a. page 110
4. a. page 105
5. a. page 118
6. a. page 134
7. a. page 145
8. a. page 90
9. a. page 85
10. a. page 70

Time, Please? (page 69)
Mr. Zuk saved $7.50
Mrs. Zuk saved $5.00
Frannie saved $4.00
Tyrone saved $1.00
Mr. Zuk saved $1.25
Mrs. Zuk saved $3.16
Frannie saved $5.00
Stella Ann saved $2.00
Tyrone saved $3.00

Unmasking Numbers (page 65)
Masked Guest #1: 6
Masked Guest #2: 16
Masked Guest #3: 27
Masked Guest #4: 28
Masked Guest #5: 12
Masked Guest #6: 50
Masked Guest #7: 18
Masked Guest #8: 49
Masked Guest #9: 21
Masked Guest #10: 15

Math Tales (page 72)
1. 2025
2. 1990
3. 2050
4. 1975
5. 1950

Subtraction Magic (page 74)
1. 3, 138
2. 652
3. 88
4. 63,013
5. 572,321,086
6. 2,539