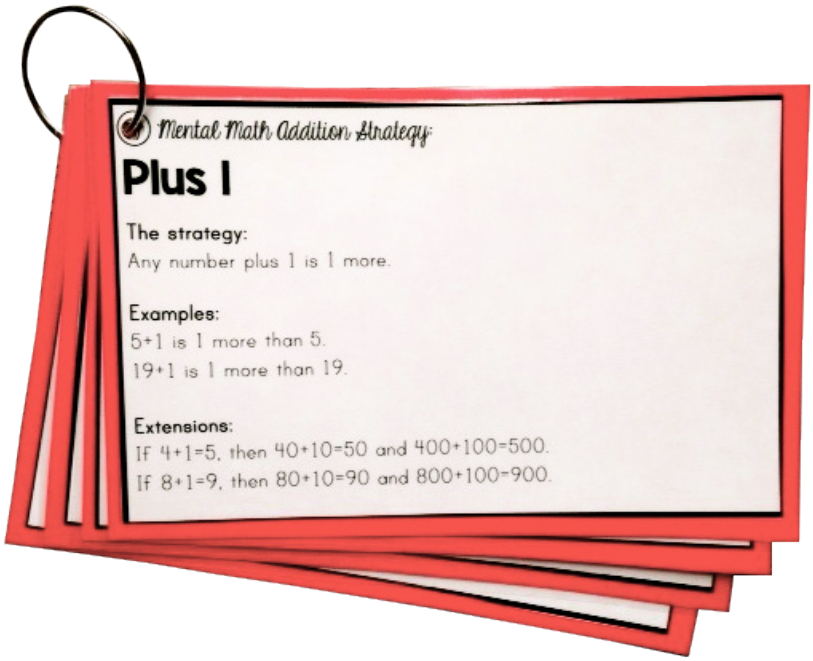
MENTAL MATH

Addition STRATEGIES

A QUICK REFERENCE GUIDE {FOR TEACHERS} FOR MENTAL MATH ADDITION STRATEGIES



CREATED BY

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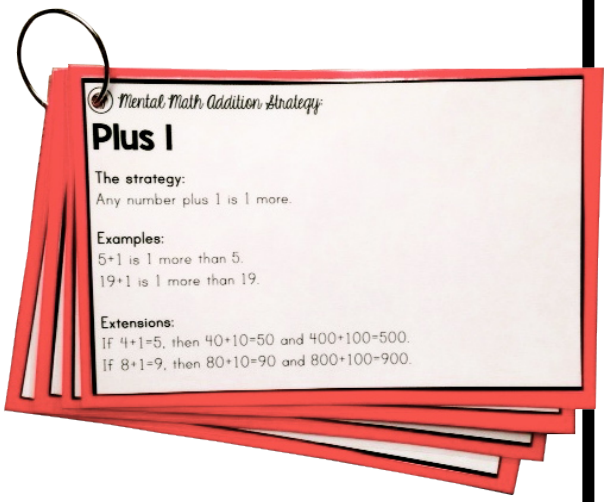
About This Guide

Mental math is crucial to a child's development of number sense. Children must understand the true meaning of numbers, and possess strategies for basic operations.

There are many different mental math strategies that can be used to reinforce number sense and teach students the art of flexible thinking.

Although we know how important mental math is, it can be difficult to remember the important strategies and to reinforce them with your students on a regular basis.

I have created this Quick Reference Guide as a tool for you to use throughout the year to reinforce mental math addition strategies. Simply cut out the reference cards, laminate them, and keep them handy in your classroom.



Please note that the strategies that I have included are not exhaustive. These are the same strategies that I have included in my Grades 1-2 and Grades 3-4 Addition Stations and they are the ones that I feel will give your students the best possible understanding of addition. These strategies will also vary based on the grade that you teach. For example, a Grade 1 student should not be expected to learn all of the strategies listed here. Similarly, a Grade 4 student should be learning the strategies at a higher level (for example, working with 1000's rather than 10's).

Enjoy!
Shelley Gray

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Mental Math Addition Strategy:

Plus 0

The strategy:

Any number plus 0 is itself.

Examples:

4+0=4

18+0=18

250+0=250

Mental Math Addition Strategy:

Plus 1

The strategy:

Any number plus 1 is 1 more.

Examples:

5+1 is 1 more than 5.

19+1 is 1 more than 19.

Extensions:

If 4+1=5, then 40+10=50 and 400+100=500.

If 8+1=9, then 80+10=90 and 800+100=900.

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Mental Math Addition Strategy:

Plus 2

The strategy:

Any number plus 2 is two more.

Examples:

6+2 is 2 more than 6.

15+2 is 2 more than 15.

Extensions:

If 6+2=8, then 60+20=80 and 600+200=800.

If 4+2=6, then 40+20=60 and 400+200=600.

Mental Math Addition Strategy:

Counting On

The strategy:

Start with the bigger number and count up. Only use this strategy when adding 1, 2, 3, or 4 to a number.

Examples:

For 5+3, think: "5...6, 7, 8."

For 104+2, think: "104...105, 106."

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Mental Math Addition Strategy:

Doubles

The strategy:

This is one set of facts that should be memorized. Students can think about the wheels on a truck (2+2=4), the legs on a spider (4+4=8), or similar examples to help.

Examples:

3+3=6 5+5=10 10+10=20

Extensions:

If 4+4=8, then 40+40=80 and 400+400=800.

If 2+2=4, then 20+20=40 and 200+200=400.

Mental Math Addition Strategy:

Doubles Plus One

The strategy:

Use the double and then add one more

Examples:

For 4+5, think: "The double of 4 is 8, plus 1 more is 9."

For 7+8, think: "The double of 7 is 14, plus 1 more is 15."

Extensions:

If 4+5=9, then 40+50=90 and 400+500=900.

If 2+3=5, then 20+30=50 and 200+300=500.

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Mental Math Addition Strategy:

Doubles Plus Two

The strategy:

Use the double and then add two more

Examples:

For 5+7, think: "The double of 5 is 10, plus 2 more is 12."

For 9+11, think: "The double of 9 is 18, plus 2 more is 20."

Extensions:

If 3+5=8, then 30+50=80 and 300+500=800.

If 2+4=6, then 20+40=60 and 200+400=600.

Mental Math Addition Strategy:

Making Ten, 100, and 1000

The strategy:

Students should try to memorize the number combinations that make 10. If it is grade appropriate, students should also know how these number combinations can be extended to make 100 and 1000.

Examples:

3+7=10 4+6=10 5+5=10

Extensions:

If 4+6=10, then 40+60=100 and 400+600=1000.

If 2+8=10, then 20+80=100 and 200+800=1000.

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Mental Math Addition Strategy:

Adding 10's/100's/1000's

The strategy:

Use place value understanding to add 10 to a number. If it is grade appropriate, use this same understanding to add 100 and 1000.

Examples:

For 32+10, add one more group of ten to the tens place to make 42.
For 249+100, add one more group of 100 to the hundreds place to make 349.

Extensions:

Use the same place value understanding to add multiples of 10, 100, and 1000, for example: 34+20 means 34+2 groups of 10.

Mental Math Addition Strategy:

Plus 8 and 9

The strategy:

Manipulate the numbers by making a 10. This means taking some away from one addend and giving them to the 8 or 9 to make a 10.

Examples:

For 7+8, take 2 from the 7 and give to the 8 to make a 10. Now solve 5+10, which is an easier equation.

Extensions:

Use this strategy for larger numbers ending in 8 or 9. For example, for 29+6, take 1 from the 6 and give it to the 29 to make 30. Now solve 30+5.

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Mental Math Addition Strategy:

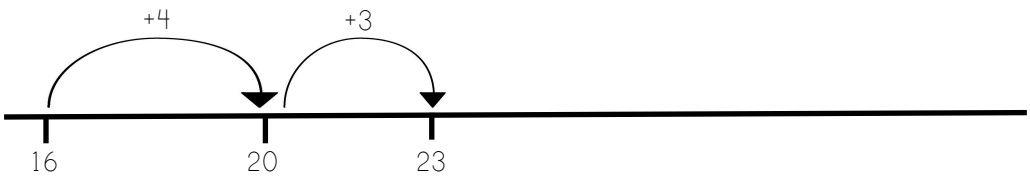
Using "Friendly" Numbers

The strategy:

Make a "friendly" number first (a number ending in 0), and then add the rest. Empty number lines are a useful tool for this strategy.

Examples:

For 16+7, students first add 16+4 to get to the friendly number 20. Then the last 3 are added on.



Mental Math Addition Strategy:

Left-to-Right Addition

The strategy:

Add from left to right. For example, in a 2-digit equation, add the tens first and then the ones.

Examples:

13+26 → 10+20=30 and 3+6=9 → 30+9=39

231+157 → 200+100=300, 30+50=80, and 1+7=8 → 300+80+8=388

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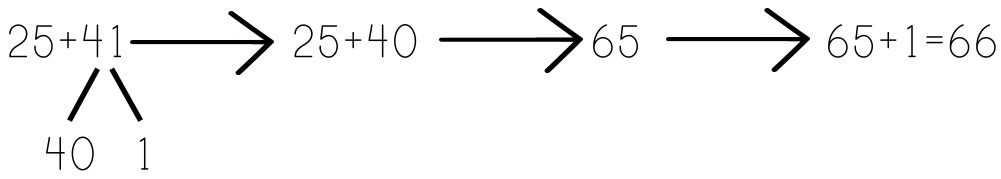
Mental Math Addition Strategy:

Break Up the Second Number

The strategy:

Break up the second addend and add it in parts.

Example:



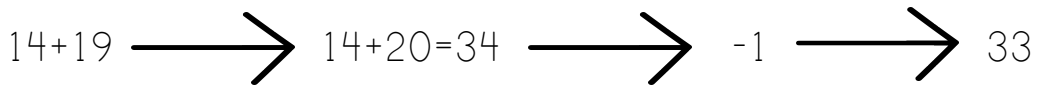
Mental Math Addition Strategy:

Compensation

The strategy:

Adjust the equation to make it more manageable and then compensate for the adjustment later on. This is a higher-level strategy.

Examples:



We can add 1 to the second addend to make this equation easier to solve.

Since we added 1 to the equation, we now need to subtract 1 from the answer to COMPENSATE for the adjustment.

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Thank-you!

Thank-you for your download!

If you would like to implement these mental math strategies, but are not sure how to get started or manage it in your classroom, you may be interested in The Addition Station, a self-paced and student-centered approach to learning the strategies listed in this Quick Reference Guide. Please see the links below:

Grades 1-2 Addition Station Combo Pack:
https://www.teacherspayteachers.com/Product/The-Addition-Station-Grade-1-2-Combo-Pack-1781356

Grades 3-4 Addition Station Combo Pack
https://www.teacherspayteachers.com/Product/The-Addition-Station-Grade-3-4-Combo-Pack-1833186

If you have questions, concerns or general comments, please feel free to contact me through my blog:

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Have a wonderful day!

Shelley