Hello Families of Sixth Graders,

My name is Dorothy Schutter, and I will be teaching sixth grade Math this year. This year will be my twenty-fourth year at Saratoga Central Catholic and forty-ninth year in the classroom. During all these many years I have taught mathematics on both the middle school and high school levels.

Students in sixth grade math will be able to use a calculator but not until the second semester. Entering sixth grade with a mastery of multiplication facts will help them move more easily through various levels of understanding and mastery of sixth grade math concepts. Freeing up working memory allows students to develop their reasoning skills which becomes more and more important as they move through the grades.

I have put together packets focusing on the 6-7-8-9 multiplication facts. The activities in these packets are repetitive and most are meant to encourage students to count by 6s,7s,8s, 9s to complete meaningful tasks. These activities are meant to be a help for your sixth grader. They are optional.

The following are four strategies that have been shown to help students with memorization of multiplication facts:

(1). Intensive repetitive focus on just one set of multiples is exactly what is needed for students who struggle with their multiplication facts.

(2). Engaging the fine motor system to handwrite has been shown to have positive effects on learning and memory.

(3). Understanding the correlation between adding repeatedly by the same number and multiplying by that number is essential.

(4). Chanting the multiplication facts also aids in memory.

Later in the summer I will be sending the answer keys for these worksheets.

If you have any questions, you may contact me at: dschutter@saratogacatholic.org

I am looking forward to meeting you in the fall.

Ms. Schutter

Discovering Patterns in Multiples of 6

- Highlight all multiples of 2 (even numbers) in yellow
- Highlight all multiples of 3 in blue
- Circle all multiples of 6

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

What do you notice about multiples of 6? (come up with at least 3 ideas)

Multiples of 6: Which multiple does not belong?

1.

60	54	36
30	48	24
42	39	72

2.

66	24	60
36	45	12
24	72	42

3.

54	78	30
60	24	66
48	34	42

4.

42	66	36
60	48	84
54	18	69

5.

24	28	42
66	36	18
48	60	72

6.

54	24	18
30	32	48
36	42	60

7.

24	12	54
63	48	72
66	54	36

8.

42	72	36
24	52	66
54	48	30

9.

48	72	66
42	54	36
60	16	30

10.

72	36	40
24	42	48
66	30	12

11.

66	72	30
54	24	60
36	66	26

12.

24	66	30
54	48	36
20	36	42

Multiples of 6:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 6's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

1.

60	54	36
30	48	24
42	39	72

6 x 10

My Number Sense Explanation:

2.

66	24	60
36	45	12
24	72	42

My Number Sense Explanation:

Multiples of 6:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 6's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

3.

54	78	30
60	24	66
48	34	42

My Number Sense Explanation:

4.

42	66	36
60	48	84
54	18	69

My Number Sense Explanation:

Circle the multiple that does not belong. Next, record the 6's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

5.

24	28	42
66	36	18
48	60	72

My Number Sense Explanation:

6.

54	24	18
30	32	48
36	42	60

My Number Sense Explanation:

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Circle the multiple that does not belong. Next, record the 6's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

7.

24	12	54
63	48	72
66	54	36

My Number Sense Explanation:

8.

42	72	36
24	52	66
54	48	30

My Number Sense Explanation:

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3.

Multiples of 6:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 6's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

9.

48	72	30
42	54	66
60	16	36

My Number Sense Explanation:

10.

72	36	40
24	42	48
66	30	12

My Number Sense Explanation:

Multiples of 6:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 6's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

11.

66	72	30
54	24	60
36	66	26

My Number Sense Explanation:

12.

24	66	30
54	48	60
20	36	42

My Number Sense Explanation:

Find the Missing Multiple of 6 #1

Each box should contain the products of your 6 times tables from 1-12. Figure out the missing multiple and record it in the empty box.

1.

6	60	24
66	36	12
30	18	48
	72	42

2.

36	6	60
48		66
18	30	12
72	24	54

3.
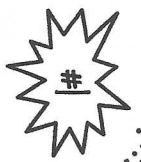
48	42	54
36	6	66
12	72	18
	30	24

4.

18	12	24
42	72	30
66	6	60
54		36

5.

24	6	48
30	36	66
12	60	18
	42	54

6.

60	42	54
6	24	66
30	72	12
36		18

Find the Missing Multiple of 6 #2

Each box should contain the products of your 6 times tables from 1-12. Figure out the missing multiple and record it in the empty box.
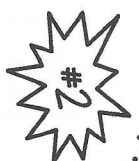
1.

48	42	
18	66	24
6	12	60
72	30	54

2.

72	12	48
6	66	60
24	42	
30	36	18

3.

12	30	36
72	24	18
48	66	42
6		54

4.

30	6	24
42	48	18
12	66	54
60		36

5.

6	30	
18	24	60
48	42	12
72	66	54

6.

6		42
48	24	72
60	12	18
36	66	54

5.

Find the Missing Multiple of 6: Larger Multiples

These "Missing Multiple" boxes use larger multiples of 6. Figure out the multiple that is missing in the sequence. You may NOT use the multiple that comes before the LOWEST multiple in the chart. (Example: If 24 is the lowest number, your answer will not be 18).

Challenge

1.

42	48	30
72	18	36
60	24	
78	66	54

2.

42	84	
72	60	78
54	96	48
90	30	36

3.

30		78
48	36	72
42	60	66
96	90	84

4.

24	60	90
48	30	84
36	78	54
66		42

5.

24	66	72
30	54	36
60	18	48
78	84	

6.

42	72	60
84	36	66
54	78	24
	48	30

Multiples of 6 Search

Begin with 6 and follow multiples of 6 (by connecting numbers to the left, right, above, below, or diagonally) until you reach 72.

This Multiple Search has 3 solutions. Find them all!

#1

66	72	36	48	48	6	42			
6	60	54	54	66	42	6			
36	54	12	60	6	24	42			
66	54	30	54	60	72	66			
24	72	24	30	18	48	54			
72	30	60	48	30	18	42			
72	60	30	36	6	12	30			
24	72	24	60	36	42	30			
66	36	42	36	48	12	36			
48	42	18	30	12	42	48			
66	36	54	6	36	12	18			
18	48	54	18	6	36	72			
66	54	60	66	72	24	48			
54	72	42	24	72	54	66			

Multiples of 6 Search

#2

Begin with 6 and follow multiples of 6 (by connecting numbers to the left, right, above, below, or diagonally) until you reach 72.

This Multiple Search has 3 solutions. Find them all!

66	36	72	30	60	54	48	42
6	18	12	66	48	6	36	12
36	60	42	24	12	30	48	60
66	12	30	18	54	24	18	42
24	24	24	48	12	6	30	12
72	12	30	36	54	36	42	48
72	36	36	42	30	54	6	72
66	42	24	48	42	24	18	54
48	48	30	54	48	66	54	6
18	42	54	60	60	12	18	24
66	72	60	42	66	72	6	42
72	72	42	24	72	18	54	24

7.

Discovering Patterns in Multiples of 7

Highlight all multiples of 7

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

What do you notice about multiples of 7? (come up with at least 3 ideas)

Multiples of 7: Which multiple does not belong?

1.

70	63	42
35	56	28
49	26	84

2.

77	28	70
42	45	14
21	84	49

3.

63	91	35
70	28	77
56	34	49

4.

49	77	42
70	56	98
63	21	62

5.

28	29	49
77	42	21
56	70	84

6.

63	28	21
35	32	56
42	49	70

7.

28	14	63
60	56	84
77	21	42

8.

49	84	42
28	52	77
63	56	35

9.

56	84	35
49	63	77
70	13	42

10.

84	42	25
28	49	56
77	35	14

11.

77	84	35
63	28	91
42	66	21

12.

28	77	35
63	56	70
20	42	49

8.

Multiples of 7:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 7's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

1.

70	63	42
35	56	28
49	26	84

7 x 10		

My Number Sense Explanation:

2.

77	28	70
42	45	14
21	84	49

My Number Sense Explanation:

Multiples of 7:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 7's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

3.

63	91	35
70	28	77
56	34	49

My Number Sense Explanation:

4.

49	77	42
70	56	98
63	21	62

My Number Sense Explanation:

9.

Multiples of 7:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 7's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

5.

28	29	49
77	42	70
56	21	84

My Number Sense Explanation:

6.

63	28	21
35	32	56
42	49	70

My Number Sense Explanation:

Multiples of 7:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 7's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

7.

28	14	63
60	56	84
77	21	42

My Number Sense Explanation:

8.

49	84	42
28	52	77
63	56	35

My Number Sense Explanation:

10.

Multiples of 7:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 7's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

9.

56	84	35
49	63	77
70	13	42

My Number Sense Explanation:

10.

84	42	25
28	49	56
77	35	14

My Number Sense Explanation:

Multiples of 7:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 7's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

11.

77	84	35
63	28	91
42	66	21

My Number Sense Explanation:

12.

28	77	35
63	56	70
20	42	49

My Number Sense Explanation:

Find the Missing Multiple of 7   #1

Each box should contain the products of your 7 times tables from 1-12. Figure out the missing multiple and record it in the empty box.

1.

7	70	28
77	42	56
35	84	49
	14	49

2.

42	7	70
56		77
21	35	14
84	28	63

3.

56	49	63
42	7	77
14	84	21
	35	70

4.
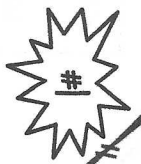
21	14	28
49	84	35
77	7	70
63		42

5.

28	7	56
35	42	77
14	70	21
	49	63

6.

70	49	63
7	28	77
35	84	14
56		21

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Find the Missing Multiple of 7   #2

Each box should contain the products of your 7 times tables from 1-12. Figure out the missing multiple and record it in the empty box.

1.
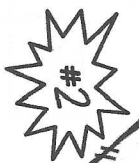
56	49	
21	77	28
7	14	70
84	35	63

2.

84	14	56
7		70
28	77	49
35	42	21

3.

14	35	42
84	28	21
56	77	49
7		63

4.

35	7	28
49	56	21
14	77	63
70		42

5.

7		35
21	28	70
56	49	14
84	77	63

6.

7		49
56	28	84
70	14	21
42	77	63

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12.

Challenge

These "Missing Multiple" boxes use larger multiples of 7. Figure out the multiple that is missing in the sequence. You may NOT use the multiple that comes before the LOWEST multiple in the chart. (Example: If 28 is the lowest number, your answer will not be 21).

1.

49	56	35
84	21	42
70	28	
91	77	63

2.

49	98	
84	70	91
63	112	56
105	35	42

3.

35		91
56	42	84
49	70	77
112	105	98

4.

28	70	105
56	35	98
42	91	63
	77	49

5.

28	77	84
35	63	42
70	21	
91	98	56

6.

49	84	70
98	42	77
63	91	28
	21	35

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Multiples of 7 Search

#1

Begin with 7 and follow multiples of 7 (by connecting numbers to the left, right, above, below, or diagonally) until you reach 84! This Multiple Search has 3 solutions. Find them all.

77	84	42	56	77	7	56	49
42	14	7	63	63	35	56	7
7	70	63	77	49	70	7	49
28	84	28	21	14	14	14	77
84	35	63	7	28	35	21	56
84	70	35	56	42	42	35	63
77	42	28	49	70	56	14	49
56	49	42	70	49	14	35	56
21	56	63	35	21	42	49	21
77	63	7	21	14	7	35	84
63	84	49	70	35	21	28	77
	84	49	28	84	63		28

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Multiples of 7 Search

Begin with 7 and follow multiples of 7 (by connecting numbers to the left, right, above, below, or diagonally) until you reach 84.

This Multiple Search has 3 solutions. Find them all!

77	42	84	35	70	63	56	49
7	21	14	77	56	7	42	14
42	70	49	28	14	35	56	70
77	14	35	21	63	28	21	49
28	28	28	56	14	7	14	14
84	42	42	49	35	7	21	84
84	14	35	42	63	42	49	56
77	49	28	56	49	28	63	7
56	56	63	56	49	77	21	63
21	49	70	70	70	14	49	28
77	77	70	49	77	84	7	49
84	84	49	28	84	21	63	28

14.

Discovering Patterns in Multiples of 8

Highlight all multiples of 8

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

What do you notice about multiples of 8? (come up with at least 3 ideas)

Multiples of 8: Which multiple does not belong?

1.

80	72	48
40	64	32
16	28	96

2.

88	32	80
48	45	16
24	96	64

3.

72	56	40
80	32	88
64	34	24

4.

64	88	48
80	16	112
72	24	62

5.

32	30	64
88	48	24
16	80	96

6.

72	32	24
40	58	64
48	16	80

7.

32	16	56
60	64	96
88	72	48

8.

64	96	48
32	52	88
72	24	40

9.

64	24	40
16	72	88
80	18	48

10.

96	48	40
32	64	16
88	40	25

11.

88	96	40
72	32	64
48	66	24

12.

32	88	40
72	24	80
20	48	64

15.

Circle the multiple that does not belong. Next record the 8's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

1.

80	72	48
40	64	32
16	28	96

8 x 10

My Number Sense Explanation:

2.

88	32	80
48	45	16
24	96	64

My Number Sense Explanation:

Circle the multiple that does not belong. Next record the 8's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

3.

72	56	40
80	32	88
64	34	24

My Number Sense Explanation:

4.

64	88	48
80	16	112
72	24	62

My Number Sense Explanation:

16.

Multiples of 8:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 8's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

5.

32	30	64
88	48	96
16	80	96

My Number Sense Explanation:

6.

72	32	24
40	58	64
48	16	80

My Number Sense Explanation:

Multiples of 8:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 8's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

7.

32	16	56
60	64	96
88	72	48

My Number Sense Explanation:

8.

64	96	48
32	52	88
72	24	40

My Number Sense Explanation:

Multiples of 8:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 8's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

9.

64	24	40
16	72	88
80	18	48

My Number Sense Explanation:

10.

96	48	25
32	64	24
88	40	16

My Number Sense Explanation:

Multiples of 8:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 8's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

11.

88	96	40
72	32	64
48	66	24

My Number Sense Explanation:

12.

32	88	40
72	24	80
20	48	64

My Number Sense Explanation:

Find the Missing Multiple of 8 — #1

Each box should contain the products of your 8 times tables from 1-12. Figure out the missing multiple and record it in the empty box.

1.

8	80	32
40	88	16
96	96	56
	24	64

2.

48	56	24
8	40	32
80	16	
96	88	72

3.

64	48	16
56	8	96
	40	24
72	32	80

4.

24	16	32
64	96	8
88		80
72	40	48

5.
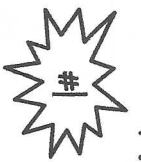
32	8	56
40	48	88
16	80	24
	64	72

6.

48	64	72
8	32	88
40	96	16
56		24

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Find the Missing Multiple of 8 — #2

Each box should contain the products of your 8 times tables from 1-12. Figure out the missing multiple and record it in the empty box.

1.
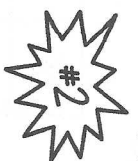
64	56	
24	88	32
8	16	80
96	40	72

2.

96	16	64
8	88	80
32	56	
40	48	24

3.

16	96	8
40	32	56
48	88	64
	24	72

4.

40	8	32
56	64	24
16	88	72
80		48

5.

8	40	
24	32	80
64	56	16
96	48	72

6.

8		56
64	32	96
80	16	24
48	88	72

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Find the Missing Multiple of 8: Larger Multiples

These "Missing Multiple" boxes use larger multiples of 8. Figure out the multiple that is missing in the sequence. You may NOT use the LOWEST multiple in the chart. (Example: If 32 is the lowest number, your answer will not be 24).

Challenge

1.

56	64	40
96	64	24
80	32	
104	88	48
	72	

2.

64	112	
96	80	104
72	32	56
120	40	48

3.

40		104
64	48	96
56	80	88
32	120	112

4.

32	80	120
64	40	112
48	104	72
	88	56

5.

32	88	64
40	72	48
80	24	
96	112	56

6.

56	64	80
112	48	88
72	104	32
	24	40

Multiples of 8 Search

Begin with 8 and follow multiples of 8 (by connecting numbers to the left, right, above, below, or diagonally) until you reach 96.

This Multiple Search has 3 solutions. Find them all!

#1

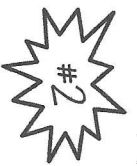| 88	96	48	72	8	48	88	32	48	8	80	96
96	64	32	72	40	16	72	96	40	40	16	8
24	88	72	40	8	24	80	32	80	48	72	40
88	96	56	64	16	56	48	40	72	16	32	80
40	80	64	80	48	64	96	72	40	16	64	48
64	72	64	88	64	80	64	64	24	16	48	64
40	80	8	24	16	48	8	80	48	56	64	64
24	88	88	32	96	72	24	40	48	16	72	96
88	72	80	80	64	32	8	32	56	64	96	64
72	96	64	72	96	24	96	40	72	32	88	32

Multiples of 8 Search

#2

Begin with 8 and follow multiples of 8 (by connecting numbers to the left, right, above, below, or diagonally) until you reach 96.

This Multiple Search has 3 solutions. Find them all!!

96	48	96	40	64	72	64	16	56	72
88	96	16	24	72	16	8	24	48	64
24	64	72	8	32	64	48	80	40	16
64	64	64	80	64	56	88	16	64	96
88	64	40	56	48	64	32	96	16	80
96	8	32	64	56	48	64	88	32	96
96	16	48	64	72	16	72	8	24	64
32	24	40	48	16	72	72	64	40	32
88	16	32	40	72	8	64	16	48	72
48	80	40	24	16	64	16	8	64	96
8	88	80	32	64	48	64	40	16	64
96	96	16	24	96	16	24	72	8	64

Discovering Patterns in Multiples of 9

Highlight all multiples of 9

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

What do you notice about multiples of 9? (come up with at least 3 ideas)

Multiples of 9: Which multiple does not belong?

1.

90	81
45	72	36
18	28	108

2.

99	36	90
54	30	18
27	108	81

3.

81	117	45
72	46	99
18	36	

4.

81	99
90	72	54
18	27	36
		62

5.

36	39	81
72	99	27
90	54	108

6.

81	36	27
45	32	72
54	18	90

7.

36	18	81
99	60	108
	72	
	27	54

8.

18	108	54
36	52	99
81	72	45

9.

72	108	45
90	18	99
	81	54
	15	

10.

108	54	49
99	36	72
81	45	18

11.

99	18	45
54	81	63
66	36	27

12.

36	99	45
81	72	90
56	54	18

Multiples of 9: Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 9's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

1.

90	81	54
45	72	36
18	28	108

9 x 10		

My Number Sense Explanation:

2.

99	36	90
54	30	18
27	108	81

My Number Sense Explanation:

Multiples of 9: Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 9's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

3.

81	117	45
90	36	99
72	46	18

My Number Sense Explanation:

4.

81	99	54
90	72	36
18	27	62

My Number Sense Explanation:

23.

Multiples of 9:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 9's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

5.

36	39	81
99	54	27
72	90	108

My Number Sense Explanation:

6.

81	36	27
45	32	72
54	18	90

My Number Sense Explanation:

Multiples of 9:
Which multiple does not belong?
Extend Your Thinking

Circle the multiple that does not belong. Next, record the 9's multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

7.

36	18	81
60	72	108
99	27	54

My Number Sense Explanation:

8.

18	108	54
36	52	99
81	72	45

My Number Sense Explanation:

24.

Multiples of 9: Which multiple does not belong?
Extend Your Thinking

<u>Circle</u> the multiple that does not belong. Next, <u>record</u> the 9s multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

9.

72	108	45
18	81	99
90	15	54

My Number Sense Explanation:

10.

108	54	49
36	81	72
99	45	18

My Number Sense Explanation:

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Multiples of 9: Which multiple does not belong?
Extend Your Thinking

<u>Circle</u> the multiple that does not belong. Next, <u>record</u> the 9s multiplication fact for each of the other numbers in the chart. Then, using your "number sense," explain your reasoning for the number that does not belong in as many ways as you can.

11.

99	18	45
81	36	63
54	66	27

My Number Sense Explanation:

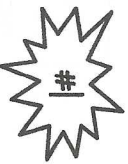**12.**

36	99	45
81	72	90
56	54	18

My Number Sense Explanation:

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Find the Missing Multiple of 9

Each box should contain the products of your 9 times tables from 1-12. Figure out the missing multiple and record it in the empty box.

#1

1.

9	90	36
45	99	18
108	72	81

2.

54	9	90
72	45	99
108	36	63
	18	

3.

72	63	81
36	108	27
18	9	99
	45	90

4.

27	18	36
81	108	45
63	9	90
	99	54

5.

36	9	72
45	54	99
18	90	27
	63	81

6.

90	81	63
9	36	54
45	108	18
72		27

Find the Missing Multiple of 9

Each box should contain the products of your 9 times tables from 1-12. Figure out the missing multiple and record it in the empty box.

#2

1.

72	81	
27	99	36
9	18	90
108	45	63

2.

108	18	72
9	99	90
36	99	81
45	54	27

3.

18	45	54
108	36	27
72	99	81
9		63

4.

45	9	36
81	72	27
18	99	63
90		54

5.

9	45	
27	36	90
72	63	18
108	99	81

6.

9		63
72	36	108
90	18	27
54	99	81

26.

Find the Missing Multiple of 9: Larger Multiples

These "Missing Multiple" boxes use larger multiples of 9. Figure out the multiple that is missing in the sequence. You may NOT use the multiple that comes before the LOWEST multiple in the chart. (Example: If 36 is the lowest number, your answer will not be 27).

Challenge

1.

81	72	45
108	27	54
117	90	36
	99	63

2.

81	126	
108	90	117
135	45	54
	36	72

3.

45		117
81	54	108
63	90	99
135	36	126

4.

36	90	135
54	117	126
	99	63
45	81	

5.

36	99	108
45	63	54
90	27	72
117	126	

6.

81	108	90
126	54	99
63	117	36
	27	45

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Multiples of 9 Search

Begin with 9 and follow multiples of 9 (by connecting numbers to the left, right, above, below, or diagonally) until you reach 108.

This Multiple Search has 3 solutions. Find them all!

#1

9	63	108	99	36	9	45	45	99
18	27	9	90	108	27	9	36	36
45	9	36	63	81	54	63	54	27
9	36	90	81	72	18	72	45	18
72	63	27	72	54	63	18	54	72
81	81	81	90	18	72	63	36	18
18	72	81	72	99	9	54	18	72
72	45	54	9	108	9	36	54	45
45	81	81	27	99	45	81	9	18
9	54	54	36	54	9	54	27	54
18	27	81	27	9	72	81	36	18
90	18	54	9	72	18	54	72	54
81	63	9	45	9	45	81	9	63
72	108	81	72	27	72	72	108	45
99	54	72	9	36	27	9	90	108
72	72	54	72	81	18	18	18	90
27	72	63	45	36	99	45	18	27

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Multiples of 9 Search

Begin with 9 and follow multiples of 9 (by connecting numbers to the left, right, above, below, or diagonally) until you reach 108.
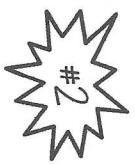
This Multiple Search has 3 solutions. Find them all!

9	81	63	36	27	72	63	45
54	108	45	54	63	18	27	18
27	90	81	72	81	27	9	27
108	45	72	45	108	9	27	9
36	9	99	108	72	81	63	63
18	45	54	63	72	63	9	18
27	36	99	90	99	90	90	81
81	27	18	108	18	108	45	108
99	18	9	18	27	36	63	18
18	9	63	90	27	9	108	81
108	36	36	99	54	72	54	99
45	18	90	108	9	27	18	27

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