

SIGMABUDGIE · GRADE 2

Adding & Subtracting

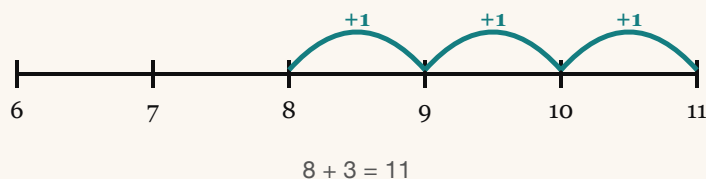
A gentle walkthrough & a 24-question exam

Part 1 walks through adding and subtracting to 100 from the very beginning, with drawings. Part 2 is a 24-question exam that starts easy and slowly builds to harder, ISEE-style reasoning questions. Work through the lesson together first, then let your child try the exam. The answer key at the back explains every question.

1 • Counting on

To add a small number, start with the **big** number and count on. $8 + 3$: say "8", then count 9, 10, **11**.

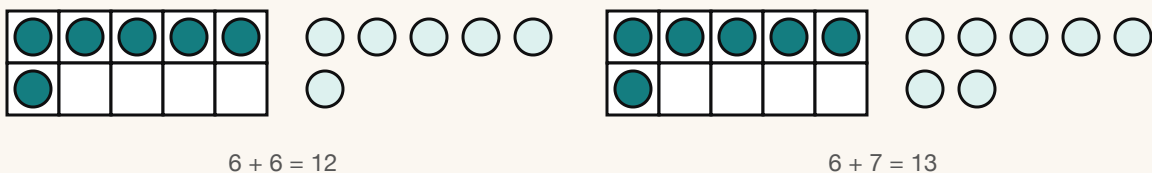
Three hops from 8 land on 11.



2 · Doubles and near doubles

Doubles are the same number twice: $6 + 6 = 12$, $7 + 7 = 14$, $8 + 8 = 16$. Learn them by heart.

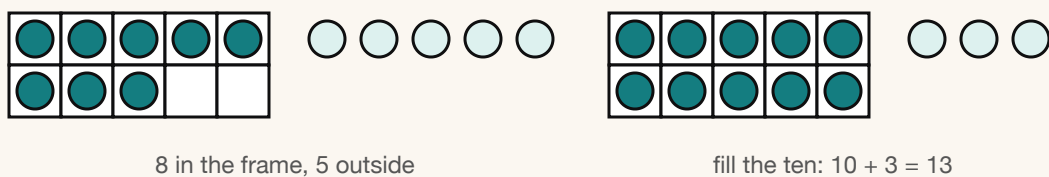
A **near double** is one more: $6 + 7$ is $6 + 6$ and one more, so **13**.



3 • Making ten

Ten is a friendly number. $8 + 5$: move 2 dots into the frame to make 10. Then 3 are left: $10 + 3 = 13$.

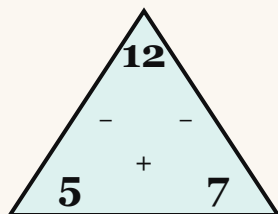
So $8 + 5 = 8 + 2 + 3 = 13$. Fill the ten first, then add what is left.



4 • Fact families

Adding and subtracting are opposites. The numbers 5, 7, and 12 make a **fact family**: $5 + 7 = 12$, $7 + 5 = 12$, $12 - 5 = 7$, $12 - 7 = 5$.

The biggest number goes on top. Know one fact and you know all four.

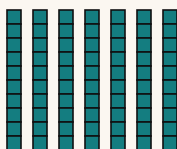


$$5 + 7 = 12, \text{ so } 12 - 7 = 5$$

5 • Adding tens

$30 + 40$ is just 3 tens + 4 tens = 7 tens = **70**. Count the rods.

The same trick works for taking away: $70 - 20 = 5$ tens = 50.



$$3 \text{ tens} + 4 \text{ tens} = 7 \text{ tens} = 70$$

6 • Two-digit adding

Line the numbers up: ones under ones, tens under tens. Add the **ones first**, then the tens.

$23 + 45$: ones $3 + 5 = 8$. Tens $2 + 4 = 6$. Answer **68**.

$$\begin{array}{r} 23 \\ + 45 \\ \hline 68 \end{array}$$

ones first, then tens

7 • Regrouping: when the ones go over 9

$37 + 25$: ones $7 + 5 = \mathbf{12}$. That is 1 ten and 2 ones. Write the 2, carry the 1 ten up to the tens column.

Tens: $1 + 3 + 2 = 6$. Answer **62**.

$$\begin{array}{r} 1 \\ 37 \\ + 25 \\ \hline 62 \end{array}$$

$7 + 5 = 12$: write 2, carry 1

8 • Two-digit subtracting

Subtract the ones first, then the tens. $45 - 12$: ones $5 - 2 = 3$. Tens $4 - 1 = 3$. Answer **33**.

$$\begin{array}{r} 45 \\ - 12 \\ \hline 33 \end{array}$$

ones first, then tens

9 • Regrouping: when you cannot take away

$63 - 47$: you cannot take 7 from 3. **Borrow** a ten: the 6 tens become 5 tens, and the 3 ones become 13 ones.

Now $13 - 7 = 6$, and $5 - 4 = 1$. Answer **16**.

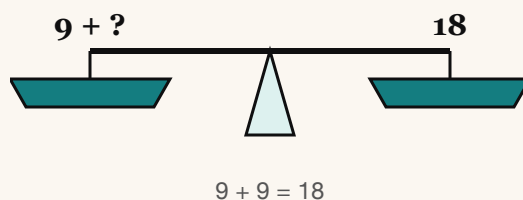
$$\begin{array}{r} 5 \quad 13 \\ \cancel{6} \quad 3 \\ - 47 \\ \hline 16 \end{array}$$

borrow a ten: $13 - 7 = 6$, then $5 - 4 = 1$

10 • Missing numbers

An equation is a balance. $9 + \square = 18$: what goes with 9 to make 18? $18 - 9 = 9$.

$\square - 7 = 5$: the number was 5 before 7 was taken away, so add it back: $5 + 7 = 12$.



11 • Clue words in stories

"**Altogether**" and "**in all**" mean add: Omar has 22 books and Tom has 34. Altogether: $22 + 34 = 56$.

"**Left**", "**how many more**", and "**fewer**" mean subtract: Sam had 44 grapes and gave away 31. Left: $44 - 31 = 13$. Ava has 21 shells, Tom has 8. How many more: $21 - 8 = 13$.

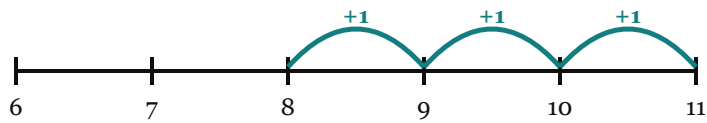
12 • Three numbers and checking

Adding three numbers? Look for a double or a ten first. $8 + 8 + 9$: the double $8 + 8 = 16$, then $16 + 9 = 25$.

Check a subtraction by adding back: $63 - 47 = 16$, because $16 + 47 = 63$. You are ready for the test! 🎉

Read each drawing first, then choose the best answer. Take your time, there is no clock here. Questions start gentle and get harder toward the end. Circle your answer.

1 $8 + 3 = ?$



A 10

B 11

C 12

D 5

2 $6 + 6 = ?$

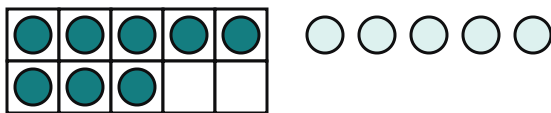
A 11

B 13

C 66

D 12

3 $8 + 5 = ?$



A 13

B 12

C 14

D 3

4 $30 + 40 = ?$

A 34

B 60

C 70

D 80

5 $12 - 5 = ?$

A 8

B 17

C 6

D 7

6 $23 + 45 = ?$

$$\begin{array}{r} 23 \\ + 45 \\ \hline \end{array}$$

A 58

B 68

C 78

D 22

7 What number makes this true? $9 + \square = 18$

A 27

B 8

C 9

D 10

8 $37 + 25 = ?$

$$\begin{array}{r} 37 \\ + 25 \\ \hline \end{array}$$

A 62

B 52

C 512

D 61

9 $45 - 12 = ?$

$$\begin{array}{r} 45 \\ - 12 \\ \hline \end{array}$$

A 57

B 23

C 34

D 33

10 What number makes this true? $\square - 7 = 5$

A 2

B 12

C 35

D 13

11 $63 - 47 = ?$

$$\begin{array}{r} 63 \\ - 47 \\ \hline \end{array}$$

A 16

B 26

C 24

D 110

12 Omar has 22 books and Tom has 34 books. How many books do they have altogether?

A 12

B 54

C 56

D 66

13 Sam had 44 grapes and gave away 31. How many grapes are left?

A 75

B 13

C 23

D 15

14 Ava has 21 shells. Tom has 8 shells. How many more shells does Ava have?

A 29

B 17

C 12

D 13

15 $8 + 8 + 9 = ?$

A 25

B 24

C 26

D 17

16 $55 - 46 = ?$

A 11

B 19

C 9

D 101

17 $17 + 37 = ?$

A 44

B 414

C 54

D 55

18 $100 - 35 = ?$

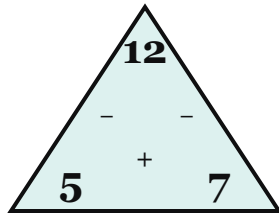
A 65

B 75

C 135

D 55

19 Which fact is in the same fact family as $5 + 7 = 12$?



A $12 + 5 = 17$

B $7 - 5 = 2$

C $5 + 12 = 17$

D $12 - 7 = 5$

20 Which has the same answer as $7 + 8$?

A $7 + 7$

B $8 + 7$

C $8 + 8$

D $15 + 1$

21 Nia had 15 stickers. She got 12 more, then gave 9 to a friend. How many does she have now?

A 18

B 36

C 27

D 6

22 Ben has 26 marbles. Mia has 9 fewer than Ben. How many marbles does Mia have?

A 35

B 19

C 17

D 9

23 What number makes this true? $48 + \square = 60$

A 108

B 12

C 22

D 18

24 What is the sum of 36 and 29?

A 55

B 7

C 66

D 65

ANSWER KEY & EXPLANATIONS

- 1 B** Start at 8 and count on 3: 9, 10, 11.
-
- 2 D** Double 6 is 12.
-
- 3 A** Make ten: $8 + 2 = 10$, then 3 more is 13.
-
- 4 C** 3 tens + 4 tens = 7 tens = 70.
-
- 5 D** $12 - 5 = 7$. Check: $7 + 5 = 12$.
-
- 6 B** Ones: $3 + 5 = 8$. Tens: $2 + 4 = 6$. So 68.
-
- 7 C** $18 - 9 = 9$, and $9 + 9 = 18$.
-
- 8 A** Ones: $7 + 5 = 12$, write 2 and carry 1. Tens: $1 + 3 + 2 = 6$. So 62.
-
- 9 D** Ones: $5 - 2 = 3$. Tens: $4 - 1 = 3$. So 33.
-
- 10 B** Add back: $5 + 7 = 12$. Check: $12 - 7 = 5$.
-
- 11 A** Borrow a ten: $13 - 7 = 6$, then $5 - 4 = 1$. So 16.
-
- 12 C** Altogether means add: $22 + 34 = 56$.
-
- 13 B** Left means subtract: $44 - 31 = 13$.
-
- 14 D** How many more means subtract: $21 - 8 = 13$.
-
- 15 A** Double first: $8 + 8 = 16$. Then $16 + 9 = 25$.
-
- 16 C** Borrow a ten: $15 - 6 = 9$, then $4 - 4 = 0$. So 9.
-
- 17 C** Ones: $7 + 7 = 14$, write 4 and carry 1. Tens: $1 + 1 + 3 = 5$. So 54.
-
- 18 A** Count up from 35: 5 to reach 40, then 60 to reach 100. $5 + 60 = 65$.
-
- 19 D** The family for 5, 7, 12: $5 + 7$, $7 + 5$, $12 - 5$, $12 - 7$.
-
- 20 B** You can add in any order: $7 + 8 = 8 + 7 = 15$.
-
- 21 A** First $15 + 12 = 27$. Then $27 - 9 = 18$.
-
- 22 C** Fewer means subtract: $26 - 9 = 17$.
-
- 23 B** Count up from 48: 2 to reach 50, then 10 to reach 60. $2 + 10 = 12$.
-
- 24 D** Sum means add. $36 + 29$: $6 + 9 = 15$, write 5 and carry 1. $1 + 3 + 2 = 6$. So 65.
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