Mathematics for Grade 3 Teachers

I. UNDERSTANDING NUMBERS BETTER

A. Read each number, give the place value and then the value of the underlined digit.

	a	b	c	d	e	f	g
1.	4<u>5</u>7	<u>6</u>67	98<u>7</u>	<u>8</u>,888	5<u>6</u>,750	<u>3</u>90	4<u>8</u>5
2.	<u>6</u>,543	<u>4</u>5,675	7,5<u>4</u>0	67,<u>5</u>80	<u>6</u>,890	55,<u>0</u>78	<u>5</u>92

B. Write the numbers in symbols.

1. four hundred fifteen _____
2. seven hundred twenty-five _____
3. 5 thousand, seven hundred fifty _____
4. forty-nine thousand, five hundred seventy-five _____
5. twenty-one thousand, eight hundred seventy-five _____

C. Fill in the blanks with the correct numbers to make each sentence true.

1. 980 = _____ + 70
2. 975 = 900 + _____ + 15
3. 600 + 80 + 6 = _____ + 380 + 6
4. 978 = _____ + 272 + _____
5. 2,975 = _____ + 600 + 75
6. 8,348 = 7,000+_____ +300+_____
7. 22,000 + 3,000 + 750 + 8 = _____ + 750 + _____
8. 45,000 + 5,500 + 350 + 9 = _____ + 1,800 + _____ + 9

D. Use the given digits to write the <u>LEAST</u> and the <u>GREATEST</u> number possible.

	LEAST	GREATEST		LEAST	GREATEST
1. 5, 5, 3	_____	_____	2. 0,9, 8	_____	_____
3. 9, 3, 0	_____	_____	4. 3, 4, 1	_____	_____
5. 2, 5, 9,1	_____	_____	6. 7, 9, 2, 4	_____	_____

E. Write the number between or midway the given numbers.

1. 235 _____ 237
2. 454 _____458
3. 731 _____ 737
4. 3,450 _____ 3,460
5. 4,742 _____ 4,748
6. 8,233 _____ 8,245
7. 6,754 _____ 6,774
8. 3,341 _____ 3,381
9. 9,450 _____ 9,510

F. Find the smallest/largest digit you can put in the blank to make the sentence true.

1. 35____3 > 3573
2. 2____43 < 2343
3. ____153 < 4153
4. 23____37 < 23 437
5. ____6 921 > 46 921
6. 36 4____9 < 36 419
7. ____26 569 < 526 569
8. 2____3 457 < 263 457
9. 523 7____1 > 523 721

G. Answer each of the following questions.

1. How many tens are in 560? _____
2. How many 5-peso coins are equal to ₱50.00? _____

3. How many ₱100-bills are equal to a ₱1000-bill? _____
4. Vanessa has 3 ₱20-bills and ten 1-peso coins. Mila has two ₱20-bills one ₱10-bill and one ₱5-coin. Who has more money? _____

5. How many ten thousands are there in 82,456? _____

6. How many thousands are there in 75,000? _____

7. Which will you choose, three ₱100-bills or seven ₱50-bills? Why? _____

8. What is the largest 4-digit number with no digits the same? _____

9. What is the smallest/largest 4-digit odd number? _____

10. What is the number smaller than but closest to 6,000? _____

H. Write the following in Hindu Arabic.

1. CXXXI _____
2. DCL _____
3. CLIX _____
4. DCDLXL _____
5. LXXIX _____
6. CXIV _____
7. CDVIII _____
8. CDXCIV _____
9. CCLXIII _____

I. Write the following in Roman Numerals.

1. 26 _____
2. 101 _____
3. 59 _____
4. 367 _____
5. 83 _____
6. 799 _____

J. Find the next three numbers in each pattern.

1. 1, 4, 7, 10, 13, _____, _____, _____

2. 24, 28, 32, 36, 40, _____, _____, _____

3. 12, 24, 12, 36, 12, 48, _____, _____, _____

4. 173, 178, 183, 188, 193, 198, _____, _____, _____

5. 917, 815, 913, 811, 909, _____, _____, _____

6. 987, 877, 767, 657, 547, _____, _____, _____

Challenge!!!!
Read each number carefully, analyze then answer.

1. I am a three-digit number. My ones is three times my tens and my hundreds is four more than my tens. My tens digit is 2.

2. I am an even 4-digit number. My tens is one itself. As for my other digits, each is at least three of my ones digit. What numbers can I be?

3. How many digits corresponds to one hundred thousand?

4. I am bigger when turned upside down than when right side up. What number am I?

5. Susan accidentally entered 123 instead of 132 in her calculator. How much greater is 2 in the first number than in the second number?

6. What is the greatest even number before the number 5 400?

7. Excluding 1534, what is the smallest even numbers we can find between 1530 and 1540?

8. If you were given the digits 6, 7, 8, and 9, what is the greatest number that you can form?

9. How many even numbers are there between the numbers 234 and 240?

10. The total cost of a blouse and skirt is ₱485. The skirt cost ₱95 more than the blouse. How much did each cost?

II. UNDERSTANDING ADDITION, SUBTRACTION AND THE CALENDAR BETTER

A. Find the sums. Try to do each orally.

1. 28	2. 44	3. 73	4. 89	5. 196	6. 6 + 17 + 3 =
+ 6	+ 9	+ 27	+ 11	+ 199	7. 28 + 5 + 7 =

8. 25	9. 46	10. 83	11. 876	12. 971	13. 791	14. 895
+ 87	+ 64	+ 98	+ 132	+ 241	+ 642	+ 779

B. Give the difference. Try to do each orally.

1. 19	2. 36	3. 46	4. 62	5. 71	6. 89	7. 85
- 8	- 17	- 27	- 39	- 57	- 69	- 76

8. 86	9. 96	10. 91	11. 564	12. 290	13. 733	14. 582
- 67	- 13	- 54	- 92	- 112	- 456	- 562

C. Study the calendar for the month of May, 2011

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

1. Connect 6, 7, 14 and 13 to form a square. Add the corner numbers. What is the sum?

2. Draw the square with 6, 20, 18, & 4 as corners. Find the sum of the numbers in the opposite corners. What do you find? What is the number in the center of the square? How is it related to the sum of the corner numbers? Try the same with another 3x3 squares. Do you get the same results?

3. a. Look at the numbers under the same day. What is the difference?
   b. What day is May 2? What day is May 9? May 30?

4. a. If July 6 is a Wednesday, what day is July 13? Why?
   b. If May 21 is a Saturday, what days are (i) May 13? (ii) May 12? Can you explain your answer?

5. What is the difference between (i) any date and the date one week before it? (ii) any date and any date two weeks after it?

6. Draw a line from one number to another to form a rectangle and get the sum of the numbers in the opposite corners. Compare results and observations.

7. If today is September 30, what date was it three days before yesterday?

8. If today is September 15, what date will it be four days from tomorrow?

D. Find the value of R in each of the following.

	- 17	+ 15	- 8	+ 10
1. [R] -->	[ ] -->	[ ] -->	[ ] -->	[30]
	+ 6	- 13	- 17	+ 18
2. [R] -->	[ ] -->	[ ] -->	[ ] -->	[46]
	+ 9	-16	+ 27	- 50

3. [R] --> [ ] --> [ ] --> [ ] --> [45]

E. Do as told.

1. Subtract 8 from the sum of 12 and 16.
2. Add 9 to the difference of 23 and 18.
3. Add 35 to 27 and subtract the sum from 95.
4. Add twice 12 to the difference of 65 and 19.
5. Subtract 17 from 65 and add the difference to 25.
6. I am thinking of a number. If I add 25 to it and then subtract 12, I get 24. Find my number.

F. Analyze and solve each of the following problems.

1. Sophia had ₱28; Mother gave her ₱13 and Father gave her ₱19. How much money has she now?
2. The three sides of a triangle are 13 cm, 14 cm and 19 cm. Find its perimeter.
3. Anna made 40 sampaguita garlands in the morning and 35 in the afternoon. She sold 67 in the evening. How many garlands remained?
4. Rose picked 125 roses. She sold 4/5 and gave the rest for their home altar. How many roses did Rose give for their altar.
5. As a gift, I gave my sister Margie a 134-page book of stories. If she read 15 pages a day, how many pages remained after 4 days?

Challenge!!! A. Study the part of the addition table below.

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	(8)	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13

1. Can you tell how each number in the table is obtained? Look at the circled 8. How was it obtained?
2. What can you say about the numbers in each row? How can you describe them? Can you explain why? [Hint: How do they differ? Why? what kind of sequence do they form?]
3. Now, look at the numbers in each column? What can you say about them? Why is this true?
4. Find the sum of the numbers in each row. 0+1+2+3+4+5+6+7+8+9= 45 for the first row. Find the sum of the four other rows. What are the sums? [Hint: There is a short way to get the sum.]
5. Now, get the difference between the sums. What is it? Can you explain why it is the same? [Look at the table and discuss with your partner.]

B. 1. Glen, Harry and Kim each has a favorite sport among tennis, soccer and baseball. Glen does not like baseball and soccer. Harry does not like baseball. Name the favorite sport of each person.

2. Arrange the digits 1, 1, 2, 2, 3, 3 as a 6-digit number so that the 1s are separated by 1 digit, the 2s are separated by two digits and the 3s by 3 digits. There are 2 answers. Find one.

III. UNDERSTANDING MULTIPLICATION BETTER

A. How many of the following can you do orally?

	a	b	c	d	e	f	g	h	i	j
1.	32 x 3	23 x 4	24 x 3	25 x 4	27 x 5	34 x 2	36 x 3	45 x 6	54 x 5	56 x 6
2.	75 x 8	76 x 7	78 x 9	92 x 5	74 x 8	57 x 8	64 x 6	82 x 9	95 x 5	85 x 7

B. Do as told. How many can you do orally?

1. Subtract 15 from the product of a. 7 and 8, b. 9 and 12.

2. Multiply the difference of 37 and 11 by a. 7 b. 9.

3. Add twice a. 13 b. 27 to the sum of 25 and 79.

4. If I add 15 to a number I am thinking and then multiply the sum by 3, I get 117. Find the number I am thinking of.

5. Subtract the product of 9 and 7 from a. 100, b. 200.

6. Multiply the sum of 27 and 38 by a. 7 b. 9.

7. Add 9 to 8; multiply the result by 5 and then subtract 11 from the product.

8. Subtract the sum of 25 and 36 from the product of 12 and 7.

9. Multiply 15 and 7; add the product to 125 and then subtract the sum from 500.

10. If I subtract 12 from the number I am thinking of and then multiply the difference by 20, I get 700. What is my number?

C. Cross-number puzzle.

a	b	xxx	c		d
e		f	xxx	xxx	
g			xxx	h	
xxx	xxx	i	j		xxx
k	l	xxx	m		n
o			xxx	xxx	

Across

a. Subtract 17 from 45
c. 4 times the sum of 12 and 14
e. Add 36 to 4 times 25
g. Four less than 216
h. The square of 8
i. Add 112 to 306
k. Multiply 7 and 6
m. Add 45 to twice 250
o. Twice 319 added to 236

Down

a. 4 times 53
b. 5 times 160 added to 31
d. Four times 121
f. Subtract 26 from 650
h. Multiply 76 by 9
j. Subtract 45 from 60
k. Multiply 8 by 6
l. Add 12 to 15
n. Subtract 42 from 100

D. Analyze each problem and then solve it.

1. John picked 4 baskets of chicos. Each basket contained 3 dozen chicos. How many dozen chicos did he pick? How many chicos did he pick?

2. In #1, John sold 10 dozen chicos at ₱30.00 a dozen. a. How many chicos did he not sell? b. How much money did he get?
3. Catherine collects stamps. She puts 15 stamps on each page of her album. If 15 pages of her album are full and there are 6 on the 16th page, how many stamps has she?
4. Caesar bought 2 ballpens at ₱6.75 each, and a pencil case for ₱32.50. How much change did he get from a ₱50-bill?

E. Study the part of the multiplication table given below. Can you explain how each entry in the table is obtained?

x	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45

Let us call the rows the 0-row, 1-row, etc. and the columns as 0-column, 1-column, 2-column, etc.

Study the rows and columns.

1. What do the 0-row and 0-column tell you about multiplication by 0?
2. What do the 1-column and the 1-row tell you about multiplication by 1?
3. Look at the numbers in the 2-row. How do they differ? What about those in the 2-column? What name do we give to numbers in the 2-row and the 2-column? [Hint: there are two possible names you can give.]
4. What do we call the numbers in the 5-row? How do those numbers end?
5. Look at the numbers on the diagonal line. What kind of numbers are they?
6. Observe the products. Which digit, aside from 0, is used the greatest number of times? the least number of times?

Challenge!!!

1. Myra and Meryll are playing a number game. Myra gives a number and then Meryll gives another according to a pattern. Study the numbers they have given and see if you can complete the tables.

a

Myra	7	10	15	17	21	27		
Meryll	11	14	19	21			41	53

b.

Myra	2	3	4	5	6	7	10		
Meryll	7	9	11	13				25	

29

3. A clock strikes once for the first quarter of an hour; twice for the half hour, thrice for the 3rd quarter and it strikes as many times as the hour. How many strikes will you hear from the time it strikes 11:00 until it strikes 12:00? How many strikes from 9:00 to 12:00?

4. Go to the multiplication table again. Find the sum of all the numbers in each row. In the 1-row, 0+1+2+...+8+9 = 45. Find sums of the other four rows. Compare them. What is the difference of consecutive sums? Can you explain the results? Get the sum of the numbers in each column from the 1-column. How do they differ? Can you explain the result?

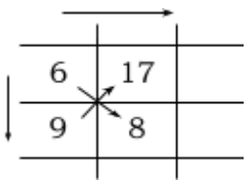
5. Lita, Roy and Gina went shopping. Lita spent ₱145.50, Gina spent ₱25 less than twice as much as Lita and Roy, spent ₱35 less than Gina. How much did Gina and Roy spend? How much in all did the three spend?

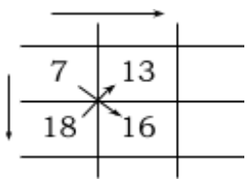
IV. UNDERSTANDING MULTIPLICATION AND DIVISION BETTER

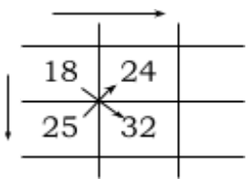
A. Find the quotients of the following. How many can you do orally?

	a	b	c	d	e	f	g	h
1.	2)99	2)68	3)36	4)84	3)48	4)72	5)65	4)56
2.	3)66	7)91	6)84	8)96	7)84	5)95	6)96	4)100
3.	8)112	9)117	7)154	6)144	8)136	9)198	6)192	4)128

B. Mastering multiplication. Find the products along the given arrows. Write the answers in the boxes.

1. 

2. 

3. 

C. Do as told.

1. Multiply the quotient of 48 divided by 6 by the sum of 7 and 14.

2. Subtract 60 divided by 5 from the product of 8 and 12.

3. Divide 56 by 4 and add the result to the quotient of 78 divided by 6.

4. Multiply 12 by 18 and divide the product by 6. Can you find a way to get the answer mentally?

5. Add 135 to 249 and divide the sum by 12.

6. Find the remainder when 2349 is divided by 17?

7. What are all the possible remainders when the divisor is 8?

8. I am thinking of a number. If I add 26 to it and divide the sum by 5 the result is 24. What is my number?

9. Multiply the sum of 23 and 36 by 4.

10. Subtract 126 divided by 6 from the product of 8 and 12.

D. Multiplying by multiples and powers of 10. How many can you do orally? Ex. Since 4 x 3 = 12, 4 x 30 = 4 x 3 x 10 = 12 x 10 = 120

1. 5 x 40 = _____	2. 8 x 50 = _____	3. 5 x 60 = _____
4. 7 x 500 = _____	5. 9 x 300 = _____	6. 9 x 600 = _____
7. 8 x 700 = _____	8. 6 x 220 = _____	9. 4 x 420 = _____
10. 5 x 300 = _____	11. 3 x 210 = _____	12. 7 x 340 = _____

13. If 9 x 62 = 558, what is 90 x 62?

14. If 14 x 67 = 938, what is 140 x 670?

15. If 35 x 83 = 2,905, what is 350 x 8300?

D. Find N.

1. [N] --> [÷4] --> [+ 10] --> [x 3] --> [- 10] --> [51]

2. [N] --> [x 3] --> [- 6] --> [÷ 11] --> [+ 27] --> [33]

3. [N] --> [÷ 5] --> [+ 5] --> [x 4] --> [- 12] --> [60]

4. [N] --> [+ 16] --> [÷ 3] --> [- 12] --> [x 5] --> [100]

E. Analyze each problem and solve.

1. Sophia can type 53 words a minute. How long will it take her to type a term paper containing 1,375 words if she spends an additional 15 minutes for changing and putting in the paper in the printing?

2. Timothy gathered 139 santols from one tree and twice as many from another tree. How many santols in all did he gather?

3. A small library had 936 books. This week, 235 were donated by the graduating class and 230 new books were given by the local government. If 514 were borrowed by students, how many books are now in the library?

4. City A and City B are 90 km apart. City C is between A and B. Its distance from A is twice its distance from B. How far is C from A? [Hint: Make a sketch of how the three towns are along the road.]

5. A group of 7 hikers walked a total of 289 kilometers. One walked two km more than the others. The other 6 walked the same distance. How many kilometers did each hiker walk?

6. Pete is thinking of 2 factors of 63 whose sum is 24. What are they?

7. There are 48 cans of milk in a box. The Grade 3 pupils of St. John's School bought 4 boxes. They put 3 cans in each Christmas package. How many packages were they able to make?

8. Oranges cost ₱8.50 each. How many can you buy with ₱100.00?

9. A test has three sections. Verena got 50 out of 60 in the first section, 65 out of 70 in the second section and 60 out of 70 in the third section. How many items of the test did Verena get correctly? How many items did she not get?

G. Challenge!!!

1. Put any 4 coins of different denominations on your desk. In how many ways can you arrange them? How will you keep track of the different arrangements?

2. With your partner, draw 23 small circles. Toss a coin to see who will play first. Partners will take turns crossing 1, 2 or 3 circles. The player who crosses the last circle is the loser.

3. Using only the letters in the square, you can form arithmetic words. How many can you form?

S	X	T	Y
T	U	R	
F	O	M	
H	D	Z	

N

You may use each letter many times.

4. DAD EON ROME LOTTA CABSTRUT NET ZONED FEE-TO-RUN
are jumbled arithmetic words. How many can you unscramble?

5.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2

If the letters have the values above, what is the value of your name?

Ex. ANN - 24 + 11 + 11 = 46 What is the value of your name? What can you find with the cheapest value? more expensive value?

V. UNDERSTANDING FRACTIONS BETTER

A. Circle the correct number of objects to show the indicated fraction.

o o o o o o o o	* * * * *	@ @ @ @ @ @	+ + + + + +	0 0 0 0 0 0
o o o o o o o	* * * * *	@ @ @ @ @ @	+ + + + + +	0 0 0 0 0
o o o o o o o	* * * * *	@ @ @ @ @ @	+ + + + + +	0 0 0 0
o o o o o 3/8	2/5 * *	@ @ @ @ 4/7	+ + + + + +	0 0 0
			5/6	5/6

B. Write the following in symbols.

1. four-fifths _____
2. one-thirds _____
3. twelve-twelfths _____
4. seven-elevenths _____
5. two-seventeenths _____
6. three and five-sixths _____
7. eight and seven-ninths _____
8. two and three-tenths _____
9. six and nine-thirteenths _____
10. fourteen and five-twenty-first _____

C. Solve.

1. 1/2 of 14 = _____
2. 2/3 of 18 = _____
3. 3/4 of 16 = _____
4. 3/5 of 25 = _____
5. 2/5 of 30 = _____
6. 5/6 of 42 = _____
7. 3/7 of 21 = _____
8. 3/8 of 32 = _____
9. 4/9 of 36 = _____
10. 2/7 of 56 = _____
11. 7/10 of 60 = _____
12. 8/11 of 77 = _____

D. Problem Solving. Analyze each problem and then solve it.

1. Dolores bought some cakes and cut each into 6 equal parts to sell. She had 72 pieces after cutting the cakes. In the afternoon, she had 5 pieces left. a. How many cakes did she buy in all? b. How many cakes did she sell? (use a mixed number)
2. Mother baked 36 cupcakes. She gave 10 to her neighbors and served 18 to her children. What fraction of the cupcakes did she a. give away? b. serve? c. What fraction remained?
3. Anthony has 25 blue marbles, 18 red marbles, 32 black and 40 white marbles. a. What fraction of his marbles are the blue marbles? b. What fraction of his marbles are not blue?
4. There are 54 pupils in a Grade 3 class. One-third of them are girls and 1/3 of the girls wear eye-glasses. How many girls wear glasses?
5. In a store, the storeowner found out that 1/6 of his stock of ice cream had melted. If only 15 gallons were unharmed, how many gallons of ice cream melted? How many gallons were in stock?

E. To help yourself with the following questions, draw a line and divide it, first into 9 equal parts and then divide each ninth into 2 parts. Use your drawing to write in the missing numbers.

1. a. $\frac{1}{2} = \frac{}{6} = \frac{}{18}$

b. $\frac{2}{3} = \frac{4}{} = \frac{}{9} = \frac{12}{}$

c. $\frac{4}{2} = \frac{}{6} = \frac{}{18}$

d. $\frac{4}{3} = \frac{}{6} = \frac{}{9} = \frac{}{18}$

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

f. $\frac{4}{6} = \frac{}{18}$

g. $\frac{6}{6} = \frac{}{18}$

h. $\frac{12}{9} = \frac{}{}$

i. $\frac{10}{6} = \frac{}{10} = \_\_$

j. $\frac{6}{9} = \frac{12}{}$

k. $\frac{12}{9} = \frac{}{18}$

l. $\frac{10}{9} = \frac{20}{}$

2. Draw another line as long as the one in #1 and divide it into 6 equal parts and then each sixth into 3 equal parts. Write the missing numbers.

a. $\frac{2}{2} = \frac{}{6} = \frac{}{18}$

b. $\frac{4}{3} = \frac{}{6} = \frac{}{9} = \frac{}{18}$

c. $\frac{5}{3} = \frac{}{6} = \frac{}{9} = \frac{}{18}$

d. $\frac{7}{6} = \frac{}{18}$

e. $\frac{11}{9} = \frac{}{18}$

f. $\frac{11}{6} = \frac{}{18}$

g. $\frac{13}{9} = \frac{}{18}$

h. $\frac{14}{9} = \frac{}{18}$

i. $\frac{10}{9} = \frac{}{18}$

3. Using the line you have constructed and the answers above, write "<, = or > " in each [ ] .

a. $\frac{2}{6}[\ ]\frac{9}{18}$

b. $\frac{3}{9}[\ ]\frac{3}{18}$

c. $\frac{7}{9}[\ ]\frac{14}{18}$

d. $\frac{5}{6}[\ ]\frac{14}{18}$

e. $\frac{1}{3}[\ ]\frac{9}{18}$

f. $\frac{3}{9}[\ ]\frac{6}{18}$

g. $\frac{11}{9}[\ ]\frac{22}{18}$

h. $\frac{4}{3}[\ ]\frac{7}{6}$

i. $\frac{5}{6}[\ ]\frac{11}{18}$

Challenge!!!

A. 1. Lucia had 2 1/2 apples. She divided them so she had just enough fourths of an apple for each friend and herself. How many of them were there?

2. Father bought 3 kilos of oranges and 2 kilos of grapes. He gave 1 1/2 kilos of the fruits to Grandmother at the hospital. How many kilos remained?

3. Chris has a rope 7/3 meters long. Lindley has one 19/6 meters long. Who has a longer rope? How much longer is it? If they join their ropes, what will be the resulting length?

4. Mr. Reyes planted 1 2/3 hectares to rice, 1 2/3 hectares to sugar-cane and 2/3 hectares to vegetables. How many hectares of land in all had plants?

5. Marianne was given a 2 1/3 meters of white cloth and 1 1/2 meters of black cloth. She used 7/3 meters for a costume party dress. How much cloth is left?

6. Five oranges and an apple cost ₱87; five apples and an orange cost ₱99. How much do 2 oranges and 2 apples cost?

7. Given a number of eggs, distribute the eggs so that you have a different number of eggs in each basket. a.1/2 dozen eggs, 3 baskets b. 1 dozen eggs, 4 baskets c. 3 dozen eggs, 9 baskets d. 2 dozen eggs, 6 baskets

B. Let us go shopping in a candy store. The candies we can buy are:

yellow candies	orange candies	red candies
50 ¢ each	60 ¢ each	45 ¢ each
green candies	chocolate candies	
55 ¢ each	70 ¢ each	

1. You have ₱2.00. What 4 candies can you buy without change? with change?

2. You bought ₱2.35 worth of candies. What did you buy? Can you buy more than one set of candies?

3. You bought 2 candies and got 10 ¢ change. What did you buy? Could they be of the same color? Different color?

4. You bought 6 candies of one color. What is the least money you could have spent? What is the most money you could have paid?

5. You are 5 friends together and you have ₱5.00. Can you buy each of you a green candy and a chocolate candy? If no, how much more do you need? If yes, do you have any change?

VI. UNDERSTANDING GEOMETRY BETTER

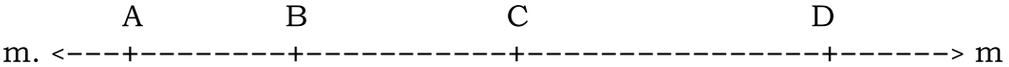
A. Getting more acquainted with figures

1. Look around in your classroom. How many of the following can you name? Can you sketch each of them?

a. horizontal lines	b. vertical lines	c. oblique lines	
d. parallel lines	e. perpendicular lines	f. circles	g. squares
h. rectangles	i. parallelograms	j. trapezoids	k. angles

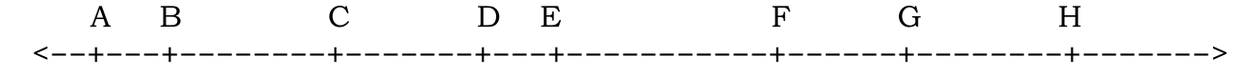
2. Take any piece of paper. Fold it into two; press the fold well. Fold it again into two making sure that part of the first fold is completely over the other part. Press the fold well. Open the paper. What do the two creased lines form? Look at the angles; what kind are they?

3. Look at line m.

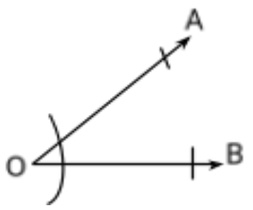


a. How many points are shown on it? Name them.
b. Using its points, how is line m named?
c. How many segments on it can be named? Why is segment AB the same as segment BA?
d. If you use B as origin, which rays can you name?
e. What if you use A, C or D as origin? How many rays in all can be named?
f. Is ray AB the same as ray BA? Can you explain your answer?

4. How many segments and rays can you name from the figure?

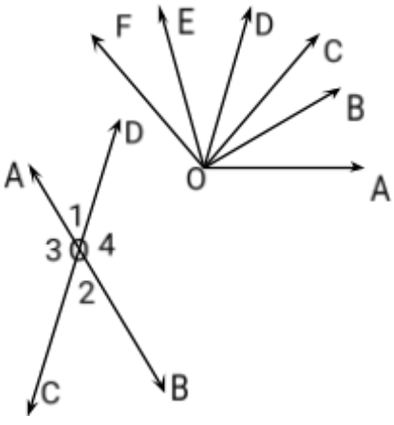


5. In how many ways can you name the angle at the right? Which is the vertex? the sides?

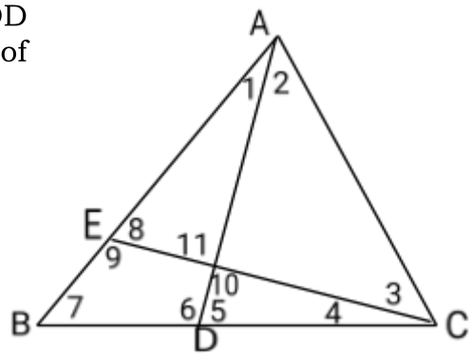


6. a. How many rays are in the figure? How many rays are needed to form an angle?
b. How many angles can you name from the figure?

7. Lines like AB and CD that have one point in common are called <u>intersecting</u> lines. a. How many angles do intersecting lines form? Opposite angles formed by intersecting lines, like ∠1 and ∠2 are called <u>vertical</u> angles. b. Can you name another pair of vertical angles in the figure?

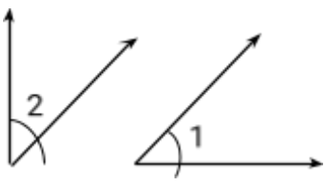


8. Take a piece of paper. Fold it into two; press the fold well. Open the fold; then fold it again to cross the first one. The two creases should be two intersecting lines. Can you see the two pairs of vertical angles? By folding, make AO fall on OC and OD on OB. What happens to one pair of vertical angles? Next, make AO fall on OD and OC on OB. What happens to the other pair of vertical angles?



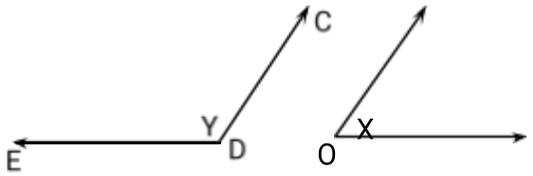
B. 1. Kinds of angles
   a. Name the acute angles in the figure.
   b. What are the obtuse angles in the figure.
   c. Name the right angles in the figure.

2. In the figure, $\angle 1 = 55^o$ and $\angle 2 = 35^o$. Angles like the two angles such that $\angle 1 + \angle 2 = 90^o$, are called complementary angles. $\angle 1$ and $\angle 2$ are complementary.



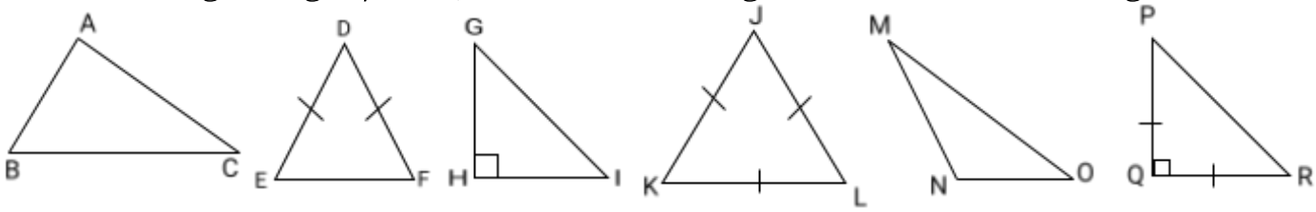
   a. If $\angle 1 = 42^o$, what is $\angle 2$?
   b. If $\angle 2$ is twice $\angle 1$, find $\angle 1$ and $\angle 2$.
   c. If $\angle 1$ is 10^o more than $\angle 2$, find the two angles.

3. The sum of x and y in the figure is 180^o. When the sum of two angles is 180^o, they are called supplementary angles. x and y are supplementary.



   a. If $x = 72^o$, what is y?
   b. If y is three times x, find x and y.
   c. If y is 18^o more than x, find x and y.

C.1. According to angles/sides, what kind of triangle is each of the following?



2. Tear out two angles of your cut-out triangle and put them beside the third one along one line of your paper/notebook. What do the three angles form? What is the sum of the angles of a triangle?

   a. In ΔABC, $\angle A = 50^o$ and $\angle B = 65^o$. What is $\angle C$?
   b. The angles of a triangle are in the ratio 3:4:5. Find the angles of the triangle.

Challenge!!!

A. Measure opposite sides of one page of your handout. What do you find? Use what you discovered to answer the first three problems.

1. Mario has a rectangular garden 16 meters long and 12 meters wide. What is the perimeter of Mario's garden? b. Mario wants to fence it. The fence will cost ₱75 per meter. How much will Mario spend for the fence? Mario will use posts 2 m apart. How many will he need?

2. Lucila is making a table cloth. Its length is 2 meters and its width is 1 1/4 m. How many meters of lace does Lucila need to put around the edges?

3. The Botanical garden in Baguio City is 130 m long and 85 m wide. If you jog around it 5 times, how many meters will that be?

4. Train stations are 25 kilometers apart. While Jerry was riding a fast train, he counted 6 stations in one hour, one at the beginning and the 6th at the end. How many kilometers did the train cover in one hour?

5. In an egg relay race, 5 eggs are placed 2 meters apart with the first egg 3 meters from the start line. Each contestant has a big metal spoon. He takes the first egg in the spoon and brings it back to the start line. He then goes to the second egg, takes the egg in the spoon and brings it back to the finish line. The winner is the one who brings in all 5 eggs to the finish line first. Question: In all, how many meters does the winner run? Make a diagram to help you. Remember that the first egg is 3 m from the start line.

B. Exploring with coins

With your partner, put one 5 ¢ coin, one 25 ¢ coin, one ₱1 coin, and one ₱5-coin. Arrange them in a line.

1. In how many ways can you arrange the 4 coins in a row?

2. In how many other ways can you arrange them if you need not put them in one line?
3. How many different amounts of money can you pay with one, two, three or all the coins?
4. If you have 3 of each kind of coin, how many other different amounts can you pay for?

VII. UNDERSTANDING MEASUREMENT BETTER

A. Do you know your units of measurement? Convert the following into what is required.

1. 3 m = _____ dm
2. 50 cm = _____ dm
3. 200 cm = _____ m
4. 500 m = _____ km
5. 7 dm = _____ cm
6. 3 1/2 m = ____ dm
7. 160 cm = ____ dm
8. 1 1/2 km = ____ m
9. 8 1/2 dm = ____ cm
10. 130 cm = _____ m
11. 2 1/5 m = ____ cm
12. 35 dm = ____ m

2. What unit will you use to measure:

a. the length of the blackboard? _____

b. the length of the school corridor?_____

c. the height of a flagpole? _____

d. the distance between your house and your school? _____

e. the length of a ballpen? _____

f. the thickness of a telephone directory? _____

3. A piece of pad paper is rectangular.
a. How long is it? _____ cm
b. How wide is it? _____ cm
c. What is its perimeter? _____ cm

C. Find the perimeter and area given the following dimensions. Make your own figure.

1. Rectangle with a length of 30 cm and a width of 16 cm

2. Square with a side of a. 18 cm b. 22 dm

3. Right triangle with a base of 17 cm and a height of 33 cm

4. Square with a side of a. 16 cm b. 27 cm c. 25 m

5. Rectangle with a length of 5.6 m and a width of 3.4 m

D. Analyze each problem and then solve it.

1. Nena bought 1/2 kilo of broccoli and 1 kilo of cauliflower. In all, how many grams of vegetables did Nena buy?

2. A rectangular school yard is 110 m long and 90 m wide.

   a. What is its perimeter?
   b. How many times do you need to walk around it to be able to walk 1 kilometer?

3. Remy made a table cover 1 3/4 m long? How long is the table cover in centimeters? If the cover is 1 m wide, what is the perimeter of the table cover? What is its area?

4. An H.E. class is making dusters which are 42 cm long and 32 cm wide. The teacher cut them from a cloth that is 96 cm wide. To make 45 dusters for her class, what is the total length of the cloth that the teacher needs?

5. George bought a rectangular farm which is 224 m long and 96 m wide. He divided it into smaller square plots which are 32 m on each side to plant different kinds of vegetables. How many square plots will he be able to make?

6. A grass lawn is 56 m long and 48 m wide. There is a 4 flower plot near each of the 4 corners of the lawn. Each is 8 m by 5 m. What is the area of one plot? What is the area of the 4 plots? What is the area of the grass lawn?

Challenge!!!

A. 1. Mario has a rectangular garden 15 meters long and 12 meters wide. What is the perimeter of Mario's garden? b. Mario wants to fence it. The fence will cost ₱75 per meter. How much will Mario spend for the fence? Mario will use posts 3 m apart. How many will he need?

2. Lucila is making a round table cloth. Its diameter is 2 meters. How many meters of lace does Lucila need to put around the edges?

3. Train stations are 25 kilometers apart. While Jerry was riding a fast train, he counted 8 stations in one hour, one at the beginning and the eighth at the end. How many kilometers did the train cover in one hour?

4. The Botanical garden in Baguio City is 130 meters long and 85 meters wide. If you walk around it, how many meters will that be?

5. In an egg relay race, 5 eggs are placed 2 meters apart with the first egg 3 meters from the start line. Each contestant has a big metal spoon. He takes the first egg in the spoon and brings it back to the start line. He then goes to the second egg, takes the egg in the spoon and brings it back to the finish line. The winner is the one who brings in all 5 eggs to the finish line first. Question: In all, how many meters does the winner run? [The diagram shows the first and second eggs.]

6. Father has a garden with an area of 48 square meters. What could be the length and width of Father's garden if both are whole numbers and at least 2 m?

7. John wants to make a garden. He has 48 meters of fencing materials. If the garden he wants to make must have a length and a width which are whole numbers of at least 4 m, how many different gardens can John make. Which will have the biggest area?

B. 1. Dexter started studying at 7:15 p.m. He finished at 8:37 p.m. How many minutes did he study?

2. Anastasia and Victoria went to see a play. They arrived at 8:45 p.m. and the doors were closed. The guard told them they were 30 minutes late. What time did the play start?

3. A film is 45 minutes long. It was shown to Grades 3 to 6 pupils. Because the room is not big enough, one grade at a time saw it. The showing began at 1:00 p.m. What time did it end if 10 minutes is needed between each showing for rewinding the film and changing the audience?

4. Suppose you want to cook an egg for 5 minutes. You have no watch but you have two sand-filled timers, one for 2 minutes and the other for 9 minutes. How will you use them to get 5 minutes?

5. Using a 3-minute and a 7-minute timers how can you measure any number of minutes from 1 to 10?

6. If you toss a coin 20 times, how many times do you think it will fall head up? Record your guess and that of your partner. Take any coin and toss it 20 times. Write H and T on your paper. Use tallies to record each result. How close was your guess?

7. A cell of a certain bacterium divides in two every 30 minutes. In 3 hours, how many cells will a single cell produce.

8. Carla made a dozen handkerchiefs each of side 24 cm. How much lace does she need to put around all of them if 1 cm is needed for each handkerchief for turning at the corners?