MRS. MADSEN'S RESOURCE CORNER

Mrs. Madsen's 2 Cents
Frequently asked questions!!
How can I help my child read better?

Helping your child learn to read is one of the top 10 important things you can do for your child as a parent. We have all been taught sound it out!! But actually there are more strategies that help kids figure out unknown words more effectively than just sounding it out. Also reading to and with your child and modeling reading behavior is huge in their learning. If you would like your own copy of the strategies listed below please let me know.

Resources to Help

I comprehend when I….

Make Connections Text to text Text to self Text to world	**Ask Questions** "I wonder" before. During, & after reading
Visualize see pictures like a movie in my head	**Determine Importance** Dig for details & important information
Infer make predictions draw conclusions	**Synthesize** Put it all together Retell the text
Monitor & Fix I know when I don't understand use fix up strategies reread for Clarity	**Use Background Knowledge** what do I already know about what I am reading

MRS. MADSEN'S RESOURCE CORNER

How can I help my child remember their addition, subtraction, multiplication and division facts?
Another super helpful thing to do as a parent is support your child in learning their basic math facts. This is so important at an early age to have these facts learned to a 3 second recall, because if your child has mastered this when questions become more complex they can simply worry about solving the problem and the steps it takes, NOT struggling to remember of figure out what 8x7 is. Again most of us were taught to simply try and memorize these, however sometimes in the memorization we really had no idea what those numbers working together meant. So we have Strategies to help students learn these as well. On a side note I have also been known to say that I never subtract and I never divide I just usually use the reverse operation. This helps kids as they almost always find addition and multiplication easier than subtraction and division.
Resources to Help

Parent Support Guide Addition

This package outlines the order in which your child will be learning the addition facts and strategies. In this program, your child will move through 11 levels of facts. Each level focuses on a different strategy, beginning with the easiest ones and moving along to the most difficult. Please help your child experience success with addition by practicing the facts that he/she is currently working on each night. Ask your child to tell you about the strategies to show you how they work. If you have any questions, please don't hesitate to ask me!

Level 1: The "+0" Facts

The rule for this strategy: any number + 0 equals that number
Facts to practice (mix up the order that you ask these in):

1+0=1	5+0=5	9+0=9	13+0=13	17+0=17
2+0=2	6+0=6	10+0=10	14+0=14	18+0=18
3+0=3	7+0=7	11+0=11	15+0=15	19+0=19
4+0=4	8+0=8	12+0=12	16+0=16	20+0=20

Level 2: The "+1" Facts

The rule for this strategy: any number + 1 is 1 more than that number
Facts to practice (mix up the order that you ask these in):

1+1=2	5+1=6	9+1=10	13+1=14	17+1=18
2+1=3	6+1=7	10+1=11	14+1=15	18+1=19
3+1=4	7+1=8	11+1=12	15+1=16	19+1=20
4+1=5	8+1=9	12+1=13	16+1=17	

Level 3: The "+2" Facts

The rule for this strategy: any number +2 is 2 more than that number
Facts to practice (mix up the order that you ask these in):

1+2=3	5+2=7	9+2=11	13+2=15	17+2=19
2+2=4	6+2=8	10+2=12	14+2=16	18+2=20
3+2=5	7+2=9	11+2=13	15+2=17	
4+2=6	8+2=10	12+2=14	16+2=18	

©Shelley Gray

Level 4: The "Counting On" Strategy

The rule for this strategy: Start with the higher number, and count up. For example, for 6+3, think: "6...7, 8, 9."
Sample facts to practice (you can ask other facts as well, as long as you are only adding 1, 2, 3, or 4 to a number):

3+2=5	15+2=17	18+1=19	6+2=8	11+3=14
6+4=10	9+3=12	16+2=18	5+2=7	7+1=8
2+2=4	1+2=3	7+3=10	6+1=7	13+2=15
10+1=11	5+4=9	4+3=7	7+4=11	14+3=17
19+1=20	18+2=20	3+3=6	10+3=13	9+2=11

Level 5: The "Doubles" Facts

Students should try to memorize these doubles facts to the best of their abilities.
Facts to Practice (mix up the order that you ask these in):

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

Level 6: The "Doubles +1" Facts

The strategy for these facts: The double of the number, plus 1 more. For example for 3+4, think, "The double of 3 is 6, plus 1 more is 7."
Facts to Practice (mix up the order that you ask these in):

1+2=3	3+4=7	5+6=11	7+8=15	9+10=19
2+3=5	4+5=9	6+7=13	8+9=17	10+11=21

Level 7: The "Doubles +2" Facts

The strategy for these facts: The double of the number, plus 2 more. For example for 3+5, think, "The double of 3 is 6, plus 2 more is 8."
Facts to Practice (mix up the order that you ask these in):

1+3=4	3+5=8	5+7=12	7+9=16	9+11=20
2+4=6	4+6=10	6+8=14	8+10=18	

©Shelley Gray

Level 8: The "Making Ten" Facts

Students should try to memorize the numbers that can be added to make 10.
Facts to Practice (to practice these, you can ask questions such as, "What can I add to 7 to make 10?"):

1+9=10	3+7=10	5+5=10	7+3=10	9+1=10
2+8=10	4+6=10	6+4=10	8+2=10	10+0=10

Level 9: The "+10" Strategy

The rule for this strategy: When you add 10, you simply add 1 group to the tens place. For example, in the number 24, there are 2 tens and 4 ones. If we add 10, we just add 1 more group of ten, to make 3 groups of 10. So now we have 3 groups of 10, and 4 ones, or 34. Using a paper and pencil may help your child with these facts.

Sample facts to practice (you can ask other facts as well, as long as you are only adding 10 to a number between 0 and 90):

13+10=23	15+10=25	47+10=57	86+10=96	75+10=85
6+10=16	19+10=29	8+10=18	10+10=20	7+10=17
22+10=32	60+10=70	5+10=15	9+10=19	13+10=23
50+10=60	45+10=55	24+10=34	12+10=22	65+10=75
39+10=49	90+10=100	30+10=40	11+10=21	3+10=13

Level 10: The "+9" Strategy

The rule for this strategy: When you add 9, you simply add 10 to the number and take 1 away. For example, for 12+9, think, "12+10=22 and then take away 1 to make 21."

Sample facts to practice (focus on the facts with a sum less than 21):

1+9=10	5+9=14	9+9=18	13+9=22	17+9=26
2+9=11	6+9=15	10+9=19	14+9=23	18+9=27
3+9=12	7+9=16	11+9=20	15+9=24	19+9=28
4+9=13	8+9=17	12+9=21	16+9=25	20+9=29

Level 11: The "+8" Strategy

The rule for this strategy: When you add 8, you add 10 to the number and take 2 away. For example, for 14+8, think, "14+10=24 and then take away 2 to make 22." This is a tough concept, and your child may struggle a bit with the "taking away 2" part. Remember to stay positive and keep it fun.

Sample facts to practice (focus on the facts with a sum less than 21):

1+8=9	5+8=13	9+8=17	13+8=21	17+8=25
2+8=10	6+8=14	10+8=18	14+8=22	18+8=26
3+8=11	7+8=15	11+8=19	15+8=23	19+8=27
4+8=12	8+8=16	12+8=20	16+8=24	20+8=28

Parent Support Guide Subtraction

This package outlines the order in which your child will be learning the subtraction facts and strategies. In this program, your child will move through 17 levels of facts. Each level focuses on a different strategy, beginning with the easiest ones and moving along to the most difficult. Please help your child experience success with subtraction by practicing the facts that he/she is currently working on each night. Ask your child to tell you about the strategies to show you how they work. If you have any questions, please don't hesitate to ask me!

Level 1: Introduction

The introduction is simply a chance to get acquainted with the concept of subtraction as well as some of the tools that will be used throughout the Subtraction Station. Here are some ways to practice at home with your child:

- Roll a die. Ask your child to tell you what number the dots represent. Make a graph to show which number was rolled the most.
- Talk about "taking away" with some type of object. For example, take 5 pennies. Ask your child to take away 4 and then ask, "Now how many are left?" Try with higher numbers as well.

Level 2: Properties of 0

There are two properties to know. First, a number – 0 will equal that same number. Second, a number – itself will equal 0.
Sample facts to practice:

1-1=0	13-13=0	39-39=0	9-0=9	37-0=37
4-4=0	15-15=0	44-44=0	13-0=13	46-0=46
8-8=0	20-20=0	50-50=0	20-0=20	54-0=54
10-10=0	25-25=0	78-78=0	28-0=28	62-0=62

Level 3: One Less

The Strategy: Any number – 1 is the same as 1 less than that number. For example, 4-1 means 1 less than 4.
Sample facts to practice:

6-1=5	29-1=28	43-1=42	52-1=51	68-1=67
11-1=10	33-1=32	46-1=45	55-1=54	78-1=77
17-1=16	36-1=35	49-1=48	60-1=59	80-1=79
22-1=21	41-1=40	50-1=49	63-1=62	88-1=87

©Shelley Gray

Level 4: Two Less

The Strategy: Any number – 2 is the same as 2 less than that number. For example, 6-2 means 2 less than 6.
Sample facts to practice:

4-2=2	22-2=20	35-2=33	42-2=40	59-2=57
7-2=5	26-2=24	37-2=35	48-2=46	63-2=61
11-2=9	29-2=27	40-2=38	54-2=52	80-2=78
16-2=14	30-2=28	41-2=39	56-2=54	84-2=82

Level 5: Counting Back

The Strategy: Count back when you are subtracting 1, 2, 3, or 4 from a number. For example, for 14-3, think: "14_13, 12, 11."
Sample facts to practice:

4-2=2	16-3=13	25-2=23	42-2=40	70-3=67
5-3=2	17-4=13	29-4=25	53-3=50	77-1=76
7-4=3	19-2=17	30-1=29	56-4=52	85-4=81
10-4=6	20-3=17	35-3=32	63-4=59	97-4=93
13-2=11	22-4=18	37-4=33	67-2=65	

Level 6: Counting Up

The Strategy: Start with the smaller number and count up when the difference between the two numbers is 4 or less. For example, for 15-12, start at 12 and count up: "12_13, 14, 15." We counted up 3 so the difference is 3.
Sample facts to practice:

8-5=3	17-15=2	28-25=3	40-39=1	60-56=4
10-8=2	19-18=1	30-28=2	45-42=3	67-64=3
12-11=1	20-17=3	32-29=3	51-48=3	72-70=2
14-10=4	25-21=4	36-32=4	56-53=3	89-85=4

Level 7: Think Addition

The Strategy: To solve a subtraction equation, you can "think addition." For example, for 15-10, think: "What can I add to 10 to make 15?" For 12-8, think: "What can I add to 8 to make 12?"
Sample facts to practice:

3-2=1	10-6=4	18-8=10	29-8=21	63-30=33
5-4=1	11-5=6	20-9=11	30-20=10	70-50=20
8-5=3	13-10=3	25-15=10	35-29=6	98-90=8

©Shelley Gray

Level 8: Using Doubles

The Strategy: Use the addition doubles to solve the equations. For example, when you see 8-4=____, you can think: "I know that 4+4 is 8, so 8-4 is 4!"
Sample facts to practice:

24-12=12	18-9=9	12-6=6	6-3=3
22-11=11	16-8=8	10-5=5	4-2=2
20-10=10	14-7=7	8-4=4	2-1=1

Level 9: Using Near Doubles

The Strategy: Use the addition doubles plus one facts to solve the subtraction equations. For example, when you see 9-4=____, you can think: "I know that 4+5 is 9, so 9-4 is 5!"
Sample facts to practice:

3-1=2	7-3=4	11-5=6	15-7=8	19-9=10
3-2=1	7-4=3	11-6=5	15-8=7	19-10=9
5-2=3	9-4=5	13-6=7	17-8=9	21-10=11
5-3=2	9-5=4	13-7=6	17-9=8	21-11=10

Level 10: Using Combinations of 10 and 20

The Strategy: We can use the addition combinations that make 10 and 20 in order to know our subtraction facts. For example, when we see an equation like 10-7, we can think: "I know that 3 and 7 makes 10, so the answer is 3." For 20-15, we can think, "I know that 5 and 15 makes 20, so the answer is 5."

Sample facts to practice:

10-10=0	10-7=3	10-4=6	10-1=9	20-2=18	20-7=13
10-9=1	10-6=4	10-3=7	10-0=10	20-4=16	20-8=12
10-8=2	10-5=5	10-2=8	20-19=1	20-5=15	20-10=10

Level 11: Decompose Numbers to Get to 10

The Strategy: This is a difficult strategy that involves getting to 10, and then subtracting the rest. You will need to be very patient with your child as he/she learns to manipulate numbers in this way. Example: for 13-4, do 13-3 first to get to 10, then subtract 1 more.
Sample facts to practice (help your child explain the strategy as they solve the facts):

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

©Shelley Gray

Level 12: Subtract 10

The Strategy: To subtract 10, take one group of 10 away from the tens place. For example, for 24-10, take a group of 10 away to make 14. For 87-10, take a group of 10 away to make 77.
Sample facts to practice:

12-10=2	22-10=12	40-10=30	66-10=56	124-10=114	191-10=181
14-10=4	24-10=14	46-10=36	73-10=63	135-10=125	241-10=231
15-10=5	29-10=19	53-10=43	77-10=67	157-10=147	286-10=276
19-10=9	33-10=23	58-10=48	84-10=74	184-10=174	350-10=340

Level 13: Subtract 9

The Strategy: To subtract 9, first take 10 away (to make the equation easier), and then add 1. For example, 14-9 seems tricky! To make this easier, do 14-10 first to make 4. Then add 1 to make 5.
Sample facts to practice (work with numbers to 99 for this strategy):

10-9=1	16-9=7	22-9=13	33-9=24	48-9=39	65-9=56
12-9=3	17-9=8	25-9=16	36-9=27	53-9=44	74-9=65
14-9=5	19-9=10	28-9=19	38-9=29	57-9=48	86-9=77
15-9=6	20-9=11	29-9=20	41-9=32	62-9=53	90-9=81

Level 14: Subtract 8

The Strategy: To subtract 8, first take 10 away (to make the equation easier), and then add 2. For example, 14-8 seems tricky! To make this easier, do 14-10 first to make 4. Then add 2 to make 6.
Sample facts to practice (work with numbers to 99 for this strategy):

10-8=2	17-8=9	24-8=16	33-8=25	43-8=35	65-8=57
13-8=5	19-8=11	25-8=17	35-8=27	46-8=38	72-8=64
14-8=6	21-8=13	28-8=20	37-8=29	55-8=47	75-8=67
16-8=8	22-8=14	29-8=21	40-8=32	61-8=53	90-8=82

Level 15: Subtracting Multiples of 10

The Strategy: Take groups of 10 away from the tens place or relate to an easier equation. For example, for 40-20, think 4-2. For 90-50, think 9-5 or take 5 groups of 10 away from the 90.
Sample facts to practice (work with numbers to 99 for this strategy):

10-10=0	40-30=10	62-50=12	72-30=42	80-40=40	79-60=19
20-10=10	51-30=21	60-40=20	71-40=31	85-50=35	70-20=50
34-20=14	50-40=10	68-30=38	79-60=19	84-60=24	80-40=40
46-20=26	58-30=28	60-20=40	70-20=50	91-30=61	85-50=35

©Shelley Gray

Level 16: Subtract 100

The Strategy: To subtract 100, take one group of 100 away from the hundreds place. For example, for 354-100, take a group of 100 away to make 254. For 239-100, take a group of 100 away to make 139.
Sample facts to practice:

103-100=3	200-100=100	286-100=186	402-100=302
110-100=10	231-100=131	304-100=204	469-100=369
154-100=54	250-100=150	367-100=267	558-100=458
180-100=80	267-100=167	398-100=298	600-100=500

Level 17: Expanding the Subtrahend

To use this strategy, students break apart the smaller number (the subtrahend) in order to make the equation easier to solve. For example, for the equation 23-11, break the 11 into a 10 and a 1. First do 23-10 to make 13, and then take away the remaining 1 to make 12. Choose about 10 equations to ask your students during the oral test.

23-11=12	37-12=25	46-31=15	55-34=21	68-33=35
27-13=14	38-16=22	49-19=30	58-17=41	70-25=45
29-12=17	40-23=17	50-42=8	60-12=48	84-23=61
30-12=18	44-24=20	51-22=29	65-25=40	87-20=67

©Shelley Gray

Multiplication Strategies

When it comes to learning the multiplication facts, research studies repeatedly show the value of learning STRATEGIES. Even though we want our kids to be able to know an answer instantly, we want to encourage strategies so that they possess real understanding of what multiplication means. Here are some of the strategies that can be practiced at home.

The 2's:

Think of the addition doubles

Example: For 2x5, think 5+5 (2 groups of 5); or for 2x3, think 3+3 (2 groups of 3)

The 10's:

All digits move one place to the left and 0's are used as placeholders.

Example: For 4x10, shift digits to the left. The 4 moves to the tens place and a 0 is added to make 40.

The 5's:

Half of the related 10's fact

Example: For 5x3, think 10x3=30, and half of 30 is 15

The 1's:

Any number times one is itself.

Example: 3x1=3, 1x10=10

The 0's:

Any number times zero is zero. Focus on WHY (0 groups or groups of 0)

Example: 3x0=0, 0x10=0

Multiplication Squares

When you create an array (as shown) it creates a perfect square.

Example: 3x3=9, 4x4=16, 5x5=25, 6x6=36

This array shows 3x3=9.

The 4's:

The double of the double

Example: For 4x3, first double the 3 to make 6, and then double the 6 to make 12. For 5x4, double the 5 to make 10 and then double the 10 to make 20.

The 3's:

The doubles plus one more group

Example: For 3x4, double the 4 to make 8, and then add one more group of 4 to make 12. For 5x3, double the 5 to make 10 and then add one more group of 5 to make 15.

The 9's:

The 10's fact subtract one group

Example: For 4x9, start with 4x10 to make 40, then subtract a group of 4 to make 36.

The 6's, 7's, and 8's:

Use what you know and build on it.

Example: To solve 6x6, use a fact that you already know, such as 6x5=30, then add one more group of 6. To solve 7x8, think of a fact that you already know, such as 7x9=63, and subtract a group of 7 to make 56. For 8x3, you could use 4x3=12 and then double the 12 to make 24 (because 8 is the double of 4).

Big Ideas

As you read through these strategies, they might seem confusing. You might think to yourself, "Isn't it just easier to memorize?"

Here are the big ideas that will be driving the way that we learn multiplication this year:

- Memorization works for some, but not all students.
- Memorization does not help students solve bigger problems. For example memorizing that 8x3=24 does not help a student solve 16x3. However, when we use strategies, a student might realize that to solve 16x3 we can simply double the product of 8x3 because 16 is the double of 8!
- Strategies build confidence. Students should not have to worry about forgetting a fact. When they possess strategies, they have all the tools they need to figure it out.
- Research has shown time and time again, that the students who possess strategies are more successful mathematicians than the ones who use rote memorization.

If you have any questions about the way that your child is learning, please contact me.

Division

The Strategies

Please reinforce throughout your division unit.

When it comes to division, there are a few strategies that students can use to figure out an equation. These include:

- Making equal groups
- Reverse skip-counting
- Arrays
- Relating to multiplication

All of these strategies help to promote **real understanding** of division. For this reason, all of the strategies listed above have been integrated into The Division Station.

However, there is one strategy that is the MOST effective and efficient for finding the quotient of an equation. That is **"relating to multiplication."**

Students MUST understand that multiplication and division are directly related. They MUST know that to solve a division equation, we can ask a question like the one below:

25÷5=___ ⇦ What can I multiply by 5 to make 25?

The concept of multiplication and division being related is practiced in every single level of this Division Station. In fact, each level begins with a review of the multiplication facts, and the related strategy for that set of facts. Then students begin working with the related division facts.

It is extremely important that you, as a teacher, continuously reinforce this concept in your classroom. Division should be seen as a direct extension of multiplication, and students should get used to "thinking of multiplication" when working with division.

Additionally, "relating to multiplication" will enable students to know the numbers that can be used to create a fact family.

18÷6=___ ⇦ "I haven't learned the 'Divide by 6's' yet, but I know that 3x6 is 18, so the quotient must be 3."

As your students move through the levels, you will notice that in the 2's level, you will find equations like this one: 18÷9=___. At this point, even though the student has not yet learned the 'Divide By 9's," she still needs to understand that she can use what she knows about 2's to solve this equation. The goal is for her to look at the equation and think, "I know that 2x9=18, so the quotient is 2." As