

Math Facts Fluency

Overview of Addition and Subtraction Strategies

Simply memorizing math facts can be challenging to some students. This is where patterns can help learn a few foundational facts and then strategies can help figure out other ones.

+0 or -0: adding or subtracting zero doesn't change the amount

+1 or -1: add one more or take away one

+2 or -2: add two more or take away two

Doubles facts: add the same number twice ($2+2=4$, $3+3=6$, $4+4=8$, etc.)

Doubles + 1 strategy: If you know $6+6=12$, $6+7$ is one more. So one more than 12 is 13.

Doubles + 2 strategy: If you know $6+6=12$, $6+8$ is two more. So two more than 12 is 14.

+10: Note the pattern. The number in the ones place stays the same when adding 10 to a single digit number. The tens place has one. (i.e. $3+10=13$, $5+10=15$, $8+10=18$, etc.)

+ 9: Add ten and take away one. To figure out $7+9=$ do $7+10=17$ and then $17-1=16$ since 9 is the same as $10-1$.

Make a 10: Break apart the numbers to give you combinations of 10 and add. This way, you are using smaller numbers that are easier to work with. To solve $8+5$, break apart 5 into a 2 and 3. Then $8+2=10$ and $10+3=13$.

Use related facts/fact families/number bonds. Addition and subtraction are related. If you know one addition fact, you know one more related addition fact and two subtraction facts. For example, If you know $3+4=7$, then you know $4+3=7$ since the order of the numbers do not matter. Also, $7-4=3$ and $7-3=4$.

The following pages are organized by grades and which facts children should be able to solve and which ones they should know fluently.

Grade K- Math Facts Fluency (within 5)
Add and subtract within 10 but fluency is within 5.

+0

$0+0=0$

$1+0=1$

$2+0=2$

$3+0=3$

$4+0=4$

$5+0=5$

And related + and - facts

Concepts to teach

- adding or subtracting a number doesn't change it; note pattern
- order of the addends doesn't matter; sum will be the same

+1

$0+1=1$

$1+1=2$

$2+1=3$

$3+1=4$

$4+1=5$

And related + and - facts

Concepts to teach

- Adding one is counting on one more
- Subtracting one is counting back one more
- Note the "one more/one less" pattern
- order of the addends doesn't matter; sum will be the same

+2

$0+2=2$

$1+2=3$

$2+2=4$

$3+2=5$

And related + and - facts

Concepts to teach

- Adding two more is counting on two more
- Subtracting two is counting back two
- Note the "two more/two less" pattern
- order of the addends doesn't matter; sum will be the same

+3

$0+3=3$

$1+3=4$

$2+3=5$

And related + and - facts

+4

$0+4=4$

$1+4=5$

And related + and - facts

+5

$0+5=5$

And related + and - facts

Grade 1- Math Facts Fluency (within 10)
Add and Subtract within 20 but fluency is within 10.

+0

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

And related + and - facts

Concept to teach

- adding or subtracting a number doesn't change it; note pattern
- order of the addends doesn't matter; sum will be the same

+1

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

And related + and - facts

Concept to teach

- Adding one is counting on one more
- Subtracting one is counting back one more
- Note the "one more/one less" pattern

+2

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

And related + and - facts

+3

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

And related + and - facts

+4

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

And related + and - facts

+5

0+5=5
1+5=6
2+5=7

$3+5=8$

$4+5=9$

$5+5=10$

And related + and - fact

Doubles

$0+0=0$

$1+1=2$

$2+2=4$

$3+3=6$

$4+4=8$

$5+5=10$

Knowing “doubles” is essential for building up to “doubles +1” and “doubles +2” strategies

Doubles + 1 strategy: If you know $6+6=12$, $6+7$ is one more. So one more than 12 is 13.

Doubles + 2 strategy: If you know $6+6=12$, $6+8$ is two more. So two more than 12 is 14.

Grade 2 Math Facts Fluency (within 20)

Add and subtract fluently within 20 using mental strategies; know from memory all sums of two single digit numbers and related differences.

+0

+1

+2

+3

+4

+5

doubles

+6

+7

+8

+9

+10

-0

-1

-2

-3

-4

-5

Related subtraction facts for doubles

-6

-7

-8

-9

-10

See overview pages and grades K and 1 for strategy descriptions.