

Mental Addition and Subtraction Within 20

Six visual strategies for solving problems without a calculator

Mental math means changing a problem into numbers that are easier to use.

Different students may use different strategies—and that is okay.

1. Count On

Start with the larger number and count forward.

$$8 + 3$$

1. Start at 8.
2. Count 9, 10, 11.
3. Answer: 11

2. Doubles and Near Doubles

Use a doubles fact, then adjust by one.

$$6 + 7$$

1. $6 + 6 = 12$
2. Add one more.
3. Answer: 13

3. Make a Ten

Break apart a number so you can complete 10.

$$8 + 5$$

1. Break 5 into $2 + 3$.
2. $8 + 2 = 10$
3. $10 + 3 = 13$

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Three more ways to make numbers easier to use

4. Use Place Value

Keep the ten and solve with the ones.

$$13 + 5$$

1. $13 = 10 + 3$
2. $3 + 5 = 8$
3. $10 + 8 = 18$

5. Use Compensation

Make a friendly number, then correct the change.

$$9 + 6$$

1. Change 9 to 10.
2. $10 + 6 = 16$
3. Remove extra 1: 15

6. Add Up in Chunks

Break a number into useful smaller parts.

$$7 + 8$$

1. Break 8 into $3 + 5$.
2. $7 + 3 = 10$
3. $10 + 5 = 15$

Visual Tools

Use these models to show how the numbers move and combine

Count On: Number-Line Hops



Make a Ten: Ten Frame



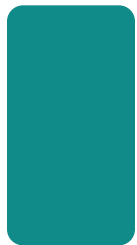
$$8 + 5$$

Use 2 to fill the frame.

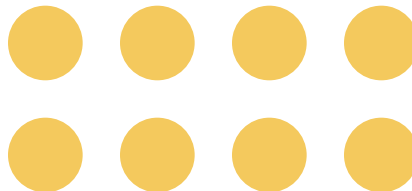
Then add the 3 left over.

$$10 + 3 = 13$$

Place Value: One Ten and Some Ones



1 ten



$$13 + 5$$

$$10 + (3 + 5)$$

$$10 + 8 = 18$$

Practice

Choose any strategy that helps you understand the numbers

1. $8 + 5 = \underline{\quad}$

7. $6 + 8 = \underline{\quad}$

2. $7 + 7 = \underline{\quad}$

8. $15 - 6 = \underline{\quad}$

3. $9 + 6 = \underline{\quad}$

9. $9 + 9 = \underline{\quad}$

4. $16 - 7 = \underline{\quad}$

10. $13 - 5 = \underline{\quad}$

5. $12 + 5 = \underline{\quad}$

11. $7 + 4 = \underline{\quad}$

6. $18 - 9 = \underline{\quad}$

12. $17 - 8 = \underline{\quad}$

Which strategy did you use most?

Count On · Doubles · Make a Ten · Place Value · Compensation · Chunks

Explain one answer: _____

Answer key: 1) 13 2) 14 3) 15 4) 9 5) 17 6) 9 7) 14 8) 9 9) 18 10) 8 11) 11 12) 9