

Addition and Subtraction Word Problems: math lesson, Grade 1 – download the PDF

Every day you meet little stories with numbers: birds land on a fence, cookies get eaten, friends share crayons. In this chapter you will learn to read these stories, draw a picture of them, and write a number sentence that solves them. All the numbers stay within 20.

1. Four kinds of stories

Most addition and subtraction stories fit into a few simple types. When you know the type, the story is much easier to solve.

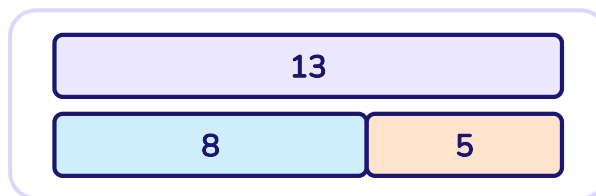
- **Add to:** something starts, then more comes. There were 7 ducks and 4 more swam over. This is an addition story.
- **Take from:** something starts, then some goes away. There were 12 grapes and you ate 5. This is a subtraction story.
- **Put together:** two groups are joined to find the total. 6 cats and 9 dogs are pets in a shop. How many pets in all?
- **Take apart:** a total is split into two parts. 14 children are in a gym, 8 are girls. How many are boys?

D Number sentence (equation)

A number sentence uses numbers and signs such as $+$, $-$ and $=$. For example, $7 + 4 = 11$ tells the story “7 and 4 more make 11.”

2. Draw a bar model

A bar model is a picture that shows how the parts and the total fit together. The long bar on top is the **total**. The two smaller bars below are the **parts**.

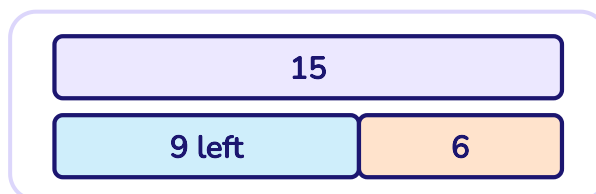


E Example 1: put together

8 red balloons and 5 blue balloons are tied to a fence. How many balloons in all?

The parts are 8 and 5, and the total is missing. We add: $8 + 5 = 13$. There are 13 balloons.

If a part is missing, look at the bar and ask: what goes with this part to make the total? Here is a take from story drawn as a bar.



E**Example 2: take from**

There were 15 apples in a basket. A family ate 6. How many apples are left?

The total is 15 and one part is 6. We subtract: $15 - 6 = 9$. There are 9 apples left.

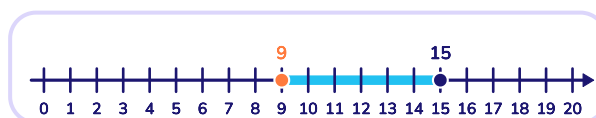
3. Write an equation for the story

To write an equation, follow these steps.

M**Method: from story to equation**

- Read the story twice. Say it in your own words.
- Find the numbers and decide what the question asks.
- Decide: does the amount get bigger or are two groups joined? Use $+$. Does something go away or do we split a total? Use $-$.
- Write the equation, solve it, and answer with a full sentence.

You can also use a number line. Start at the first number and jump forward to add or backward to subtract.

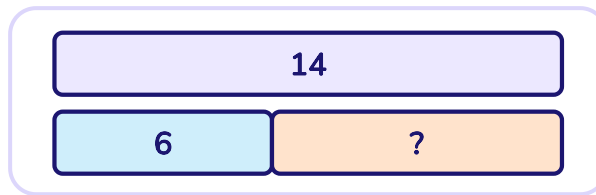


On this number line we start at 9 and jump 6 steps to land on 15. So $9 + 6 = 15$.

4. The unknown can hide anywhere

Sometimes the missing number is not the answer to the sum. It can be the start, the change, or the result. We use a small box or a question mark $?$ for the number we do not know.

- Result unknown: $6 + 8 = ?$
- Change unknown: $6 + ? = 14$
- Start unknown: $? + 8 = 14$



E Example 3: change unknown

Kim had 6 stickers. Her aunt gave her some more. Now Kim has 14 stickers. How many did her aunt give her?

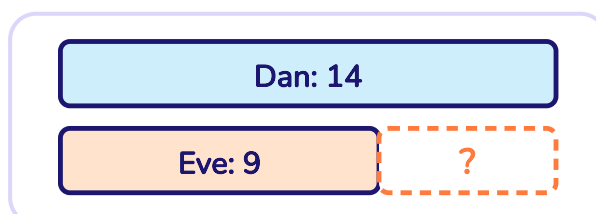
We write $6 + ? = 14$. Think of the bar: the total is 14 and one part is 6, so the other part is $14 - 6 = 8$. Check: $6 + 8 = 14$. Her aunt gave her 8 stickers.

A Careful with the start

“Some birds were on a branch. 5 flew away. 9 are left.” The story takes away, but the unknown is the start. Write $? - 5 = 9$, and solve by adding: $9 + 5 = 14$. Do not just subtract 5 from 9!

5. Comparing problems

A comparing story asks **how many more** or **how many fewer**. Draw two bars, one above the other, and look at the gap between them.



E**Example 4: how many more?**

Dan scored 14 points and Eve scored 9 points. How many more points did Dan score?

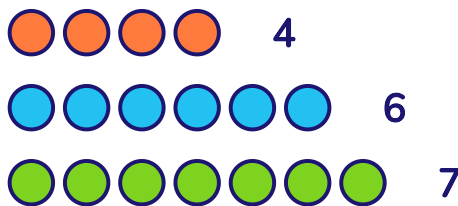
The gap is what Eve is missing to reach Dan: $14 - 9 = 5$. Dan scored 5 more points.

You can also check by adding: $9 + 5 = 14$.

“Fewer” stories work the same way. If Max has 3 fewer toys than Lea, and Lea has 12 toys, Max has $12 - 3 = 9$ toys.

6. Adding three numbers

Some stories have three groups. You may add them in any order, so look for a friendly pair first, such as two numbers that make 10.

**E****Example 5: three groups**

A box holds 4 orange crayons, 6 blue crayons and 7 green crayons. How many crayons in all?

The pair 4 and 6 makes 10. Then $10 + 7 = 17$. So $4 + 6 + 7 = 17$. There are 17 crayons.



Zyro's tip

On my planet we always hunt for a pair that makes 10 first. It turns three numbers into a simple add-10 problem!

7. Choose the operation

How do you decide between adding and subtracting? Use clue questions instead of key words, because the same word can be used in different ways.

- Are two groups joined, or is something added? Add.
- Is something taken away, or are we comparing two amounts? Subtract.
- Do we know the total and one part? Subtract to find the other part, or think “what goes with this part to make the total?”



Check your answer

Ask yourself: does the answer make sense? After joining, the total should be bigger than each part. After taking away, what is left should be smaller than what you started with.

Key takeaways

- Stories can add to, take from, put together, take apart, or compare.
- A bar model shows the total on top and the parts below.
- An equation uses $+$, $-$ and $=$ to match the story.
- The unknown can be the result, the change or the start.
- “How many more” and “how many fewer” are solved by finding the gap.
- To add three numbers, look for a pair that makes 10.
- Always check that your answer makes sense and write a full sentence.



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