REVIEW UNIT- Multiplication

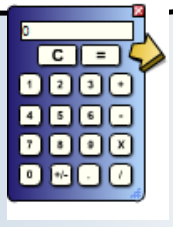
Agenda:

1. Attendance
2. Math Notes
3. Skill test- Multiplication Grid

REVIEW UNIT- Multiplication

Lesson Objectives:

1. Find the products for basic multiplication facts using arrays, grouping and number sentences.



Math Notes- Multiplication

Vocabulary:

Factor:

Any one of the numbers you multiply together to get a product.

Product:

The answer or result to a multiplication sentence

Math Notes- Multiplication

Symbols:

X

Example:

2 X 6 = 12

Factors Product

Single Digit- Multiplication

Methods:

- Memorization of basic facts
- Pattern Recognition
- Multiplication Grid
- Pictures/Groups and Arrays
- Addition
- Special Tricks for certain times table groups (finger trick, Rhymes)

Math Notes- Multiplication

Methods to finding a product

4x5=?

Method 1

Classic Number Sentence

4x5=20

Method 2

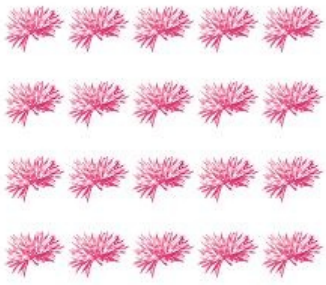
Addition

4X5=

5+5+5+5=20

Method 3

Array/Picture



Multiplication Array

4 Rows of 5 equals 20 symbols in total.

Multiplication Sentence

4 X 5 = 20

Think of the Multiplication sign as meaning "Rows of.."

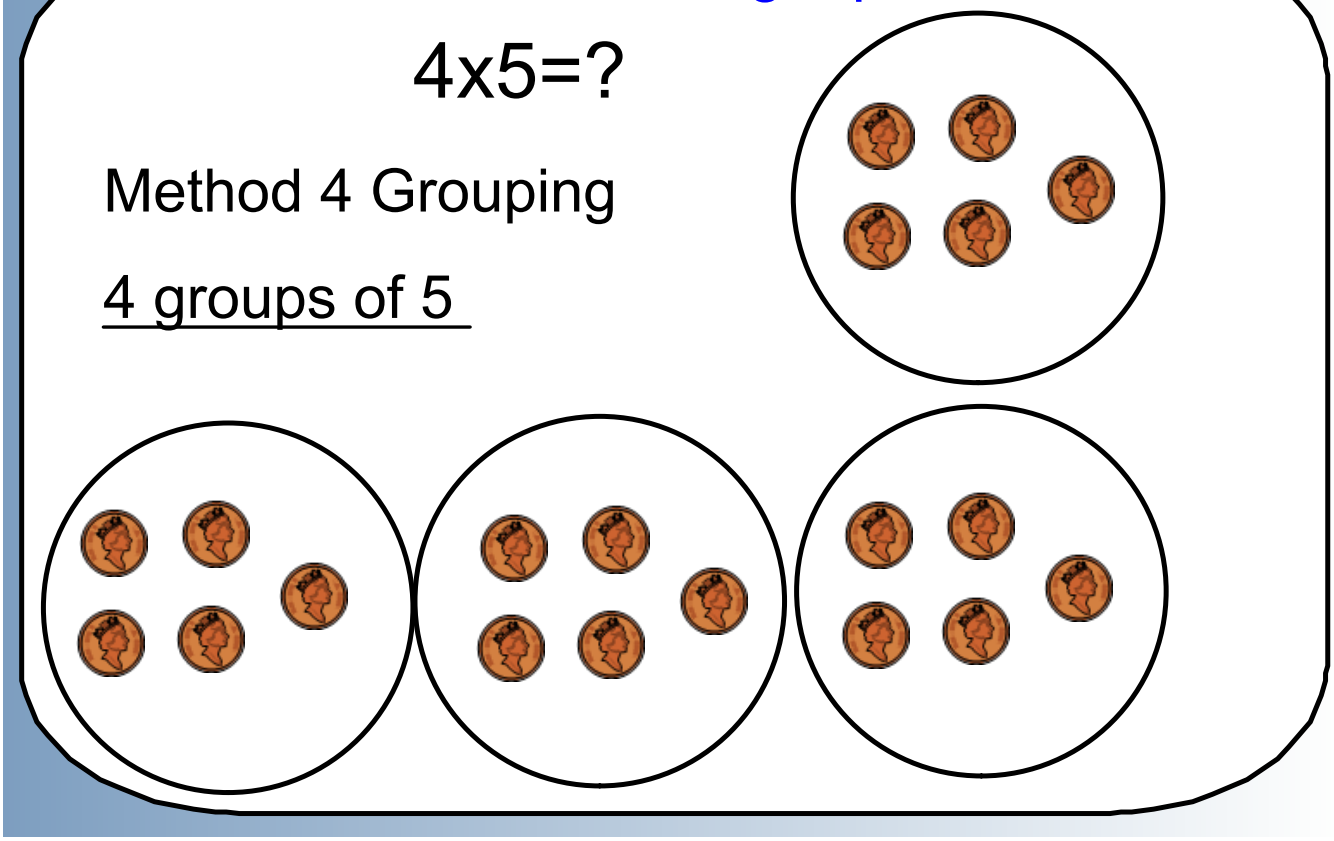
Math Notes- Multiplication

Methods to finding a product

4x5=?

Method 4 Grouping

4 groups of 5



REVIEW UNIT- Multiplication

Complete the multiplication worksheet.

HOMEWORK:

Due Monday, I will be collecting them so make sure your name, # and class pattern is on them.

Math Notes- Multiplication

Single Digit- Multiplication Tables

My Times Tables

Read, Say and Remember

Name:

1 times table				
1	X	1	=	1
2	X	1	=	2
3	X	1	=	3
4	X	1	=	4
5	X	1	=	5
6	X	1	=	6
7	X	1	=	7
8	X	1	=	8
9	X	1	=	9
10	X	1	=	10

2 times table				
1	X	2	=	2
2	X	2	=	4
3	X	2	=	6
4	X	2	=	8
5	X	2	=	10
6	X	2	=	12
7	X	2	=	14
8	X	2	=	16
9	X	2	=	18
10	X	2	=	20

5 times table				
1	X	5	=	5
2	X	5	=	10
3	X	5	=	15
4	X	5	=	20
5	X	5	=	25
6	X	5	=	30
7	X	5	=	35
8	X	5	=	40
9	X	5	=	45
10	X	5	=	50

10 times table				
1	X	10	=	10
2	X	10	=	20
3	X	10	=	30
4	X	10	=	40
5	X	10	=	50
6	X	10	=	60
7	X	10	=	70
8	X	10	=	80
9	X	10	=	90
10	X	10	=	100

3 times table				
1	X	3	=	3
2	X	3	=	6
3	X	3	=	9
4	X	3	=	12
5	X	3	=	15
6	X	3	=	18
7	X	3	=	21
8	X	3	=	24
9	X	3	=	27
10	x	3	=	30

6 times table				
1	X	6	=	6
2	X	6	=	12
3	X	6	=	18
4	X	6	=	24
5	X	6	=	30
6	X	6	=	36
7	X	6	=	42
8	X	6	=	48
9	X	6	=	54
10	X	6	=	60

4 times table				
1	X	4	=	4
2	X	4	=	8
3	X	4	=	12
4	X	4	=	16
5	X	4	=	20
6	X	4	=	24
7	X	4	=	28
8	X	4	=	32
9	X	4	=	36
10	X	4	=	40

8 times table				
1	X	8	=	8
2	X	8	=	16
3	X	8	=	24
4	X	8	=	32
5	X	8	=	40
6	X	8	=	48
7	X	8	=	56
8	X	8	=	64
9	X	8	=	72
10	X	8	=	80

7 times table				
1	X	7	=	7
2	X	7	=	14
3	X	7	=	21
4	X	7	=	28
5	X	7	=	35
6	X	7	=	42
7	X	7	=	49
8	X	7	=	56
9	X	7	=	63
10	X	7	=	70

9 times table				
1	X	9	=	9
2	X	9	=	18
3	X	9	=	27
4	X	9	=	36
5	X	9	=	45
6	X	9	=	54
7	X	9	=	63
8	X	9	=	72
9	X	9	=	81
10	X	9	=	90

How to Use a Multiplication Grid

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Math Notes- Multiplication

Single Digit- Multiplication Tables

MULTIPLICATION CHART

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

Patterns/Rules in basic multiplication

Take a look at your grid do you notice any patterns?

Math Notes- Multiplication

Patterns/Rules in basic multiplication

#1) 0 times anything is always 0.

#2) 1 times anything always =s itself

#3) 2 times anything is always double that number.

#4) 4 times anything is always double that number twice.

#5) Count up by 5's

#6) 9 Times tables- tens places counts down ones place counts up (see picture)

#7) 6X6 through 10X10 you can use your fingers

#8) 10 times anything, add a 0 to the end of the number (Exception 10X11)

#9) 11 times anything double the number (1-9)

#10) if you multiply any number by an even number your answer will always be even.

Math Notes- Multiplication

Single Digit- Multiplication Tables

0 Times Table

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

1 Times Table

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

Math Notes- Multiplication

Single Digit- Multiplication Tables

10 Times Table

10	×	0	=	0
10	×	1	=	10
10	×	2	=	20
10	×	3	=	30
10	×	4	=	40
10	×	5	=	50
10	×	6	=	60
10	×	7	=	70
10	×	8	=	80
10	×	9	=	90
10	×	10	=	100
10	×	11	=	55
10	×	12	=	60

11 Times Table

11	×	0	=	0
11	×	1	=	11
11	×	2	=	22
11	×	3	=	33
11	×	4	=	44
11	×	5	=	55
11	×	6	=	66
11	×	7	=	77
11	×	8	=	88
11	×	9	=	99
11	×	10	=	110
11	×	11	=	121
11	×	12	=	132

Math Notes- Multiplication

Single Digit- Multiplication Tables

11 Times Table

11 × 0 = 0
11 × 1 = 11
11 × 2 = 22
11 × 3 = 33
11 × 4 = 44
11 × 5 = 55
11 × 6 = 66
11 × 7 = 77
11 × 8 = 88
11 × 9 = 99
11 × 10 = 110
11 × 11 = 121
11 × 12 = 132

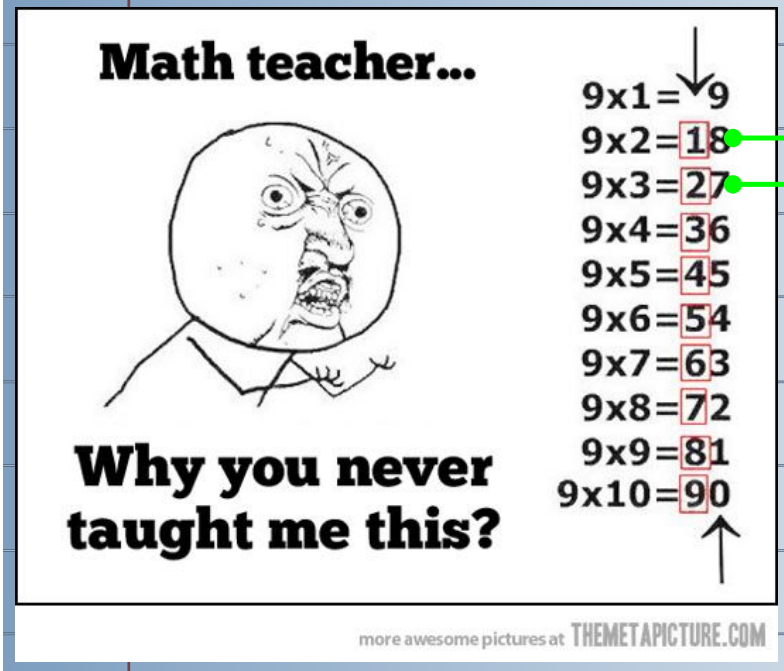
Use this strategy for two digit numbers only.

1. Multiply 11 by 18. Jot down 1 and 8 with **a** space between it. 1 _ 8.

2. Add the 8 and the 1 and put that number in the middle: 198

Math Notes- Multiplication

Single Digit- Multiplication Tables



1+8=9

2+7=9

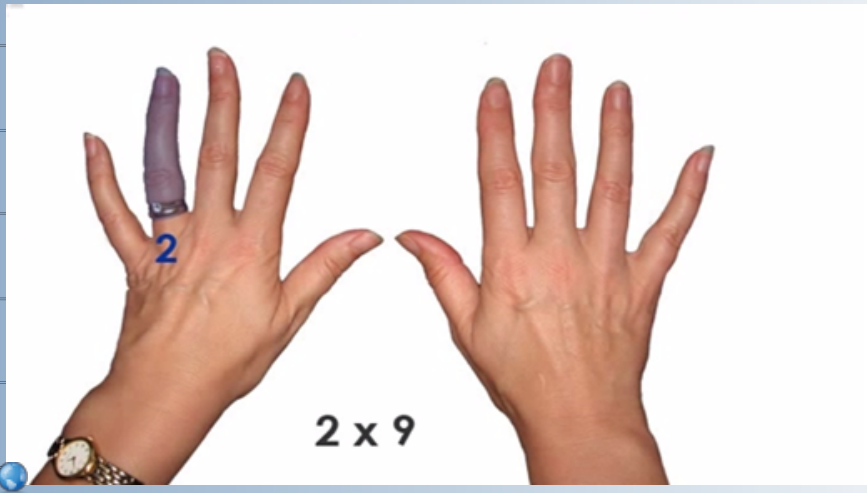
Or:

Both digits in the answer always add up to 9!

Math Notes- Multiplication

Single Digit- Multiplication Tables

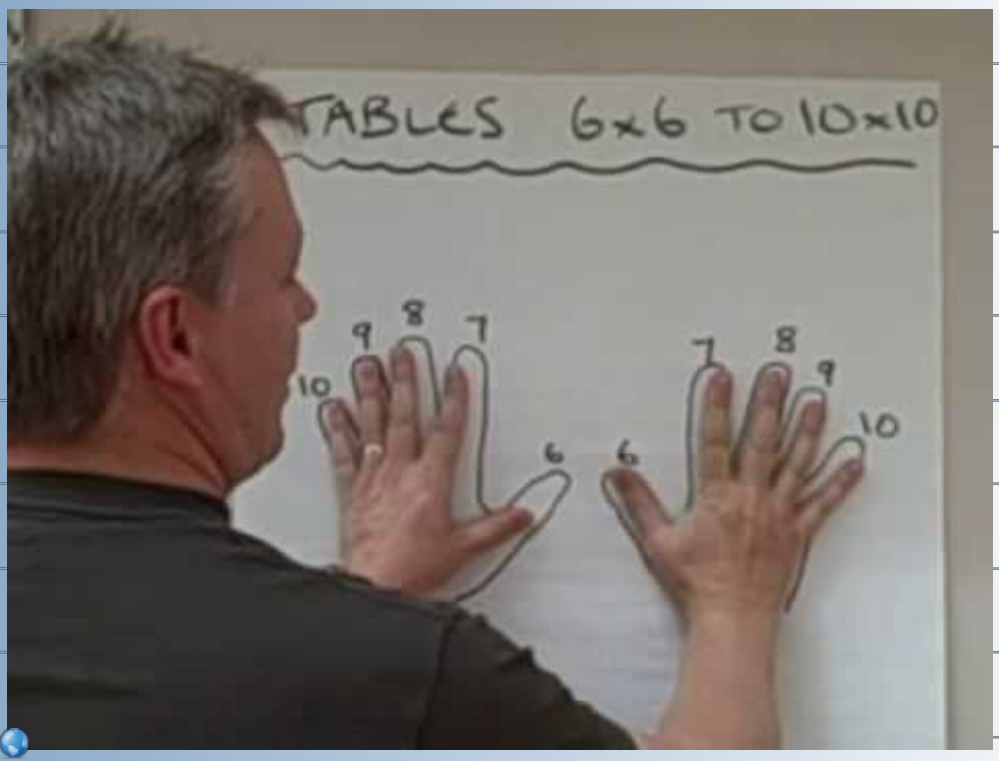
9X Tables



http://www.youtube.com/watch?v=xBTGKiVgWcA

Math Notes- Multiplication

Single Digit- Multiplication Tables



http://www.youtube.com/watch?v=twv-ynv_m9o

Math Notes- Multiplication

Classic Multi-Digit Multiplication

$$\begin{array}{r} {\scriptstyle 1\ 2} \\ 245 \\ \times\quad 4 \\ \hline 980 \end{array}$$

5x4=20

4x4=16+2=18

2X4=8+1=9

http://www.mathantics.com/index.php/section/lesson/MultiDigitMultiplicationPt1

Math Notes- Multiplication

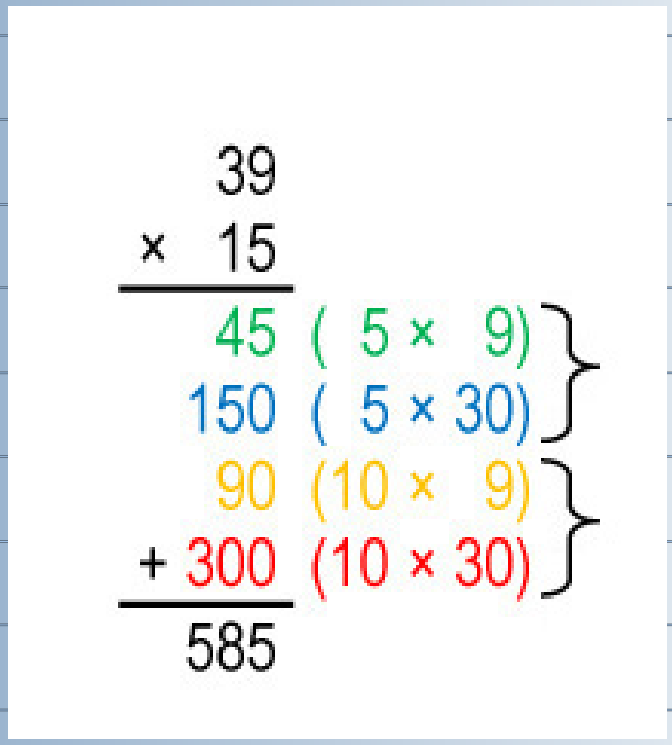
Classic Multi-Digit Multiplication

Try it out!

$$\begin{array}{r} 245 \\ \times \quad 2 \\ \hline \end{array}$$

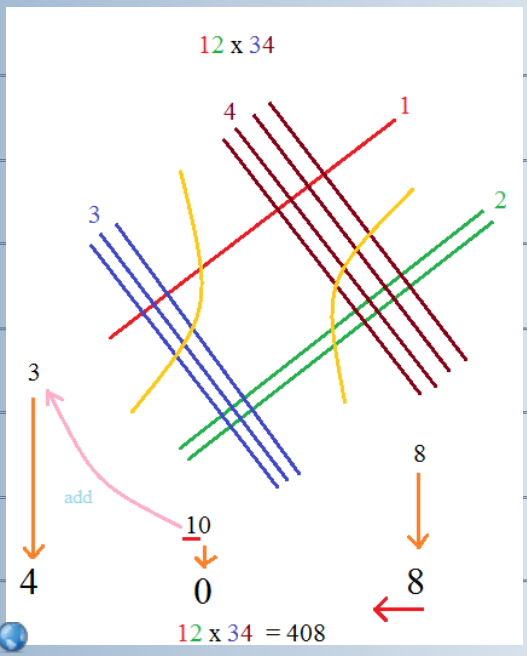
Math Notes- Multiplication

Partial Products Multi-Digit Multiplication



Math Notes- Multiplication

Japanese Method



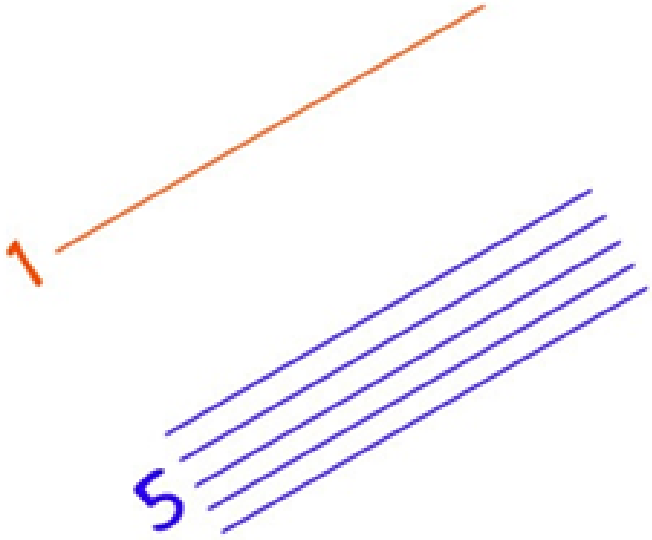
http://www.youtube.com/watch?v=85Vd0NpL32k

Math Notes- Multiplication

15 X 23

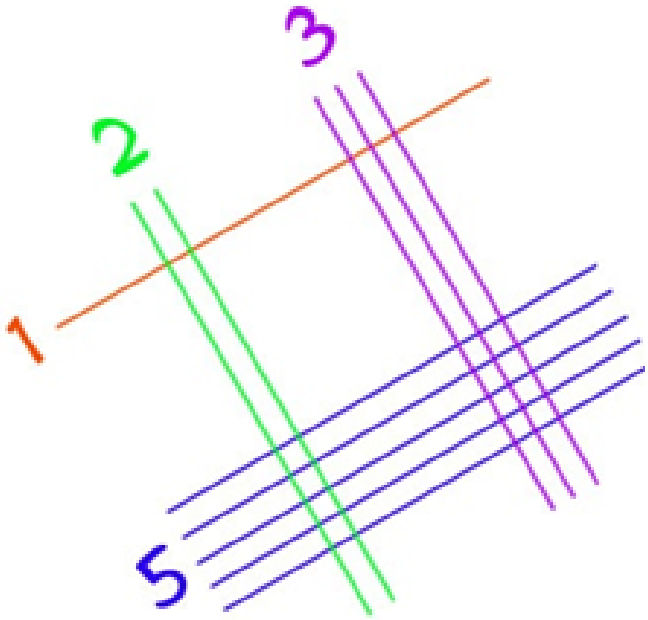
STEP 1:

MAKE YOUR GRID FOR THE NUMBER "15"



STEP 2:

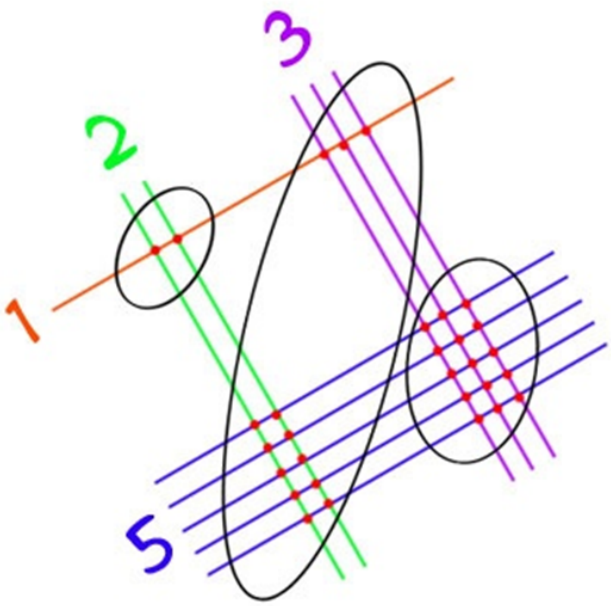
MAKE ANOTHER GRID FOR THE NUMBER "23", CROSSING IT WITH YOUR FIRST NUMBER SO IT FORMS A DIAMOND.



Math Notes- Multiplication

STEP 3:

SIMPLY COUNT THE NUMBER OF INTERSECTIONS/CROSSES IN YOUR GRID MAKES, GROUPED AS SHOWN BELOW, AND WRITE IT DOWN.



SO IN THIS CASE, YOU SHOLD GET THE NUMBERS:

2, 13 AND 15

STEP 4:

THEN YOU TAKE THOSE NUMBERS, AND YOU ADD THEM UP LIKE THIS....

$$\begin{array}{r} 2 \\ +\ 13 \\ +\ \ 15 \\ \hline 345 \end{array}$$

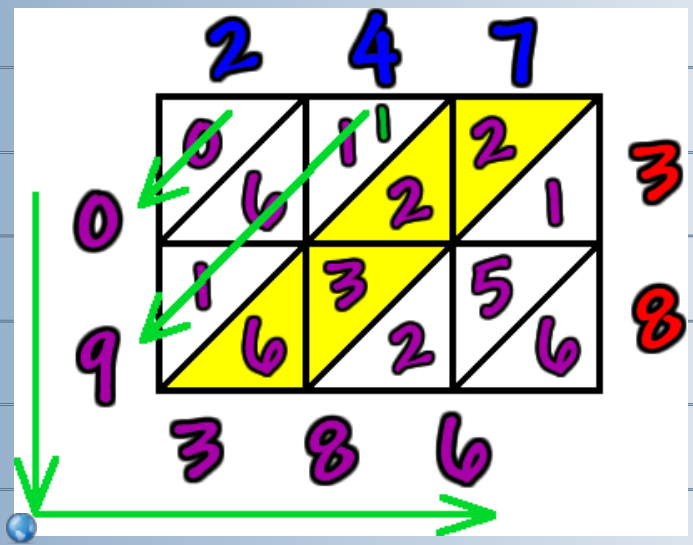
AND TADAH! THERE'S YOUR ANSWER!!

LOL IT MIGHT SEEM LIKE A REALLY COMPLICATED METHOD FOR MULTIPLICATION, COMPARED TO JUST USING A CALCULATOR, BUT IT'S PRETTY HANDY IF YOU DON'T HAVE ONE.

ALSO, THIS METHOD CAN BE USED FOR QUICK COMPUTATIONS FOR REALLY BIG NUMBERS TOO! SO FAR, WE'VE TRIED USING IT ON UP TO SEVEN-DIGIT FIGURES, AND THE METHOD STILL HOLDS TRUE. :D JUST MORE OVALS ANDMORE DOTS. :D

Math Notes- Multiplication

Lattice Method



http://www.youtube.com/watch?v=cijuPxHgZAA

Math Notes- Multiplication

Math Stations:

- Work as a group to help each other answer the questions at your station.
- Try to use the multiplication method at your station.
- When complete 3 questions move to the next station, **bring your dice.**
- **When done all stations choose a worksheet.**