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AUTHOR Copley, Charlotte E.
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ABSTRACT

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

Math By Mail
Grade 6

Hampton City Schools
1819 Nickerson Blvd
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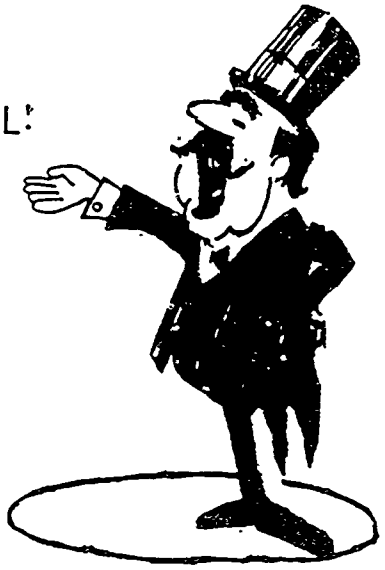
23663

WELCOME TO MATH BY MAIL!

GRADE 6



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

GOOD LUCK!

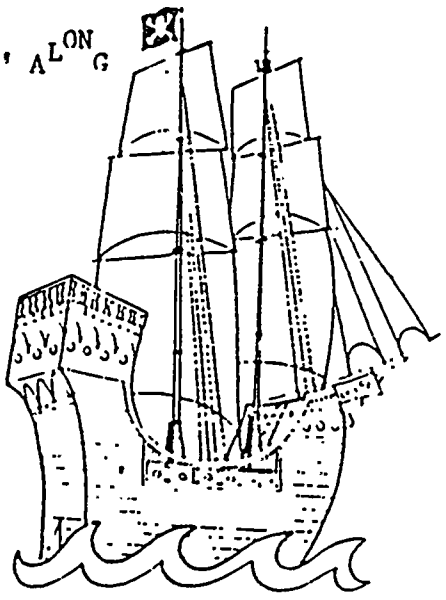
NAME _____

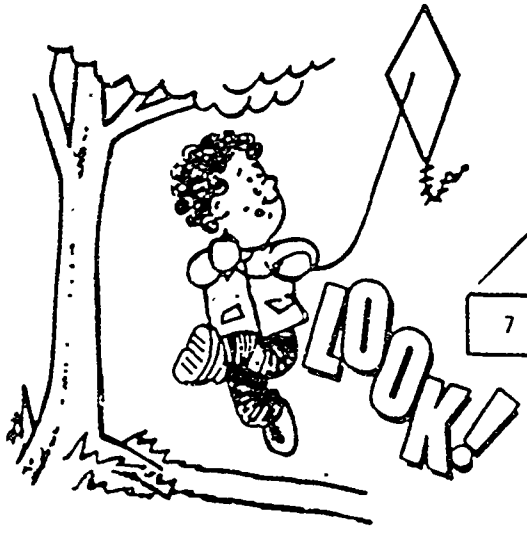
LESSON ONE

Grade 6

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

BREEZIN' ALONG

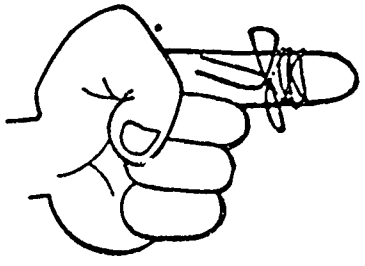




Millions			Thousands			Ones		
Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
7	0	0	0	0	0	4	2	1

seven hundred million, four hundred twenty-one.

Remember These?



nine hundred two thousand, seventeen
902,017

321,438 - three hundred twenty-one thousand, four hundred thirty-eight

Name _____

I. Place Value

Write the missing numbers. Here's how:

4937 __4__ thousands __9__ hundreds __3__ tens __7__ ones

1. 10 _____tens _____ones
2. 670 _____hundreds _____tens _____ones
3. 5003 _____thousands _____hundreds _____tens _____ones
4. 9236 _____thousands _____hundreds _____tens _____ones

Write the standard numeral.

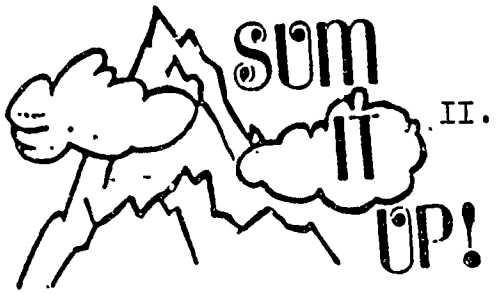
Here's how

2 tens 3 ones 7 hundreds	2 thousands 4 hundreds 8 tens 5 ones	8 ones 1 thousand 2 tens	2 tens 8 hundreds 3 ones
723	5. _____	6. _____	7. _____

3 thousands 9 tens 1 one 4 hundreds	7 hundreds 6 thousands 5 tens 9 ones	2 hundreds 6 ones 1 ten	5 ones 4 tens 6 hundreds	7 ones 5 thousands
8. _____	9. _____	10. _____	11. _____	12. _____

Match:

b 13.	808,606	a.	eight hundred eighty thousand, sixty-six
____14.	880,606	b.	eight hundred eight thousand, six hundred six
____15.	808,660	c.	eight hundred eight thousand, six hundred sixty
____16.	880,066	d.	eight hundred eighty thousand, six hundred six
____17.	21,302	e.	twenty-one thousand, twenty-three
____18.	21,032	f.	twenty-one thousand, three hundred two
____19.	21,230	g.	twenty-one thousand, two hundred thirty
____20.	21,023	h.	twenty-one thousand, thirty-two



II.

NAME_____

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

WER RASTET, ROSTET

4	5		8	4	O 1		6	5	2	3	2		6	7	2	3	2

O 1. 5,200 is read:

B) fifty-two, thousand

K) five thousand, two

O) five thousand, two hundred

E) five million, two hundred thousand

____ 2. 201,004 is read:

F) two hundred one thousand, four hundred

O) two hundred one million, four hundred thousand

S) two hundred one thousand, four

G) twenty-one, thousand four

____ 3. 6,010,100 is read:

T) six million, ten thousand, one hundred

L) six million, one hundred one thousand

S) six billion, ten million, one hundred

E) six billion, ten million, one hundred thousand

____ 4. 137,060 is read:

T) one hundred thirty-seven million, sixty

E) one hundred thirty-seven thousand, six

H) one hundred thirty-seven thousand sixty

N) one million, thirty-seven thousand, sixty

____ 5. 10,007 is read:

L) one hundred thousand, seven

E) ten thousand, seven

A) ten thousand, seven hundred

C) ten million, seven thousand

____ 6. 930,000,570 is read:

R) nine hundred thirty million five hundred seventy

E) ninety-three million, fifty-seven

T) nine hundred thirty million, five hundred seventy thousand

R) nine hundred thirty billion, five hundred seventy

____ 7. 870 is read:

E) eight hundred seven

I) eighty-seven

U) eight hundred seventy

H) eight thousand seventy

____ 8. 3,208 is read:

R) thirty thousand two hundred eight

M) thirty-two thousand two hundred eight

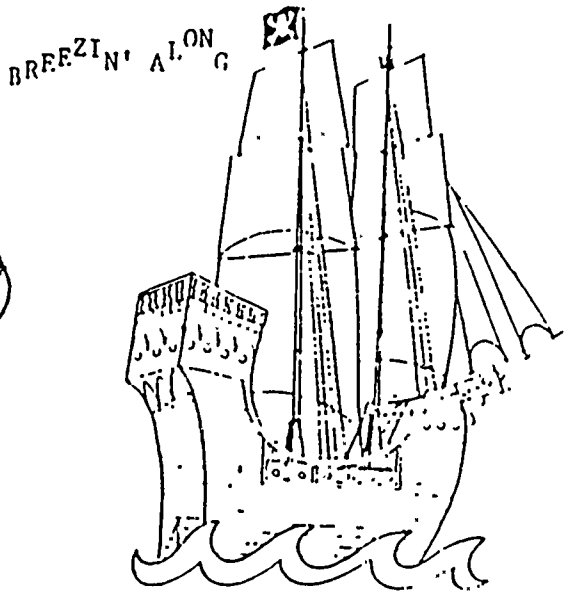
A) three thousand, two hundred eighty

W) three thousand, two hundred eight

9. Write the answer to the puzzle.

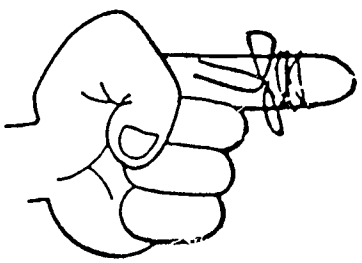
NAME_____

LESSON TWO
Grade 6



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

Remember These?



> greater than (the alligator takes the largest bite)
< less than
= equal

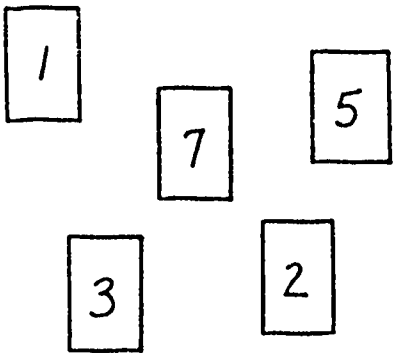
To compare two numbers compare digits in the same place beginning at the left.

SAMPLE: 4537 ◯ 4541

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

Name_____

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



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

II. Replace each ◯ with < or > .

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

Write the number that is 10 greater.

17. 76 ____
18. 469 479
19. 1275 ____
20. 6924 ____
21. 7861 ____
22. 3000 ____

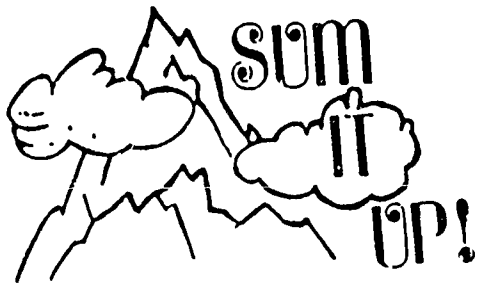
Name_____

Write the number that is 100 greater.

23. 482 ____
24. 709 ____
25. 4521 4621
26. 6023 ____
27. 5700 ____
28. 98 ____

Write the number that is 1000 greater.

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

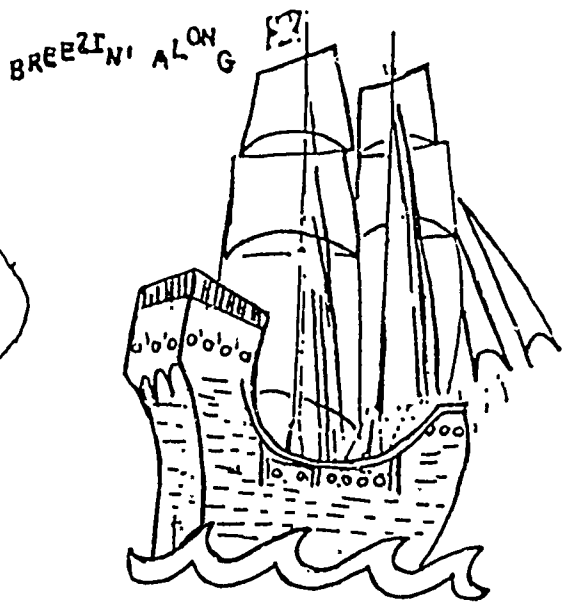


III. Less than (<) greater than (>)?

1. 4,618 (>) 4,609
2. 8,342 ◯ 8,256
3. 5,836 ◯ 5,900
4. 3,948 ◯ 4,062
5. 9,284 ◯ 9,275
6. 23,781 ◯ 24,619
7. 63,821 ◯ 63,281
8. 48,000 ◯ 39,076
9. 25,000 ◯ 24,999
10. 563,074 ◯ 536,074
11. 238,416 ◯ 238,526
12. 820,356 ◯ 820,349
13. 821,642 ◯ 812,462
14. 6,038 ◯ 6,259
15. 4,521 ◯ 4,251
16. 52,834 ◯ 51,792
17. 47,235 ◯ 49,236
18. 73,829 ◯ 74,265
19. 715,624 ◯ 723,000
20. 932,499 ◯ 931,000

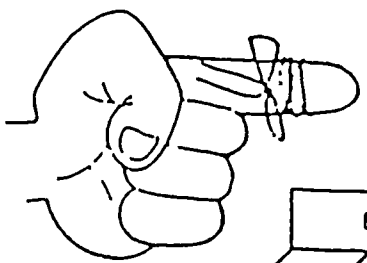
NAME_____

LESSON THREE
Grade 6



PARENT: Your child in this lesson will recognize the place value of numerals to billions.

Remember These?



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

Billions			Millions			Thousands			Ones		
Hundred Billions	Ten Billions	Billions	Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
1	0	6	7	0	0	0	0	0	4	2	1

Name_____

I. TRY THESE: Circle the digits in the indicated place. Look back at the place value chart if you have any difficulty. (Copy the number and circle the correct digit on your answer sheet.)
Sample: 64,000,322 thousands

1. 18,900,754 hundreds
2. 439,286,357 ten thousands
3. 4,050,803 thousands
4. 17,010,358 millions
5. 428,328 tens
6. 5,832,86_,200 billions
7. 563,821,004 millions
8. 64,000,781 ones
9. 4,038,003,008 ten millions
10. 81,673,920 hundred thousands

Build the number that has:

11.

BILLIONS			MILLIONS			THOUSANDS					
					5						

5 in the hundred millions place

6 in the hundreds place

9 in the hundred thousands place

3 in the thousands place

1 in the billions place

3 in the ones place

0 in the ten millions place

8 in the ten billions place

2 in the tens place

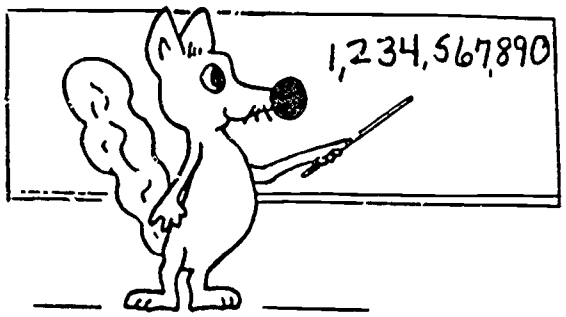
5 in the millions place

2 in the hundred billions place

7 in the ten thousands place

Name_____

TEACHER



Look at the numbers under the blanks, then find an underlined digit which has the same value and place the corresponding letter for it in the blank. The first one has been worked for you.

II. A good math teacher is like a Ford and

1) H / 40,000,000 2) ____ 4,000 3) ____ 90,000

4) ____ 400,000,000 5) ____ 4,000,000 6) ____ 40,000 7) ____ 40,000

8) ____ 4,000,000 9) ____ 50,000

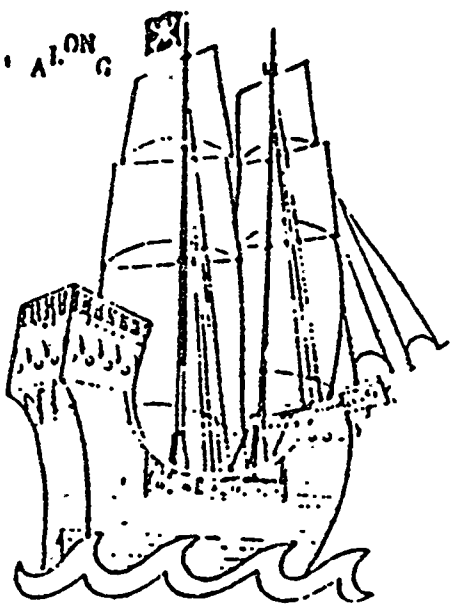
10) ____ 400 11) ____ 500,000,000 12) ____ 4,000,000 13) ____ 4,000 14) ____ 90,000

A	B	C	D	E
104,869	421,986,357	412,375	501,698,423	124,869,537
F	**G**	**H**	**I**	**J**	**K**
43,196	682	241,689,735	521,438	732	23,916
L	**M**	**N**	**O**	**P**	**R**
510,423	869,510	62,341	15,698	843	342,150,895
S	**T**	**W**			
324,691,708	142,573	423,160			

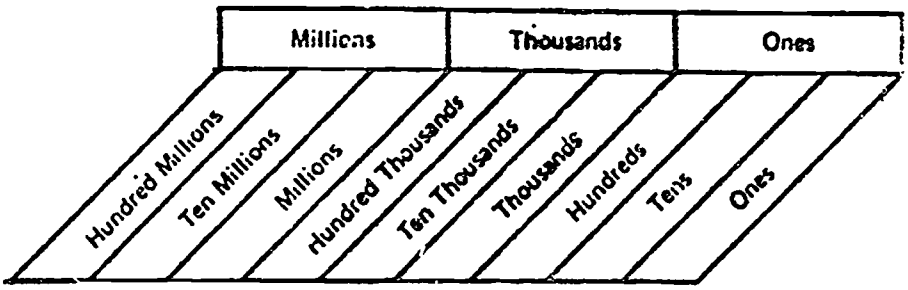
Name _____ LESSON FOUR
Grade 6

PARENT: Estimation and Mental Arithmetic are important skills and sometimes are neglected. Here are some suggestions that you and your child might consider fun.

-"Beat the Clock" - When making purchases see if the child can come up with the cost including tax before the clerk can.
-When in a store point to several items and ask your child if $1.00 is enough (ex. tablet 79¢ and pen 29¢)
-At the dinner table do some mental arithmetic (ex. [(2+5)x8+6]÷2)
-Estimate orally (ex. choose the better estimate for 482 (480 or 490).



LOOK!



ROUNDING WHOLE NUMBERS

EXAMPLE 1: Round 34,256 to nearest thousand.

Look at the digit to the right of the thousands place.
If that digit is less than five (0,1,2,3,or4), the thousands digit is not changed and all digits to its right become zeros.

If the digit is five or greater (5,6,7,8,or9), the thousands digit is increased by one and the digits to its right become zeros.

Round to
34,256
look at

4 is not changed
34,256
replace with 0's

34,000

We say that 34,256 is closer to 34,000 than it is to 35,000

EXAMPLE 2: Round 227,467 to nearest hundred.

Round to
227,467
look at

add 1 to 4
227,467
replace with 0's

227,500

We say that 227,467 is closer to 227,500 than 227,400.

SKILL BUILDERS

Name _____

ESTIMATING SUMS

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

Here's how:

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

ROUND TO TENS AND THEN FIND SUMS.

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

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

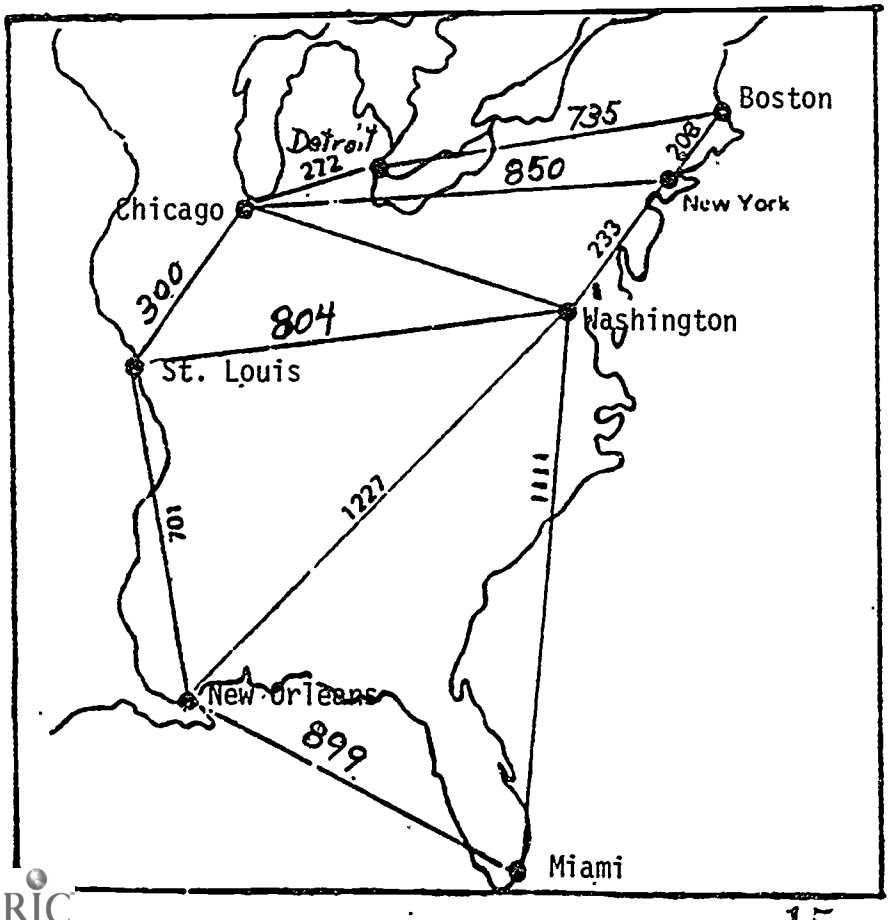
3. 87 a. ___
   3 b. ___
   +24 c. ___
   e. ___ d. ___

ROUND TO HUNDREDS AND THEN FIND SUMS

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

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

6. 113 a. ___
   265 b. ___
   +121 c. ___
   e. ___ d. ___



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

7. Chicago to Detroit to Boston _____

8. St. Louis to New Orleans to Miami _____

9. New Orleans to Washington to New York _____

10. New York to Washington to Miami _____

11. Boston to New York to Washington _____

12. Chicago to New York to Boston _____

Mathematics Department
Hampton, Virginia

Name_____

II. **Complete.**

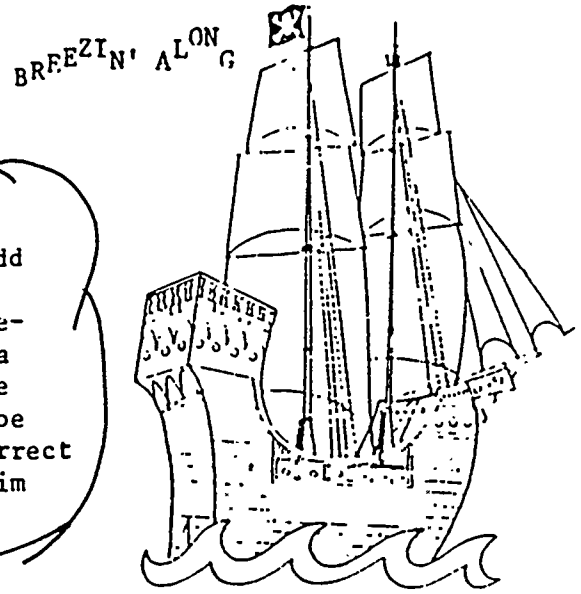
Number	Rounded to the nearest ten	Rounded to the nearest hundred	Rounded to the nearest thousand
74,356	74,360	74,400	74,000
96,478	1)	2)	3)
340,997	4)	5)	6)
545,654	7)	8)	9)
994,817	10)	11)	12)

Round:

13. 572,685 to the nearest hundred _____
14. 253 to the nearest ten _____
15. 69813 to the nearest thousand _____
16. 532,863 to the nearest ten _____
17. 399,588 to the nearest thousand _____
18. 2954 to the nearest thousand _____
19. 8416 to the nearest ten _____
20. 5499 to the nearest thousand _____
21. 70,450 to the nearest hundred _____
22. 401,029 to the nearest hundred _____

NAME_____

LESSON FIVE
Grade 6



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

Example:
$$\begin{array}{r} 516 \\ +\ 289 \\ \hline \end{array}$$

Step 1: Add the ones. Rename if the sum is more than 9.

15 ones = 1 ten + 5 ones

h	t	o
5	1	6
2	8	9
		5

Step 2: Add the tens. Rename if the sum is more than 9.

10 tens = 1 hundred + 0 tens

h	t	o
5	1	6
2	8	9
	0	5

Step 3: Add the hundreds.

h	t	o
5	1	6
2	8	9
8	0	5

Check by adding numbers in reverse order:
$$\begin{array}{r} 289 \\ +\ 516 \\ \hline \end{array}$$

SOME FUN!

What most resembles half an orange? (the other half)

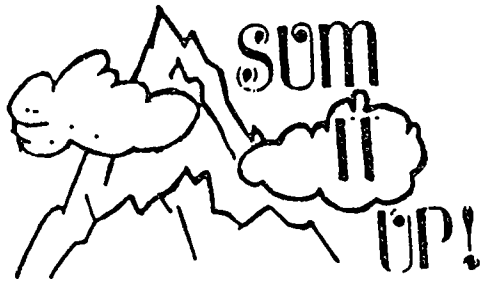
What is worse than finding a worm in your apple? (finding only half a worm)

What runs around a pasture, yet never moves? (a fence)

MATH FACTS

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

5+9=	8+2=	5+8=	7+4=
7+3=	3+6=	1+1=	2+3=
0+5=	5+1=	6+9=	0+7=
2+6=	4+3=	3+5=	2+2=
4+8=	8+8=	2+9=	8+6=
6+8=	3+9=	8+0=	1+2=
4+2=	4+0=	3+1=	5+7=
1+0=	7+5=	4+9=	2+0=
8+1=	9+1=	8+3= Do	4+1=
0+3=	8+4=	2+5= Not	6+6=
9+5=	4+5=	6+1=	9+2=
4+4=	9+6=	3+4= Send	0+4=
5+6=	1+4=	0+0=	1+9=
1+6=	7+2=	1+8= In	2+7=
4+7=	0+9=	6+3=	8+5=
3+3=	6+5=	0+1=	2+1=
6+4=	7+0=	5+5=	9+4=
5+3=	1+3=	9+8=	5+0=
8+9=	3+8=	3+2=	6+2=
7+1=	3+0=	6+0=	0+6=
2+8=	7+9=	9+3=	5+2=
1+7=	5+4=	8+7=	4+6=
7+6=	6+7=	2+4=	0+8=
0+2=	1+5=	9+0=	9+7=
9+9=	3+7=	7+7=	7+8=

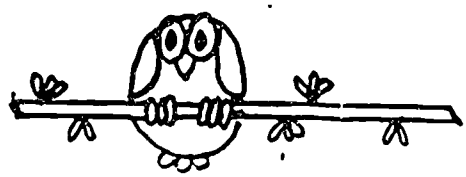


NAME _____

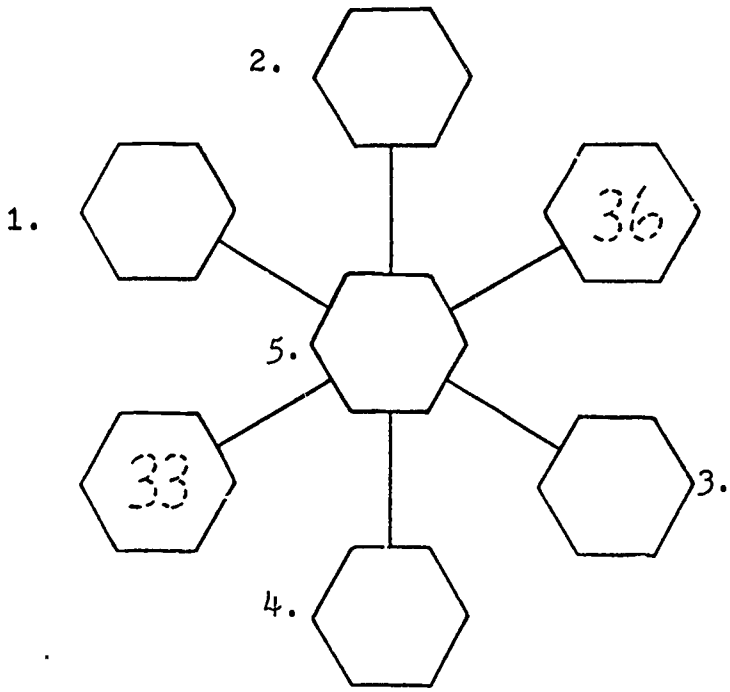
I. Add.

1. 568 + 357 = 925
2. 943 + 278
3. 278 + 495
4. 429 + 378
5. 609 + 527
6. 753 + 942
7. 685 + 259
8. 834 + 399
9. 745 + 268
10. 635 + 395
11. 526 + 666
12. 483 + 483
13. 274 + 895
14. 627 + 483
15. 483 + 637
16. 2216 + 6434
17. 2758 + 5264
18. 4378 + 9295
19. 5409 + 6695
20. 7742 + 7563
21. 8492 + 5886
22. 3605 + 4789
23. 9427 + 3389
24. 8659 + 7847
25. 6768 + 8935
26. 59683 + 25974
27. 32759 + 59867
28. 64936 + 72858
29. 55294 + 53888
30. 8693 + 6275

NAME _____



IV. Adding with Renamings: Write these numbers in the diagram so that the sum of each row of numbers will be 100.



31
32
33
34
35
36
37

V.

Add across. Add down.

1.

16	34	c.
81	71	d.
a.	b.	e.

2.

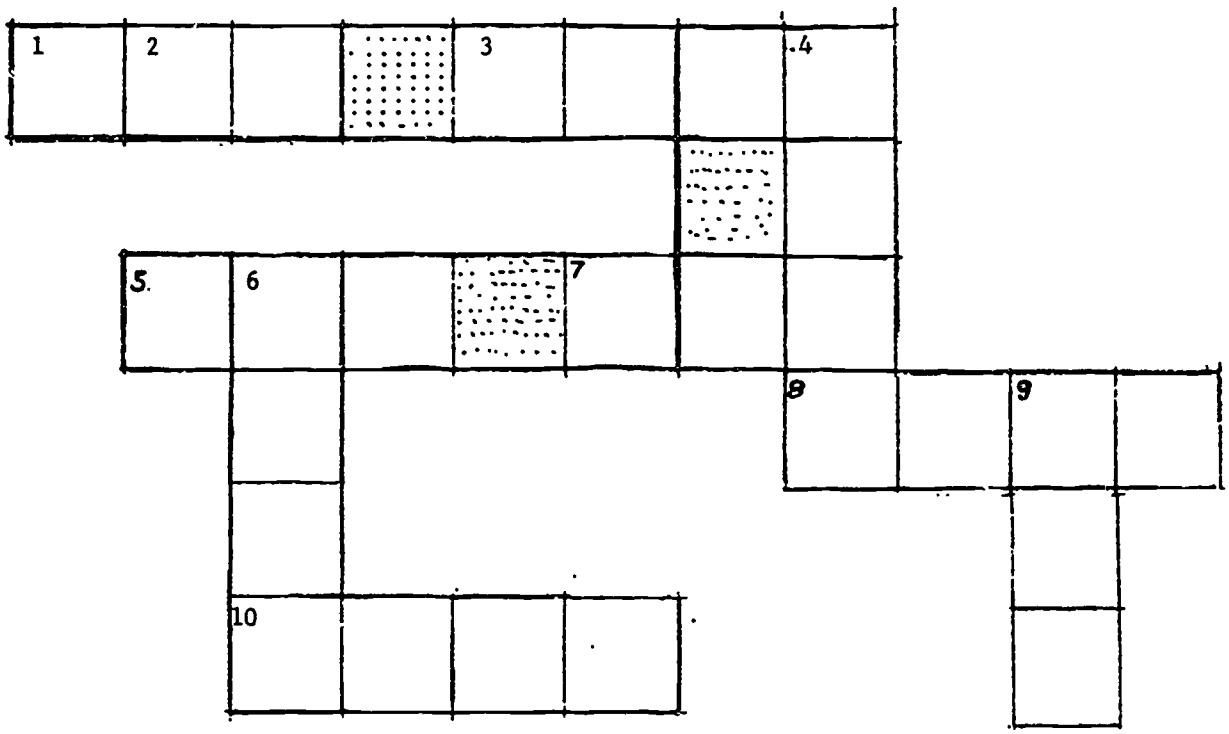
102	43	c.
48	25	d.
a.	b.	e.

3.

469	387	c.
943	2138	d.
a.	b.	e.

Name_____

III. Use the clues in the ACROSS and DOWN columns to solve the cross-number puzzle below.



ACROSS

1. 742 + 736
3. 50 + 153
5. 41 + 240
7. 257 + 250
8. 2724 + 2350
10. 5729 + 2613

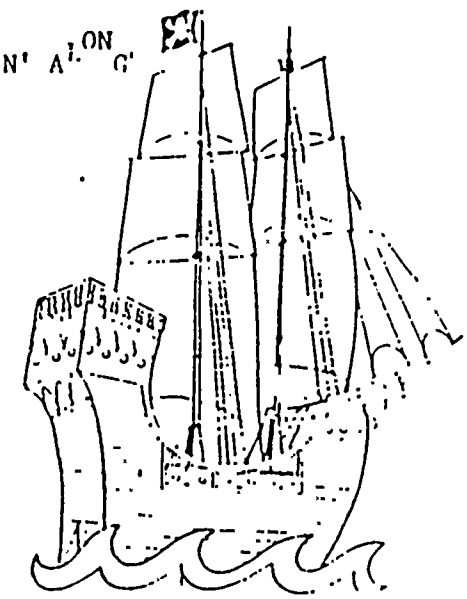
DOWN

2. 131 + 341
3. 89 + 146
4. 1236 + 2439
6. 2599 + 5479
9. 271 + 491

NAME_____

LESSON SIX
Grade 6

BREEZIN' ALONG



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

Example: 810
- 374

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

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

Step 3: Subtract hundreds.

step 1:

h	t	o
8	^{0}	^{1}0
- 3	7	4
		6

step 2:

h	t	o
7	^{10}	^{1}0
- 3	7	4
	3	6

step 3:

h	t	o
7	^{10}	^{1}0
-	3	7 4
4	3	6

Check by adding difference and minuend to get subtrahend:

436
+ 374
810

MATH FACTS

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

8-5=	10-1=	8-7=	5-1=
4-4=	9-4=	10-4=	11-3=
14-7=	13-8=	9-5=	5-2=
6-3=	7-0=	11-2=	12-4=
13-6=	18-9=	15-8=	13-5=
1-0=	8-3=	7-3=	9-3=
11-7=	2-2=	5-5=	10-2=
3-2=	11-5=	13-7=	13-4=
9-1=	9-7=	8-4=	9-8=
5-3=	5-4=	1-1=	16-7=
7-6=	12-7=	14-8=	6-6=
8-2=	0-0=	5-0=	11-6=
6-0=	17-9=	7-7=	9-0=
9-9=	8-8=	4-3=	6-5=
4-1=	10-6=	8-1=	15-7=
12-3=	14-9=	12-9=	7-2=
10-7=	8-6=	10-3=	3-3=
6-4=	12-5=	3-1=	15-6=
16-9=	10-8=	6-2=	7-1=
14-5=	6-1=	15-9=	17-8=
12-8=	4-0=	11-4=	14-6=
9-6=	11-8=	7-5=	9-2=
7-4=	12-6=	13-9=	2-0=
10-5=	16-8=	8-0=	11-9=
3-0=	10-9=	2-1=	4-2=

DO Not Send In

Name _____

I. Subtract

1. 114 - 38 = 76

2. 54 - 27

3. 160 - 78

4. 108 - 91

5. 55 - 38

6. 103 - 70

7. 153 - 71

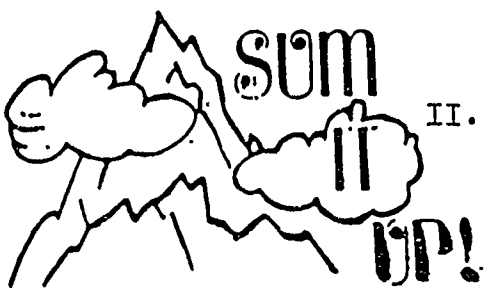
8. 113 - 96

9. 46 - 29

10. 63 - 36

11. 131 - 49

12. 117 - 68



II. 1. 805 - 41

2. 370 - 29

3. 605 - 431

4. 1608 - 475

5. 7062 - 4683

6. 8507 - 3026

7. 3048 - 1765

8. 9052 - 5871

9. 82931 - 38247

10. 93765 - 25849

11. 72380 - 45695

12. 63519 - 27843

13. 52781 - 14993

14. 902 - 375

15. 701 - 298

16. 803 - 359

17. 605 - 247

SOLVE THE FOLLOWING SUTRACTION PROBLEMS.

THE FIRST ONE HAS BEEN WORKED FOR YOU.

1. $\begin{array}{r} 4\,15 \\ 5\!\!\not 5 \\ -\,36 \\ \hline 19 \end{array}$

2. $\begin{array}{r} 436 \\ -\,42 \\ \hline \end{array}$

3. $\begin{array}{r} 92 \\ -\,85 \\ \hline \end{array}$

4. $\begin{array}{r} 845 \\ -\,359 \\ \hline \end{array}$

5. $\begin{array}{r} 52 \\ -\,15 \\ \hline \end{array}$

6. $\begin{array}{r} 200 \\ -\,113 \\ \hline \end{array}$

7. $\begin{array}{r} 96 \\ -\,7 \\ \hline \end{array}$

8. $\begin{array}{r} 436 \\ -\,249 \\ \hline \end{array}$

9. $\begin{array}{r} 471 \\ -\,289 \\ \hline \end{array}$

10. $\begin{array}{r} 201 \\ -113 \\ \hline \end{array}$

11. $\begin{array}{r} 771 \\ -\,671 \\ \hline \end{array}$

12. $\begin{array}{r} 565 \\ -337 \\ \hline \end{array}$

13. $\begin{array}{r} 541 \\ -374 \\ \hline \end{array}$

14. $\begin{array}{r} 323 \\ -165 \\ \hline \end{array}$

15. $\begin{array}{r} 625 \\ -\,338 \\ \hline \end{array}$

16. $\begin{array}{r} 75 \\ -\,16 \\ \hline \end{array}$

17. $\begin{array}{r} 753 \\ -\,288 \\ \hline \end{array}$

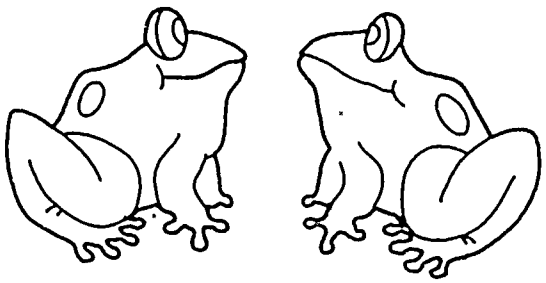
18. $\begin{array}{r} 676 \\ -\,397 \\ \hline \end{array}$

19. $\begin{array}{r} 74 \\ -\,45 \\ \hline \end{array}$

20. $\begin{array}{r} 78 \\ -\,28 \\ \hline \end{array}$

21. $\begin{array}{r} 860 \\ -789 \\ \hline \end{array}$

22. $\begin{array}{r} 43 \\ -\,19 \\ \hline \end{array}$



Let's see you hop through these !!

Name_____

TRY THESE!

IV.

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

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

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

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

V. Use the code to find each difference.

102	97	608
4061	48	572
872	705	300

Here's how

102 − 48

102 − 48 = 54

1. ☐ − ☐ = _____

2. ☐ − ☐ = _____

3. ☐ − ☐ = _____

4. ☐ − ☐ = _____

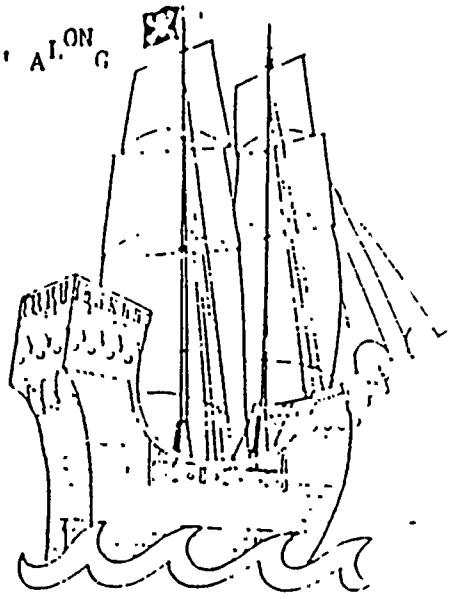
5. ☐ − ☐ = _____

NAME_____

LESSON SEVEN

Grade 6 BREEZIN' ALONG

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



Example 1: Multiply 54 x 7

Step 1:
$$\begin{array}{r} {}^{2}54 \\ \times\ 7 \\ \hline 8 \end{array}$$
7 x 4 ones - 28 ones; that's 2 tens 8 ones

Step 2:
$$\begin{array}{r} {}^{2}54 \\ \times\ 7 \\ \hline 378 \end{array}$$
7 x 5 tens - 35 tens; 35 tens + 2 tens = 37 tens

Example 2: Multiply
$$\begin{array}{r} 362 \\ \times\ 25 \end{array}$$

Step 1: Multiply 5 x 263
$$\begin{array}{r} 263 \\ \times\ 25 \\ \hline 1315 \end{array}$$

Step 2: Multiply 20 x 263
$$\begin{array}{r} 263 \\ \times\ 25 \\ \hline 1315 \\ 5260 \end{array}$$

Step 3: Add partial products
$$\begin{array}{r} 263 \\ \times\ 25 \\ \hline 1315 \\ 5260 \\ \hline 6575 \end{array}$$

MATH FACTS

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

4x0=	8x2=	6x7=	1x3=
7x0=	7x4=	8x5=	6x1=
0x1=	1x6=	5x4=	7x1=
0x3=	5x6=	8x0=	6x5=
8x3=	6x9=	4x3=	0x5=
2x6=	5x7=	3x5=	7x7=
5x0=	2x1=	9x2=	7x6=
4x5=	0x6= DO	4x7=	3x2=
6x0=	8x7= Not	2x4=	6x4=
0x8=	9x6= Send	3x1=	4x2=
4x6=	9x9= In	7x9=	5x3=
3x0=	5x8=	0x7=	6x3=
1x9=	4x8=	1x7=	3x6=
4x9=	8x8=	8x4=	3x8=
7x2=	0x0=	5x2=	1x5=
4x1=	9x8=	2x8=	8x1=
4x4=	7x3=	2x7=	6x8=
0x2=	2x5=	1x1=	8x9=
9x4=	3x3=	3x9=	9x7=
5x1=	1x4=	2x3=	5x5=
1x8=	9x0=	1x2=	8x6=
2x6=	6x6=	0x9=	9x3=
7x5=	2x9=	6x2=	3x7=
9x1=	0x4=	1x0=	7x8=
9x5=	2x2=	5x9=	3x4=

ONE DIGIT MULTIPLIERS.

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

1. $\overset{2}{24} \times 7 = 168$

2. 52×8

3. 32×8

4. 59×5

5. 43×8

6. 67×5

7. 36×9

8. 32×4

9. 66×7

10. 62×6

11. 83×3

12. 76×6

13. 68×2

14. 88×4

15. 91×6

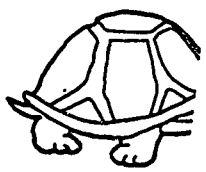
16. 91×4

17. 45×2

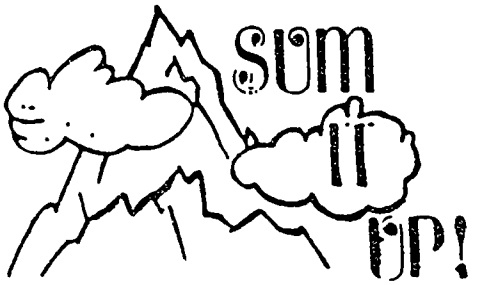
18. 45×4

19. 24×8

20. 47×3



I think I can.
I know you can!!



NAME _____

II. Multiplying Two Digit Multipliers

1. 34
x 23

2. 67
x45

3. 82
x 19

4. 38
x64

5. 96
x 58

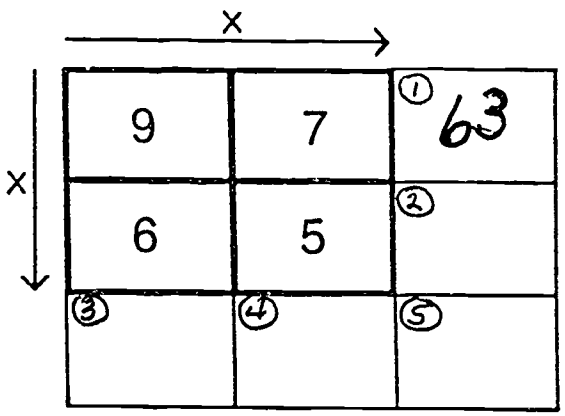
6. 409
x 84

7. 326
x 34

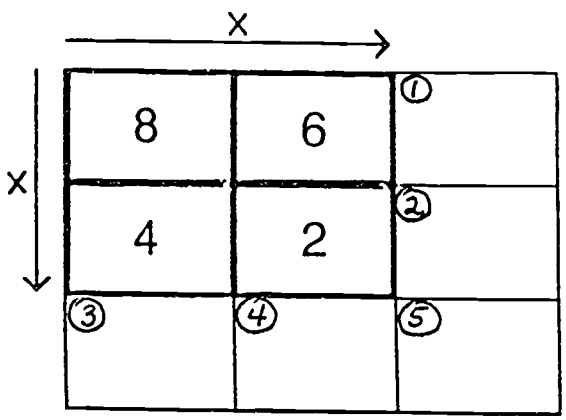
8. 513
x 77

III. Multiply across. Multiply down.

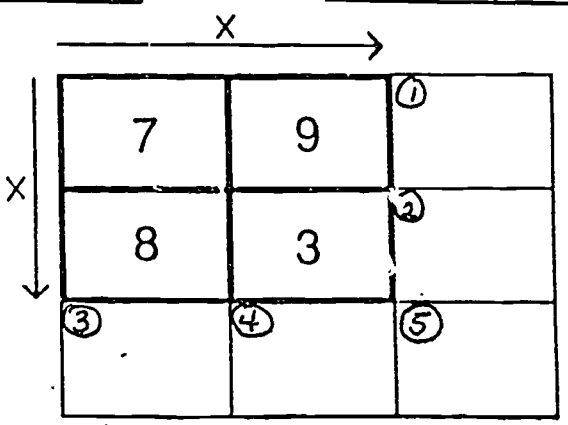
A.



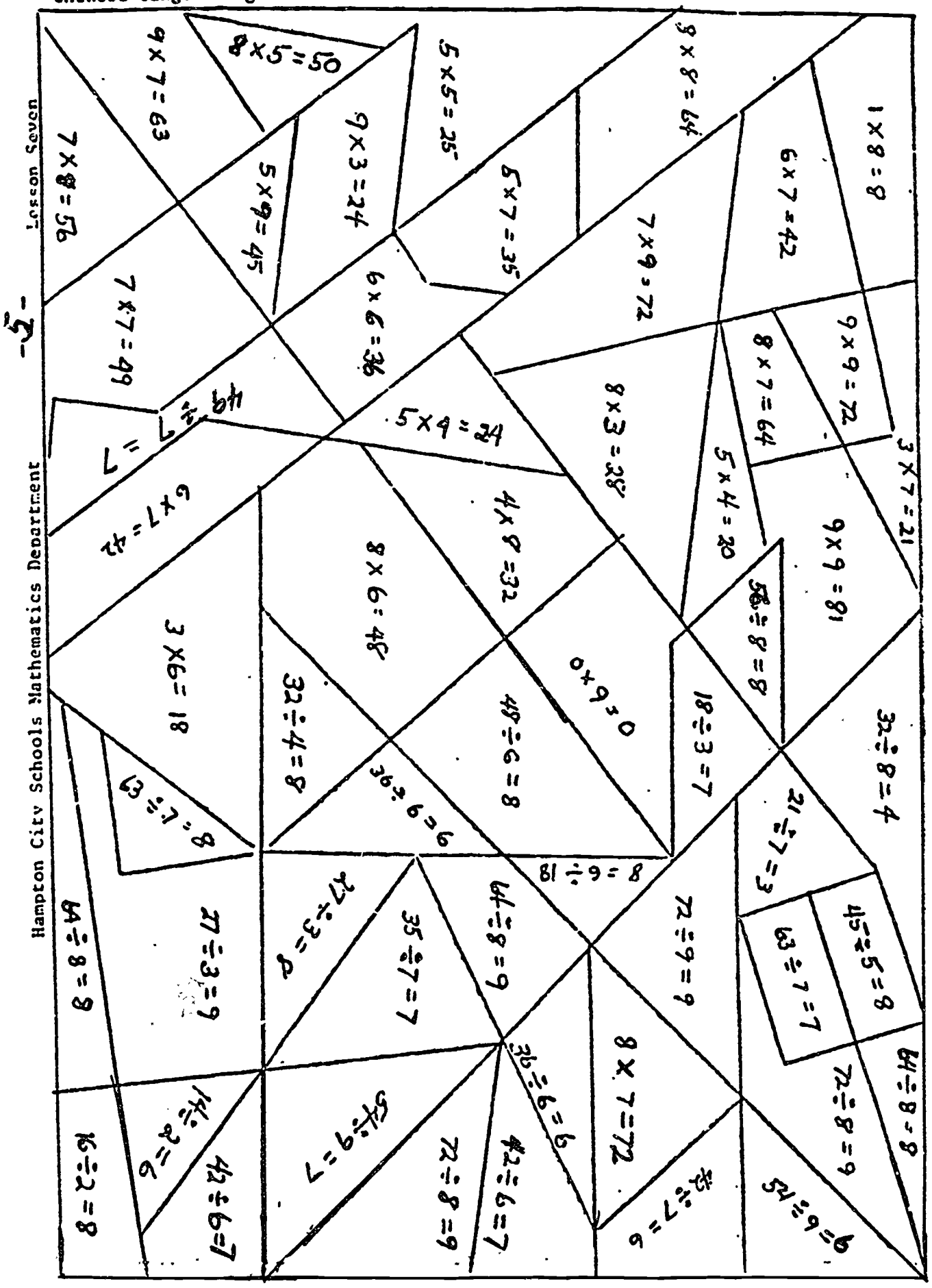
B.



C.



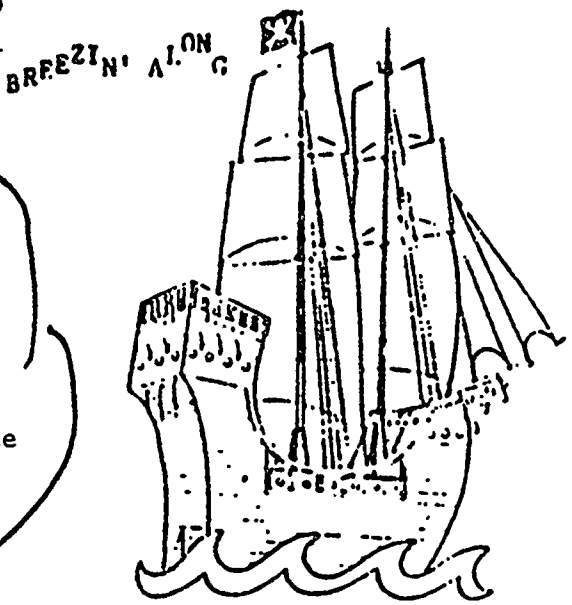
Shade in each shape which contains a mistake. You should find 20 mistakes Please use pencil so that you can erase if necessary. You will create the Chinese tangram figures.



NAME _____

LESSON EIGHT

Grade 6



PARENT: In this lesson your child will divide five-digit numbers by two-digit numbers. For division it is necessary that your child know both the division and multiplication facts. On the next page is a list of division facts. Have your child practice the facts until he or she can complete them correctly in three minutes. You can rearrange the order. This is also an appropriate time to brush up on estimation skills.

Example:

$8\overline{)2872}$

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

$$\begin{array}{r} 359 \\ 8\overline{)2872} \\ -24 \\ \hline 47 \\ -40 \\ \hline 72 \\ -72 \\ \hline 0 \end{array}$$

Your answer is 359.

This may also be solved by short division.

(Examples on Page 3 ar, done using this process.)

Name _____ Grade ____

MATH FACTS

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

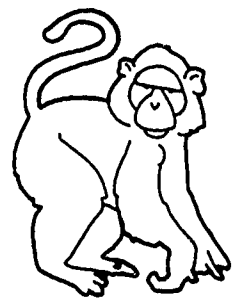
27÷9=	16÷2=	30÷6=	54÷6=
18÷2=	54÷9=	12÷2=	14÷2=
64÷8=	4÷4=	6÷6=	10÷2=
30÷5=	32÷8=	28÷7=	24÷3=
24÷6=	45÷9=	3÷1=	20÷4=
15÷3=	25÷5=	0÷5=	8÷8=
6÷1=	2÷1=	48÷6=	81÷9=
28÷4=	7÷7=	63÷7=	0÷3=
0÷6=	0÷2=	5÷5=	35÷5=
3÷3=	40÷5=	6÷3=	72÷8=
14÷7=	9÷3=	32÷4=	8÷1=
9÷1=	6÷2=	56÷8=	9÷9=
36÷9=	45÷5=	49÷7=	12÷3=
4÷2=	0÷4=	7÷1=	24÷4=
40÷8=	21÷7=	20÷5=	18÷3=
56÷7=	10÷5=	42÷7=	1÷1=
36÷4=	42÷6=	12÷4=	0÷8=
0÷7=	27÷3=	15÷5=	12÷6=
5÷1=	4÷1=	36÷6=	21÷3=
18÷6=	2÷2=	18÷9=	16÷8=
35÷7=	16÷4=	0÷1=	0÷9=
48÷8=	24÷8=	8÷2=	63÷9=
72÷9=	8÷4=		

DO NOT Send In

Math Form U1-A (New 07)

Name _____

Divide. The first one has been worked for you.



1. $7\overline{)4242}$ — 60!, 42, 0, 42, 42, 0

2. $4\overline{)1244}$

3. $9\overline{)5490}$

4. $9\overline{)8199}$

BEWARE OF ZEROS

5. $5\overline{)2050}$

6. $5\overline{)2045}$

7. $4\overline{)3624}$

8. $2\overline{)426}$

9. $8\overline{)416}$

10. $5\overline{)405}$

11. $7\overline{)406}$

12. $7\overline{)497}$

13. $7\overline{)4256}$

14. $3\overline{)1806}$

15. $9\overline{)4563}$

NAME_____

II. Example: $43\overline{)8335}$

that is about 40 $\overline{)8000}$ so the quotient is about 200.

Example: $32\overline{)3907}$ $3\square\overline{)4\square\square\square}$

since 30 X 100 = 3000 the quotient is more than 100.

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

Example: $62\overline{)3286}$ (The first digit is over the 8.)

62 X 10 = 620
62 X100 = 6200 the quotient is less than 100 but more than 10.

answer: 3.286

1. $55\overline{)3056}$ 2. $28\overline{)4836}$ 3. $42\overline{)8738}$ 4. $24\overline{)1683}$

5. $5\overline{)7140}$ 6. $36\overline{)4891}$ 7. $12\overline{)396}$

NAME _____

Remember These?

Let's review the steps in LONG division:

1. Estimate
2. Multiply
3. Subtract
4. Bring down

ESTIMATE: $51\overline{)2434}$

1. Estimate: 51 rounds to 50
   any 50's in 2? No
   any 50's in 24? No
   any 50's in 243? Yes
   First digit goes above 3
   How many 50's in 243? 4

$$51\overline{)2434}$$
$$\begin{array}{r} 4 \\ 51\overline{)2434} \\ -204 \end{array}$$

2. Multiply: 4 X 51 = 204

3. Subtract:

$$\begin{array}{r} 4 \\ 51\overline{)2434} \\ -204 \\ \hline 39 \end{array}$$

4. Bring Down:

$$\begin{array}{r} 4 \\ 51\overline{)2434} \\ -204 \\ \hline 394 \end{array}$$

1. Estimate: How many 50's in 394? 7

2. Multiply: 7 X 51 = 357

3. Subtract:

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

$$\begin{array}{r} 47 \\ 51\overline{)2434} \\ -204 \\ \hline 394 \\ -357 \\ \hline 37 \end{array}$$

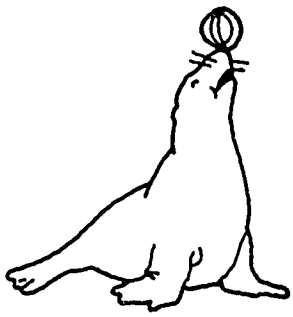
III. Divide:

1. $6\overline{)30}$
2. $60\overline{)300}$
3. $62\overline{)3000}$
4. $4\overline{)172}$
5. $40\overline{)172}$
6. $45\overline{)1720}$
7. $22\overline{)88}$
8. $24\overline{)192}$
9. $54\overline{)380}$
10. $5\overline{)457}$
11. $73\overline{)878}$
12. $25\overline{)286}$

Name _____

Divide: The first one has been worked for you.

1. $21\overline{)4221}$ — 201, 42, 21, 21



2. $29\overline{)928}$

3. $28\overline{)1708}$

4. $37\overline{)16317}$

5. $16\overline{)992}$

6. $38\overline{)15428}$

7. $36\overline{)1764}$

8. $39\overline{)2613}$

9. $25\overline{)1175}$

10. $88\overline{)6336}$

11. $82\overline{)8856}$

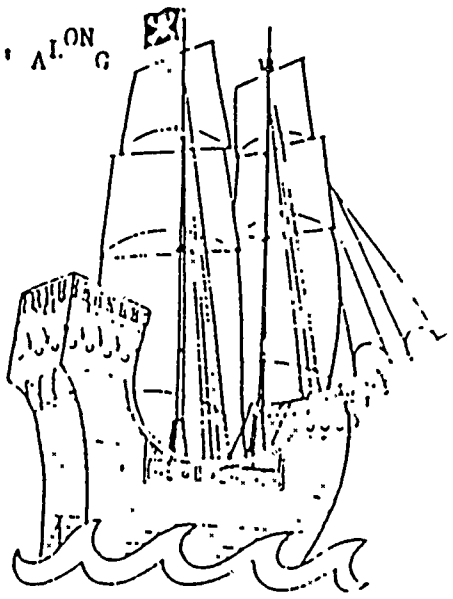
12. $55\overline{)4565}$

13. $27\overline{)11367}$

NAME_____

LESSON NINE
Grade 6

BREEZIN' ALONG



PARENT: This is both a review lesson on the four basic operations on whole numbers and a lesson on estimation to determine whether an answer is reasonable. After solving a problem a person should always ask "Is that reasonable?"

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

Example 1:
$$\begin{array}{r} 46 \\ \times\ 3 \\ \hline 1218 \end{array}$$
is unreasonable.

If you round and estimate 50x3=150, you would realize there is an error.

Example 2:
$$\begin{array}{r} 54 \\ +\ 38 \\ \hline 812 \end{array}$$
is unreasonable since 50+40=90

Example 3: $3\overline{)307}$ $\quad 12$ R1 is unreasonable since 12x3=36.

TRY THESE!

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

	Estimate	Correct Answer
$\begin{array}{r} 5308 \\ +1965 \\ \hline \end{array}$	$\begin{array}{r} 5000 \\ +2000 \\ \hline 7000 \end{array}$	$\begin{array}{r} 5308 \\ +1965 \\ \hline 7273 \end{array}$
$\begin{array}{r} 4160 \\ 2057 \\ +\ 6542 \\ \hline \end{array}$	1.	2.
$\begin{array}{r} 3052 \\ 14605 \\ 981 \\ +\ 1232 \\ \hline \end{array}$	3.	4.

NAME_____

II. Estimate differences (there may be more than one correct estimate).

		Estimate	Correct Answer
72,009 - 8,805		72,000 - 10,000 62,000	72,009 - 8,805 63,204
3,056 - 437	1.		2.
16,049 - 2,501	3.		4.
63,048 - 28,429	5.		6.
2,471 - 607	7.		8.

III. WORD PROBLEMS:

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

Answer_____

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

Answer_____

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

Answer_____

NAME _____

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

Example:		estimate	correct answer
	247	200	247
	x 63	x 60	x 63
		12000	741
			1482
			15561

		estimate	correct answer
473 x 45	1.		2.
407 x 49	3.		4.
238 x 72	5.		6.

Estimate the quotients and then find the correct quotient.

Example:		estimate	correct answer
	27)5136	100	190R6
		30)5000	27)5136
			27
			243
			243
			06
			0
			6

If you have a calculator check the problem this way.

Quotient x Divisor + Remainder = Dividend

190 x 27 + 6 = 5136

NAME_____ Circle the appropriate answer on this paper; then write that answer on the answer sheet.

V.

1. $2\overline{)391}$ R1 = 195 R1

Reasonable Not reasonable

2. $3\overline{)62}$ R2 = 20 R2

Reasonable Not reasonable

3. $2\overline{)980}$ = 49

Reasonable Not reasonable

4. $3\overline{)930}$ = 310

Reasonable Not reasonable

5. $6\overline{)615}$ R3 = 12 R3

Reasonable Not reasonable

6. $9\overline{)460}$ R1 = 51 R1

Reasonable Not reasonable

7. $7\overline{)705}$ R5 = 100 R5

Reasonable Not reasonable

8. $4\overline{)802}$ R2 = 20 R2

Reasonable Not reasonable

VI. Word Problems:

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

Answer_____

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

Answer_____

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

Answer_____

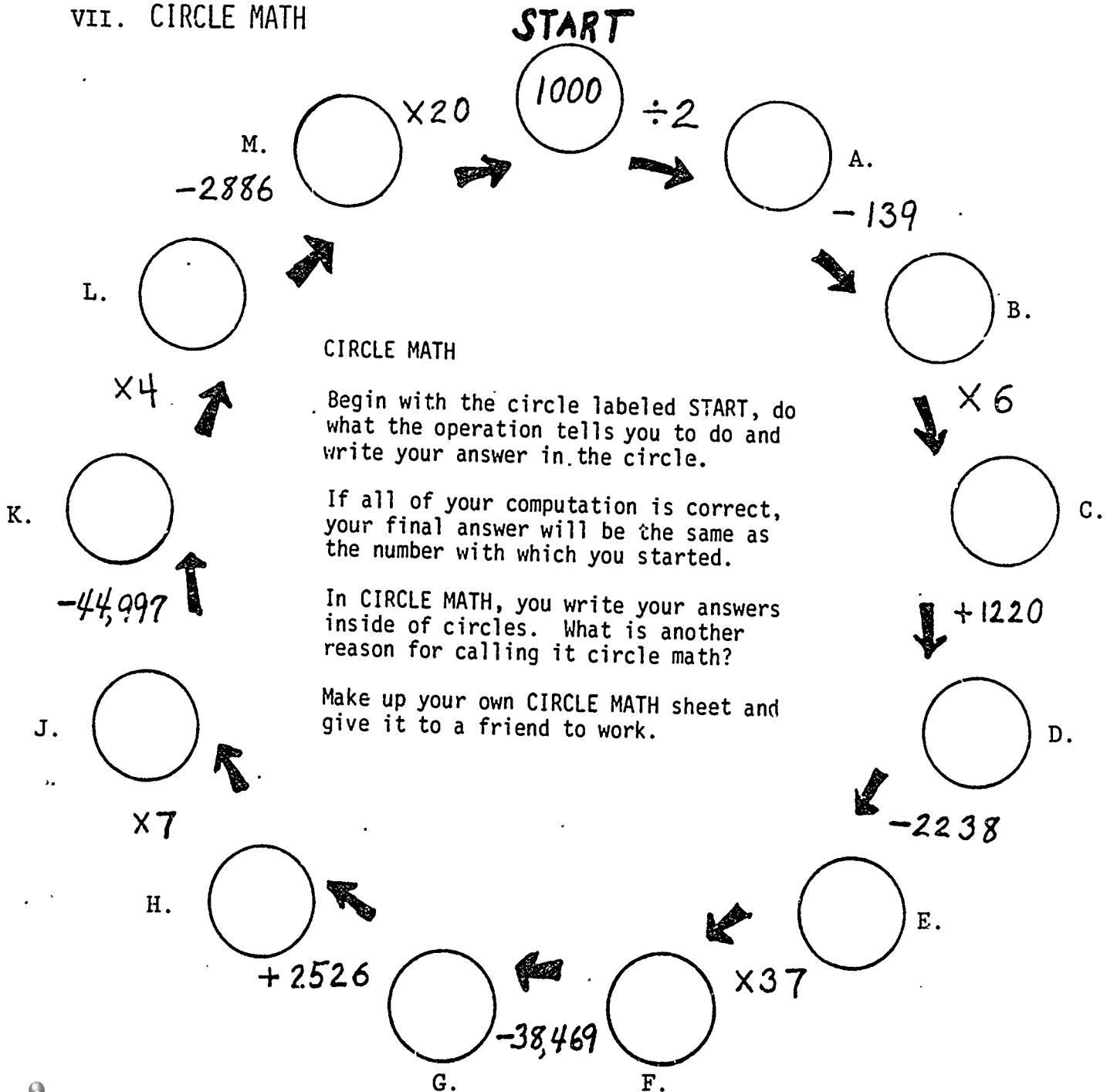
quick and easy

From The Virginia Mathematics Teacher, October, 1980

Hampton City Schools

Charlotte E. Copley
Hampton City Schools, Hampton

VII. CIRCLE MATH



CIRCLE MATH

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

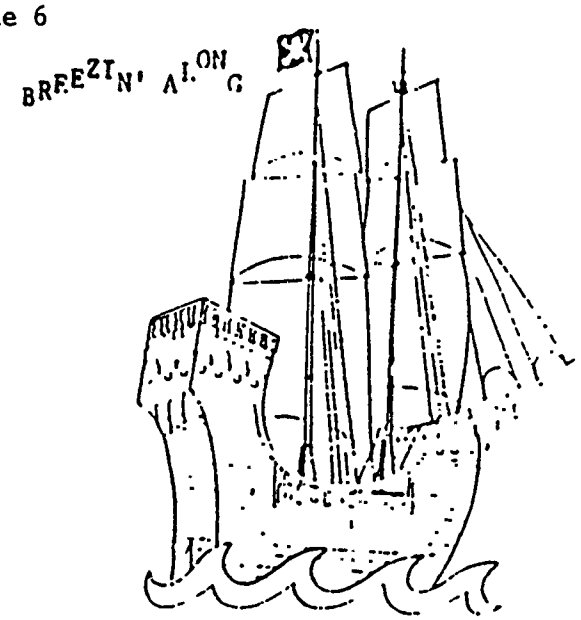
If all of your computation is correct, your final answer will be the same as the number with which you started.

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

Make up your own CIRCLE MATH sheet and give it to a friend to work.

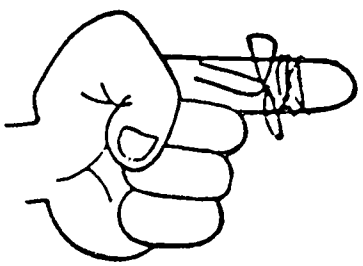
NAME _____

LESSON TEN
Grade 6

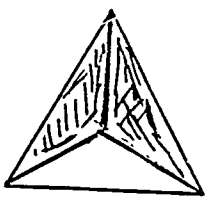


PARENT: This lesson is a review of fractions.

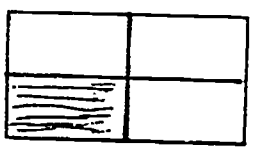
Remember These?



numerator ← number of parts darkened
denominator ← total number of equal parts

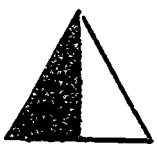
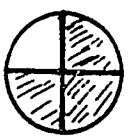
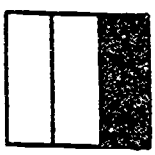
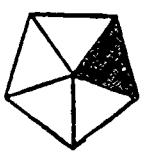
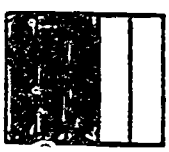
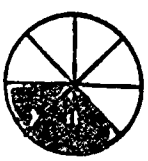
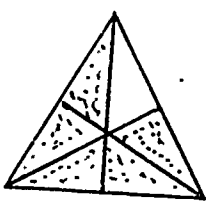
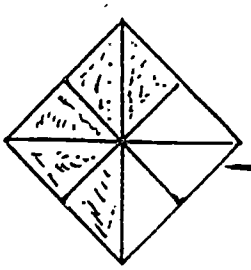


$\frac{2}{3}$



$\frac{1}{4}$

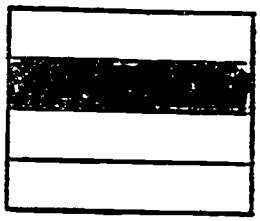
I. Write the fraction that tells how much of each figure is colored.

	a	b	c	d
1.	 ___	 ___	 ___	 ___
2.	 ___	 ___	 ___	 ___

SKILL BUILDERS

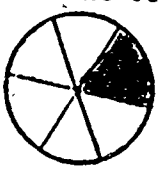
NAME_____

II. 1. What fractional part of the figure to the right is shaded?



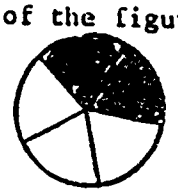
Answer_____

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



Answer_____

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

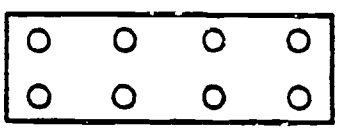


Answer_____

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

Answer_____

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



Answer_____

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

Answer_____

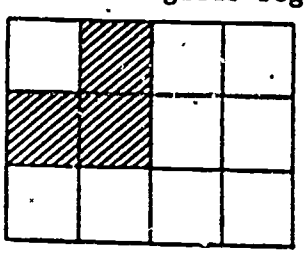
7. What part of this rectangular region is shaded?

a) $\frac{3}{4}$

b) $\frac{3}{8}$

c) $\frac{3}{9}$

d) $\frac{3}{12}$



Answer_____

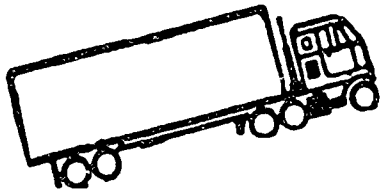
Name _____

HIDDEN FOODS

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

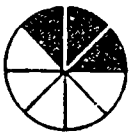
	CLUE	ANSWER/FOOD	FRACTION
ex.	to charge a public official with misbehavior in office	impeach	$\frac{5}{7}$
1.	an upright piece forming the side of a door	_____	_____
2.	the fruit of the oak	_____	_____
3.	a beautifully plumed bird	_____	_____
4.	to bat lightly	_____	_____
5.	to give instruction	_____	_____
6.	to come before the public as in a play	_____	_____
7.	watched secretly	_____	_____
8.	a pet belonging to the rodent family	_____	_____
9.	to make grasping motions (to seize)	_____	_____
10.	to begin	_____	_____
11.	chubby	_____	_____
12.	small ships	_____	_____
13.	covering for the legs	_____	_____
14.	supreme; exhalted	_____	_____
15.	a place where money is coined	_____	_____

NAME_____ KEEP ON TRUCKING!



Write fractions which show the shaded parts.

IV. Example:



Numerator 3 Fraction $\frac{3}{8}$
Denominator 8

1. 

Numerator ___ Fraction ___
Denominator ___

2. 

Numerator ___ Fraction ___
Denominator ___

3. 

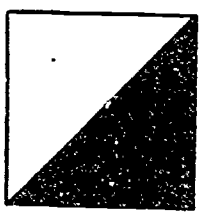
Numerator ___ Fraction ___
Denominator ___

4. 

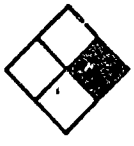
Numerator ___ Fraction ___
Denominator ___

5. 

Numerator ___ Fraction ___
Denominator ___

6. 

Numerator ___ Fraction ___
Denominator ___

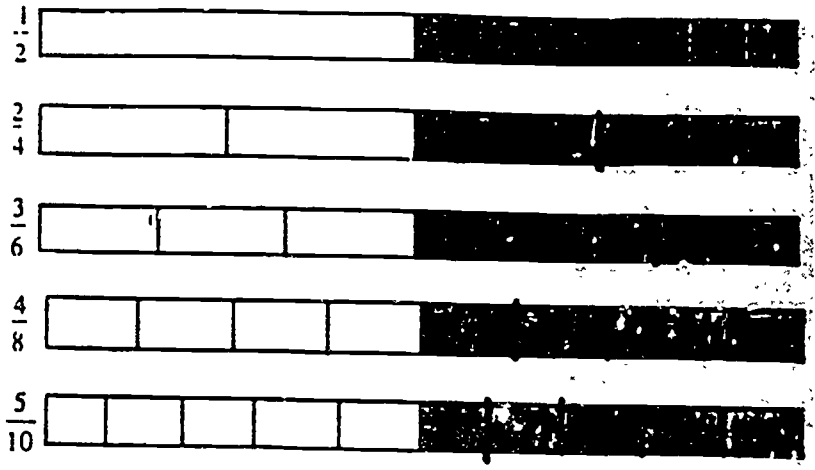
7. 

Numerator ___ Fraction ___
Denominator ___

NAME _____

Equivalent Fractions - are fractions that name the same number.

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



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

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

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

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

Write each fraction in lowest terms.

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

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

NAME_____ Building Equivalent Fractions

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

$$\frac{2}{3} = \frac{2\times4}{3\times4} = \frac{8}{12}$$

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

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

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

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

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

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

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

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

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

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

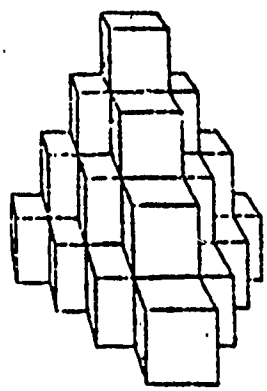
9. $\frac{5}{9} = \frac{10}{18} = \frac{15}{27} = \frac{20}{36} = \frac{25}{54}$

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

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

TAKE A BREATHER - HAVE SOME FUN!

How many blocks?



NAME_____ Improper Fractions and Mixed Numbers

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

1. $\frac{27}{4} = 6\frac{3}{4}$

$$4\overline{)27}\ \ 6\ \tfrac{3}{4}$$
$$\underline{24}$$
$$3$$

$\frac{83}{5} = 16\frac{3}{5}$

$$5\overline{)83}\ \ 16\ \tfrac{3}{5}$$
$$\underline{5}$$
$$33$$
$$\underline{30}$$
$$3$$

TRY THESE:

1. $\frac{7}{2} =$ _____ 2. $\frac{9}{5} =$ _____ 3. $\frac{7}{3} =$ _____ 4. $\frac{9}{4} =$ _____

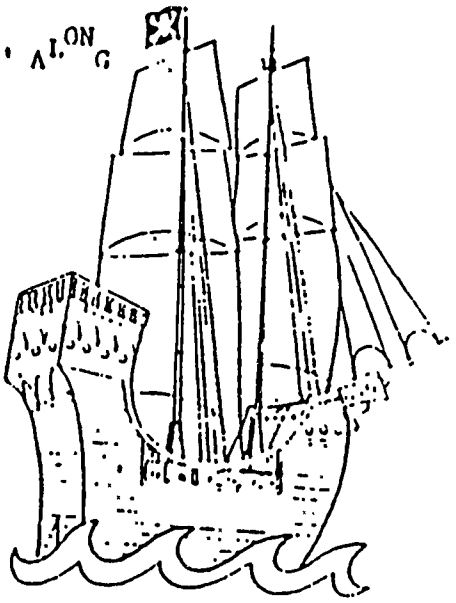
5. $\frac{6}{5} =$ _____ 6. $\frac{8}{3} =$ _____ 7. $\frac{14}{3} =$ _____ 8. $\frac{10}{3} =$ _____

9. $\frac{17}{5} =$ _____ 10. $\frac{79}{10} =$ _____ 11. $\frac{37}{6} =$ _____ 12. $\frac{62}{7} =$ _____

NAME_____

LESSON ELEVEN
Grade 6

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



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

Try these: Remember to reduce to lowest terms.

$\frac{1}{4} + \frac{3}{4} =$ ____ $\frac{1}{3} + \frac{1}{3} =$ ____ $\frac{1}{6} + \frac{5}{6} =$ ____

$\frac{5}{9} + \frac{2}{9} =$ ____ $\frac{1}{10} + \frac{3}{10} =$ ____ $\frac{1}{25} + \frac{2}{25} =$ ____ $\frac{1}{16} + \frac{5}{16} =$ ____

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

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

6 { 0, 6, 12, 18, 24, ... Multiples of 6
8 { 0, 8, 16, 24, ... Multiples of 8

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

$\frac{1}{6} = \frac{\quad}{24}$ $\frac{1x4}{6x4} = \frac{4}{24}$

$\frac{1}{8} = \frac{\quad}{24}$ $\frac{1x3}{8x3} = \frac{3}{24}$ $\frac{4}{24} + \frac{3}{24} = \frac{7}{24}$

Example 2: Add: $\frac{1}{3} = \frac{2}{6}$

$+ \frac{5}{6} = \frac{5}{6}$

3 → 0, 3, 6, ...
6 → 0, 6, ...

$\frac{7}{6} = 1\frac{1}{6}$

COMPLETE THIS PAGE AND RETURN WITH ANSWER SHEET.

NAME _____

I. Complete each table of multiples.

4	0	4	8	12						
5	0									
6	0									
8	0									
9	0									
12	0									
15	0									
18	0									

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

EXAMPLE: 5 {5,10,15,20,25,30,35,40...} = 40
8 {8,16,24,32,40...}

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

Addition: Name_____

Add mixed numbers. Write answers in simplest form.

1. $1\frac{1}{4} + \frac{2}{4}$

2. $\frac{3}{28} + \frac{10}{28}$

3. $\frac{9}{19} + \frac{7}{19}$

4. $1\frac{5}{7} + 3\frac{1}{7}$

5. $\frac{3}{11} + 2\frac{4}{11}$

6. $1\frac{2}{11} + 2\frac{3}{11}$

7. $\frac{3}{8} + 1\frac{2}{8}$

8. $\frac{4}{10} + \frac{1}{10}$

9. $7\frac{2}{9} + 2\frac{5}{9}$

10. $10\frac{4}{8} + 9\frac{3}{8}$

11. $5\frac{5}{16} + 1\frac{8}{16}$

12. $8 + 7\frac{1}{2}$

13. $\frac{5}{16} + \frac{4}{16}$

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

15. $\frac{3}{7} + \frac{3}{7}$

THIS WAS JUST A NICE EASY WARM-UP, WASN'T IT?

NAME_____

IV. Find the common denominator and add. Answers should be in SIMPLEST form.

1. $\frac{1}{2}$ $\frac{2}{4}$ $+\frac{1}{4}$ $\frac{1}{4}$ $\frac{3}{4}$	2. $\frac{1}{6}$ $+\frac{1}{3}$	3. $\frac{2}{3}$ $+\frac{1}{4}$	4. $\frac{1}{2}$ $+\frac{2}{5}$	5. $\frac{7}{9}$ $+\frac{1}{3}$
6. $\frac{1}{6}$ $+\frac{1}{4}$	7. $\frac{2}{5}$ $+\frac{3}{4}$	8. $\frac{1}{3}$ $+\frac{4}{5}$	9. $\frac{2}{9}$ $+\frac{1}{6}$	10. $\frac{1}{4}$ $+\frac{7}{10}$
11. $\frac{5}{8}$ $+\frac{1}{2}$	12. $\frac{1}{6}$ $+\frac{3}{8}$	13. $\frac{3}{5}$ $+\frac{7}{10}$	14. $\frac{2}{3}$ $+\frac{1}{8}$	15. $\frac{8}{15}$ $+\frac{1}{3}$

NAME_____

MIXED NUMBERS

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

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

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

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

numerator = 2 X 5 + 1 = 11

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

V. Try these:

1. $3\frac{2}{3} = \frac{\quad}{3}$
2. $4\frac{1}{7} = \frac{\quad}{7}$
3. $8\frac{2}{5} = \frac{\quad}{5}$
4. $2\frac{3}{8} = \frac{\quad}{8}$
5. $9\frac{1}{2} = \frac{\quad}{2}$
6. $1\frac{7}{10} = \frac{\quad}{10}$
7. $8\frac{1}{4} = \frac{\quad}{4}$
8. $7\frac{3}{5} = \frac{\quad}{5}$
9. $2\frac{1}{6} = \frac{\quad}{6}$

Try these as a review:

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

NAME_____

VI. IMPROPER FRACTIONS AND MIXED NUMBERS

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

1. $\frac{8}{7} = 1\frac{1}{A}$ A = 7
2. $\frac{16}{3} = 0\frac{1}{3}$ O = ___
3. $\frac{40}{15} = 2\frac{W}{3}$ W = ___
4. $\frac{53}{5} = I\frac{3}{5}$ I = ___
5. $\frac{21}{9} = 2\frac{1}{Y}$ Y = ___
6. $5\frac{1}{3} = \frac{H}{3}$ H = ___
7. $4\frac{3}{8} = \frac{M}{8}$ M = ___
8. $1\frac{5}{9} = \frac{D}{9}$ D = ___
9. $\frac{15}{12} = 1\frac{1}{E}$ E = ___
10. $2\frac{1}{13} = \frac{27}{G}$ G = ___
11. $\frac{33}{5} = B\frac{3}{5}$ B = ___
12. $6\frac{1}{3} = \frac{N}{3}$ N = ___
13. $5\frac{2}{5} = \frac{T}{5}$ T = ___
14. $2\frac{1}{12} = \frac{25}{U}$ U = ___

KNOCK!
KNOCK! WHO'S THERE?

$\frac{}{14}\ \frac{}{2}\ \frac{A}{7}\ \frac{}{3}\ \frac{}{19}\ \frac{}{4}$. $\frac{}{14}\ \frac{}{2}\ \frac{A}{7}\ \frac{}{3}\ \frac{}{19}\ \frac{}{4}\quad \frac{}{2}\ \frac{}{16}\ \frac{}{5}$?

$\frac{}{14}\ \frac{}{2}\ \frac{A}{7}\ \frac{}{10}\ \frac{}{19}\qquad \frac{}{27}\ \frac{}{16}\ \frac{}{4}\quad \frac{}{6}\ \frac{A}{7}\ \frac{}{27}\ \frac{}{16}\ \frac{}{27}\ \frac{}{12}\ \frac{}{6}$

$\frac{}{10}\ \frac{}{35}\quad \frac{}{14}\ \frac{}{2}\ \frac{}{5}\ \frac{}{2}\ \frac{}{19}\ \frac{}{10}\ \frac{}{19}\ \frac{}{13}$!

15. Write the coded message.

NAME_____

VII. ADDING MIXED NUMBERS

Example 1:

$$\begin{array}{r} 4\frac{5}{8} \\ +3\frac{7}{8} \\ \hline \frac{12}{8} \end{array}$$

same denominator

$\frac{12}{8} = 1\frac{4}{8} = 1\frac{1}{2}$

$$\begin{array}{r} 4\frac{5}{8} \\ +3\frac{7}{8} \\ \hline 8\frac{1}{2} \end{array}$$

Example 2:

$$\begin{array}{r} 2\frac{1}{2} \\ +3\frac{1}{3} \\ \hline \end{array}$$

unlike denominators; 6 is lowest common denominator

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

$$\begin{array}{r} 2\frac{3}{6} \\ +3\frac{2}{6} \\ \hline 5\frac{5}{6} \end{array}$$

Add and Simplify:

1. $7\frac{1}{2} = 7_{\overline{8}}$
   $+6\frac{1}{8} = 6_{\overline{8}}$

2. $2\frac{1}{6} = 2_{\overline{6}}$
   $+4\frac{1}{2} = 4_{\overline{6}}$

3. $4\frac{7}{12} = 4_{\overline{12}}$
   $+8\frac{1}{3} = 8_{\overline{12}}$

4. $2\frac{2}{5}$
   $+4\frac{1}{3}$

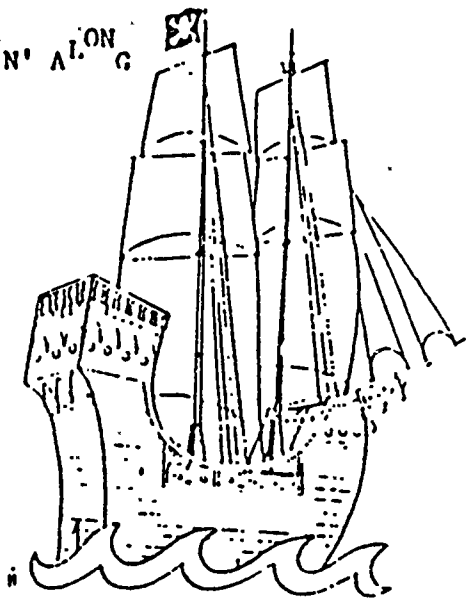
5. $5\frac{1}{3}$
   $+3\frac{1}{2}$

6. $7\frac{3}{4}$
   $+\frac{5}{6}$

NAME _____

LESSON TWELVE
Grade 6

BREEZIN' ALONG



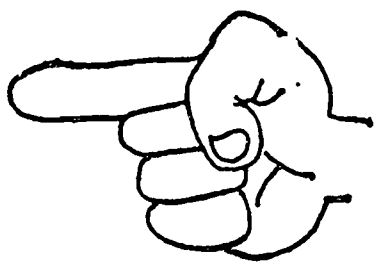
PARENT: In this lesson your child will subtract fractions. The steps are similar to those for adding fractions.

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

Example 1: $\begin{array}{r} \frac{5}{8} \\ -\ \frac{3}{8} \\ \hline \frac{2}{8} = \frac{1}{4} \end{array}$

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

Example 2: $\begin{array}{rr} \frac{2}{3} & = \frac{4}{6} \\ -\ \frac{1}{2} & -\ \frac{3}{6} \\ \hline & \frac{1}{6} \end{array}$



Example 3: $\begin{array}{rr} 5\ \frac{1}{2} & \textcircled{5}\ \frac{2}{4} \\ -\ 2\ \frac{3}{4} & 2\ \frac{3}{4} \\ \hline & \end{array}$

Step 1: Rename fractions with common denominators.

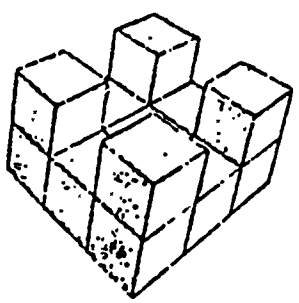
$\begin{array}{r} \textcircled{4}\ \frac{6}{4} \\ -\ 2\ \frac{3}{4} \\ \hline 2\ \frac{3}{4} \end{array}$

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

Step 3: Subtract fractions and whole numbers.

TAKE A BREATHER AND HAVE SOME FUN!

How many blocks in this picture?



(CI :sue)
Mathematics Department

Hampton, Virginia

MIXED NUMBERS–SUBTRACTION LIKE DENOMINATORS

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

1. $5\frac{1}{4} \quad 4\frac{5}{4}$
$-\ 2\frac{3}{4} \quad -2\frac{3}{4}$
$2\frac{3}{4} \cdot 2\frac{1}{2}$

2. $8\frac{1}{3}$
$-\ 4\frac{2}{3}$

3. $9\frac{1}{6}$
$-\ 7\frac{5}{6}$

4. $6\frac{5}{8}$
$-\ 2\frac{7}{8}$

5. $7\frac{1}{5}$
$-\ 5\frac{3}{5}$

6. $4\frac{3}{10}$
$-\ 1\frac{9}{10}$

7. $8\frac{2}{7}$
$-\ 3\frac{6}{7}$

8. $10\frac{1}{12}$
$-\ 5\frac{7}{12}$

9. $9\frac{3}{8}$
$-\ 3\frac{7}{8}$

10. $8\frac{2}{15}$
$-3\frac{11}{15}$

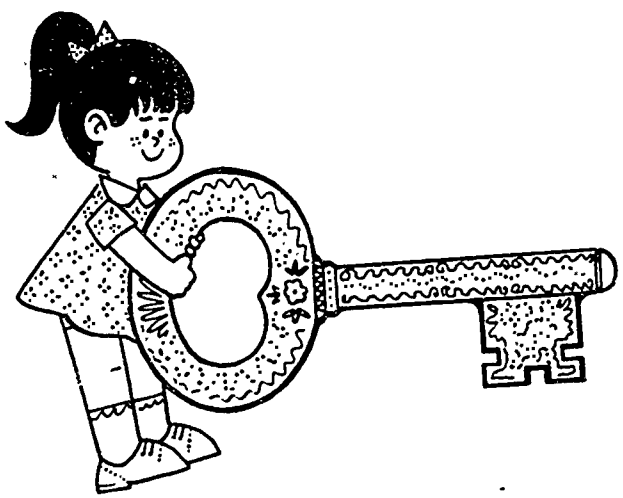
11. $12\frac{1}{20}$
$-\ 9\frac{19}{20}$

12. $7\frac{4}{7}$
$-\ 1\frac{5}{7}$

13. $11\frac{1}{10}$
$-\ 5\frac{9}{10}$

14. $6\frac{5}{12}$
$-4\frac{11}{12}$

15. $7\frac{5}{18}$
$-1\frac{11}{18}$



Answers:

$5\frac{1}{2}$ $4\frac{1}{2}$ $5\frac{6}{7}$

~~$2\frac{1}{2}$~~ $5\frac{1}{5}$ $1\frac{3}{5}$

$4\frac{2}{5}$ $5\frac{2}{3}$ $1\frac{1}{2}$

$3\frac{2}{3}$ $2\frac{1}{10}$ $1\frac{1}{3}$

$4\frac{3}{7}$ $3\frac{3}{4}$ $2\frac{2}{5}$

NAME_____

MAGIC WHEEL

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

-In the Magic Wheel find the letter corresponding to each example and write the example's answer in the circle.

-Find the sum of each of the diagonals in the magic wheel. This is the magic sum.

A. $10 - 6\frac{2}{3}$

B. $8\frac{3}{4} - 5\frac{3}{8}$

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

D. $1\frac{7}{8} - 1\frac{1}{8}$

E. $4\frac{1}{4} - 2\frac{3}{4}$

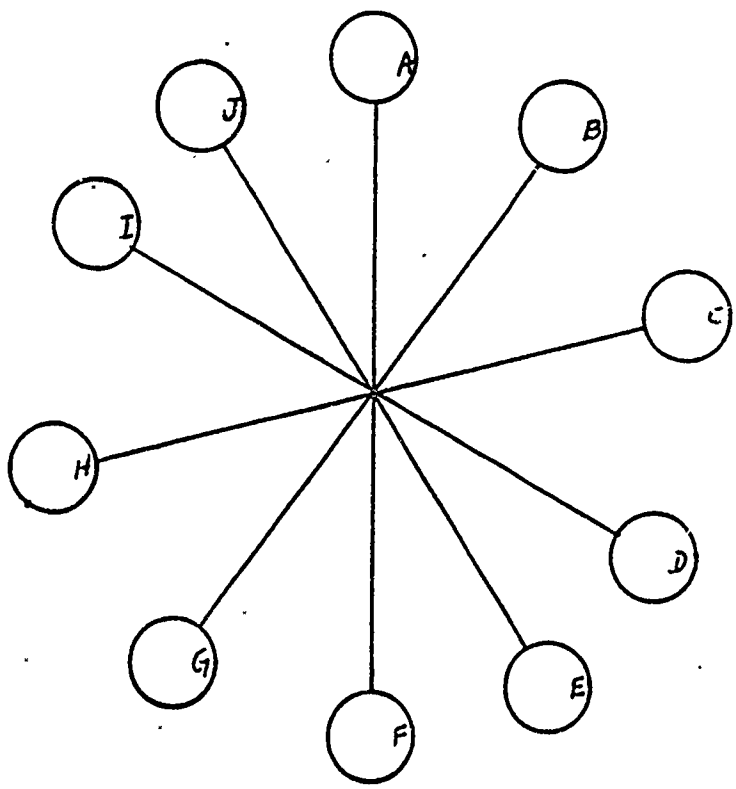
F. $8\frac{1}{6} - 4\frac{1}{2}$

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

H. $12 - 8\frac{1}{6}$

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

J. $14\frac{3}{8} - 8\frac{7}{8}$



K. SUM IS _____

SUBTRACTION: MIXED NUMBERS AND FRACTIONS-UNLIKE DENOMINATORS

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

1. $\frac{7}{10} - \frac{1}{4} = \frac{14}{20} - \frac{5}{20} = \frac{9}{20}$

2. $\frac{5}{6} - \frac{2}{3} =$ _____

3. $\frac{5}{12} - \frac{1}{4} =$ _____

4. $\frac{1}{2} - \frac{3}{8} =$ _____

5. $8\frac{1}{2}$
$- 6\frac{1}{4}$

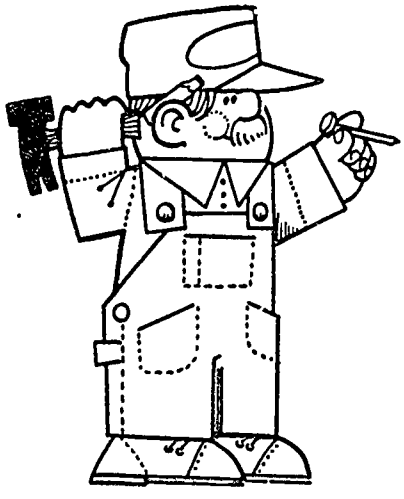
6. $7\frac{3}{10}$
$-5\ \frac{1}{5}$

7. $12\ \frac{2}{3}$
$- 6\frac{7}{12}$

8. $6\frac{1}{5} = 6\frac{3}{15} = 5\frac{18}{15}$
$- 2\frac{1}{3} = 2\frac{5}{15}$ $\quad - 2\frac{5}{15}$
$3\frac{13}{15}$

9. $5\ \frac{1}{5}$
$-4\frac{2}{15}$

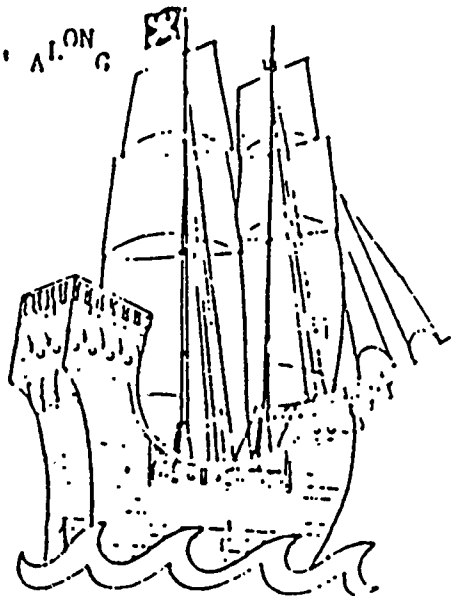
10. $7\frac{3}{8}$
$- 3\frac{1}{2}$



NAME_____

LESSON THIRTEEN
Grade 6

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



A short way to multiply fractions is:

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

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

Example: $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$ $\frac{\text{product of numerators}}{\text{product of denominators}}$

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

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

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

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

NAME: _____

I. Solve and simplify.

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

4. $\frac{3}{4} \times 7 =$ 5. $3\frac{1}{2} \times 7\frac{1}{3}$ 6. $\frac{2}{3}$ of $18 =$

(of means multiply)

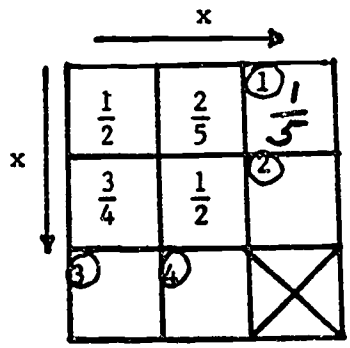
You may wish to simplify your calculations by dividing out a common factor in one of the denominators and one of the numerators.

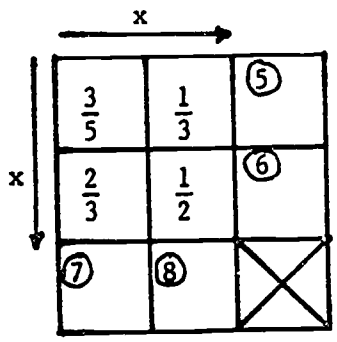
Step 1: $\frac{2}{3} \times \frac{3}{4}$ Cancel to divide by the common factor 3

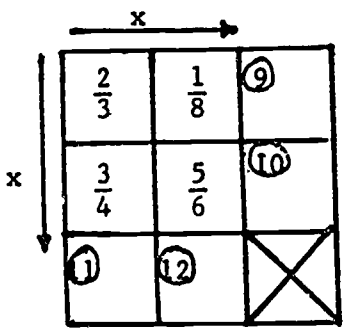
Step 2: $\frac{2}{3} \times \frac{3}{4}$ Cancel to divide by the common factor 2

Step 3: $\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$ Multiply

II. Multiply across and down. Reduce.







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

Name_____

MULTIPLYING MIXED NUMBERS:

Multiply. Write answers in simplest form.

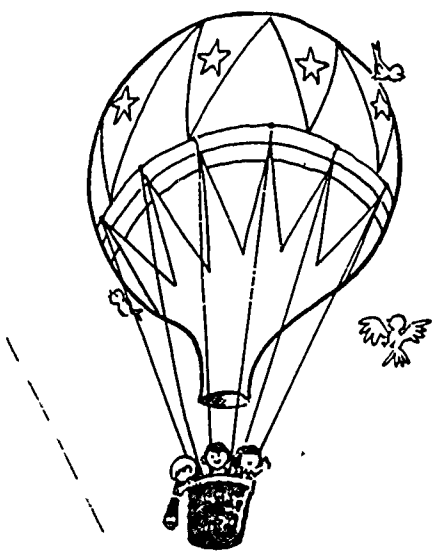
1. $3\frac{3}{4} \times \frac{1}{6} =$ 2. $4\frac{2}{3} \times \frac{3}{4} =$ 3. $1\frac{1}{16} \times \frac{2}{17} =$

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

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

10. $\frac{3}{4} \times 1\frac{2}{7} =$ 11. $3\frac{2}{3} \times \frac{5}{11} =$ 12. $2\frac{1}{4} \times 4\frac{1}{2} =$

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



Did you find an answer of $\frac{5}{8}$?

MULTIPLICATION OF WHOLE NUMBERS AND FRACTIONS:

Multiply. Write answers in simplest form.

1. $\frac{1}{2} \times 20 =$

2. $72 \times \frac{4}{9} =$

3. $\frac{4}{\cancel{7}} \times \cancel{42}^{6} = 24$

4. $15 \times \frac{1}{3} =$

5. $\frac{7}{10} \times 40 =$

6. $36 \times \frac{2}{9} =$

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

8. $45 \times \frac{4}{5} =$

9. $\frac{3}{10} \times 20 =$

10. $30 \times \frac{2}{5} =$

11. $\frac{7}{8} \times 64 =$

12. $60 \times \frac{7}{12} =$

13. $\frac{6}{7} \times 21 =$

14. $49 \times \frac{2}{7} =$

15. $\frac{1}{8} \times 56 =$

16. $40 \times \frac{5}{8} =$

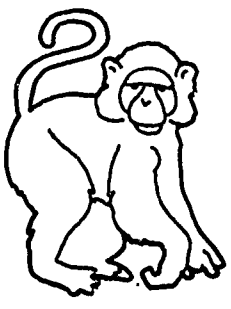
17. $\frac{1}{12} \times 48 =$

18. $33 \times \frac{3}{11} =$

19. $\frac{5}{6} \times 36 =$

20. $60 \times \frac{1}{20} =$

21. $\frac{11}{15} \times 45 =$

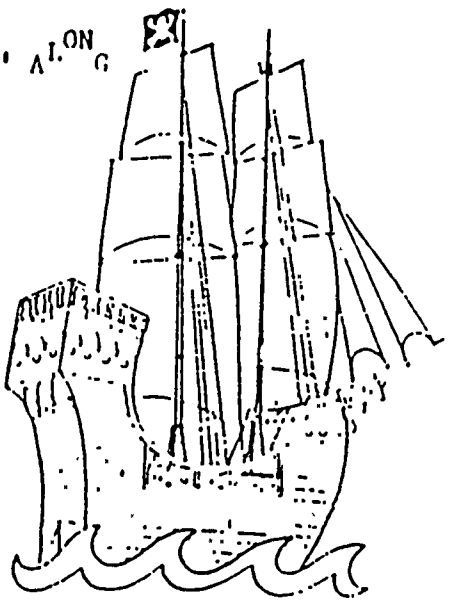


Did you find these answers?

32	36	28	8	10	~~24~~	5
33	3	30	25	4	9	7
14	18	56	12	35	6	21

NAME_____

LESSON FOURTEEN
Grade 6



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

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

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

Remember Dividing is the same as multiplying by the reciprocal.

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

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

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

Example 2: $1 \div \frac{2}{3}$

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

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

Step 3: $\frac{1}{1} \times \frac{3}{2} = \frac{3}{2} = 1\frac{1}{2}$ Multiply

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

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

Example 4: $\frac{3}{4} \div 2 =$

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

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

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

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

Step 3: $\frac{7}{2} \times \frac{4}{7} = 2$ Multiply

I. TRY THESE. Divide and simplify your answer.

1. $\frac{5}{8} \div 10 =$

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

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

4. $5\frac{1}{4} \div 7 =$

5. $1\frac{5}{8} \div 1\frac{3}{8} =$

6. $7 \div 14 =$

II. Solve these problems. Be sure answer is in simplest terms.

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

2. $\frac{3}{8} \div \frac{7}{8} =$

3. $\frac{2}{3} \div \frac{4}{7} =$

4. $\frac{5}{4} \div \frac{5}{14} =$

5. $\frac{3}{7} \div \frac{12}{5} =$

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

7. $\frac{5}{14} \div \frac{15}{7} =$

8. $\frac{3}{4} \div \frac{15}{16} =$

9. $\frac{6}{11} \div \frac{10}{11} =$

10. $\frac{9}{10} \div \frac{6}{5} =$

11. $\frac{1}{10} \div \frac{2}{3} =$

12. $\frac{10}{21} \div \frac{15}{7} =$

13. $\frac{11}{12} \div \frac{5}{18} =$

14. $\frac{25}{24} \div \frac{15}{16} =$

15. $\frac{4}{33} \div \frac{20}{11} =$

16. $\frac{18}{5} \div \frac{27}{20} =$

DIVISION OF FRACTIONS CAN BE FUN: Work the following problems. The answers are found at the bottom of the page. Mark out the answers as you find them.

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

2. $\frac{6}{5} \div \frac{3}{8} =$

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

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

5. $\frac{7}{8} \div \frac{7}{4} =$

6. $\frac{11}{3} \div 2 =$

7. $\frac{2}{7} \div \frac{4}{9} =$

8. $3 \div \frac{9}{10} =$

9. $\frac{4}{10} \div 8 =$

10. $\frac{3}{8} \div \frac{7}{8} =$

11. $4 \div \frac{12}{13} =$

12. $\frac{12}{25} \div \frac{4}{15} =$

13. $\frac{4}{5} \div \frac{2}{3} =$

14. $9 \div \frac{6}{7} =$

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

16. $5 \div \frac{3}{4} =$

17. $\frac{6}{7} \div \frac{8}{21} = \frac{\overset{3}{\cancel{6}}}{\cancel{7}_{1}} \times \frac{\overset{3}{\cancel{21}}}{\cancel{8}_{4}} = \frac{9}{4} = 2\frac{1}{4}$

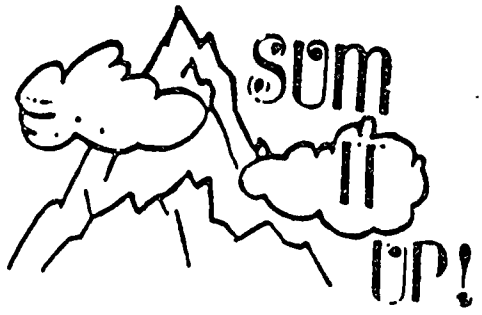
Answers:

~~$2\frac{1}{4}$~~ $4\frac{1}{3}$ $\frac{1}{2}$ $\frac{9}{14}$ $\frac{3}{25}$ $6\frac{2}{3}$

$\frac{1}{30}$ $\frac{3}{4}$ $1\frac{5}{6}$ $10\frac{1}{2}$ $1\frac{1}{5}$

$3\frac{1}{3}$ $3\frac{1}{5}$ $\frac{2}{3}$ $\frac{3}{5}$ $1\frac{4}{5}$ $\frac{3}{7}$

NAME _____



MAGIC SQUARE

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

This is a review of ALL operations with fractions.

DIRECTIONS:

-Work examples A-I. Simplify all answers.

-Find the letter corresponding to each example and write the answer in the space in the Magic Square. The first one has been worked for you.

A. $\frac{2}{3} \times 3 = 2$

B. $5\frac{1}{2} + 1\frac{1}{2} =$

C. $\frac{13}{2} - \frac{1}{2} =$

D. $3 \div \frac{1}{3} =$

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

F. $\frac{8}{3} - \frac{5}{3} =$

G. $1\frac{1}{2} + 2\frac{1}{4} + \frac{1}{4} =$

H. $1\frac{1}{2} \div \frac{1}{2} =$

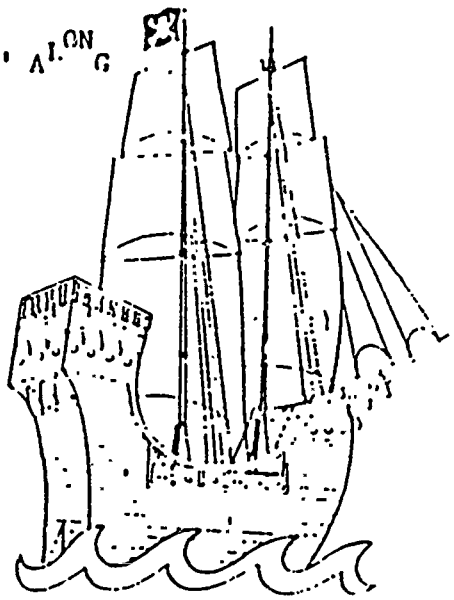
I. $4\frac{3}{8} + 3\frac{5}{8} =$

A 2	B	C
D	E	F
G	H	I

J. The magic sum is _____.

NAME _____

LESSON FIFTEEN
Grade 6



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

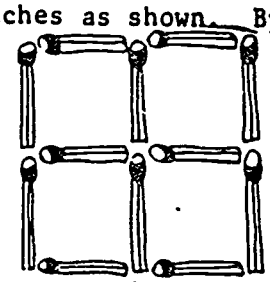
- Reading and Restating the Problem

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

Restatement: All died but 7. How many lived?
7

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

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



Try all rearrangements moving three matches until you have

- Looking at it Another Way

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

Think carefully. - Could be thinking only 28 days

Could be thinking at least 28 days

The second one is correct.

- Make List, Chart, Diagram or Picture

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

ring	1st	2nd	3rd	4th	5th	6th
people	1	3	5	7	9	11

NAME _____

SALE
15 oz. cans of cat food
59¢ per can

I.

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

_____

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

_____

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

Name of Person	Quarts Picked
Henry	3
Joan	$2\frac{1}{2}$
Norm	2
Marcia	$2\frac{1}{4}$

3. How many quarts were picked in all? _____

4. How many more did Henry pick than

a) Joan? _____ b) Norm? _____ c) Marcia? _____

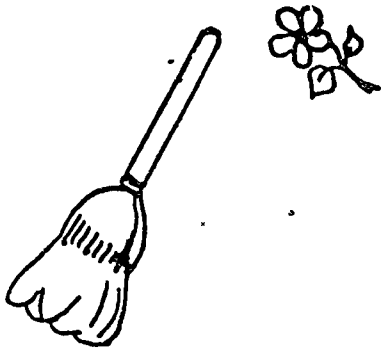
---

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

_____

6. At the grocery store Lamont paid $24.59 for 22 items. Estimate the cost per item.

_____



LET'S MAKE A CLEAN SWEEP OF IT!

NAME_____

7. Danny bought $3\frac{1}{2}$ yards of denim at $3 a yard. How much did he pay in all for the denim?

_____

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

_____

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

_____

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

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

_____

2. How many birthdays does the average man have?

_____

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

_____

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

a)_____ b)_____

5. Divide 30 by $\frac{1}{2}$ and add 10. What is the answer?_____

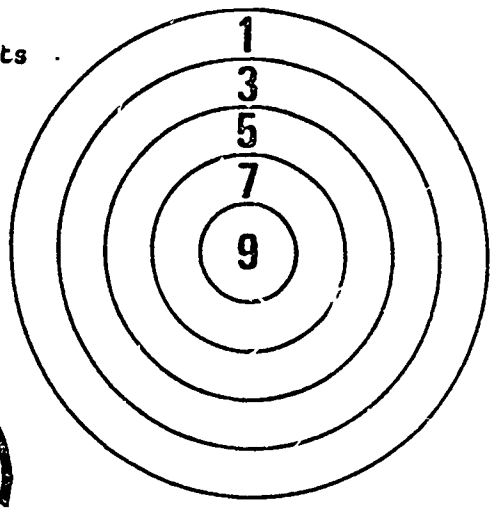
6. If you take two apples from three apples how many apples do you have?

_____

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

_____

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



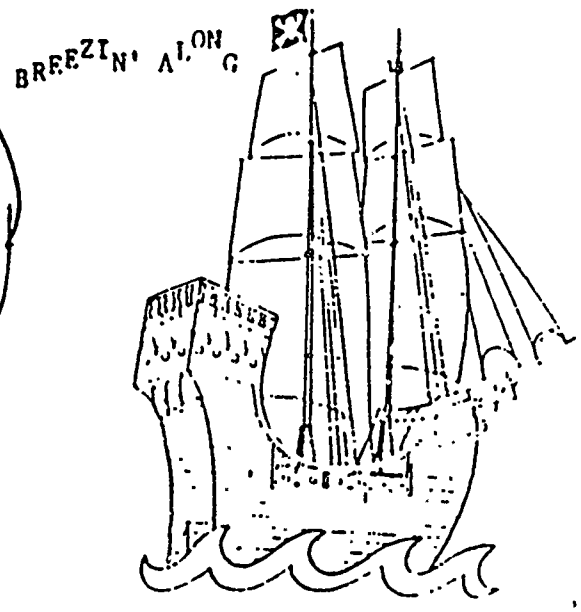
9.

Meet DOUBLE CHIN HARRY. Harry's face shows the sum of many years. How old is he?

NAME_____

LESSON SIXTEEN
Grade 6

PARENT: In this lesson your child will use decimals and identify place values through ten thousandths. Point out to your child that the odometer shows how many miles a car has traveled and that the last digit represents tenths. Have your child read your car odometer and also read the following:



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

2	6	5	0	2	8

(decimal)

I. Read the following odometers.

1. | 0 | 5 | 2 | 8 | 0 | 0 |

2. | 0 | 4 | 5 | 6 | 0 | 0 |

3. | 0 | 6 | 7 | 0 | 0 | 0 |

4. | 0 | 7 | 3 | 3 | 2 | 8 |

5. | 0 | 3 | 0 | 4 | 6 | 3 |

6. | 0 | 8 | 6 | 4 | 5 | 9 |

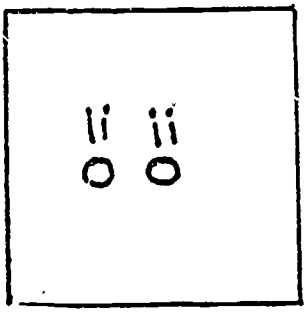
7. | 1 | 3 | 6 | 0 | 0 | 4 |

8. | 1 | 8 | 0 | 0 | 6 | 6 |

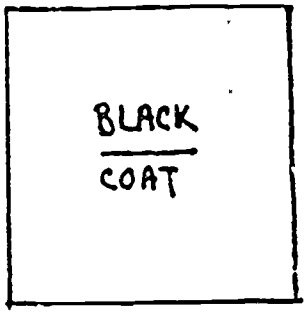
9. | 2 | 0 | 4 | 8 | 0 | 5 |

10. | 3 | 7 | 5 | 6 | 2 | 7 |

CAN YOU FIGURE THESE OUT?



(circles under the eyes)



(black overcoat)

NAME _____

Our system for writing numbers uses place value. The decimal point is used to locate the ones place. The place values are symmetrical about the ones place.

hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths	thousandths	ten thousandths	hundred thousandths
5	6	2	0	0	0.	0	0	0	4	9

Five hundred sixty-two thousand and forty-nine hundred thousandths

II. Read these decimals.

Examples: Your answers should read as follows.

$6.5 = 6\frac{5}{10}$ = six and five tenths $\qquad$ $3.12 = 3\frac{12}{100}$ = three and twelve hundredths

$23.04 = 23\frac{4}{100}$ = twenty-three and four hundredths

$6.004 = 6\frac{4}{1000}$ = six and four thousandths

TRY THESE.

1. .86 $\qquad$ 2. 18.42 $\qquad$ 3. 12.04 $\qquad$ 4. 39.015

III. On a check the amount is written in both decimal notation and words.

No. 37 21-458/146

Montrose, Texas June 27 19 8?

Pay to the Order of Gene Hampton $ 105.05

One hundred five and 05/100 DOLLARS

NATIONAL BANK ⑈0175 0678 19⑈ John Smith

NAME _____

III. Write these checks and send with answer sheet.

1. Check #45
   DATE July 5, 1984
   PAY Jones Electronics
   AMOUNT $57.83

2. Check #46
   DATE July 6, 1984
   PAY VEPCO
   AMOUNT $89.02

3. Check #47
   DATE July 6, 1984
   PAY C&P Telephone
   AMOUNT $34.29

No. _____ 21-458/146

Hampton, VA _____ 19___

Pay to the Order of _____ $ _____

_____ DOLLARS

NATIONAL BANK ⑈0175 0678 1911⑈ _____

No. _____ 21-458/146

Hampton, VA _____ 19___

Pay to the Order of _____ $ _____

_____ DOLLARS

NATIONAL BANK ⑈0175 0678 1911⑈ _____

No. _____ 21-458/146

Hampton, VA _____ 19___

Pay to the Order of _____ $ _____

_____ DOLLARS

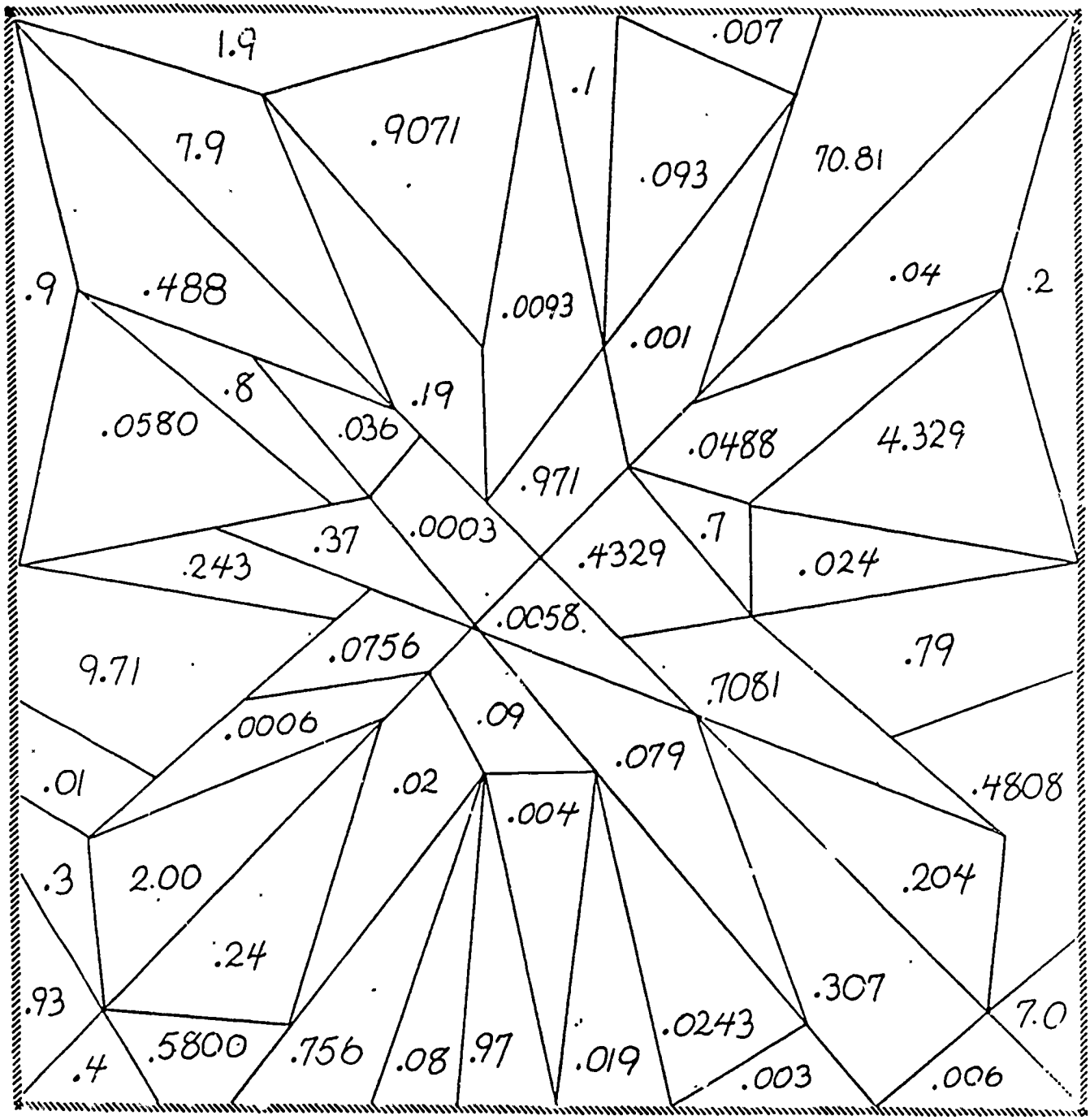
NATIONAL BANK ⑈0175 0678 1911⑈ _____

NAME

IV. HEAVENLY BODY

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

Send this sheet with your Answer Sheet.



NAME _____

IV. Write as decimal fractions. Shade the areas on PREVIOUS PAGE.

1. $\frac{79}{1,000}$ =

2. $\frac{756}{10,000}$ =

3. $\frac{9}{100}$ =

4. $\frac{4329}{10,000}$ =

5. $\frac{8}{10}$ =

6. $\frac{6}{10,000}$ =

7. $\frac{36}{1,000}$ =

8. $\frac{37}{100}$ =

9. $\frac{488}{10,000}$ =

10. $\frac{58}{10,000}$ =

11. $\frac{243}{1,000}$ =

12. $\frac{19}{100}$ =

13. $\frac{1}{1,000}$ =

14. $\frac{93}{10,000}$ =

15. $\frac{24}{1,000}$ =

16. $\frac{3}{10,000}$ =

17. $\frac{971}{1,000}$ =

18. $\frac{4}{1,000}$ =

19. $\frac{7}{10}$ =

20. $\frac{7,081}{10,000}$ =

21. $\frac{2}{100}$ =

NAME_____

MIGHTY MATHEMATICAL MOUSE

V. Circle the answer to each problem. Write the letter that goes with your answer in the blank above the problem number. The first one is done for you. (Also write letter on the answer sheet.)

HE'S THE

													H		
13	9	6	11	3	4	14	8	9	7	15	11	5	1	12	10	2

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

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

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

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

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

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

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

8. Nine ten thousandths can be written
   - 9.0010 R
   - 0.0009 E

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

10. Five thousandths can be written
    - 5000 M
    - 0.005 R

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

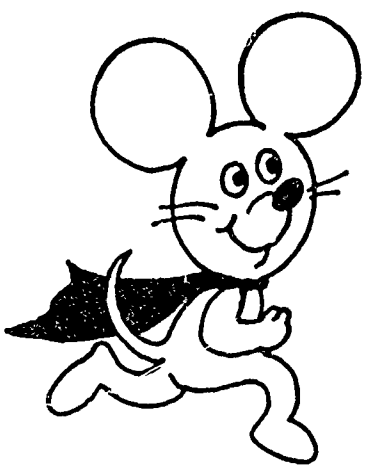
12. 7.02 is read
    - seven point two T
    - seven and two hundredths E

13. 0.72 can be written < seventy-two W
seventy-two hundredths G

14. Thirteen hundredths can be written < 0.013 E
0.13 M

15. 9.8 is read < nine and eight tenths C
nine eight tenths Y

16. Write the solution to the puzzle.

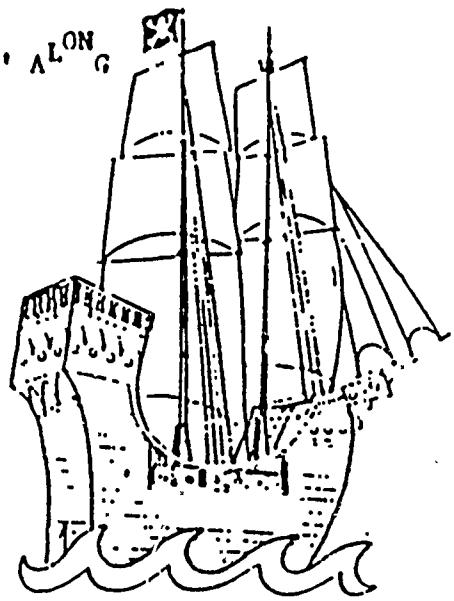


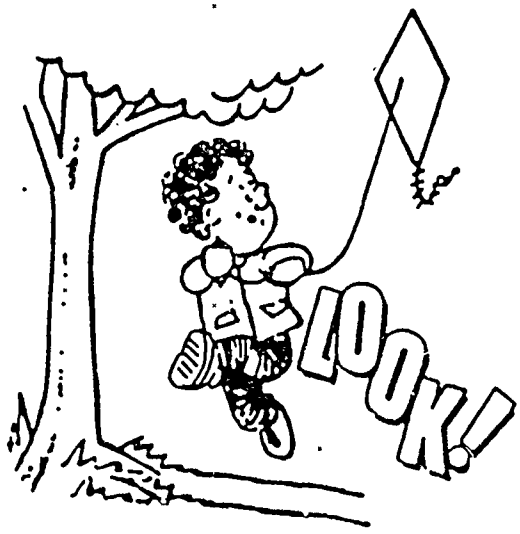
NAME_____

LESSON SEVENTEEN

Grade 6

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





Example 1: 7.4 + 0.39 = ?

Step 1: Line up decimal points.
$$\begin{array}{r} 7.4 \\ +\ 0.39 \end{array}$$

Step 2: Write decimal point in sum.

Step 3: Add
$$\begin{array}{r} 7.4 \\ +\ 0.39 \\ \hline 7.79 \end{array}$$

Example 2: 3.75 + 7 = ?

Whole numbers have a decimal point after the last digit.
$$\begin{array}{r} 3.75 \\ +7.00 \\ \hline 10.75 \end{array}$$

I. SOLVE THESE

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

NAME_____

LET'S WORK ON SUBTRACTION

II. EXAMPLE: 16 - 0.27 = ?

Step 1:	Line up the decimal points.	16. - 0.27
Step 2:	Annex zeros.	16.00 - 0.27
Step 3:	Subtract.	16.00 - 0.27 15.73

TRY THESE!

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

****

JUST FOR FUN

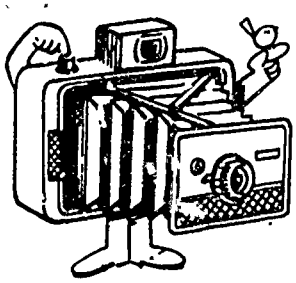
TAKE A BREATHER AND HAVE SOME FUN!

1. What is the biggest jewel in the world?
2. How many sides does a circle have?
3. In what way are the moon and a dollar alike?

1. baseball diamond
2. inside and outside
3. They both have 4 quarters

III. Subtract. Be sure to line up the decimal points.

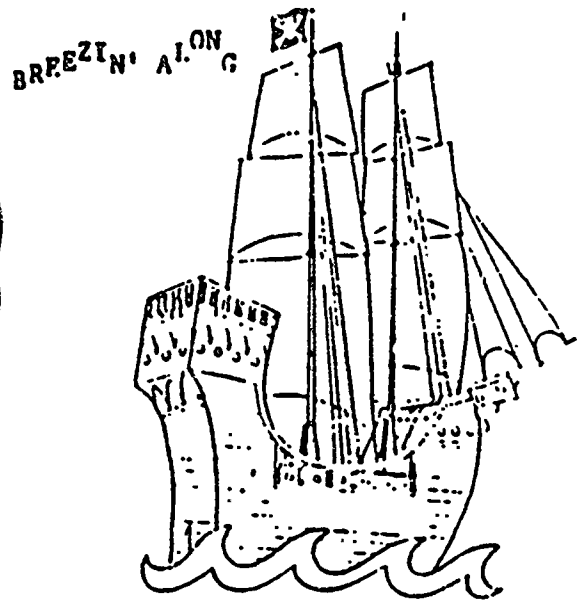
1. 16. - 4.3
2. 9.82 - 2.4
3. 3.7 - 1.19
4. 0.64 - 0.305
5. 72.4 - 1.98
6. 600.7 - 167.8
7. 72.19 - 3.337
8. 801.36 - 4.204
9. 0.9 - 0.565
10. 2.037 - 0.65
11. 2.7 - 1.104
12. 67.007 - 63.014
13. 38.6 - 4.577
14. 19 - 1.8
15. 37 - 0.45
16. 4 - 0.007
17. 700 - 0.6
18. 395.2 - 382.7



NAME_____

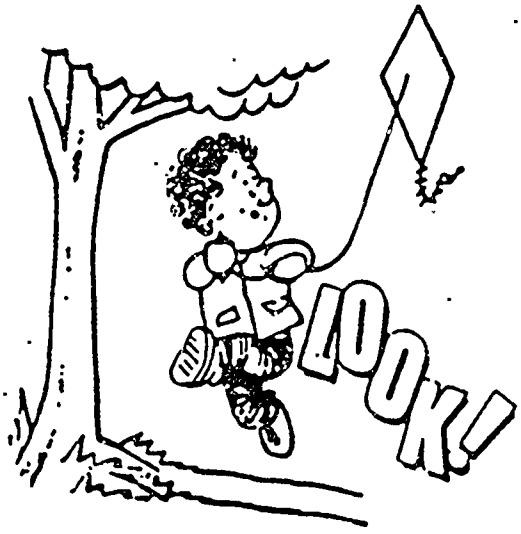
LESSON EIGHTEEN

Grade 6



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

Sample:	3.12	(2)
	0.013	(3)
	2	(none)
	4.7	(1)
	3256.32	(2)



3.75 x 1.6 = ?

Step 1: Count places after decimal point in each factor.

3.75 (2 places)
x 1.6 (1 place)

Step 2: Add number of places. 2 places + 1 place = 3 places

Step 3: Multiply and point off places from the right.

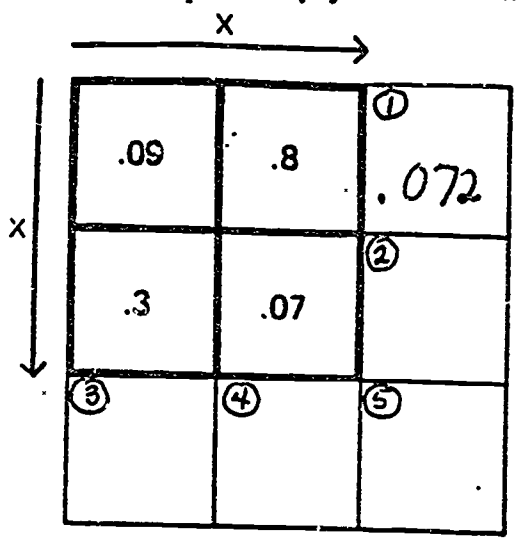
3.75
x 1.6
6000

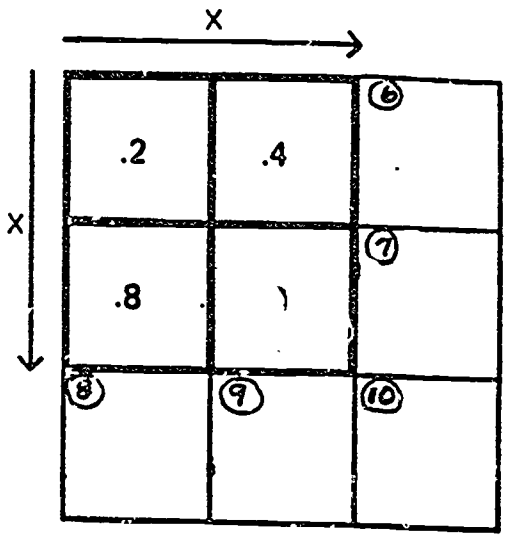
I. TRY THE FOLLOWING. PLACE THE DECIMAL POINT.

1. 7 x 1.23 = 861 (↑)
2. 3 x 1.8 = 54
3. 50 x .375 = 18750
4. 90 x 4.8 = 4320
5. 3.01 x 45 = 13545
6. 0.9 x 5.4 = 486
7. 5.89 x 3.7 = 21793
8. 17.9 x 15 = 2685
9. 8.1 x 4.7 = 3807
10. 738 x 0.22 = 16236
11. 1.25 x 0.8 = 1000
12. 3.95 x 40 = 15800

NAME _____

II. Directions: Multiply across. Multiply down.





III. Multiply.

1. $2.3 \times .6$

2. $3.08 \times .5$

3. $.019 \times 8$

4. 4.6×2.2

5. $90 \times .14$

6. $.86 \times 4.5$

7. $.17 \times .43$

8. $.005 \times .08$

9. 1.21×3.4

10. $3.05 \times .17$

11. $.036 \times .095$

12. $.719 \times .78$

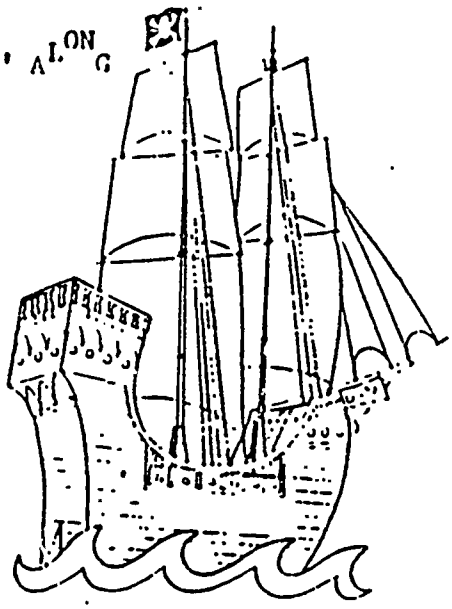
13. 846×6.1

NAME_____

LESSON NINETEEN

Grade 6

BREEZIN' ALONG



PARENT: In this lesson your child will divide decimal fractions. You might want to review the operation of division.

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

Example: $4\overline{)5.08}$ → 1.27; 4; 10; 8; 28; 28

$7\overline{).049}$ → $.007$ (use zeros as place holders)

check: $.007$ (3 places) × 7 (0 places) = $.049$ (3 places)

I. TRY THESE!

1. $5\overline{)12.18}$
2. $9\overline{)0.81}$
3. $6\overline{).0054}$
4. $5\overline{)23.05}$
5. $8\overline{).0128}$
6. $9\overline{)1.17}$

NAME_____

Let's review multiplying by powers of 10 (10, 100, 1000, etc.)

5.5 x 10 = 55 .02 x 100 = 2 .005 x 1000 = 5

10 moves the decimal <u>one</u> place to the right, 100 moves the decimal <u>two</u> places to the right, etc.

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

Example: 5.1 x 10 = 51

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

1) 2.27 x 100 = 227 2) .7 x ____ = 7 3) 28.1 x ____ = 281

4) 3.1 x ____ = 31 5) .001 x ____ = 1 6) 4.17 x ____ = 417

<u>Something Else:</u> $0.3\overline{)9.24}$ Step 1: You must divide by a whole number so multiply the divisor and quotient by 10.

10 x 0.3 = 3

10 x 9.24 = 92.4

$0.\overset{\curvearrowright}{3}\overline{)9.\overset{\curvearrowright}{24}}$ Step 2: Show like this.

$$\begin{array}{r} 30.8 \\ 3\overline{)92.4} \\ \underline{9} \\ 24 \\ \underline{24} \end{array}$$

Step 3: Divide

Sometimes you may have to annex zeros in the dividend.

$0.6\overline{)90}$ Step 1: .6 x 10 = 6 90 x 10 = 900

$6\overline{)900}$ Step 2: Show like this.

$$\begin{array}{r} 150 \\ 6\overline{)900} \end{array}$$

Step 3: Divide

NAME_____

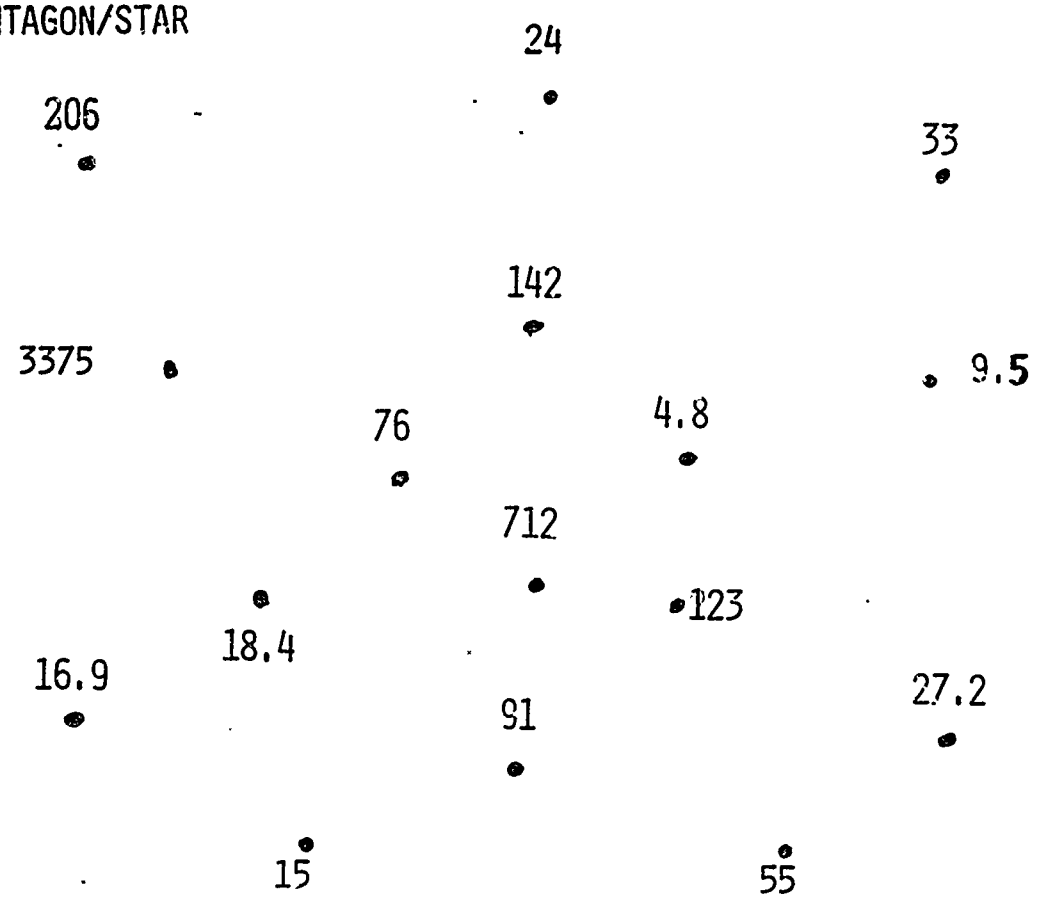
III. Place the decimal in the following: $0.5\overline{)18.0}$

$0.6\overline{)120}$ $0.8\overline{)99.2}$ $0.9\overline{)18.9}$

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

	A	B
1) $1.5\overline{)19.5}$	$1.5\overline{)19.5}$	$1.5\overline{)19.50}$
2) $2.3\overline{)2.16}$	$2.3\overline{)2.16}$	$2.3\overline{)2.16}$
3) $0.12\overline{)0.0168}$	$0.12\overline{)0.0168}$	$0.12\overline{)0.0168}$
4) $0.015\overline{)0.255}$	$0.015\overline{)0.255}$	$0.015\overline{)0.255}$
5) $19\overline{)1.71}$	$19\overline{)1.71}$	$19\overline{)1.71}$
6) $0.45\overline{)202.5}$	$0.45\overline{)202.5}$	$0.45\overline{)202.50}$
7) $0.015\overline{)19.5}$	$0.015\overline{)19.5}$	$0.015\overline{)19.500}$
8) $2.7\overline{)864}$	$2.7\overline{)864.0}$	$27\overline{)864.}$
9) $0.31\overline{)995.1}$	$0.31\overline{)995.1}$	$0.31\overline{)995.10}$
10) $0.05\overline{)2715}$	$0.05\overline{)2715.00}$	$0.05\overline{)2715.0}$

PENTAGON/STAR



Work these problems. Connect your answers in order above.

1. $0.05 \overline{)1.2}$
2. $0.12 \overline{)6.6}$
3. $0.8 \overline{)7.6}$
4. $0.32 \overline{)4.8}$
5. $0.38 \overline{)9.12}$
6. $0.44 \overline{)4.18}$
7. $0.004 \overline{)13.5}$
8. $0.02 \overline{)1.1}$
9. $0.54 \overline{)8.1}$
10. $0.006 \overline{)20.25}$
11. $0.03 \overline{)0.72}$

NAME _____

R & C's BURGER STAND MENU

V.

Tasty Burger	$.65
Tasty Burger with Cheese	$.75
Double Tasty Burger	$.99
French Fries (small)	$.29
French Fries (large)	$.45
Cola (small)	$.35
Cola (large)	$.45
Shakes	$.69

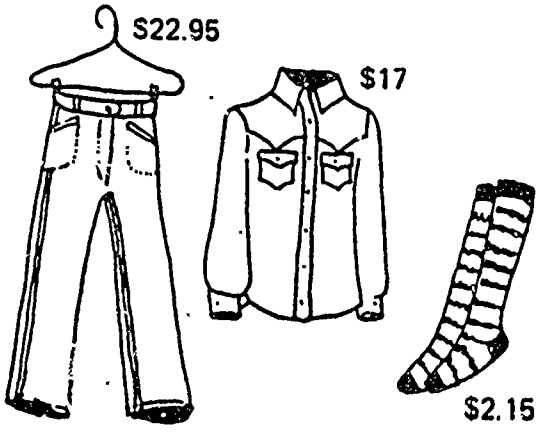
1. How many Tasty Burgers could you buy for $5.00? _____
2. How many Double Tasty Burgers could you buy for $5.00? _____

What is the cost of each order shown below?

3. a. 2 Tasty Burgers _____
   b. 3 Double Tasty Burgers _____
   c. 1 small French Fries _____
   d. 2 large French Fries _____
   e. 2 Shakes _____
   f. TOTAL _____

4. a. 4 Double Tasty Burgers _____
   b. 3 Tasty Burgers with Cheese _____
   c. 4 Small Fries _____
   d. 1 Small Cola _____
   e. 2 large Colas _____
   f. 1 vanilla shake _____ g. TOTAL _____

++



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

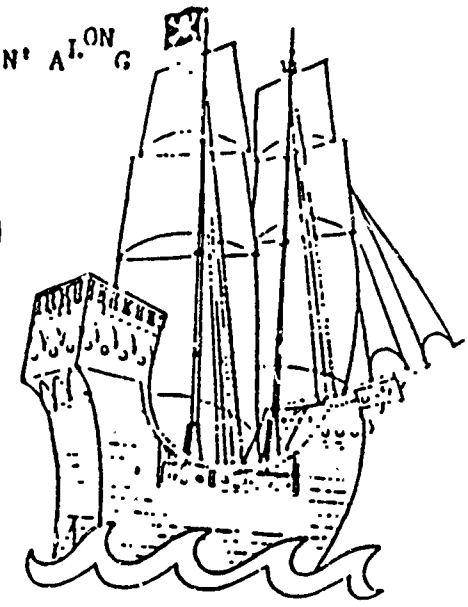
   _____

6. If you give the cashier $50.00 to pay for the clothes, how much change will you receive? _____

NAME_____

LESSON TWENTY
Grade 6

BREEZIN' ALONG



PARENT: In this lesson your child will use the metric system to find lengths. The metric system like our money system is based on 10's. If your child does not know the prefixes review them. These prefixes will be used in this lesson and in the next four lessons.

The prefixes that we will use are:

milli = .001 = 1 thousandth

centi = .01 = 1 hundredth

deci = .1 = 1 tenth

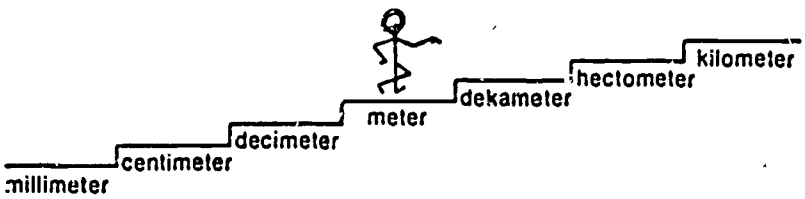
base unit

deca = 10 = tens

hecto = 100 = hundreds

kilo = 1000 = thousands

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



1	millimeter	= .001 meter
1	centimeter	= .01 meter
1	decimeter	= .1 meter
	meter	
1	dekameter	= 10 meters
1	hectometer	= 100 meters
1	kilometer	= 1000 meters

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

NAME_____

Do you remember <u>how to multiply by powers of 10</u>?

2.5 x 10 = 25 move one place to the right

2.5 x 100 = 250 move two places to the right

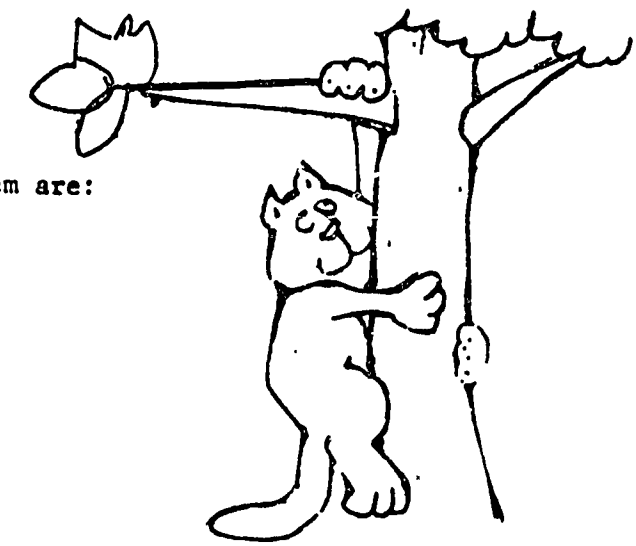
2.5 x 1000 = 2500 move three place to the right

Since division is the inverse (opposite) of multiplication <u>you move to the left.</u>

2.5 ÷ 10 = .25

2.5 ÷ 100 = .025

2.5 ÷ 1000 = .0025



HANG IN THERE!

The symbols for length in the metric system are:

millimeters	mm
centimeters	cm
decimeters	dm
meters	m
decameters	dam
hectometers	hm
kilometers	km

I. <u>TRY THESE:</u>

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

6 m = 600 cm

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

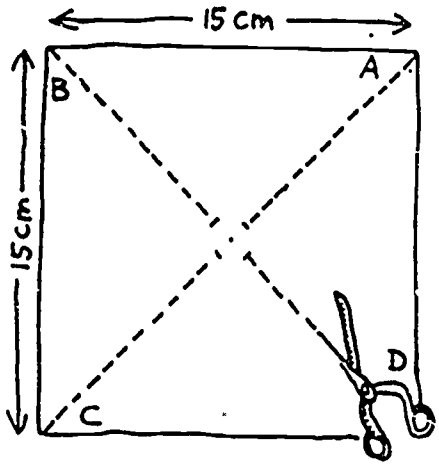
500 cm = 5 m

1. 2,000 mm = _____m
2. 300 mm = _____ m
3. _____mm = 2 cm
4. 7 km = _____ m
5. 100 cm = _____m
6. _____ km = 1 m
7. .63 m = _____cm
8. 56 mm = _____cm
9. 9 km = _____m
10. 300 cm = _____m

NAME_____ Try this Windmill Activity.

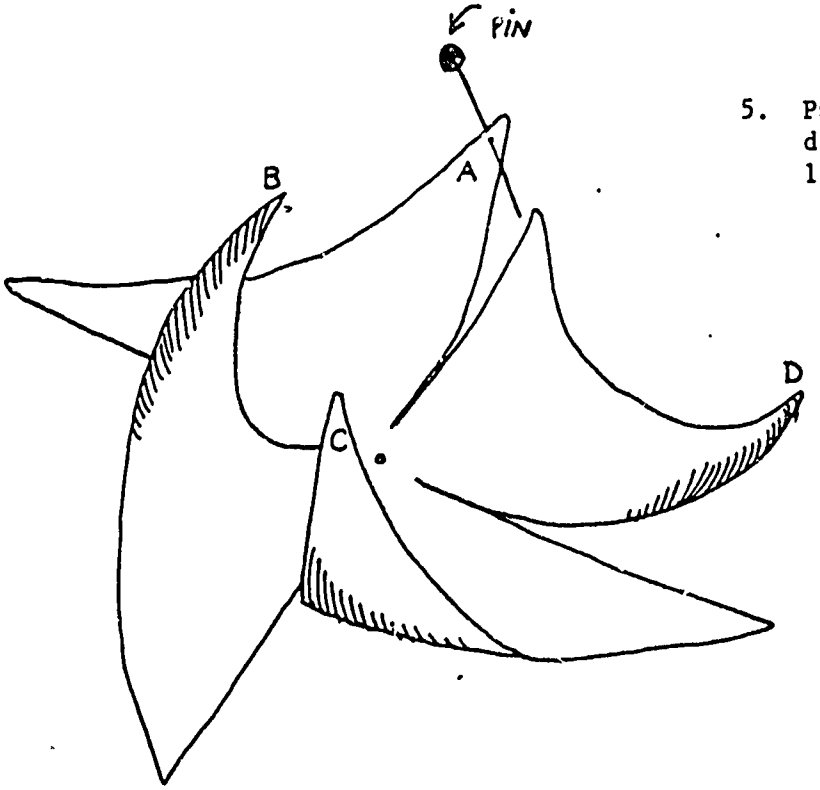
DO THIS FOR FUN!

1. Cut a square 15 cm by 15 cm from a brown paper bag.
2. Fold the square on the dotted lines.

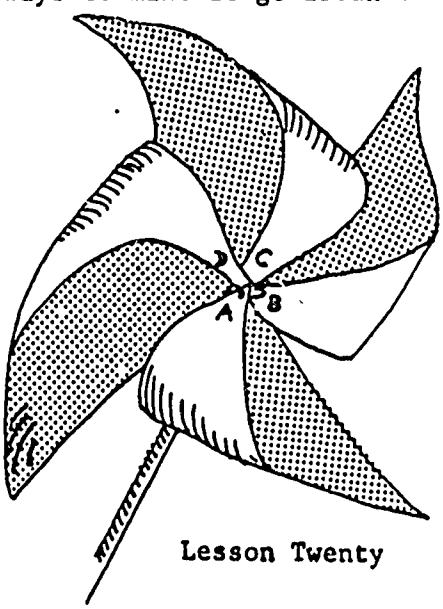


Scale: 1 cm represents 3 cm

3. Cut along each fold, stopping 1 cm from the center.
4. Stick a pin through every other point and then through the center of the windmill. This pins every other point to the center.



5. Push the pin into a piece of dowelling or the end of a lollipop stick.
6. By blowing on your windmill you can make it turn, but you'll also discover other ways to make it go around.

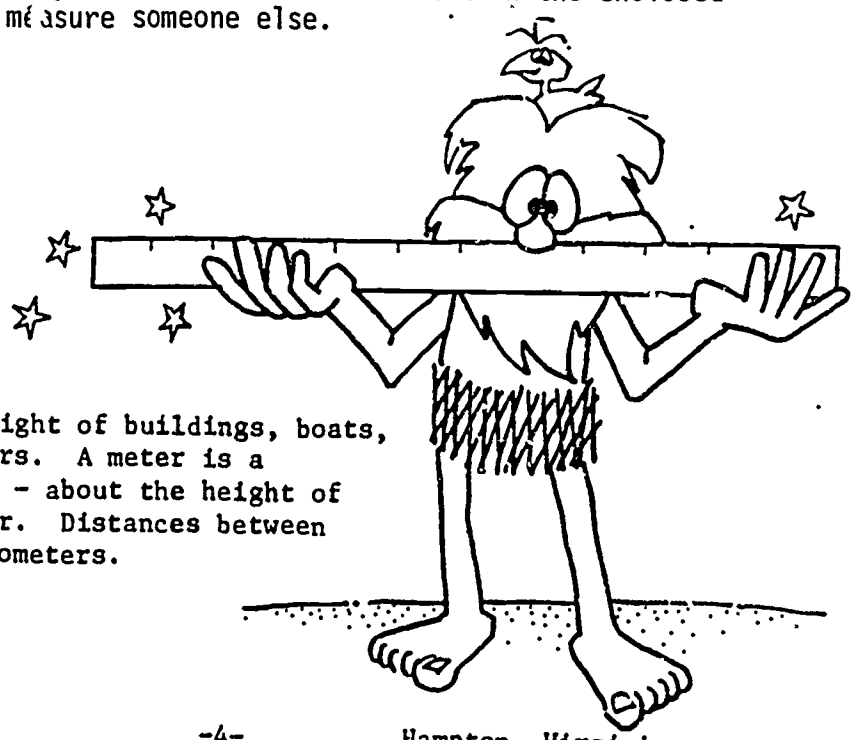


NAME _____

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

	Estimate	Actual Length
1. Paper Clip	_____	_____
2. Length of This Paper	_____	_____
3. Length of Your Middle Finger	_____	_____
4. Your Shoe Length	_____	_____
5. A Book	_____	_____
6. A Key	_____	_____
7. Width of TV Screen	_____	_____
8. A Pen	_____	_____
9. A Picture	_____	_____
Choose some of your own		
Name of object:		
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____

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

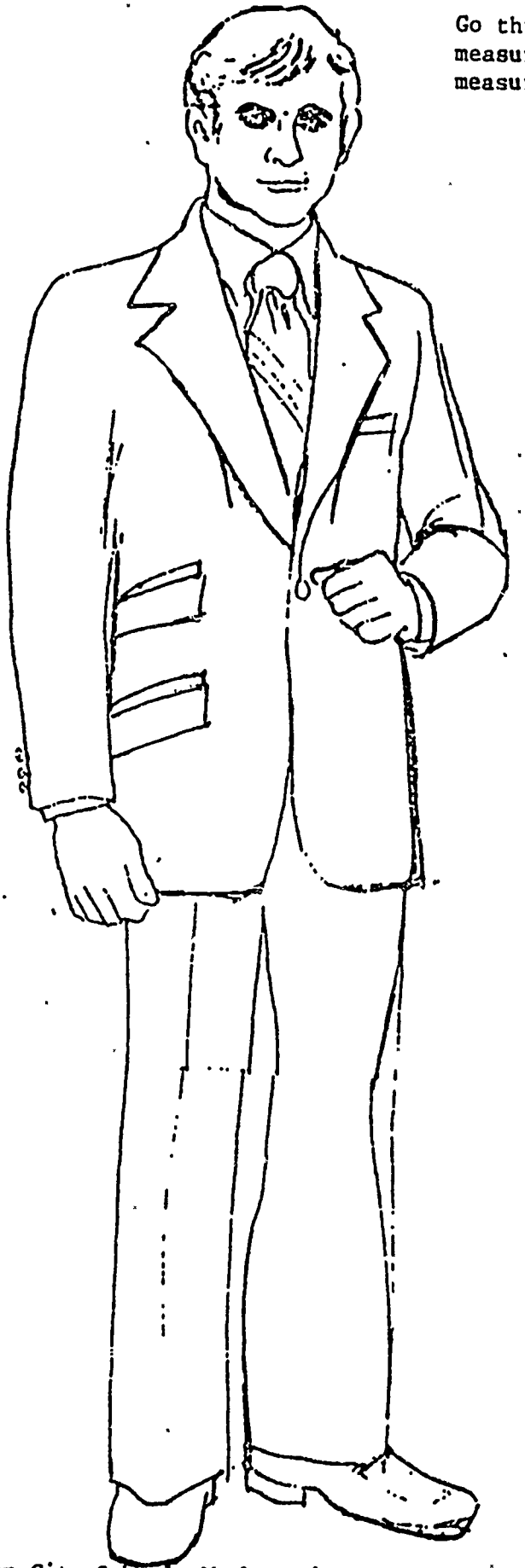


Larger objects such as height of buildings, boats, cars are measured in meters. A meter is a little longer than a yard - about the height of a door knob from the floor. Distances between towns are measured in kilometers.

COMPLETE AND RETURN WITH ANSWER SHEET.

III. BOY
(Do this one if you are a boy.)

ME IN METRIC!



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

Height in centimeters is:
Estimate_____cm
Measure_____cm

Neck in centimeters is:
Estimate_____cm
Measure_____cm

Chest in centimeters is:
Estimate_____cm
Measure_____cm

Span (tip of little finger to tip of thumb on right hand with fingers spread) is:
Estimate_____cm
Measure_____cm

Waist in centimeters is:
Estimate_____cm
Measure_____cm

Hips in centimeters are:
Estimate_____cm
Measure_____cm

Distance from floor to knee is:
Estimate_____cm
Measure_____cm

Weight in kilograms is:
Estimate:_____kg
Weight:_____kg

Shirt Size:_____

Shoe Size:_____

III. GIRL COMPLETE AND RETURN WITH ANSWER SHEET.

(Do this one if you are a girl.)

ME IN METRIC!

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

Height in centimeters is:
Estimate _____cm
Measure_____cm

Neck in centimeters is:
Estimate_____cm
Measure_____cm

Bust in centimeters is:
Estimate_____cm
Measure_____cm

Span (tip of little finger to tip of thumb on right hand with fingers spread is:
Estimate_____cm
Measure_____cm

Waist in centimeters is:
Estimate_____cm
Measure_____cm

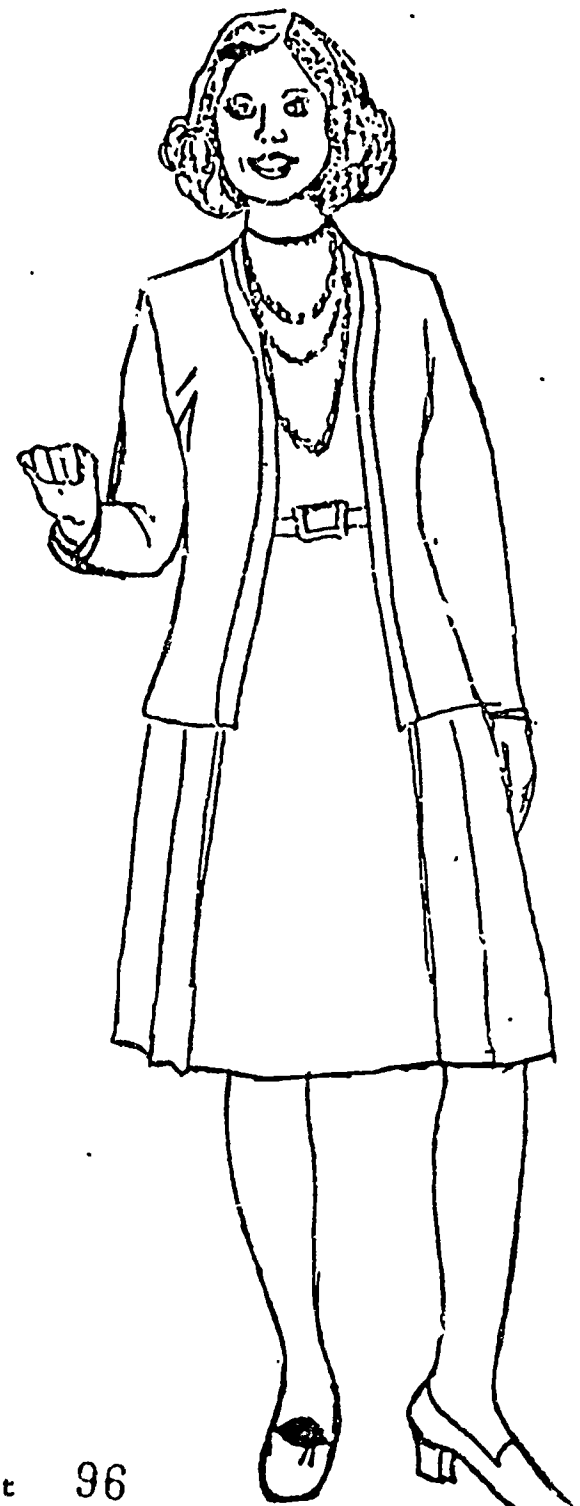
Hips in centimeters are:
Estimate_____cm
Measure_____cm

Distance from floor to knee is:
Estimate_____cm
Measure_____cm

Weight in kilograms is:
Estimate_____kg
Weight_____kg

Dress Size_____

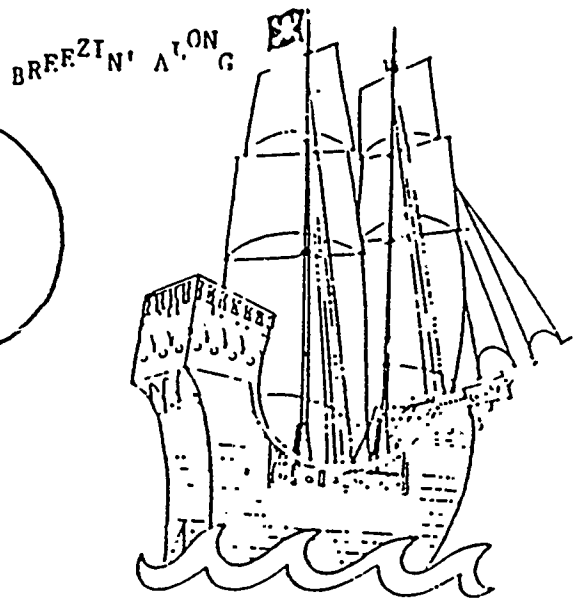
Shoe Size_____



NAME_____

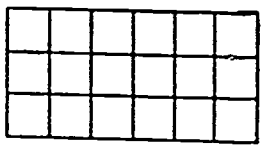
LESSON TWENTY-ONE
Grade 6

PARENT: In this lesson your child will measure area in both the metric and customary system. It is important that your child understand that area is the part contained inside a figure and is measured in square units.



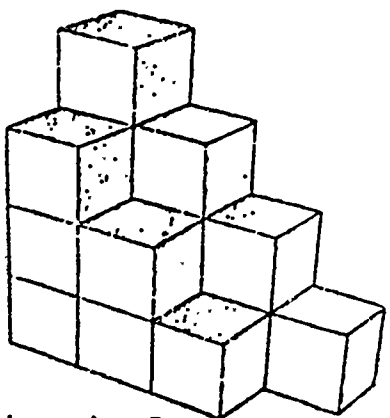
The area enclosed in a region is the number of square units needed to cover the region. You can find the number of square units by counting.

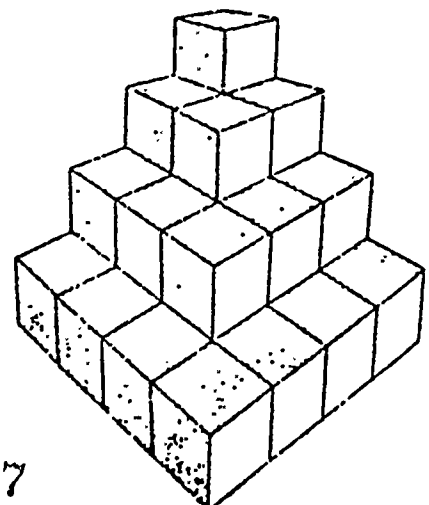
square unit



18 square units

HOW MANY BLOCKS? TRY THIS FOR FUN!

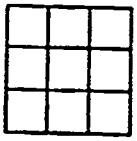




NAME_____

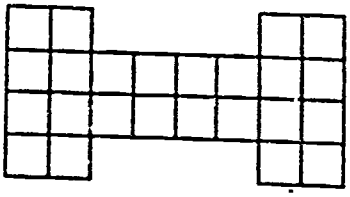
I. Find the area of the following by counting the squares. NOTE: Some are only ½ squares.

1



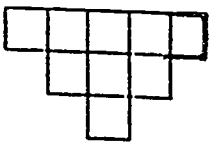
_____ square units

2



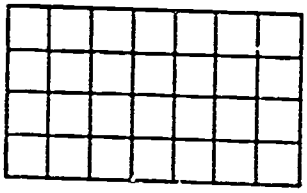
_____ square units

3



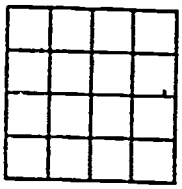
_____square units

4



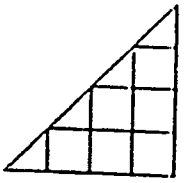
_____ square units

5



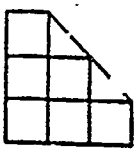
_____ square units

6



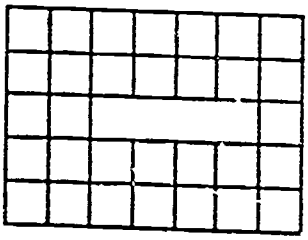
_____square units

7



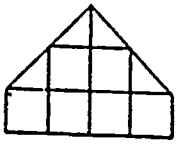
_____ square units

8



_____ square units

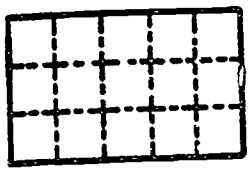
9



_____square units

NAME _____

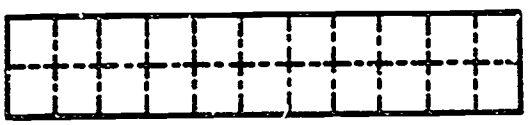
You can find the area of a rectangle by multiplying its length by its width.



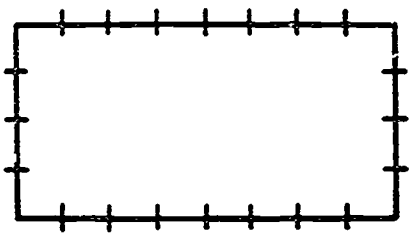
$5 \times 3 = 15$

15 square millimeters (mm^2)
15 square centimeters (cm^2)
15 square meters (m^2)

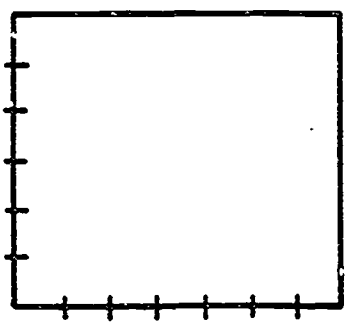
II. Find the area of each of the following by using A(area) = l(length) x w(width).

1. 

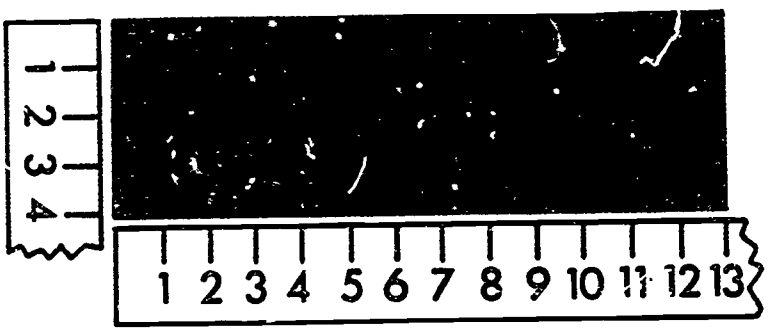
_____ cm^2

2. 

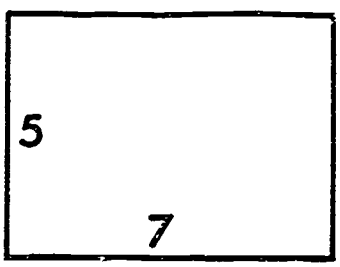
_____ cm^2

3. 

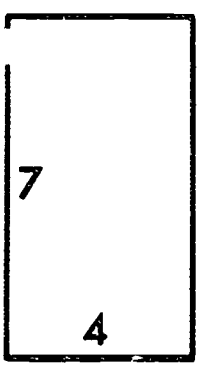
_____ cm^2

4. 

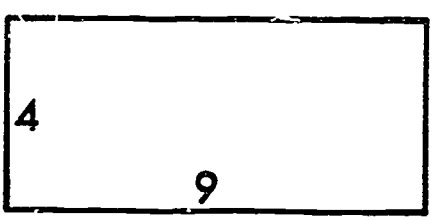
_____ cm^2

5. 

_____ cm^2

6. 

_____ cm^2

7. 

_____ cm^2

NAME_____

SEND IN WITH ANSWER SHEET!

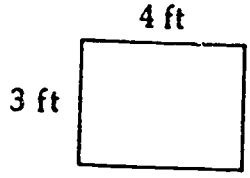
III. Each square has an area = 1 sq. in. Trace a pattern of your left hand. Describe the area:

more than _____ sq. in.

less than _____ sq. in.

NAME _____

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

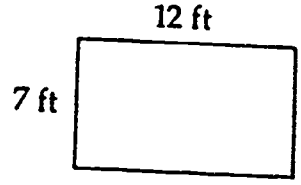
1. 

A = 3 x 4 = 12 sq. ft

P = 2(4+3) = 14 ft

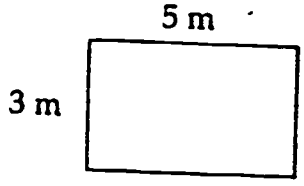
or

3 ft + 4 ft + 3 ft + 4 ft = 14 ft

2. 

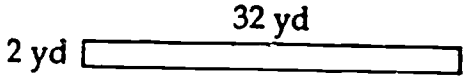
A =

P =

3. 

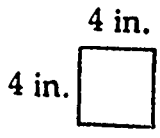
A =

P =

4. 

A =

P =

5. 

A =

P =

NAME_____

DO THESE FOR FUN!

Here are some activities you can try.

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

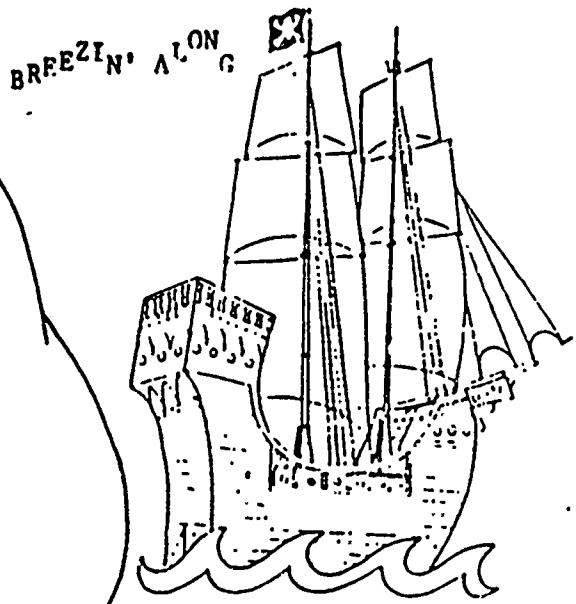
2. Use the square region you just made to find the approximate area of the floor of one room in your home. These square regions are each 1 m^2.

3. Using a decimeter (10 cm on the ruler) make a square 1 decimeter on a side. The area of this square is 1 dm^2 or 100 cm^2.

4. Use the ruler to measure a rectangle that is 10 cm long and 5 cm wide.

NAME_____

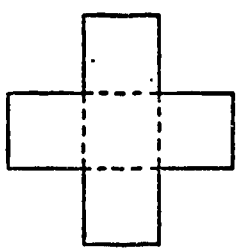
LESSON TWENTY- TWO
Grade 6



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

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

The milliliter is a cube 1 cm on each edge. If you cut out the cube you will see the size of 1 milliliter.



$1 ml = 1 cm^3$

$V = 1 cm \times 1 cm \times 1 cm$

Twenty drops of water from a medicine dropper are the same amount as 1 ml (or 1 cm^3) of water. One teaspoon has a capacity of 5 ml (or 5 cm^3).

TRY THIS RECIPE!

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

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

NAME_____ YUM!YUM!YUM!

COCOA KRISPIE BALLS

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

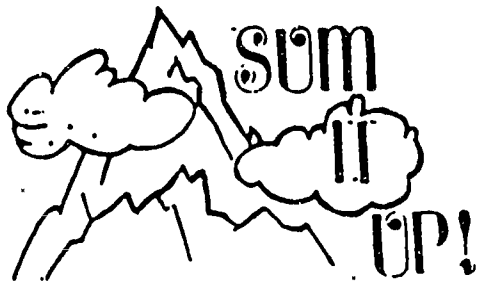
ADD: 15 g Cocoa Krispies

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

CHOCOLATE CHIP COOKIES

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

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



NAME _____

I. Directions: Circle the most sensible measure of capacity. Then write answer on answer sheet.

1.	tea cup	2 ml	20 ml	200 ml
2.	glass of milk	25 ml	250 ml	2500 ml
3.	garbage can	8 L	80 L	800 L
4.	bottle of salad oil	10 ml	100 ml	1000 ml
5.	bath tub	4 L	40 L	400 L
6.	teaspoon	5 ml	50 ml	500 ml
7.	large can of tomato juice	3 ml	130 ml	1300 ml
8.	swimming pool	6 L	600 L	60,000 L
9.	Pepsi Boss	20 ml	200 ml	2000 ml
10.	coffee pot	2.5 L	25 L	250 L

Give each measure in liters.

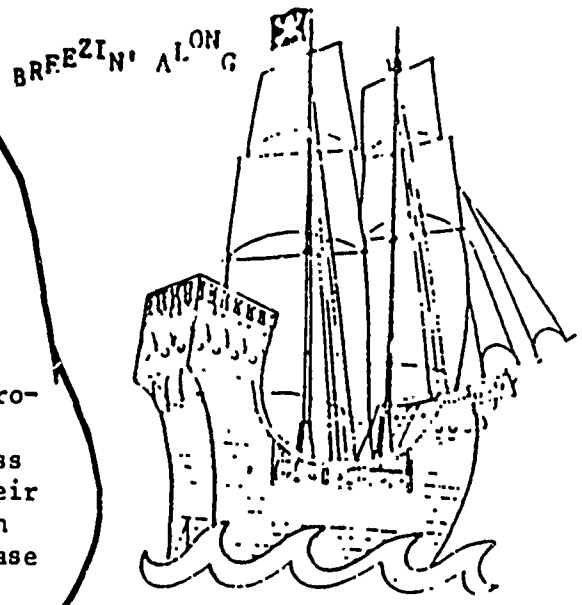
11. 14 ml = .014 L
12. 25 ml = _____
13. 500 ml = _____
14. 750 ml = _____
15. 2500 ml = _____
16. 62000 ml = _____
17. 1000 ml = _____
18. 180 ml = _____

NAME_____

LESSON TWENTY-THREE

Grade 6

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



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

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

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

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

LET'S REVIEW THE PREFIXES

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

NAME_____

I. Directions: Ring the best answer for each of the following:

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

Unscramble the following to form metric measures.

11. e r m t e

    o n e t n tonne

12. i m k g l a o r

13. t o i e l r i l k

14. e e e t d r c i m

    e o s d c n second

15. t l i i l l e i m r

16. t e e i r c t e n m

17. r t l k e m o i e

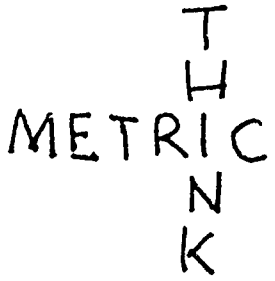
18. r e t i l

NAME _____

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

1. _____ A unit of mass equal to 1 of 1000 parts of a kilogram, each part of the same mass.
2. _____ What you can measure in kilometers
3. _____ A unit of length equal to 1000 meters
4. _____ A prefix meaning 1000
5. _____ Sometimes people speak of finding ____ in grams and kilograms
6. _____ A unit equal to 1000 grams
7. _____ The base unit of length
8. _____ A unit of capacity(how much something can hold)
9. _____ The first country to use the Metric System
10. _____ The liter is a unit of measure of _____
11. _____ A unit of length this long: ———
12. _____ The meter is the _____ unit of length
13. _____ The gram is the base _____ of mass
14. _____ The Metric _____

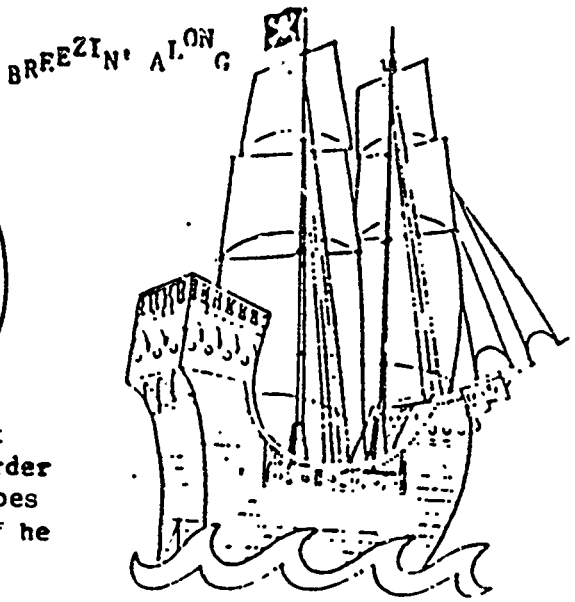
a. distance
b. capacity
c. System
d. England
e. base
f. kilometer
g. unit
h. mass
i. kilo
j. France
k. meter
L. gram
m. liter
n. centimeter
o. kilogram



NAME_____

LESSON TWENTY-FOUR
Grade 6

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

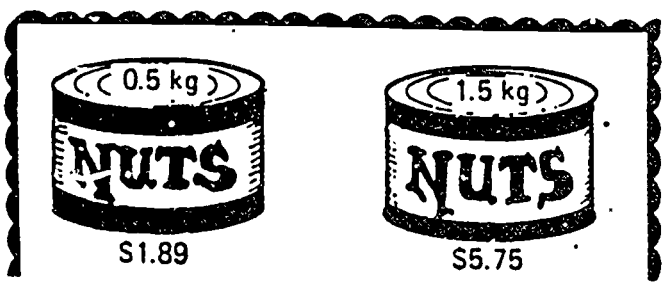


Example: John wants to buy 3 hamburgers at 99¢ each, a large coke for 45¢ and large order of fries for 35¢. Allowing 16¢ for tax, does John have enough money to cover the cost if he has $4.00?

3 hamburgers at	.99	3 x .99 =	$2.97
1 coke	.45		.45
1 fries	.35		.35
tax	.16		.16
			$3.93

Answer: Yes

I.



1) Which can is the better buy?_____

2) Why?_____

_____

NAME_____

REMEMBER: TO CHECK YOUR CHANGE:

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

1) You buy a belt for $7.29 and give the clerk $8.00. Here is your change.

Did you receive the correct change? YES NO

2) You buy a bean bag chair for $24.59. You give the clerk $25.00. Here is your change.

Did you receive the correct change? YES NO

3) You buy a poster for $2.15 and give the clerk $3.00. Here is your change.

Did you receive the correct change? YES NO

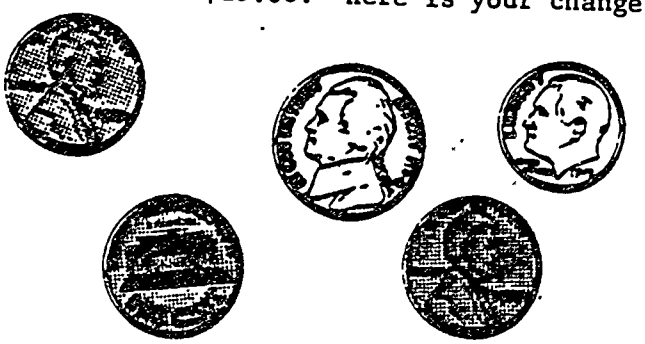
4) You buy a ruler for $ .41 and give the clerk $1.00. Here is your change.

Did you receive the correct change? YES NO

5) You buy some groceries for $9.18 and give the clerk $10.00. Here is your change.

Did you receive the correct change? YES NO

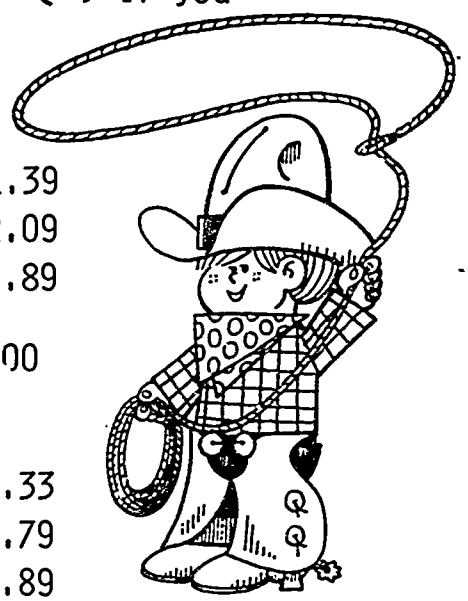
6) You buy a sweater for $14.82 and give the clerk $15.00. Here is your change.



Did you receive the correct change? YES NO

LET'S SEE HOW GOOD YOU ARE AT GUESSING.

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



1.

1 lb beef	$1.59
3 cans corn	1.01
2 onions	.39
1 bottle catsup	.89
_____	$5.00

2.

1 gal milk	$1.39
3 loaves, bread	2.09
jar of jelly	.89
_____	$4.00

3.

5 lb chicken	$3.55
2 cans beans	.59
1 doz eggs	.79
1 qt milk	.76
_____	$5.00

4.

2 lb fish	$2.33
1 qt milk	.79
spaghetti	.89
2 cans tomatoes	.79
3 lb beans	99
2 lg cans soup	1.25
_____	$7.00

5.

2 lb pork chops	$4.75
3 lb bananas	1.00
3 lb apples	1.49
1 orange juice	.99
1 mayonaise	.89
_____	$8.00

6.

2 lb steak	4.87
potatoes	.61
squash	.79
gal milk	1.39
2 doz eggs	1.59
_____	$10.00

7.

1 lg box soap	$1.89
32 oz jelly	1.89
5 lb apples	1.59
2 loaves, bread	1.38
2 cans juice	1.69
_____	$10.00

8.

3 cans chili	2.10
6 cans peas	2.31
turkey	4.18
4 sm soup	1.89
2 spaghetti	1.92
2 cereal	2.49
_____	$14.00

9.

2 lg catsup	$1.98	3 lb beef	5.18
2 mayonaise	1.89	6 lb grapes	6.25
6 lb tomatoes	2.15	_____	$15.00

GROCERY SHOPPING:

Sometimes you may feel that you need a wheelbarrow full of money to pay for your groceries. It is ,therefore, a good idea to estimate to see if you do have enough money with you. Estimate the cost of the following bags of groceries by rounding to the nearest $0.10. If you do not have enough money, select an item to put back.

1.

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

Is $25.00 enough? A_____
Put back? B_____
New estimate C_____

2.

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

Is $26.00 enough? A_____
Put back? B_____
New estimate C_____

3.

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

Is $23.00 enough? A_____
Put back? B_____
New estimate C_____

4.

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

Is $18.00 enough? A_____
Put back B_____
New estimate C_____

5.

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

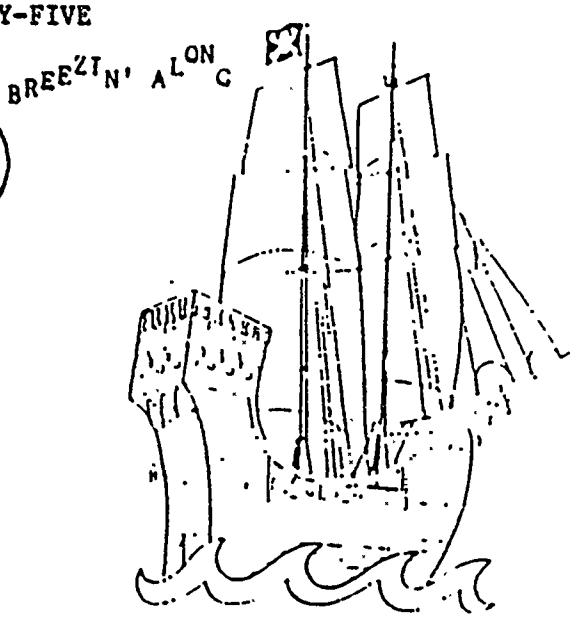
Is $27.00 enough? A_____
Put back? B_____
New estimate C_____

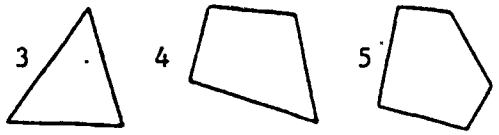
NAME _____

LESSON TWENTY-FIVE

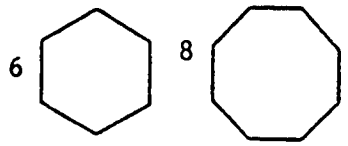
Grade 6

PARENT: This is a lesson on Geometry. Your child will review parts of a circle, types of polygons and will identify congruent figures.





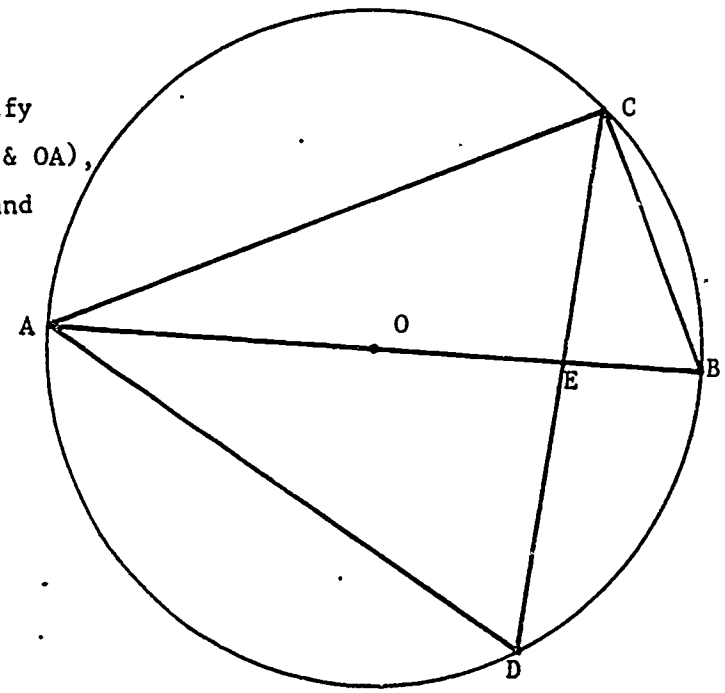
Triangle Quadrilateral Pentagon



Hexagon Octagon

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

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

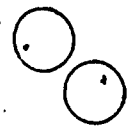


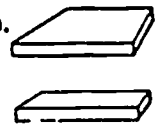
NAME_____

Figures with the same size and shape are congruent.

Examples:

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

a. 

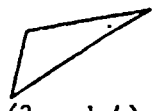
b. 

c. 

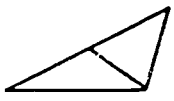
d. 

e. 

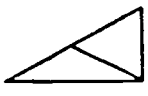
(a, d and e seem to have the same size and shape)

(1) 

(2) 

(3) 

(4) 

(5) 

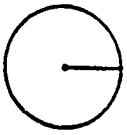
(2 and 4)

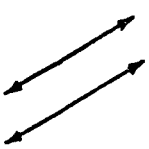
I. Match the figures on the right to the words on the left. (If there are 2 matches, give both answers.)

1. _____segment
2. _____triangle
3. _____parallel lines
4. _____ray
5. _____angle
6. _____rectangle
7. _____radius
8. _____right triangle

a. 

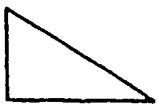
b. 

c. 

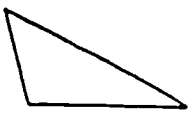
d. 

e.

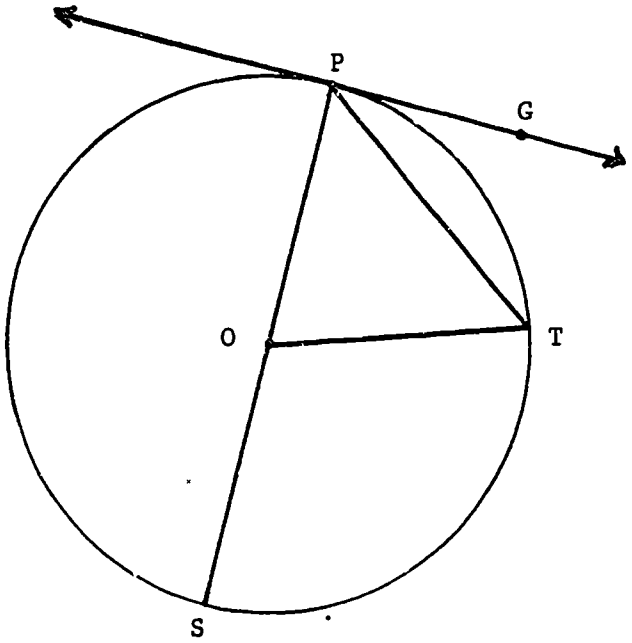
f.

g. 

h. 

j. 

NAME_____



II. Use the drawing above to answer the following questions.

1. Which line segment is the diameter of the circle?

a. $\overline{OT}$ b. $\overline{PT}$ c. $\overline{OS}$ d. $\overline{PS}$

2. What is the center?

a. O b. T c. S d. P

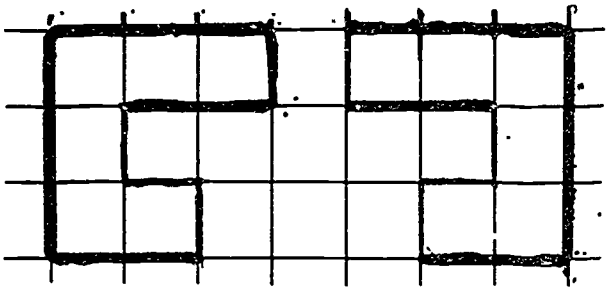
3. Which line segment is a radius?

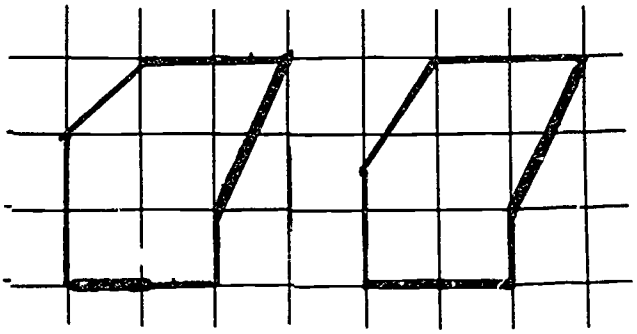
a. $\overline{PT}$ b. $\overline{SP}$ c. $\overline{PG}$ d. $\overline{OS}$

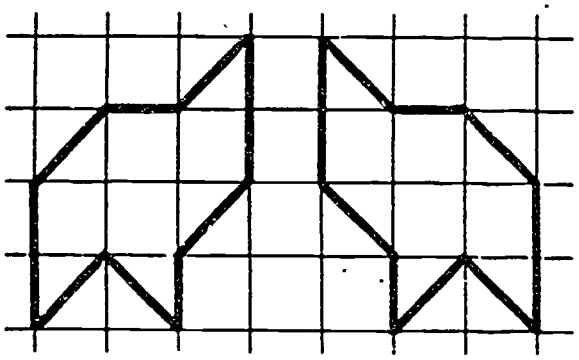
RETURN WITH YOUR ANSWER SHEET.

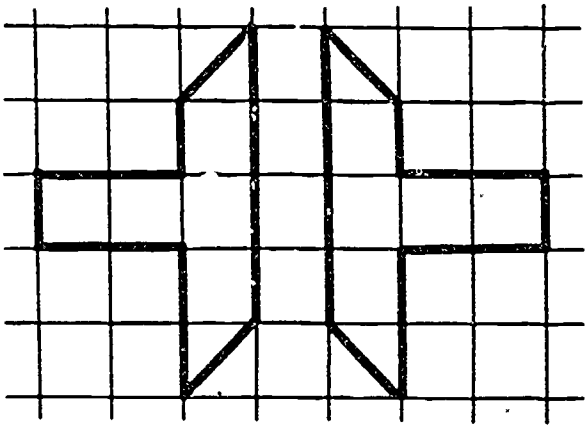
name _____

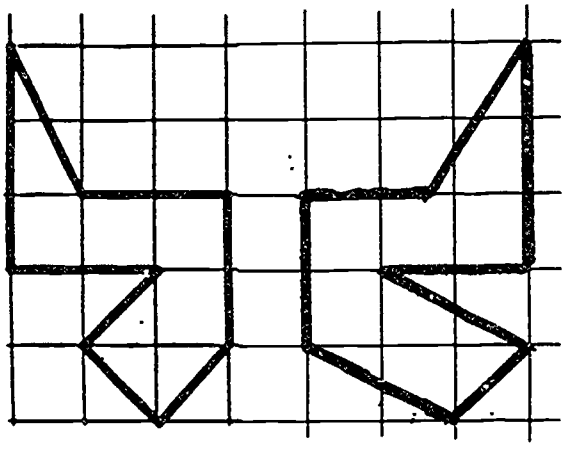
III. Circle the figures which are congruent.

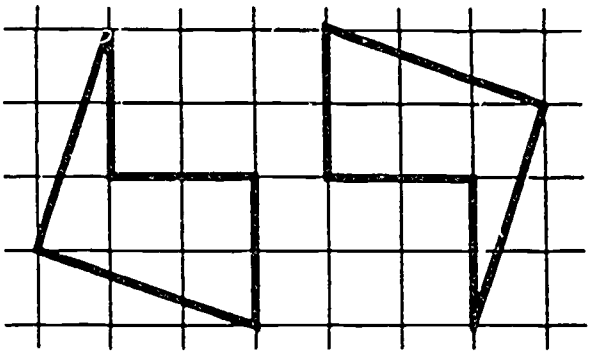
1. 

2. 

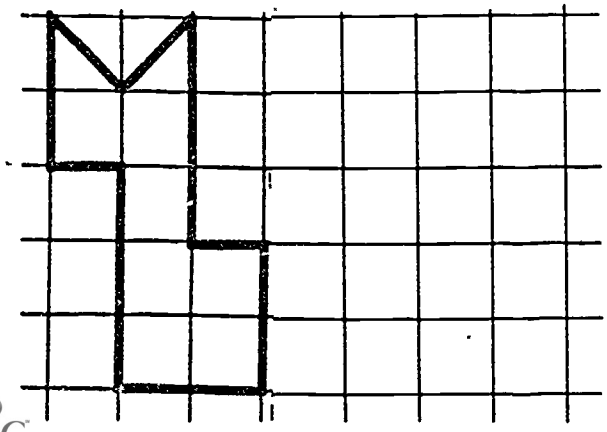
3. 

4. 

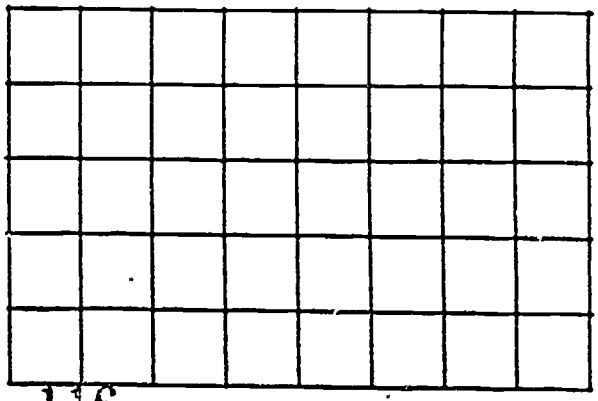
5. 

6. 

7. Draw a figure congruent to this one.



8. Draw a figure. Then make a figure congruent to the one you drew.



NAME_____

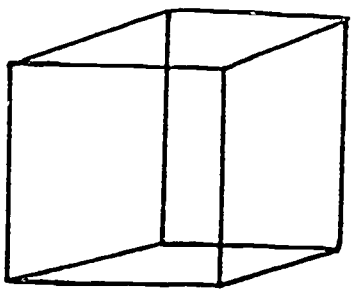
ILLUSIONS

IV. Illusions, or optical puzzles, provide an interesting challenge. They are not strictly mathematical ideas, but mathematical forms lend themselves to this kind of project.

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

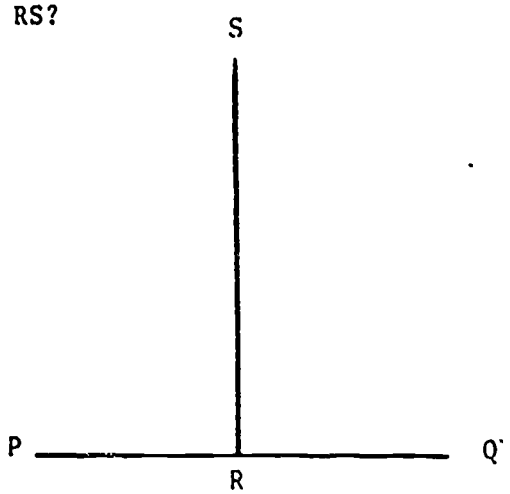
****

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

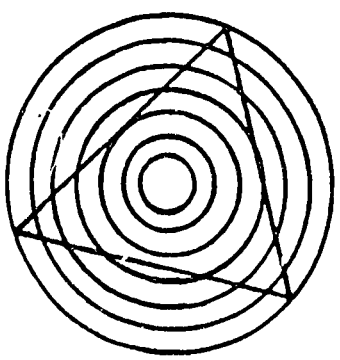


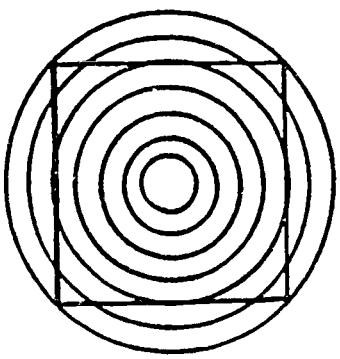
Try to make some optical illusions yourself.

2. Which is longer - line PQ or line RS? Be sure now! Check with a piece of paper, marked at the edge.



3. Look carefully at the square and triangle. Are the sides straight or do the lines bend? Maybe you will need a ruler to double-check.

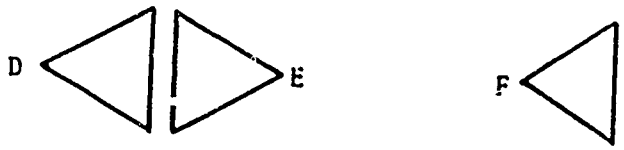




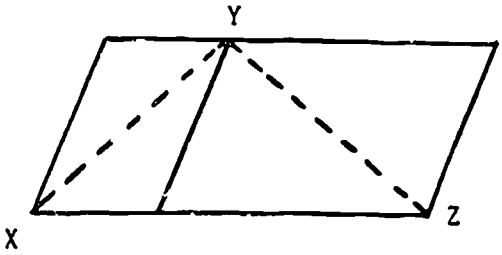
NAME _____

ILLUSIONS, con't.

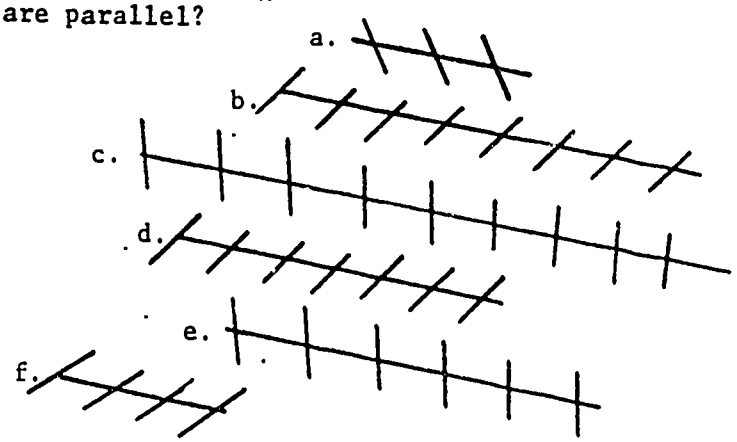
4. How does the distance DE compare with the distance EF? Check with marked edge of paper.



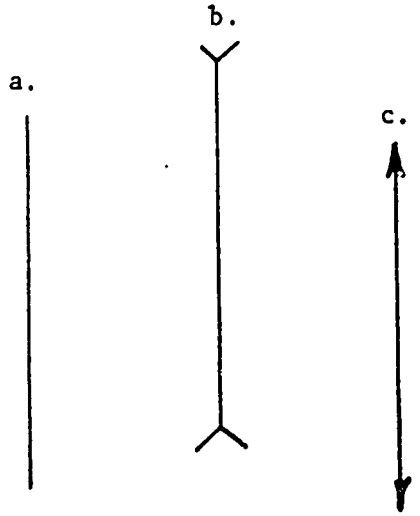
5. Is dotted line XY shorter than dotted line YZ?



6. Which of these lines are parallel?



7. How do these three arrows compare in length?



CONGRATULATIONS ! ! ! !

YOU HAVE COMPLETED

MATH BY MAIL, GRADE 6

GOOD LUCK NEXT

YEAR IN GRADE 7 MATHEMATICS