This document describes an experimental program which is designed to help students from grade 5 to grade 7 who are working at or slightly below grade level maintain mathematics skills. Students receive nine home-study packets containing two to four lessons each. Parents must make a commitment to supervise the home-study. The 25 lessons presented in grade 6 cover topics such as: (1) computation with whole numbers; (2) computation with fractions; (3) computation with decimals; and (4) measurement and geometry.

(End)
Math By Mail
Grade 6

Hampton City Schools
1819 Nickerson Blvd
Hampton, VA 23663
Please, read the directions carefully. You may want to do this several times. Then look at the example which is worked out for you. Try it on your own to see if you get the same answer. After this you will be ready to work the other exercises. Repeat this process on each section.

GOOD LUCK!
LESSON ONE
Grade 6

PARENT: Your child should be able to read and write numerals to 1,000,000. Review the place value chart before beginning the assignments. Alert your child to the zeros as place holders - ex.: one hundred thousand, two - 100,002.

Remember These?

nine hundred two thousand, seventeen
902,017

321,438 - three hundred twenty-one thousand, four hundred thirty-eight
**I. Place Value**

Write the missing numbers. Here's how:

<table>
<thead>
<tr>
<th>Number</th>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>4937</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

1. 10  
   - tens  
   - ones

2. 670  
   - hundreds  
   - tens  
   - ones

3. 5003  
   - thousands  
   - hundreds  
   - tens  
   - ones

4. 9236  
   - thousands  
   - hundreds  
   - tens  
   - ones

Write the standard numeral.

Here's how

<table>
<thead>
<tr>
<th>2 tens</th>
<th>3 ones</th>
<th>7 hundreds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 thousands</td>
<td>4 hundreds</td>
<td>8 tens</td>
</tr>
<tr>
<td>8 ones</td>
<td>1 thousand</td>
<td>2 tens</td>
</tr>
<tr>
<td>2 tens</td>
<td>8 hundreds</td>
<td>3 ones</td>
</tr>
</tbody>
</table>

5. 723

6. 5

7. 6

8. 3 thousands | 9 tens | 1 one | 4 hundreds |

9. 7 hundreds | 6 thousands | 5 tens | 9 ones |

10. 2 hundreds | 5 ones | 6 ones | 1 ten |

11. 4 tens | 6 hundreds | 7 ones |

12. 8

Match:

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. 808,606</td>
<td>a. eight hundred eighty thousand, sixty-six</td>
</tr>
<tr>
<td>14. 880,606</td>
<td>b. eight hundred eight thousand, six hundred six</td>
</tr>
<tr>
<td>15. 808,660</td>
<td>c. eight hundred eight thousand, six hundred sixty</td>
</tr>
<tr>
<td>16. 880,066</td>
<td>d. eight hundred eighty thousand, six hundred six</td>
</tr>
<tr>
<td>17. 21,302</td>
<td>e. twenty-one thousand, twenty-three</td>
</tr>
<tr>
<td>18. 21,032</td>
<td>f. twenty-one thousand, three hundred two</td>
</tr>
<tr>
<td>19. 21,230</td>
<td>g. twenty-one thousand, two hundred thirty</td>
</tr>
<tr>
<td>20. 21,023</td>
<td>h. twenty-one thousand, thirty-two</td>
</tr>
</tbody>
</table>

Hampton, Virginia Mathematics Department  Lesson One
Directions: Circle the answer to each problem. Then put the letter that corresponds to the answer in the blank above the problem number and also in the blank beside the problem. Note some numbers repeat. The first problem is worked for you.

WER RASTET, ROSTET

1. 5,200 is read:
   B) fifty-two, thousand
   K) five thousand, two
   O) five thousand, two hundred
   E) five million, two hundred thousand

2. 201,004 is read:
   F) two hundred one thousand, four hundred
   O) two hundred one million, four hundred thousand
   S) two hundred one thousand, four
   G) twenty-one, thousand four

3. 6,010,100 is read:
   T) six million, ten thousand, one hundred
   L) six million, one hundred thousand
   S) six billion, ten million, one hundred
   E) six billion, ten million, one hundred thousand

4. 137,060 is read:
   T) one hundred thirty-seven million, sixty
   E) one hundred thirty-seven thousand, six
   H) one hundred thirty-seven thousand sixty
   N) one million, thirty-seven thousand, sixty

5. 10,007 is read:
   L) one hundred thousand, seven
   A) ten thousand, seven hundred
   C) ten million, seven thousand

6. 930,000,570 is read:
   R) nine hundred thirty million, five hundred seventy
   T) nine hundred thirty million, five hundred seventy thousand
   E) ninety-three million, fifty-seven
   R) nine hundred thirty billion, five hundred seventy

Mathematics Department

Lesson One

Hampton, Virginia
7. 870 is read:
   E) eight hundred seven
   I) eighty-seven
   U) eight hundred seventy
   H) eight thousand seventy

8. 3,208 is read:
   R) thirty thousand two hundred eight
   M) thirty-two thousand two hundred eight
   A) three thousand, two hundred eighty
   W) three thousand, two hundred eighty

9. Write the answer to the puzzle.
LESSON TWO
Grade 6

PARENT: In this lesson your child will compare two numerals with up to six digits using <, >, =.

Remember These?

> greater than (the alligator takes the largest bite)

< less than

= equal

To compare two numbers compare digits in the same place beginning at the left.

SAMPLE: 4537 < 4541

digits in thousands place are the same - both 4's
digits in hundreds place are the same - both 5's
But in tens place 3 < 4
So 4537 < 4541

Mathematics Department Hampton, Virginia
I. For each of the following questions, use the five cards to find your answer.

1. Write the largest number you can make._______
2. Write the smallest five-digit number you can make._______
3. Write the largest two-digit number._______
4. Write the smallest two-digit number._______
5. Write the largest number between 300 and 500._______

II. Replace each 0 with < or >.

1. 72〇86
2. 247〇362
3. 549〇495
4. 655〇491
5. 792〇801
6. 3000〇3900
7. 6200〇4100
8. 9700〇9824
9. 3280〇3240
10. 4168〇4183
11. 6871〇8761
12. 4913〇3942
13. 9000〇10,000
14. 21,000〇7269
15. 17,000〇1700
16. 9990〇999

Write the number that is 10 greater.

17. 76_______
18. 469〇479
19. 1275_______
20. 6924_______
21. 7861_______
22. 3000_______
Write the number that is 100 greater.

23. 482 ______ 26. 6023 ______
24. 709 ______ 27. 5700 ______
25. 4521 462 ______ 28. 98 ______

Write the number that is 1000 greater.

29. 7016 8016 ______ 33. 25,876 ______
30. 5834 ______ 34. 607 ______
31. 1039 ______ 35. 95 ______
32. 8524 ______

III. Less than (<) greater than (>)?

1. 4,618 □ 4,609 11. 238,416 □ 238,526
2. 8,342 □ 8,256 12. 820,356 □ 820,349
3. 5,836 □ 5,900 13. 821,642 □ 812,462
4. 3,948 □ 4,062 14. 6,038 □ 6,259
5. 9,284 □ 9,275 15. 4,521 □ 4,251
6. 23,781 □ 24,619 16. 52,834 □ 51,792
7. 63,821 □ 63,281 17. 47,235 □ 49,236
8. 48,000 □ 39,076 18. 73,829 □ 74,265
9. 25,000 □ 24,999 19. 715,624 □ 723,000
10. 563,074 □ 536,074 20. 932,499 □ 931,000
PARENT: Your child in this lesson will recognize the place value of numerals to billions.

Remember These?

one hundred six billion, seven hundred million, four hundred twenty-one

<table>
<thead>
<tr>
<th>Billions</th>
<th>Millions</th>
<th>Thousands</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>6</td>
<td>70000000</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Mathematics Department

Hampton, Virginia
I. TRY THESE: Circle the digits in the indicated place. Look back at the place value chart if you have any difficulty. (Copy the number and circle the correct digit on your answer sheet.)

Sample: 64,000,322 thousands

1. 18,900,754 hundreds
2. 439,286,357 ten thousands
3. 4,050,803 thousands
4. 17,010,358 millions
5. 428,328 tens
6. 5,832,862,200 billions
7. 563,821,004 millions
8. 64,000,781 ones
9. 4,038,003,008 ten millions
10. 81,673,920 hundred thousands

Build the number that has:

<table>
<thead>
<tr>
<th>BILLIONS</th>
<th>MILLIONS</th>
<th>THOUSANDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
| 5 in the hundred million place
6 in the hundreds place
9 in the hundred thousands place
3 in the thousands place
1 in the billions place
3 in the ones place
0 in the ten millions place
8 in the ten billions place
2 in the tens place
5 in the millions place
2 in the hundred billions place
7 in the ten thousands place

Mathematics Department

Hampton, Virginia

Lesson Three
II. A good math teacher is like a Ford and  

1) \[ \frac{H}{40,000,000} \]  
2) \[ \frac{4,000}{40,000} \]  
3) \[ \frac{90,000}{40,000} \]  

4) \[ \frac{400,000,000}{4,000} \]  
5) \[ \frac{4,000,000}{40,000} \]  
6) \[ \frac{40,000}{4,000} \]  
7) \[ \frac{40,000}{50,000} \]  

8) \[ \frac{4,000,000}{50,000} \]  
9) \[ \frac{50,000}{50,000} \]  

10) \[ \frac{400}{400} \]  
11) \[ \frac{500,000,000}{500,000,000} \]  
12) \[ \frac{4,000,000}{4,000,000} \]  
13) \[ \frac{4,000}{4,000} \]  
14) \[ \frac{90,000}{90,000} \]  

A \ 104,869  
B \ 421,986,357  
C \ 412,375  
D \ 501,698,423  
E \ 124,669,537  
F \ 43,196  
G \ 682  
H \ 241,689,735  
I \ 521,438  
J \ 732  
K \ 23,216  
L \ 510,423  
M \ 869,510  
N \ 62,341  
O \ 15,698  
P \ 843  
Q \ 342,150,895  
S \ 324,621,708  
T \ 14,2573  
W \ 423,160  

Mathematics Department  
Hampton, Virginia  
Lesson Three
Parent: Estimation and Mental Arithmetic are important skills and sometimes are neglected. Here are some suggestions that you and your child might consider fun.

- "Rent the Clock" - When making purchases see if the child can come up with the cost including tax before the clerk can.
- When in a store point to several items and ask your child if $1.00 is enough (ex. tablet 79¢ and pen 29¢)
- At the dinner table do some mental arithmetic (ex. \((2+5)\times8+6\) \div 2)
- Estimate orally (ex. choose the better estimate for 482 (480 or 490).

### Rounding Whole Numbers

**Example 1:** Round 34,256 to nearest thousand.

Look at the digit to the right of the thousands place.

If that digit is less than five (0, 1, 2, 3, or 4), the thousands digit is not changed and all digits to its right become zeros.

If the digit is five or greater (5, 6, 7, 8, or 9), the thousands digit is increased by one and the digits to its right become zeros.

Round to

\[
\begin{align*}
34,256 & \quad \{ \quad 4 \text{ is not changed} \\
34,000 & \quad \{ \quad 34,256 \text{ add 1 to 4 replace with 0's} \\

\text{We say that 34,256 is closer to 34,000 than it is to 35,000.}
\end{align*}
\]

**Example 2:** Round 227,467 to nearest hundred.

Round to

\[
\begin{align*}
227,467 & \quad \{ \quad \text{add 1 to 4} \\
227,500 & \quad \{ \quad 227,467 \text{ add 1 to 4 replace with 0's} \\

\text{We say that 227,467 is closer to 227,500 than 227,400.}
\end{align*}
\]
ESTIMATING SUMS

I. Round each number. Add the rounded numbers to find an estimate of each sum. Then find the exact sum.

Here's how:

Chicago to Detroit  272
Detroit to Boston  + 735  a. 300
                                b. +700
d. 1007  c. 1000

ROUND TO TENS AND THEN FIND SUMS.

1. 37  a. __
    +88  b. __
    c. __
d. __

2. 67  a. __
    +13  b. __
    d. __
    c. __

3. 87  a. __
    +24  b. __
    c. __
    d. __

ROUND TO HUNDREDS AND THEN FIND SUMS

4. 829  a. __
    +293  b. __
    d. __
    c. __

5. 142  a. __
    +396  b. __
    d. __
    c. __

6. 113  a. __
    +265  b. __
    e. __
    d. __
    c. __

Estimate the number of miles for each route. (round to hundreds)
Solve (use same process as 1 - 6)

7. Chicago to Detroit to Boston _______

8. St. Louis to New Orleans to Miami _______

9. New Orleans to Washington to New York _______

10. New York to Washington to Miami _______

11. Boston to New York to Washington _______

12. Chicago to New York to Boston _______

Mathematics Department
Hampton, Virginia
-2- Lesson Four
II. Complete.

<table>
<thead>
<tr>
<th>Number</th>
<th>Rounded to the nearest ten</th>
<th>Rounded to the nearest hundred</th>
<th>Rounded to the nearest thousand</th>
</tr>
</thead>
<tbody>
<tr>
<td>74,356</td>
<td>74,360</td>
<td>74,400</td>
<td>74,000</td>
</tr>
<tr>
<td>96,478</td>
<td>96,480</td>
<td>96,500</td>
<td>96,000</td>
</tr>
<tr>
<td>340,997</td>
<td>341,000</td>
<td>340,000</td>
<td>300,000</td>
</tr>
<tr>
<td>545,654</td>
<td>546,000</td>
<td>546,000</td>
<td>500,000</td>
</tr>
<tr>
<td>994,817</td>
<td>995,000</td>
<td>995,000</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

Round:
13. 572,685 to the nearest hundred ____________________________
14. 253 to the nearest ten ________________________________
15. 69813 to the nearest thousand __________________________
16. 532,863 to the nearest ten ______________________________
17. 399,588 to the nearest thousand __________________________
18. 2954 to the nearest thousand ____________________________
19. 8416 to the nearest ten ________________________________
20. 5499 to the nearest thousand ____________________________
21. 70,450 to the nearest hundred __________________________
22. 401,029 to the nearest hundred __________________________
PARENT: In this lesson your child will add whole numbers with up to five digits. It is important that your child have quick recall of basic number facts. Enclosed is a list of basic addition facts. This can be used as a timed test. Your child should be able to complete this with all answers correct in three minutes. If not practice with him or her using flash cards.

Example:  

\[
\begin{array}{c}
516 \\
+ 289 \\
\end{array}
\]

Step 1: Add the ones. Rename if the sum is more than 9.  
15 ones = 1 ten + 5 ones

Step 2: Add the tens. Rename if the sum is more than 9.  
10 tens = 1 hundred + 0 tens

Step 3: Add the hundreds.

Check by adding numbers in reverse order:  
\[
\begin{array}{c}
289 \\
+ 516 \\
\end{array}
\]

SOME FUN!

What most resembles half an orange? (a) the other half  
What is worse than finding a worm in your apple? (a) worm a half worm a half worm a worm a  
What runs around a pasture, yet never moves? (a) a fence

Hampton City Schools Mathematics Department  
Lesson Five
<p>| | | | | | | | | | |</p>
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>5+9</td>
<td>8+2</td>
<td>5+8</td>
<td>7+4</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7+3</td>
<td>3+6</td>
<td>1+1</td>
<td>2+3</td>
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<td></td>
<td></td>
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</tr>
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<td>0+7</td>
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<td></td>
</tr>
<tr>
<td>2+6</td>
<td>4+3</td>
<td>3+5</td>
<td>2+2</td>
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<td></td>
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<tr>
<td>4+8</td>
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<td>2+9</td>
<td>8+6</td>
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<tr>
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<td>8+0</td>
<td>1+2</td>
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</tr>
<tr>
<td>4+2</td>
<td>4+0</td>
<td>3+1</td>
<td>5+7</td>
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<tr>
<td>8+1</td>
<td>9+1</td>
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</tbody>
</table>

See how many of these you can answer correctly in 3 minutes. Have someone time you and check your answers. THEN complete the remaining facts.
NAME

I. Add.

1. $568 + 357 = 925$
2. $943 + 278 = 1221$
3. $278 + 495 = 773$

4. $429 + 378 = 807$
5. $609 + 527 = 1136$
6. $753 + 942 = 1695$
7. $685 + 259 = 944$
8. $834 + 399 = 1233$

9. $745 + 268 = 1013$
10. $635 + 395 = 1030$
11. $526 + 666 = 1192$
12. $483 + 483 = 966$
13. $274 + 895 = 1169$

14. $627 + 483 = 1110$
15. $483 + 637 = 1120$
16. $2216 + 6434 = 8650$
17. $2758 + 5264 = 8022$
18. $4378 + 9295 = 13673$

19. $5409 + 6695 = 12104$
20. $7742 + 7563 = 15305$
21. $8492 + 5886 = 14378$
22. $3605 + 4789 = 8394$
23. $9427 + 3389 = 12816$

24. $8659 + 7847 = 16506$
25. $6768 + 8935 = 15703$
26. $59683 + 25974 = 85657$
27. $32759 + 59867 = 92626$

28. $64936 + 72858 = 137794$
29. $55294 + 53888 = 109182$
30. $8693 + 6275 = 14968$

Hampton City Schools Mathematics Department
Lesson Five
IV. **Adding with Renamings:** Write these numbers in the diagram so that the sum of each row of numbers will be 100.

![Diagram with hexagons and numbers to be added](image)

V. Add across. Add down.

1. 
   
   \[
   \begin{array}{ccc}
   16 & 34 & c. \\
   31 & 32 & 33 \\
   34 & 35 & 36 \\
   37 &   &   \\
   \end{array}
   \]

2. 
   
   \[
   \begin{array}{ccc}
   102 & 43 & c. \\
   48 & 25 & d. \\
   943 & 2138 & d. \\
   \end{array}
   \]

3. 
   
   \[
   \begin{array}{ccc}
   469 & 387 & c. \\
   943 & 2138 & d. \\
   \end{array}
   \]

Hampton City Schools Mathematics Department Lesson Five
III. Use the clues in the ACROSS and DOWN columns to solve the cross-number puzzle below.

Hampton City Schools, Va Mathematics Department Lesson Five
LESSON SIX
Grade 6  

PARENT: In this lesson your child will subtract whole numbers with up to five digits. It is important that your child have quick recall of basic number facts. Enclosed is a list of basic subtraction facts. This can be used as a timed test. Your child should be able to complete this will all answers correct in three minutes. If not practice with him or her using flash cards.

Example:  
810
- 374

Step 1: Do you have enough ones? If not, rename a ten as ones. Subtract ones.

Step 2: Do you have enough tens? If not, rename a hundred as tens. Subtract tens.

Step 3: Subtract hundreds.

Check by adding difference and minuend to get subtrahend:  
436
+ 374
810

Mathematics Department  
Hampton, Virginia
<table>
<thead>
<tr>
<th>Fact 1</th>
<th>Fact 2</th>
<th>Fact 3</th>
<th>Fact 4</th>
<th>Fact 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-5</td>
<td>11-3</td>
<td>14-7</td>
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<tr>
<td>3-0</td>
<td>1-0</td>
<td>13-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2-</td>
<td>-2-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
### I. Subtract

<p>| | | | | |</p>
<table>
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<td>54</td>
<td>160</td>
<td>108</td>
</tr>
<tr>
<td>-</td>
<td>38</td>
<td>27</td>
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<td>5</td>
<td>55</td>
<td>103</td>
<td>153</td>
<td>113</td>
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<td>-</td>
<td>38</td>
<td>70</td>
<td>71</td>
<td>96</td>
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<td></td>
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<tr>
<td>9</td>
<td>46</td>
<td>63</td>
<td>131</td>
<td>117</td>
</tr>
<tr>
<td>-</td>
<td>29</td>
<td>36</td>
<td>49</td>
<td>68</td>
</tr>
</tbody>
</table>

### II. Up!

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
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</thead>
<tbody>
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<td>1</td>
<td>805</td>
<td>370</td>
<td>605</td>
<td>1608</td>
</tr>
<tr>
<td>-</td>
<td>41</td>
<td>29</td>
<td>431</td>
<td>475</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>7062</td>
<td>8507</td>
<td>3048</td>
<td>9052</td>
</tr>
<tr>
<td>-</td>
<td>4683</td>
<td>3026</td>
<td>1765</td>
<td>5871</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>82931</td>
<td>93765</td>
<td>72380</td>
<td>63519</td>
</tr>
<tr>
<td>-</td>
<td>38247</td>
<td>25849</td>
<td>45695</td>
<td>27843</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>52781</td>
<td>902</td>
<td>701</td>
<td>803</td>
</tr>
<tr>
<td>-</td>
<td>14993</td>
<td>375</td>
<td>298</td>
<td>359</td>
</tr>
</tbody>
</table>

Hampton City Schools Mathematics Department

Lesson Six
SOLVE THE FOLLOWING SUBTRACTION PROBLEMS.
THE FIRST ONE HAS BEEN WORKED FOR YOU.

1. 45
   - 36
   ----
   09

2. 436
   - 42
   ----
   394

3. 92
   - 85
   ----
   07

4. 845
   - 559
   ----
   286

5. 52
   - 15
   ----
   37

6. 200
   - 113
   ----
   087

7. 96
   - 7
   ----
   89

8. 436
   - 249
   ----
   187

9. 471
   - 289
   ----
   182

10. 201
    - 113
    ----
    088

11. 771
    - 671
    ----
    100

12. 565
    - 337
    ----
    228

13. 541
    - 374
    ----
    167

14. 323
    - 165
    ----
    158

15. 625
    - 338
    ----
    287

16. 75
    - 16
    ----
    59

17. 753
    - 288
    ----
    465

18. 676
    - 397
    ----
    279

19. 74
    - 45
    ----
    29

20. 78
    - 28
    ----
    50

21. 860
    - 789
    ----
    071

22. 43
    - 19
    ----
    24

Let's see you hop through these!!
IV. TRY THESE!

1. The eighth-grade class needed $1000 for its class trip. They earned $158 on a bake sale and $386 on their class play. How much more did they need?

2. The distance around a track is 320m. Sheila has run 106m. How much further must she run to complete the lap?

3. Last night Lou had a score of 206 in her first bowling game and 129 in her second game. How much lower was her second game?

4. Bob had a score of 148 in his first bowling game and 195 in his second game. What was Bob's total score?

V. Use the code to find each difference.

Here's how

\[
\begin{array}{c|c|c|c}
102 & 97 & 608 \\
\hline
4061 & 48 & 572 \\
\hline
872 & 705 & 300 \\
\end{array}
\]

\[
102 - 48 = 54
\]

\[
\begin{array}{c|c|c|c}
\_ & \_ & \_ & \_ \\
\hline
\_ & \_ & \_ & \_ \\
\hline
\_ & \_ & \_ & \_ \\
\hline
\_ & \_ & \_ & \_ \\
\end{array}
\]

Hampton City Schools Mathematics Department
Lesson Six
LESSON SEVEN

Grade

PARENT: In this lesson your child will be multiplying a three-digit number by a two-digit number. It is important that your child has quick recall of his multiplication facts. It is suggested that your child be given a three minute quiz on these facts. You might use the enclosed sheet. Keep practicing until he or she has mastered these facts.

Example 1: Multiply 54

\[
\begin{align*}
\text{Step 1:} & \quad 54 \\
& \times 7 \\
& \frac{8}{7 \times 4 \text{ ones} - 28 \text{ ones}; \text{ that's } 2 \text{ tens } 8 \text{ ones}}
\end{align*}
\]

\[
\begin{align*}
\text{Step 2:} & \quad 54 \\
& \times 7 \\
& \frac{378}{7 \times 5 \text{ tens} - 35 \text{ tens}; 35 \text{ tens } + 2 \text{ tens } = 37 \text{ tens}}
\end{align*}
\]

Example 2: Multiply 362

\[
\begin{align*}
\text{Step 1:} & \quad 362 \\
& \times 25 \\
& \frac{1315}{5 \times 263 }
\end{align*}
\]

\[
\begin{align*}
\text{Step 2:} & \quad 362 \\
& \times 25 \\
& \frac{1315}{5 \times 263 }
\end{align*}
\]

\[
\begin{align*}
\text{Step 3:} & \quad \text{Add partial products} \\
& \frac{263}{x 25} \\
& \frac{1315}{5260}
\end{align*}
\]

Hampton City Schools Mathematics Department
Lesson Seven

-1-
<table>
<thead>
<tr>
<th>4×0 =</th>
<th>8×2 =</th>
<th>6×7 =</th>
<th>1×3 =</th>
</tr>
</thead>
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<td>7×1 =</td>
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<td>5×6 =</td>
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</tr>
<tr>
<td>8×3 =</td>
<td>6×9 =</td>
<td>4×3 =</td>
<td>0×5 =</td>
</tr>
<tr>
<td>2×6 =</td>
<td>5×7 =</td>
<td>3×5 =</td>
<td>7×7 =</td>
</tr>
<tr>
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<td>3×8 =</td>
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<td>1×5 =</td>
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<td>8×1 =</td>
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<tr>
<td>7×5 =</td>
<td>2×9 =</td>
<td>6×2 =</td>
<td>3×7 =</td>
</tr>
<tr>
<td>9×1 =</td>
<td>0×4 =</td>
<td>1×0 =</td>
<td>7×8 =</td>
</tr>
<tr>
<td>9×5 =</td>
<td>2×2 =</td>
<td>5×9 =</td>
<td>3×4 =</td>
</tr>
</tbody>
</table>
ONE DIGIT MULTIPLIERS.

MULTIPLY THE FOLLOWING.  THE FIRST ONE HAS BEEN WORKED FOR YOU.

1. \[
\begin{array}{c}
24 \\
\times 7 \\
\hline
168
\end{array}
\]

2. \[
\begin{array}{c}
52 \\
\times 8 \\
\hline
416
\end{array}
\]

3. \[
\begin{array}{c}
32 \\
\times 8 \\
\hline
256
\end{array}
\]

4. \[
\begin{array}{c}
59 \\
\times 5 \\
\hline
295
\end{array}
\]

5. \[
\begin{array}{c}
43 \\
\times 8 \\
\hline
344
\end{array}
\]

6. \[
\begin{array}{c}
67 \\
\times 5 \\
\hline
335
\end{array}
\]

7. \[
\begin{array}{c}
36 \\
\times 9 \\
\hline
324
\end{array}
\]

8. \[
\begin{array}{c}
32 \\
\times 4 \\
\hline
128
\end{array}
\]

9. \[
\begin{array}{c}
66 \\
\times 7 \\
\hline
462
\end{array}
\]

10. \[
\begin{array}{c}
62 \\
\times 6 \\
\hline
372
\end{array}
\]

11. \[
\begin{array}{c}
83 \\
\times 3 \\
\hline
249
\end{array}
\]

12. \[
\begin{array}{c}
76 \\
\times 6 \\
\hline
456
\end{array}
\]

13. \[
\begin{array}{c}
68 \\
\times 2 \\
\hline
136
\end{array}
\]

14. \[
\begin{array}{c}
88 \\
\times 4 \\
\hline
352
\end{array}
\]

15. \[
\begin{array}{c}
91 \\
\times 6 \\
\hline
546
\end{array}
\]

16. \[
\begin{array}{c}
91 \\
\times 4 \\
\hline
364
\end{array}
\]

17. \[
\begin{array}{c}
45 \\
\times 2 \\
\hline
90
\end{array}
\]

18. \[
\begin{array}{c}
45 \\
\times 4 \\
\hline
180
\end{array}
\]

19. \[
\begin{array}{c}
24 \\
\times 8 \\
\hline
192
\end{array}
\]

20. \[
\begin{array}{c}
47 \\
\times 3 \\
\hline
141
\end{array}
\]

I think I can.  
I know you can!!

Hampton City Schools, Va  Mathematics Department  Lesson Seven
II. Multiplying Two Digit Multipliers

1. \[34 \times 23\]
2. \[67 \times 45\]
3. \[82 \times 19\]
4. \[38 \times 64\]
5. \[96 \times 58\]
6. \[409 \times 84\]
7. \[326 \times 34\]
8. \[513 \times 77\]

III. Multiply across. Multiply down.

A. \[
\begin{array}{cc}
9 & 7 \\
6 & 5 \\
\end{array}
\]

B. \[
\begin{array}{cc}
8 & 6 \\
4 & 2 \\
\end{array}
\]

C. \[
\begin{array}{cc}
7 & 9 \\
8 & 3 \\
\end{array}
\]

Hampton City Schools
Mathematics Department

Lesson Seven
Shade in each shape which contains a mistake. You should find 20 mistakes. Please use pencil so that you can erase if necessary. You will create the Chinese tangram figures.
In this lesson your child will divide five-digit numbers by two-digit numbers. For division it is necessary that your child know both the division and multiplication facts. On the next page is a list of division facts. Have your child practice the facts until he or she can complete them correctly in three minutes. You can rearrange the order. This is also an appropriate time to brush up on estimation skills.

Example:

\[ \begin{array}{c}
8 \longdiv{2872} \\
359 \\
\end{array} \]

The 8 will not divide into 2 - therefore you must use 8 into 28.

\[ \begin{array}{c}
\text{359} \\
\end{array} \]

Your answer is 359.

This may also be solved by short division. (Examples on Page 3 are done using this process.)
<table>
<thead>
<tr>
<th>Name</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 ÷ 9 =</td>
<td>16 ÷ 2 =</td>
</tr>
<tr>
<td>18 ÷ 2 =</td>
<td>54 ÷ 9 =</td>
</tr>
<tr>
<td>64 ÷ 8 =</td>
<td>4 ÷ 4 =</td>
</tr>
<tr>
<td>30 ÷ 5 =</td>
<td>32 ÷ 8 =</td>
</tr>
<tr>
<td>24 ÷ 6 =</td>
<td>45 ÷ 9 =</td>
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<td>15 ÷ 3 =</td>
<td>25 ÷ 5 =</td>
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<tr>
<td>6 ÷ 1 =</td>
<td>2 ÷ 1 =</td>
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<tr>
<td>28 ÷ 4 =</td>
<td>7 ÷ 7 =</td>
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<tr>
<td>0 ÷ 6 =</td>
<td>0 ÷ 2 =</td>
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<tr>
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<td>40 ÷ 5 =</td>
</tr>
<tr>
<td>14 ÷ 7 =</td>
<td>9 ÷ 3 =</td>
</tr>
<tr>
<td>9 ÷ 1 =</td>
<td>6 ÷ 2 =</td>
</tr>
<tr>
<td>36 ÷ 9 =</td>
<td>45 ÷ 5 =</td>
</tr>
<tr>
<td>4 ÷ 2 =</td>
<td>0 ÷ 4 =</td>
</tr>
<tr>
<td>40 ÷ 8 =</td>
<td>21 ÷ 7 =</td>
</tr>
<tr>
<td>56 ÷ 7 =</td>
<td>10 ÷ 5 =</td>
</tr>
<tr>
<td>36 ÷ 4 =</td>
<td>42 ÷ 6 =</td>
</tr>
<tr>
<td>0 ÷ 7 =</td>
<td>27 ÷ 3 =</td>
</tr>
<tr>
<td>5 ÷ 1 =</td>
<td>4 ÷ 1 =</td>
</tr>
<tr>
<td>18 ÷ 6 =</td>
<td>2 ÷ 2 =</td>
</tr>
<tr>
<td>35 ÷ 7 =</td>
<td>16 ÷ 4 =</td>
</tr>
<tr>
<td>48 ÷ 8 =</td>
<td>24 ÷ 8 =</td>
</tr>
<tr>
<td>72 ÷ 9 =</td>
<td>8 ÷ 4 =</td>
</tr>
</tbody>
</table>

See how many of these you can answer correctly in 3 minutes. Have someone time you and check your answers. Then complete the remaining facts.
Divide. The first one has been worked for you.

1. \[ \frac{601}{4242} \]

2. \[ 4 \div 1244 \]

3. \[ 9 \div 5490 \]

4. \[ 9 \div 8199 \]

5. \[ 5 \div 2050 \]

6. \[ 5 \div 2045 \]

7. \[ 4 \div 3624 \]

8. \[ 2 \div 426 \]

9. \[ 8 \div 416 \]

10. \[ 5 \div 405 \]

11. \[ 7 \div 406 \]

12. \[ 7 \div 497 \]

13. \[ 7 \div 4256 \]

14. \[ 3 \div 1806 \]

15. \[ 9 \div 4563 \]

Beware of Zeros

Hampton City Schools, VA  Mathematics Department  Lesson Eight

\[ \text{Name } \]
II. Example:

\[43 \div 8335\]

that is about \(40 \div 8000\) so the quotient is about 200.

Example:

\[32 \div 3907\]

since \(30 \times 100 = 3000\) the quotient is more than 100.

Have your child do the following. This will help to find place value of the quotient. Mark the place for the first digit in the quotient. (Copy dividend on answer sheet and put - over correct digit.)

Example: \(62 \div 3286\)

\(62 \times 10 = 620\)

\(62 \times 100 = 6200\) the quotient is less than 100

but more than 10.

Answer: 3286

1. \(55 \div 3056\)  
2. \(28 \div 4836\)  
3. \(42 \div 8738\)  
4. \(24 \div 1683\)

5. \(5 \div 7140\)  
6. \(36 \div 4891\)  
7. \(12 \div 396\)
NAME ____________________________

ESTIMATE: 51 \( \sqrt{2434} \)

1. Estimate: 51 rounds to 50
   - any 50's in 2? No
   - any 50's in 24? No
   - any 50's in 243? Yes
   - First digit goes above 3
   - How many 50's in 243? 4
      \[ \frac{2434}{51} \]
      \[ \frac{204}{394} \]

2. Multiply: 4 \( \times \) 51 = 204

3. Subtract: \[ \frac{2434}{51} \]
   \[ \frac{204}{394} \]

4. Bring Down: \[ \frac{2434}{51} \]
   \[ \frac{204}{394} \]

   1. Estimate: How many 50's in 394? 7
   \[ \frac{2434}{51} \]
   \[ \frac{204}{394} \]

   2. Multiply: 7 \( \times \) 51 = 357

   3. Subtract:

   4. Bring Down: No more to bring down; \( 37 < 51 \) The answer: 47 R37
      37 is the remainder

III. Divide:

1. \( 6 \sqrt{30} \) 2. \( 60 \sqrt{300} \) 3. \( 62 \sqrt{3000} \) 4. \( 4 \sqrt{172} \)

5. \( 40 \sqrt{172} \) 6. \( 45 \sqrt{1720} \) 7. \( 22 \sqrt{88} \) 8. \( 24 \sqrt{192} \)

9. \( 54 \sqrt{380} \) 10. \( 5 \sqrt{457} \) 11. \( 73 \sqrt{878} \) 12. \( 25 \sqrt{286} \)

- Hampton City Schools Mathematics Department

Lesson Eight
Divide; The first one has been worked for you.

1. \[21 \div 4221 \]
2. \[29 \div 928 \]
3. \[28 \div 1708 \]
4. \[37 \div 16317 \]
5. \[16 \div 992 \]
6. \[38 \div 15428 \]
7. \[36 \div 1764 \]
8. \[39 \div 2613 \]
9. \[25 \div 1175 \]
10. \[88 \div 6336 \]
11. \[82 \div 8856 \]
12. \[55 \div 4565 \]
13. \[27 \div 11367 \]

Hampton City Schools, VA Mathematics Department Lesson Eight
PARENT: This is both a review lesson on the four basic operations on whole numbers and a lesson on estimation to determine whether an answer is reasonable. After solving a problem a person should always ask "Is that reasonable?"

Estimating or checking for reasonableness of results can cut down on computing errors.

Example 1: \[ \frac{46}{3} \]

\[ 1218 \text{ is unreasonable.} \]

If you round and estimate \(50 \times 3 = 150\), you would realize there is an error.

Example 2: \[ 54 + 38 \]

\[ 812 \text{ is unreasonable since } 50 + 40 = 90 \]

Example 3: \[ \frac{120}{3} \]

\[ 307 \text{ is unreasonable since } 12 \times 3 = 36. \]

TRY THESE!

I. Estimate sums (there may be more than one correct estimate) and then find the correct answer.

<table>
<thead>
<tr>
<th>Estimate</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>5308 + 1965</td>
<td>5000 + 2000 + 1965</td>
</tr>
<tr>
<td>4160 + 2057 + 6542</td>
<td>7000 + 7273</td>
</tr>
<tr>
<td>3052 + 14605 + 981 + 1232</td>
<td>5308 + 1965</td>
</tr>
</tbody>
</table>

Hampton City Schools Mathematics Department - Lesson Nine
II. Estimate differences (there may be more than one correct estimate).

<table>
<thead>
<tr>
<th>Estimate</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>72,009</td>
<td>72,009</td>
</tr>
<tr>
<td>- 8,805</td>
<td>- 8,805</td>
</tr>
<tr>
<td></td>
<td>63,204</td>
</tr>
<tr>
<td>3,056</td>
<td>1.</td>
</tr>
<tr>
<td>- 437</td>
<td>2.</td>
</tr>
<tr>
<td>16,049</td>
<td>3.</td>
</tr>
<tr>
<td>- 2,501</td>
<td>4.</td>
</tr>
<tr>
<td>63,048</td>
<td>5.</td>
</tr>
<tr>
<td>- 28,429</td>
<td>6.</td>
</tr>
<tr>
<td>2,471</td>
<td>7.</td>
</tr>
<tr>
<td>- 607</td>
<td>8.</td>
</tr>
</tbody>
</table>

III. WORD PROBLEMS:

1. The following is a list of the vehicles registered in the Southeast Atlantic states in 1979: Virginia-1,751,000; North Carolina-1,426,000; South Carolina-846,000; Georgia-708,600; Florida-2,321,000. Estimate the total number of registered vehicles.

   Answer____________________

2. Of the total 10,367,000 United States cars sold in 1975, 9,728,000 were sold in the United States. Estimate how many cars were sold overseas.

   Answer____________________

3. Mrs. Scott bought a sweater for $19, a blouse for $23, and a pair of boots for $62. Estimate how much she spent in all.

   Answer____________________
IV. Estimate the products and then find the correct product.

Example: \[ \begin{array}{ccc} & & \\ 247 & \times & 63 \\ \hline & 12000 & \\ & 741 & \\ & 1482 & \\ & 15561 & \\ \end{array} \]

<table>
<thead>
<tr>
<th>estimate</th>
<th>correct answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 x 60</td>
<td>247 x 63</td>
</tr>
<tr>
<td>12000</td>
<td>741</td>
</tr>
<tr>
<td>1482</td>
<td>15561</td>
</tr>
</tbody>
</table>

\[ \begin{array}{ccc} \text{estimate} & & \text{correct answer} \\ 473 & \times & 45 \\ 1. & & 2. \\ \hline \end{array} \]

\[ \begin{array}{ccc} \text{estimate} & & \text{correct answer} \\ 407 & \times & 49 \\ 3. & & 4. \\ \hline \end{array} \]

\[ \begin{array}{ccc} \text{estimate} & & \text{correct answer} \\ 238 & \times & 72 \\ 5. & & 6. \\ \hline \end{array} \]

Estimate the quotients and then find the correct quotient.

Example: \[ \begin{array}{cc} \text{estimate} & \text{correct answer} \\ 100 & 190R6 \\ \hline \end{array} \]

\[ \begin{array}{cc} 27)5136 & 27)5136 \\ 3050 & 227 \\ \hline 6 & 243 \\ \hline \end{array} \]

If you have a calculator check the problem this way.

Quotient \times \text{Divisor} + \text{Remainder} = \text{Dividend}

\[ \begin{array}{cccc} 190 & \times & 27 & + 6 = 5136 \\ \hline 0 & & 6 \end{array} \]

Hampton City Schools Mathematics Department - 3 - Lesson Nine
NAME __________________ Circle the appropriate answer on this paper; then write that answer on the answer sheet.

V.  1. \[2 \div 391 \]
   Reasonable Not reasonable
   2. \[2 \div 391 \]
   Reasonable Not reasonable

VI. Word Problems:

1. The Ramos VEPCO bill averages $75 a month. Estimate their yearly VEPCO bill.
   Answer __________________

2. Mrs. Ramos drove her car 320 miles. The car used 11 gallons of gas. Estimate the number of miles per gallon.
   Answer __________________

3. Jean has saved $38 from each of her last eight paychecks. Estimate how much has she saved in all?
   Answer __________________
CIRCLE MATH

Begin with the circle labeled START, do what the operation tells you to do and write your answer in the circle.

If all of your computation is correct, your final answer will be the same as the number with which you started.

In CIRCLE MATH, you write your answers inside of circles. What is another reason for calling it circle math?

Make up your own CIRCLE MATH sheet and give it to a friend to work.
PARENT: This lesson is a review of fractions.

Remember These?

\[
\begin{align*}
\text{numerator} & \leftrightarrow \text{number of parts darkened} \\
\text{denominator} & \leftrightarrow \text{total number of equal parts}
\end{align*}
\]

\[
\frac{2}{3}, \quad \frac{1}{4}
\]

I. Write the fraction that tells how much of each figure is colored.

1. \(a\)
2. \(a\)
3. \(b\)
4. \(b\)
5. \(c\)
6. \(c\)
7. \(d\)
8. \(d\)
II. 1. What fractional part of the figure to the right is shaded?

2. What fractional part of the figure below is shaded?

3. What fractional part of the figure below is shaded?

4. What fractional part of the figure below is shaded?

5. If one-fourth of the dots in the figure below are removed, how many dots will be left?

6. A candy bar is broken into three pieces of the same size. Each piece is what part of the candy bar?

7. What part of this rectangular region is shaded?
   a) \( \frac{3}{4} \)
   b) \( \frac{3}{8} \)
   c) \( \frac{3}{9} \)
   d) \( \frac{3}{12} \)
HIDDEN FOODS

The clues below will help you find a word that has a food or beverage hidden in it. What fraction of each word is the food?

<table>
<thead>
<tr>
<th>CLUE</th>
<th>ANSWER/FOOD</th>
<th>FRACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. an upright piece forming the side of a door</td>
<td>impeach</td>
<td>5/7</td>
</tr>
<tr>
<td>2. the fruit of the oak</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. a beautifully plumed bird</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. to bat lightly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. to give instruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. to come before the public as in a play</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. watched secretly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. a pet belonging to the rodent family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. to make grasping motions (to seize)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. to begin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. chubby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. small ships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. covering for the legs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. supreme; exalted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. a place where money is coined</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Write fractions which show the shaded parts.

IV. Example:

1. Numerator ___  Fraction ___
   Denominator ___

2. Numerator ___  Fraction ___
   Denominator ___

3. Numerator ___  Fraction ___
   Denominator ___

4. Numerator ___  Fraction ___
   Denominator ___

5. Numerator ___  Fraction ___
   Denominator ___

6. Numerator ___  Fraction ___
   Denominator ___

7. Numerator ___  Fraction ___
   Denominator ___
Equivalent Fractions - are fractions that name the same number.

\[
\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10}
\]

V. When the numerator and denominator have no common factor except 1, the fraction is in simplest form or in lowest terms.

Example: \(\frac{4}{8} = \frac{4 \div 4}{8 \div 4} = \frac{1}{2}\)

Write each fraction in lowest terms. (Some are already in lowest terms.)

1. \(\frac{1}{8}\)  2. \(\frac{5}{9}\)  3. \(\frac{8}{12}\)  4. \(\frac{5}{10}\)  5. \(\frac{4}{10}\)  6. \(\frac{12}{18}\)  7. \(\frac{3}{8}\)

Write each fraction in lowest terms.

8. \(\frac{6}{10}\)  9. \(\frac{9}{18}\)  10. \(\frac{15}{12}\)  11. \(\frac{8}{20}\)  12. \(\frac{18}{16}\)

13. \(\frac{14}{21}\)  14. \(\frac{12}{27}\)  15. \(\frac{42}{48}\)  16. \(\frac{27}{36}\)  17. \(\frac{20}{24}\)

Hampton City Schools Mathematics Department

Lesson Ten
VI. To express fractions in higher terms multiply the numerator and denominator by the same factor.

\[
\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}
\]

For each fraction, list five equivalent (equal) fractions.

1. \( \frac{5}{6} = \frac{10}{12} = \frac{15}{18} = \frac{20}{24} = \frac{25}{30} = \frac{30}{36} \)

2. \( \frac{1}{3} = \)

3. \( \frac{2}{5} = \)

4. \( \frac{3}{7} = \)

5. \( \frac{3}{10} = \)

Eleanor was asked to write another equivalent fraction for each example below. Check her work. Mark an X on the answer sheet for each incorrect answer.

6. \( \frac{1}{2} = \frac{5}{10} = \frac{10}{20} = \frac{15}{30} = \frac{20}{40} \)

7. \( \frac{2}{3} = \frac{4}{6} = \frac{8}{12} = \frac{12}{18} = \frac{16}{24} \)

8. \( \frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16} = \frac{15}{20} \)

9. \( \frac{5}{9} = \frac{10}{18} = \frac{15}{27} = \frac{20}{36} = \frac{25}{54} \)

10. \( \frac{7}{8} = \frac{14}{16} = \frac{21}{24} = \frac{28}{32} = \frac{35}{40} \)

11. \( \frac{3}{25} = \frac{6}{50} = \frac{9}{75} = \frac{12}{100} = \frac{15}{175} \)

TAKE A BREATH - HAVE SOME FUN!

How many blocks?

Mathematics Department

Hampton, Virginia

Lesson Ten
VII. A fraction whose numerator is greater than the denominator is an improper fraction. Improper fractions are greater than one. Any fraction that is greater than one can also be written as a combination of a whole number and a fraction.

1. \( \frac{27}{4} = 6 \frac{3}{4} \)
2. \( \frac{6}{4} = \frac{3}{4} \)
3. \( 5\) \(\overline{27} \)
4. \( \frac{24}{3} = \)
5. \( \frac{83}{5} = 16 \frac{3}{5} \)
6. \( \frac{16}{3} = \frac{3}{5} \)
7. \( \frac{5}{33} = \frac{30}{3} \)

TRY THESE:

1. \( \frac{7}{2} = \) ___
2. \( \frac{9}{5} = \) ___
3. \( \frac{7}{3} = \) ___
4. \( \frac{9}{4} = \) ___
5. \( \frac{6}{5} = \) ___
6. \( \frac{8}{3} = \) ___
7. \( \frac{14}{3} = \) ___
8. \( \frac{10}{3} = \) ___
9. \( \frac{17}{5} = \) ___
10. \( \frac{79}{10} = \) ___
11. \( \frac{37}{6} = \) ___
12. \( \frac{62}{7} = \) ___

Mathematics Department
Lesson Ten
Hampton, Virginia
LESSON ELEVEN
Grade 6

PARENT: In this lesson your child will add fractions. In order to add fractions the denominators must be the same (alike). To find the sum when the denominators are the same add the numerators and leave the denominators as they are.

Example:
\[
\frac{2}{3} + \frac{1}{5} = \frac{3}{5}
\]

Try these: Remember to reduce to lowest terms.

\[
\frac{1}{4} + \frac{3}{4} = \quad \frac{1}{3} + \frac{1}{3} = \quad \frac{1}{6} + \frac{5}{6} = \
\]

\[
\frac{5}{9} + \frac{2}{9} = \quad \frac{1}{10} + \frac{3}{10} = \quad \frac{1}{25} + \frac{2}{25} = \quad \frac{1}{16} + \frac{5}{16} = \
\]

To add (or subtract) fractions that have different (unlike) denominators, the fractions must be changed to equivalent fractions which have a common (like) denominator. List the multiples of each denominator. Then find the smallest number that is alike in the two lists.

Example 1: Add \(\frac{1}{6} + \frac{3}{8}\)

6 \(0, 6, 12, 18, 24, \ldots\) Multiples of 6
8 \(0, 8, 16, 24, \ldots\) Multiples of 8

24 is the smallest number that is alike in the two lists.

\[
\frac{1}{6} = \frac{4}{24} \quad \frac{1 \times 4}{6 \times 4} = \frac{4}{24} \\
\frac{1}{8} = \frac{3}{24} \quad \frac{1 \times 3}{8 \times 3} = \frac{3}{24} \\
\frac{4}{24} + \frac{3}{24} = \frac{7}{24}
\]

Example 2: Add: \(\frac{1}{3} + \frac{5}{6}\)

3 \(0, 3, 6, \ldots\)
6 \(0, 6, \ldots\)

\[
\frac{7}{6} = 1 \frac{1}{6}
\]

Mathematics Department

Hampton, Virginia

50
I. Complete each table of multiples.

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>8</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

II. Use your tables of multiples to find the least common multiple (other than zero) of each pair of numbers.

**EXAMPLE:**

5 \{5,10,15,20,25,30,35,40,\ldots\} = 40
8 \{8,16,24,32,40,\ldots\} = 80

1. 4,6
2. 4,12
3. 6,18
4. 12,18
5. 9,15
6. 8,9
7. 8,12
8. 12,15
Addition: Name

Add mixed numbers. Write answers in simplest form.

1. \(1 \frac{1}{4}\) 2. \(3 \frac{1}{28}\) 3. \(9 \frac{1}{19}\) 4. \(17 \frac{1}{11}\) 5. \(3 \frac{1}{11}\)
   + \(\frac{3}{4}\) + \(\frac{10}{28}\) + \(\frac{7}{19}\) + \(\frac{3}{7}\) + \(\frac{4}{11}\)

6. \(\frac{12}{11}\) 7. \(\frac{7}{8}\) 8. \(\frac{4}{10}\) 9. \(\frac{7}{9}\) 10. \(\frac{10}{48}\)
   + \(\frac{2}{11}\) + \(\frac{1}{8}\) + \(\frac{1}{10}\) + \(\frac{5}{25}\) + \(\frac{3}{8}\)

11. \(\frac{5}{16}\) 12. \(\frac{3}{16}\) 13. \(\frac{5}{16}\) 14. \(\frac{3}{6}\) 15. \(\frac{3}{7}\)
   + \(\frac{18}{16}\) + \(\frac{1}{2}\) + \(\frac{4}{16}\) + \(\frac{2}{6}\) + \(\frac{3}{7}\)

This was just a nice easy warm-up, wasn’t it?

Hampton City Schools, VA  Lesson Eleven  Grade 6
IV. Find the common denominator and add. Answers should be in SIMPLEST form.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$\frac{1}{2}$</td>
<td>$\frac{2}{4}$</td>
<td>+ $\frac{1}{4}$</td>
<td>$\frac{3}{4}$</td>
</tr>
<tr>
<td>2</td>
<td>$\frac{1}{6}$</td>
<td>+ $\frac{1}{3}$</td>
<td>+ $\frac{1}{4}$</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>$\frac{2}{3}$</td>
<td>+ $\frac{2}{5}$</td>
<td>+ $\frac{1}{3}$</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>$\frac{1}{2}$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>$\frac{7}{9}$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>$\frac{1}{6}$</td>
<td>$\frac{2}{5}$</td>
<td>+ $\frac{1}{4}$</td>
<td>$\frac{7}{10}$</td>
</tr>
<tr>
<td>7</td>
<td>$\frac{1}{3}$</td>
<td>$\frac{4}{5}$</td>
<td>+ $\frac{1}{6}$</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>$\frac{2}{9}$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>$\frac{1}{4}$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>$\frac{5}{8}$</td>
<td>$\frac{1}{6}$</td>
<td>$\frac{3}{5}$</td>
<td>$\frac{2}{3}$</td>
</tr>
<tr>
<td>12</td>
<td>+ $\frac{1}{2}$</td>
<td>$\frac{3}{8}$</td>
<td>$\frac{7}{10}$</td>
<td>$\frac{1}{8}$</td>
</tr>
<tr>
<td>13</td>
<td>$\frac{1}{8}$</td>
<td>$\frac{1}{3}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hampton City Schools Mathematics Department -4- Lesson Eleven
MIXED NUMBERS

$2\frac{1}{5}$ is a short way to write $2 + \frac{1}{5}$.

Sometimes it is necessary to change a mixed number to an improper fraction.

$2 + \frac{1}{5} = \frac{10}{5} + \frac{1}{5} = \frac{11}{5}$

A short cut is as follows: $2\frac{1}{5} =$

numerator = $2 \times 5 + 1 = 11$
Keep the denominator of 5. $2\frac{1}{5} = \frac{11}{5}$

V. Try these:

1. $3\frac{2}{3} = \frac{11}{3}$
2. $4\frac{1}{7} = \frac{29}{7}$
3. $8\frac{2}{9} = \frac{74}{9}$
4. $2\frac{3}{8} = \frac{19}{8}$
5. $9\frac{1}{2} = \frac{19}{2}$
6. $1\frac{7}{10} = \frac{17}{10}$
7. $8\frac{1}{4} = \frac{33}{4}$
8. $7\frac{3}{5} = \frac{38}{5}$
9. $2\frac{1}{6} = \frac{13}{6}$

Try these as a review:

10. $\frac{9}{4} =$
11. $\frac{18}{3} =$
12. $\frac{22}{8} =$
13. $\frac{21}{6} =$
14. $\frac{14}{5} =$
15. $\frac{28}{4} =$
VI.

IMPROPER FRACTIONS AND MIXED NUMBERS

Directions: Solve the problems. Find the number that each letter represents. Then fill in the blank (at the bottom of the page) above the number that each letter represents. The first problem is worked for you.

1. \( \frac{8}{7} = 1 \frac{1}{A} \quad A = 7 \) \hspace{0.5cm} 2. \( \frac{16}{3} = 0 \frac{1}{3} \quad O = \) \hspace{0.5cm} 3. \( \frac{40}{15} = 2 \frac{W}{3} \quad W = \)

4. \( \frac{53}{5} = I \frac{3}{5} \quad I = \) \hspace{0.5cm} 5. \( \frac{21}{9} = 2 \frac{1}{Y} \quad Y = \) \hspace{0.5cm} 6. \( \frac{5}{3} = H \frac{1}{3} \quad H = \)

7. \( \frac{43}{8} = M \frac{1}{8} \quad M = \) \hspace{0.5cm} 8. \( \frac{5}{9} = D \frac{1}{9} \quad D = \) \hspace{0.5cm} 9. \( \frac{15}{12} = 1 \frac{1}{E} \quad E = \)

10. \( \frac{2}{13} = \frac{27}{G} \quad G = \) \hspace{0.5cm} 11. \( \frac{33}{5} = B \frac{3}{5} \quad B = \) \hspace{0.5cm} 12. \( \frac{62}{3} = \frac{N}{3} \quad N = \)

13. \( \frac{5}{2} = \frac{T}{5} \quad T = \) \hspace{0.5cm} 14. \( 2\frac{1}{12} = \frac{25}{U} \quad U = \)

KNOCK!

WHO'S THERE?

\[ \frac{14}{14} \quad 2 \quad \frac{7}{3} \quad 19 \quad 4 \]

\[ \frac{14}{14} \quad 2 \quad \frac{16}{3} \quad 19 \quad 4 \quad \frac{2}{16} \quad \frac{5}{7} \]

\[ \frac{14}{14} \quad 2 \quad \frac{A}{7} \quad 10 \quad 19 \]

\[ \frac{27}{27} \quad \frac{16}{16} \quad \frac{4}{4} \quad \frac{6}{6} \quad \frac{A}{7} \]

\[ \frac{10}{10} \quad \frac{35}{35} \quad \frac{14}{14} \quad 2 \quad \frac{5}{5} \quad 2 \quad 19 \quad 10 \quad 19 \quad 13 \]

15. Write the coded message.

Mathematics Department -6- Hampton, Virginia

Lesson Eleven

55
VII. ADDING MIXED NUMBERS

Example 1:

\[
\begin{align*}
4\frac{5}{8} + 3\frac{7}{8} &= 12 \quad \text{same denominator} \\
&= 1 \frac{4}{8} = 1 \frac{1}{2} + 3 \frac{7}{8} \\
&= 8 \frac{1}{2}
\end{align*}
\]

Example 2:

\[
\begin{align*}
2\frac{1}{2} + 3\frac{1}{3} &= \frac{1}{2} = \frac{3}{6} ; \quad \frac{1}{3} = \frac{2}{6} \\
&= 2 \frac{3}{6} + 3 \frac{2}{6} \\
&= 5 \frac{5}{6}
\end{align*}
\]

Add and Simplify:

1. \(7\frac{1}{8} + 6\frac{1}{8} = 7 \frac{7}{8}\)
2. \(2\frac{1}{6} + 4\frac{1}{2} = 2 \frac{1}{6} + 4 \frac{1}{2} = 4\frac{1}{6}\)
3. \(4\frac{7}{12} + 8\frac{1}{3} = 4 \frac{7}{12} + 8 \frac{1}{3} = 8\frac{1}{12}\)
4. \(2\frac{2}{5} + 4\frac{3}{5} = 2 \frac{2}{5} + 4 \frac{3}{5}\)
5. \(5\frac{1}{3} + 3\frac{1}{2} = 5 \frac{1}{3} + 3 \frac{1}{2}\)
6. \(7\frac{3}{4} + 5\frac{1}{6} = 7 \frac{3}{4} + 5 \frac{1}{6}\)
NAME

LESSON TWELVE
Grade 6

PARENT: In this lesson your child will subtract fractions. The steps are similar to those for adding fractions.

To subtract fractions with like denominators subtract the numerators and keep the denominators.

Example 1: \[
\frac{5}{8} - \frac{3}{8} = \frac{2}{8} = \frac{1}{4}
\]

To subtract one fraction from another when the denominators are different, change the fractions to equivalent fractions which have the least common denominator. Then subtract.

Example 2: \[
\frac{2}{3} - \frac{1}{2} = \frac{4}{6} - \frac{3}{6} = \frac{1}{6}
\]

Example 3: \[
5 \frac{1}{2} - 2 \frac{3}{4}
\]

Step 1: Rename fractions with common denominators.

\[
\frac{6}{4} - \frac{3}{4} = \frac{3}{4}
\]

Step 2: Change 1 into \(\frac{4}{4}\). Add to \(\frac{2}{4}\).

Step 3: Subtract fractions and whole numbers.

TAKE A BREATHER AND HAVE SOME FUN!

How many blocks in this picture?

(CI :sup)
Mathematics Department

Hampton, Virginia
MIXED NUMBERS—SUBTRACTION LIKE DENOMINATORS

Subtract the following. Then find your answer at the bottom of the page and mark it out.

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<tbody>
<tr>
<td>1. ( \frac{5}{4} )</td>
<td>2. ( \frac{1}{3} )</td>
<td>3. ( \frac{9}{6} )</td>
<td>4. ( \frac{6}{8} )</td>
<td>5. ( \frac{7}{5} )</td>
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<td>(- \frac{3}{4} )</td>
<td>(- \frac{3}{4} )</td>
<td>(- \frac{4}{3} )</td>
<td>(- \frac{7}{6} )</td>
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<td>(2 \frac{3}{4} )</td>
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<tr>
<td>6. ( \frac{3}{10} )</td>
<td>7. ( \frac{2}{7} )</td>
<td>8. ( \frac{1}{12} )</td>
<td>9. ( \frac{3}{8} )</td>
<td>10. ( \frac{2}{15} )</td>
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<tr>
<td>(- \frac{1}{10} )</td>
<td>(- \frac{3}{7} )</td>
<td>(- \frac{5}{12} )</td>
<td>(- \frac{3}{8} )</td>
<td>(- \frac{3}{15} )</td>
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<tbody>
<tr>
<td>11. ( \frac{12}{20} )</td>
<td>12. ( \frac{4}{7} )</td>
<td>13. ( \frac{1}{10} )</td>
<td>14. ( \frac{1}{12} )</td>
<td>15. ( \frac{5}{18} )</td>
<td></td>
</tr>
<tr>
<td>(- \frac{9}{20} )</td>
<td>(- \frac{1}{7} )</td>
<td>(- \frac{5}{10} )</td>
<td>(- \frac{4}{12} )</td>
<td>(- \frac{1}{18} )</td>
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</tbody>
</table>

Answers:

\[ \frac{5}{2} \times \frac{4}{2} = \frac{5}{7} \]

\[ \frac{2}{2} \div \frac{5}{5} = \frac{1}{5} \]

\[ \frac{4}{5} \times \frac{2}{3} = \frac{1}{2} \]

\[ \frac{3}{3} - \frac{1}{10} = \frac{1}{3} \]

\[ \frac{4}{7} - \frac{3}{4} = \frac{2}{5} \]
MAGIC WHEEL

II. Directions: Work examples A–J (simplify all answers).

- In the Magic Wheel find the letter corresponding to each example and write the example's answer in the circle.
- Find the sum of each of the diagonals in the magic wheel. This is the magic sum.

A. \( 10 \)  
- \( 6 \frac{2}{3} \)

B. \( 8 \frac{3}{4} \)
- \( 5 \frac{3}{8} \)

C. \( 3 \frac{1}{2} \)
- \( \frac{1}{3} \)

D. \( 1 \frac{7}{8} \)
- \( 1 \frac{1}{8} \)

E. \( 4 \frac{1}{4} \)
- \( 2 \frac{3}{4} \)

F. \( 8 \frac{1}{6} \)
- \( 4 \frac{1}{2} \)

G. \( 11 \frac{3}{8} \)
- \( 7 \frac{3}{4} \)

H. \( 12 \)
- \( 8 \frac{1}{6} \)

I. \( 6 \frac{11}{12} \)
- \( \frac{2}{3} \)

J. \( 14 \frac{3}{8} \)
- \( 8 \frac{7}{8} \)

K. SUM IS ________

Mathematics Department

-3- Lesson Twelve

Hampton, Virginia
SUBTRACTION: MIXED NUMBERS AND FRACTIONS—UNLIKE DENOMINATORS

Subtract the following. Remember to first find a common denominator. The first one has been solved for you.

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1. (\frac{7}{10} - \frac{1}{4})</td>
<td></td>
<td>(\frac{14}{20} - \frac{5}{20} = \frac{9}{20})</td>
</tr>
<tr>
<td>2. (\frac{5}{6} - \frac{2}{3})</td>
<td></td>
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</tr>
<tr>
<td>3. (\frac{5}{12} - \frac{1}{4})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. (\frac{1}{2} - \frac{3}{8})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. (8\frac{1}{2} - 6\frac{1}{4})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. (7\frac{3}{10} - 5\frac{1}{5})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. (12\frac{2}{3} - 6\frac{7}{12})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. (6\frac{1}{5} - 2\frac{1}{3})</td>
<td></td>
<td>(= \frac{6}{15} + \frac{3}{15} = \frac{9}{15})</td>
</tr>
<tr>
<td>9. (5\frac{1}{5} - 4\frac{2}{15})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. (7\frac{3}{8} - 3\frac{1}{2})</td>
<td></td>
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</tr>
</tbody>
</table>

Hampton City Schools, VA  Mathematics Dept.  Lesson 12
LESSON THIRTEEN
Grade 6

PARENT: In this lesson your child will multiply fractions and mixed numbers. It may be necessary to review changing mixed numbers to improper fractions.

A short way to multiply fractions is:

**Step 1:** Multiply the numerators to get the numerator of the product.

**Step 2:** Multiply the denominators to get the denominator of the product.

Example: \( \frac{2}{3} \times \frac{4}{5} = \frac{8}{15} \)

To multiply where one factor is a whole number, write the whole number as the numerator and with the denominator 1.

\[ \frac{4}{5} \times 3 = \frac{4}{5} \times \frac{3}{1} = \frac{12}{5} = 2 \frac{2}{5} \]

When multiplying mixed numbers, change the mixed number to an improper fraction and then multiply.

\[ 3 \frac{2}{5} \times 2 \frac{1}{2} = \frac{17}{5} \times \frac{5}{2} = \frac{85}{10} = 8 \frac{1}{2} \]

Mathematics Department
Hampton, Virginia

61
I. Solve and simplify.

1. \( \frac{5}{8} \times \frac{3}{4} = \)  
   2. \( \frac{2}{5} \times \frac{4}{7} = \)  
   3. \( \frac{1}{2} \times 2 = \)

4. \( \frac{3}{4} \times 7 = \)  
5. \( 1\frac{1}{2} \times 7\frac{1}{3} = \)  
6. \( \frac{2}{3} \text{ of } 18 = \)  
   (of means multiply)

You may wish to simplify your calculations by dividing out a common factor in one of the denominators and one of the numerators.

Step 1: \( \frac{2}{3} \times \frac{3}{4} \)  
   Cancel to divide by the common factor 3

Step 2: \( \frac{1}{2} \times \frac{1}{2} \)  
   Cancel to divide by the common factor 2

Step 3: \( \frac{1}{2} \times \frac{1}{3} = \frac{1}{6} \)  
   Multiply

II. Multiply across and down. Reduce.

13. A recipe calls for \( 1\frac{1}{3} \) cups of sugar. The recipe is doubled. How much sugar is needed?
14. A dress costing $66 is on sale \( 1\frac{1}{3} \) off. How much will the dress cost? (excluding tax)
15. A recipe calls for \( 1\frac{1}{2} \) cups of flour. How much flour is needed if the recipe is cut in half?

Hampton city Schools Mathematics Department  -2- Lesson Thirteen
MULTIPLYING MIXED NUMBERS:
Multiply. Write answers in simplest form.

1. $3\frac{3}{4} \times \frac{1}{6} =$
2. $4\frac{2}{3} \times \frac{3}{4} =$
3. $1\frac{1}{16} \times \frac{2}{17} =$

4. $1\frac{3}{4} \times \frac{2}{7} =$
5. $2 \times \frac{2}{3} =$
6. $3 \times 2\frac{1}{2} =$

7. $6 \times \frac{1}{3} =$
8. $\frac{2}{5} \times \frac{15}{16} =$
9. $1\frac{5}{7} \times 2\frac{1}{6} =$

10. $\frac{3}{4} \times 1\frac{2}{3} =$
11. $3\frac{2}{3} \times \frac{5}{11} =$
12. $2\frac{1}{4} \times 4\frac{1}{2} = $

$$\frac{9}{4} \times \frac{9}{2} = \frac{81}{8} = 10\frac{1}{8}$$

Did you find an answer of $\frac{5}{8}$?
MULTIPLICATION OF WHOLE NUMBERS AND FRACTIONS:
Multiply. Write answers in simplest form.

1. \( \frac{1}{2} \times 20 = \)
2. \( 72 \times \frac{4}{9} = \)
3. \( \frac{4}{6} \times \frac{6}{42} = 2\)

4. \( 15 \times \frac{1}{3} = \)
5. \( \frac{7}{10} \times 40 = \)
6. \( 36 \times \frac{2}{9} = \)

7. \( \frac{3}{4} \times 28 = \)
8. \( 45 \times \frac{4}{5} = \)
9. \( \frac{3}{10} \times 20 = \)

10. \( 30 \times \frac{2}{5} = \)
11. \( \frac{7}{8} \times 64 = \)
12. \( 60 \times \frac{7}{12} = \)

13. \( \frac{6}{7} \times 21 = \)
14. \( 49 \times \frac{2}{7} = \)
15. \( \frac{1}{8} \times 56 = \)

16. \( 40 \times \frac{5}{8} = \)
17. \( \frac{1}{12} \times 48 = \)
18. \( 33 \times \frac{3}{11} = \)

19. \( \frac{5}{6} \times 36 = \)
20. \( 60 \times \frac{1}{20} = \)
21. \( \frac{11}{15} \times 45 = \)

Did you find these answers?

32 36 28 8 10 \( \times \) 5
33 3 30 25 4 9 7
14 18 56 12 35 6 21

Hampton City Schools, VA Lesson Thirteen Grade 6
LESSON FOURTEEN
Grade 6

PARENT: In this lesson your child will divide fractions. Since division is the inverse operation of multiplication, we must use the multiplicative inverse or reciprocal. Here are some examples on finding reciprocals that you and your child can discuss.

- What is the reciprocal of 5? \( \frac{1}{5} \)
- What is the reciprocal of 1? 1
- What is the reciprocal of \( \frac{1}{4} \)? 4
- What is the reciprocal of \( \frac{3}{5} \)? \( \frac{5}{3} \)
- What is the reciprocal of \( 2 \frac{1}{2} \)? First change the mixed number to an improper fraction \( -\frac{5}{2} \). The reciprocal of \( -\frac{5}{2} \) is \( \frac{2}{5} \).

- Dividing by \( \frac{1}{2} \) is the same as multiplying by _____. (2)
- Dividing by \( \frac{1}{4} \) is the same as multiplying by _____. (4)
- Dividing by \( \frac{2}{3} \) is the same as multiplying _____. (\( \frac{3}{2} \))

Remember: Dividing is the same as multiplying by the reciprocal.

Example 1: \( \frac{3}{4} \div \frac{5}{2} \)

Step 1: \( \frac{3}{4} \times \frac{2}{5} \) Find the reciprocal of the divisor (the number after the division sign)

Step 2: \( \frac{3}{4} \times \frac{2}{5} = \frac{3}{10} \) Multiply

Hampton City Schools Mathematics Department
Lesson Fourteen
Example 2: \(1 \div \frac{2}{3}\)

Step 1: \(1 \times \frac{3}{2}\) Find the reciprocal of the divisor.

Step 2: \(\frac{1}{1} \times \frac{3}{2}\) Write 1 as a fraction.

\[
\text{Step 3: } \frac{1}{1} \times \frac{3}{2} = \frac{3}{2} = 1 \frac{1}{2} \quad \text{Multiply}
\]

Example 3: \(\frac{3}{5} \div \frac{1}{2}\) =

\[
\frac{3}{5} \times \frac{2}{1} = \frac{6}{5} = 1 \frac{1}{5}
\]

Example 4: \(\frac{3}{4} \div 2\) =

\[
\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}
\]

Example 5: \(3 \frac{1}{2} \div 1 \frac{3}{4}\) =

Step 1: \(\frac{7}{2} \div \frac{7}{4}\) Change mixed numbers to improper fractions.

Step 2: \(\frac{7}{2} \times \frac{4}{7}\) Write the reciprocal of the divisor.

\[
\text{Step 3: } \frac{7}{2} \times \frac{3}{7} = 2 \quad \text{Multiply}
\]

I. TRY THESE. Divide and simplify your answer.

1. \(\frac{5}{8} \div 10\) =

2. \(11 \div 3 \frac{1}{7}\) =

3. \(1 \div 1 \frac{3}{4}\) =

4. \(5 \frac{1}{4} \div 7\) =

5. \(1 \frac{5}{8} \div 1 \frac{3}{8}\) =

6. \(7 \div 14\) =
II. Solve these problems. Be sure answer is in simplest terms.

\[
\begin{align*}
1. \quad \frac{1}{5} \div \frac{1}{2} &= \\
2. \quad \frac{3}{8} \div \frac{7}{8} &= \\
3. \quad \frac{2}{3} \div \frac{4}{7} &= \\
4. \quad \frac{5}{4} \div \frac{5}{14} &= \\
5. \quad \frac{3}{7} \div \frac{12}{5} &= \\
6. \quad \frac{8}{9} \div \frac{4}{3} &= \\
7. \quad \frac{5}{14} \div \frac{15}{7} &= \\
8. \quad \frac{3}{4} \div \frac{15}{16} &= \\
9. \quad \frac{6}{11} \div \frac{10}{11} &= \\
10. \quad \frac{9}{10} \div \frac{6}{5} &= \\
11. \quad \frac{1}{10} \div \frac{2}{3} &= \\
12. \quad \frac{10}{21} \div \frac{15}{7} &= \\
13. \quad \frac{11}{12} \div \frac{5}{18} &= \\
14. \quad \frac{25}{24} \div \frac{15}{16} &= \\
15. \quad \frac{4}{33} \div \frac{20}{11} &= \\
16. \quad \frac{18}{5} \div \frac{27}{20} &= 
\end{align*}
\]
DIVISION OF FRACTIONS CAN BE FUN: Work the following problems. The answers are found at the bottom of the page. Mark out the answers as you find them.

1. \( \frac{1}{4} \div \frac{1}{3} = \)  
2. \( \frac{6}{5} \div \frac{3}{8} = \)  
3. \( \frac{3}{5} - \frac{9}{10} = \)

4. \( \frac{2}{5} \div \frac{2}{3} = \)  
5. \( \frac{7}{8} \div \frac{7}{4} = \)  
6. \( \frac{11}{3} \div 2 = \)

7. \( \frac{2}{7} \div \frac{4}{9} = \)  
8. \( \frac{3}{4} \div \frac{9}{10} = \)  
9. \( \frac{4}{10} \div 8 = \)

10. \( \frac{3}{4} \div \frac{7}{8} = \)  
11. \( \frac{4}{5} \div \frac{12}{13} = \)  
12. \( \frac{12}{25} \div \frac{4}{15} = \)

13. \( \frac{4}{5} \div \frac{3}{2} = \)  
14. \( \frac{9}{4} \div \frac{6}{7} = \)  
15. \( \frac{9}{5} \div \frac{15}{1} = \)

16. \( \frac{5}{7} \div \frac{3}{4} = \)  
17. \( \frac{6}{7} \div \frac{8}{21} = \)  

Answers:

\(\frac{2\frac{1}{4}}{1\frac{3}{4}} \times \frac{4\frac{1}{3}}{1\frac{1}{2}} = \frac{9}{14} \div \frac{3}{25} = \frac{6\frac{2}{3}}{1\frac{5}{6}} \)

\(\frac{1}{30} \div \frac{3}{4} = \frac{1\frac{5}{6}}{10\frac{1}{2}} = \frac{1\frac{i}{5}}{3\frac{1}{3}} \)

\(3\frac{1}{3} \div 3\frac{1}{5} = \frac{2}{3} \div \frac{3}{5} = 1\frac{4}{5} \div \frac{3}{7} \)

HAMPTON CITY SCHOOLS, VA  MATH EMATICS DEPT.  
LESSON FOURTEEN
MAGIC SQUARE

(The sum of numbers in each row, column and diagonal is the same.)

This is a review of ALL operations with fractions.

DIRECTIONS:
- Work examples A-I. Simplify all answers.
- Find the letter corresponding to each example and write the answer in the space in the Magic Square. The first one has been worked for you.

A. \( \frac{2}{3} \times 3 = 2 \)
B. \( 5 \frac{1}{2} + 1 \frac{1}{2} = \)
C. \( \frac{13}{2} - \frac{1}{2} = \)
D. \( 3 \div \frac{1}{3} = \)
E. \( 6 \frac{2}{3} \times \frac{3}{4} = \)
F. \( \frac{8}{3} - \frac{5}{3} = \)
G. \( 1 \frac{1}{2} + 2 \frac{1}{4} + \frac{1}{4} = \)
H. \( 1 \frac{1}{2} \div \frac{1}{2} = \)
I. \( 4 \frac{3}{8} + 3 \frac{5}{8} = \)

J. The magic sum is _____.

Hampton City Schools Mathematics Department
Lesson Fourteen
LESSON FIFTEEN
Grade 6

PARENT: In this lesson your child will solve story problems. Some techniques that might help in problem solving follow.

- Reading and Restating the Problem

EX: A man had 24 chickens. All but 7 died? How many lived?
Restatement: All died but 7. How many lived? 7

- Brainstorming - Discuss the problem and list the given information and consider alternatives.

EX: Arrange the 12 matches as shown. By moving only three, form three squares of the same size.

Try all rearrangements moving three matches until you have

- Looking at it Another Way

EX: Some months have 31 days; some have 30 days. How many months have 28 days?

Think carefully. - Could be thinking only 28 days
Could be thinking at least 28 days
The second one is correct.

- Make List, Chart, Diagram or Picture

EX: Joan is having a party. The first time the doorbell rings, one person enters. If on each successive ring a group enters that has two more persons than the group that entered on the previous ring, how many people enter on the sixth ring?

<table>
<thead>
<tr>
<th>ring</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
</tr>
</thead>
<tbody>
<tr>
<td>people</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

Hampton City Schools Mathematics Department 1 Lesson Fifteen
I.

1. a) How many cans can you buy with 97 cents?  
   b) How much money will you have left?

2. Tom's cat eats 60 oz. per week. How many cans does the cat eat each week?

Strawberry Farm held a strawberry picking contest. The manager recorded how many quarts of strawberries each person picked in one hour.

<table>
<thead>
<tr>
<th>Name of Person</th>
<th>Quarts Picked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Henry</td>
<td>3</td>
</tr>
<tr>
<td>Joan</td>
<td>2 1/2</td>
</tr>
<tr>
<td>Norm</td>
<td>2</td>
</tr>
<tr>
<td>Marcia</td>
<td>2 1/4</td>
</tr>
</tbody>
</table>

3. How many quarts were picked in all?

4. How many more did Henry pick than
   a) Joan?  
   b) Norm?  
   c) Marcia?

5. Jim bought a bicycle for $129. The salesman allowed him $39 as a trade-in. How much did Jim pay?

6. At the grocery store Lamont paid $24.59 for 22 items. Estimate the cost per item.
7. Danny bought 3 \( \frac{1}{2} \) yards of denim at $3 a yard. How much did he pay in all for the denim?

8. June bought two yards of material to make a skirt. She used \( 1 \frac{2}{3} \) yards. How much material did she have left over?

9. Ed bought 2 records for $4.98 each and 3 comic books for $.50 each. How much did he spend?

II: TRY THESE! Let's see if we can trick you.

1. If you went to bed at 8 o'clock at night and set the alarm to get up at 9 o'clock in the morning, how many hours of sleep would this permit you to have? (Is more than one answer possible?)

2. How many birthdays does the average man have?

3. If a doctor gave you 3 pills and told you to take 1 every half hour, how long would they last?

4. What is the minimum number of active baseball players on the field during any part of an inning? How many outs in each inning?

a) ____________________________  b) ____________________________

Hampton City Schools Mathematics Department 3 Lesson Fifteen
5. Divide 30 by $\frac{1}{2}$ and add 10. What is the answer?

6. If you take two apples from three apples how many apples do you have?

7. I have in my hand 2 U.S. coins which total 55 cents in value. One is not a nickel. What are the 2 coins?

8. John was playing darts. He threw 6 darts and all 6 hit the target. Which of the following could be his score - 17, 28, 29, 31, 45, 56?

Meet DOUBLE CHIN HARRY. Harry's face shows the sum of many years. How old is he?
PARENT: In this lesson your child will use decimals and identify place values through ten thousandths. Point out to your child that the odometer shows how many miles a car has traveled and that the last digit represents tenths. Have your child read your car odometer and also read the following:

This odometer reads twenty-six thousand, five hundred two and eight tenths miles.

\[26502.8\]

(decimal)

I. Read the following odometers.

1. \[052800\]
2. \[045600\]
3. \[067000\]
4. \[073328\]
5. \[030463\]
6. \[086459\]
7. \[136004\]
8. \[180066\]
9. \[204805\]
10. \[375627\]

CAN YOU FIGURE THESE OUT?
Our system for writing numbers uses place value. The decimal point is used to locate the ones place. The place values are symmetrical about the ones place.

<table>
<thead>
<tr>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
<th>tenths</th>
<th>hundredths</th>
<th>thousandths</th>
<th>ten thousandths</th>
<th>hundred thousandths</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

II. Read these decimals: Five hundred sixty-two thousand and forty-nine hundred thousandths.

Examples: Your answers should read as follows.

\[
6.5 = \frac{65}{10} = \text{six and five tenths} \\
3.12 = \frac{312}{100} = \text{three and twelve hundredths} \\
23.04 = \frac{2304}{100} = \text{twenty-three and four hundredths} \\
6.004 = \frac{6004}{1000} = \text{six and four thousandths}
\]

TRY THESE.

1. .86  
2. 18.42  
3. 12.04  
4. 39.015

III. On a check the amount is written in both decimal notation and words.
III. Write these checks and send with answer sheet.

<table>
<thead>
<tr>
<th>No.</th>
<th>DATE</th>
<th>PAY</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>July 5, 1984</td>
<td>Jones Electronics</td>
<td>$57.83</td>
</tr>
<tr>
<td>2</td>
<td>July 6, 1984</td>
<td>VEPCO</td>
<td>$89.02</td>
</tr>
<tr>
<td>3</td>
<td>July 6, 1984</td>
<td>C&amp;P Telephone</td>
<td>$34.29</td>
</tr>
</tbody>
</table>

Hampton, VA

Pay to the Order of

$____

DOLLARS

Hampton City Schools Mathematics Department

Lesson Sixteen
Solve the problems on the next page. Then shade each area below that contains one of your answers.

Send this sheet with your Answer Sheet.
IV. Write as decimal fractions. Shade the areas on PREVIOUS PAGE.

1. \( \frac{79}{1,000} = \)
2. \( \frac{756}{10,000} = \)
3. \( \frac{9}{100} = \)
4. \( \frac{4329}{10,000} = \)
5. \( \frac{8}{10} = \)
6. \( \frac{6}{10,000} = \)
7. \( \frac{36}{1,000} = \)
8. \( \frac{37}{100} = \)
9. \( \frac{488}{10,000} = \)
10. \( \frac{58}{10,000} = \)
11. \( \frac{243}{1,000} = \)
12. \( \frac{19}{100} = \)
13. \( \frac{1}{1,000} = \)
14. \( \frac{93}{10,000} = \)
15. \( \frac{24}{1,000} = \)
16. \( \frac{3}{10,000} = \)
17. \( \frac{971}{1,000} = \)
18. \( \frac{4}{1,000} = \)
19. \( \frac{7}{10} = \)
20. \( \frac{7,081}{10,000} = \)
21. \( \frac{2}{100} = \)
Circle the answer to each problem. Write the letter that goes with your answer in the blank above the problem number. The first one is done for you. (Also write letter on the answer sheet.)

HE'S THE
13 9 6 11 3 4 14 8 9 7 15 11 5 1 12 10 2

1. 0.005 can be written
   - five hundredths B
   - five thousandths H

2. 4.3 is read
   - four and point three E
   - four and three tenths O

3. Twenty-one hundredths can be written
   - 0.21 T
   - 0.021 S

4. 5.5 is read
   - five and five tenths A
   - five point five tenths S

5. 0.06 can be written
   - six hundredths N
   - six hundred V

6. Forty-eight thousandths can be written
   - 0.48 L
   - 0.048 E

7. 8.12 is read
   - eight twelve hundredths P
   - eight and twelve hundredths I

8. Nine ten thousandths can be written
   - 0.0010 R
   - 0.0009 E

9. 0.033 can be written
   - thirty-three hundredths F
   - thirty-three thousandths R

10. Five thousandths can be written
    - 0.005 M
    - 0.005 R

11. 0.004 can be written
    - four thousandths A
    - four thousand S

12. 7.02 is read
    - seven point two T
    - seven and two hundredths E
13. 0.72 can be written \(\text{seventy-two hundredths}\) G

14. Thirteen hundredths can be written \(0.013\) E M

15. 9.8 is read \(\text{nine and eight tenths}\) C Y

16. Write the solution to the puzzle.
LESSON SEVENTEEN
Grade 6

PARENT: In this lesson your child will add and subtract decimal fractions. Caution your child to be careful when lining up decimal points.

Example 1: 7.4 + 0.39 = ?
Step 1: Line up decimal points. 7.4
+ 0.39
Step 2: Write decimal point in sum.
Step 3: Add
7.4
+ 0.39
---
7.79

Example 2: 3.75 + 7 = ?
Whole numbers have a decimal point after the last digit.
3.75
+ 7.00
---
10.75

I. SOLVE THESE

1. 9.03 + .7 = 2. 9.59 + 0.6 = 3. 6.32 + .008 =
4. 8 + 3.78 = 5. 0.07 + 2.038 = 6. 9.75 + 20.833 =
7. 40.318 + 33.67 = 8. 30.53 + 18.048 = 9. 25.3 + 9.75 =

Hampton City Schools Mathematics Department

Lesson Seventeen
II. EXAMPLE: $16 - 0.27 = ?$

Step 1: Line up the decimal points. 

\[
\begin{array}{c}
16. \\
- 0.27 \\
\end{array}
\]

Step 2: Annex zeros. 

\[
\begin{array}{c}
16.00 \\
- 0.27 \\
\end{array}
\]

Step 3: Subtract. 

\[
\begin{array}{c}
16.00 \\
- 0.27 \\
\hline
15.73 \\
\end{array}
\]

TRY THESE!

1. $9.03 - 0.6 = $ 
2. $72.81 - 6.2 = $ 
3. $3 - 1.21 = $ 
4. $11.4 - 6.03 = $ 

JUST FOR FUN

TAKE A BREATHER AND HAVE SOME FUN!

1. What is the biggest jewel in the world?
2. How many sides does a circle have?
3. In what way are the moon and a dollar alike?
III. Subtract. Be sure to line up the decimal points.

1. 16. - 4.3
2. 9.82 - 2.4
3. 3.7 - 1.19
4. 0.64 - 0.305
5. 72.4 - 1.98
6. 600.7 - 167.8
7. 72.19 - 3.337
8. 801.36 - 4.204
9. 9.9 - 0.565
10. 2.037 - 0.65
11. 2.7 - 1.104
12. 67.007 - 63.014
13. 38.6 - 4.577
14. 19 - 1.8
15. 37 - 0.45
16. 4 - 0.007
17. 700 - 0.6
18. 395.2 - 382.7
I. NAME

LESSON EIGHTEEN

Grade 6

PARENT: In this lesson your child will multiply decimal fractions. You might want to review multiplication of whole numbers. Then give your child decimal fractions and ask how many places are after the decimal point.

Sample:

3.12 (2)
0.013 (3)
2 (none)
4.7 (1)
3255.32 (2)

Try the Following. Place the Decimal Point.

1. 7 x 1.23 = 8.61
2. 3 x 1.8 = 54

3. 50 x .375 = 18750
4. 90 x 4.8 = 4320

5. 3.01 x 45 = 13545
6. 0.9 x 5.4 = 486

7. 5.89 x 3.7 = 21793
8. 17.9 x 15 = 2685

9. 8.1 x 4.7 = 3807
10. 738 x 0.22 = 16236

11. 1.25 x 0.8 = 1000
12. 3.95 x 40 = 15800

Mathematics Department

-1- Hampton, Virginia
II. Directions: Multiply across. Multiply down.

III. Multiply.

1. \( \frac{2.3}{6} \)  
2. \( \frac{3.06}{5} \)  
3. \( \frac{.019}{8} \)  
4. \( \frac{4.6}{2.2} \)  
5. \( \frac{90}{.14} \)  
6. \( \frac{.86}{4.5} \)  
7. \( \frac{.17}{.43} \)  
8. \( \frac{.005}{.08} \)  
9. \( \frac{1.21}{3.4} \)  
10. \( \frac{3.05}{.17} \)  
11. \( \frac{.036}{.095} \)  
12. \( \frac{.719}{.78} \)  
13. \( \frac{846}{6.1} \)
PARENT: In this lesson your child will divide decimal fractions. You might want to review the operation of division.

To divide a decimal fraction by a whole number, place the decimal point in the quotient above the decimal point in the dividend.

Example: \[ \frac{1.27}{4)5.08} \quad \frac{.007}{7).049} \]

\[
\begin{array}{c}
1.27 \\
\ \ 4 \\
\ \ 10 \\
\ \ 8 \\
\ \ 28 \\
\ \ 28 \\
\end{array}
\]

\[
\begin{array}{c}
.007 \\
\ \ 7 \\
\ \ 0 \text{ places} \\
\ \ 0 \text{ places} \\
\ \ 3 \text{ places} \\
\end{array}
\]

use zeros as place holders

check \[ .007 \times 7 = .049 \]

I. TRY THESE!

1. \[ 5)12.18 \]
2. \[ 9)0.81 \]
3. \[ 6).0054 \]
4. \[ 5)23.05 \]
5. \[ 8).0128 \]
6. \[ 9)1.17 \]
Let's review multiplying by powers of 10 (10, 100, 1000, etc.)

\[
\begin{align*}
5.5 \times 10 &= 55 \\
0.02 \times 100 &= 2 \\
0.005 \times 1000 &= 5
\end{align*}
\]

10 moves the decimal **one** place to the right, 100 moves the decimal **two** places to the right, etc.

To change a decimal fraction to a whole number multiply by a power of 10.

**Example:** \(5.1 \times 10 = 51\)

**II. TRY THESE:** Determine whether to multiply by 10, 100 or 1000 to change the decimal fractions to whole numbers.

1) \(2.27 \times \frac{100}{100} = 227\)

2) \(0.7 \times \_\_\_ = 7\)

3) \(28.1 \times \_\_\_ = 281\)

4) \(3.1 \times \_\_\_ = 31\)

5) \(0.001 \times \_\_\_ = 1\)

6) \(4.17 \times \_\_\_ = 417\)

**Something Else:**

\[
\begin{align*}
0.3\overline{9.24} \\
30.8 \\
3\overline{92.4} \quad \text{Step 3: \text{Divide}}
\end{align*}
\]

Sometimes you may have to annex zeros in the dividend.

\[
\begin{align*}
0.6\overline{90} \\
90 \times 10 = 900 \\
90 \times 10 = 900 \quad \text{Step 1:} \quad .6 \times 10 = 6 \\
6\overline{900} \quad \text{Step 2: Show like this.} \\
150 \quad \text{Step 3: \text{Divide}}
\end{align*}
\]
### III. Place the decimal in the following:

- $0.5)18.0$
- $0.6)120$
- $0.8)99.2$
- $0.9)18.9$

**Directions:** Do not finish these problems! Just check the answer which is set up correctly for division. Then write correct answer "A" or "B" on answer sheet.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>$1.5\overline{19.5}$</td>
<td>$1.5\overline{19.50}$</td>
</tr>
<tr>
<td>2)</td>
<td>$2.3\overline{12.16}$</td>
<td>$2.3\overline{12.16}$</td>
</tr>
<tr>
<td>3)</td>
<td>$0.12\overline{0.0168}$</td>
<td>$0.12\overline{0.0168}$</td>
</tr>
<tr>
<td>4)</td>
<td>$0.015\overline{0.255}$</td>
<td>$0.015\overline{0.255}$</td>
</tr>
<tr>
<td>5)</td>
<td>$19\overline{71.71}$</td>
<td>$19\overline{71.71}$</td>
</tr>
<tr>
<td>6)</td>
<td>$0.45\overline{202.5}$</td>
<td>$0.45\overline{202.50}$</td>
</tr>
<tr>
<td>7)</td>
<td>$0.015\overline{19.5}$</td>
<td>$0.015\overline{19.500}$</td>
</tr>
<tr>
<td>8)</td>
<td>$2.7\overline{864}$</td>
<td>$2.7\overline{864.0}$</td>
</tr>
<tr>
<td>9)</td>
<td>$0.31\overline{995.1}$</td>
<td>$0.31\overline{995.10}$</td>
</tr>
<tr>
<td>10)</td>
<td>$0.05\overline{2715}$</td>
<td>$0.05\overline{2715.00}$</td>
</tr>
</tbody>
</table>
Work these problems. Connect your answers in order above.

1. $0.05 \sqrt{1.2}$
2. $0.12 \sqrt{6.6}$
3. $0.8 \sqrt{7.6}$
4. $0.32 \sqrt{4.8}$
5. $0.38 \sqrt{9.12}$
6. $0.44 \sqrt{4.18}$
7. $0.004 \sqrt{13.5}$
8. $0.02 \sqrt{1.1}$
9. $0.54 \sqrt{8.1}$
10. $0.006 \sqrt{20.25}$
11. $0.03 \sqrt{0.72}$
R & C's BURGER STAND MENU

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasty Burger</td>
<td>$.65</td>
</tr>
<tr>
<td>Tasty Burger with Cheese</td>
<td>$.75</td>
</tr>
<tr>
<td>Double Tasty Burger</td>
<td>$.99</td>
</tr>
<tr>
<td>French Fries (small)</td>
<td>$.29</td>
</tr>
<tr>
<td>French Fries (large)</td>
<td>$.45</td>
</tr>
<tr>
<td>Cola (small)</td>
<td>$.35</td>
</tr>
<tr>
<td>Cola (large)</td>
<td>$.45</td>
</tr>
<tr>
<td>Shakes</td>
<td>$.69</td>
</tr>
</tbody>
</table>

1. How many Tasty Burgers could you buy for $5.00? ___________

2. How many Double Tasty Burgers could you buy for $5.00? ___________

What is the cost of each order shown below?

3. a. 2 Tasty Burgers ________  b. 3 Double Tasty Burgers ________
   c. 1 small French Fries ________  d. 2 large French Fries ________
   e. 2 Shakes ________  e. 2 large Colas ________
   f. TOTAL ________  f. 1 vanilla shake ________

5. What is the total cost of your new outfit? ________

6. If you give the cashier $50.00 to pay for the clothes, how much change will you receive? ________
PARENT: In this lesson your child will use the metric system to find lengths. The metric system like our money system is based on 10's. If your child does not know the prefixes review them. These prefixes will be used in this lesson and in the next four lessons.

The prefixes that we will use are:

- milli = .001 = 1 thousandth
- centi = .01 = 1 hundredth
- deci = .1 = 1 tenth
- base unit
- deca = 10 = tens
- hecto = 100 = hundreds
- kilo = 1000 = thousands

The underlined prefixes are encountered most. The base unit of length is the meter.

Look at the staircase. Each step in the metric system is ten times greater than the one which precedes it.
NAME

Do you remember how to multiply by powers of 10?

\[2.5 \times 10 = 25\] move one place to the right
\[2.5 \times 100 = 250\] move two places to the right
\[2.5 \times 1000 = 2500\] move three places to the right

Since division is the inverse (opposite) of multiplication you move to the left.
\[2.5 \div 10 = .25\]
\[2.5 \div 100 = .025\]
\[2.5 \div 1000 = .0025\]

The symbols for length in the metric system are:

- millimeters \(\text{mm}\)
- centimeters \(\text{cm}\)
- decimeters \(\text{dm}\)
- meters \(\text{m}\)
- decameters \(\text{dam}\)
- hectometers \(\text{hm}\)
- kilometers \(\text{km}\)

I. TRY THESE:

6 m = _____ cm (hint: cm is 2 steps down from m so multiply by \(10^2\) or 100
6 m = 600 cm

500 cm = _____ m (m is 2 steps up from cm so divide by \(10^2\) or 100
500 cm = 5 m

1. 2,000 mm = _______ m
2. 300 mm = _____ m
3. _____ mm = 2 cm
4. 7 km = _____ m
5. 100 cm = ______m

6. _____ km = 1 m
7. .63 m = _____ cm
8. 56 mm = _____ cm
9. 9 km = ______ m
10. 300 cm = ______ m

Mathematics Department

Hampton, Virginia

Lesson Twenty
Try this Windmill Activity.

DO THIS FOR FUN!
1. Cut a square 15 cm by 15 cm from a brown paper bag.
2. Fold the square on the dotted lines.
3. Cut along each fold, stopping 1 cm from the center.
4. Stick a pin through every other point and then through the center of the windmill. This pins every other point to the center.
5. Push the pin into a piece of dowelling or the end of a lollipop stick.
6. By blowing on your windmill, you can make it turn, but you'll also discover other ways to make it go around.

Hampton City Schools Mathematics Department

Lesson Twenty
II. With a ruler measure the following after first estimating the length in centimeters.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Paper Clip</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Length of This Paper</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Length of Your Middle Finger</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Your Shoe Length</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>A Book</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>A Key</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Width of TV Screen</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>A Pen</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>A Picture</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Choose some of your own</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Name of object:</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use a tape measure to measure your dimensions. List them on the enclosed sheet or you might want to measure someone else.

Larger objects such as height of buildings, boats, cars are measured in meters. A meter is a little longer than a yard—about the height of a door knob from the floor. Distances between towns are measured in kilometers.
III. BOY
(Do this one if you are a boy.)

Go through and estimate each of your measurements - then have someone measure you.

Height in centimeters is:
Estimate: _______ cm
Measure: _______ cm

Neck in centimeters is:
Estimate: _______ cm
Measure: _______ cm

Chest in centimeters is:
Estimate: _______ cm
Measure: _______ cm

Span (tip of little finger to tip of thumb on right hand with fingers spread) is:
Estimate: _______ cm
Measure: _______ cm

Waist in centimeters is:
Estimate: _______ cm
Measure: _______ cm

Hips in centimeters are:
Estimate: _______ cm
Measure: _______ cm

Distance from floor to knee is:
Estimate: _______ cm
Measure: _______ cm

Weight in kilograms is:
Estimate: _______ kg
Measure: _______ kg

Shirt Size: _______

Shoe Size: _______
III. GIRL  COMPLETE AND RETURN WITH ANSWER SHEET. 
(Do this one if you are a girl.)

ME IN METRIC!

Go through and estimate each of your measurements - then have someone measure you.

Height in centimeters is:
  Estimate ________ cm
  Measure ________ cm

Neck in centimeters is:
  Estimate ________ cm
  Measure ________ cm

Bust in centimeters is:
  Estimate ________ cm
  Measure ________ cm

Span (tip of little finger to tip of thumb on right hand with fingers spread is):
  Estimate ________ cm
  Measure ________ cm

Waist in centimeters is:
  Estimate ________ cm
  Measure ________ cm

Hips in centimeters are:
  Estimate ________ cm
  Measure ________ cm

Distance from floor to knee is:
  Estimate ________ cm
  Measure ________ cm

Weight in kilograms is:
  Estimate ________ kg
  Weight ________ kg

Dress Size __________

Shoe Size __________

Hampton City Schools Mathematics Department 96
Lesson Twenty
PARENT: In this lesson your child will measure area in both the metric and customary system. It is important that your child understand that area is the part contained inside a figure and is measured in square units.

The area enclosed in a region is the number of square units needed to cover the region. You can find the number of square units by counting.

![Square unit](image)

HOW MANY BLOCKS? TRY THIS FOR FUN!

Mathematics Department

Hampton, Virginia
I. Find the area of the following by counting the squares. NOTE: Some are only $\frac{1}{2}$ squares.

1. ______ square units
2. ______ square units
3. ______ square units
4. ______ square units
5. ______ square units
6. ______ square units
7. ______ square units
8. ______ square units
9. ______ square units
You can find the area of a rectangle by multiplying its length by its width.

<table>
<thead>
<tr>
<th>3 units (width)</th>
<th>15 square millimeters (mm$^2$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 units (length)</td>
<td>15 square centimeters (cm$^2$)</td>
</tr>
<tr>
<td></td>
<td>15 square meters (m$^2$)</td>
</tr>
</tbody>
</table>

$5 \times 3 = 15$

II. Find the area of each of the following by using $A(\text{area}) = l(\text{length}) \times w(\text{width})$.

1. __________ cm$^2$
2. __________ cm$^2$
3. __________ cm$^2$
4. __________ cm$^2$
5. __________ cm$^2$
6. __________ cm$^2$
7. __________ cm$^2$
SEND IN WITH ANSWER SHEET!

III. Each square has an area = 1 sq. in. Trace a pattern of your left hand. Describe the area:

   more than ___ sq. in.
   less than ___ sq. in.

NAME _____________________
IV. Directions: Find the perimeter (distance around) and the area (space inside) for the following rectangles.

1. \[ \begin{array}{c}
    4 \text{ ft} \\
    3 \text{ ft} \\
\end{array} \]
   
   \[ A = 3 \times 4 = 12 \text{ sq. ft} \]
   
   \[ P = 2(4+3) = 14 \text{ ft} \]
   
   \[ \text{or} \]
   
   \[ 3 \text{ ft} + 4 \text{ ft} + 3 \text{ ft} + 4 \text{ ft} = 14 \text{ ft} \]

2. \[ \begin{array}{c}
    7 \text{ ft} \\
\end{array} \]
   
   \[ A = \]
   
   \[ P = \]

3. \[ \begin{array}{c}
    5 \text{ m} \\
\end{array} \]
   
   \[ A = \]
   
   \[ P = \]

4. \[ \begin{array}{c}
    2 \text{ yd} \\
    32 \text{ yd} \\
\end{array} \]
   
   \[ A = \]
   
   \[ P = \]

5. \[ \begin{array}{c}
    4 \text{ in.} \\
    4 \text{ in.} \\
\end{array} \]
   
   \[ A = \]
   
   \[ P = \]
DO THESE FOR FUN!

Here are some activities you can try.

1. Use newspaper or cardboard to make a square that is 1 meter on each side (use the tape measure to measure off 1 meter).

2. Use the square region you just made to find the approximate area of the floor of one room in your home. These square regions are each 1 m².

3. Using a decimeter (10 cm on the ruler) make a square 1 decimeter on a side. The area of this square is 1 dm² or 100 cm².

4. Use the ruler to measure a rectangle that is 10 cm long and 5 cm wide.
PARENT: In this lesson your child will work with volume (capacity). The unit of capacity is a liter (1), which is a little more than a quart. Gasoline, oil, water, milk, paint and other liquids are measured in liters. Most measuring cups are now marked in milliliters (\(\frac{1}{1000}\) or .001 of a liter). One cup is approximately 250 ml. Point out that many soft drinks are sold in 2 liter bottles.

Some recipes are included that you and your child might like to try.

TRY THIS RECIPE!

500 ml sugar
45 ml butter or margarine
250 ml evaporated milk
375 ml crunchy peanut butter
5 ml vanilla
250 ml minature marshmallows

In an electric skillet combine sugar, butter and milk. Set control at slow heat (approximately 140° C). Bring mixture to a boil, boil 5 minutes, stirring constantly. Turn off heat. Add marshmallows, peanut butter and vanilla, stir until well blended. Pour into 20 cm square buttered pan. Cut into squares when cool. Yields about 1 kg.
COCOA KRISPIE BALLS

BLEND:
15 g sifted powdered sugar
20 ml light corn syrup
20 g peanut butter

ADD:
15 g Cocoa Krispies

MIX WELL:
With clean hands roll mixture into 4-centimeter balls. Roll in extra cereal (crushed) or in coconut. Cool until firm.

CHOCOLATE CHIP COOKIES

INGREDIENTS:
125 milliliters (ml) shortening, margarine, or butter
50 ml granulated sugar
150 ml brown sugar firmly packed
1 egg, well-beaten
5 ml vanilla
250 ml all-purpose flour
2.5 ml baking soda
2.5 ml salt
1 package chocolate chips

1. Combine the shortening and sugar together and beat until creamy.
2. Add the well-beaten egg and the vanilla. Mix well.
3. Gradually add the flour, baking soda and salt and blend.
4. Stir in the chocolate chips.
5. Drop small spoonfuls of the mixture onto a greased cookie sheet, about 5 cm apart.
6. Bake in 180° C (350°F) oven for about 8 minutes.
I. Directions: Circle the most sensible measure of capacity. Then write answer on answer sheet.

<table>
<thead>
<tr>
<th>Item</th>
<th>Capacity Options</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. tea cup</td>
<td>2 ml, 20 ml</td>
<td>200 ml</td>
</tr>
<tr>
<td>2. glass of milk</td>
<td>25 ml, 250 ml</td>
<td>2500 ml</td>
</tr>
<tr>
<td>3. garbage can</td>
<td>8 L, 80 L</td>
<td>800 L</td>
</tr>
<tr>
<td>4. bottle of salad oil</td>
<td>10 ml, 100 ml</td>
<td>1000 ml</td>
</tr>
<tr>
<td>5. bath tub</td>
<td>4 L, 40 L</td>
<td>400 L</td>
</tr>
<tr>
<td>6. teaspoon</td>
<td>5 ml, 50 ml</td>
<td>500 ml</td>
</tr>
<tr>
<td>7. large can of tomato juice</td>
<td>3 ml, 130 ml</td>
<td>1300 ml</td>
</tr>
<tr>
<td>8. swimming pool</td>
<td>6 L, 600 L</td>
<td>6000 L</td>
</tr>
<tr>
<td>9. Pepsi Boss</td>
<td>20 ml, 200 ml</td>
<td>2000 ml</td>
</tr>
<tr>
<td>10. coffee pot</td>
<td>2.5 L, 25 L</td>
<td>250 L</td>
</tr>
</tbody>
</table>

Give each measure in liters.

11. 14 ml = \( \frac{14}{1000} = 0.014 \) L
12. 25 ml = __________
13. 500 ml = __________
14. 750 ml = __________
15. 2500 ml = __________
16. 62000 ml = __________
17. 1000 ml = __________
18. 180 ml = __________
LESSON TWENTY-THREE
Grade 6

PARENT: In this lesson your child will measure mass (weight) in the metric system. A person, a car, a box of candy—everything on earth is made up of matter. Mass is a measure of the amount of matter in an object. Weight is a measure of the pull of gravity on the object. The stronger the force pulling on the object the greater its weight. People often speak of mass and weight as if they are the same, but there is a difference. The astronauts had the same mass on the moon as on the Earth. On the Moon the pull of gravity is less so the weight of the astronauts was less. Their weight was changed but their mass was not. In the Metric System, the kilogram (kg) is the base unit of mass. (The kilogram is the only base unit that has a prefix as part of its name.)

Some objects which have a mass (weight) of about 1 kg are 5 apples or 2 footballs.

The gram is a small measure of mass. One kilogram = 1000 grams so you can see how small a gram is.

Examples: 
3 raisins = 1 gram
1 dime = 2 grams
1 bottle top = 2 grams
a new pencil = 5 grams
2 small paper clips = 1 gram

Then the milligram (\(\frac{1}{1000}\) gram) is extremely small but very important. It is used to measure medicines, vitamins and chemicals.

LET'S REVIEW THE PREFIXES

Kilogram (kg) = 1000 grams
Hectogram (hg) = 100 grams
Decagram (dag) = 10 grams
Gram =
Decigram (dg) = .1 gram
Centigram (cg) = .01 gram
Milligram (mg) = .001 gram

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Lesson Twenty-Three
I. Directions: Ring the best answer for each of the following:

1. mass of man
   - 85 mg
   - 85 g
   - 85 kg
2. mass of car
   - 1400 mg
   - 1400 g
   - 1400 kg
3. mass of hot dog
   - 50 mg
   - 50 g
   - 50 kg
4. mass of medium sized egg
   - 45 mg
   - 45 g
   - 45 kg
5. mass of candy bar
   - 31 g
   - 31 kg
6. mass of bicycle
   - 9 g
   - 9 kg
7. mass of horse shoe
   - 1 g
   - 1 kg
8. mass of pair of shoes
   - 750 g
   - 750 kg
9. mass of car tire
   - 18 g
   - 18 kg
10. mass of bar of soap
    - 140 g
    - 140 kg

Unscramble the following to form metric measures.

11. er m t e
    - on et n
    - tonne
12. i m k g l a o r
13. t o i e l r i l k
14. e e t d r c i m
    - e o s d c n
    - second
15. t l i i l l e i m r
16. t e e i r c t e n m
17. r t l k e m o i e
18. r e t i l

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Lesson Twenty-three

107
II. Match the words in the second column with the proper definition in column one.

1. _____ A unit of mass equal to 1 of 1000 parts of a kilogram, each part of the same mass.  
   a. distance
   b. capacity
   c. System

2. _____ What you can measure in kilometers  
   d. England
   e. base

3. _____ A unit of length equal to 1000 meters  
   f. kilometer
   g. unit
   h. mass
   i. kilo

4. _____ A prefix meaning 1000  
   j. France
   k. meter

5. _____ Sometimes people speak of finding _____ in grams and kilograms  
   l. gram
   m. liter
   n. centimeter
   o. kilogram

6. _____ A unit equal to 1000 grams  

7. _____ The base unit of length  

8. _____ A unit of capacity (how much something can hold)  
   p. England
   q. System

9. _____ The first country to use the Metric System  
   r. England
   s. System

10. _____ The liter is a unit of measure of _____  
    t. England
    u. System

11. _____ A unit of length this long: _____  
    v. England
    w. System

12. _____ The meter is the _____ unit of length  
    x. England
    y. System

13. _____ The gram is the base _____ of mass  
    z. England
    {. System

14. _____ The Metric _____  

   T
   H
   M
   E
   R
   I
   C
   N
   K

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Lesson Twenty-Three
In this lesson your child will solve problems involving money. Have your child read the problem carefully, jot down the given information and what is asked for and then determine the operation(s) that should be used to solve the problem.

Example: John wants to buy 3 hamburgers at 99¢ each, a large coke for 45¢ and large order of fries for 35¢. Allowing 16¢ for tax, does John have enough money to cover the cost if he has $4.00?

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 hamburgers</td>
<td>.99</td>
</tr>
<tr>
<td>1 coke</td>
<td>.45</td>
</tr>
<tr>
<td>1 fries</td>
<td>.35</td>
</tr>
<tr>
<td>tax</td>
<td>.16</td>
</tr>
</tbody>
</table>

\[ 3 \times .99 = 2.97 \]
\[ .45 + .35 + .16 = 1.96 \]
\[ 2.97 + 1.96 = 4.93 \]

Answer: Yes

I.

1) Which can is the better buy?

2) Why?

1.89

5.75

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Lesson Twenty-Four
II. Start with the cost.
Add on the change from the smallest to the largest value coin.
Be sure you end with the amount you gave the clerk.

<table>
<thead>
<tr>
<th>1) You buy a belt for $7.29 and give the clerk $8.00. Here is your change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coins:</td>
</tr>
<tr>
<td>Did you receive the correct change? YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2) You buy a bean bag chair for $24.59. You give the clerk $25.00. Here is your change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coins:</td>
</tr>
<tr>
<td>Did you receive the correct change? YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3) You buy a poster for $2.15 and give the clerk $3.00. Here is your change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coins:</td>
</tr>
<tr>
<td>Did you receive the correct change? NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4) You buy a ruler for $0.41 and give the clerk $1.00. Here is your change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coins:</td>
</tr>
<tr>
<td>Did you receive the correct change? NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5) You buy some groceries for $9.18 and give the clerk $10.00. Here is your change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coins:</td>
</tr>
<tr>
<td>Did you receive the correct change? YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6) You buy a sweater for $14.82 and give the clerk $15.00. Here is your change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coins:</td>
</tr>
<tr>
<td>Did you receive the correct change? YES</td>
</tr>
</tbody>
</table>
LET'S SEE HOW GOOD YOU ARE AT GUESSING.

Guess how much each list of groceries costs. Then look at the price given. If you guess the price is less, write < ; if you guess more, write > . Use rounding to help you.

1. 1 lb beef $1.59 2. 1 gal milk $1.39
3 cans corn 1.01 3 loaves, bread 2.09
2 onions .39 jar of jelly .89
1 bottle catsup .89
_____ $5.00 _____ $4.00

3. 5 lb chicken $3.55 4. 2 lb fish $2.33
2 cans beans .59 1 qt milk .79
1 doz eggs .79 spaghetti .89
1 qt milk .76 2 cans tomatoes .79
_____ $5.00 3 lb beans .99
2 1 qt cans soup 1.25
_____ $7.00

5. 2 lb pork chops $4.75 6. 2 lb steak 4.87
3 lb bananas 1.00 potatoes .61
3 lb apples 1.49 squash .79
1 orange juice .99 gal milk 1.39
1 mayonnaise .89 2 doz eggs 1.59
_____ $8.00 _____ $10.00

7. 1 lg box soap $1.89 8. 3 cans chili 2.10
32 oz jelly 1.89 6 cans peas 2.31
5 lb apples 1.59 turkey 4.18
2 loaves, bread 1.38 4 sm soup 1.89
2 cans juice 1.69 2 spaghetti 1.92
1 mayonnaise .89 2 cereal 2.49
_____ $10.00 _____ $14.00

9. 2 lg catsup $1.98 3 lb beef 5.18
2 mayonnaise 1.89 6 lb grapes 6.25
6 lb tomatoes 2.15 2 spaghetti $15.00
GROCERY SHOPPING:
Sometimes you may feel that you need a wheelbarrow full of money to pay for your groceries. It is, therefore, a good idea to estimate to see if you do have enough money with you. Estimate the cost of the following bags of groceries by rounding to the nearest $0.10. If you do not have enough money, select an item to put back.

1. 4.5 kg beef $13.90
   6 loaves, bread 4.15
   2.5 kg chicken 3.35
   6 L milk 2.45
   1.5 kg apples 2.50

Is $25.00 enough? A
Put back? B
New estimate C

2. 6 loaves, bread $4.52
   4 lettuce 2.57
   1 kg spaghetti 1.89
   2 kg fish 8.56
   2 doz eggs 1.49
   2 orange juice 3.37

Is $26.00 enough? A
Put back? B
New estimate C

3. 12L milk $4.52
   2 lg juice 1.17
   5 kg fish 6.90
   2 mayonaise 1.89
   2 catsup 1.88
   1 box detergent 4.99

Is $23.00 enough? A
Put back? B
New estimate C

4. 5 kg oranges $3.00
   2 kg bananas 1.60
   4 kg tomatoes 2.15
   4.5 kg plums 6.99
   2 jars jelly 2.58
   4 cans soup 2.58

Is $18.00 enough? A
Put back? B
New estimate C

5. 5kg oranges $3.50
   4 kg melons 3.10
   5 kg tomatoes 2.44
   4.5 kg peaches 5.91
   4 kg cherries 4.60
   3 kg peppers 1.75
   5 kg carrots 1.90
   5 kg cucumbers 4.80

Is $27.00 enough? A
Put back? B
New estimate C

Hampton City Schools Mathematics Department - Lesson Twenty-Four
PARENT: This is a lesson on Geometry. Your child will review parts of a circle, types of polygons and will identify congruent figures.

Triangle Quadrilateral Pentagon

Hexagon Octagon

Have your child name some traffic signs which are in the shape of polygons.

Have your child identify center (O), radii (OB & OA), diameter AB. AC, CD and CB are chords.

Hampton City Schools Mathematics Department
Lesson Twenty-Five
Figures with the same size and shape are congruent.

Examples:
Tell whether the figures seem to have the same size and shape.

(a, d and e seem to have the same size and shape)

(2 and 4)

I. Match the figures on the right to the words on the left. (If there are 2 matches, give both answers.)

1. ___ segment
2. ___ triangle
3. ___ parallel lines
4. ___ ray
5. ___ angle
6. ___ rectangle
7. ___ radius
8. ___ right triangle

Hampton City Schools Mathematics Department
Lesson Twenty-Five
II. Use the drawing above to answer the following questions.

1. Which line segment is the **diameter** of the circle?
   - a. OT
   - b. PT
   - c. OS
   - d. PS

2. What is the **center**?
   - a. O
   - b. T
   - c. S
   - d. P

3. Which line segment is a **radius**?
   - a. PT
   - b. SP
   - c. PG
   - d. OS
III. Circle the figures which are congruent.

1. 

2. 

3. 

4. 

5. 

6. 

7. Draw a figure congruent to this one.

8. Draw a figure. Then make a figure congruent to the one you drew.
IV. Illusions, or optical puzzles, provide an interesting challenge. They are not strictly mathematical ideas, but mathematical forms lend themselves to this kind of project.

Try to answer the questions on the illusions below. Will your mathematical reasoning power accept what your eyes appear to see?

1. Look at this cube. Can you determine which is the front and which is the back?

Try to make some optical illusions yourself.

2. Which is longer - line PQ or line RS?

Be sure now! Check with a piece of paper, marked at the edge.

3. Look carefully at the square and triangle. Are the sides straight or do the lines bend?

Maybe you will need a ruler to double-check.
ILLUSIONS, con't.

4. How does the distance DE compare with the distance EF? Check with marked edge of paper.

5. Is dotted line XY shorter than dotted line YZ?

6. Which of these lines are parallel?

7. How do these three arrows compare in length?
CONGRATULATIONS !!!

You have completed
MATH BY MAIL, Grade 6
Good luck next
year in Grade 7 Mathematics