

Level 4.0 - 5.9



- LEVEL:** 4.0 – 5.9
- STANDARD:** 17.0 Show awareness of the ways whole numbers are represented and used in the real world.
- BENCHMARK:** 17.01 Identify whole numbers combining up to 7-digit numeration (millions, thousands, hundreds, tens, and ones).
- 17.02 Associate whole numbers to their respective spoken names, written names, and numerals.
- MATERIALS:** Number Line Handout, poster-sized or overhead copy of the number line, worksheet
- PROCEDURE:** Give students a copy of the number line handout.
Show them how it works on the poster-sized or overhead copy.
Give examples of numbers and have the group do them together.
Have students complete the worksheet individually or with a partner.

Student: _____

Date: _____

Teacher: _____

Directions: Write the word names for the following numbers. Write the numbers for those written in words.

4,235 _____

86,934 _____

345 _____

5,984,643 _____

906,742 _____

two hundred ninety-three

forty-eight thousand six hundred seventy-five

seven thousand three hundred forty-seven

six million four hundred thirty-seven thousand two hundred sixteen

one thousand twenty-seven

Directions: Write the word names for the following numbers. Write the numbers for those written in words.

4,235 **four thousand two hundred thirty-five**

86,934 **eighty-six thousand nine hundred thirty-four**

345 **three hundred forty-five**

5,984,643 **five million nine hundred eighty four thousand six hundred forty-three**

906,742 **nine hundred six thousand seven hundred forty-two**

two hundred ninety-three
293

forty-eight thousand six hundred seventy-five
48,675

seven thousand three hundred forty-seven
7,347

six million four hundred thirty-seven thousand two hundred sixteen
6,437,216

one thousand twenty-seven
1,027

Number Line Handout



LEVEL: 4.0 – 5.9

STANDARD: 17.0 Show awareness of the ways whole numbers are represented and used in the real world.

BENCHMARK: 17.03 Understand the relative size of whole numbers.

MATERIALS: Board, markers

PROCEDURE: Write the numbers 1; 10; 100; 1,000; 10,000; 100,000; and 1,000,000 at the top of the board.
Let the students brainstorm things that would cost \$1, \$10, \$100, etc.
Let them brainstorm things you would find one of, 10 of, 100 of, etc.

- LEVEL:** 4.0 – 5.9
- STANDARD:** 18.0 Demonstrate proficiency in adding and subtracting whole numbers.
- BENCHMARK:** 18.01 Add with and without regrouping a 1-, 2- or 3-digit number to a 3-digit number given in vertical notation.
- MATERIALS:** White board and markers, and 15 plastic toothpicks, poker chips, or pieces of colored paper of each of the following colors:
Red representing ones
Green representing tens
Yellow representing hundreds
- PROCEDURE:**
1. On the classroom board establish 3 vertical columns.
 2. Provide an example 3-digit number, and insert it into the appropriate using the appropriate color of paper.
Example: 274
Place: 4 reds in the ones column
7 greens in tens column
2 yellows in hundreds column
 3. Present a second addend, and list under the first. Example: 124
 4. Count picks representing ones (4+4). Annotate sum.
 5. Repeat with remaining columns.
 6. Provide groups of 3 students with three practice problems to solve.
 7. Groups should compare answers.

Student: _____

Date: _____

Teacher: _____

Directions: Add the numbers in each column with and without regrouping.

$$\begin{array}{r} 603 \\ + 285 \\ \hline \end{array}$$

$$\begin{array}{r} 577 \\ + 321 \\ \hline \end{array}$$

$$\begin{array}{r} 458 \\ + 201 \\ \hline \end{array}$$

$$\begin{array}{r} 413 \\ + 564 \\ \hline \end{array}$$

$$\begin{array}{r} 762 \\ + 125 \\ \hline \end{array}$$

$$\begin{array}{r} 210 \\ + 648 \\ \hline \end{array}$$

$$\begin{array}{r} 307 \\ + 652 \\ \hline \end{array}$$

$$\begin{array}{r} 805 \\ + 163 \\ \hline \end{array}$$

$$\begin{array}{r} 761 \\ + 135 \\ \hline \end{array}$$

$$\begin{array}{r} 432 \\ + 245 \\ \hline \end{array}$$

$$\begin{array}{r} 854 \\ + 133 \\ \hline \end{array}$$

$$\begin{array}{r} 386 \\ + 402 \\ \hline \end{array}$$

$$\begin{array}{r} 683 \\ + 417 \\ \hline \end{array}$$

$$\begin{array}{r} 257 \\ + 683 \\ \hline \end{array}$$

$$\begin{array}{r} 594 \\ + 417 \\ \hline \end{array}$$

$$\begin{array}{r} 637 \\ + 905 \\ \hline \end{array}$$

$$\begin{array}{r} 842 \\ + 369 \\ \hline \end{array}$$

$$\begin{array}{r} 715 \\ + 486 \\ \hline \end{array}$$

$$\begin{array}{r} 377 \\ + 417 \\ \hline \end{array}$$

$$\begin{array}{r} 257 \\ + 683 \\ \hline \end{array}$$

Directions: Add the numbers in each column with and without regrouping.

$$\begin{array}{r} 603 \\ + 285 \\ \hline 888 \end{array}$$

$$\begin{array}{r} 577 \\ + 321 \\ \hline 898 \end{array}$$

$$\begin{array}{r} 458 \\ + 201 \\ \hline 659 \end{array}$$

$$\begin{array}{r} 413 \\ + 564 \\ \hline 977 \end{array}$$

$$\begin{array}{r} 762 \\ + 125 \\ \hline 887 \end{array}$$

$$\begin{array}{r} 210 \\ + 648 \\ \hline 858 \end{array}$$

$$\begin{array}{r} 307 \\ + 652 \\ \hline 959 \end{array}$$

$$\begin{array}{r} 805 \\ + 163 \\ \hline 968 \end{array}$$

$$\begin{array}{r} 761 \\ + 135 \\ \hline 896 \end{array}$$

$$\begin{array}{r} 432 \\ + 245 \\ \hline 677 \end{array}$$

$$\begin{array}{r} 854 \\ + 133 \\ \hline 987 \end{array}$$

$$\begin{array}{r} 386 \\ + 402 \\ \hline 788 \end{array}$$

$$\begin{array}{r} 683 \\ + 417 \\ \hline 1,100 \end{array}$$

$$\begin{array}{r} 257 \\ + 683 \\ \hline 940 \end{array}$$

$$\begin{array}{r} 594 \\ + 417 \\ \hline 1,011 \end{array}$$

$$\begin{array}{r} 637 \\ + 905 \\ \hline 1,542 \end{array}$$

$$\begin{array}{r} 842 \\ + 369 \\ \hline 1,211 \end{array}$$

$$\begin{array}{r} 715 \\ + 486 \\ \hline 1,201 \end{array}$$

$$\begin{array}{r} 377 \\ + 417 \\ \hline 794 \end{array}$$

$$\begin{array}{r} 257 \\ + 683 \\ \hline 940 \end{array}$$

LEVEL: 4.0 – 5.9

STANDARD: 18.0 Demonstrate proficiency in adding and subtracting whole numbers.

BENCHMARK: 18.02 Add with and without regrouping three or four 3-digit numbers given in vertical notation.

MATERIALS: Board, markers
Activity Sheet

- PROCEDURE:**
1. Write three or four multi-addend problems of 3 digits on the board. Ask for two students to volunteer to do each problem.
 2. Guide the first pair of students through the first problems. Assign them an additional problem on the board.
 3. Pairs of students should cooperatively complete their problems. A representative of each pair orally describes the process used to arrive at the sum.
 4. Students complete a five-problem worksheet, asking for assistance from other students when needed.

Student: _____

Date: _____

Teacher: _____

Directions: Add the following problems:

$$\begin{array}{r} 318 \\ 187 \\ + 460 \\ \hline \end{array}$$

$$\begin{array}{r} 835 \\ 583 \\ + 432 \\ \hline 126 \\ \hline \end{array}$$

$$\begin{array}{r} 318 \\ 241 \\ + 924 \\ \hline \end{array}$$

$$\begin{array}{r} 316 \\ 321 \\ + 718 \\ \hline 635 \\ \hline \end{array}$$

$$\begin{array}{r} 508 \\ 214 \\ + 930 \\ \hline \end{array}$$

Directions: Add the following problems:

$$\begin{array}{r} 318 \\ 187 \\ + 460 \\ \hline 965 \end{array}$$

$$\begin{array}{r} 835 \\ 583 \\ + 432 \\ 126 \\ \hline 1,976 \end{array}$$

$$\begin{array}{r} 318 \\ 241 \\ + 924 \\ \hline 1,483 \end{array}$$

$$\begin{array}{r} 316 \\ 321 \\ + 718 \\ 635 \\ \hline 1,990 \end{array}$$

$$\begin{array}{r} 508 \\ 214 \\ + 930 \\ \hline 1,652 \end{array}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 18.0 Demonstrate proficiency in adding and subtracting whole numbers.
- BENCHMARK:** 18.03 Add with and without regrouping three or four 4 digit numbers given in vertical notation.
- MATERIALS:** Board, markers
Activity Sheet
- PROCEDURE:**
1. Write three or four multi-addend problems of 4 digits on the board. Ask for two students to volunteer to do each problem.
 2. Guide the first pair of students through the first problem. Assign them an additional problem on the board.
 3. Pairs of students should cooperatively complete their problems. A representative of each pair orally describes the process used to arrive at the sum.
 4. Students complete a five-problem worksheet, asking for assistance from other students when needed.
- EVALUATION:** Individual students complete a worksheet of five problems with 80% accuracy.

Student: _____

Date: _____

Teacher: _____

Directions: Add the following problems:

$$\begin{array}{r} 2346 \\ 5643 \\ + 3217 \\ \hline \end{array}$$

$$\begin{array}{r} 6535 \\ 3241 \\ + 1158 \\ \hline 5487 \end{array}$$

$$\begin{array}{r} 2463 \\ 8731 \\ + 3161 \\ \hline \end{array}$$

$$\begin{array}{r} 3211 \\ 1873 \\ + 1439 \\ \hline 9871 \end{array}$$

$$\begin{array}{r} 542 \\ 2430 \\ + 4056 \\ \hline \end{array}$$

Directions: Add the following problems:

$$\begin{array}{r} 2346 \\ 5643 \\ + 3217 \\ \hline 11,206 \end{array}$$

$$\begin{array}{r} 6535 \\ 3241 \\ + 1158 \\ \hline 5487 \\ \hline 16,421 \end{array}$$

$$\begin{array}{r} 2463 \\ 8731 \\ + 3161 \\ \hline 14,355 \end{array}$$

$$\begin{array}{r} 3211 \\ 1873 \\ + 1439 \\ \hline 9871 \\ \hline 11,394 \end{array}$$

$$\begin{array}{r} 542 \\ 2430 \\ + 4056 \\ \hline 7,028 \end{array}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 18.0 Demonstrate proficiency in adding and subtracting whole numbers.
- BENCHMARK:** 18.04 Subtract with and without regrouping two 3-digit numbers given in vertical notation.
- MATERIALS:** Board, markers, and 15 plastic toothpicks, poker chips, or pieces of colored paper of each of the following colors:
Red representing ones
Green representing tens
Yellow representing hundreds
- PROCEDURE:**
1. Choose two students to demonstrate and present one student with 1 greenpick and the other with 15 red picks. Give each a piece of paper, but no pencil.
 2. Offer a reward for the student who most neatly writes a word such as “money.” When they request a pencil, tell them that a pencil costs a red pick.
 3. The class brainstorms on a way that each of the two students can get a pencil. Arrive at the words “exchange” and “borrow.”
 4. Reiterate that $10 \text{ ones} = 1 \text{ ten}$. Lead them through the borrowing process in the following problem: $24 - 15 =$. (It is helpful to talk in terms of something concrete such as 24 dollars minus 15 dollars.) Note that the borrowed ten is added to the four ones making fourteen ones. Stress that only 1 ten can be borrowed at a time and that the number remaining must be annotated in the tens column by slashing through the 2 and writing 1 above it.
 5. Repeat using these examples on the board ($62 - 7 =$; $44 - 16 =$; $963 - 785 =$)
 6. Students should practice in pairs on three problems ($181 - 76 =$; $847 - 719 =$; $132 - 126 =$.) Use concrete terms such as M&M’s, students passing GED, or cookies for party).

Student: _____

Date: _____

Teacher: _____

Directions: Add the following problems:

$$\begin{array}{r} (1) \ 498 \\ - 276 \\ \hline \end{array}$$

$$\begin{array}{r} (2) \ 458 \\ - 349 \\ \hline \end{array}$$

$$\begin{array}{r} (3) \ 691 \\ - 227 \\ \hline \end{array}$$

$$\begin{array}{r} (4) \ 794 \\ - 478 \\ \hline \end{array}$$

$$\begin{array}{r} (5) \ 652 \\ - 239 \\ \hline \end{array}$$

Directions: Add the following problems:

$$\begin{array}{r} (1) \ 498 \\ - 276 \\ \hline 222 \end{array}$$

$$\begin{array}{r} (2) \ 458 \\ - 349 \\ \hline 109 \end{array}$$

$$\begin{array}{r} (3) \ 691 \\ - 227 \\ \hline 464 \end{array}$$

$$\begin{array}{r} (4) \ 794 \\ - 478 \\ \hline 316 \end{array}$$

$$\begin{array}{r} (5) \ 652 \\ - 239 \\ \hline 413 \end{array}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 18.0 Demonstrate proficiency in adding and subtracting whole numbers.
- BENCHMARK:** 18.05 Subtract with and without regrouping two 5-digit numbers given in both vertical and horizontal notation.
- MATERIALS:** Worksheet, pencil
- PROCEDURE:** Tell the students, once you know the basic subtraction facts and processes, including *borrowing* and *regrouping*, you can apply this knowledge to subtracting larger numbers. Remember to subtract the column at the right first, moving to the left.

To check your work, add the answer you got to the bottom number of the problem. That should equal the top number of the original problem.

When subtraction problems are written horizontally, you will want to re-write them vertically before you begin to solve the problem.

Example:

$$\begin{array}{r} 86,947 \text{ (without borrowing)} \\ - 32,826 \\ \hline 54,121 \end{array}$$

Answer. Add to subtracted # to check your work.

$$\begin{array}{r} 54,121 \\ + 32,826 \\ \hline 86,947 \end{array}$$

This should equal your top number.

$$\begin{array}{r} 1767 \\ \cancel{28,785} \text{ (with borrowing)} \\ - 19,796 \\ \hline 8,989 \end{array}$$

Answer. Add to subtracted # to check your work.

$$\begin{array}{r} 8,989 \\ 19,796 \\ \hline 28,785 \end{array}$$

This should equal your top number.

See the student activity page for more practice problems.

Student: _____

Date: _____

Teacher: _____

Practice:

86,947

91,528

92,466

75,826

53,485

68,238

-32,826-20,414-22,143-23,520-33,252-32,025

$42,795 - 30,730 =$

$56,738 - 54,229 =$

$59,427 - 41,313 =$

22,482

62,538

55,131

35,614

28,785

45,187

-19,585-56,849-43,272-26,726-19,796-11,279

Practice:

86,947	91,528	92,466	75,826	53,485	68,238
-32,826	-20,414	-22,143	-23,520	-33,252	-32,025
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
54,121	71,114	70,323	52,306	20,233	36,213

$$42,795 - 30,730 = 12,066 \quad 56,738 - 54,229 = 2,509 \quad 59,427 - 41,313 = 18,114$$

22,482	62,538	55,131	35,614	28,785	45,187
-19,585	-56,849	-43,272	-26,726	-19,796	-11,279
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
2,897	5,689	11,859	8,888	8,989	33,908

LEVEL: 4.0 - 5.9

STANDARD: 18.0 Demonstrate proficiency in adding and subtracting whole numbers.

BENCHMARK: 18.06 Borrow where the minuend is a digit followed by three zeros and regrouping is necessary e.g., 6000-495.

MATERIALS: Worksheet, pencil

PROCEDURE: Sometimes you will encounter problems where you will need to subtract from a number with several zeros. Since you cannot borrow from zero, you need to move to the column that does not contain a zero.

Here is an example:

$$\begin{array}{r} 5,000 \\ -2,786 \\ \hline \end{array} \qquad \begin{array}{r} 4 \ 990 \\ \cancel{5,000} \\ -2,786 \\ \hline 2,214 \text{ (now add to check)} \\ 5,000 \end{array}$$

One way to understand subtracting with zeros is to think about money. If you have a \$20.00 bill and owe someone \$15.39, you will have to get change. You don't have any pennies to give, there are no dimes to borrow from, or any dollar bills. You need to take one of your \$10 bills and change it for 9 one dollar bills, 9 dimes, and 10 pennies to be able to give the correct change.

Now try the practice problems on the activity page.

Benchmark: 18.06

Student: _____

Date: _____

Teacher: _____

Practice:

4,000

- 436

3,000

- 328

7,000

- 926

2,000

-532

8,000

- 408

9,000

- 317

5,000

- 291

6,000

- 766

3,000

- 678

4,000

- 456

17,000

-2,333

25,000

- 1,999

Practice:

4,000	3,000	7,000	2,000	8,000	9,000
- 436	- 328	- 926	-532	- 408	- 317
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
3,564	2,672	6,074	1,468	7,592	8,683

5,000	6,000	3,000	4,000	17,000	25,000
- 291	- 766	- 678	- 456	-2,333	- 1,999
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
4,709	5,234	2,322	3,544	14,667	23,001

LEVEL: 4.0 - 5.9**STANDARD:** 19.0 Multiply whole numbers.**BENCHMARK:** 19.01 Multiply a 2-digit number by a 2 digit number.**MATERIALS:** Notebook paper, Blank Multiplication Chart

PROCEDURE: Have students complete the Multiplication Chart. Check it for accuracy, and then encourage students to keep it in their folder to use as needed.

Show students how to multiply first with the ones digit by the ones digit, then the ones digit by the tens digit. Next, they need to multiply by the tens digit (leaving a space in the ones digit space). Students then add both lines.

1	The 1 ten carried
43	
x 62	
86	$2 \times 3 = 6$; $2 \times 4 = 8$
<u>2580</u>	$6 \times 3 = 18$, so put the 8 directly under the 6 (the number being multiplied by) leaving a space in the ones place. Carry the 1 ten and put it in the tens column. $6 \times 4 = 24$ plus the one carried is 25. If the empty space is confusing the students, have them place a zero there as a place holder.
2666	$86 + 2580 = 2666$

Students can turn the notebook paper sideways to keep their columns straight.

			4	3
		x	6	2
			8	6
	2	5	8	
	2	6	6	6

Student: _____

Date: _____

Teacher: _____

Directions: Multiply these problems.

$$\begin{array}{r} 1) 24 \\ x 31 \\ \hline \end{array}$$

$$\begin{array}{r} 2) 45 \\ x 62 \\ \hline \end{array}$$

$$\begin{array}{r} 3) 86 \\ x 53 \\ \hline \end{array}$$

$$\begin{array}{r} 4) 93 \\ x 82 \\ \hline \end{array}$$

$$\begin{array}{r} 5) 27 \\ x 24 \\ \hline \end{array}$$

Directions: Multiply these problems.

$$\begin{array}{r} 1) 24 \\ \times 31 \\ \hline 24 \\ + 72 \\ \hline 744 \end{array}$$

$$\begin{array}{r} 2) 45 \\ \times 62 \\ \hline 90 \\ +270 \\ \hline 2,790 \end{array}$$

$$\begin{array}{r} 3) 86 \\ \times 53 \\ \hline 258 \\ +430 \\ \hline 4,558 \end{array}$$

$$\begin{array}{r} 4) 93 \\ \times 82 \\ \hline 186 \\ +744 \\ \hline 7,626 \end{array}$$

$$\begin{array}{r} 5) 27 \\ \times 24 \\ \hline 108 \\ +54 \\ \hline 648 \end{array}$$

Multiplication Grid

X	0	1	2	3	4	5	6	7	8	9	10	11	12
0													
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

Multiplication Grid

X	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	3
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

LEVEL: 4.0 - 5.9

STANDARD: 19.0 Multiply whole numbers.

BENCHMARK: 19.02 Multiply a 3-digit number by a 1-, 2-, or 3- digit number.

MATERIALS: Completed Multiplication Chart

PROCEDURE: If students have not completed a Multiplication Chart, have them do one and check it for accuracy.

Point out to the students that once they can multiply a 2-digit number by a 2-digit number, bigger numbers are easy. They just keep going if the top number is bigger. For the bottom number they just need to remember to add another line for every digit in the number. Also, they need to start the ones column directly under the number being multiplied by. If the number is in the 10s place, the ones column for that row starts in the 10s place. If the number is in the 1000s place, that's where the one's column starts for that row.

Student: _____

Date: _____

Teacher: _____

Directions: Multiply these problems.

$$\begin{array}{r} 1) \ 263 \\ \times \ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 2) \ 638 \\ \times \ 53 \\ \hline \end{array}$$

$$\begin{array}{r} 3) \ 452 \\ \times \ 234 \\ \hline \end{array}$$

$$\begin{array}{r} 4) \ 671 \\ \times \ 653 \\ \hline \end{array}$$

$$\begin{array}{r} 5) \ 348 \\ \times \ 127 \\ \hline \end{array}$$

Directions: Multiply these problems.

$$\begin{array}{r} 1) \ 263 \\ \times \ 5 \\ \hline 1,315 \end{array}$$

$$\begin{array}{r} 2) \ 638 \\ \times \ 53 \\ \hline 1,914 \\ + \ 31,90 \\ \hline 33,814 \end{array}$$

$$\begin{array}{r} 3) \ 452 \\ \times \ 234 \\ \hline 1,808 \\ 13,56 \\ + \ 90,4 \\ \hline 105,768 \end{array}$$

$$\begin{array}{r} 4) \ 671 \\ \times \ 653 \\ \hline 2,013 \\ 33,55 \\ +402,6 \\ \hline 438,163 \end{array}$$

$$\begin{array}{r} 5) \ 348 \\ \times \ 127 \\ \hline 2,436 \\ 6,96 \\ +34,8 \\ \hline 44,196 \end{array}$$

LEVEL: 4.0 - 5.9

STANDARD: 19.0 Multiply whole numbers.

BENCHMARK: 19.03 Multiply a 4-digit number by a 1-, 2-, or 3- digit number.

MATERIALS: Completed Multiplication Chart

PROCEDURE: If students have not completed a Multiplication Chart, have them do one and check it for accuracy.

Point out to students that once they can multiply a 2-digit number by a 2-digit number, bigger numbers are easy. They just keep going if the top number is bigger. For the bottom number they just need to remember to add another line for every digit in the number. Also they need to start the ones column directly under the number being multiplied by. If the number is in the 10's place, the ones column for that row starts in the 10's place. If the number is in the 1000's place, that's where the one's column starts for that row.

Student: _____

Date: _____

Teacher: _____

Directions: Multiply these problems.

$$\begin{array}{r} 1) \ 5634 \\ \times \ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 2) \ 6235 \\ \times \ 53 \\ \hline \end{array}$$

$$\begin{array}{r} 3) \ 2374 \\ \times \ 234 \\ \hline \end{array}$$

$$\begin{array}{r} 4) \ 9843 \\ \times \ 653 \\ \hline \end{array}$$

$$\begin{array}{r} 5) \ 2639 \\ \times \ 127 \\ \hline \end{array}$$

Directions: Multiply these problems.

$$\begin{array}{r} 1) \ 5634 \\ \times \ 5 \\ \hline 28,170 \end{array}$$

$$\begin{array}{r} 2) \ 6235 \\ \times \ 53 \\ \hline 18,705 \\ + \ 311,75 \\ \hline 330,455 \end{array}$$

$$\begin{array}{r} 3) \ 2374 \\ \times \ 234 \\ \hline 9,496 \\ 71,22 \\ + \ 4748 \\ \hline 555,516 \end{array}$$

$$\begin{array}{r} 4) \ 9843 \\ \times \ 653 \\ \hline 29529 \\ 49215 \\ + \ 59058 \\ \hline 6,427,479 \end{array}$$

$$\begin{array}{r} 5) \ 2639 \\ \times \ 127 \\ \hline 18,473 \\ 52,78 \\ + \ 263,9 \\ \hline 335,153 \end{array}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 19.0 Multiply whole numbers.
- BENCHMARK:** 19.04 Demonstrate proof method for multiplication e.g., $64 \times 27 = 27 \times 64$.
- MATERIALS:** Completed Multiplication Chart, worksheet
- PROCEDURE:** If students have not completed a Multiplication Chart, have them do one and check it for accuracy.
- Talk to students about the Commutative Property of Multiplication. Show them that $3 \times 4 = 4 \times 3$. Draw circles on the board to show this.
- Explain to students that because this is so, they can use it to check their multiplication problems. Talk about how it is easy to make a mistake, so checking is helpful. This is important especially when they must get the correct answer.
- To check a multiplication problem, they should first multiply regularly. Then they should switch the numbers, putting the bottom number on top and the top number on the bottom and multiply again. The answers should match.
- Do several examples with them before having them to do the worksheet.

Student: _____

Date: _____

Teacher: _____

Directions: Multiply these problems.

Problem

$$\begin{array}{r} 1) \quad 56 \\ \times 48 \\ \hline \end{array}$$

Check

$$\begin{array}{r} 48 \\ \times 56 \\ \hline \end{array}$$

Problem

$$\begin{array}{r} 2) \quad 62 \\ \times 27 \\ \hline \end{array}$$

Check

$$\begin{array}{r} 27 \\ \times 62 \\ \hline \end{array}$$

Problem

$$\begin{array}{r} 3) \quad 23 \\ \times 34 \\ \hline \end{array}$$

Check

Problem

$$\begin{array}{r} 4) \quad 98 \\ \times 18 \\ \hline \end{array}$$

Check

Problem

$$\begin{array}{r} 5) \quad 26 \\ \times 71 \\ \hline \end{array}$$

Check

Problem

$$\begin{array}{r} 6) \quad 39 \\ \times 45 \\ \hline \end{array}$$

Check

Directions: Multiply these problems.

Problem

$$\begin{array}{r} 1) \quad 56 \\ \times 48 \\ \hline 448 \\ + 224 \\ \hline 2,688 \end{array}$$

Check

$$\begin{array}{r} 48 \\ \times 56 \\ \hline 288 \\ + 240 \\ \hline 2,688 \end{array}$$

Problem

$$\begin{array}{r} 2) \quad 62 \\ \times 27 \\ \hline 434 \\ + 124 \\ \hline 1,674 \end{array}$$

Check

$$\begin{array}{r} 27 \\ \times 62 \\ \hline 54 \\ + 162 \\ \hline 1,674 \end{array}$$

Problem

$$\begin{array}{r} 3) \quad 23 \\ \times 34 \\ \hline 92 \\ + 69 \\ \hline 782 \end{array}$$

Check

$$\begin{array}{r} 34 \\ \times 23 \\ \hline 102 \\ + 68 \\ \hline 782 \end{array}$$

Problem

$$\begin{array}{r} 4) \quad 98 \\ \times 18 \\ \hline 784 \\ + 98 \\ \hline 1,764 \end{array}$$

Check

$$\begin{array}{r} 18 \\ \times 98 \\ \hline 144 \\ + 162 \\ \hline 1,764 \end{array}$$

Problem

$$\begin{array}{r} 5) \quad 26 \\ \times 71 \\ \hline 26 \\ + 182 \\ \hline 1,846 \end{array}$$

Check

$$\begin{array}{r} 71 \\ \times 26 \\ \hline 426 \\ + 142 \\ \hline 1,846 \end{array}$$

Problem

$$\begin{array}{r} 6) \quad 39 \\ \times 45 \\ \hline 195 \\ + 156 \\ \hline 1,755 \end{array}$$

Check

$$\begin{array}{r} 45 \\ \times 39 \\ \hline 405 \\ + 135 \\ \hline 1,755 \end{array}$$

LEVEL: 4.0 - 5.9

STANDARD: 20.0 Divide whole numbers.

BENCHMARK: 20.01 Divide 3- or 4-digit numbers by a 1-digit number where the quotient is with or without a remainder.

MATERIALS: Clues for Divisibility Handout

PROCEDURE: The following handout helps students determine the divisibility of a number. Hand out the divisibility clues and allow students to work in groups. Let each group test one or two of the divisibility rules. Each group should come up with three examples that prove their rule is valid. Each example must be a 3- or 4-digit number. Have each group teach the class how their divisibility rule works. Students keep their lists of divisibility rules for future reference.

Student: _____

Date: _____

Teacher: _____

Clues for Divisibility

- (2) A number can be divided by 2 if it ends in a 0, 2, 4, 6, or 8.
ALL EVEN NUMBERS CAN BE DIVIDED BY 2.
- (3) A number can be divided by 3 only if the sum of its digits is can be divided by 3.
For example: 4,971 ($4+9+7+1 = 21$) $21/3 = 7$ 4,971 is divisible by 3
- (4) An even number in which the last two digits can be divided evenly by 4 is divisible by 4.
For example: 616 ($16/4 = 4$) so 616 is divisible by 4
- All numbers ending in two zeros are divisible by 4.
- (5) Any number that ends in 5 or 0 is divisible by 5.
- (6) A number can be divided by 6 only if it is an even number and the sum of its digits is divisible by 3. For example:
- 9,558 ($9+5+5+8 = 27$) 9,558 is an even number in which the digits add up to 27. 27 can be divided evenly by 3. Therefore, 9,558 can be divided by 6.

(7) There is no divisibility clue for 7.

(8) The clue for 8 only works on numbers of 1000 or more. A number can be divided evenly by 8 if it is an even number and the last three digits can be divided evenly by 8. For example:

$$39,712 \quad 712/8 = 79 \quad \text{So, 39, 712 can be divided evenly by 8.}$$

Also, any number ending in 000 is divisible by 8.

(9) A 9 will go evenly into any number in which the sum of the digits is divisible by 9. For example: 50,382 ($5+0+3+8+2 = 18$) $18/9 = 2$ 50,382 is divisible by 9.

(10) Any number that ends in 0 is divisible by 10.

Clues for Divisibility

- (2) A number can be divided by 2 if it ends in a 0, 2, 4, 6, or 8.
ALL EVEN NUMBERS CAN BE DIVIDED BY 2.

Answers will vary.

Possible answer: 236 ends with an even number - 6; therefore, 236 can be evenly divided by 2. Proof: $236 \div 2 = 118$

- (3) A number can be divided by 3 only if the sum of its digits is can be divided by 3.

Answers will vary.

For example: 4,971 ($4+9+7+1 = 21$) $21/3 = 7$ 4,971 is divisible by 3

- (4) An even number in which the last two digits can be divided evenly by 4 is divisible by 4.

Answers will vary.

For example: 616 ($16/4 = 4$) so 616 is divisible by 4

All numbers ending in two zeros are divisible by 4.

Answers will vary.

Possible answer: 100 ends in two zeros; therefore, 100 can be evenly divided by 4. Proof: $100 \div 4 = 25$

- (5) Any number that ends in 5 or 0 is divisible by 5.

Answers will vary.

Possible answer: 45 ends in a five; therefore, 45 can be evenly divided by 5. Proof: $45 \div 5 = 9$

- (6) A number can be divided by 6 only if it is an even number and the sum of its digits is divisible by 3.

Answers will vary.

For example:

9,558 ($9+5+5+8 = 27$) 9,558 is an even number in which the digits add up to 27. 27 can be divided evenly by 3. Therefore, 9,558 can be divided by 6.

(7) There is no divisibility clue for 7.

(8) The clue for 8 only works on numbers of 1000 or more. A number can be divided evenly by 8 if it is an even number and the last three digits can be divided evenly by 8.

Answers will vary.

For example:

39,712 $712/8 = 79$ So, 39,712 can be divided evenly by 8.

Also, any number ending in 000 is divisible by 8.

(9) A 9 will go evenly into any number in which the sum of the digits is divisible by 9.

Answers will vary.

For example: 50,382 ($5+0+3+8+2 = 18$) $18/9 = 2$ 50,382 is divisible by 9.

(10) Any number that ends in 0 is divisible by 10.

Answers will vary.

Possible answer: 120 ends in a zero, therefore, 120 can be divided evenly by 10.

Proof: $120 \div 10 = 12$

LEVEL: 4.0 - 5.9**STANDARD:** 20.0 Divide whole numbers.**BENCHMARK:** 20.02 Divide 3 or 4-digit numbers by a 2-digit number where the quotient is with or without a remainder.**MATERIALS:** Worksheet, pencil**PROCEDURE:** Explain to students that *estimating* is a skill you will need to practice to divide by 2 and 3-digit numbers.
This kind of estimating means guessing how many times a number goes into another number.

Try this with a partner: How many times does

5 go into 41 ? (8)

7 go into 48 ? (6)

9 go into 30 ? (3)

6 go into 52 ? (8)

Now try this problem. $1,735 \div 34 =$ **Ask yourself:**

1. How many times does 34 go into 173?
1. How many times does 3 go into 17? 5
2. Place 5 over 3 and multiply $5 \times 34 = 170$.
3. Subtract $173 - 170 = 3$. Bring down 5.
4. How many times does 34 go into 35? 1
4. Place the 1 above the 5.
5. Multiply 1×34 , place under 35.
6. Bring down 1.
7. Check: $34 \times 51 = 1734 + 1 = 1735$.

$$\begin{array}{r}
 51 \\
 34 \overline{) 1,735} \\
 \underline{170} \\
 35 \\
 \underline{- 34} \\
 r 1
 \end{array}$$

Check:

$$\begin{array}{r}
 34 \\
 \times 51 \\
 \hline
 34 \\
 170 \\
 \hline
 1734 \\
 + 1 \\
 \hline
 1735
 \end{array}$$

Now try the practice problems.

Student: _____

Date: _____

Teacher: _____

Practice Problems

Rewrite each problem, then divide.

$$52 \overline{) 271}$$

$$64 \overline{) 320}$$

$$96 \overline{) 672}$$

$$41 \overline{) 1150}$$

$$65 \overline{) 266}$$

$$38 \overline{)345}$$

$$38 \overline{)342}$$

$$18 \overline{)672}$$

$$54 \overline{)162}$$

$$25 \overline{)200}$$

Practice Problems

$$\begin{array}{r} 5 \\ 52 \overline{) 271} \\ \underline{- 260} \\ 11 \end{array}$$

ANSWER: 5 r11

$$\begin{array}{r} \text{CHECK:} \quad 52 \\ \quad \quad \underline{\times 5} \\ \quad \quad 260 \\ \quad \quad + 11 \\ \quad \quad \underline{\quad} \\ \quad 271 \quad \checkmark \end{array}$$

$$\begin{array}{r} 5 \\ 64 \overline{) 320} \\ \underline{- 320} \\ 0 \end{array}$$

ANSWER: 5 r0

$$\begin{array}{r} \text{CHECK:} \quad 64 \\ \quad \quad \underline{\times 5} \\ \quad \quad 320 \quad \checkmark \end{array}$$

$$\begin{array}{r} 7 \\ 96 \overline{) 672} \\ \underline{- 672} \\ 0 \end{array}$$

ANSWER: 7

$$\begin{array}{r} \text{CHECK:} \quad 96 \\ \quad \quad \underline{\times 7} \\ \quad \quad 672 \quad \checkmark \end{array}$$

$$\begin{array}{r} 28 \\ 41 \overline{) 1150} \\ \underline{- 82} \\ 330 \\ \underline{- 328} \\ 2 \end{array}$$

ANSWER: 28 r2

$$\begin{array}{r} \text{CHECK:} \quad 28 \\ \quad \quad \underline{\times 41} \\ \quad \quad 28 \\ \quad \quad + 112 \\ \quad \quad \underline{\quad} \\ \quad 1148 \\ \quad \quad + 2 \\ \quad \quad \underline{\quad} \\ \quad 1150 \quad \checkmark \end{array}$$

$$\begin{array}{r} 4 \\ 65 \overline{) 266} \\ \underline{260} \\ 6 \end{array}$$

ANSWER: 4 r6

$$\begin{array}{r} \text{CHECK:} \quad 65 \\ \quad \quad \underline{\times 4} \\ \quad \quad 260 \\ \quad \quad \underline{\times 6} \\ \quad \quad 266 \quad \checkmark \end{array}$$

$$\begin{array}{r} 9 \\ 38 \overline{) 345} \\ - 342 \\ \hline 3 \end{array}$$

ANSWER: 9 r 3

CHECK:

$$\begin{array}{r} 38 \\ \times 9 \\ \hline 342 \\ + 3 \\ \hline 345 \checkmark \end{array}$$

$$\begin{array}{r} 9 \\ 38 \overline{) 342} \\ - 342 \\ \hline 0 \end{array}$$

ANSWER: 9 r 0

CHECK:

$$\begin{array}{r} 38 \\ \times 9 \\ \hline 342 \checkmark \end{array}$$

$$\begin{array}{r} 37 \\ 18 \overline{) 672} \\ - 54 \\ 132 \\ - 126 \\ \hline 6 \end{array}$$

ANSWER: 37 r 6

CHECK:

$$\begin{array}{r} 37 \\ \times 18 \\ \hline 296 \\ + 37 \\ \hline 666 \\ + 6 \\ \hline 672 \checkmark \end{array}$$

$$\begin{array}{r} 3 \\ 54 \overline{) 162} \\ - 162 \\ \hline 0 \end{array}$$

ANSWER: 3

CHECK:

$$\begin{array}{r} 54 \\ \times 3 \\ \hline 162 \checkmark \end{array}$$

$$\begin{array}{r} 8 \\ 25 \overline{) 200} \\ - 200 \\ \hline 0 \end{array}$$

ANSWER: 8

CHECK:

$$\begin{array}{r} 25 \\ \times 8 \\ \hline 200 \checkmark \end{array}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 20.0 Divide whole numbers
- BENCHMARK:** 20.03 Divide by a 3-digit number where the quotient is with or without a remainder.
- MATERIALS:** Worksheet, pencil
- PROCEDURE:** **Example:** Divide 17,868 by 794

$$\begin{array}{r}
 22 \\
 794 \overline{) 17868} \\
 \underline{1588} \\
 1988 \\
 \underline{1588} \\
 400 \text{ r}
 \end{array}$$

Answer: 18 r 525

Answer: 18 r 525

- How many times will 794 go into 17868? To estimate, ask how many times will 8 go into 17?
- Place the 2 over the 6 and multiply $2 \times 794 = 1588$.
- Subtract $17,868 - 1588$. The answer is 198.
- Bring down the 8.
- How many times will 794 (estimate 800) go into 1988? About 2.
- Place a 2 over the 8 and multiply $2 \times 794 = 1588$.
- Subtract. The remainder is 400.

Practice the problems on the next page.

Answers:

- 18, r 525
- 38, r 39
- 34, r 106
- 18, r 371

Student: _____

Date: _____

Teacher: _____

Practice Problems

Divide.

1) $16,023 \div 861 =$ $861 \overline{)16023}$

2) $15,885 \div 417 =$ $417 \overline{)15885}$

3) $33,086 \div 970 =$ $970 \overline{)33086}$

4) $17867 \div 972 =$ $972 \overline{)17867}$

Practice Problems

Divide.

1) $16,023 \div 861 =$

$$\begin{array}{r} 18 \\ 861 \overline{)16023} \\ \underline{-861} \\ 7413 \\ \underline{-6888} \\ 525 \end{array}$$

Answer: 18 r 525

2) $15,885 \div 417 =$

$$\begin{array}{r} 38 \\ 417 \overline{)15885} \\ \underline{1251} \\ 3375 \\ \underline{3336} \\ 39 \end{array}$$

Answer: 38 r 39

3) $33,086 \div 970 =$

$$\begin{array}{r} 34 \\ 970 \overline{)33086} \\ \underline{2910} \\ 3986 \\ \underline{3880} \\ 106 \end{array}$$

Answer: 34 r 106

4) $17867 \div 972 =$

$$\begin{array}{r} 18 \\ 972 \overline{)17867} \\ \underline{972} \\ 8147 \\ \underline{7776} \\ 371 \end{array}$$

Answer: 18 r 371

LEVEL: 4.0 - 5.9

STANDARD: 20.0 Divide whole numbers.

BENCHMARK: 20.04 Prove long division problems.

MATERIALS: Worksheet, pencil

PROCEDURE: Talk to the students about checking their work. Point out that long division has lots of steps, so it is good to check their work. Long division can be checked by multiplying the answer by the divisor. This should give you the dividend.

Example:

$$\begin{array}{r} 208 \\ 18 \overline{) 3745} \\ \underline{36} \\ 14 \\ \underline{00} \\ 145 \\ \underline{144} \\ 1 \end{array}$$

Check:

$$\begin{array}{r} 208 \text{ answer} \\ \times 18 \text{ multiply by divisor} \\ \hline 1664 \\ 208 \\ \hline 3744 \\ + 1 \text{ add remainder} \\ \hline 3745 \text{ dividend} \end{array}$$

Answers:

1. 54 r 23
2. 453 r 0
3. 257 r 3
4. 73 r 38

Student: _____

Date: _____

Teacher: _____

Practice Problems

$$43 \overline{) 2345}$$

Check:

$$14 \overline{) 6342}$$

Check:

$$27 \overline{) 9642}$$

Check:

$$73 \overline{) 5367}$$

Check

Practice Problems

$$\begin{array}{r} 54 \text{ r } 23 \\ 43 \overline{) 2345} \\ \underline{215} \\ 195 \\ \underline{172} \\ 23 \end{array}$$

$$\begin{array}{r} \text{Check:} \\ 54 \\ \times 43 \\ \hline 162 \\ 2160 \\ \hline 2322 \\ + 23 \\ \hline 2345 \end{array}$$

$$\begin{array}{r} 453 \\ 14 \overline{) 6342} \\ \underline{56} \\ 74 \\ \underline{70} \\ 42 \\ \underline{42} \\ 0 \end{array}$$

$$\begin{array}{r} \text{Check:} \\ 453 \\ \times 14 \\ \hline 1812 \\ 4530 \\ \hline 6342 \\ + 0 \\ \hline 6342 \end{array}$$

$$\begin{array}{r} 257 \text{ r } 3 \\ 27 \overline{) 9642} \\ \underline{81} \\ 134 \\ \underline{135} \\ 192 \\ \underline{189} \\ 3 \end{array}$$

$$\begin{array}{r} \text{Check:} \\ 357 \\ \times 27 \\ \hline 2499 \\ 7140 \\ \hline 9639 \\ + 3 \\ \hline 9642 \end{array}$$

$$\begin{array}{r} 73 \text{ r } 38 \\ 73 \overline{) 5367} \\ \underline{511} \\ 257 \\ \underline{219} \\ 38 \end{array}$$

$$\begin{array}{r} \text{Check} \\ 73 \\ \times 73 \\ \hline 219 \\ 5110 \\ \hline 5329 \\ + 38 \\ \hline 5367 \end{array}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.01 Associate commonly used fractions ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{3}{4}$, and $\frac{2}{3}$) to their respective spoken names, written names, and numerals.
- 21.02 Understand the relative size of commonly used fractions.
- 21.05 Understand the concepts of numerators and denominators.
- MATERIALS:** White paper or foam plates
- PROCEDURE:**
1. Prepare a set of plates with marked fractional parts—halves, thirds, fourths.
 2. Review with the class the role of the fraction bar as a sign for division.
 3. Write the fraction $\frac{1}{2}$ on the board. (Use the straight horizontal fraction bar.)
 4. Explain that the bottom number of a fraction shows the number of pieces into which the whole is divided. Ask which of the set of plates illustrates using a 2 as the bottom number. (At this point you can introduce the term *denominator*.)
 5. Go through the set of plates, determining which number would be used as a denominator for each of the plates.
 6. Place a half-circle of construction paper on the top of the plate divided in halves. Explain that the top number of a fraction notation indicates the number of pieces used in the problem. Ask, “In this case, what would be the top number to show the number of red (sic) pieces on this plate?” “Where should I write the 1?”
 7. When directed by the students, write 1 above the fraction bar. (At this point, you can introduce the term *numerator*.) Explain that this fraction is read as one-half, with the top number being read first.
 8. Ask a student to fill in any number of sections on the plate divided in thirds. Ask a second student to write the fraction represented on the board. Ask a third student to read that fraction. Repeat until all students have had experience in identifying the fractions.
 9. Using the fractions written on the board, illustrate how the written word names of fractions look and sound, noting that the fraction bar translates into a hyphen.
- EVALUATION:** Students complete a worksheet on which circles with fractional shaded parts are presented. Students fill in the appropriate fraction term.

Student: _____

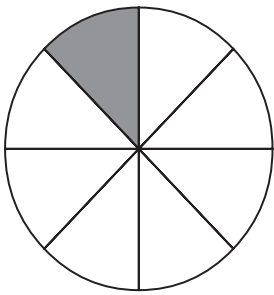
Date: _____

Teacher: _____

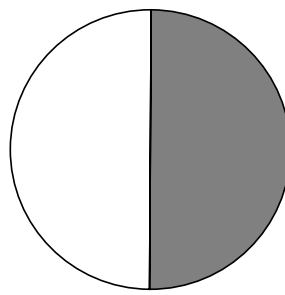
Practice Problems

Directions: Write fractions that represent the part of each figure that is shaded.

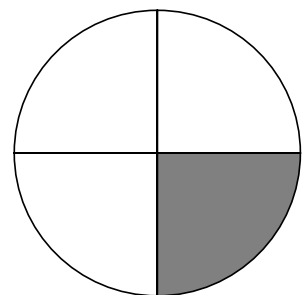
1. _____



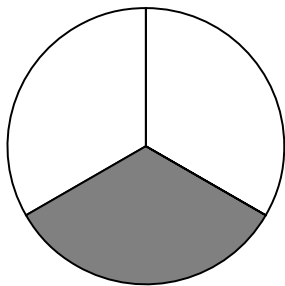
2. _____



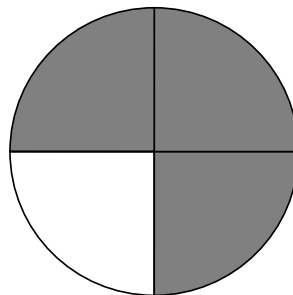
3. _____



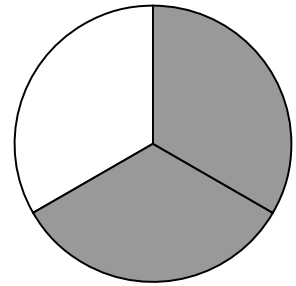
4. _____



5. _____



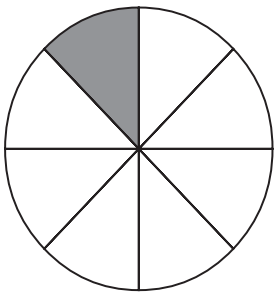
6. _____



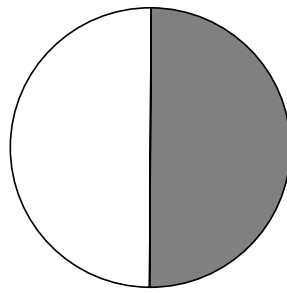
Practice Problems

Directions: Write fractions that represent the part of each figure that is shaded.

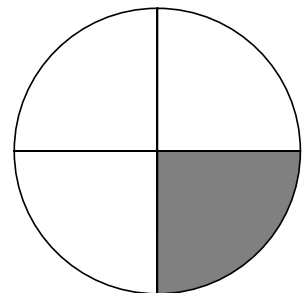
1. $\frac{1}{8}$



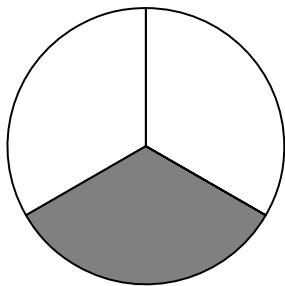
2. $\frac{1}{2}$



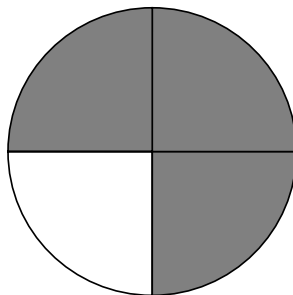
3. $\frac{1}{4}$



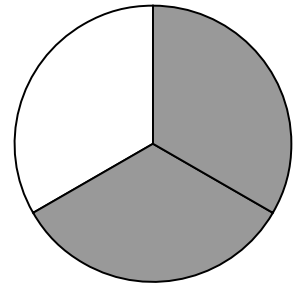
4. $\frac{1}{3}$



5. $\frac{3}{4}$



6. $\frac{2}{3}$



- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.03 Understand that commonly used fractions can be represented in other equivalent forms, such as, decimals and percents ($1/2 = 50\% = .5$).
- MATERIALS:** Worksheet, scratch paper, pencil
- PROCEDURE:** Have each student complete the worksheet. Encourage them to keep it in their folder to refer back to.

To convert fractions to decimals:

Divide the denominator (bottom number) into the numerator (top number).
Add a decimal point and 0's to the numerator if needed.

Example: Divide the denominator (2) into the numerator (1). Add a decimal and 0's as needed. Then divide. Remember to move the decimal point straight up.

$$\begin{array}{r} .5 \\ 2 \overline{) 1.0} \\ \underline{10} \\ 0 \end{array}$$

To convert decimals to percents:

Move the decimal point two places to the right and add a percent sign. If there aren't two places to the right of the decimal, add a zero.

Student: _____

Date: _____

Teacher: _____

Converting between Fractions, Decimals and Percents

Fractions	Decimals	Percents
$\frac{1}{2}$	.5	50%
$\frac{1}{4}$		
$\frac{3}{4}$		
$\frac{1}{5}$		
$\frac{2}{5}$		
$\frac{3}{5}$		
$\frac{4}{5}$		
$\frac{1}{3}$		
$\frac{2}{3}$		
$\frac{1}{8}$		
$\frac{3}{8}$		
$\frac{5}{8}$		
$\frac{7}{8}$		
$\frac{1}{10}$		
$\frac{3}{10}$		
$\frac{7}{10}$		
$\frac{9}{10}$		
$\frac{1}{6}$		
$\frac{5}{6}$		

Converting between Fractions, Decimals and Percents

Fractions	Decimals	Percents
$\frac{1}{2}$	.5	50%
$\frac{1}{4}$	.25	25%
$\frac{3}{4}$	.75	75%
$\frac{1}{5}$	.2	20%
$\frac{2}{5}$	.4	40%
$\frac{3}{5}$	.6	60%
$\frac{4}{5}$	.8	80%
$\frac{1}{3}$	.33	33%
$\frac{2}{3}$	.66	66%
$\frac{1}{8}$	.125	12.5%
$\frac{3}{8}$	.375	3.75%
$\frac{5}{8}$	.625	62.5%
$\frac{7}{8}$	.875	87.5%
$\frac{1}{10}$	.1	10%
$\frac{3}{10}$	.3	30%
$\frac{7}{10}$	.7	70%
$\frac{9}{10}$	.9	90%
$\frac{1}{6}$	.16	16%
$\frac{5}{6}$	.83	83%

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.04 Write numbers as fractions.
- MATERIALS:** White paper or foam plates
- PROCEDURE:**
1. Review numerator /denominator concept.
 2. Display one whole plate. Mark a fraction bar on the board. Ask:
 - a. How many pieces in this whole plate?
Student answer:
 1. Student writes denominator 1 under the fraction bar.
 - b. How many pieces of the whole plate am I indicating (Sweep hand over entire plate)?
Student answer: 1. Student fills in numerator 1.
 3. Conclude that we represent whole numbers by the numeral 1 as the denominator.
 4. Display 6 plates. Mark a fraction bar on the board. Ask:
 - a. How many pieces in a whole plate?
Student answer: 1. Student writes denominator 1 under the fraction bar.
 - b. How many whole plates do we have?
Student answer: 6. Student writes 6 as numerator.
 - c. Practice writing several whole numbers as fractions with the denominator of 1.
 - d. Recall that the fraction bar is a division sign and demonstrate that a number such as $32/1 = 32$ divided by 1 = 32.
 - e. Point out that we only change a whole number into a fraction in order to do mathematical computation which students will be learning.
- EVALUATION:** Ask students to represent 5 whole numbers as fractions.

Student: _____

Date: _____

Teacher: _____

Directions: Write these whole numbers as a fraction.

1. 3

2. 5

3. 2

4. 15

5. 73

Directions: Write these whole numbers as a fraction.

1. 3

1. $\frac{3}{1}$

2. 5

2. $\frac{5}{1}$

3. 2

3. $\frac{2}{1}$

4. 15

4. $\frac{15}{1}$

5. 73

5. $\frac{73}{1}$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.06 Identify proper and improper fractions and mixed numbers.
- MATERIALS:** Three cardboard boxes, small, medium, and large. A white paper plate divided into sixths with a marker and 7 one-sixth-sized colored construction paper pieces.
- PROCEDURE:**
1. Ask students to stack the small and medium boxes and determine which box should go on top and which on the bottom in order to be stable. Draw a parallel to fractions; i.e., that a fraction to be proper has the smaller numeral on the top.
 2. Demonstrate that when the medium sized box is placed on top of the small one, it is unstable. That parallels the improper fraction with the larger numeral on top.
 3. Display the plate and construction paper pieces. Ask:
 - a. How many pieces is this whole plate divided into?
Student answer: 6. Ask student to write the fraction representing the whole plate on the board: $\frac{6}{6}$.
 - b. Count the number of construction paper pieces (7).
Ask students how to represent this on the board.
Lead them to conclude $\frac{7}{6}$.
 - c. Practice this technique with several fractions until the concept is grasped. Recall that the fraction bar is a division sign. Again, write $\frac{7}{6}$ on the board and rewrite it as 7 divided by 6 or $6 \overline{)7}$.
Solve as a division problem showing the remainder 1.
 4. Bring out seven candy bars (or one per student in the group plus one extra). Ask how these bars could be divided evenly among the group, concluding that the extra bar would have to be cut into equal parts or into fractions. Allow the group to conclude that each person receives $1 \frac{1}{6}$ bar.
 5. Point out that the remainder is numerically represented by placing it over the divisor. Identify this combination of a whole number with a fraction as a *mixed number*.
 6. Discuss the status of the fraction $\frac{8}{8}$. Note again that the fraction bar means we are to divide. In this instance, 8 divided by 8. Because this fraction does not have a *smaller* numeral as the numerator, it is considered an *improper fraction*.

Student: _____

Date: _____

Teacher: _____

Directions: Label this page of mixed numbers, proper fractions, and improper fractions. Write (M) for mixed numbers, (P) for proper fractions and (I) for improper fractions on the blank space.

- | | | | | | |
|-----------|-----------------|------------|-----------------|------------|-----------------|
| (1) _____ | $8 \frac{3}{4}$ | (7) _____ | $\frac{14}{8}$ | (13) _____ | $5 \frac{1}{3}$ |
| (2) _____ | $\frac{10}{13}$ | (8) _____ | $\frac{36}{6}$ | (14) _____ | $\frac{7}{24}$ |
| (3) _____ | $\frac{14}{5}$ | (9) _____ | $2 \frac{1}{3}$ | (15) _____ | $1 \frac{4}{7}$ |
| (4) _____ | $\frac{30}{7}$ | (10) _____ | $\frac{2}{3}$ | (16) _____ | $\frac{24}{7}$ |
| (5) _____ | $6 \frac{2}{7}$ | (11) _____ | $\frac{5}{18}$ | (17) _____ | $\frac{5}{9}$ |
| (6) _____ | $4 \frac{3}{5}$ | (12) _____ | $\frac{12}{13}$ | (18) _____ | $\frac{12}{2}$ |

Directions: Label this page of mixed numbers, proper fractions, and improper fractions. Write (M) for mixed numbers, (P) for proper fractions and (I) for improper fractions on the blank space.

- | | | |
|-------------------------------|--------------------------------|--------------------------------|
| (1) <u> M </u> 8 3/4 | (7) <u> I </u> 14/8 | (13) <u> M </u> 5 1/3 |
| (2) <u> P </u> 10/13 | (8) <u> I </u> 36/6 | (14) <u> P </u> 7/24 |
| (3) <u> I </u> 14/5 | (9) <u> M </u> 2 1/3 | (15) <u> M </u> 1 4/7 |
| (4) <u> I </u> 30/7 | (10) <u> P </u> 2/3 | (16) <u> I </u> 24/7 |
| (5) <u> M </u> 6 2/7 | (11) <u> P </u> 5/18 | (17) <u> M </u> 5/9 |
| (6) <u> M </u> 4 3/5 | (12) <u> P </u> 12/13 | (18) <u> I </u> 12/2 |

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.07 Convert from mixed numbers to improper fractions.
- MATERIALS:** A sub sandwich or similar item, plus another half of the same. Knife.
- PROCEDURE:**
1. Present the dilemma: We have this sandwich to share. How can we divide it?
Students conclude it must be cut into equal pieces.
 2. Point out that, in some instances, it is necessary to cut a whole item into fractions in order to solve a mathematical problem.
 3. Recall that we used the division process to convert a fraction such as $\frac{3}{2}$ into $1\frac{1}{2}$.
 4. Point out that we now must do the opposite action and elicit that multiplication is the opposite process.
 5. Note that we have $1\frac{1}{2}$ sandwiches. Ask how that could be split evenly among 3 people. Elicit that the whole sandwich would be halved or divided by 2.
 6. Write the equation on the board: $1\frac{1}{2} = \text{how many halves?}$
 $1\frac{1}{2} = \frac{\quad}{2}$
 7. Talk through the process: We know the answer will be a fraction, so we draw a fraction bar. The denominator will be the same as the denominator we already have, so we write that number (in this case 2) under the fraction bar. Since that will be the number of pieces we are going to cut the whole into, we *multiply the denominator times the whole number*. Now we have two halves from the whole and the one half that we started with. Therefore we *add the half we already had to the two halves we created* arriving at three halves or $\frac{3}{2}$.
 8. Develop two or three other scenarios requiring the conversion of a mixed number in a real life situation. Example: A carton of plants contains 6 pansies. You buy 1 whole carton plus five extra. How many plants do you have in all? Each plant equals $\frac{1}{6}$ of a carton. $1\frac{5}{6} = \frac{11}{6}$
 9. Divide students into groups of two or three and ask them to solve problems involving changing mixed numbers to fractions. Assist individuals as necessary.

Student: _____

Date: _____

Teacher: _____

Directions: Change each mixed number to an improper fraction:**Directions:** Change each mixed number to an improper fraction:

1. $2 \frac{3}{4} =$

11. $10 \frac{1}{3} =$

2. $1 \frac{4}{7} =$

12. $11 \frac{2}{5} =$

3. $5 \frac{1}{3} =$

13. $4 \frac{5}{12} =$

4. $6 \frac{2}{7} =$

14. $6 \frac{7}{8} =$

5. $4 \frac{3}{5} =$

15. $12 \frac{1}{4} =$

6. $9 \frac{1}{2} =$

16. $4 \frac{1}{12} =$

7. $7 \frac{5}{8} =$

17. $5 \frac{3}{9} =$

8. $2 \frac{9}{10} =$

18. $5 \frac{2}{3} =$

9. $8 \frac{3}{4} =$

19. $3 \frac{2}{3} =$

10. $3 \frac{5}{9} =$

20. $2 \frac{4}{7} =$

Directions: Change each mixed number to an improper fraction:

1. $2 \frac{3}{4} = \frac{11}{4}$

2. $1 \frac{4}{7} = \frac{11}{7}$

3. $5 \frac{1}{3} = \frac{16}{3}$

4. $6 \frac{2}{7} = \frac{44}{7}$

5. $4 \frac{3}{5} = \frac{23}{5}$

6. $9 \frac{1}{2} = \frac{19}{2}$

7. $7 \frac{5}{8} = \frac{61}{8}$

8. $2 \frac{9}{10} = \frac{29}{10}$

9. $8 \frac{3}{4} = \frac{35}{4}$

10. $3 \frac{5}{9} = \frac{32}{9}$

11. $10 \frac{1}{3} = \frac{31}{3}$

12. $11 \frac{2}{5} = \frac{57}{5}$

13. $4 \frac{5}{12} = \frac{53}{12}$

14. $6 \frac{7}{8} = \frac{55}{8}$

15. $12 \frac{1}{4} = \frac{49}{4}$

16. $4 \frac{1}{12} = \frac{49}{12}$

17. $5 \frac{3}{9} = \frac{48}{9}$

18. $5 \frac{2}{3} = \frac{17}{3}$

19. $3 \frac{2}{3} = \frac{11}{3}$

20. $2 \frac{4}{7} = \frac{18}{7}$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.07 Convert from mixed numbers to improper fractions.
21.08 Convert from improper fractions to mixed numbers.
- MATERIALS:** Twist (3 part) pretzels; Snyder's 12 part pretzels; worksheet
- PROCEDURE:** Give each student a napkin with a small handful of pretzels. Tell them not to eat them until the entire math worksheet is done.
Have students work with a partner to complete the worksheet.
- After students have completed the worksheet using pretzels, show them how to change from a mixed number to an improper fraction numerically by multiplying the denominator by the whole number and adding the numerator. That number then becomes the numerator over the original denominator.
- Also, show how to change from a improper fraction to a mixed number numerically by dividing the denominator into the numerator. The quotient becomes the whole number, the remainder is the numerator, and the denominator stays the same.

Student: _____

Date: _____

Teacher: _____

Directions: Change these mixed numbers to improper fractions.*Example:* $3 \frac{1}{4}$ = Multiply the denominator (4) by the whole number (3) to get 12 and add the numerator (1) to get 13. That is the numerator. Use the original denominator (4). The answer is $\frac{13}{4}$.

$2 \frac{3}{8} =$ _____

$4 \frac{1}{4} =$ _____

$5 \frac{2}{3} =$ _____

$2 \frac{1}{8} =$ _____

$1 \frac{3}{4} =$ _____

Directions: Change these mixed numbers to improper fractions.

Example:

$3 \frac{1}{4}$ = Multiply the denominator (4) by the whole number (3) to get 12 and add the numerator (1) to get 13. That is the numerator. Use the original denominator (4). The answer is $\frac{13}{4}$.

$$2 \frac{3}{8} = \frac{19}{8}$$

$$4 \frac{1}{4} = \frac{17}{4}$$

$$5 \frac{2}{3} = \frac{17}{3}$$

$$2 \frac{1}{8} = \frac{17}{8}$$

$$1 \frac{3}{4} = \frac{7}{4}$$

Student: _____

Date: _____

Teacher: _____

Pretzel Fractions

Give each student a small bag of pretzels. Point out that each pretzel is divided into 3 parts that if equal would be thirds.

1. If 1 pretzel has $\frac{3}{3}$ (three thirds) how many thirds would there be in 4 pretzels?
2. 5 pretzels?
3. 2 pretzels?
4. $4 \frac{1}{3}$
5. $2 \frac{2}{3}$
6. $3 \frac{1}{3}$
7. How many pretzels would you have if you had $\frac{9}{3}$ (nine thirds)?
8. How many pretzels would you have if you had 7 thirds? (hint: bite off a third or two if necessary)
9. $\frac{5}{3}$?
10. $\frac{8}{3}$
11. $\frac{18}{3}$?
12. $\frac{11}{3}$?

Look at a 12-part pretzel.

How many 12^{ths} are in $\frac{1}{2}$ of a pretzel?

How many fourths are in $\frac{1}{2}$ of a pretzel?

How many 12^{ths} are in $\frac{1}{4}$ of a pretzel?

How many 12^{ths} are in $\frac{1}{3}$ of a pretzel?

Pretzel Fractions

Give each student a small bag of pretzels. Point out that each pretzel is divided into 3 parts that if equal would be thirds.

1. If 1 pretzel has $\frac{3}{3}$ (three thirds) how many thirds would there be in 4 pretzels? 12 or $\frac{12}{3}$
2. 5 pretzels? 15 or $\frac{15}{3}$
3. 2 pretzels? 6 or $\frac{6}{3}$
4. $4 \frac{1}{3}$ 13 or $\frac{13}{3}$
5. $2 \frac{2}{3}$ 8 or $\frac{8}{3}$
6. $3 \frac{1}{3}$ 10 or $\frac{10}{3}$
7. How many pretzels would you have if you had $\frac{9}{3}$ (nine thirds)? 3
8. How many pretzels would you have if you had 7 thirds? (Hint: bite off a third or two if necessary.) $2 \frac{1}{3}$
9. $\frac{5}{3}$? $1 \frac{2}{3}$
10. $\frac{8}{3}$ $2 \frac{2}{3}$
11. $\frac{18}{3}$? 6
12. $\frac{11}{3}$? $3 \frac{2}{3}$

Look at a 12-part pretzel.

- How many 12ths are in $\frac{1}{2}$ of a pretzel? 6 or $\frac{6}{12}$
How many fourths are in $\frac{1}{2}$ of a pretzel? $\frac{12}{4}$ or $1 \frac{1}{2}$
How many 12ths are in $\frac{1}{4}$ of a pretzel? 3 or $\frac{3}{12}$
How many 12ths are in $\frac{1}{3}$ of a pretzel? 4 or $\frac{4}{12}$

Student: _____

Date: _____

Teacher: _____

Directions: Change these mixed numbers to improper fractions.

Example:

$3 \frac{1}{4}$ = Multiply the denominator (4) by the whole number (3) to get 12 and add the numerator (1) to get 13. That is the numerator. Use the original denominator (4). The answer is $\frac{13}{4}$.

$2 \frac{3}{8} =$ _____

$4 \frac{1}{4} =$ _____

$5 \frac{2}{3} =$ _____

$2 \frac{1}{8} =$ _____

$1 \frac{3}{4} =$ _____

Directions: Change these mixed numbers to improper fractions.

Example:

$3 \frac{1}{4}$ = Multiply the denominator (4) by the whole number (3) to get 12 and add the numerator (1) to get 13. That is the numerator. Use the original denominator (4). The answer is $\frac{13}{4}$.

$$2 \frac{3}{8} = \underline{\underline{\frac{19}{8}}}$$

$$4 \frac{1}{4} = \underline{\underline{\frac{17}{4}}}$$

$$5 \frac{2}{3} = \underline{\underline{\frac{17}{3}}}$$

$$2 \frac{1}{8} = \underline{\underline{\frac{17}{8}}}$$

$$1 \frac{3}{4} = \underline{\underline{\frac{7}{4}}}$$

Student: _____

Date: _____

Teacher: _____

Directions: Change the following improper fractions to mixed numbers.

(1) $14/8 =$

(9) $36/10 =$

(17) $24/7 =$

(2) $30/9 =$

(10) $32/12 =$

(18) $12/7 =$

(3) $13/12 =$

(11) $42/9 =$

(19) $29/2 =$

(4) $33/6 =$

(12) $4/3 =$

(20) $52/3 =$

(5) $26/8 =$

(13) $3/2 =$

(6) $14/5 =$

(14) $5/3 =$

(7) $45/6 =$

(15) $25/12 =$

(8) $30/7 =$

(16) $31/7 =$

Directions: Change the following improper fractions to mixed numbers.

(1) $14/8 = 1 \frac{6}{8}$ or $1 \frac{3}{4}$

(9) $36/10 = 3 \frac{6}{10}$ or $3 \frac{5}{8}$

(17) $24/7 = 3 \frac{3}{7}$

(2) $30/9 = 3 \frac{3}{9}$ or $3 \frac{1}{3}$

(10) $32/12 = 2 \frac{8}{12}$ or $2 \frac{2}{3}$

(18) $12/7 = 1 \frac{5}{7}$

(3) $13/12 = 1 \frac{1}{12}$

(11) $42/9 = 4 \frac{6}{9}$ or $4 \frac{2}{3}$

(19) $29/2 = 14 \frac{1}{2}$

(4) $33/6 = 5 \frac{3}{6}$ or $5 \frac{1}{2}$

(12) $4/3 = 1 \frac{1}{3}$

(20) $52/3 = 17 \frac{1}{3}$

(5) $26/8 = 3 \frac{2}{8}$ or $3 \frac{1}{4}$

(13) $3/2 = 1 \frac{1}{2}$

(6) $14/5 = 2 \frac{4}{5}$

(14) $5/3 = 1 \frac{2}{3}$

(7) $45/6 = 7 \frac{3}{6}$ or $7 \frac{1}{2}$

(15) $25/12 = 2 \frac{1}{12}$

(8) $30/7 = 4 \frac{3}{7}$

(16) $31/7 = 4 \frac{3}{7}$

LEVEL: 4.0 - 5.9

STANDARD: 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.

BENCHMARK: 21.09 Reduce common fractions to their lowest common denominator.

MATERIALS: A small pizza or sandwich cut into fourths. A piece of paper can also be used.

- PROCEDURE:**
1. Discuss that the whole pizza can be thought of as a whole or it can be represented by the fraction $\frac{4}{4}$.
 2. Take away two of the pieces
 3. Ask how much of the pizza is left. Two answers should surface: $\frac{2}{4}$ and $\frac{1}{2}$. Point out that both of these represent exactly the same amount of pizza.
 4. Write the equation $\frac{2}{4} = \frac{1}{2}$ on the board. Define this as “reducing a fraction to lowest terms.”
 5. Show several other examples using eighths, sixths, etc.
 6. Show students how to get the answer mathematically by finding a number that will divide into both the numerator and the denominator evenly. Let them know that they might have to take several steps to get to the lowest terms if they don’t pick the largest number that will divide into both.

$$\frac{24}{64} \div 2 = \frac{12}{32} \div 2 = \frac{6}{16} \div 2 = \frac{3}{8}$$

or

$$\frac{24}{64} \div 4 = \frac{6}{16} \div 2 = \frac{3}{8}$$

or

$$\frac{24}{64} \div 8 = \frac{3}{8}$$

Student: _____

Date: _____

Teacher: _____

When you reduce fractions you change them to smaller numbers so they are easier to work with. To change the numbers you must do the same thing to the top number as you do to the bottom number. That way, the amount you are working with doesn't change. To reduce, you need to find a number that will divide evenly into both the numerator and the denominator.

$6/8$ – 2 will divide into both 6 and 8. 2 will divide into 6, 3 times, and will divide into 8, 4 times. So, $6/8$ reduces to $3/4$.

Reduce the following fractions.

$8/12 =$

$9/12 =$

$10/50 =$

$10/35 =$

$7/21 =$

$8/56 =$

$16/32 =$

$9/21 =$

Sometimes when working with large numbers like $75/120$ you need to take several steps. Try something you know will divide evenly and then go from there. Since they both end in 5 or 0 you know that 5 will divide into both evenly. Then you have $15/24$. The number is now small enough to see that 3 will go into both the numerator and the denominator. That will give you $5/8$. If you can reduce in one step, that's great, but taking extra steps is fine.

Try reducing the larger numbers below in a couple of steps if necessary.

$45/60 =$

$36/48 =$

$128/320$

$245/315$

When you reduce fractions you change them to smaller numbers so they are easier to work with. To change the numbers you must do the same thing to the top number as you do to the bottom number. That way, the amount you are working with doesn't change. To reduce, you need to find a number that will divide evenly into both the numerator and the denominator.

$6/8$ – 2 will divide into both 6 and 8. 2 will divide into 6, 3 times, and will divide into 8, 4 times. So, $6/8$ reduces to $3/4$.

Reduce the following fractions.

$$8/12 = \frac{2}{3}$$

$$9/12 = \frac{3}{4}$$

$$10/50 = \frac{1}{5}$$

$$10/35 = \frac{2}{7}$$

$$7/21 = \frac{1}{3}$$

$$8/56 = \frac{1}{7}$$

$$16/32 = \frac{1}{2}$$

$$9/21 = \frac{3}{7}$$

Sometimes when working with large numbers like $75/120$ you need to take several steps. Try something you know will divide evenly and then go from there. Since they both end in 5 or 0 you know that 5 will divide into both evenly. Then you have $15/24$. The number is now small enough to see that 3 will go into both the numerator and the denominator. That will give you $5/8$. If you can reduce in one step, that's great, but taking extra steps is fine.

Try reducing the larger numbers below in a couple of steps if necessary.

$$45/60 = \frac{3}{4}$$

$$36/48 = \frac{3}{4}$$

$$128/320 = \frac{2}{5}$$

$$245/315 = \frac{7}{9}$$

LEVEL: 4.0 - 5.9

STANDARD: 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.

BENCHMARK: 21.10 Convert fractions to equivalent fractions.

MATERIALS: **Step 1:** Pizza or brownies or Hershey Bars or whatever will work

Step 2: newsprint and markers, or
chalkboard and chalk

Step 3: paper plates
markers scissors

Step 4: newsprint and markers, or
chalkboard and chalk
Fractions Kit

Step 5: Fraction worksheet
Number Power 2
Sample set of fraction bars and explanation of use
craft sticks for making fraction bars
ziploc bags for fraction bars
pencils
computer programs
fraction games

Step 6: newsprint
Construction paper
Markers
Glue stick
Scissors
Ruler
Poster board
Old magazines and catalogues

DEALING WITH EQUIVALENT FRACTIONS

PROCEDURE:

- Step 1:** (Adapt as needed for groups or for individuals)
Pizza party! Two large pizzas – one cut into 12ths, the other cut into 24ths.
Some students get one piece from the 12th/cut, others get two pieces from the 24th/cut.
OR
Brownies! Two pans of brownies, one cut into 12ths and one cut into 24ths.
OR
Hershey Bars! One bar divided into the preformed sections, and the other having each pre-formed section cut in half.
- Step 2:** As students enjoy their treat, let them brainstorm about how fractions are a part of everyday life, leading into a discussion of whether it was fair for some students to receive two pieces and others to receive one piece from the pre-cut food items. List student input on board or newsprint pad.
After discussion, have students write a paragraph on a time or situation outside of class when they have used equivalent fractions.
- Step 3:** Give each student 3 paper plates. Have them fold the first one in half, the second one into 4ths and the third one into 8ths. Use markers to highlight folds on each plate OR have students use scissors to cut their plates on the folds. Encourage them to match up the $\frac{1}{2}$, $\frac{2}{4}$ ths, and $\frac{4}{8}$ ths, so that they can see that all of these fractions equal the same amount.
Have students write on each slice what piece it is of the whole plate. Have students make as many matches as they can and write down the matches that they find.
- Step 4:** Lecture and demonstration on equivalent fractions. Use Fractions Kit to demonstrate other equivalent fractions.
Put a fraction on the board, and call on students to give fractions that are equivalent to the original. After three examples, put the fraction $\frac{4}{6}$ ths on the board and have students write three equivalent fractions on their paper.
- Step 5:** Have students make fraction bars.
Use fraction worksheets, fraction games, computer programs, etc., to reinforce student understanding of equivalent fractions.
Students work individually, and then compare answers and discuss their results in groups of two. After ample discussion time, the class as a whole should discuss problems and questions.
- Step 6:** Allow students in small groups to choose one activity from the following:
- Create a game called “Find the Equivalent Fraction.”
 - Illustrate equivalent fractions by drawing pictures or cutting pictures from magazines.
 - Develop a song which uses equivalent fractions in the lyrics.
 - Act out a play called “Equivalent Fraction Land.”
 - Through body movement only, demonstrate equivalent fractions.

Teacher should circulate between groups to listen (not to help). When listening, evaluate groups on how they work together and whether each individual is contributing.

Step 7: Students share their activity with another group, receiving feedback. They then evaluate and refine their product.

Evaluating group should fill out evaluation checklist and then return it to the presenting group with suggestions for improvement. Presenting group should write down improvements they are making to the presentation.

Step 8: Students share their activity with the entire class. Have groups evaluate each activity presented.

HOW TO USE FRACTION BARS

Fraction bars are created by using popsicle sticks, tongue depressors, or strips of paper. The first number (1 through 9) is placed to the left, then multiples of that number (2x, 3x, 4x, etc.) continue towards the right. (Be sure that the same spacing is used between the numbers on each bar so that the numbers will line up properly when one bar is placed over another bar to create a fraction.)

Line one fraction bar up over another. The first fraction created will then have its equivalent fractions along the two bars:

1	2	3	4	5
3	6	9	12	15

Fraction bars can also be used to add and subtract fractions. If the addition problem were $\frac{1}{3}$ plus $\frac{2}{5}$, the student would line up the 1 and 3 bars and the 2 and 5 bars. Then the student looks along the bottom of each until he or she finds the lowest number which is the same in each set: 5/15 and 6/15 – the common denominator. He or she then proceeds to add or subtract the numerators.

Student: _____

Date: _____

Teacher: _____

Change the following fractions into equivalent fractions:

1. $\frac{2}{3} = \frac{6}{\quad}$

6. $\frac{3}{6} = \frac{\quad}{18}$

2. $\frac{2}{4} = \frac{4}{\quad}$

7. $\frac{1}{2} = \frac{2}{\quad}$

3. $\frac{3}{5} = \frac{\quad}{15}$

8. $\frac{6}{12} = \frac{\quad}{36}$

4. $\frac{1}{3} = \frac{3}{\quad}$

9. $\frac{25}{30} = \frac{5}{\quad}$

5. $\frac{5}{10} = \frac{10}{\quad}$

10. $\frac{45}{60} = \frac{15}{\quad}$

Change the following fractions into equivalent fractions:

$$1. \frac{2}{3} = \frac{6}{9}$$

$$6. \frac{3}{6} = \frac{9}{18}$$

$$2. \frac{2}{4} = \frac{4}{8}$$

$$7. \frac{1}{2} = \frac{2}{4}$$

$$3. \frac{3}{5} = \frac{9}{15}$$

$$8. \frac{6}{12} = \frac{18}{36}$$

$$4. \frac{1}{3} = \frac{3}{9}$$

$$9. \frac{25}{30} = \frac{5}{6}$$

$$5. \frac{5}{10} = \frac{10}{20}$$

$$10. \frac{45}{60} = \frac{15}{20}$$

Student: _____

Date: _____

Teacher: _____

FRACTION WORKSHEET

1. $\frac{1}{2} = \frac{?}{6}$

6. $\frac{2}{3} = \frac{16}{?}$

2. $\frac{3}{4} = \frac{?}{16}$

7. $\frac{5}{9} = \frac{30}{?}$

3. $\frac{10}{12} = \frac{?}{6}$

8. $\frac{7}{8} = \frac{210}{?}$

4. $\frac{8}{12} = \frac{?}{3}$

9. $\frac{9}{12} = \frac{3}{?} = \frac{?}{20}$

5. $\frac{60}{150} = \frac{?}{5}$

10. $\frac{6}{9} = \frac{?}{15}$

FRACTION WORKSHEET

1. $\frac{1}{2} = \frac{3}{6}$

6. $\frac{2}{3} = \frac{16}{24}$

2. $\frac{3}{4} = \frac{12}{16}$

7. $\frac{5}{9} = \frac{30}{36}$

3. $\frac{10}{12} = \frac{5}{6}$

8. $\frac{7}{8} = \frac{210}{240}$

4. $\frac{8}{12} = \frac{2}{3}$

9. $\frac{9}{12} = \frac{3}{4} = \frac{15}{20}$

5. $\frac{60}{150} = \frac{2}{5}$

10. $\frac{6}{9} = \frac{24}{36}$

LEVEL: 4.0 - 5.9

STANDARD: 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.

BENCHMARK: 21.11 Add fractions with common denominators.

MATERIALS: Quarter and dime coins

- PROCEDURE:**
1. Lead students to conclude that a quarter is represented by the fraction $\frac{1}{4}$.
 2. Hold a quarter in each hand. Ask, "How many quarters do I have?"
 3. Lead students to conclude that this is an addition problem represented as
$$\begin{array}{r} \frac{1}{4} \\ + \frac{1}{4} \\ \hline \frac{2}{4} \end{array}$$
 4. Further lead students to conclude that only the numerators were added in the same way that the quarters remained quarters.
 5. Ask if there is a simpler way to say "I have two quarters."
ANSWER: I have a half a dollar.
 6. Review the concept of reducing fractions, and show that $\frac{2}{4}$ can be reduced to $\frac{1}{2}$.
 7. Repeat process with 3 dimes plus 5 dimes ($\frac{3}{10} + \frac{5}{10} = \frac{8}{10} = \frac{4}{5}$)
 8. Stress that, if instructions so indicate, all addition of fraction answers should be reduced if possible.
 9. Students in pairs add 5 addition problems with like denominators.

Student: _____

Date: _____

Teacher: _____

Directions: Add fractions with the same bottom number (denominator)

$$\begin{array}{r} 1. \quad 2/9 \\ + 3/9 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 3/7 \\ + 1/7 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 4/8 \\ + 3/8 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 5/12 \\ + 2/12 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 4/13 \\ + 6/13 \\ \hline \end{array}$$

Directions: Add fractions with the same bottom number (denominator)

$$\begin{array}{r} 1. \quad 2/9 \\ + 3/9 \\ \hline 5 \\ 9 \end{array}$$

$$\begin{array}{r} 2. \quad 3/7 \\ + 1/7 \\ \hline 4 \\ 7 \end{array}$$

$$\begin{array}{r} 3. \quad 4/8 \\ + 3/8 \\ \hline 7 \\ 8 \end{array}$$

$$\begin{array}{r} 4. \quad 5/12 \\ + 2/12 \\ \hline 7 \\ 12 \end{array}$$

$$\begin{array}{r} 5. \quad 4/13 \\ + 6/13 \\ \hline 10 \\ 13 \end{array}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.11 Add fractions with common denominators.
21.12 Subtract fractions with common denominators.
- MATERIALS:** 3-part pretzels, napkins, worksheet
- PROCEDURE:** Give each student a napkin and a handful of pretzels. Tell students they may not eat the pretzels until they have completed the math worksheet. They may eat broken pieces while creating a $\frac{1}{3}$ or $\frac{2}{3}$ part of a pretzel. Have students work with a partner to complete the worksheet.

Student: _____

Date: _____

Teacher: _____

More Pretzel Fractions

1. If you had $4 \frac{1}{3}$ pretzels and some one gave you 3 more pretzels, how many pretzels would you have?
2. $7 \frac{1}{3} + 2 \frac{2}{3} =$
3. $4 \frac{2}{3} + 6 \frac{2}{3} =$
4. $2 \frac{2}{3} + 4 \frac{1}{3} + 3 \frac{2}{3} =$
5. If you had 5 pretzels and you ate $2 \frac{2}{3}$ pretzels, how many would you have left?
6. $4 \frac{2}{3} - 2 \frac{1}{3} =$
7. $3 - 1 \frac{2}{3} =$
8. $5 \frac{1}{3} - 2 \frac{2}{3} =$
9. $4 \frac{2}{3} - 3 =$
10. If you have 3 piles of $4 \frac{2}{3}$ pretzels, how many do you have all together?
11. If you have 8 pretzels and you want to divide them evenly between 6 people, how many will each person get? (Careful! Pretzels don't break easily.)

More Pretzel Fractions

ANSWERS

1. If you had $4 \frac{1}{3}$ pretzels and some one gave you 3 more pretzels, how many pretzels would you have? $7 \frac{1}{3}$ pretzels
2. $7 \frac{1}{3} + 2 \frac{2}{3} =$ 10 pretzels
3. $4 \frac{2}{3} + 6 \frac{2}{3} =$ $11 \frac{1}{3}$ pretzels
4. $2 \frac{2}{3} + 4 \frac{1}{3} + 3 \frac{2}{3} =$ $10 \frac{2}{3}$ pretzels
5. If you had 5 pretzels and you ate $2 \frac{2}{3}$ pretzels, how many would you have left? $2 \frac{1}{3}$ pretzels
6. $4 \frac{2}{3} - 2 \frac{1}{3} =$ $2 \frac{1}{3}$ pretzels
7. $3 - 1 \frac{2}{3} =$ $1 \frac{1}{3}$ pretzels
8. $5 \frac{1}{3} - 2 \frac{2}{3} =$ $2 \frac{2}{3}$ pretzels
9. $4 \frac{2}{3} - 3 =$ $1 \frac{1}{3}$ pretzels
10. If you have 3 piles of $4 \frac{2}{3}$ pretzels, how many do you have all together? 14 pretzels
11. If you have 8 pretzels and you want to divide them evenly between 6 people, how many will each person get? (Careful! Pretzels don't break easily.) $\frac{3}{4}$ of a pretzels

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.12 Subtract fractions with common denominators.
- MATERIALS:** Coins (quarters and dimes), a dime coin wrapper
- PROCEDURE:**
1. Present the addition problem: $1/4 + 1/4 = \underline{\quad}$ and review the addition of the fraction process.
 2. Write the problem $3/4 - 1/4 = \underline{\quad}$ and let students brainstorm the solution method concluding that only the numerators are subtracted.
 3. Have students solve the following with manipulation of coins.
 - a. You arrive at school with 6 quarters in your pocket. You arrive home with only 3. How many quarters have you spent? (For fun: What did you spend them on?)
 - b. You collect dimes. A dime is $1/10$ of a dollar, and it takes \$5 ($5 = 50/10$) to fill a coin wrapper. You have 32 ($32/10$). How many more must you save to turn the dimes in for a \$5 bill?
 4. Students, in pairs, solve 10 subtraction of fraction problems with common denominators and reducing. Teacher provides assistance by demonstrating solution of stumbling blocks on the board to the entire group.

Benchmark: 21.11; 21.12

Student: _____ Date: _____

Teacher: _____

Directions: Subtract fractions with the same bottom number (denominator).

$$\begin{array}{r} 1. \quad 5/9 \\ - 2/9 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 7/10 \\ - 6/10 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 5/8 \\ - 1/8 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 4/13 \\ - 1/13 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 9/11 \\ - 3/11 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 13/15 \\ - 8/15 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 15/16 \\ - 9/16 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 23/24 \\ - 11/24 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 11/19 \\ - 8/19 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 17/20 \\ - 13/20 \\ \hline \end{array}$$

Benchmark: 21.11; 21.12
ANSWER KEY

Directions: Subtract fractions with the same bottom number (denominator).

$$\begin{array}{r} 1. \quad 5/9 \\ \quad - 2/9 \\ \hline \underline{3} = \underline{1} \\ 9 \quad 3 \end{array}$$

$$\begin{array}{r} 2. \quad 7/10 \\ \quad - 6/10 \\ \hline \underline{1} \\ 10 \end{array}$$

$$\begin{array}{r} 3. \quad 5/8 \\ \quad - 1/8 \\ \hline \underline{4} = \underline{1} \\ 8 \quad 2 \end{array}$$

$$\begin{array}{r} 4. \quad 4/13 \\ \quad - 1/13 \\ \hline \underline{3} \\ 13 \end{array}$$

$$\begin{array}{r} 5. \quad 9/11 \\ \quad - 3/11 \\ \hline \underline{6} \\ 11 \end{array}$$

$$\begin{array}{r} 6. \quad 13/15 \\ \quad - 8/15 \\ \hline \underline{5} = \underline{1} \\ 15 \quad 3 \end{array}$$

$$\begin{array}{r} 7. \quad 15/16 \\ \quad - 9/16 \\ \hline \underline{6} = \underline{3} \\ 16 \quad 8 \end{array}$$

$$\begin{array}{r} 8. \quad 23/24 \\ \quad - 11/24 \\ \hline \underline{12} = \underline{1} \\ 24 \quad 2 \end{array}$$

$$\begin{array}{r} 9. \quad 11/19 \\ \quad - 8/19 \\ \hline \underline{3} \\ 19 \end{array}$$

$$\begin{array}{r} 10. \quad 17/20 \\ \quad - 13/20 \\ \hline \underline{4} = \underline{1} \\ 20 \quad 5 \end{array}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.13 Multiply proper fractions.
- MATERIALS:** Board, Calculators
- PROCEDURE:** Emphasize that “of” after a fraction indicates multiplication. Show on the board that $\frac{1}{2}$ of $\frac{1}{2}$ is $\frac{1}{4}$. Show students that to multiply fractions they must multiply the numerators by each other and the denominators by each other.

$$\frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$$

Next, they need to reduce. Remind them that whatever they do to the numerator, they must do to the denominator.

$$\frac{2}{12} = \frac{1}{6}$$

Show students how to cross cancel. Point out that this makes reducing much easier later on

$$\frac{1}{3} \times \frac{1}{4} = \frac{1}{2}$$

Look at numbers diagonally across from each other. See if any number will go into both of the diagonal numbers evenly. In this example, 2 goes into 2 one time, and 2 goes into 4 two times. Check to see if anything else will go into both diagonal numbers, if not, multiply across:

$$\frac{1}{3} \times \frac{1}{4} = \frac{1}{6}$$

Show that this is the same answer as when you multiply straight across and then reduce.

Student: _____

Date: _____

Teacher: _____

To multiply fractions you must multiply the numerators by each other and the denominators by each other:

$$\frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$$

Next, you need to reduce. Remember that whatever you do to the numerator, you must do to the denominator:

$$\frac{2}{12} \div 2 = \frac{1}{6}$$

If you learn how to cross cancel it makes reducing much easier at the end. It lets you reduce while the numbers are small so you can see what numbers go into them more easily:

$$\frac{2}{3} \times \frac{1}{4} = \frac{1}{2}$$

Look at numbers diagonally across from each other. See if any number will go into both of the diagonal numbers. In this example 2 goes into 2 one time, and 2 goes into 4 two times. Check to see if anything else will go into both diagonal numbers, if not, multiply across:

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

If you look, you can see that the answer is the same if you reduce or if you cancel. In this problem it might not matter either way, but with larger numbers the cross canceling is much easier. Try the ones below.

$$\frac{5}{6} \times \frac{9}{10} =$$

$$\frac{8}{9} \times \frac{9}{16} =$$

$$\frac{7}{8} \times \frac{16}{21} =$$

$$\frac{6}{9} \times \frac{15}{24} =$$

$$\frac{5}{7} \times \frac{14}{25} =$$

$$\frac{3}{8} \times \frac{12}{21} =$$

To multiply fractions you must multiply the numerators by each other and the denominators by each other:

$$\frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$$

Next, you need to reduce. Remember that whatever you do to the numerator, you must do to the denominator:

$$\frac{2}{12} \div 2 = \frac{1}{6}$$

If you learn how to cross cancel it makes reducing much easier at the end. It lets you reduce while the numbers are small so you can see what numbers go into them more easily:

$$\begin{array}{c} 1 \\ \frac{2}{3} \times \frac{1}{4} = \\ 2 \end{array}$$

Look at numbers diagonally across from each other. See if any number will go into both of the diagonal numbers. In this example 2 goes into 2 one time, and 2 goes into 4 two times. Check to see if anything else will go into both diagonal numbers, if not, multiply across:

$$\begin{array}{c} 1 \\ \frac{2}{3} \times \frac{1}{4} = \frac{1}{6} \\ 2 \end{array}$$

If you look, you can see that the answer is the same if you reduce or if you cancel. In this problem it might not matter either way, but with larger numbers the cross canceling is much easier. Try the ones below.

$$\frac{5}{6} \times \frac{9}{10} = \frac{3}{4}$$

$$\frac{8}{9} \times \frac{9}{16} = \frac{1}{2}$$

$$\frac{7}{8} \times \frac{16}{21} = \frac{2}{3}$$

$$\frac{6}{9} \times \frac{15}{24} = \frac{5}{12}$$

$$\frac{5}{7} \times \frac{14}{25} = \frac{2}{5}$$

$$\frac{3}{8} \times \frac{12}{21} = \frac{3}{14}$$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 21.0 Demonstrate proficiency in number sense, concepts, and operations involving fractions.
- BENCHMARK:** 21.14 Multiplying proper fractions by whole numbers.
- MATERIALS:** Ten \$1 bills (simulated)
- PROCEDURE:**
1. Students conclude that half of \$10 is five through various methods or observation.
 2. Annotate this conclusion on the board:
One-half of ten dollars equals five dollars.
One-half of ten = five
 $1/2 \text{ of } 10 = 5$
 3. Note that in fractions the word *of* indicates the multiplication process.
Add to notation on board:
 $1/2 \times 10 = 5$
 4. Tell students out that in order to multiply fractions all numbers in the problem must be fractions and that it is necessary to turn whole numbers into fractions to work the problem. Whole numbers are changed into a fraction by putting them over a 1. $5 = 5/1$. Show them how this is comparable to a five dollar bill being equal to 5 ones.
 5. Demonstrate the process of multiplying numerators and then multiplying denominators to arrive at $10/2$. Ask students to reduce the product.
 6. Lead students through 4 more simple problems, including two that require reducing.

Student: _____

Date: _____

Teacher: _____

Directions: Multiply and reduce.

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

2. $9 \times \frac{1}{4} =$

3. $3 \times \frac{4}{5} =$

4. $\frac{2}{3} \times 10 =$

5. $\frac{4}{12} \times 7 =$

Directions: Multiply and reduce.

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

2. $9 \times \frac{1}{4} = 2 \frac{1}{4}$

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

4. $\frac{2}{3} \times 10 = 6 \frac{2}{3}$

5. $\frac{4}{12} \times 7 = 2 \frac{1}{3}$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 22.0 Demonstrate proficiency with number sense, concepts, and operations involving decimals.
- BENCHMARK:** 22.01 Associate decimals - including tenths, hundredths, and thousandths to their respective spoken names, written names, and numerals.
- MATERIALS:** Decimal chart for each student; Overhead decimal chart for teacher or large class size chart; worksheet
- PROCEDURE:** Use the chart to answer the questions below with the class:
1. Read this number: 1,317.023 Point out that the decimal is read as “and”.
 2. How many thousands are in this number
 3. How many thousandths are in this number
 4. What is the difference (Explain that in money eight thousand dollars is a lot of money, but eight thousandths of a dollar is less than a penny. Point out that numbers get bigger as you get farther to the left of the decimal and numbers get smaller as you go to the right of the decimal. Talk about money. Use \$48.36 as an example.

5,	4	7	8,	2	0	6	.	1	9	8
Million	Hundred thousand	Ten thousand	Thousand	Hundred	Ten	One	AND	Tenths	Hundredths	Thousandths

Benchmark: 22.01
ANSWER KEY

5,	4	7	8,	2	0	6	.	1	9	8
Million	Hundred thousand	Ten thousand	Thousand	Hundred	Ten	One	AND	Tenths	Hundredths	Thousandths

Write these numbers as numerals. Use the chart to refer to.

- | | |
|---|----------|
| 1. eight thousand, two hundred ninety-four and sixty-eight hundredths | 8,294.68 |
| 2. three hundred twenty-eight and four-tenths | 328.4 |
| 3. twenty five and four hundred thirty-six thousandths | 25.436 |
| 4. sixty six and eighty-seven hundredths | 66.87 |
| 5. three hundred four and six tenths | 304.6 |

Write these numbers in words

- | | | |
|----|---------|--|
| 1. | 24.23 | twenty-four and twenty-three hundredths |
| 2. | 6.256 | six and two hundred fifty-six thousandths |
| 3. | 348.1 | three hundred forty-eight and one tenth |
| 4. | 6462.84 | six thousand four hundred sixty-two and eighty-four hundredths |
| 5. | 3.628 | three and six hundred twenty-eight thousandths |

- LEVEL:** 4.0 - 5.9
- STANDARD:** 22.0 Demonstrate proficiency with number sense, concepts, and operations involving decimals.
- BENCHMARK:** 22.02 Understand the relative size of decimals.
22.03 Understand that decimals can be represented in other equivalent forms, e.g., fractions.
22.04 Convert common fractions to decimals.
22.05 Convert decimals to common fractions.
- MATERIALS:** M&M candy, baggies, M&M worksheet (sample follows), paper towel, scratch paper, pencils
- PROCEDURE:** Preparation: Prepare a baggie for each student. In each baggie, put an “easy” number of M&M candies; i.e. 20, 25, 50, etc.
Teacher Talk: Today, we will work with fractions, decimals, and percents. Percents is another way to measure how much of a total we have. Whenever you see a number represented as a percent, you have a part, not the whole amount. *You may want to briefly review fractions and decimals at this point.*
When you get your bag of M&Ms, count the total number first.
Pass out the bags, the paper towels, and the worksheets. Some students prefer to spread the candy out on the paper towels. Some like to keep them in the bags.
Record the total number of M&Ms in the space provided. Then count each color and record that number in the proper space.
Check to make sure that all students have counted correctly.
Use the total number of M&Ms as the denominator of your fraction. Use the number of the color for the numerator. Remember to reduce if needed. Repeat for all colors.
Demonstrate: Total = 20 Orange = 7 Fraction = 7/20
Divide the denominator into the numerator to get a decimal equivalent. Repeat for all fractions.
Demonstrate: 7/20 = 0.35
Move the decimal point two places to the right to make the equivalent percent. Repeat for all decimals.
Demonstrate: 0.35 = 35%

Benchmark: 22.02, 22.03, 22.04, 22.05

Student: _____

Date: _____

Teacher: _____

M&M Math

Add up the percents. If you have done this correctly, you should get 100%.

Total # of M&Ms _____

	TOTAL #	FRACTION	DECIMAL	PERCENT
RED				
YELLOW				
ORANGE				
BLUE				
GREEN				
BROWN				
SUM (TOTAL)				

LEVEL: 4.0 - 5.9

STANDARD: 22.0 Demonstrate proficiency with number sense, concepts, and operations involving decimals.

BENCHMARK: 22.04 Convert common fractions to decimals.
22.05 Convert decimals to common fractions.

MATERIALS: Worksheet

PROCEDURE: Hand out worksheet, and have students work individually or in groups.

Benchmark: 22.04, 22.05

Student: _____ Date: _____

Teacher: _____

To change from a fraction to a decimal, divide the denominator into the numerator. To change from a decimal to a fraction, read the number as a decimal, then write it as a fraction, then reduce. (.5 is five tenths; written as a fraction it is $\frac{5}{10}$ which can be reduced to $\frac{1}{2}$)

Fraction	Decimal
$\frac{6}{8}$	
$\frac{1}{2}$	.5
	.25
$\frac{3}{8}$	
$\frac{1}{8}$	
	.625
$\frac{3}{4}$	
$\frac{7}{8}$	
$\frac{4}{10}$	
	.20
	.30
$\frac{1}{10}$	

To change from a fraction to a decimal, divide the denominator into the numerator. To change from a decimal to a fraction, read the number as a decimal , then write it as a fraction, then reduce. (.5 is five tenths; written as a fraction it is 5/10 which can be reduced to 1/2)

Fraction	Decimal
6/8	.75
1/2	.50 or .5
1/4	.25
3/8	.375
1/8	.125
5/8	.625
3/4	.75
7/8	.875
4/10	.40 or .4
2/10	.20 or .2
3/10	.30 or .3
1/10	.10 or .1

Benchmark: 22.06; 22.07; 22.09

LEVEL: 4.0 - 5.9

STANDARD: 22.0 Demonstrate proficiency with number sense, concepts, and operations involving decimals.

BENCHMARK: 22.06 Add and subtract decimals.

22.07 Select the appropriate operation to solve specific problems involving decimals.

22.09 Solve real-world problems involving decimals.

MATERIALS: Worksheet, calculator (optional)

PROCEDURE: Have students work with a partner to complete the worksheet. Review that when decimals are added and subtracted that the decimal point needs to be lined up, not the right hand side of the problem.

Benchmark: 22.06; 22.07; 22.09

Student: _____ Date: _____

Teacher: _____

Directions: Read and solve the following problems. Remember to line up the decimal point when adding and subtracting decimals.

1. John bought a compact disc player for \$165.98 and a compact disc for \$21.75. How much did he spend all together?
2. Maria spent \$125.46 for a new winter coat, plus \$28.28 for gloves and a scarf. How much did Maria spend in all?
3. A charity group earned \$865.17 at a garage sale on Saturday and \$520.92 on Sunday. How much more did they earn on Saturday than on Sunday?
4. Michelle bought a rocking chair on sale for \$35.99. The original price of the chair was \$115.50. How much money did Michelle save?
5. Al and his friends held a two-day yard sale. The first day they made \$135.88. The second day they made \$68.42. How much money did they make all together?

Benchmark: 22.06; 22.07; 22.09
ANSWER KEY

Directions: Read and solve the following problems. Remember to line up the decimal point when adding and subtracting decimals.

1. John bought a compact disc player for \$165.98 and a compact disc for \$21.75. How much did he spend all together?

Answer: \$187.73

2. Maria spent \$125.46 for a new winter coat, plus \$28.28 for gloves and a scarf. How much did Maria spend in all?

Answer: \$153.74

3. A charity group earned \$865.17 at a garage sale on Saturday and \$520.92 on Sunday. How much more did they earn on Saturday than on Sunday?

Answer: \$1,386.09

4. Michelle bought a rocking chair on sale for \$35.99. The original price of the chair was \$115.50. How much money did Michelle save?

Answer: \$79.51

5. Al and his friends held a two-day yard sale. The first day they made \$135.88. The second day they made \$68.42. How much money did they make all together?

Answer: \$204.30

LEVEL:	4.0 - 5.9
STANDARD:	22.0 Demonstrate proficiency with number sense, concepts, and operations involving decimals.
BENCHMARK:	22.08 Understand the relationship between money and decimals.
MATERIALS:	Worksheet
PROCEDURE:	Have students work independently or with a partner to complete the worksheet.

Student: _____

Date: _____

Teacher: _____

Write the following money amounts as a decimal:

Example: Forty dollars and twenty three cents: \$40.23

1. six dollars and thirty eight cents _____

2. seven dollars _____

3. twenty four cents _____

4. five hundred sixty three dollars and eighteen cents _____

5. thirty seven dollars and ninety three cents _____

Write the following money amounts as a decimal:

Example: Forty dollars and twenty three cents: \$40.23

1. six dollars and thirty eight cents _____ \$6.38
2. seven dollars _____ \$7.00
3. twenty four cents _____ .24¢
4. five hundred sixty three dollars and eighteen cents _____ \$563.18
5. thirty seven dollars and ninety three cents _____ \$37.94

LEVEL: 4.0 - 5.9

STANDARD: 23.0 Use estimation to problem solve and compute.

BENCHMARK: 23.01 Use and justify different estimation strategies in a real-world problem situation, and determine the reasonableness of results of calculations in a given problem situation.

MATERIALS: Worksheet

PROCEDURE: Have students complete the worksheet independently.
Go over the answers together letting students explain how they got their answers.

Student: _____

Date: _____

Teacher: _____

Estimate the correct answer:

1. What would a typical weight for an adult man be?
50 pounds 70 pounds 150 pounds 300 pounds
2. What would a typical weight for a full term, healthy infant be?
2 pounds 7 pounds 15 pounds
3. What would a typical weight for a family sized box of cereal be?
5 ounces 15 ounces 3 pounds 7 pounds
4. How much milk would an average child drink at one time?
1 ounce 1 cup 1 gallon 3 gallons
5. How much water would fill a bath tub?
1 cup 1 gallon 30 gallons 300 gallons
6. How much water is in a swimming pool?
1 gallon 30 gallons 100 gallons 10,000 gallons
7. What is a typical volume for a shoebox?
1 cubic inch 4 cubic inches 1/2 cubic foot 10 cubic feet
8. What is a typical volume for a cereal box?
1 cubic inch 24 cubic inches 160 cubic inches 10 cubic feet
9. Would you weigh a full grown dog in ounces, pounds, or tons?
10. Would you weigh a truck in ounces, pounds, or tons?

Estimate the correct answer:

1. What would a typical weight for an adult man be?
50 pounds 70 pounds 150 pounds 300 pounds
2. What would a typical weight for a full term, healthy infant be?
2 pounds 7 pounds 15 pounds
3. What would a typical weight for a family sized box of cereal be?
5 ounces 15 ounces 3 pounds 7 pounds
4. How much milk would an average child drink at one time?
1 ounce 1 cup 1 gallon 3 gallons
5. How much water would fill a bath tub?
1 cup 1 gallon 30 gallons 300 gallons
6. How much water is in a swimming pool?
1 gallon 30 gallons 100 gallons 10,000 gallons
7. What is a typical volume for a shoebox?
1 cubic inch 4 cubic inches 1/2 cubic foot 10 cubic feet
8. What is a typical volume for a cereal box?
1 cubic inch 24 cubic inches 160 cubic inches 10 cubic feet
9. Would you weigh a full grown dog in ounces, pounds, or tons?
10. Would you weigh a truck in ounces, pounds, or tons?

- LEVEL:** 4.0 - 5.9
- STANDARD:** 23 .0 Use estimation to problem solve and compute.
- BENCHMARK:** 23.02 Solve real-world problems with the help of estimating measurements including length, time, weight, temperature, money, perimeter, area, and volume, and compare the results to actual measurements.
- MATERIALS:** Worksheets, Daily Temperature Chart
- PROCEDURE:** Talk to students about estimating as an educated guess
Have students complete the estimating measurement worksheet. Have each student come up with their own estimate. Let them work independently or in a group for the actual results.
Work on the daily temperature chart as a group activity.

Student: _____

Date: _____

Teacher: _____

Estimating Worksheet

1. What is the population of the United States?
2. What is the population of the world?
3. How often is a new baby born in the United States?
(Give your estimate in seconds.)
4. How many feet are in a mile?
5. How far is the moon from the Earth?
6. How far is the Earth from the Sun?

Estimating Worksheet

1. What is the population of the United States?

Answer: (2/2005); 6,446,131,400

2. What is the population of the world?

Answer: (2/2005); 295,515,011

3. How often is a new baby born in the United States?
(Give your estimate in seconds.)

Answer: (2/2005); One baby is born every 8 seconds.

4. How many feet are in a mile?

Answer: 5,250

5. How far is the moon from the Earth?

Answer: A little less than 240,000 miles

6. How far is the Earth from the Sun?

Answer: Approximately 93,000,000 miles

Student: _____

Date: _____

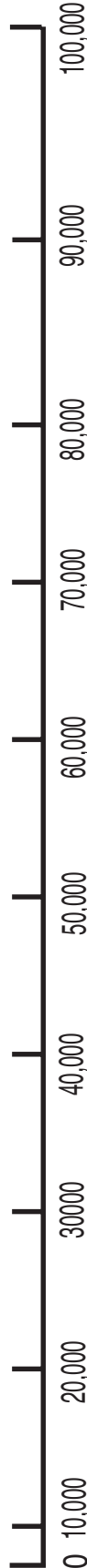
Teacher: _____

Daily Weather Chart

	ESTIMATED HIGH	ACTUAL HIGH	ESTIMATED LOW	ACTUAL LOW	AVERAGE TEMPERATURE
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Average Temperature					

- LEVEL:** 4.0 - 5.9
- STANDARD:** 23.0 Use estimation to problem solve and compute.
- BENCHMARK:** 23.03 Round a whole number less than one million to any designated place.
- MATERIALS:** Number Line Sheet, Worksheet
- PROCEDURE:** Draw a number line on the board from 0 to 10.
Mark the number 7. Ask students if it is closer to 0 or to 10.
Show students how the number line works from 0 – 100 counting by 10's.
Mark the number 17. Ask the students which it is closer to 0 or 100.
Mark the 50. Point out to students that if it is exactly in the middle 5; 50; 5000, etc.) then the number is rounded up to the next highest number.
Show students how to draw their own number lines.
It is important to have the numbers evenly spaced.
Turning a piece of notebook paper sideways has evenly spaced lines available.
Have students work independently or with a partner to complete the worksheet.

Number Line Handout



Student: _____

Date: _____

Teacher: _____

Rounding Whole Numbers

Round to the nearest 10

47 32 53 89 3 456 392

Round to the nearest 100

384 225 636 219 598 1462 2528

Round to the nearest 1000

3 7443 2695 2421 52,368 45,921

Round to the nearest 10,000

54,298 62,464 98,256 254,321 286,945

Round to the nearest 100,000

245,321 648,392 748 1,428,295 6,234,421

Round to the nearest 1,000,000

5,523,426 453,643 456 4,382,108 2,938,645

Rounding Whole Numbers

Round to the nearest 10

47 32 53 89 3 456 392

ANSWER: 50 30 50 90 0 460 390

Round to the nearest 100

384 225 636 219 598 1462 2528

ANSWER: 400 200 600 200 600 1500 2500

Round to the nearest 1000

3 7443 2695 2421 52,368 45,921

ANSWER: 0 7000 3000 2000 52,000 46,000

Round to the nearest 10,000

54,298 62,464 98,256 254,321 286,945

ANSWER: 50,000 60,000 100,000 250,000 290,000

Round to the nearest 100,000

245,321 648,392 748 1,428,295 6,234,421

ANSWER: 200,000 600,000 0 1,400,000 6,200,000

Round to the nearest 1,000,000

5,523,426 453,643 456 4,382,108 2,938,645

ANSWER: 6,000,000 0 0 4,000,000 3,000,000

LEVEL: 4.0 - 5.9

STANDARD: 23.0 Use estimation to problem solve and compute

BENCHMARK: 23.04 Round fractions and mixed numbers to the nearest whole numbers.

MATERIALS: Ruler for each student, Overhead ruler if possible, Worksheet

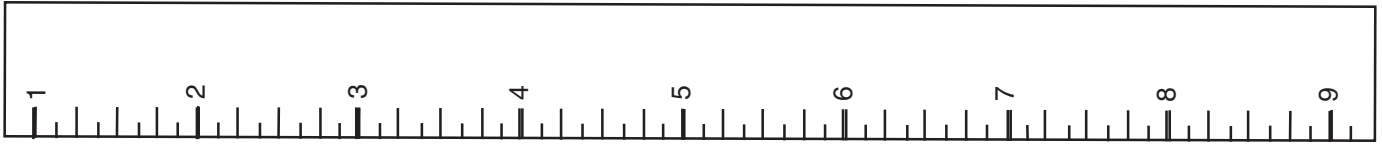
PROCEDURE: Have students study the ruler.
Call out several measurements less than 1 inch.
Let students see it if is closer to 0 or to 1.
Call out larger numbers, and let students see what whole number they are closer to.

Benchmark: 23.04

Student: _____

Date: _____

Teacher: _____



Round these numbers to the nearest whole number.
Remember $1/2$ gets rounded to the next largest number.

$1/4$

$3/4$

$13/16$

$3/16$

$1 \frac{5}{8}$

$3 \frac{1}{16}$

$7/8$

$3 \frac{1}{4}$

$2 \frac{11}{16}$

$15/16$

$5 \frac{1}{2}$

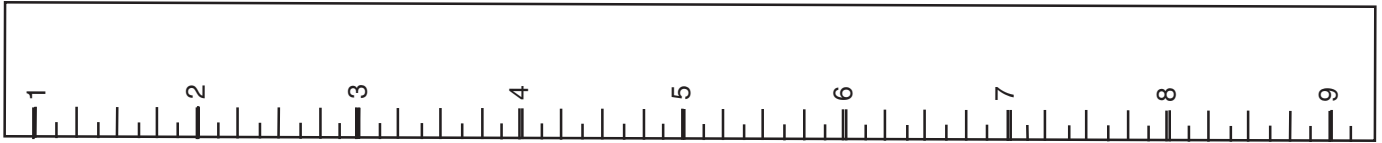
$4 \frac{1}{8}$

$9 \frac{3}{4}$

$10 \frac{5}{16}$

$7 \frac{1}{2}$

6



Round these numbers to the nearest whole number.
Remember $1/2$ gets rounded to the next largest number.

	$1/4$	$3/4$	$13/16$	$3/16$
Answer:	0	1	1	0
	$1 \frac{5}{8}$	$3 \frac{1}{16}$	$7/8$	$3 \frac{1}{4}$
Answer:	2	3	1	3
	$2 \frac{11}{16}$	$15/16$	$5 \frac{1}{2}$	$4 \frac{1}{8}$
Answer:	3	1	6	4
	$9 \frac{3}{4}$	$10 \frac{5}{16}$	$7 \frac{1}{2}$	6
Answer:	10	10	8	6

LEVEL: 4.0 - 5.9

STANDARD: 23.0 Use estimation to problem solve and compute.

BENCHMARK: 23.05 Use rounding techniques to estimate the solution to a real-world addition or subtraction measurement problem, and then determine the actual result.

MATERIALS: Worksheet

PROCEDURE: Talk to students about rounding numbers (see 23.03).

Explain to students that when they are adding two numbers such as $328 + 593$, they should round to the nearest 100 and get $300 + 600$. Students should be able to see that their answer should be close to 900. If it isn't, they should check their math.

Student: _____

Date: _____

Teacher: _____

Use rounding techniques to come up with an approximate answer to the questions below. Then determine the actual results.

1. A woman needed to buy lumber to build a bookshelf. The shelf lengths were 3 ft. 2 in.; 3 ft. 10 in.; and 4 ft. 3 in. How much wood did she need to buy?

Estimate_____

Actual result_____

2. A father was buying wallpaper trim to go in his son's room. The wall lengths were 11 foot 9 inches, 13 feet, 12 foot 3 inches, and 13 feet. How much trim does he need to buy?

Estimate_____

Actual result_____

3. If Deborah is 4 foot 10 inches, and her friend is 3 foot 11 inches, how much taller is Deborah than her friend?

Estimate_____

Actual result_____

4. A boy was making a fruit punch for a picnic. He added $5\frac{1}{4}$ cups of orange juice, $\frac{1}{3}$ cup lime juice, $6\frac{1}{2}$ cups of pineapple juice, and $10\frac{3}{4}$ cups of ginger ale. How many cups of punch did he have?

Estimate_____

Actual result_____

5. If there are 15.3 miles to bike to get from John's house to his grandmother's, and he has already biked 9.4 miles, how much farther does he have to go?

Estimate_____

Actual result_____

Use rounding techniques to come up with an approximate answer to the questions below. Then determine the actual results.

1. A woman needed to buy lumber to build a bookshelf. The shelf lengths were 3 ft. 2 in.; 3 ft. 10 in.; and 4 ft. 3 in. How much wood did she need to buy?

Estimate 11 feet

Actual result 11 feet 3 in.

2. A father was buying wallpaper trim to go in his son's room. The wall lengths were 11 foot 9 inches, 13 feet, 12 foot 3 inches, and 13 feet. How much trim does he need to buy?

Estimate 50 feet

Actual result 50 feet

3. If Deborah is 4 foot 10 inches, and her friend is 3 foot 11 inches, how much taller is Deborah than her friend?

Estimate 1 foot or 12 inches

Actual result 1 ft. 1 inch

4. A boy was making a fruit punch for a picnic. He added $5\frac{1}{4}$ cups of orange juice, $\frac{1}{3}$ cup lime juice, $6\frac{1}{2}$ cups of pineapple juice, and $10\frac{3}{4}$ cups of ginger ale. How many cups of punch did he have?

Estimate 21 cups

Actual result $22\frac{3}{4}$ cups

5. If there are 15.3 miles to bike to get from John's house to his grandmother's, and he has already biked 9.4 miles, how much farther does he have to go?

Estimate 6 miles

Actual result 5.9 miles

- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.01 Write abbreviations for length, weight, and capacity measurements in the customary* system.
**Customary refers to the system of measurement used in the United States*
- MATERIALS:** 3 x 5 cards, individual dictionaries
- PROCEDURE:**
1. Divide students into two groups: Team A and Team B.
 2. Have the students prepare a card with the full word on one side of the card. Write the term on the board so that they have the correct spelling.
 3. Students use the dictionary to find the abbreviation. The first team to find it gets a point. Keep score on the board.
 4. Write the abbreviation on the board for students to copy on the reverse side of the card.
 5. Repeat, up to 5 cards in a session, within related groupings (i.e., inch, foot, yard).
 6. Students, in pairs, flash cards to one another for practice.

Words to Abbreviate:

Inch	Ounce
Foot	Ton
Yard	Kilogram
Centimeter	Minute
Milligram	Second
Gram	Week
Pound	Hour

Student: _____ Date: _____

Teacher: _____

Directions: Fill the blanks with the correct abbreviations.

1. inch _____

6. gram _____

2. foot _____

7. pound _____

3. yard _____

8. ounce _____

4. centimeter _____

9. ton _____

5. milligram _____

10. kilogram _____

12 inches = 1 foot

3 feet = 1 yard

36 inches = 1 yard

1 mile = 5280 feet = 1760 yards

1 pound (lb) = 16 ounces (oz)

1 ton (T) = 2,000 lb.

1 gallon (gal) = 4 quarts (qt)

1 qt = 2 pints (pt)

Think: your desktop ruler

Think: yardstick

Think: a yard of fabric

Think: a brisk 20-minute walk!

Think: pound of ground meat

Think: truckload!!

Think: gallon of ice cream

Think: quart of milk

Directions: Fill the blanks with the correct abbreviations.

1. inch in.

6. gram g

2. foot ft.

7. pound lb.

3. yard yd.

8. ounce oz.

4. centimeter cm.

9. ton T

5. milligram mg.

10. kilogram kg.

- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.02 Identify equal measures defined in different units.
- MATERIALS:** Worksheet
- PROCEDURE:** Explain to students that things may be measured in different units, e.g., ounces to pounds to tons, you may want to tell them that in general
- The weight (or length, or volume, etc.) of an object does not change, but that
 - If you move from a smaller unit to a larger one, the number of units will decrease.
 - If you change from a larger unit to a smaller one, the number of units will increase.

Example: Ileana bought a 2-pound bag of rice. How many ounces of rice did she buy?

1. Write the problem. $2 \text{ lb.} = \underline{\hspace{1cm}} \text{ oz.}$
2. Write the relationship between ounces and pounds. $1 \text{ lb.} = 16 \text{ oz.}$
3. Multiply both sides of the equation in Step 2 by 2. $2(1) \text{ lb.} = 2(16) \text{ oz.} = 32 \text{ oz.}$

Answer: Ileana bought 32 oz. of rice.

12 inches = 1 foot

3 feet = 1 yard

36 inches = 1 yard

Think: your desktop ruler

Think: yardstick

Think: a yard of fabric

1 mile = 5280 feet = 1760 yards

Think: a brisk 20-minute walk!

1 pound (lb) = 16 ounces (oz)

1 ton (T) = 2,000 lb.

Think: pound of ground meat

Think: truckload!!

1 gallon (gal) = 4 quarts (qt)

1 qt = 2 pints (pt)

Think: gallon of ice cream

Think: quart of milk

Student: _____ Date: _____

Teacher: _____

Using the chart below, rewrite each measurement using the given unit.

1,000 pounds = _____ ton

320 ounces = _____ pounds

7 1/2 pounds = _____ ounces

4 yards = _____ feet

9.2 tons = _____ pounds

5 pints = _____ cups

16 quarts = _____ gallons

5 miles = _____ yards

9 teaspoons = _____ tablespoons

72 inches = _____ feet or _____ yards

12 inches = 1 foot

3 feet = 1 yard

36 inches = 1 yard

Think: your desktop ruler

Think: yardstick

Think: a yard of fabric

1 mile = 5280 feet = 1760 yards

Think: a brisk 20-minute walk!

1 pound (lb) = 16 ounces (oz)

Think: pound of ground meat

1 ton (T) = 2,000 lb.

Think: truckload!!

1 gallon (gal) = 4 quarts (qt)

Think: gallon of ice cream

1 qt = 2 pints (pt)

Think: quart of milk

Using the chart below, rewrite each measurement using the given unit.

$$1,000 \text{ pounds} = \underline{\quad 1/2 \quad} \text{ ton}$$

$$320 \text{ ounces} = \underline{\quad 20 \quad} \text{ pounds}$$

$$7 \frac{1}{2} \text{ pounds} = \underline{\quad 120 \quad} \text{ ounces}$$

$$4 \text{ yards} = \underline{\quad 12 \quad} \text{ feet}$$

$$9.2 \text{ tons} = \underline{\quad 18,400 \quad} \text{ pounds}$$

$$5 \text{ pints} = \underline{\quad 2 \frac{1}{5} \quad} \text{ cups}$$

$$16 \text{ quarts} = \underline{\quad 4 \quad} \text{ gallons}$$

$$5 \text{ miles} = \underline{\quad 8,800 \quad} \text{ yards}$$

$$9 \text{ teaspoons} = \underline{\quad 3 \quad} \text{ tablespoons}$$

$$72 \text{ inches} = \underline{\quad 6 \quad} \text{ feet or } \underline{\quad 2 \quad} \text{ yards}$$

12 inches = 1 foot

3 feet = 1 yard

36 inches = 1 yard

Think: your desktop ruler

Think: yardstick

Think: a yard of fabric

1 mile = 5280 feet = 1760 yards

Think: a brisk 20-minute walk!

1 pound (lb) = 16 ounces (oz)

1 ton (T) = 2,000 lb.

Think: pound of ground meat

Think: truckload!!

1 gallon (gal) = 4 quarts (qt)

1 qt = 2 pints (pt)

Think: gallon of ice cream

Think: quart of milk

- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.03 Measure to the nearest $\frac{1}{4}$ inch on a 12-inch ruler.
- MATERIALS:** Overhead ruler, 12-inch ruler for each student, pencil, paper clip, penny, floppy disk, watchband, sticky note, car key, door
- PROCEDURE:** Demonstrate to students how to measure something with a ruler.
Point out the markings on the ruler.
- Discuss as a class when it would be important to have an accurate measurement within one fourth of an inch.
Would an inaccurate measure of $\frac{1}{4}$ inch matter on a pencil?
On a doorframe? On a key?

Student: _____

Date: _____

Teacher: _____

Have students measure these objects and record their findings.

- pencil
- paper clip
- penny
- floppy disk
- watchband
- sticky note
- car key
- width of the classroom door fram
- height of the door frame
- any other items that students can easily measure.

- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement
- BENCHMARK:** 24.04 Solve measurement problems in the customary* system using addition or subtraction with no conversion.
** Customary refers to the system of measurement used in the United States.*
- MATERIALS:** Worksheet, yardstick, ruler
- PROCEDURE:** Remind students that there are 12 inches in one foot, three feet in one yard, and 5280 feet in one mile.
- Have students complete the following worksheet independently or with a partner.

Student: _____

Date: _____

Teacher: _____

Directions: The five problems that follow are warm-up exercises to give you the opportunity to practice basic math skills. You may use a calculator or paper and pencil. Circle the letter of the correct answer.

1. Change 72 inches to feet:

- a. 12 feet
- b. 7 feet
- c. 6 feet
- d. 2 feet

2. Add: 8 feet, 7 inches + 9 feet, 4 inches=?

- a. 17 feet, 3 inches
- b. 18 feet, 7 inches
- c. 17 feet, 11 inches
- d. 18 feet, 4 inches

3. Subtract: 5 yards, 2 feet- 2 yards, 1 foot=?

- a. 3 yards, 1 foot
- b. 2 yards, 1 foot
- c. 2 yards, 2 feet
- d. 2 yards, 1 foot

4. Add: 4 yards, 1 feet 7 inches + 2 yards, 1 feet 3 inches =?

- a. 6 yards, 2 feet, 10 inches
- b. 7 yards, 1 foot, 2 inches
- c. 7 yards
- d. 2 yards, 4 inches

5. Change 1.5 miles to feet.

- a. 18 feet
- b. 5,280 feet
- c. 7,920 feet
- d. 8,920 feet

Directions: The five problems that follow are warm-up exercises to give you the opportunity to practice basic math skills. You may use a calculator or paper and pencil. Circle the letter of the correct answer.

1. Change 72 inches to feet:

- a. 12 feet
- b. 7 feet
- c. 6 feet
- d. 2 feet

ANSWER: C

2. Add: 8 feet, 7 inches + 9 feet, 4 inches=?

- a. 17 feet, 3 inches
- b. 18 feet, 7 inches
- c. 17 feet, 11 inches
- d. 18 feet, 4 inches

ANSWER: C

3. Subtract: 5 yards, 2 feet- 2 yards, 1 foot=?

- a. 3 yards, 1 foot
- b. 2 yards, 1 foot
- c. 2 yards, 2 feet
- d. 2 yards, 1 foot

ANSWER: A

4. Add: 4 yards, 1 foot 7 inches + 2 yards, 1 foot 3 inches =?

- a. 6 yards, 2 feet, 10 inches
- b. 7 yards, 1 foot, 2 inches
- c. 7 yards
- d. 2 yards, 4 inches

ANSWER: A

5. Change 1.5 miles to feet.

- a. 18 feet
- b. 5,280 feet
- c. 7,920 feet
- d. 8,920 feet

ANSWER: C

- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.05 Determine temperature using a Fahrenheit or Celsius thermometer.
- MATERIALS:** Thermometers of different kinds (optional); Worksheet
- PROCEDURE:** If possible, bring in several types of thermometers. Show how to read them. Pass them around.
- Put them in different places such as outside, by the air conditioner or heating vent, in the middle of the room, under someone's arm, etc.
- Then pass them around again for students to practice reading them.
- Handout the worksheet for students to complete.

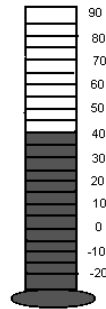
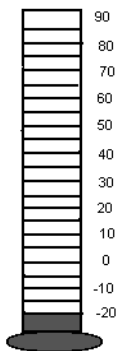
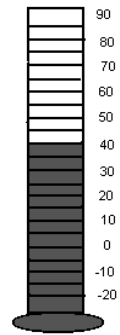
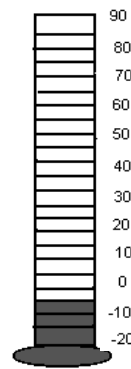
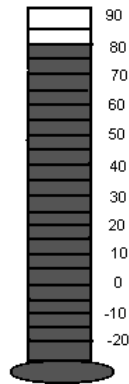
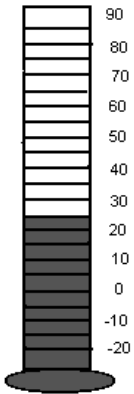
Student: _____

Date: _____

Teacher: _____

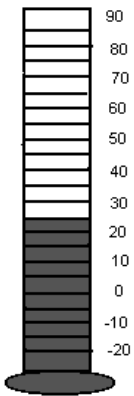
Reading a Thermometer

Read the temperature on the thermometers below.

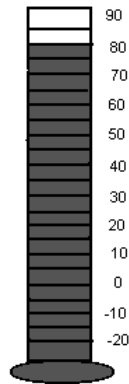


Reading a Thermometer

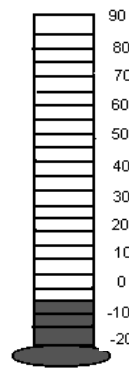
Read the temperature on the thermometers below.



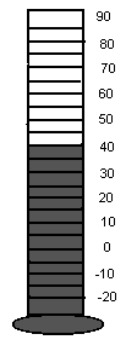
25°



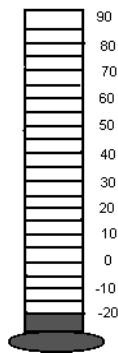
80°



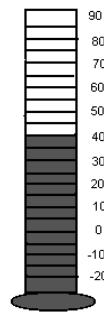
-5°



40°



-20°



40°



10°

LEVEL:	4.0 - 5.9
STANDARD:	24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
BENCHMARK:	24.06 Determine capacity by measuring quantities in teaspoons, tablespoons, cups, pints, quarts, gallons, and liters.
MATERIALS:	Converting Units of Measure Chart, worksheet, measuring spoons, measuring cups, 2 quart measuring cup, gallon container, liter container
PROCEDURE:	<p>If possible, have measuring tools available to use.</p> <p>Do the worksheet as a group project if you have the measuring tools.</p> <p>If measuring tools are not available, let students complete the worksheet using the chart.</p> <p>Encourage students to keep the chart for future use.</p>

Converting Units of Measure

LENGTH	
1 foot	12 inches
1 yard	3 feet
1 mile	5280 feet; 1760 yards
TIME	
1 minute	60 seconds
1 hour	60 minutes
1 day	24 hours
1 week	7 days
1 year	365 days; 52 weeks
LIQUID	
1 tablespoon	3 teaspoons
1 cup	8 ounces
1 pint	2 cups
1 quart	4 cups
1 gallon	4 quarts
WEIGHT	
1 pound	16 ounces
1 ton	2000 pounds
Metric Length	Meter
Metric Weight	Gram
Metric Liquid	Liter
METRIC PREFIXES	
Milli	1/1000
Centi	1/100
Deci	1/10
Deka	10
Hecto	100
Kilo	1000

Student: _____

Date: _____

Teacher: _____

1. How many ounces in one cup? _____

2. How many ounces in a quart? _____

3. How many ounces in a gallon? _____

4. How many ounces in a ton? _____

5. How many inches in a mile? _____

6. How many seconds in a week? _____

7. How many hours in a year? _____

8. How many milliliters in a liter? _____

9. How many centimeters in a meter? _____

10. How many meters in a kilometer? _____

11. How many centimeters in a kilometer? _____

Benchmark: 24.06
ANSWER KEY

1. How many ounces in one cup? _____ **8**
2. How many ounces in a quart? _____ **32**
3. How many ounces in a gallon? _____ **128**
4. How many ounces in a ton? _____ **32,000**
5. How many inches in a mile? _____ **63,360**
6. How many seconds in a week? _____ **10,080**
7. How many hours in a year? _____ **8,760**
8. How many milliliters in a liter? _____ **1,000**
9. How many centimeters in a meter? _____ **100**
10. How many meters in a kilometer? _____ **1,000**
11. How many centimeters in a kilometer? _____ **100,000**

LEVEL:	4.0 - 5.9
STANDARD:	24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
BENCHMARK:	24.07 Recognize, use, measure, and interpret linear dimensions and geometric shapes.
MATERIALS:	Worksheet
PROCEDURE:	Allow students to work in groups to complete the worksheets. Then have students write a paragraph explaining what they learned from the worksheet and what surprised or puzzled them.

Student: _____

Date: _____

Teacher: _____

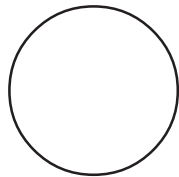
360-A Magic Number

Geometry evolved during the Golden Age of Greece in the Fifth Century B.C. Mathematicians discovered they could solve many problems by dividing figures into 360 equal parts called degrees ($^{\circ}$). Why is 360 such a “magic” number?

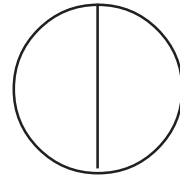
What number (s) can 360 be evenly equally divided by?

Therefore, 360 is a very useful number!

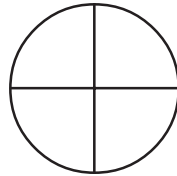
A circle has 360° .



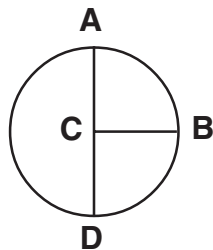
A semicircle has _____ $^{\circ}$.



A quarter of a circle has _____ $^{\circ}$.



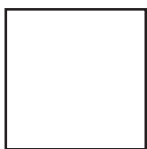
An ANGLE is formed where two lines meet.



The angle formed by lines AC and BC is _____ $^{\circ}$.

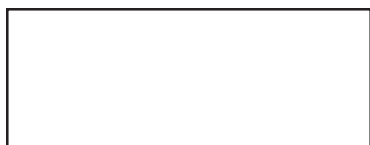
A _____ angle is called a RIGHT ANGLE.

How many right angles are there in a square?



Therefore, how many degrees are there in a square? _____

What is this figure called? _____



How many right angles does this figure have? _____

How many degrees are in this figure? _____

Remember the magic number:

EVERY _____ AND _____

has _____ degrees.

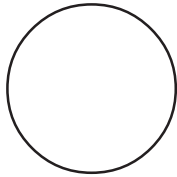
360-A Magic Number

Geometry evolved during the Golden Age of Greece in the Fifth Century B.C. Mathematicians discovered they could solve many problems by dividing figures into 360 equal parts called degrees ($^{\circ}$). Why is 360 such a “magic” number?

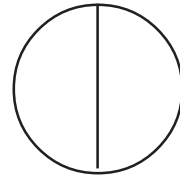
What number (s) can 360 be evenly equally divided by? 3, 6, 9, 12 and 18

Therefore, 360 is a very useful number!

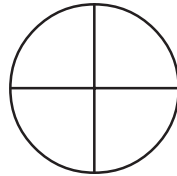
A circle has 360° .



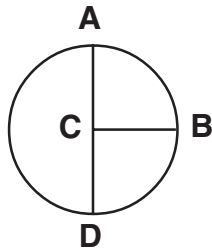
A semicircle has 180° .



A quarter of a circle has 90° .



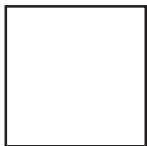
An ANGLE is formed where two lines meet.



The angle formed by lines AC and BC is 90° .

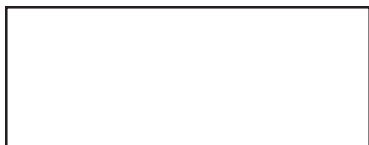
A 90° angle is called a RIGHT ANGLE.

How many right angles are there in a square? 4



Therefore, how many degrees are there in a square? 360°

What is this figure called? rectangle



How many right angles does this figure have? 4

How many degrees are in this figure? 360°

Remember the magic number:

EVERY rectangle AND circle

has 360° degrees.

- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.07 Recognize, use, measure, and interpret linear dimensions and geometric shapes.
- 24.10 Interpret spatial relationships; e.g., above, below, nearer, farther, “and equidistant.
- MATERIALS:** Chalk and Chalkboard, paper
- PROCEDURE:** Draw different shapes on the board. Label them with the correct name. The teacher draws a simple diagram using several shapes that she does not show to the class. The teacher then describes the diagram using words only. Be sure to include spatial relationships such as draw the square above the circle or draw the rectangle equidistant from all edges of the paper. The teacher and students show their diagrams. See how close they are to each other. Students can take turns giving directions about the diagrams they draw.

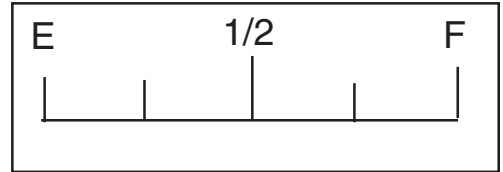
LEVEL:	4.0 - 5.9
STANDARD:	24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
BENCHMARK:	24.08 Use and interpret measurement instruments; such as, rulers, scales, gauges, and dials.
MATERIALS:	Gauges, scales, dials (if possible); worksheet
PROCEDURE:	Brainstorm with students the gauges, scales, and dials that they use regularly (bathroom scale, speedometer, gas gauge, stove dial, thermostat, clock, timer) If you have some in the classroom show them to students, and show how to read them. Have students work alone or with a partner to answer the questions on the worksheet.

Student: _____

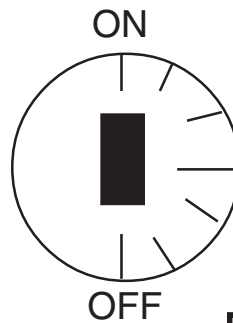
Date: _____

Teacher: _____

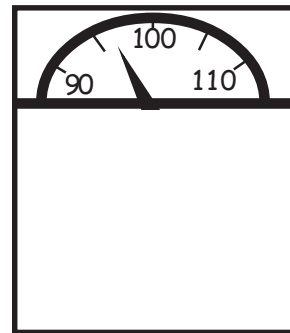
1. Use the gauge to show what a gas gauge would look like if it was half full.



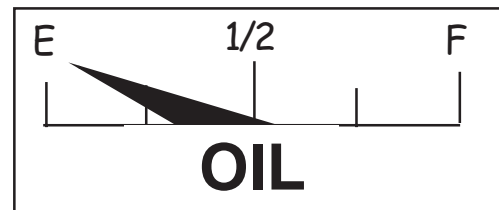
2. Draw an arrow to show where to turn the knob to turn it on high.



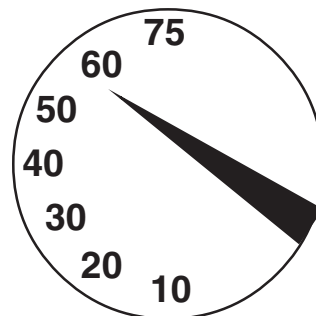
3. What weight is shown on the scale?



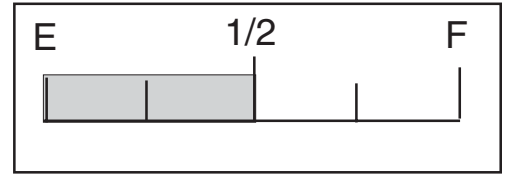
4. Does the gauge show that you need to add oil to the car?



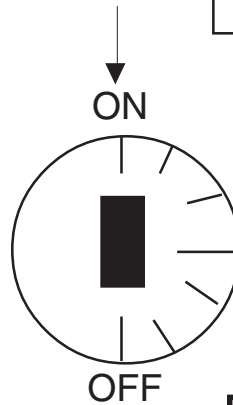
5. Use the speedometer to see how fast the car is going.



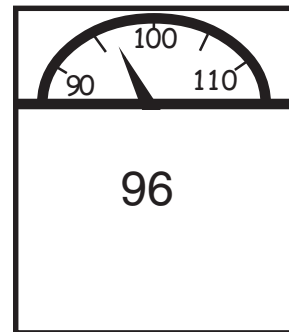
1. Use the gauge to show what a gas gauge would look like if it was half full.



2. Draw an arrow to show where to turn the knob to turn it on high.

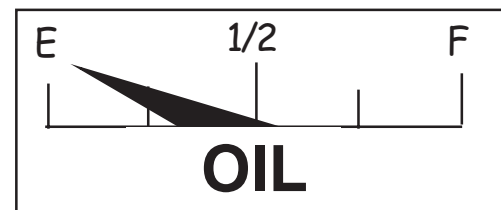


3. What weight is shown on the scale?



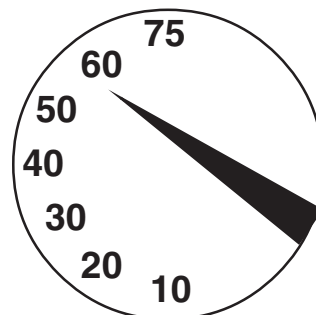
4. Does the gauge show that you need to add oil to the car?

ANSWER: Yes



5. Use the speedometer to see how fast the car is going.

ANSWER: 58 mph



- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.09 Interpret diagrams, illustrations, and scale drawings.
- MATERIALS:** Worksheet
- PROCEDURE:** Talk with students about scale drawings, and point out how they work.
Have students work in small groups to complete the worksheet.

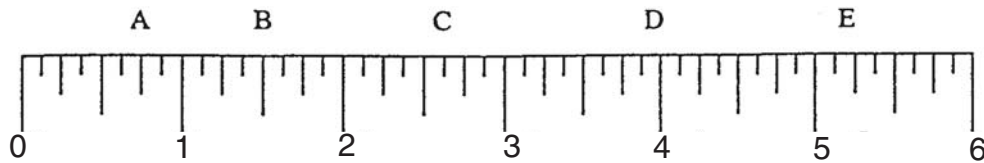
Student: _____

Date: _____

Teacher: _____

Scales and Meters

Reading a ruler.



Tell how far to the right of zero the points marked A - E are.

A:

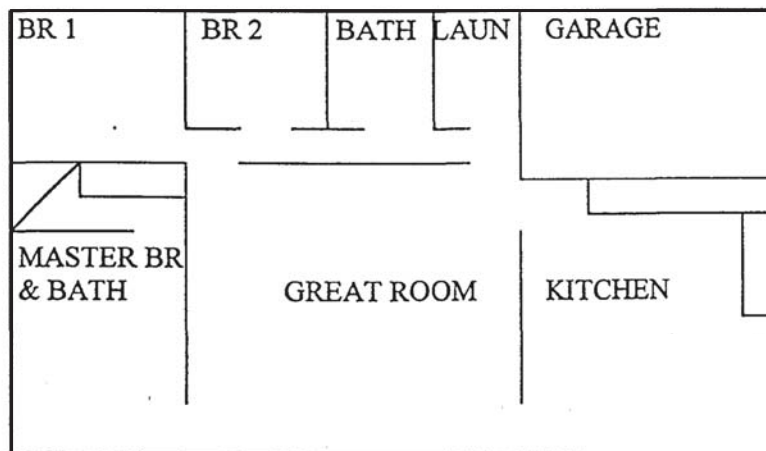
C:

E:

B:

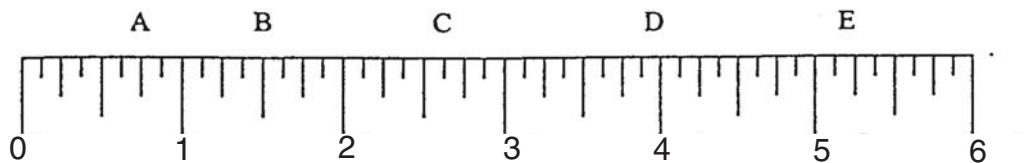
D:

The scale drawing of the house plan below are on a 1 in :12-foot scale. Choose three rooms and tell the dimensions



Scales and Meters

Reading a ruler.



Tell how far to the right of zero the points marked A - E are.

A: $\frac{3}{4}$

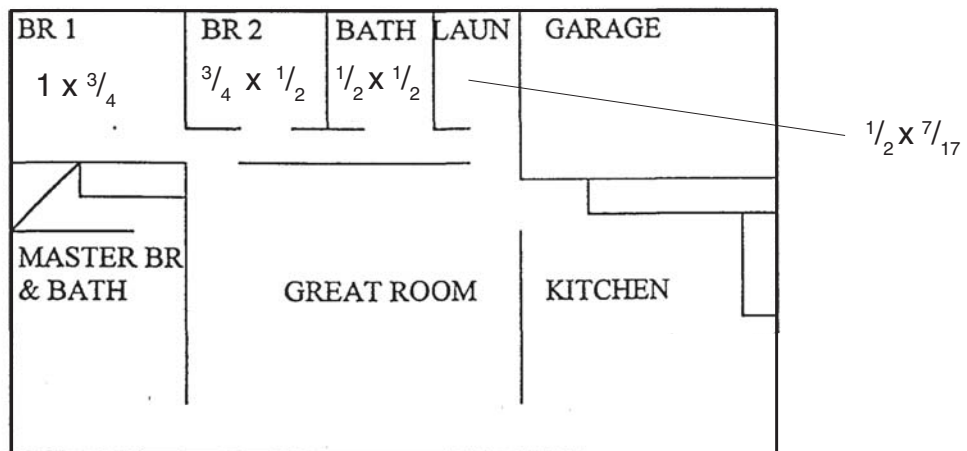
C: $2 \frac{5}{8}$

E: $5 \frac{2}{8}$

B: $1 \frac{1}{2}$

D: 4

The scale drawing of the house plan below are on a 1 in :12-foot scale. Choose three rooms and tell the dimensions



- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.11 Interpret measurements in recipes.
- MATERIALS:** Cookie story, cookie problem worksheet
- PROCEDURE:** Students enjoy this problem because it is outrageous and, supposedly, true. Read the Cookie Story to your students. Hand out the worksheets, and let them complete them in groups. Allow them to write individually how they would have reacted had this problem happened to them.

Cookie Story

My daughter and I had finished a salad at the Neiman-Marcus Café in Dallas and decided to have a small dessert. Because our family members are such “Cookie Monsters,” we decided to try the Neiman-Marcus Cookie. It was so good that I asked if they would give me the recipe. She said with a frown, “I’m afraid not,” “Well,” I said, “Would you let me buy the recipe?” With a cute smile, she agreed. I asked how much, and she responded “Two fifty.” I said with approval, “Just add it to my tab.”

Thirty days later I received my statement from Neiman-Marcus and it was \$285.00. I looked again and remembered I had only spent \$9.95 for two salads and about \$20 for a scarf. As I glanced at the bottom of the statement it said “Cookie Recipe - \$250.” Boy, was I upset! I called Neiman’s accounting office and told them the waitress said it was “two fifty” and did not realize she meant \$250 for a cookie recipe. I asked them to take back the recipe and reduce my bill, but they said they were sorry, but all recipes were this expensive so not just anyone could duplicate the bakery recipes... the bill would stand.

I thought of how I could try to get even or try to get my money back. I just said, okay, you folks got my \$250 and now I’m going to have \$250 worth of fun. I told her that I was going to see to it that every cookie lover will have the \$250 recipe from Neiman-Marcus for nothing. She replied, “I wish you wouldn’t do this.” I said, “I’m sorry, but this is the only way I feel I can get even and I will.” So here it is, please pass it on to someone else or run a few copies... I paid for it, so now you can have it for free!!!

2 cups butter	1 tsp. Salt
2 cups sugar	2 tsp. Baking powder
2 cups brown sugar	2 tsp. Soda
4 eggs	24 oz. chocolate chips
2 tsp. Vanilla	1 8-oz. Hershey bar, grated
4 cups flour	3 cups chopped nuts
5 cups blended oatmeal *	

Cream butter and both sugars. Add eggs and vanilla. Mix together with flour, oatmeal, salt, baking powder and soda. Add chocolate chips, Hershey bar and nuts. Roll into balls and place two inches apart on a cookie sheet. Bake for 10 minutes at 375. Makes 112 cookies. (recipe may be halved)

*Measure oatmeal and blend in a blender to a fine powder.

HAVE FUN!! THIS IS NOT A JOKE – THIS IS A TRUE STORY!!!
(Believe it or not)

\$250 Recipe Problem

1 dozen = 12 items
1 pound = 16 ounces
1 cup = 8 ounces

1. divide, 9 r 4 or $9 \frac{1}{3}$
2. $24/16 = 1 \frac{1}{4}$ pounds, divide
3. divide, 4
4. divide, 5 (4 r 16)
5. multiply, divide and add, \$11.16
6. multiply and subtract, \$16.84. ($\$28.00 - \11.16)

Student: _____

Date: _____

Teacher: _____

\$250 Recipe Problem

Directions: First, fill in the measurement chart. Then answer the questions, showing all our work on another sheet of paper. Tell which operation you used (add, subtract, multiply, or divide) to solve each problem.

Measurement Chart

1 dozen = _____ items

1 pound = _____ ounces

1 cup = _____ ounces

1. How many dozen cookies does this recipe make?

Operation _____ Answer _____

2. Write an improper fraction showing the amount of chocolate chips needed in ounces. Then reduce that fraction to a mixed number.

Improper fraction = mixed number

Answer _____ = _____

Operation _____

3. One stick of butter weighs a quarter pound and is equal to $\frac{1}{2}$ cup. How many sticks of butter do you need in this recipe?

Operation _____ Answer _____

4. You can bake just 24 cookies at a time on your cookie sheet. How many times will you have to fill the cookie sheet to make all the cookies in one recipe?

Operation _____ Answer _____

5. Use these grocery store prices to figure out the total cost of one recipe of these cookies:

Butter - \$1.59 per pound

Sugar – 20 cents per cup

Eggs – 84 cents per dozen

Soda – one cent per teaspoon

Vanilla – five cents per teaspoon

Nuts - \$1 for 8 ounces

flour – 10 cents per cup

oatmeal – 5 cents per cup

salt – 1 cent per teaspoon

baking powder – 1 cent per teaspoon

chocolate chips – 10 cents per ounce

Hershey Bar (8 oz.) - \$2.29

Operations _____, _____ and _____

Answer _____

6. If you sold these cookies for \$.25 each, how much money would you make as profit?

Operations _____ and _____

Answer _____

\$250 Recipe Problem

Directions: First, fill in the measurement chart. Then answer the questions, showing all our work on another sheet of paper. Tell which operation you used (add, subtract, multiply, or divide) to solve each problem.

Measurement Chart

1 dozen = 12 items

1 pound = 16 ounces

1 cup = 8 ounces

1. How many dozen cookies does this recipe make?

Operation divide Answer 9r4 pr 9 1/3

2. Write an improper fraction showing the amount of chocolate chips needed in pounds. Then reduce that fraction to a mixed number.

Improper fraction = mixed number

Answer 24/16 = 1 1/2 pounds

Operation division

3. One stick of butter weighs a quarter pound and is equal to 1/2 cup. How many sticks of butter do you need in this recipe?

Operation divide Answer 4

4. You can bake just 24 cookies at a time on your cookie sheet. How many times will you have to fill the cookie sheet to make all the cookies in one recipe?

Operation divide Answer 5 (4 r 16)

5. Use these grocery store prices to figure out the total cost of one recipe of these cookies:

Butter - \$1.59 per pound

Sugar – 20 cents per cup

Eggs – 84 cents per dozen

Soda – one cent per teaspoon

Vanilla – five cents per teaspoon

Nuts - \$1 for 8 ounces

flour – 10 cents per cup

oatmeal – 5 cents per cup

salt – 1 cent per teaspoon

baking powder – 1 cent per teaspoon

chocolate chips – 10 cents per ounce

Hershey Bar (8 oz.) - \$2.29

Operations multiply, divide and add

Answer \$11.16

6. If you sold these cookies for \$.25 each, how much money would you make as profit?

Operations multiply and subtract

Answer \$16.84 (\$28.00 – \$11.16)

- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.11 Interpret measurements in recipes.
- MATERIALS:** Recipes with a large number of ingredients (most ingredients should be in fraction form), Worksheet
- PROCEDURE:** Assign each student a partner. Give each partner team a recipe. Each partner team is to calculate the recipe for a number of servings other than the one indicated on the original recipe. Students may increase or decrease the original recipe (for example, they may calculate for 6 servings instead of 9, or for 2 servings instead of 8). Set a time limit. The partner team who has the most correct “fraction conversions” at the end of the time limit wins. (A small prize for the winning team is appropriate.)
- Give each student or group of students a worksheet. Have them compete it. For more practice bring in other recipes (or have students bring in recipes), and have students follow the procedure below.

Student: _____

Date: _____

Teacher: _____

Directions: Changing a Recipe.

Use the following list of things needed for making a cake to answer the questions on this page.

1 cup of flour
1 1/2 cups of sugar
1/4 teaspoon of salt

1 1/3 cups of egg whites
1 2/3 teaspoons of cream of tartar
1 1/4 teaspoons of vanilla

1. Fill in the amount of each thing you would need to make two cakes:

_____ flour

_____ egg whites

_____ sugar

_____ cream of tartar

_____ salt

_____ vanilla

2. Fill in the amount of each thing you would need to make a smaller cake that is one-half the size of the cake in the recipe.

_____ flour

_____ egg whites

_____ sugar

_____ cream of tartar

_____ salt

_____ vanilla

3. Fill the amount of each thing you would need to make 5 cakes:

_____ flour

_____ egg whites

_____ sugar

_____ cream of tartar

_____ salt

_____ vanilla

Directions: Changing a Recipe.

Use the following list of things needed for making a cake to answer the questions on this page.

1 cup of flour
1 1/2 cups of sugar
1/4 teaspoon of salt

1 1/3 cups of egg whites
1 2/3 teaspoons of cream of tartar
1 1/4 teaspoons of vanilla

1. Fill in the amount of each thing you would need to make two cakes:

2 cups flour
3 cups sugar
1/2 tsp. salt

2 2/3 cups egg whites
3 1/3 tsp. cream of tartar
2 1/2 tsp. vanilla

2. Fill in the amount of each thing you would need to make a smaller cake that is one-half the size of the cake in the recipe.

1/2 cup flour
3/4 cup sugar
1/8 tsp. salt

2/3 cup egg whites
5/6 tsp. cream of tartar
3/4 tsp. vanilla

3. Fill the amount of each thing you would need to make 5 cakes:

5 cups flour
7 1/2 cups sugar
1 1/4 tsp. salt

6 2/3 cups egg whites
8 1/3 tsp. cups cream of tartar
6 1/4 tsp. vanilla

- LEVEL:** 4.0 - 5.9
- STANDARD:** 24.0 Demonstrate proficiency in measuring quantities and solving problems related to measurement.
- BENCHMARK:** 24.12 Convert equivalent measurements, e.g., cups to quarts.
- MATERIALS:** Chart or books; Internet; Worksheet
- PROCEDURE:** Have each student complete his or her own chart. They may work together to find the answers. Have students think of it as a Scavenger Hunt using the Internet and books.
Encourage students to keep their charts for future use.

Student: _____

Date: _____

Teacher: _____

Converting Units of Measure

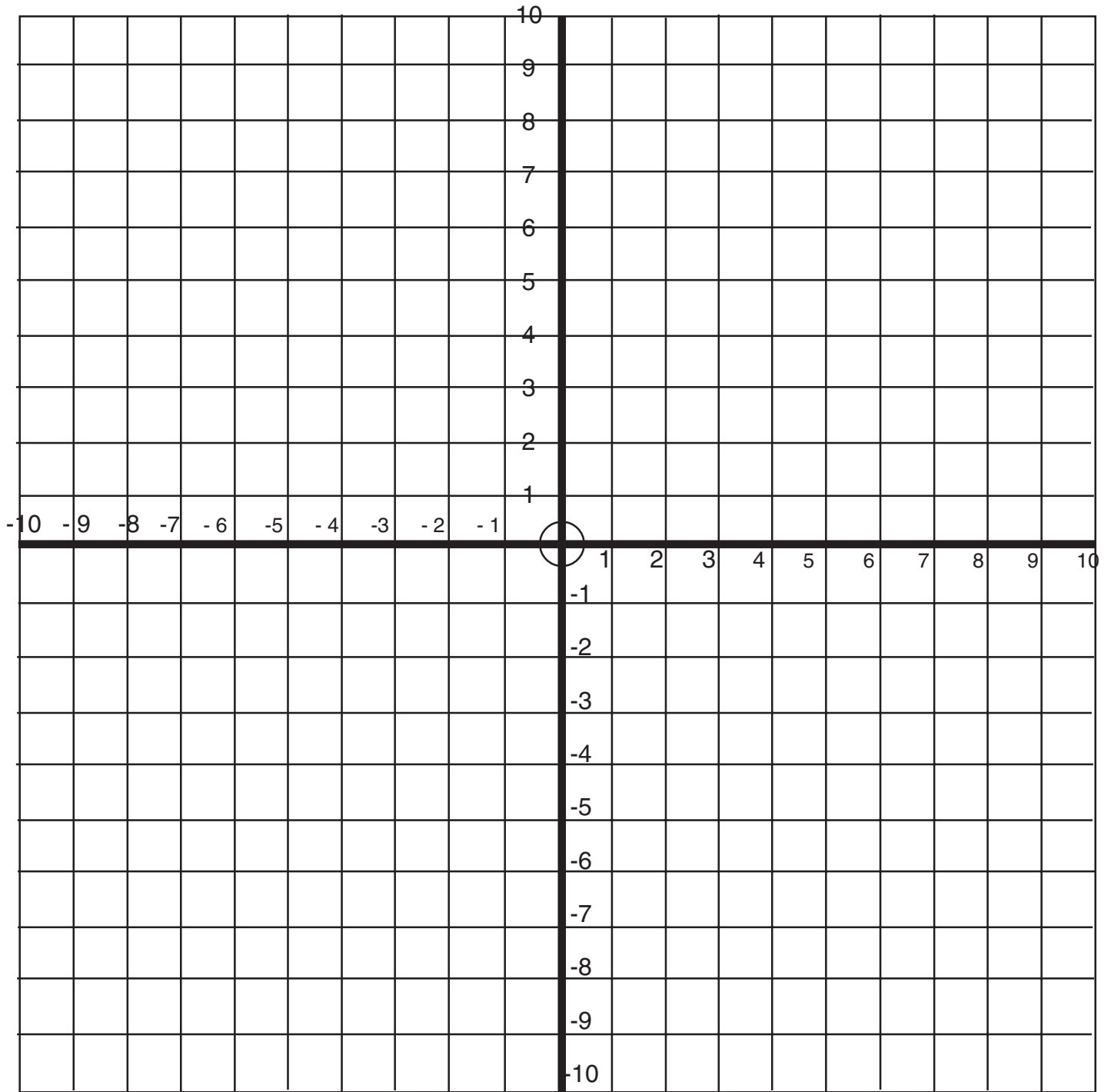
Measurement	Abbreviation	Equivalent Measurement	Abbreviation
Length			
1 foot	ft	12 inches	in
1 yard		feet	
1 mile		feet yards	
Time			
1 minute		seconds	
1 hour		minutes	
1 day		hours	
1 week		days	
1 year		days weeks	
Liquid			
1 cup		ounces	
1 pint		cups	
1 quart		cups	
1 gallon		quarts	
Weight			
1 pound		ounces	
1 ton		pounds	
Metric			
1 meter		millimeter	
1 meter		centimeter	
1 meter		decimeter	
1 meter		dekameter	
1 meter		hectometer	
1 kilometer		meter	
1 liter		milliliters	
1 gram		milligrams	
1 kilogram		grams	

Converting Units of Measure

Measurement	Abbreviation	Equivalent Measurement	Abbreviation
Length			
1 foot	ft	12 inches	in
1 yard	yd/	3 feet	ft.
1 mile	mi.	5,280 feet 1,760 yards	ft.
Time			
1 minute	min.	60 seconds	sec.
1 hour	hr.	60 minutes	min.
1 day	–	24 hours	hr.
1 week	wk.	7 days	–
1 year	yr.	365 days 52 weeks	– wk.
Liquid			
1 cup	c.	8 ounces	oz.
1 pint	pt.	2 cups	c
1 quart	qt.	4 cups	c
1 gallon	gal.	4 quarts	qt.
Weight			
1 pound	lb.	16 ounces	oz.
1 ton	T	2,000 pounds	lb.
Metric			
1 meter	m	1,000 millimeter	mL
1 meter	m	100 centimeter	cm
1 meter	m	10 decimeter	dm
1 meter	m	10 dekameter	–
1 meter	m	100 hectometer	–
1 kilometer	km	1,000 meter	m
1 liter	L	1,000 milliliters	mL
1 gram	g	1,000 milligrams	mL
1 kilogram	kg	1,000 grams	g

- LEVEL:** 4.0 - 5.9
- STANDARD:** 25.0 Demonstrate proficiency in solving problems involving algebra.
26.0 Interpret data from graphs, charts, and maps.
- BENCHMARK:** 25.01 Describe a variety of patterns and relationships through models; such as, manipulatives, tables, graphs, and rules.
- 26.01 Solve problems by generating, collecting, organizing, displaying, and analyzing data using bar graphs, circle graphs, line graphs, pictographs, and charts.
- 26.02 Interpret data in charts, tables, plots, graphs, and maps.
- MATERIALS:** Chalk board, rectangular coordinate system chart, maps, tables, rule
- PROCEDURE:** Use the Rectangle Coordinate System chart to point out that we often use only part of the system, usually the positive system. On the board draw the right angle segment demonstrating the positive x and y axes. Advise the students that we sometimes use this system with designations other than numbers, as in charts and maps. Using the appropriate example, point out longitude and latitude on a map, the two criteria of a chart, etc. Bring up in discussion other examples of charts and scales and the purposes for which they are used.

Rectangular Coordinate System Chart



Benchmark: 25.01, 26.01, 26.02

Student: _____

Date: _____

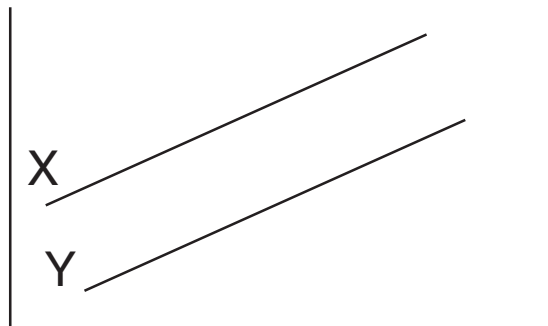
Teacher: _____

Use the graphs below to answer the questions that follow:

1.

x = cost of milk from 1995-2000
 y = cost of butter from 1995-2000

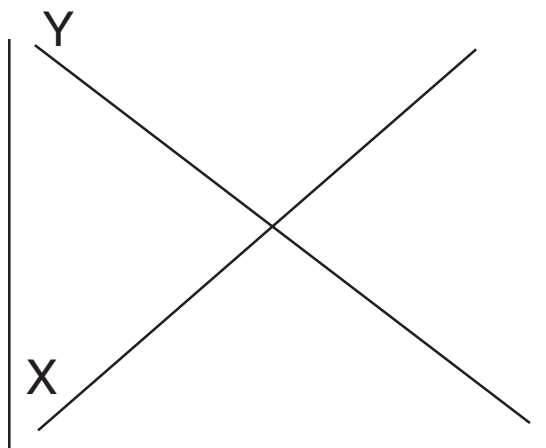
What is the relationship between $x + y$?



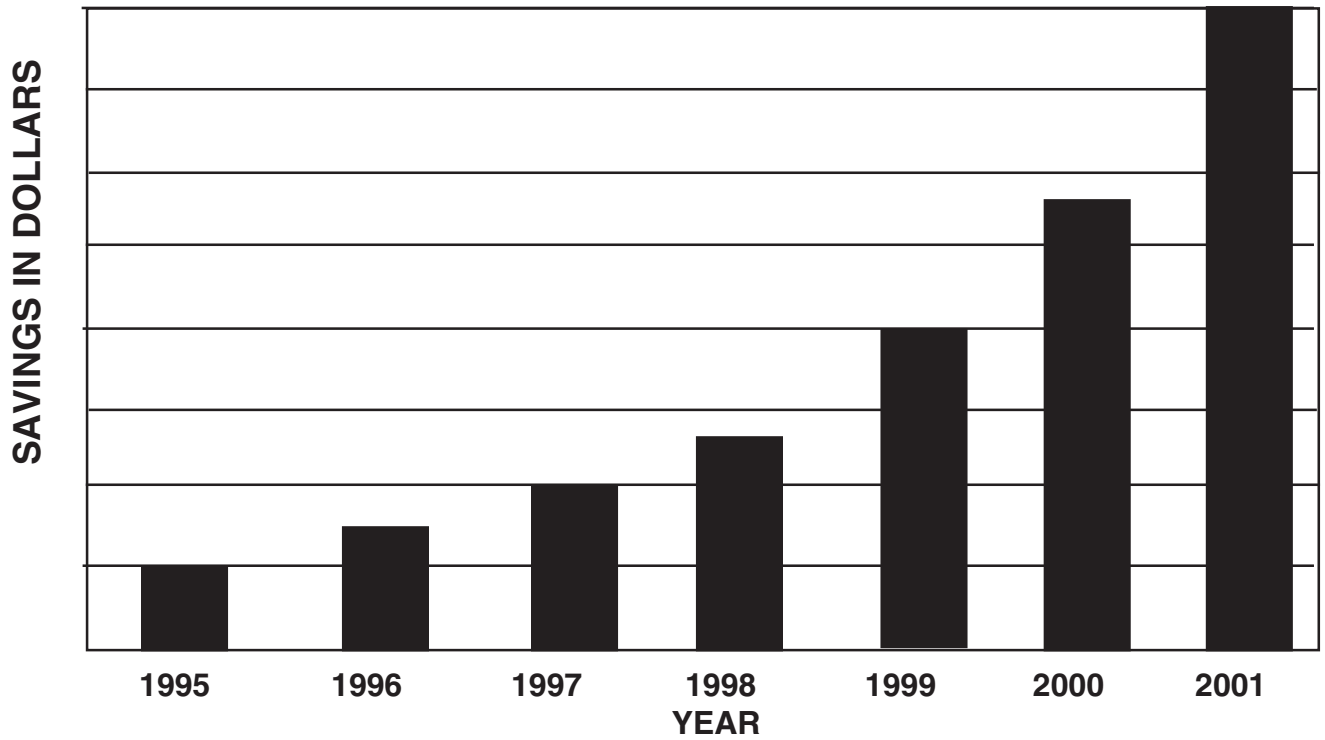
2.

x = amount paid on loan
 y = loan balance

What is the relationship between x and y ?



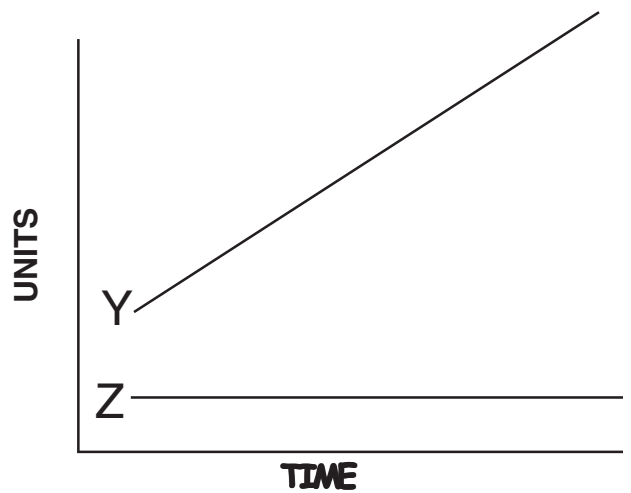
3. What pattern occurs in the chart below?



4. What is the relationship between y and z in this graph?

What happens to y? _____

What happens to z? _____



Benchmark: 25.01, 26.01, 26.02
ANSWER KEY

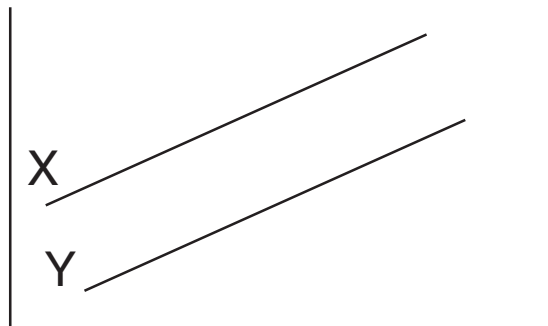
Use the graphs below to answer the questions that follow:

1.

x = cost of milk from 1995-2000
 y = cost of butter from 1995-2000

What is the relationship between $x + y$?

They are parallel lines.

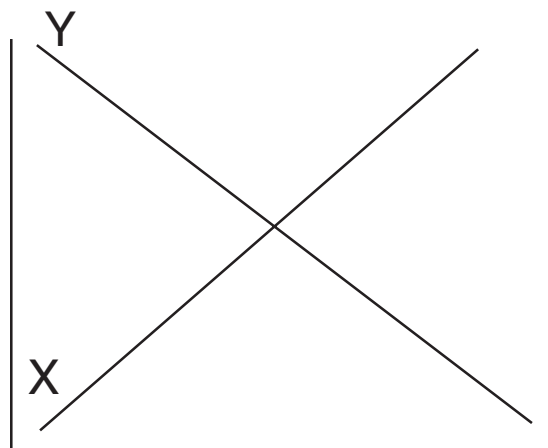


2.

x = amount paid on loan
 y = loan balance

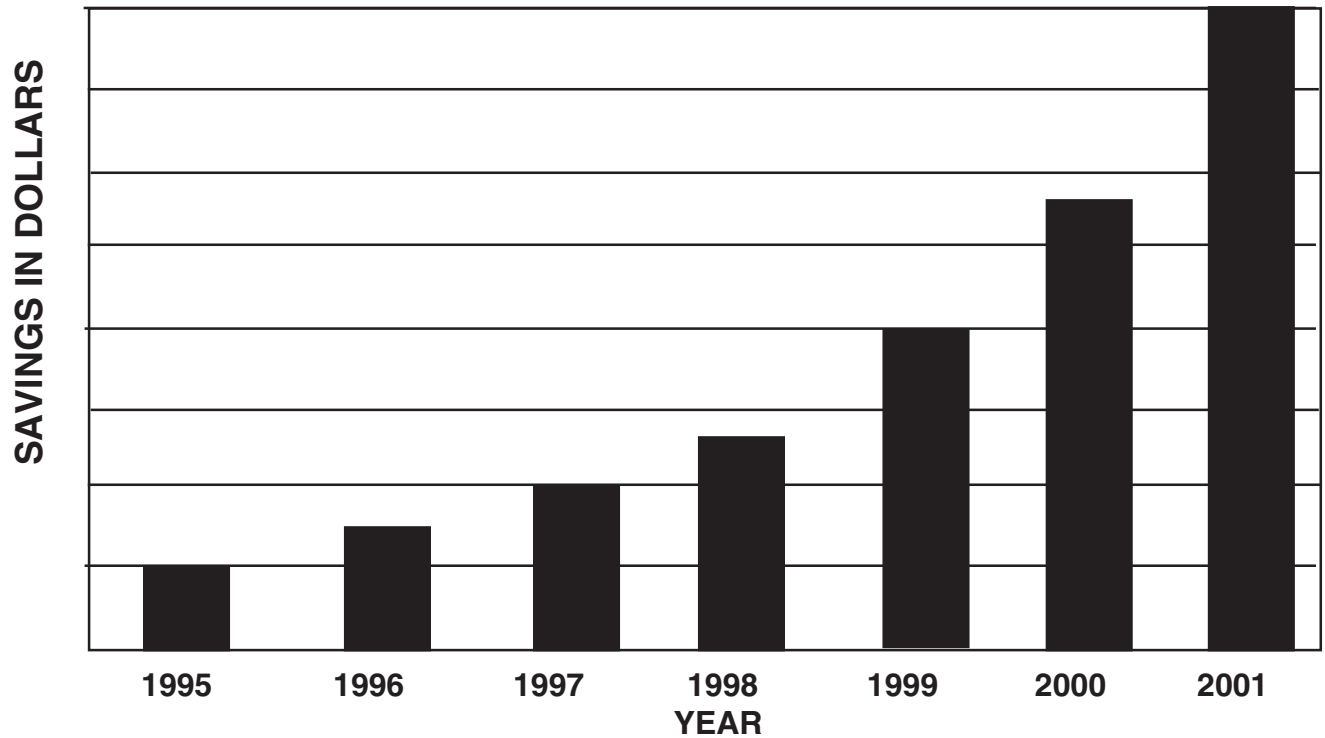
What is the relationship between x and y ?

They are intersecting lines.



3. What pattern occurs in the chart below?

Every year the amount saved increases.

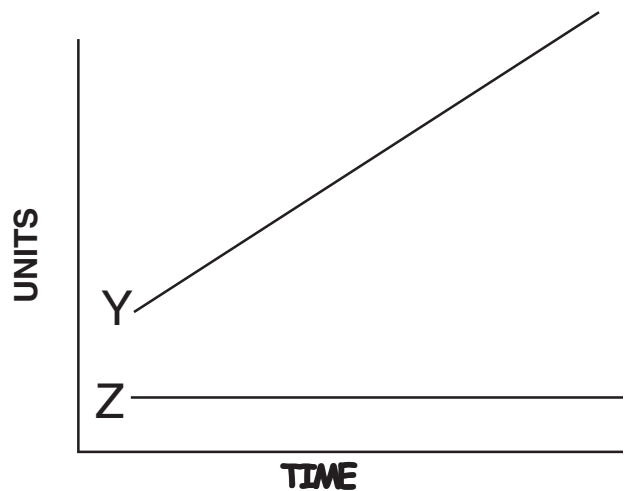


4. What is the relationship between y and z in this graph?

These lines are not parallel nor are they intersecting.

What happens to y? Y increases

What happens to z? Z does not change



LEVEL: 4.0 - 5.9

STANDARD: 25.0 Demonstrate proficiency in solving problems involving algebra.

BENCHMARK: 25.02 Translate a problem from words to a number symbol sentence, e.g., six plus one equals seven to $6 + 1 = 7$.

MATERIALS: Worksheet

PROCEDURE: Give the students a simple word problem “John has 3 cans. Mary has 4 cans. How many do they have all together. Talk about how to create a number sentence or equation to solve the problem

$$3 + 4 = x$$

Have the students make up problems and create number sentences to solve them.

Have students complete the worksheet.

Student: _____ Date: _____

Teacher: _____

Directions: Read and solve the following problems:

1. John bought a compact disc player for \$165.00 and a compact disc for \$21.00.
How much did he spend all together?
Equation _____

Answer _____
2. Maria spent \$125.00 for a new winter coat, plus \$28.00 for gloves and a scarf. How much did Maria spend in all?
Equation _____

Answer _____
3. A charity group earned \$865.00 at a garage sale on Saturday and \$520.00 on Sunday. How much more did they earn on Saturday than on Sunday?
Equation _____

Answer _____
4. Michelle bought a rocking chair on sale for \$35.00. The original price of the chair was \$115.00. How much money did Michelle save?
Equation _____

Answer _____
5. There are 3 boxes on a shelf in a sporting goods store. Each box contains 12 baseballs. All together, how many baseballs are in the boxes?
Equation _____

Answer _____
6. A school bus has 32 seats. Each seat holds 2 children. How many children can be seated on the bus?
Equation _____

Answer _____

Continued

7. Al and his friends held a two-day yard sale. The first day they made \$135.00. The second day they made \$68.00. How much money did they make all together?

Equation_____

Answer_____

8. A large supermarket received a delivery of 600 tomatoes. The tomatoes will be packaged in groups of 4. How many packages will there be?

Equation_____

Answer_____

9. A slice of apple pie contains 350 calories. If 2 people were to cut the slice in half and eat it, how many calories would each person eat?

Equation_____

Answer_____

10. Eric bought a carton of 12 eggs at the store. After arriving home, he found that 3 eggs were broken. How many eggs were unbroken?

Equation_____

Answer_____

Directions: Read and solve the following problems:

1. John bought a compact disc player for \$165.00 and a compact disc for \$21.00.
How much did he spend all together?

Equation $165 + 21 = X$

Answer $\$186.00$

2. Maria spent \$125.00 for a new winter coat, plus \$28.00 for gloves and a scarf. How much did Maria spend in all?

Equation $125 + 28 = X$

Answer $\$153.00$

3. A charity group earned \$865.00 at a garage sale on Saturday and \$520.00 on Sunday. How much more did they earn on Saturday than on Sunday?

Equation $865 - 520 = X$

Answer $\$345.00$

4. Michelle bought a rocking chair on sale for \$35.00. The original price of the chair was \$115.00. How much money did Michelle save?

Equation $115 - 35 = X$

Answer $\$80.00$

5. There are 3 boxes on a shelf in a sporting goods store. Each box contains 12 baseballs. All together, how many baseballs are in the boxes?

Equation $12 \times 3 = X$

Answer 36 baseballs

6. A school bus has 32 seats. Each seat holds 2 children. How many children can be seated on the bus?

Equation $32 \times 2 = X$

Answer 64 children

7. Al and his friends held a two-day yard sale. The first day they made \$135.00. The second day they made \$68.00. How much money did they make all together?

Equation $135 + 68 = X$

Answer $\$203.00$

8. A large supermarket received a delivery of 600 tomatoes. The tomatoes will be packaged in groups of 4. How many packages will there be?

Equation $600 \div 4 = X$

Answer 150 packages

9. A slice of apple pie contains 350 calories. If 2 people were to cut the slice in half and eat it, how many calories would each person eat?

Equation $350 \div 2 = X$

Answer 175 calories

10. Eric bought a carton of 12 eggs at the store. After arriving home, he found that 3 eggs were broken. How many eggs were unbroken?

Equation $12 - 3 = X$

Answer 9 eggs

LEVEL: 4.0 - 5.9

STANDARD: 25.0 Demonstrate proficiency in solving problems involving algebra

BENCHMARK: 25.03 Recognize simple algebraic formulas, e.g., $1 + 3 = x$.

MATERIALS: Anecdote about fear of algebra; worksheet

- PROCEDURE:**
1. Provide students with a printed anecdote describing your own or someone else's experience in learning algebra—that it is a language of mathematics, that its purpose is a shorthand way of solving problems, that (like arithmetic) it involves adding, subtracting, multiplying and dividing. Discuss any fears.
 2. On the board write **X**. Ask the students what that symbol means to them—leading them to conclude that no one knows. Conclude that, in algebra, **X** is an unknown, and that it must be given a value. Since value can change (or vary), we call it a *variable*. Ask someone to give X a value between 1 and 9.
 3. On the board write the value given and then a simple equation using **X**.
 $x = 4$ $x + 2 = 6$
 4. Translate the equation into numbers by substituting 4 for x.
 $x + 2 = 6$
 $4 + 2 = 6$
 $6 = 6$
 5. Make note of the final line of the equation and that this balance is what we seek in an algebra problem. Illustrate the equation as being like a seesaw with the equal sign as the fulcrum.
 6. Have the students develop several similar equations as a group, using the board and variables other than x.
 7. Divide students into groups of three. Give each group five equations to complete, and give them the substitutions for the value of the variable; i.e., $t = 7$.

Example:

$$\begin{aligned} \text{If } t &= 7 \\ t - 4 &= 3 \\ (7 - 4) &= 3 \\ 3 &= 3 \end{aligned}$$

Student: _____

Date: _____

Teacher: _____

Directions: Solve the following problems:

1. $\$63.72 - x = \35.21

$x = \underline{\hspace{2cm}}$

2. $b + 30 = 450$

$b = \underline{\hspace{2cm}}$

3. $y - 65 = 9$

$y = \underline{\hspace{2cm}}$

4. $\$4.95 + y = \10.00

$y = \underline{\hspace{2cm}}$

5. $x + 20 = 35$

$x = \underline{\hspace{2cm}}$

Directions: Solve the following problems:

1. $\$63.72 - x = \35.21

$x = \underline{\quad \$28.51 \quad}$

2. $b + 30 = 450$

$b = \underline{\quad 420 \quad}$

3. $y - 65 = 9$

$y = \underline{\quad 74 \quad}$

4. $\$4.95 + y = \10.00

$y = \underline{\quad \$5.05 \quad}$

5. $x + 20 = 35$

$x = \underline{\quad 15 \quad}$

- LEVEL:** 4.0 - 5.9
- STANDARD:** 25.0 Demonstrate proficiency in solving problems involving algebra.
- BENCHMARK:** 25.04 Recognize simple consumer formulas, e.g., units times price = cost.
- MATERIALS:** Formula sheet listing several simple consumer formulas, an assortment of real-life problems.
- PROCEDURE:**
1. Present a real life situation involving the cost of an order.
 2. Tell the students that we are going to solve the problem using variables and substitution and equate it to following a recipe. The “recipe” in mathematics is called a “formula” and each student is given a copy of the formula sheet.
 3. Ask students to read the formulas on the sheet (Cost; Speed; Interest, etc.) and then present a cost problem such as:
*Seven bottles of coke are needed for the party.
Each bottle costs 89 cents. How much money will be needed to purchase the soda?*
 4. Lead the students through the solution on the board beginning with writing the formula and then substituting.
 5. Ask the students, in pairs, to each develop a similar cost problem for their partner to solve by writing the formula and substituting.
 6. Repeat the procedure with problems built around the other formulas.

Student: _____

Date: _____

Teacher: _____

Simple Consumer Formulas

Which formula would you use for the problems below?

Simple Interest $i=prt$ (I=interest, p=principle, r = rate, t=time)

Distance Formula $d=rt$ (d=distance, r=rate, t=time)

Total Cost $c=nr$ (c=cost, n=number of units, r=cost per unit)

Miles per Gallon m/g (m=miles, g=gallons)

1. How much would it cost to buy 8 boxes of candy if each one cost \$5.49? _____
2. If you used 15 gallons to drive 458 miles, how many miles did you drive for each gallon of gas? _____
3. If you charge \$500 worth of clothes and accessories on your credit card which charges 15% interest, how much interest will you have to pay back after a year? _____
4. If you drive an average of 65 miles per hour, how far will you drive in an eight hour day? _____
5. If you spend \$15.29 for 4 pineapples, how much did each one cost? _____
6. If you get 25 miles to the gallon, how far can you drive with 12 gallons? _____
7. If you paid \$60 interest on a \$600 dollar credit card bill that you had for one year, what rate of interest did they charge? _____
8. If you drive 60 miles an hour, and you have to drive 420 miles, how long will it take you? _____

Student: _____

Date: _____

Teacher: _____

Simple Consumer Formulas

Which formula would you use for the problems below?

Simple Interest $i=prt$ (I=interest, p=principle, r = rate, t=time)

Distance Formula $d=rt$ (d=distance, r=rate, t=time)

Total Cost $c=nr$ (c=cost, n=number of units, r=cost per unit)

Miles per Gallon m/g (m=miles, g=gallons)

1. How much would it cost to buy 8 boxes of candy if each one cost \$5.49? Total Cost

2. If you used 15 gallons to drive 458 miles, how many miles did you drive for each gallon of gas? Miles per Gallon

3. If you charge \$500 worth of clothes and accessories on your credit card which charges 15% interest, how much interest will you have to pay back after a year? Simple Interest

4. If you drive an average of 65 miles per hour, how far will you drive in an eight hour day? Distance Formula

5. If you spend \$15.29 for 4 pineapples, how much did each one cost? Total Cost

6. If you get 25 miles to the gallon, how far can you drive with 12 gallons? Miles per Gallon

7. If you paid \$60 interest on a \$600 dollar credit card bill that you had for one year, what rate of interest did they charge? Simple Interest

8. If you drive 60 miles an hour, and you have to drive 420 miles, how long will it take you? Distance Formula

Student: _____

Date: _____

Teacher: _____

Directions to Student: Circle the correct answer.

1. Units x price = _____
A. cost
B. profit
C. salary

2. Interest = principal x interest rate x _____
A. time
B. annual percentage rate

3. Selling price - cost = _____
A. margin of profit
B. expenses

4. distance = rate x _____
A. time
B. miles / gallon
C. cost

5. miles / gallons = _____
A. miles per gallon
B. miles and gallons

Student: _____

Date: _____

Teacher: _____

Directions to Student: Circle the correct answer.

1. Units x price = **A**
A. cost
B. profit
C. salary

2. Interest = principal x interest rate x **A**
A. time
B. annual percentage rate

3. Selling price - cost = **A**
A. margin of profit
B. expenses

4. distance = rate x **A**
A. time
B. miles / gallon
C. cost

5. miles / gallons = **A**
A. miles per gallon
B. miles and gallons

- LEVEL:** 4.0 - 5.9
- STANDARD:** 26.0 Interpret data from graphs, charts, and maps.
29.0 Demonstrate proficiency in consumer math skills.
- BENCHMARK:** 26.01 Solve problems by generating, collecting, organizing, displaying, and analyzing data using bar graphs, circle graphs, line graphs, pictographs, and charts.
- 26.02 Interpret data in charts, tables, plots, graphs, and maps.
- 29.05 Interpret advertisements, labels, charts, letters, articles, price tags, or other information in selecting goods and services.
- MATERIALS:** Multiple copies of pamphlets or other publications that contain graphs. (Health departments, social service agencies, etc. often have these.) Teacher created posters illustrating line, bar, circle, and pictorial graphs and charts.
- PROCEDURE:**
1. Direct students to all look at one graph shown in a pamphlet. Ask them what they can learn from the graph? Brainstorm on how to interpret the graph.
 - a. Read its title.
 - b. Note the graph factors, (i.e., persons with cancer, year).
 2. Display the teacher-created posters, and ask which one the graph being discussed resembles (for example, *bar graph*). Label and analyze the poster.
 3. Repeat with several other pamphlets.
 4. Divide students into groups of three. Provide each group with 3 graph/chart problems to solve. Provide assistance where necessary and note that often there is more than one way to find an answer.

Benchmark: 26.01, 26.02, 29.05

Student: _____ Date: _____

Teacher: _____

1. Count how many math books you have in the classroom.
Create a chart to show how many of each book that you have.

2. Create a bar graph using the information generated in question one.

3. Use the same information to create either a line graph or a circle graph.

LEVEL: 4.0 - 5.9

STANDARD: 26.0 Interpret data from graphs, charts, and maps

BENCHMARK: 26.02 Interpret data in charts, tables, plots, graphs, and maps.

MATERIALS: Worksheet

PROCEDURE: Have students work independently or with a partner to solve the worksheets. Point out to students that they need to read carefully for details.

Student: _____

Date: _____

Teacher: _____

Newspaper Map Reading Activity

1. In what city and country is Ataturk International Airport?
2. What is the body of water north of Turkey?
3. What is the body of water south of Turkey?
4. Approximately how far is it from Istanbul to Tel Aviv in miles?
5. What is the capital of Israel?
6. What island is south of Turkey?
7. Name five countries shown on the map.
8. Where did the information come from?
9. What is the capital of Turkey?
10. If you were on a plane and someone was trying to hijack it, what would you do? Write an essay telling three possible options that you might have.

Hijacking attempt

Security guards on Israel's national carrier El Al overpowered a man who tried to take hostage a cabin attendant on Flight 581 from Tel Aviv to Istanbul.

0 150 mi
0 150 km

SOURCES: Associated Press; ESRI AP

Newspaper Map Reading Activity

1. In what city and country is Ataturk International Airport?
Istanbul, Turkey
2. What is the body of water north of Turkey? The Black Sea
3. What is the body of water south of Turkey? The Mediterranean Sea
4. Approximately how far is it from Istanbul to Tel Aviv in miles? 750 miles
5. What is the capital of Israel?
Jerusalem
6. What island is south of Turkey? Cyprus
7. Name five countries shown on the map.
Turkey, Egypt, Syria, Lebanon and Jordan
8. Where did the information come from?
AP and ESRI
9. What is the capital of Turkey? Ankara
10. If you were on a plane and someone was trying to hijack it, what would you do? Write an essay telling three possible options that you might have.



Student: _____

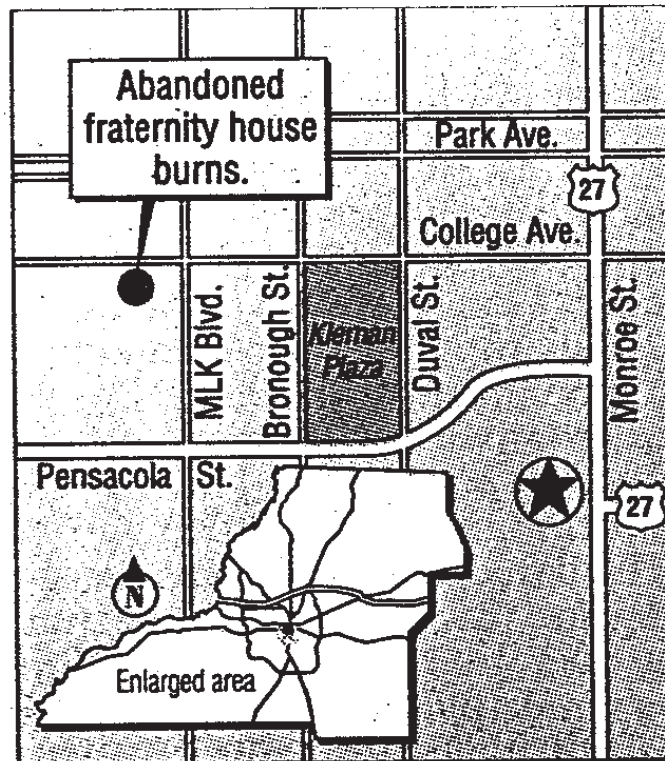
Date: _____

Teacher: _____

Newspaper Map Activity

Tallahassee Democrat
December 4, 2002 1B

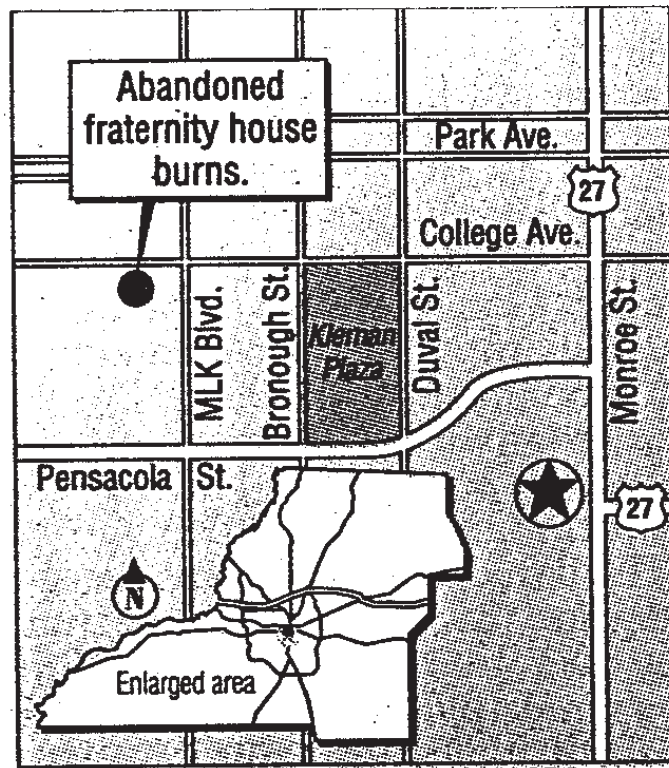
1. On what street was the fraternity house that burned?
2. What direction is the house from the capitol?
3. Is Park Avenue north, south, east, or west of the house?
4. Is Duval Street north, south, east, or west of the house?
5. What streets border Kleman Plaza?



Newspaper Map Activity

Tallahassee Democrat
December 4, 2002 1B

1. On what street was the fraternity house that burned? College Avenue
2. What direction is the house from the capitol? North West
3. Is Park Avenue north, south, east, or west of the house? North
4. Is Duval Street north, south, east, or west of the house? East
5. What streets border Kleman Plaza? Pensacola Street, Bronough Street, College Avenue and Monroe Street.



Student: _____

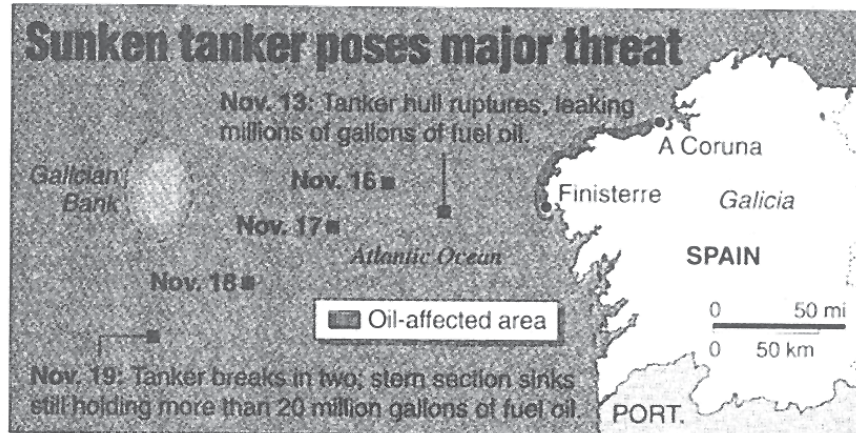
Date: _____

Teacher: _____

Newspaper Map Activity

Tallahassee Democrat 1A

November 20, 2002



SOURCES: Associated Press; Portuguese Navy Hydrographic Institute; World Wildlife Fund

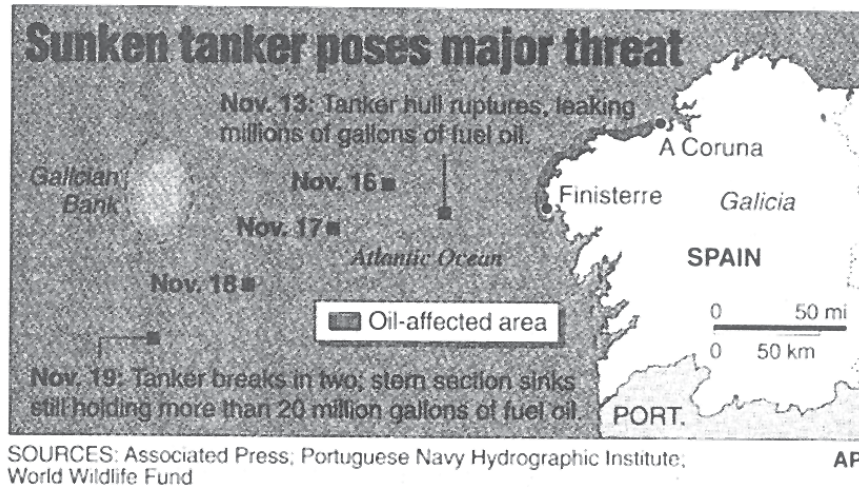
AP

1. In what body of water did the oil tanker sink?
2. What country is affected by the oil leak?
3. The oil leak runs between which two cities?
4. How far apart are the cities?
5. When did the hull rupture?
6. When did the tanker break in two?
7. How much oil was in the boat when it sank?
8. What country is south of Spain?
9. Who was this information obtained from?
10. Which is longer, 50 miles or 50 kilometers?

Newspaper Map Activity

Tallahassee Democrat 1A

November 20, 2002



1. In what body of water did the oil tanker sink? the Atlantic Ocean
2. What country is affected by the oil leak? Spain
3. The oil leak runs between which two cities? A Coruna and Finisterre
4. How far apart are the cities? Approx. 50 miles
5. When did the hull rupture? November 13
6. When did the tanker break in two? November 13
7. How much oil was in the boat when it sank? 20 million gallons
8. What country is south of Spain? Portugal
9. Who was this information obtained from? Associated Press, Portuguese Navy Hydrographic Inst., and the World Wildlife Fund
10. Which is longer, 50 miles or 50 kilometers? 50 miles

Student: _____

Date: _____

Teacher: _____

SEASON STATISTICS FOR FLORIDA STATE'S TOP RECEIVERS								
Name	No.	Drops	Yards	Avg.	YPG	YAC	TD	KB
Anquan Boldin	51	6	841	16.5	76.5	329	10	26
Talman Gardner	34	5	557	16.4	50.6	73	8	13
Robert Morgan	16	9	160	10.0	14.5	15	1	6
Craphonso Thorpe	13	5	309	23.8	28.1	N/A	3	4
P.K. Sam	13	4	162	12.5	18.0	42	0	3

YAC: Yards After the Catch; **KB:** Knockdown Blocks

Source: Tallahassee Democrat , Section 1C, November 20, 2002

Newspaper Chart Activity

1. Who are these statistics for?
2. What number is Robert Morgan?
3. How many drops did P.K. Sam make?
4. Who made the most drops?
5. Who made the most yards?
6. How many more yards did the highest person make than the lowest?
7. Who made the most touchdowns?
8. What was the average number of touchdowns by these five players?
9. What was the mean number of knockdown blocks?
The median?
10. How many yards after the catch did these players make?
How many made more than the average?

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P.K. Sam	13	4	162	12.5	18.0	42	0	3

YAC: Yards After the Catch; **KB:** Knockdown Blocks

Source: Tallahassee Democrat , Section 1C, November 20, 2002

Newspaper Chart Activity

1. Who are these statistics for? FSU's top receivers
2. What number is Robert Morgan? 16
3. How many drops did P.K. Sam make? 4
4. Who made the most drops? Robert Morgan
5. Who made the most yards? Anquan Boldin
6. How many more yards did the highest person make than the lowest? 681
7. Who made the most touchdowns? Anquan Boldin
8. What was the average number of touchdowns by these five players? 4.4
9. What was the mean number of knockdown blocks? 10.4
The median? 6
10. How many yards after the catch did these players make? 459
How many made more than the average? Average = 91.8 So, one person made more YAC than the average.

Student: _____

Date: _____

Teacher: _____

Directions: Solve the following problems refer to the following table:

Median Household Income Selected States		
State	1990	2000
California	\$35,798	\$46,499
Florida	\$27,483	\$37,346
Illinois	\$32,252	\$45,606
Massachusetts	\$36,952	\$49,505
Texas	\$27,016	\$39,120

1. Which state had the lowest median income in 1990?
 - a. California
 - b. Florida
 - c. Illinois
 - d. Massachusetts
 - e. Texas

2. Which state's median income increased by the largest amount from 1990 to 2000?
 - a. California
 - b. Florida
 - c. Illinois
 - d. Massachusetts
 - e. Texas

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Median Household Income Selected States		
State	1990	2000
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Illinois	\$32,252	\$45,606
Massachusetts	\$36,952	\$49,505
Texas	\$27,016	\$39,120

1. Which state had the lowest median income in 1990? ANSWER: e (Texas)
 - a. California
 - b. Florida
 - c. Illinois
 - d. Massachusetts
 - e. Texas

2. Which state's median income increased by the largest amount from 1990 to 2000? ANSWER: c (Illinois)
 - a. California
 - b. Florida
 - c. Illinois
 - d. Massachusetts
 - e. Texas

- LEVEL:** 4.0 - 5.9
- STANDARD:** 26.0 Interpret data from graphs, charts, and maps.
- BENCHMARK:** 26.02 Interpret data in charts, tables, plots, graphs, and maps.
- MATERIALS:** Textbooks showing charts, tables, plots, graphs, and maps. Set of questions with an indication of where information requested can be found, giving page number.
- PROCEDURE:**
1. Distribute sheet of questions titled “MATHEMATICAL BUREAU OF INVESTIGATION (MBI).” Questions might read like this:

Page 31 of Number Power 5. What is the first year covered by the chart?

Page 16 of Graph Reading Skills. How many cities are included in the graph?

Assist students in finding the first items on the worksheet.
 2. In groups of three, the students complete the worksheet.
 3. Going back to the same graphs, ask the group to answer interpretive questions.
Example:
In Graph No. 1, which region of the country has the most population?

Make the point that we don’t always need exact numbers; sometimes we can just estimate the answer by the configuration of the graph.

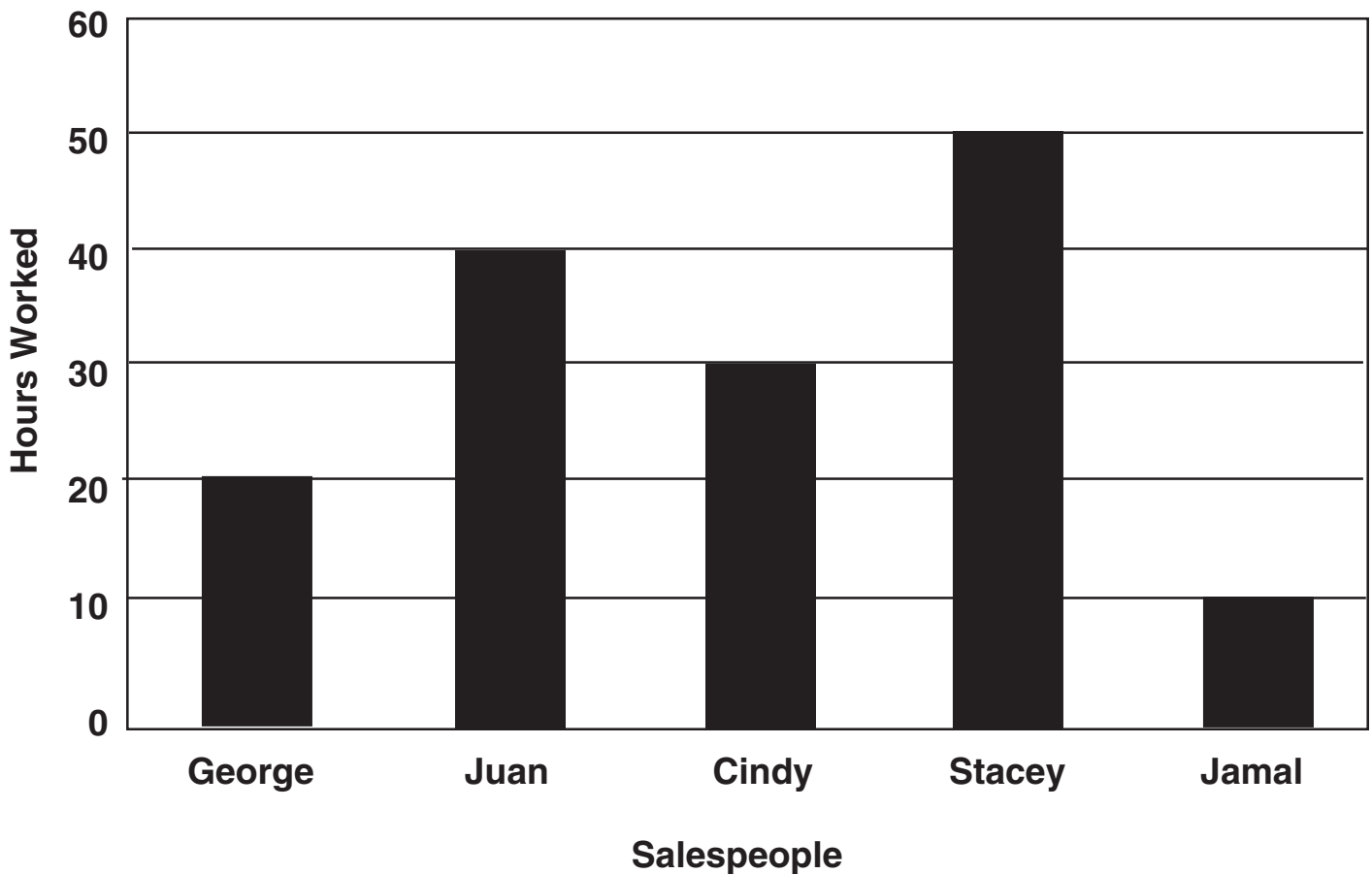
Student: _____

Date: _____

Teacher: _____

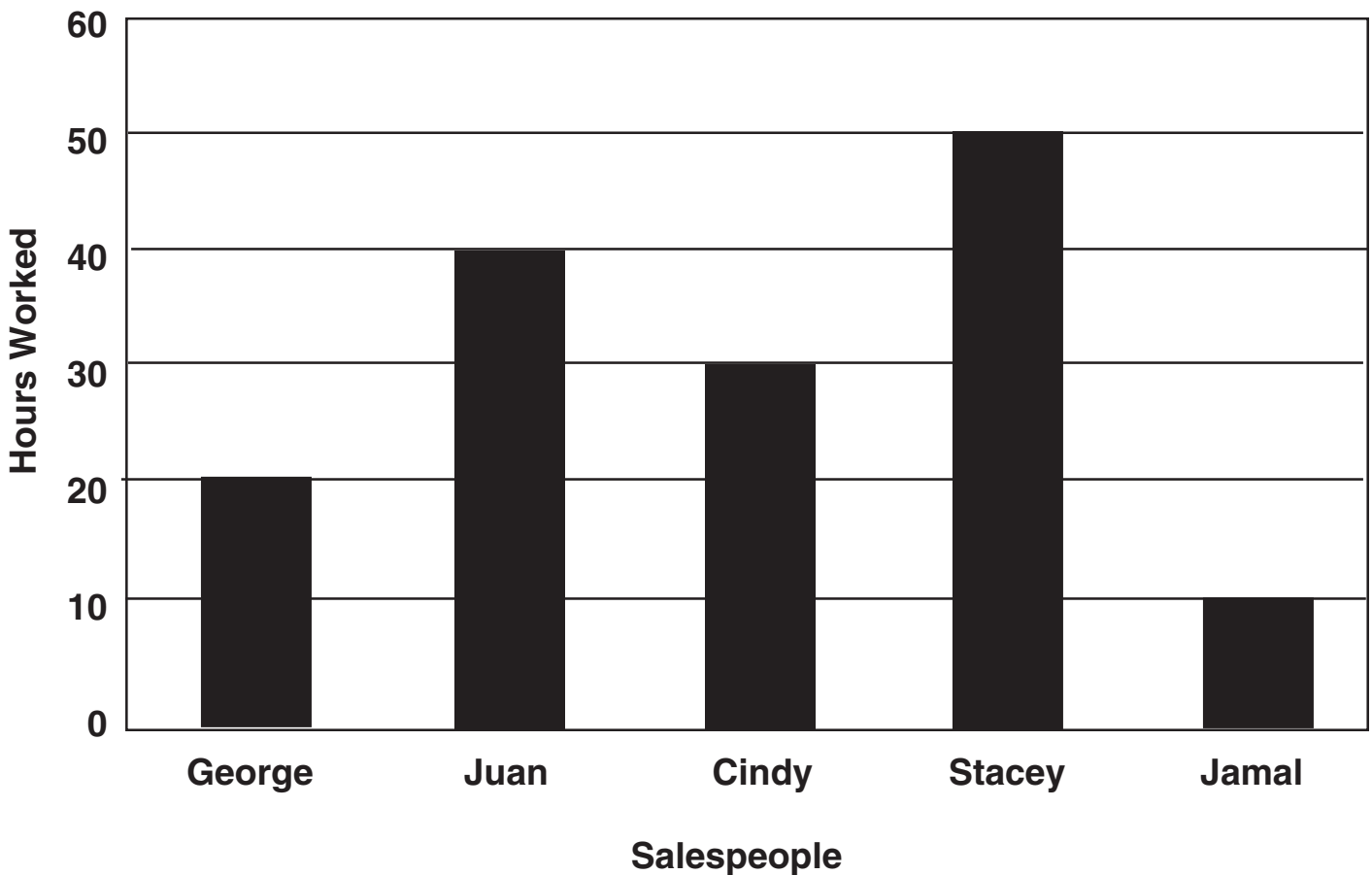
Use the bar graph below to answer the following questions:

1. Five salespeople in a department store worked different hours in one week.
 - a. Who worked the most hours? _____
 - b. Who worked the fewest hours? _____
 - c. How many hours did Juan work? _____
 - d. How many hours did all five salespeople work? _____



Use the bar graph below to answer the following questions:

1. Five salespeople in a department store worked different hours in one week.
 - a. Who worked the most hours? Stacey
 - b. Who worked the fewest hours? Jamal
 - c. How many hours did Juan work? 40 hours
 - d. How many hours did all five salespeople work? 150 hours

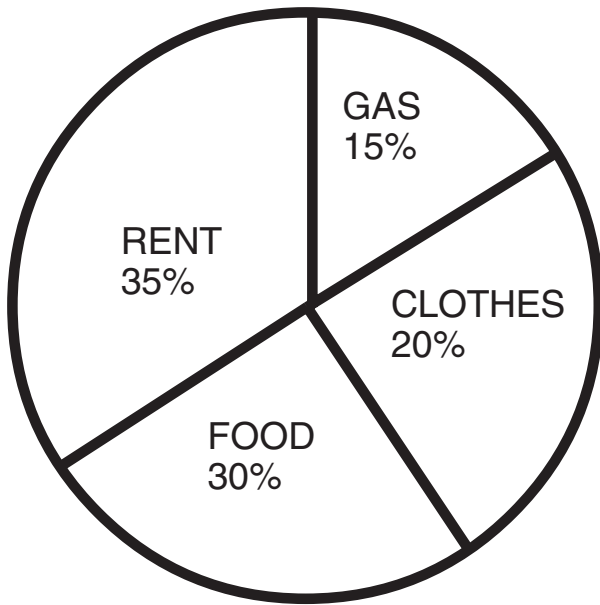


Student: _____

Date: _____

Teacher: _____

Antoine's monthly budget is shown in the circle graph below:



How much does Antoine spend for

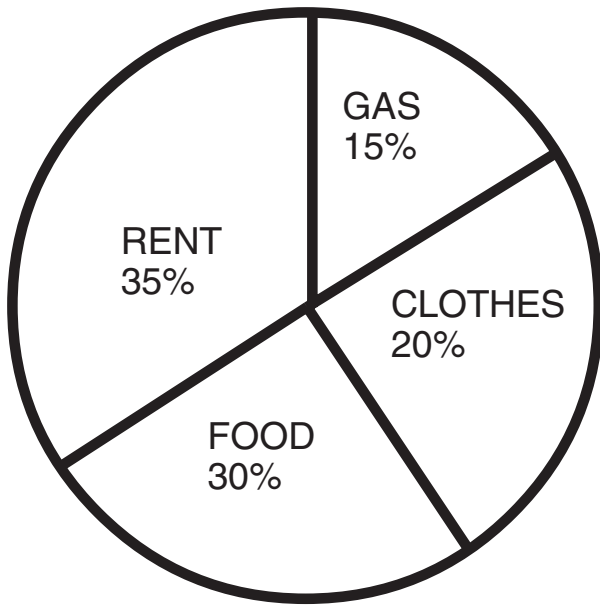
- a. food _____
- b. rent _____
- c. clothes _____
- d. gas _____
- e. total budget _____

Student: _____

Date: _____

Teacher: _____

Antoine's monthly budget is shown in the circle graph below:



How much does Antoine spend for

- a. food _____ 30%
- b. rent _____ 35%
- c. clothes _____ 20%
- d. gas _____ 15%
- e. total budget _____ 100%

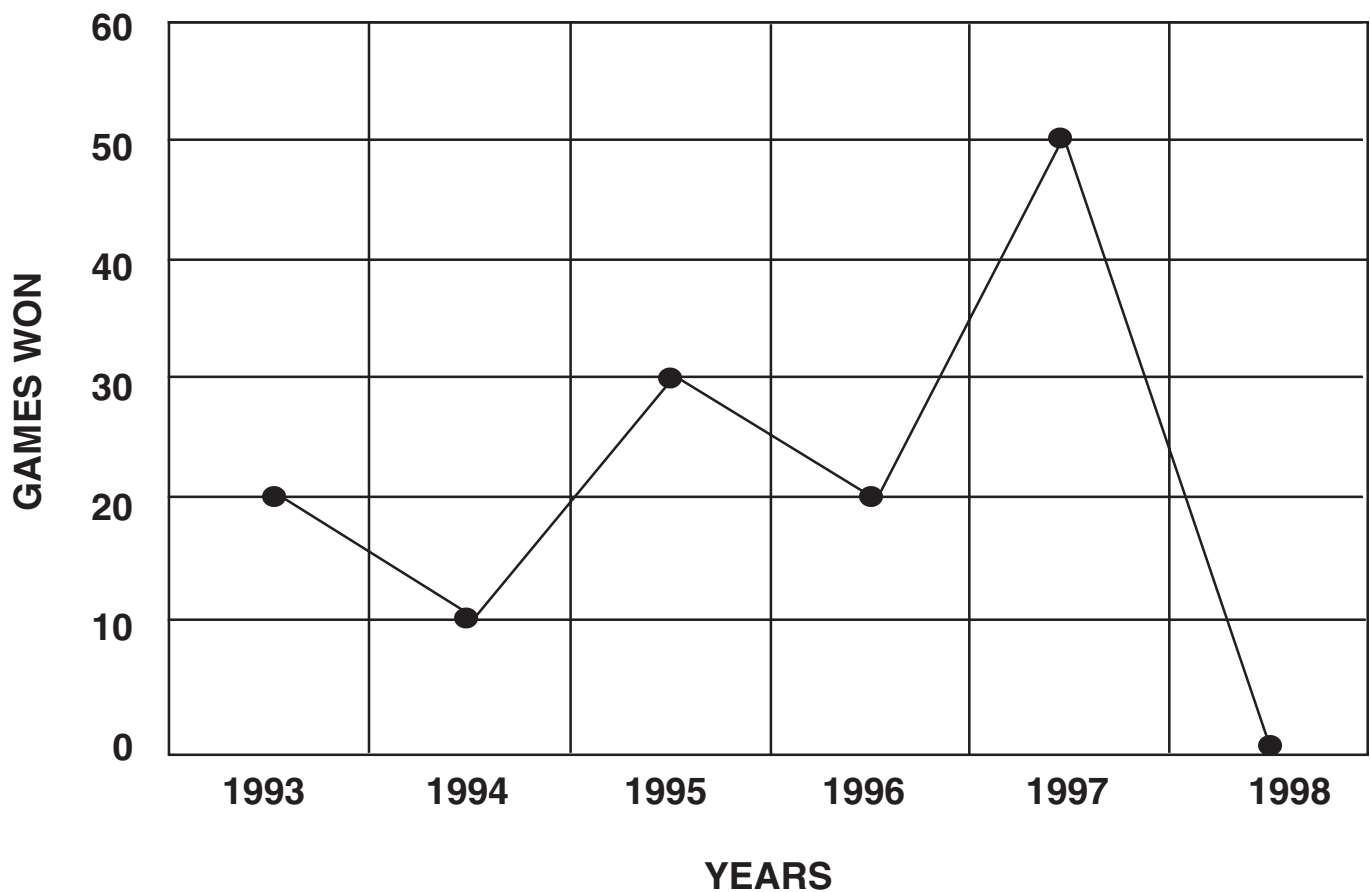
Student: _____

Date: _____

Teacher: _____

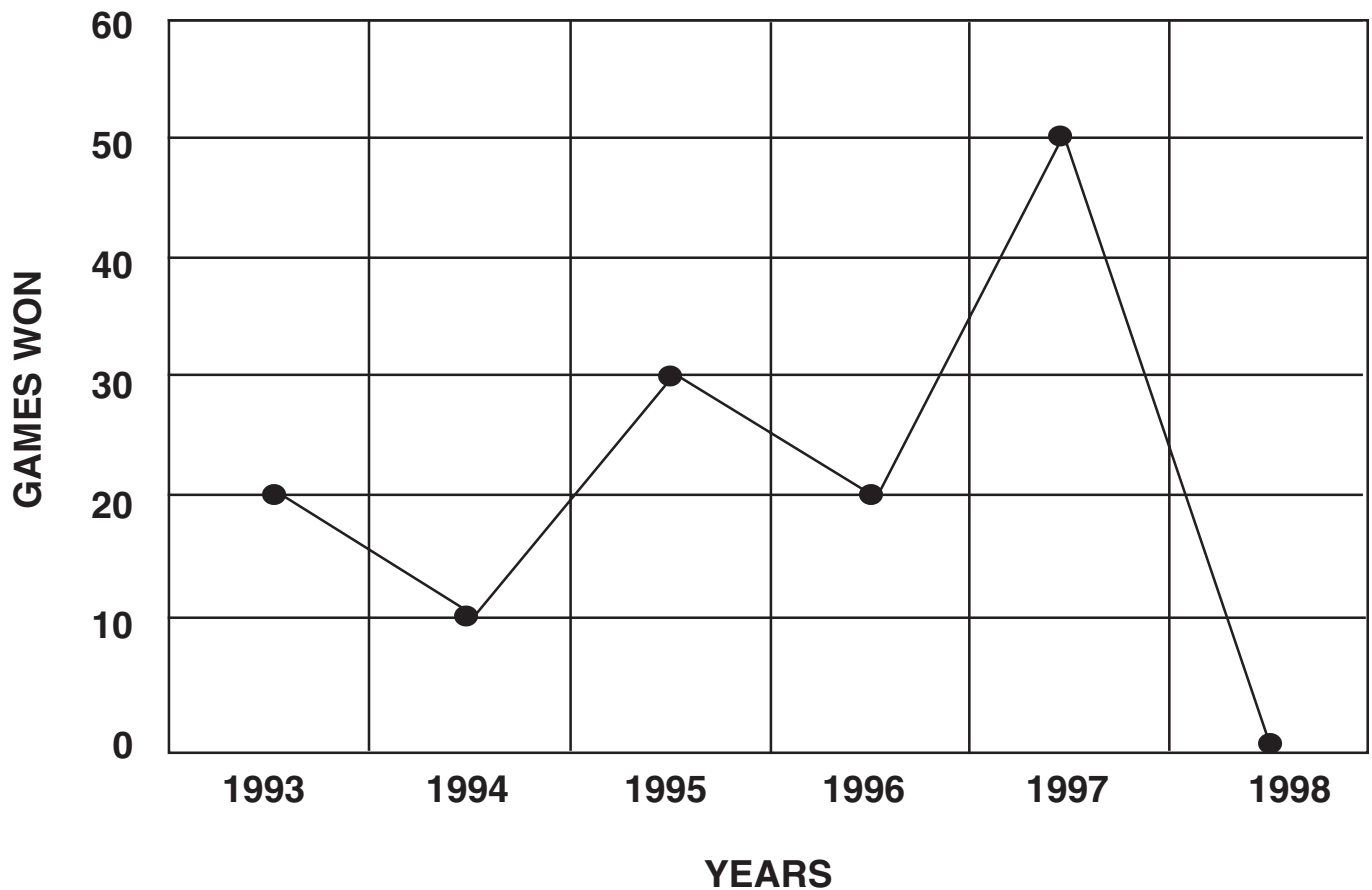
The line graph below shows the number of games won by a baseball team in a five-year period. Answer the following questions:

- How many games did the team win in 1994? _____
- How many games did the team win in 1996? _____
- In what year did the team win the most games? _____
- In what year did the team win fewer than 10 games? _____
- How many games did the team win in 1997 and 1998? _____



The line graph below shows the number of games won by a baseball team in a five-year period. Answer the following questions:

- a. How many games did the team win in 1994? 10
- b. How many games did the team win in 1996? 20
- c. In what year did the team win the most games? 1997
- d. In what year did the team win fewer than 10 games? 1998
- e. How many games did the team win in 1997 and 1998? 51 or 52



Student: _____

Date: _____

Teacher: _____

Answer the following questions using the graph below:**Key:** ▲ = 5 workers

- a. How many workers does the Easy Grocery Store have? _____
- b. How many workers does Mom and Dad's Food Stop and Joe's Food Mart have together? _____
- c. How many more workers does Big T Supermarket have than the XYZ Food Chain? _____

GROCERY STORES	NUMBER OF WORKERS
Easy Grocery Store	▲
Big T Supermarket	▲ ▲ ▲
Mom and Dad's Food Stop	▲
XYZ Food Chain	▲
Joe's Food Mart	▲ ▲ ▲

Student: _____

Date: _____

Teacher: _____

Answer the following questions using the graph below:**Key:** ▲ = 5 workers

- a. How many workers does the Easy Grocery Store have? _____ 5 _____
- b. How many workers does Mom and Dad's Food Stop and Joe's Food Mart have together? _____ 20 _____
- c. How many more workers does Big T Supermarket have than the XYZ Food Chain? _____ 10 _____

GROCERY STORES	NUMBER OF WORKERS
Easy Grocery Store	▲
Big T Supermarket	▲ ▲ ▲
Mom and Dad's Food Stop	▲
XYZ Food Chain	▲
Joe's Food Mart	▲ ▲ ▲

Student: _____ Date: _____

Teacher: _____

Use the chart below to fill in the blanks:**Nutrition Chart for Beverages**

Beverage	Size	Calories	Fat (grams)
Milk	8 oz.	150	8
Orange Juice	8 oz.	120	0
Water	8 oz.	0	0
Soft Drink	8 oz.	100	0
Chocolate Milk	8 oz.	225	8.5

- a. Which beverage has the most calories? _____
- b. Which beverage has the least amount of fat? _____
- c. Which beverage has the most calories and the most fat? _____
- d. Which beverage has no calories and no fat? _____

Student: _____

Date: _____

Teacher: _____

Use the chart below to fill in the blanks:**Nutrition Chart for Beverages**

Beverage	Size	Calories	Fat (grams)
Milk	8 oz.	150	8
Orange Juice	8 oz.	120	0
Water	8 oz.	0	0
Soft Drink	8 oz.	100	0
Chocolate Milk	8 oz.	225	8.5

- a. Which beverage has the most calories? chocolate milk
- b. Which beverage has the least amount of fat? water
- c. Which beverage has the most calories and the most fat? chocolate milk
- d. Which beverage has no calories and no fat? water

LEVEL: 4.0 - 5.9

STANDARD: 26.0 Interpret data from graphs, charts, and maps.

BENCHMARK: 26.03 Understand and find averages (means).

MATERIALS: Calculators, formula sheet, 3 x 5 cards or papers with problems requiring the finding of averages.

PROCEDURE:

1. Ask two students their ages and write them on the board next to the students' names. Add your own age and name to the list. Discuss what the average age might be—the lowest? The highest? A number in between? Allow brainstorming to lead to the procedure of adding and dividing. Carry out the procedure on the board.
2. Offer two or three other classroom examples: grades, height, daily attendance. Use differing numbers of items.
3. Show students how this procedure is symbolically represented in a formula:

$$\frac{X + X + X \dots}{n}$$

4. Have the students add that formula to their own formula sheet or locate it on a printed formula list. Add to that formula the statement: *Another word for **average** is **mean***
5. Divide students into groups of three. Write the following questions on the board for each group to solve:
 - a. What is the average age of your group?
 - b. What is the average number of people in the households of your group?
 - c. What is the average amount of money the people of your group spend in a week?
 - d. Select a one-word name for your group.
 - e. Create a chart or graph showing group results.
6. Challenge each group to solve 3 pre-written average problems and to create one for the other groups to solve.
7. As a group, solve the created problems.

Student: _____

Date: _____

Teacher: _____

Directions: Find the mean (average) in each set of data below.

1. Distance from home to school among students: 2.8 miles, 4.8 miles, 8 miles, 3 miles, 6 miles, 2.5 miles, 3.4 miles.

Equation _____

Answer _____

2. Weekly grocery bills: \$90, \$120, \$48, \$55, \$37.

Equation _____

Answer _____

3. Tips earned: \$35, \$48, \$22, \$18, \$25, \$32, \$44.

Equation _____

Answer _____

4. Gwen completed five speed tests in typing class. Her times, in minutes, were 2, 3, 2, 5 and 4. Which is the best estimate of her average (mean) time?

a. 2

c. 5

b. 3

d. 6

5. On the math test, Jean and her friends got the following scores: 65, 78, 63, 78, 83, 42, 53. About what was their average (mean) score?

a. 42

c. 66

b. 51

d. 81

LEVEL: 4.0 - 5.9

STANDARD: 26.0 Interpret data from graphs, charts, and maps.

BENCHMARK: 26.04 Locate a point on a highway map.

MATERIALS: Local maps, Florida map, U.S. map, World map; Worksheet

PROCEDURE: Have students look at the maps and try to find places of interest to them.
Have students find five cities in Florida, five states in the United States, five countries in Africa, etc.
Keep maps posted on the wall and refer to them often.
Have students complete the following worksheet.

Student: _____

Date: _____

Teacher: _____



1. Find Tallahassee.
2. Is Miami north or south of Orlando?
3. Is Jacksonville east or west of Pensacola?
4. Put these in order from north to south – Tampa, Daytona Beach, Naples.
5. Which coast is St. Augustine on?

Benchmark: 26.04
ANSWER KEY



1. Find Tallahassee.
2. Is Miami north or south of Orlando? South
3. Is Jacksonville east or west of Pensacola? East
4. Put these in order from north to south – Tampa, Daytona Beach, Naples.
Daytona Beach, Tampa, Naples
5. Which coast is St. Augustine on? East Coast

Benchmark: 27.01, 27.05, 27.09

- LEVEL:** 4.0 - 5.9
- STANDARD:** 27.0 Calculate differences to solve problems encountered in daily living.
- BENCHMARK:** 27.01 Calculate reported differences, e.g., minutes spent working on two jobs.
27.05 Use hourly and daily wage rates to calculate the difference in earnings.
27.09 Determine daily earnings based on hourly rate and number of hours worked.
- MATERIALS:** Want ads listing hourly wages cut from the newspapers and glued onto 3x5 cards, calculators.
- PROCEDURE:**
1. Annotate each card with an alternate weekly wage amount. (This amount need not be equal to the hourly wage total.)
 2. Distribute the cards to the students, or allow each student to pick one. Allow a discussion period of the hourly wage amounts, the types of jobs, etc.
 3. Direct the students to decide which wage they would accept, hourly or weekly, on their selected job offer based upon the supposition that they would work 20 hours a week. They indicate their choice with a 20 plus an H or a W at the bottom of the card.
 4. Allow the students to work with one another devising a method for comparison. Allow the use of calculators. (Students should come to the conclusion that the hourly wage is to be multiplied and the product compared with the weekly wage.)
 5. Direct the students to then calculate the numbers for a work week of 40 hours and annotate their choice by a 40 followed by an H or a W.
 6. Discuss any changes of choice and the reasons for the change.

Student: _____

Date: _____

Teacher: _____

1. Maria works at the hospital during the day, Monday through Thursday. She works from 7:00 a.m. until 3:00 p.m. After work she picks up her daughter and two friends from school at 4:00. She baby-sits for her daughter's two friends until their parents get home at 6:30. She also baby sits for them all day on Saturdays from 10:00 a.m. until 7:30 p.m. Does she spend more time working at the hospital or babysitting each week? How much more?

2. Emily works at a veterinarian's office Monday through Friday from 2:00 p.m. until 7:30 p.m. She also cares for a disabled woman in the mornings from 9:30 until noon every day. Which job does she spend more time on? How much more time?

3. Jose works as a lawyer. He has to keep track of how much time he works with each client. He worked with Mr. Taylor on Monday from 10:00 a.m. to 11:30 a.m., on Tuesday from 1:00 p.m. to 3:30 p.m. and on Wednesday from 11:00 a.m. until 2:30 p.m. He also worked with Ms. Sanchez on Monday from 8:30 a.m. to 9:45 a.m., on Tuesday from 10:00 a.m. to 12:30 p.m., and on Wednesday from 8:00 a.m. until 10:30 a.m. How much time did he spend with each. How much more or less did he spend with Mr. Taylor?

1. Maria works at the hospital during the day, Monday through Thursday. She works from 7:00 a.m. until 3:00 p.m. After work she picks up her daughter and two friends from school at 4:00. She baby-sits for her daughter's two friends until their parents get home at 6:30. She also baby sits for them all day on Saturdays from 10:00 a.m. until 7:30 p.m. Does she spend more time working at the hospital or baby-sitting each week? How much more?

ANSWER: Maria spends more time working. She works at the hospital for 12.5 more hours than she spends baby-sitting.

2. Emily works at a veterinarian's office Monday through Friday from 2:00 p.m. until 7:30 p.m. She also cares for a disabled woman in the mornings from 9:30 until noon every day. Which job does she spend more time on? How much more time?

ANSWER: Emily spends more time at the vet's office. She spends 10 more hours at the vet's office than she does caring for the woman.

3. Jose works as a lawyer. He has to keep track of how much time he works with each client. He worked with Mr. Taylor on Monday from 10:00 a.m. to 11:30 a.m., on Tuesday from 1:00 p.m. to 3:30 p.m. and on Wednesday from 11:00 a.m. until 2:30 p.m. He also worked with Ms. Sanchez on Monday from 8:30 a.m. to 9:45 a.m., on Tuesday from 10:00 a.m. to 12:30 p.m., and on Wednesday from 8:00 a.m. until 10:30 a.m. How much time did he spend with each. How much more or less did he spend with Mr. Taylor?

ANSWER: Jose spent 7 1/2 hours with Mr. Taylor, and he spent 6 1/4 hours with Ms. Sanchez. Jose spent more time with Mr. Taylor.

LEVEL: 4.0 - 5.9

STANDARD: 27.0 Calculate differences to solve problems encountered in daily living

BENCHMARK: 27.02 Calculate the difference between two hourly wages.

MATERIALS: Calculators; Worksheet

PROCEDURE:

1. Ask working students or those who have worked to provide their hourly wage amount. Write names and amounts on the board. (If inadequate data appear, ask students what hourly wage they would like to earn.)
2. Review the clue to operation given by the word *difference* (subtraction).
3. Select two names and allow the class to estimate the difference between the amounts.
4. Compute the difference by hand or with a calculator.
5. Present two or three real-life problems involving finding the difference in hourly wage.

Student: _____

Date: _____

Teacher: _____

1. Who was paid the most per hour?
2. If that person works 10 hours a week, and the person with the next lower paying job works 40 hours per week, who makes the most each week?
3. How much more does the highest paying job pay than the next highest paying job?
4. How many hours a week would the third highest paid person have to work in order to make \$100 a week?
5. How much would the last person make if s/he worked thirty hours a week?

- LEVEL:** 4.0 - 5.9
- STANDARD:** 27.0 Calculate differences to solve problems encountered in daily living.
- BENCHMARK:** 27.03 Determine the net cost of groceries after deducting the value of coupons.
- MATERIALS:** Simulated or real grocery store ad, grocery coupons applicable to items in the ad.
- PROCEDURE:**
1. Students determine the regular cost of a grocery item from the ad. Locate the appropriate coupon and calculate the net cost.
 2. Discuss pros and cons of using coupons:
 - Dollar savings
 - Need to organize
 - Delay at checkout
 - Purchase of non-needed items
 3. Over the course of a week, ask students to collect and use coupons, bringing in receipts indicating savings.

Student: _____

Date: _____

Teacher: _____

Directions: Solve the following problems using the value of the coupons:

Value of the coupon

1 loaf of bread	\$1.39	.....	\$.25 off
1 pound margarine	\$.89	.....	\$.50 off
4 cans soup	\$.95(each)	.....	\$.75 off when you buy 3 cans
1 apple pie	\$1.35	.....	\$.30 off

1. How much is the total projected cost?

2. How much is the total projected coupon savings?

Directions: Solve the following problems using the value of the coupons:

	Value of the coupon
1 loaf of bread \$1.39	..... \$.25 off
1 pound margarine \$.89	..... \$.50 off
4 cans soup \$.95(each)	..... \$.75 off when you buy 3 cans
1 apple pie \$1.35	..... \$.30 off

1. How much is the total projected cost?

ANSWER: \$5.63

2. How much is the total projected coupon savings?

ANSWER: \$1.80

Student: _____

Date: _____

Teacher: _____

Directions: Solve the following problems using the value of the coupons:

1. If you purchase a loaf of bread for \$1.25 and use a 20 cents off coupon, how much will you pay for the loaf of bread?
2. If you purchase 6 cans of kidney beans for \$.72 each and have one coupon that says 25 cents off the purchase of 2, how much will you pay for the 6 cans?
3. If you buy meat for \$5.49, oranges for \$2.49, lettuce for \$1.99, 3 cans of peas for \$.65 each, and a gallon of milk for \$2.49, how much will it cost if you have a coupon for \$.75 off a gallon of milk, \$1.25 off the price of oranges?
4. If you purchase 1 gallon of ice cream for \$4.75 and use a 50 cents off coupon, how much will you pay for the gallon of ice cream?
5. If you buy 2 lbs of chicken breasts for \$5.95, 3 lb bag of potatoes for \$2.50, 1 bag of chips for \$2.99, how much do you pay if you have a coupon for 35 cents off a bag of chips, a coupon for 70 cents off the chicken breast?

Student: _____

Date: _____

Teacher: _____

Directions: Solve the following problems using the value of the coupons:

1. If you purchase a loaf of bread for \$1.25 and use a 20 cents off coupon, how much will you pay for the loaf of bread?

ANSWER: \$1.05

2. If you purchase 6 cans of kidney beans for \$.72 each and have one coupon that says 25 cents off the purchase of 2, how much will you pay for the 6 cans?

ANSWER: \$4.07

3. If you buy meat for \$5.49, oranges for \$2.49, lettuce for \$1.99, 3 cans of peas for \$.65 each, and a gallon of milk for \$2.49, how much will it cost if you have a coupon for \$.75 off a gallon of milk, \$1.25 off the price of oranges?

ANSWER: \$12.41

4. If you purchase 1 gallon of ice cream for \$4.75 and use a 50 cents off coupon, how much will you pay for the gallon of ice cream?

ANSWER: \$4.25

5. If you buy 2 lbs of chicken breasts for \$5.95, 3 lb bag of potatoes for \$2.50, 1 bag of chips for \$2.99, how much do you pay if you have a coupon for 35 cents off a bag of chips, a coupon for 70 cents off the chicken breast?

ANSWER: \$10.39

- LEVEL:** 4.0 - 5.9
- STANDARD:** 27.0 Calculate differences to solve problems encountered in daily living.
- BENCHMARK:** 27.04 Calculate the difference between figures from a summarizing table.
- MATERIALS:** Informational tables from textbooks or periodicals.
- PROCEDURE:**
1. Determine the categories of information covered by a table, copies of which are supplied to the student.
 2. Have the students ask each other questions which can be answered by looking at the table (i.e., "How many people attended West High School in 1998?").
 3. Recall subtraction as the method used to find difference. Ask questions involving a difference between two pieces of information, i.e., "How many more people attended West High School in 2000 than in 1998?"
 4. Have the students create questions seeking difference. Note that the difference can be found only between quantities of like items, i.e., you cannot find the difference between a year and a number of students.

Student: _____

Date: _____

Teacher: _____

Newspaper Table Activity

- How did they decide what states to include in the table?
- What state has the most expensive in-state tuition?
- Which has the least in-state tuition?
- Where does Florida rank?
- How much higher is the tuition in Georgia than in Florida?
- How much higher or lower than the average is Florida?
- Where did this information come from?
- Does this tuition include summer school?
- Florida is among the states with the lowest in-state tuition. Do you think they should raise the tuition so they can have more money to spend at the universities? Write a 200 word essay stating your reasons.

In-state tuition

The five most-expensive and least-expensive states, along with selected Southern states, for average resident tuition and fees for two semesters at public universities.

1. Vermont	\$8,665
2. New Hampshire	7,693
3. Pennsylvania	7,396
4. Michigan	6,935
5. New Jersey	6,655
U.S. average	4,260
34. Georgia	3,418
37. Alabama	3,292
46. Wyoming	2,807
47. Idaho	2,720
48. Florida	2,559
49. Arizona	2,486
50. Nevada	2,295

Source: State of Washington annual survey, 2001-2002

JOHN ROBERGE/Democrat

Source: Tallahassee Democrat, Section 1A, December 4, 2002

Newspaper Table Activity

1. How did they decide what states to include in the table? 5 most expensive and 5 least expensive states and selected southern states to attend public universities.
2. What state has the most expensive in-state tuition? Vermont
3. Which has the least in-state tuition? Nevada
4. Where does Florida rank? #48 - toward the bottom
5. How much higher is the tuition in Georgia than in Florida? \$859.00
6. How much higher or lower than the average is Florida? \$1,701.00 lower than the national average
7. Where did this information come from? Tallahassee Democrat
8. Does this tuition include summer school? No
9. Florida is among the states with the lowest in-state tuition. Do you think they should raise the tuition so they can have more money to spend at the universities? Write a 200 word essay stating your reasons.

In-state tuition

The five most-expensive and least-expensive states, along with selected Southern states, for average resident tuition and fees for two semesters at public universities.

1. Vermont	\$8,665
2. New Hampshire	7,693
3. Pennsylvania	7,396
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U.S. average	4,260
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49. Arizona	2,486
50. Nevada	2,295

Source: State of Washington annual survey, 2001-2002

JOHN ROBERGE/Democrat

Source: Tallahassee Democrat, Section 1A, December 4, 2002

- LEVEL:** 4.0 - 5.9
- STANDARD:** 27.0 Calculate differences to solve problems encountered in daily living.
- BENCHMARK:** 27.05 Use hourly and daily wage rates to calculate the difference in earnings.
- MATERIALS:** Want ads listing hourly wages cut from the newspapers and glued onto 3x5 cards, calculators.
- PROCEDURE:**
1. Annotate each card with an alternate weekly wage amount.
(This amount need not be equal to the hourly wage total.)
 2. Distribute the cards to the students or allow each student to pick one.
Allow a discussion period of the hourly wage amounts, the types of jobs, etc.
 3. Direct the students to decide which wage they would accept, hourly or weekly, on their selected job offer based upon the supposition that they would work 20 hours a week. They indicate their choice with a 20 plus an H or a W at the bottom of the card.
 4. Allow the students to work with one another devising a method for comparison. Allow the use of calculators. (Students should come to the conclusion that the hourly wage is to be multiplied and the product compared with the weekly wage.)
 5. Direct the students to then calculate the numbers for a work week of 40 ohurs and annotate their choice by a 40 followed by an H or a W.
 6. Discuss any changes of choice and the reasons for the change.

Student: _____

Date: _____

Teacher: _____

Directions: Solve the following problems using hourly and daily wage rates:

1. John got a job that pays \$5.25 an hour for 30-hour work week or a weekly wage of \$150. Calculate the amounts, figure the difference and decide which wage choice is more acceptable for John.
2. Shekalia worked 20 hours a week for \$6.25 an hour. She was offered a job for \$8.50 an hour, but it was only for 15 hours a week. If she doesn't care how much she works, but is only interested in making the most money possible, which job should she take? How much more will she make?
3. Ramon works 40 hours a week for \$7.50 an hour. He was offered one job for 25 hours and another for 30 hours. The first pays \$8.50, the second pays \$6.75. If his only concern is money, should he take the two part time jobs?

Directions: Solve the following problems using hourly and daily wage rates:

1. John got a job that pays \$5.25 an hour for 30-hour work week or a weekly wage of \$150. Calculate the amounts, figure the difference and decide which wage choice is more acceptable for John. John should choose the hourly rate. He will make \$7.50 more than the weekly rate of \$150.00
2. Shekalia worked 20 hours a week for \$6.25 an hour. She was offered a job for \$8.50 an hour, but it was only for 15 hours a week. If she doesn't care how much she works, but is only interested in making the most money possible, which job should she take? How much more will she make? Shekalia should take the job that pays \$8.50 an hour. She will make \$2.50 more a week and work less.
3. Ramon works 40 hours a week for \$7.50 an hour. He was offered one job for 25 hours and another for 30 hours. The first pays \$8.50, the second pays \$6.75. If his only concern is money, should he take the two part time jobs? Ramon now makes \$300.00 a week for working 40 hours. The 2 part time jobs pay \$212.50 and \$202.50 for a total of \$415.00 a week. If money is his only concern, he should take the two part time jobs increasing his weekly paycheck by \$115.00.

- LEVEL:** 4.0 - 5.9
- STANDARD:** 27.0 Calculate differences to solve problems encountered in daily living.
- BENCHMARK:** 27.06 Determine the difference between lengths of business hours on week days and weekends.
- MATERIALS:** Worksheet
- PROCEDURE:** Have students brainstorm different businesses that have different hours during the week and on weekends.
Talk about why hours are different.
Determine the difference between the length of the business day on a week-day and on a weekend.
Complete the worksheet.

Student: _____

Date: _____

Teacher: _____

1. Jason works 8 hours a day on Monday, Tuesday, Wednesday, Thursday, and Friday. On Saturday he works five hours. How many hours does Jason work per week? _____

2. If a clothing store is open from 9:00 a.m. to 9:00 p.m. during the week, and is open from 8:00 a.m. to 10:00 p.m. on the weekends, how many hours per day is it open during weekdays? _____

How many hours is it open per day during the weekend? _____

What is the difference? _____

3. If a fast food store is open from 10:00 a.m. to 11:00 p.m. during the week and is open from 10:00 a.m. to 1:00 a.m. on the weekend, how many more hours are they open on weekend days? _____

4. If Alonzo works 9-5 on weekdays in an office, and works 11:00 a.m. to 8:00 p.m. at a fast food restaurant on Saturdays and Sundays, how many total hours does he work on weekdays? _____

Weekends? _____

1. Jason works 8 hours a day on Monday, Tuesday, Wednesday, Thursday, and Friday. On Saturday he works five hours. How many hours does Jason work per week? 45 hours
2. If a clothing store is open from 9:00 a.m. to 9:00 p.m. during the week, and is open from 8:00 a.m. to 10:00 p.m. on the weekends, how many hours per day is it open during weekdays? 12 hours

How many hours is it open per day during the weekend? 14 hours

What is the difference? The store is open for 2 hours longer each day on the weekends.

3. If a fast food store is open from 10:00 a.m. to 11:00 p.m. during the week and is open from 10:00 a.m. to 1:00 a.m. on the weekend, how many more hours are they open on weekend days? The fast food store is open 2 hours longer on the weekend days.
4. If Alonzo works 9-5 on weekdays in an office, and works 11:00 a.m. to 8:00 p.m. at a fast food restaurant on Saturdays and Sundays, how many total hours does he work on weekdays? 40 hours.

Weekends? 18 hours.

- LEVEL:** 4.0 - 5.9
- STANDARD:** 27.0 Calculate differences to solve problems encountered in daily living.
- BENCHMARK:** 27.07 Calculate the savings between two specific subscription rates.
- MATERIALS:** Subscription form from local newspaper or familiar magazine showing a choice of rates. Make copies if enough duplicates cannot be obtained.
- PROCEDURE:**
1. Discuss what, if any, publications the students have coming to their home and how they are paid for: annual check, monthly billing, weekly cash, individual daily purchase.
 2. Raise the question: How do you know you are getting the best deal? Allow students to examine the form, and brainstorm ways in which the comparative values can be determined.
 3. Lead the students to conclude that, in order to compare, you must look at the amounts in the context of one time frame, i.e., annual.
 4. Direct the students, in pairs, to determine the annual cost of the publication based upon monthly payment. Make sure the answers from all agree. The students then discuss whether monthly or annual payment is less expensive.
 5. Students then compute how much is saved by paying annually. Point out, however, that sometimes annual payments are too large a sum for budgeting on a limited income.
 6. If other incremental rates are known (example: daily newspaper cost), compute the total annual cost and allow students to discuss the amount saved by annual payment.

Student: _____

Date: _____

Teacher: _____

Answer the following questions:

1. Cheryl buys a magazine from the grocery store every month. The price of the magazine is \$4.95.
How much does she pay per year for the magazine? _____

2. Cheryl can subscribe to the same magazine for \$35.00 per year. If she subscribes to the magazine, how much can she save per year? _____

3. If Cheryl can get the magazine for \$65.00 for two years, how much will she save? _____

4. Juan only buys his magazine eight months a year for \$2.95 a month. If he buys the subscription for the entire year it will cost \$28.00; if he buys a subscription for 2 years it will cost \$48.00. What is the most economical way for him to purchase his magazine? _____

5. Tasha buys a magazine from the grocery store every month. The price of the magazine is \$3.95.
How much does she pay per year for the magazine? _____

6. Tasha can subscribe to the same magazine for \$25.00 per year. If she subscribes to the magazine, how much money will she save per year? _____

Answer the following questions:

1. Cheryl buys a magazine from the grocery store every month. The price of the magazine is \$4.95.
How much does she pay per year for the magazine? \$59.40
2. Cheryl can subscribe to the same magazine for \$35.00 per year. If she subscribes to the magazine, how much can she save per year? \$24.40
3. If Cheryl can get the magazine for \$65.00 for two years, how much will she save? \$53.80
4. Juan only buys his magazine eight months a year for \$2.95 a month. If he buys the subscription for the entire year it will cost \$28.00; if he buys a subscription for 2 years it will cost \$48.00. What is the most economical way for him to purchase his magazine? monthly
5. Tasha buys a magazine from the grocery store every month. The price of the magazine is \$3.95.
How much does she pay per year for the magazine? \$47.40
6. Tasha can subscribe to the same magazine for \$25.00 per year. If she subscribes to the magazine, how much money will she save per year? \$22.40

LEVEL: 4.0 - 5.9

STANDARD: 27.0 Calculate differences to solve problems encountered in daily living.

BENCHMARK: 27.08 Calculate the amount of increase using figures from a bar graph.

MATERIALS: Strips of red and black construction paper, approximately 3 x 11 inches, tape, white board or newsprint

PROCEDURE:

1. On board or newsprint, teacher creates a graphing schematic with 3-inch columns on a familiar topic. (For example, the graph may compare the number of people employed in different years at a local business.)
2. Provide the students with a list of people by year, and have them cut the paper strips to create the graphs and tape those strips in place. (This reinforces the graphing concept.)
3. Have the students present queries to one another based upon the graph.
 - a. In which year were most people employed?
 - b. Which year saw the greatest decline?
 - c. How many additional people were hired between 1989 and 1994?
4. Present printed bar graphs, and have students ask similar questions of one another. Note that some questions require mathematical calculation; others do not.

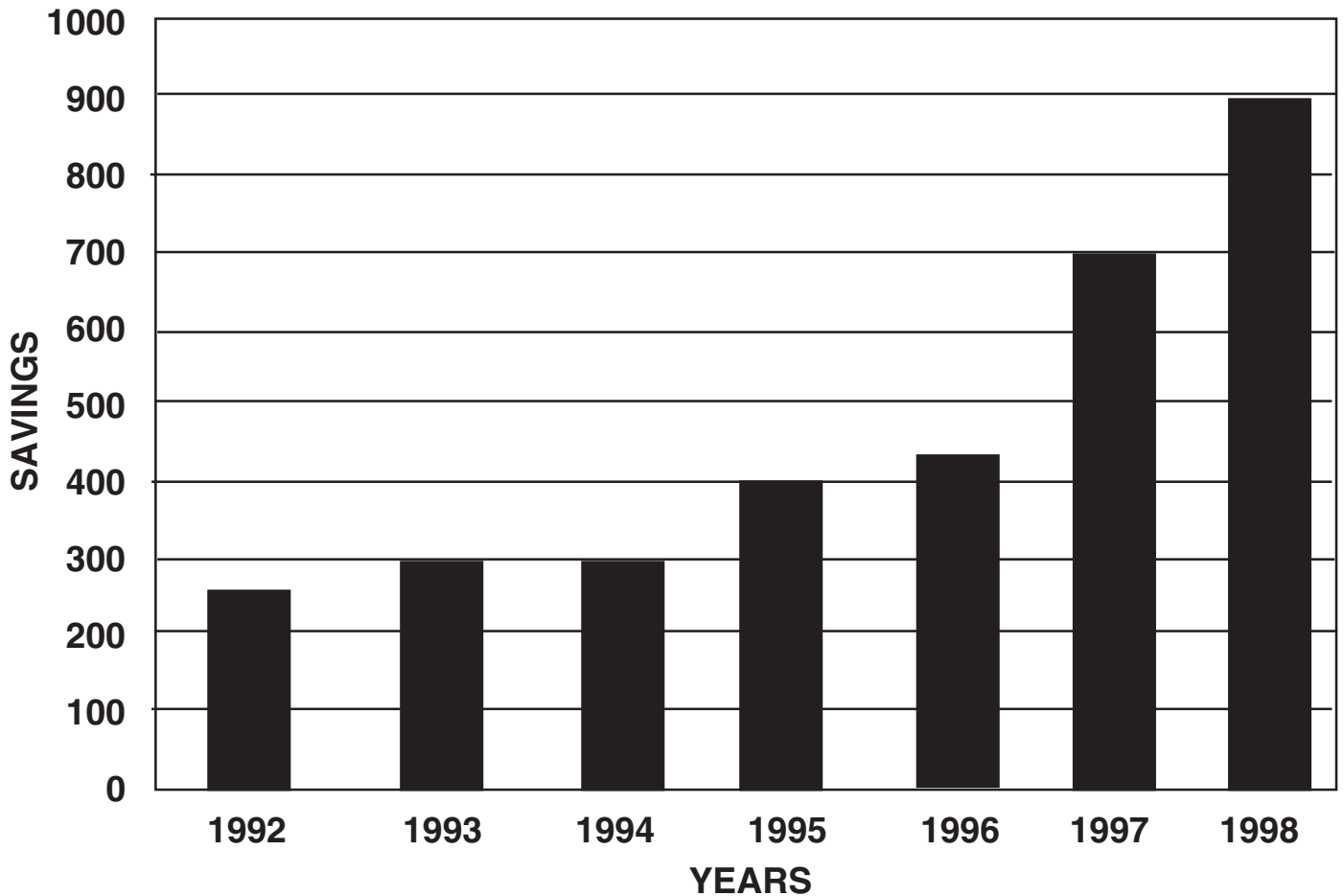
Student: _____

Date: _____

Teacher: _____

Use the bar graph below to answer the following questions:

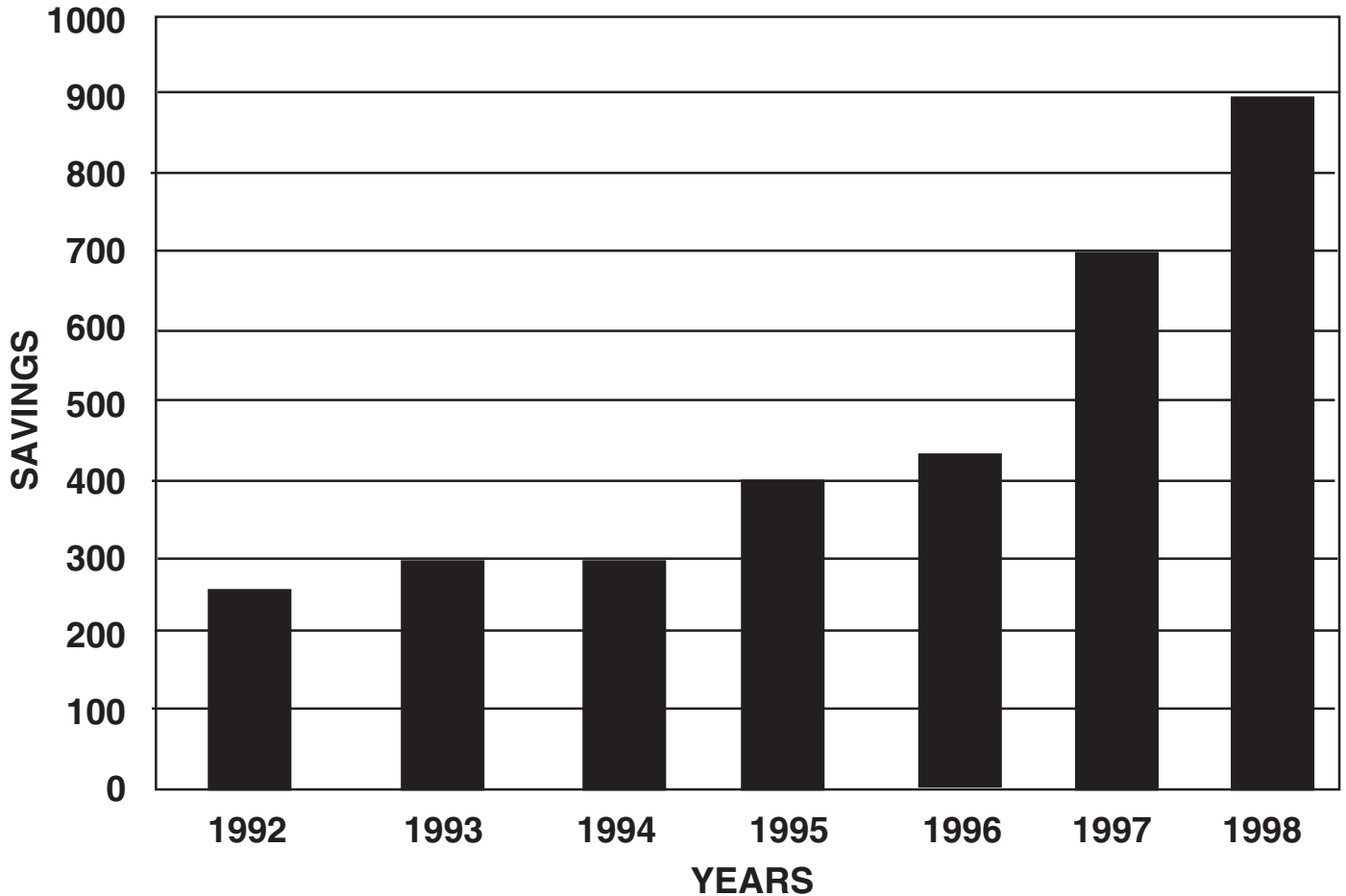
Mr. Johnson has been saving money for several years as follows:



- a. How much did Mr. Johnson save in 1995? _____
- b. How much did Mr. Johnson save in 1997? _____
- c. In what year did Mr. Johnson save the most money? _____
- d. How much more did Mr. Johnson save in 1996 than in 1995? _____

Use the bar graph below to answer the following questions:

Mr. Johnson has been saving money for several years as follows:



- a. How much did Mr. Johnson save in 1995? \$100
- b. How much did Mr. Johnson save in 1997? \$275
- c. In what year did Mr. Johnson save the most money? 1997
- d. How much more did Mr. Johnson save in 1996 than in 1995? \$75

Student: _____

Date: _____

Teacher: _____

1. Mary worked five hours on Monday. She makes \$7.00 an hour. How much did she make for the day?
2. Demetrious worked 3 hours on Monday, 5 hours on Tuesday, and 4 hours on Thursday. He makes \$6.50 an hour. How much did he make each day?
3. Celina makes \$12 an hour. She works 8 hours each day, Monday through Friday. How much does she make a day? How much does she make a week?
4. Carmen's schedule is listed below. She makes \$6.75 an hour. Determine how much she earned each day.

Day	Time in	Time out	Hourly rate	Daily earnings
Monday	8:00 a.m.	2:30 p.m.	\$6.75	
Tuesday	10:00 a.m.	5:30 p.m.	\$6.75	
Wednesday	Day off			
Thursday	7:30 a.m.	4:00 p.m.	\$6.75	
Friday	7:30 p.m.	7:30 a.m.	\$6.75	

1. Mary worked five hours on Monday. She makes \$7.00 an hour. How much did she make for the day?

ANSWER: \$35.00

2. Demetrious worked 3 hours on Monday, 5 hours on Tuesday, and 4 hours on Thursday. He makes \$6.50 an hour. How much did he make each day?

ANSWER: Monday - \$19.50
 Tuesday - \$32.50
 Thursday - \$26.00

3. Celina makes \$12 an hour. She works 8 hours each day, Monday through Friday. How much does she make a day? How much does she make a week?

ANSWER: A day - \$96.00
 A week - \$480.00

4. Carmen's schedule is listed below. She makes \$6.75 an hour. Determine how much she earned each day.

Day	Time in	Time out	Hourly rate	Daily earnings
Monday	8:00 a.m.	2:30 p.m.	\$6.75	\$43.88
Tuesday	10:00 a.m.	5:30 p.m.	\$6.75	\$50.63
Wednesday	Day off			
Thursday	7:30 a.m.	4:00 p.m.	\$6.75	\$75.38
Friday	7:30 p.m.	7:30 a.m.	\$6.75	\$81.00

- LEVEL:** 4.0 - 5.9
- STANDARD:** 27.0 Calculate differences to solve problems encountered in daily living.
- BENCHMARK:** 27.10 Use figures from a comparison table, to calculate increases.
- MATERIALS:** Copies of tables, teacher-created or textbooks.
- PROCEDURE:**
1. Divide students into two teams. Have each of them make up a set of three questions based upon a particular table. The teacher adds three questions of her own (which can include the calculation of increases if not offered by the teams).
 2. The teams then challenge each other to answer the questions of the opposing team and those of the teacher while the teacher answers the teams questions. A scribe on each team writes down the answers.
 3. A team spokesman presents the answers achieved, and the team explains how they reached that answer.

Student: _____

Date: _____

Teacher: _____

Using the chart below, calculate the cost increase:

Item	Old Cost	New Cost	Amount Increase
Milk	\$1.99	\$2.49	
Eggs	\$.75	\$1.09	
Bread	\$.39	\$1.29	
String Beans	\$.79	\$1.99	
Orange Juice	\$1.25	\$1.89	

Using the chart below, calculate the cost increase:

Item	Old Cost	New Cost	Amount Increase
Milk	\$1.99	\$2.49	.50¢
Eggs	\$.75	\$1.09	.34¢
Bread	\$.39	\$1.29	.90¢
String Beans	\$.79	\$1.99	\$1.20
Orange Juice	\$1.25	\$1.89	.64¢

- LEVEL:** 4.0 - 5.9
- STANDARD:** 27.0 Calculate differences to solve problems encountered in daily living.
- BENCHMARK:** 27.11 Total the amount of fines accrued for several driving violations.
- MATERIALS:** Chart paper, markers.
- PROCEDURE:**
1. Students list on chart various driving infractions: speeding, parking in loading zone, crossing double yellow line, etc.
 2. Students arrive at a reasonable fine amount a judge might levy for each violation.
 3. In groups, students develop a scenario in which several driving infractions are committed by a driver. They describe his road trip, the violations, and the amounts of fine and conclude with the total amount that his bad driving cost him.

Student: _____

Date: _____

Teacher: _____

1. Bobby was fined several times for driving violations. He had to pay \$75.50, \$90.00, \$25.00, \$55.00, and \$145.00. How much did he pay in all for his driving violations?
2. Andrea received 4 driving violations. The fines were \$125.00, \$78.00, \$65.00, and \$225.00. How much did she owe for her driving fines?
3. Mr. Green has received 5 speeding tickets. The speeding fines were \$50.00, \$35.00, \$75.00, \$40.00, and \$43.00. How much did he owe?
4. Louise ran several red lights. She had to pay for the fines. They were \$75.00, \$28.00, and \$52. How much did she pay all together?

1. Bobby was fined several times for driving violations. He had to pay \$75.50, \$90.00, \$25.00, \$55.00, and \$145.00. How much did he pay in all for his driving violations?

ANSWER: \$390.50

2. Andrea received 4 driving violations. The fines were \$125.00, \$78.00, \$65.00, and \$225.00. How much did she owe for her driving fines?

ANSWER: \$493.00

3. Mr. Green has received 5 speeding tickets. The speeding fines were \$50.00, \$35.00, \$75.00, \$40.00, and \$43.00. How much did he owe?

ANSWER: \$243.00

4. Louise ran several red lights. She had to pay for the fines. They were \$75.00, \$28.00, and \$52. How much did she pay all together?

ANSWER: \$155.00

LEVEL: 4.0 - 5.9

STANDARD: 28.0 Apply arithmetic operations to information contained in printed materials.

BENCHMARK: 28.01 Use an order form to determine the total cost of a purchase.
28.02 Determine the total for an order after calculating the cost of two items and sales tax (using a tax table).

MATERIALS: Assorted mail-order catalogs, calculators, paper clips, tax table

PROCEDURE:

1. Students select a catalog that interests them, locate the order blanks, and go over the information requested by the form.
2. Students browse the catalog and select three items they would like to buy. (Money is no object here!) They paperclip the pages featuring those items.
3. With teacher assistance, the students enter the first item in the order blank up to the unit price. They are then directed to increase the quantity to any number from 2 to 6.
4. Discuss the "Total Price" column and how to calculate the amount to be inserted there (multiplication). Calculate the total price for Item 1.
5. Repeat with the other items chosen by the student with student determining whether to order multiple items.
6. Students add and check the total purchase amount, use the tax table to determine tax, add in any shipping costs indicated, and determine the total amount of the order.
7. Students exchange catalogs and order forms and verify each other's work.

Benchmark: 28.01; 28.02
ANSWER KEY

Answer the following questions using the order form below:

Smith's Department Store Catalog Sales

ITEM	QUANTITY	PRICE PER UNIT	TOTAL PRICE
Dress	1	\$39.95	\$39.95
Shirt	2	\$25.95	\$51.90
Pants	1	\$29.00	\$29.00
Skirt	3	\$32.50	\$97.50
Jacket	1	\$54.75	\$54.75
Subtotal			\$273.10
Tax			\$ 20.49
Total			\$293.59

1. What is the tax for the order? \$20.49
2. What is the total price of the order? \$293.59
3. What would the subtotal of the order be if 1 jacket, 1 skirt, and 2 shirts were ordered?
\$139.15
4. What is the tax and total? Tax: \$10.44 Total - \$149.59

DR-2A
R. 02/99

**Florida Department of Revenue
Sales Tax Brackets Effective
6% Taxable Transactions**

Amount of Sale Tax			Amount of Sale Tax		
.10	-	.16	.01	5.10	- 5.16 .31
.17	-	.33	.02	5.17	- 5.33 .32
.34	-	.50	.03	5.34	- 5.50 .33
.51	-	.66	.04	5.51	- 5.66 .34
.67	-	.83	.05	5.67	- 5.83 .35
.84	-	1.09	.06	5.84	- 6.09 .36
1.10	-	1.16	.07	6.10	- 6.16 .37
1.17	-	1.33	.08	6.17	- 6.33 .38
1.34	-	1.50	.09	6.34	- 6.50 .39
1.51	-	1.66	.10	6.51	- 6.66 .40
1.67	-	1.83	.11	6.67	- 6.83 .41
1.84	-	2.09	.12	6.84	- 7.09 .42
2.10	-	2.16	.13	7.10	- 7.16 .43
2.17	-	2.33	.14	7.17	- 7.33 .44
2.34	-	2.50	.15	7.34	- 7.50 .45
2.51	-	2.66	.16	7.51	- 7.66 .46
2.67	-	2.83	.17	7.67	- 7.83 .47
2.84	-	3.09	.18	7.84	- 8.09 .48
3.10	-	3.16	.19	8.10	- 8.16 .49
3.17	-	3.33	.20	8.17	- 8.33 .50
3.34	-	3.50	.21	8.34	- 8.50 .51
3.51	-	3.66	.22	8.51	- 8.66 .52
3.67	-	3.83	.23	8.67	- 8.83 .53
3.84	-	4.09	.24	8.84	- 9.09 .54
4.10	-	4.16	.25	9.10	- 9.16 .55
4.17	-	4.33	.26	9.17	- 9.33 .56
4.34	-	4.50	.27	9.34	- 9.50 .57
4.51	-	4.66	.28	9.51	- 9.66 .58
4.67	-	4.83	.29	9.67	- 9.83 .59
4.84	-	5.09	.30	9.84	- 10.09 .60



DR-2D
R. 04/99

**Florida Department of Revenue
Sales Tax Brackets Effective
on all 7.5% Taxable Transactions**

Amount of Sale Tax			Amount of Sale Tax		
.10-	.13	.01	5.07-	5.20	.39
.14-	.26	.02	5.21-	5.33	.40
.27-	.40	.03	5.34-	5.46	.41
.41-	.53	.04	5.47-	5.60	.42
.54-	.66	.05	5.61-	5.73	.43
.67-	.80	.06	5.74-	5.86	.44
.81-	.93	.07	5.87-	6.09	.45
.94-	1.06	.08	6.10-	6.13	.46
1.07-	1.20	.09	6.14-	6.26	.47
1.21-	1.33	.10	6.27-	6.40	.48
1.34-	1.46	.11	6.41-	6.53	.49
1.47-	1.60	.12	6.54-	6.66	.50
1.61-	1.73	.13	6.67-	6.80	.51
1.74-	1.86	.14	6.81-	6.93	.52
1.87-	2.09	.15	6.94-	7.06	.53
2.10-	2.13	.16	7.07-	7.20	.54
2.14-	2.26	.17	7.21-	7.33	.55
2.27-	2.40	.18	7.34-	7.46	.56
2.41-	2.53	.19	7.47-	7.60	.57
2.54-	2.66	.20	7.61-	7.73	.58
2.67-	2.80	.21	7.74-	7.86	.59
2.81-	2.93	.22	7.87-	8.09	.60
2.94-	3.06	.23	8.10-	8.13	.61
3.07-	3.20	.24	8.14-	8.26	.62
3.21-	3.33	.25	8.27-	8.40	.63
3.34-	3.46	.26	8.41-	8.53	.64
3.47-	3.60	.27	8.54-	8.66	.65
3.61-	3.73	.28	8.67-	8.80	.66
3.74-	3.86	.29	8.81-	8.93	.67
3.87-	4.09	.30	8.94-	9.06	.68
4.10-	4.13	.31	9.07-	9.20	.69
4.14-	4.26	.32	9.21-	9.33	.70
4.27-	4.40	.33	9.34-	9.46	.71
4.41-	4.53	.34	9.47-	9.60	.72
4.54-	4.66	.35	9.61-	9.73	.73
4.67-	4.80	.36	9.74-	9.86	.74
4.81-	4.93	.37	9.87-	10.09	.75
4.94-	5.06	.38			



LEVEL: 4.0 - 5.9

STANDARD: 28.0 Apply arithmetic operations to information contained in printed materials.
29.0 Demonstrate proficiency in consumer math skills.

BENCHMARK: 28.01 Use an order form to determine the total cost of a purchase.
29.04 Identify and use methods to purchase goods and services: including catalogs, order forms, and related information.

MATERIALS: Several mail order catalogs (Sears, J C Penney, and assorted others that you may receive in the mail. You can go to some of the shopping sites on the Internet and request catalogs.)

PROCEDURE: Have the students pick out a catalog, and then instruct them that they have \$500 to spend. They are expected to get as close to \$500 as possible without going over. They may use more than one catalog if they want. They must fill out the order forms for all the merchandise they buy. After everyone is done, you can hold a classroom discussion about the purchases and what they thought of the order form and catalog sales.

LEVEL: 4.0 - 5.9

STANDARD: 28.0 Apply arithmetic operations to information contained in printed materials.

BENCHMARK: 28.03 Determine the total cost of multiple items ordered from a menu, including one item having multiple quantities.

MATERIALS: Take-out menus from local eatery, chart paper

PROCEDURE: (Ideally, this will be an actual experience but can be simulated.)

1. Each students makes a lunch selection from a take-out menu, writing down the items they want to get.
2. Menu items as ordered are listed on the chart with hash marks to indicate orders.
Example: cheeseburgers@ 1.79 ///
 Chicken sandwiches @ 2.49 //
 Fries @ .79 ///
 Coke @ .69 /////
3. Each item is then totaled by a scribe who assigns another student to calculate the total cost for that item.
4. Using a calculator, two students arrive at the total cost of the order.
5. Students each calculate their own order cost and contribute that much for the payment when the order is delivered.
6. Order, pay, and enjoy.

Student: _____

Date: _____

Teacher: _____

Answer the following questions using the menu below:**Pit Stop Sandwich Shop**

Item:	Price:
Sandwiches	
Hamburger	\$1.75
Grilled Cheese Sandwich	\$1.50
Chicken Salad Sandwich	\$2.25
Tuna Fish Sandwich	\$1.85
Side Orders	
French Fries	\$.75
Cole Slaw	\$1.15
Garden Salad	\$1.95
Desserts	
Apple Pie	\$1.35
Chocolate Chip Cookies	\$.80
Beverages	
Coffee	\$.95
Soft Drinks	\$.70
Juice	\$1.10

1. How much is one hamburger, 1 juice and a garden salad? _____
2. How much are two chicken salad sandwiches, two coffees, and one apple pie? _____
3. How much is a glass of juice and a salad? _____
4. How much are 2 tuna sandwiches, a coffee, and a juice? _____
5. How much is a grilled cheese, cole slaw, 2 chocolate chip cookies, and coffee? _____

Answer the following questions using the menu below:

Pit Stop Sandwich Shop

Item:	Price:
Sandwiches	
Hamburger	\$1.75
Grilled Cheese Sandwich	\$1.50
Chicken Salad Sandwich	\$2.25
Tuna Fish Sandwich	\$1.85
Side Orders	
French Fries	\$.75
Cole Slaw	\$1.15
Garden Salad	\$1.95
Desserts	
Apple Pie	\$.1.35
Chocolate Chip Cookies	\$.80
Beverages	
Coffee	\$.95
Soft Drinks	\$.70
Juice	\$1.10

1. How much is one hamburger, 1 juice and a garden salad? \$4.80
2. How much are two chicken salad sandwiches, two coffees, and one apple pie? \$7.75
3. How much is a glass of juice and a salad? \$3.05
4. How much are 2 tuna sandwiches, a coffee, and a juice? \$5.75
5. How much is a grilled cheese, cole slaw, 2 chocolate chip cookies, and coffee? \$5.20

- LEVEL:** 4.0 - 5.9
- STANDARD:** 28.0 Apply arithmetic operations to information contained in printed materials.
- BENCHMARK:** 28.04 Use an advertisement to determine the total cost of several items in different quantities.
- MATERIALS:** Drugstore or variety store advertising circular
- PROCEDURE:**
1. Students scan the circular, drawing a circle around 6 items that interest them.
 2. Students create a list of the items they would buy, the unit cost, how many desired, and total cost.
 3. After reviewing how to find total cost by multiplying, students determine how much their shopping list will cost.
 4. Students exchange lists and calculations and verify each others work.

Benchmark: 28.04

Student: _____

Date: _____

Teacher: _____

Directions: Find the total cost of the following shopping list:

5 lb bag potatoes \$1.79

1 lb ground beef \$1.95

2 lb cube steak \$4.95 lb.

4 lb bag of yellow onions \$1.85

3 cans kidney beans \$.35 each

1 gallon milk \$2.95

Total _____

Directions: Find the total cost of the following shopping list:

5 lb bag potatoes	\$1.79	<u>\$1.79</u>
1 lb ground beef	\$1.95	<u>\$1.95</u>
2 lb cube steak	\$4.95 lb.	<u>\$9.90</u>
4 lb bag of yellow onions	\$1.85	<u>\$1.85</u>
3 cans kidney beans	\$.35 each	<u>\$1.05</u>
1 gallon milk	\$2.95	<u>\$2.95</u>

Total \$19.49

LEVEL: 4.0 - 5.9

STANDARD: 29.0 Demonstrate proficiency in consumer math skills.

BENCHMARK: 29.01 Develop a personal budget for a set income.

MATERIALS: Worksheets

PROCEDURE: Talk with students about the benefits of having a budget. Discuss income and expenses, wants and needs, and set expenses and variable expenses. Use the worksheets to show students how to create a budget. Do one together as a group on an overhead, and then let students complete their own.

Have students create a budget in Excel using the sample at "http://www.dzfx.com/workshops/list/2/Microsoft_Excel-Office_2000_xp/

Student: _____

Date: _____

Teacher: _____

Jones Family Budget Worksheet

Monthly Income

Take-home pay / net income (first person)\$ _____

Take-home pay / net income (second person)\$ _____

Additional wages / income\$ _____

Social Security Benefits\$ _____
(Social Security Disability,
Social Security Retirement)

Child Support / Alimony\$ _____

Public Assistance / AFDC*\$ _____

Government Housing Assistance\$ _____

Food Stamps\$ _____

WIC**\$ _____

Unemployment Benefits\$ _____

Earned Income Tax Credit *** (and/or tax refund)\$ _____

Other\$ _____

Total .\$ _____

*AFDC (Aid to Families with Dependent Children)—federal government income support program for single mothers of small children.

**WIC (Women, Infants, and Children)—federal government subsidy for pregnant women and young children.

*** Earned Income Tax Credit—federal government income support program for working people who earn wages less than 125% of the poverty level.

- LEVEL:** 4.0 - 5.9
- STANDARD:** 29.0 Demonstrate proficiency in consumer math skills.
- 22.0 Demonstrate proficiency with number sense, concepts, and operations involving decimals
- BENCHMARK:** 29.02 Plan for major purchases , e.g., a car or a refrigerator.
- 22.09 Solve real-world problems involving decimals.
- MATERIALS:** Copies of the classified auto ads, copies of car loan applications (available from banks and car dealerships), Car Buying Plan handout.
- PROCEDURE:** First, students are going to find a car that they would like to purchase in the classified ads. Next, they are going to make a plan on how to purchase the car. They are going to research the car and find out the NADA* value and the Kelly's Blue Book* value to be sure that they are not spending too much. Then they will make a plan to save enough money to pay 20% of the price of the car as a down payment. Next, they will fill out a car loan application. You, as the teacher, will set an interest rate and show them how to figure out what their car payments will be. Be sure and figure in taxes, but do not worry about registration costs.
- To do this with 8%, you will use the formula:
Interest = principle times rate times time (in years) $I = prt$
ex. for a loan of \$10,000 for 4 years: $I = 10,000 \times .08 \times 4$
 $I = 3200$
- Now add the 3200 on to the 10,000 for a total loan amount of \$13,200, and divide that by 48 months. That would be a car payment of \$275. Have them figure out a 60-month loan, a 48-month loan, and a 36-month loan to see which best suits their needs.

Student: _____

Date: _____

Teacher: _____

Car Buying Plan

1. Choose the car that you wish to buy out of the classified ads. You can choose by desire, price, or practicality. You may choose a used car or a new car.
2. Get on the Internet and search for NADA and Kelly's Blue Book. These will give you information on the value of each car. You may find these by going through a used car site.
3. Make a plan on how you will save 20% of the price for a down payment. The more the down payment, the better your chances are of getting a loan approval. How much will you have to save each month? How many months will it take you?
4. Fill out a car loan application. Your teacher will go over this with you as a class, but try it on your own first to see if you can answer all the questions.
5. Your teacher will give you an interest rate and show you how to calculate your loan payments. Calculate loan payments for 36 months, 48 months, and 60 months. Determine which is best for you, and remember low payments are not always the best option. Be sure and check the amount of interest you are paying.
6. After you have finished all of this and your teacher has gone over it, save the packet so that when you do get ready to purchase a car you will be a more informed consumer.

- LEVEL:** 4.0 - 5.9
- STANDARD:** 29.0 Demonstrate proficiency in consumer math skills.
- BENCHMARK:** 29.03 Interpret information or directions to locate consumer goods, e.g., newspaper ads and yellow pages.
- MATERIALS:** Newspapers, Catalogs, Internet, Phone book
- PROCEDURE:** Brainstorm with students different places to buy items or get services. Have students work with a partner or in small groups to complete the scavenger hunt.

Student: _____

Date: _____

Teacher: _____

Use the newspaper, catalogs, Internet, phone book, or other resources to find the following goods and services.

1. Cost of a long fancy dress.
2. Where to rent a tuxedo.
3. Where to apply for food stamps.
4. When and where a movie is playing.
5. Where to find a pediatrician who treats babies.
6. Poison Control.
7. What to do if a dangerous dog is running loose in your neighborhood
8. Cost of a long sleeve red blouse.
9. Cost of 5 different pairs of jeans.
10. A plumber who will come out on weekends.

LEVEL: 4.0 - 5.9

STANDARD: 29.0 Demonstrate proficiency in consumer math skills.

BENCHMARK: 29.04 Identify and use methods to purchase goods and services; including catalogs, order forms, and related information.

MATERIALS: Worksheet

PROCEDURE: Talk to students about where they buy different items.
Get students to think about a variety of places they could purchase different things they need.

Student: _____

Date: _____

Teacher: _____

1. Name three items that can be ordered from a catalog:

a. _____

b. _____

c. _____

2. Name three items that can be bought on the Internet:

a. _____

b. _____

c. _____

3. If you need to buy a used car, name three different places you could get information about used cars for sale:

a. _____

b. _____

c. _____

4. You want to order a new pair of shoes from the Eastbay catalog. Name three ways you can order them:

a. _____

b. _____

c. _____

5. You are going to buy a new couch. You find the one you want in a furniture store for \$1099. Name three different ways you could pay for the couch:

a. _____

b. _____

c. _____

6. You are saving for your dream car. The car will cost \$6,000. You want to pay 20% down and pay the rest off in payments. How much money will you need to save?
- a. \$620
 - b. \$120
 - c. \$1,200
 - d. \$600
7. Mary is going to buy a new washer and dryer. She has saved up \$200 for a down payment. The machines cost a total of \$895. Mary will pay \$139 a month until the machines are paid off. How many months will this take?
- a. 4
 - b. 5
 - c. 6
 - d. 7

LEVEL: 4.0 - 5.9

STANDARD: 29.0 Demonstrate proficiency in consumer math skills.

BENCHMARK: 29.06 Write personal checks or money orders to purchase goods and services.

29.07 Complete a deposit and withdrawal form.

MATERIALS: Blank checks and check register (handouts), donated bank statements and receipts with account numbers blacked out, blank deposit and withdrawal forms from several banks

PROCEDURE: Have students deposit \$500. They must fill out a deposit slip and add the money to their check register. Now, have the students write checks for three different items and deduct them from their check register. To end the exercise, have them withdraw the remaining money from their accounts and subtract it from their registers.

1. Deposit \$500
2. Write checks
3. Withdraw balance

Now go over some of the bank statements, and explain what they mean and how to read them.

VARIATION: Have the students learn how to reconcile their checking account.

Benchmark: 29.06, 29.07

Student: _____ Date: _____

Teacher: _____

Your Name	Date	101
Your Street Address	_____	
Your City and State	_____	
Your phone Number	_____	
Pay to the order of	\$	_____
_____ Dollars		
Your Bank	_____	
For	_____	
|:297000231|:930000025758|| 101		

Your Name	Date	101
Your Street Address	_____	
Your City and State	_____	
Your phone Number	_____	
Pay to the order of	\$	_____
_____ Dollars		
Your Bank	_____	
For	_____	
|:297000231|:930000025758|| 101		

Your Name	Date	101
Your Street Address	_____	
Your City and State	_____	
Your phone Number	_____	
Pay to the order of	\$	_____
_____ Dollars		
Your Bank	_____	
For	_____	
|:297000231|:930000025758|| 101		

Daniel Smith 123 Main St Tallahassee, Fl 32332 (850) 555-5555	Date _____	106
Pay to the order of _____		\$ _____
		_____ Dollars
Your Bank		
For _____		
:-4359102987:—48573437462 106		

Daniel Smith 123 Main St Tallahassee, Fl 32332 (850) 555-5555	Date _____	106
Pay to the order of _____		\$ _____
		_____ Dollars
Your Bank		
For _____		
:-4359102987:—48573437462 106		

Daniel Smith 123 Main St Tallahassee, Fl 32332 (850) 555-5555	cash	_____

Date _____	checks	_____
Signature: _____		_____

Your Bank		_____
	TOTAL	_____
:-4359102987:—48573437462		

Daniel Smith 123 Main St Tallahassee, Fl 32332 (850) 555-5555	cash	_____

Date _____	checks	_____
Signature: _____		_____

Your Bank		_____
	TOTAL	_____
:-4359102987:—48573437462		

Daniel Smith 123 Main St Tallahassee, Fl 32332 (850) 555-5555	cash	_____

Date _____	checks	_____
Signature: _____		_____

Your Bank		_____
	TOTAL	_____
:-4359102987:—48573437462		

Daniel Smith 123 Main St Tallahassee, Fl 32332 (850) 555-5555	cash	_____

Date _____	checks	_____
Signature: _____		_____

Your Bank		_____
	TOTAL	_____
:-4359102987:—48573437462		

