

## Parent Guide to Problem Solving



Story problems can be thought of in 3 different levels of challenge.

1 -easiest

2-slightly more challenging

3-most challenging

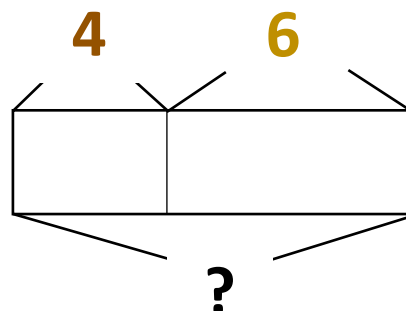
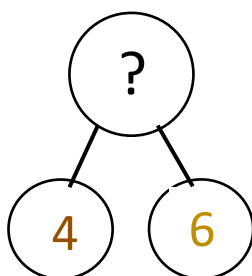
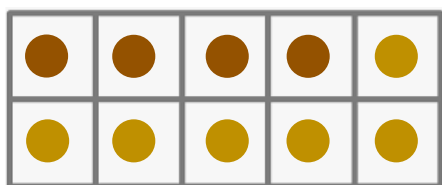
Let's take a look at *level 1* story problems. These problems involve a **direct action** of either "**putting together**" or "**taking away**" where the **result** (answer) is **unknown**.

Valentina has 4 pretzels for snack.  
Her mother gives her 6 more pretzels at snack time.  
How many pretzels does Valentina have now?

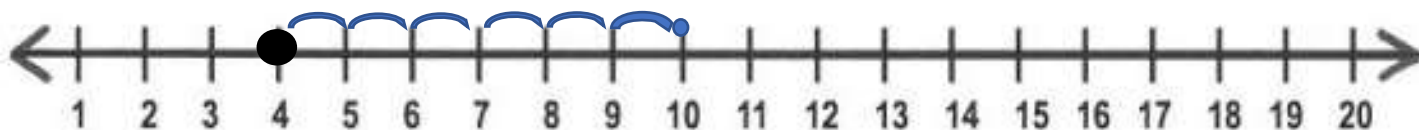


**Think:** What "**math action** (+/-)" is happening in the story?

Ways to **model** the story in order of sophistication:



+ 6 more pretzels



Equation that represents story problem  $4 + 6 = ?$  (10)

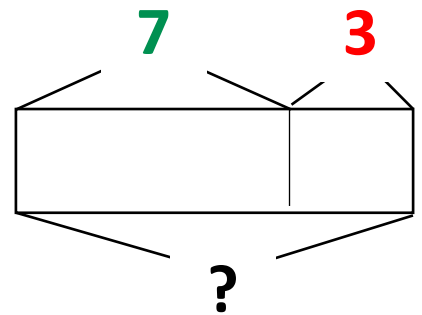
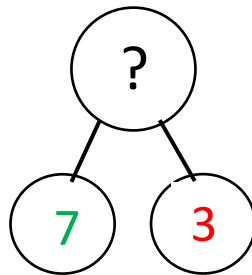
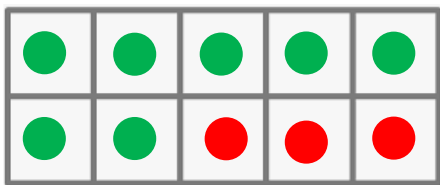
**Another *level 1* story problem.** This problem involves the direct action of “**putting together 2 parts**” where the **whole amount** (answer) is **unknown**.

Mrs. Bisceglia has 7 pears and 3 apples in a bowl.  
How many fruits does she have altogether?

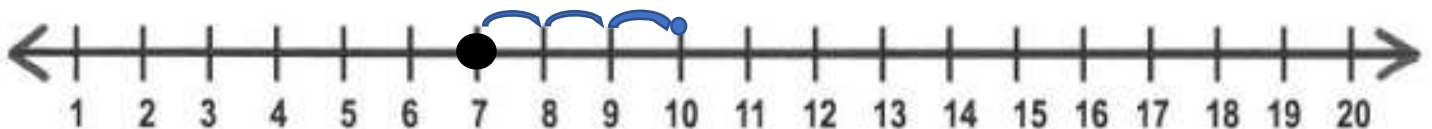


**Think:** What “**math action (+/-)**” is happening in the story?

Ways to **model** the story in order of sophistication:



+ 3 red apples



Equation that represents story problem  **$7 + 3 = ?$**  (10)

**Another *level 1* story problem.** This problem involves the **direct action** of “**taking away**” where the **result** (answer) is **unknown**.

Leo has 10 stickers.

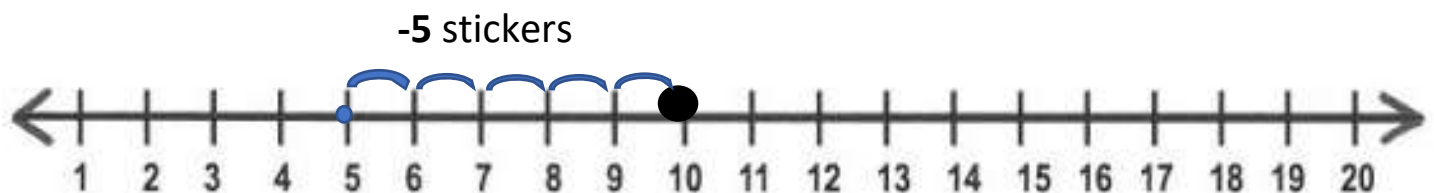
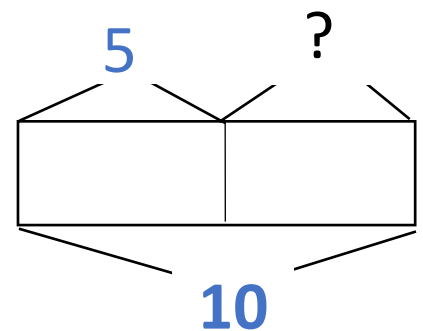
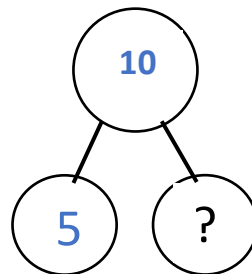
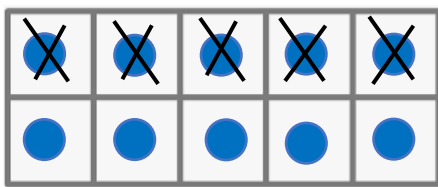
He gives 5 to his friend.

How many stickers does Leo have left?



**Think:** What “**math action (+/-)**” is happening in the story?

Ways to **model** the story in order of sophistication:



Equation that represents story problem  **$10 - 5 = ?$**  (5)

**This is a level 2 story problem.** This problem involves a **missing part**. It helps when the child understands **part-part-whole**.

“If I know the **total** and a **part**, I can figure out the other **missing part**.”

Leo has 8 cookies.

His mom gives him some more cookies.

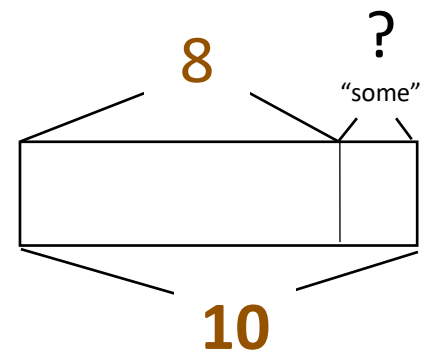
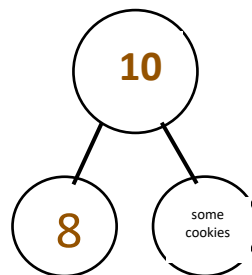
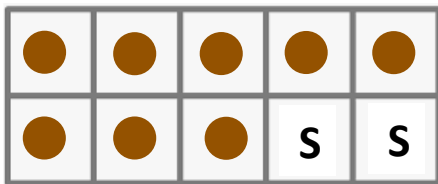
Now he has 10 cookies.

How many cookies did Leo’s mom give him?

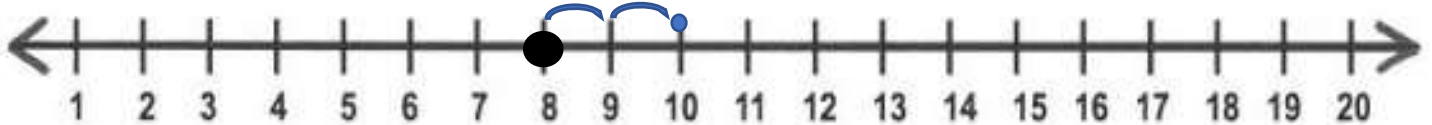


**Think:** Do I know the **total** cookies? Do I know a **part** of the cookies?

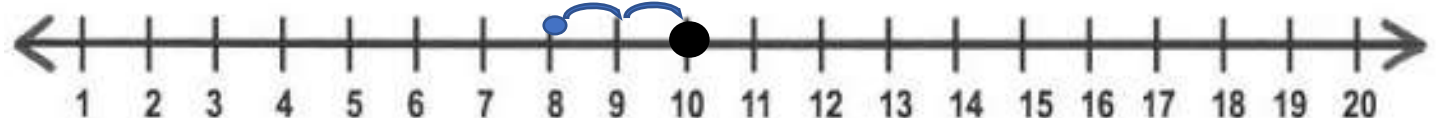
Ways to **model** the story in order of sophistication:



+2 cookies



-2 cookies



Equation that represents story problem  **$8 + ? = 10$**

$$10 - ? = 8$$

**This is another *level 2* story problem.** This problem involves a **missing part**. It helps when the child understands **part-part-whole**.

“If I know the **total** and a **part**, I can figure out the other **missing part**.”

Leo has some cookies.

His mom gives him 2 more cookies.

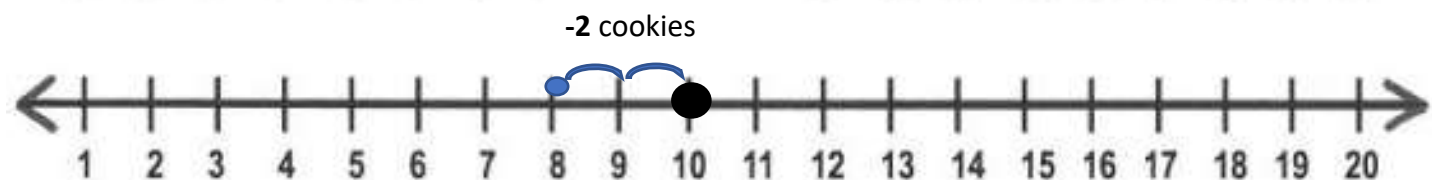
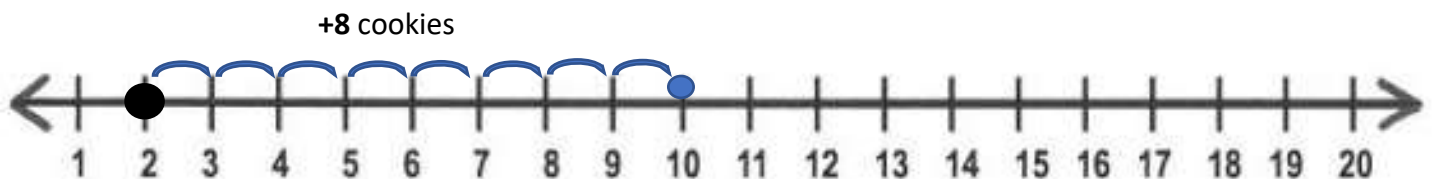
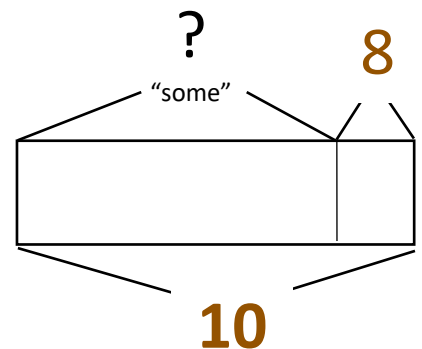
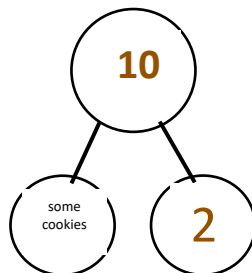
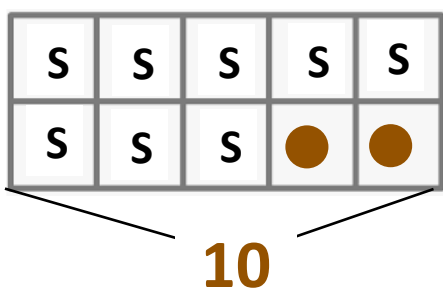
Now he has 10 cookies.

How many cookies did Leo start with?



**Think:** Do I know the **total** cookies? Do I know a **part** of the cookies?

Ways to **model** the story in order of sophistication:



Equation that represents story problem  **$? + 2 = 10$**   $\rightarrow$   **$2 + ? = 10$**

$$10 - 2 = ?$$

**This is another *level 2* story problem.** This problem involves finding all the combinations of a total.

“I need to find ***both parts*** that ***total 10.***”

Mrs. Bisceglia has 10 fruits in a basket.

Some fruits are apples.

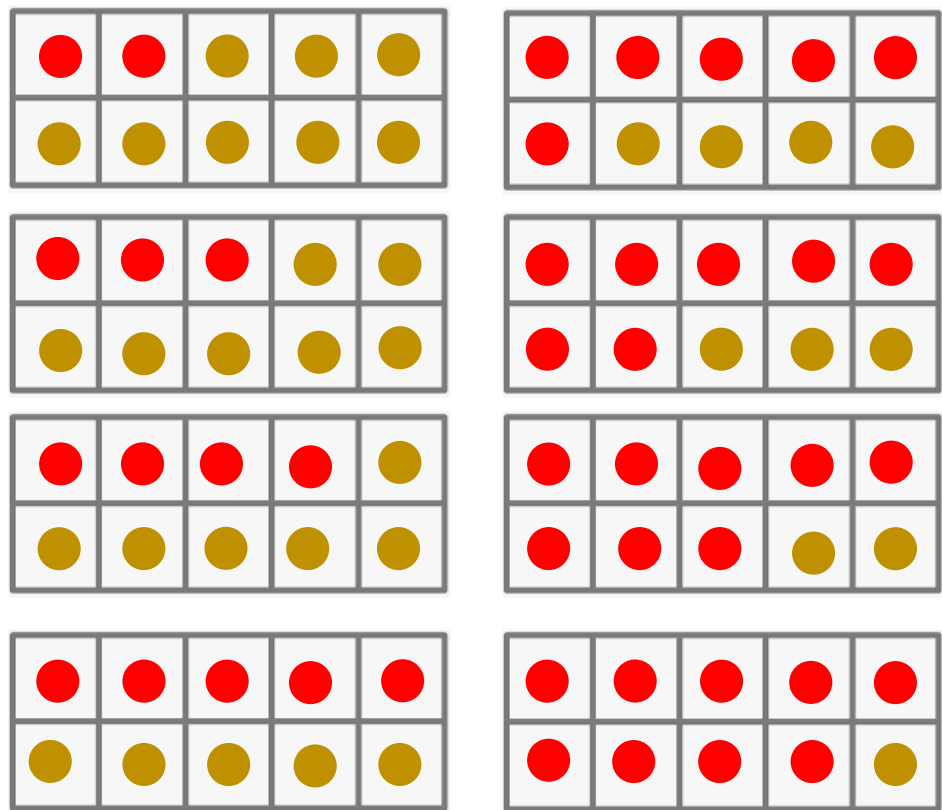
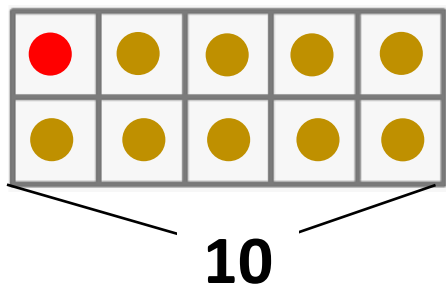
Some fruits are bananas.

How many of each fruit could she have?



**Think:** How many ways could I show 2 sets of fruits?

Ways to **model** the story in order of sophistication:



| 10 total fruits |         |
|-----------------|---------|
| apples          | bananas |
| 1               | 9       |
| 2               | 8       |
| 3               | 7       |
| 4               | 6       |
| 5               | 5       |
| 6               | 4       |
| 7               | 3       |
| 8               | 2       |
| 9               | 1       |

These are **level 3 compare** story problems. This is the **most challenging** of the 3 levels of story problems.

When you **compare** you are trying to figure out the *difference between 2 quantities* (amounts).

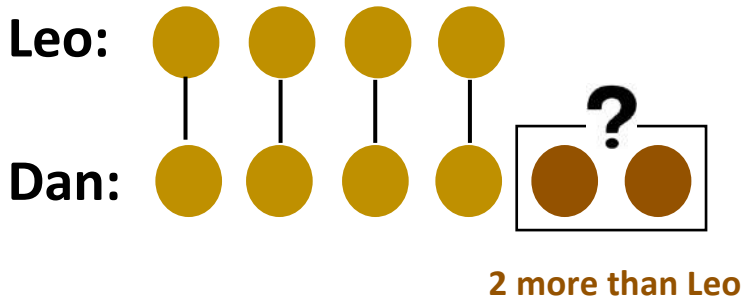
Leo has 4 crackers.

Dan has 6 crackers.

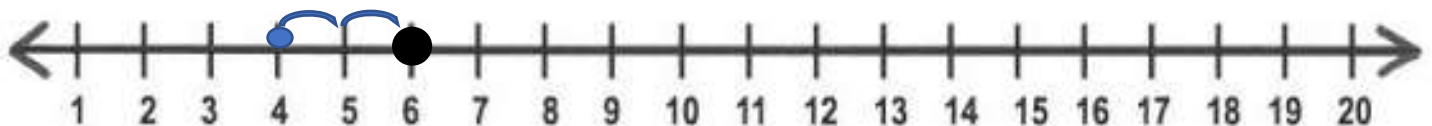
How many more crackers does Dan have than Leo?



**Think:** When I compare, both amounts are the same at some point.



**Think:** *6 crackers* are different from *4 crackers* because it *has 2 more* crackers.



Equation that represents story problem  **$6 - 2 = ?$  (4)**

This is another **level 3 compare** story problem.

When you **compare** you are trying to figure out the *difference between 2 quantities* (amounts).

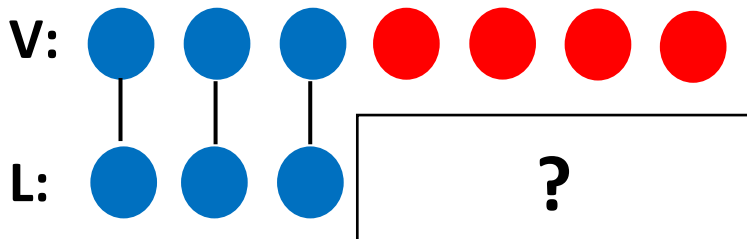
Valentina has 7 stickers.

Leo has 3 stickers.

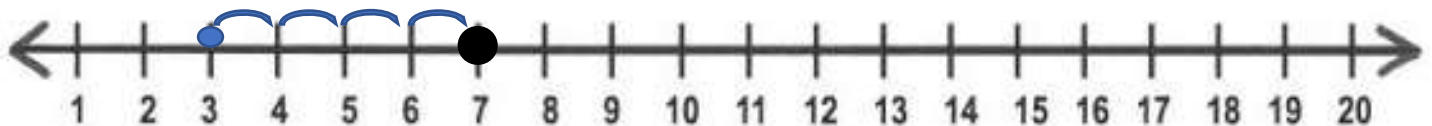
How many fewer stickers does Leo have than Valentina?



**Think:** How are both amounts of stickers different?



**Think:** *7 stickers* are different from *3 stickers* because there are *4 fewer stickers*.



Equation that represents story problem  **$7 - 4 = ?$**  (3)



This is the most challenging of the **level 3 compare** story problems.

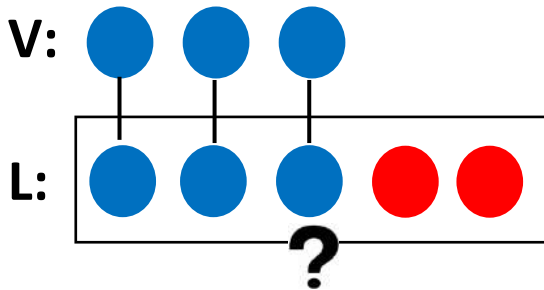
Leo has 2 more cookies than Valentina.

Valentina has 3 cookies.

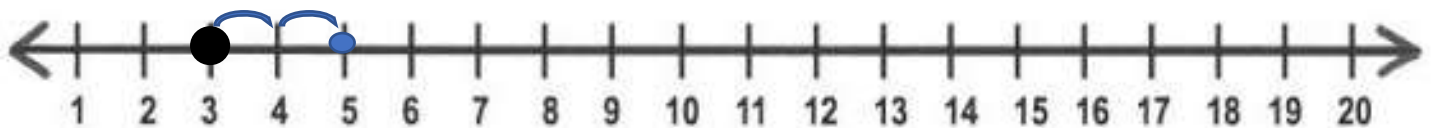
How many cookies does Leo have?



**Think:** I have to use Valentina's total cookies and add 2 more to find Leo's amount.



**Think:** Leo has “2 more” than Valentina's amount.



Equation that represents story problem  **$3 + 2 = ?$**  (5)

This is the most challenging of the **level 3 compare** story problems.

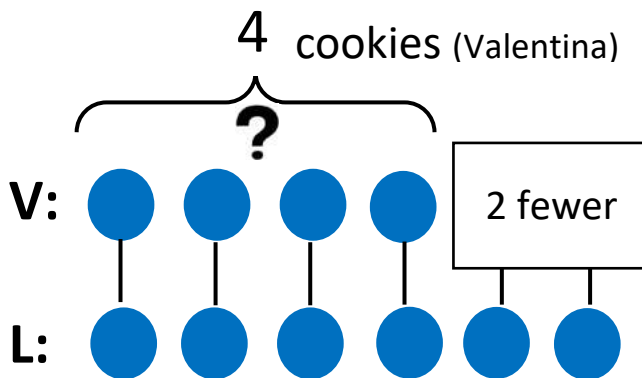
Valentina has 2 fewer cookies than Leo.

Leo has 6 cookies.

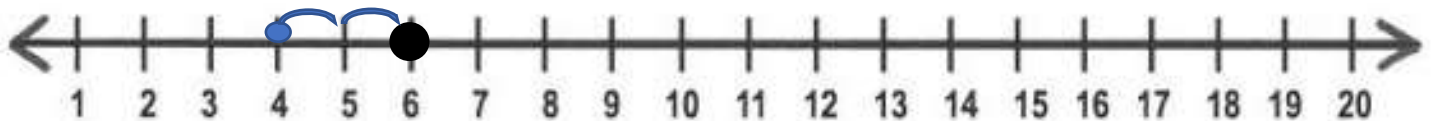
How many cookies does Valentina have?



**Think:** I have to take 2 away from Leo's total because Valentina has 2 less than Leo.



**Think:** Valentina has “2 less” than Leo's total amount.



Equation that represents story problem  **$6 - 2 = ?$**  (4)