Structures of Story Problems
Separate

Structures of Separate Problems

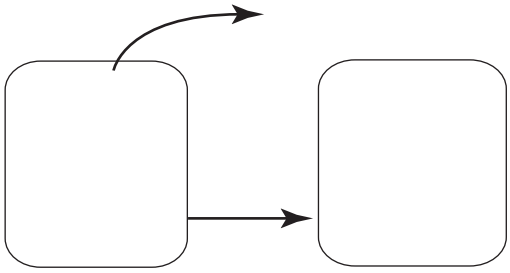
Separate story problems have an action that causes a decrease. These problems have the same three quantities as join problems: the result amount, the change amount, and the initial amount.

When drawing separate problems, teachers should use a consistent format. This format has the three steps described below, but only one final diagram. It is important to note that students may draw a variety of diagrams representing what they do with concrete materials, and these (provided they are logical) should be accepted.

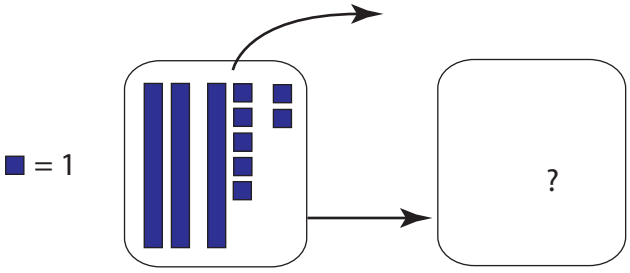
Sample Result Unknown

Kevin had 37 marbles before he went out to recess. During recess he lost 15 marbles. How many marbles does he have left?

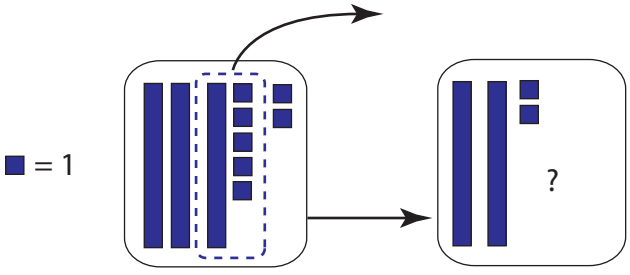
Step 1:
Start with the template for separate problems.



Step 2:
Fill in what I know and use a question mark (?) to indicate the unknown quantity.

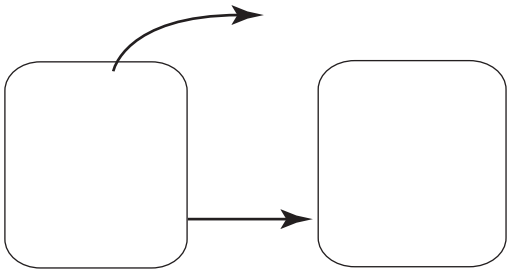
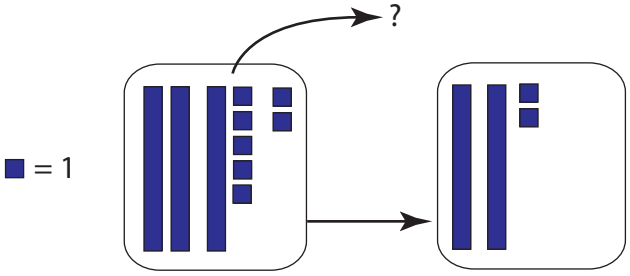
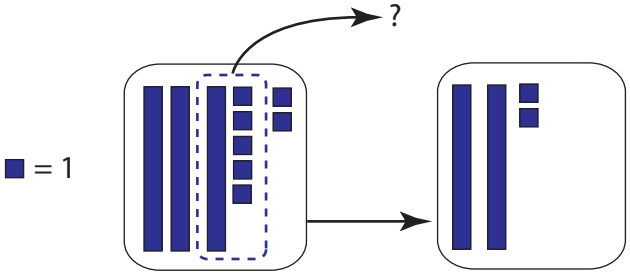


Step 3:
Circle what is separated and fill in the unknown bubble.



Step 3, the final diagram, is all that is seen by the teacher.

Structures of Story Problems
Separate

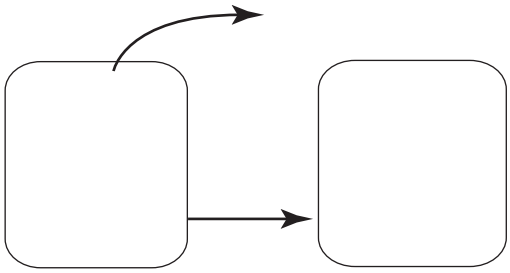
	The same process is used with all three types of separate questions.
Sample Change Unknown	Kevin had 37 marbles before he went out to recess. During recess he lost some marbles. He now has 22 marbles left. How many did he lose during recess? **Step 1:** Start with the template for separate problems.  **Step 2:** Fill in what I know and use a question mark (?) to indicate the unknown quantity.  **Step 3:** Circle what is separated. 

Structures of Story Problems
Separate

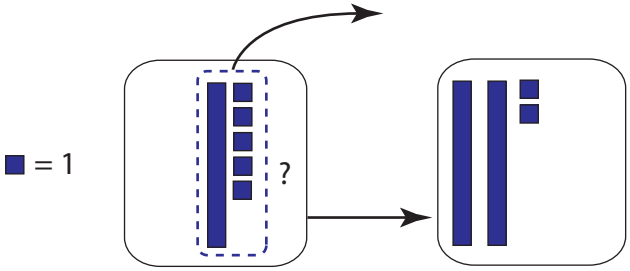
Sample Initial Unknown

Kevin had some marbles before he went out to recess. During recess he lost 15 marbles. He now has 22 marbles left. How many did he have before recess?

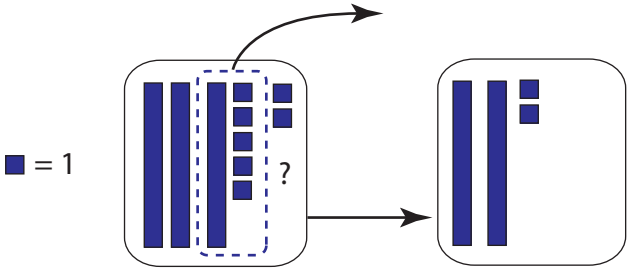
Step 1:
Start with the template for separate problems.



Step 2:
Fill in what I know and use a question mark (?) to indicate the unknown quantity.

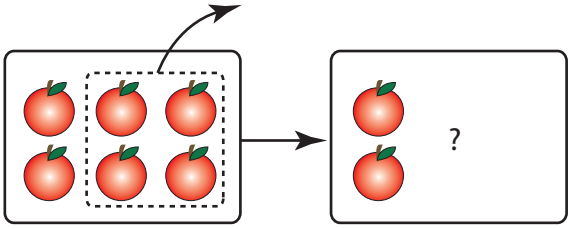


Step 3:
Fill in the unknown.

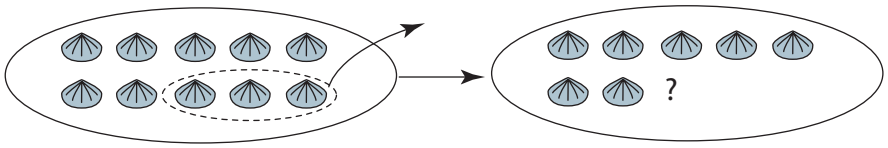
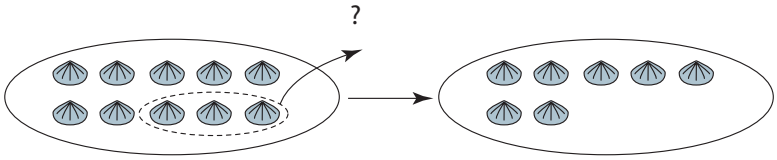
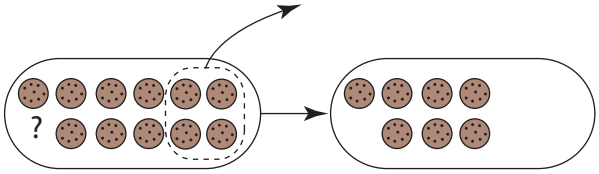


Note:
When completed, the pictures for all three types of separate problems will look the same except for the location of the question mark.

Addition and Subtraction Grade Primary
Separate

Result Unknown	A farmer has 6 apples. She gives away 4 of them. How many does she have left? 
Change Unknown	
Initial Unknown	

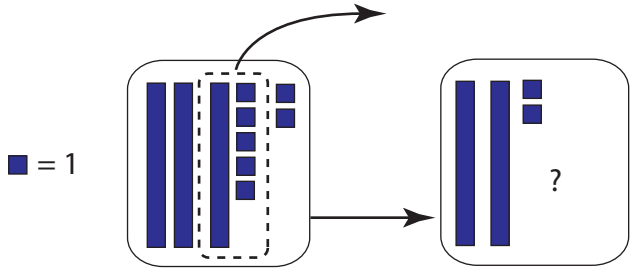
Addition and Subtraction Grade 1
Separate

Structures of Addition and Subtraction	The remaining structures are introduced as students begin to make the connection between addition and subtraction. Students continue using set models and ten frames should also be used extensively.
Result Unknown	Gillian had 10 shells in her bucket. She gave her brother 3 shells. How many does she have left?  **Think Subtraction:** 10 – 3 = (7)
Change Unknown	Gillian had 10 shells in her bucket. She gave some to her brother. Now she has 7 shells left. How many did she give to her brother?  **Think Subtraction:** 10 – (3) = 7 Remove shells from 10 until you have 7 left, so you removed 3 **or** 10 – 7 = (3) Start with 10 and subtract the 7 she has left to find the 3 she gave away
Initial Unknown	Annie had some cookies. She gave Alex 4 of them. Now she has 7 cookies left. How many cookies did Annie have to begin with?  **Think Addition:** 7 + 4 = (11) The 7 that remain, plus the 4 that were given away together total 11 cookies

Addition and Subtraction Grade 2
Separate

Result Unknown

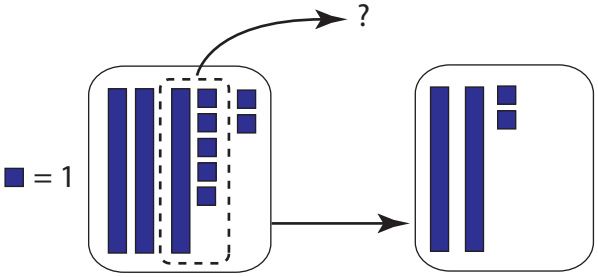
Kevin had 37 marbles before he went out to recess. During recess he lost 15 marbles. How many marbles does he have left?



Think Subtraction:
37 – 15 = (22)
He started with 37 and lost 15, he has 22 left.

Change Unknown

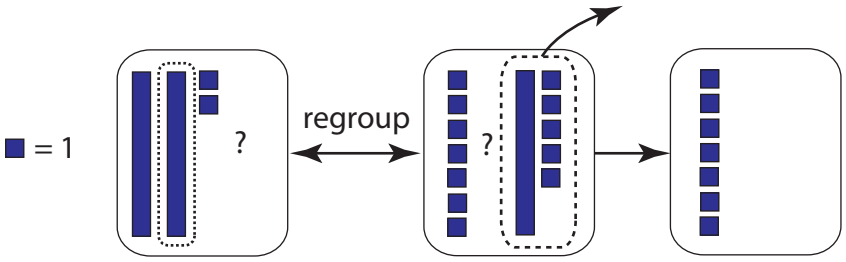
Kevin had 37 marbles before he went out to recess. During recess he lost some marbles. He now has 22 marbles left. How many did he lose during recess?



Think Subtraction:
37 – 22 = (15)
He started with 37 and subtracted the 22 he had left to get the 15 that he lost

Initial Unknown

Kevin had some marbles before he went out to recess. During recess he lost 15 marbles. He now has 7 marbles left. How many did he have before recess?

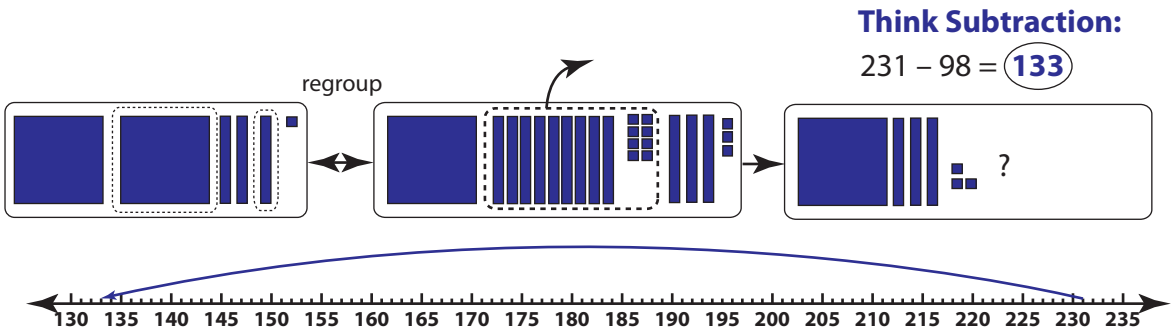


Think Addition:
15 + 7 = (22)
The 7 that he has plus the 15 he lost is what he started with

Addition and Subtraction Grade 3
Separate

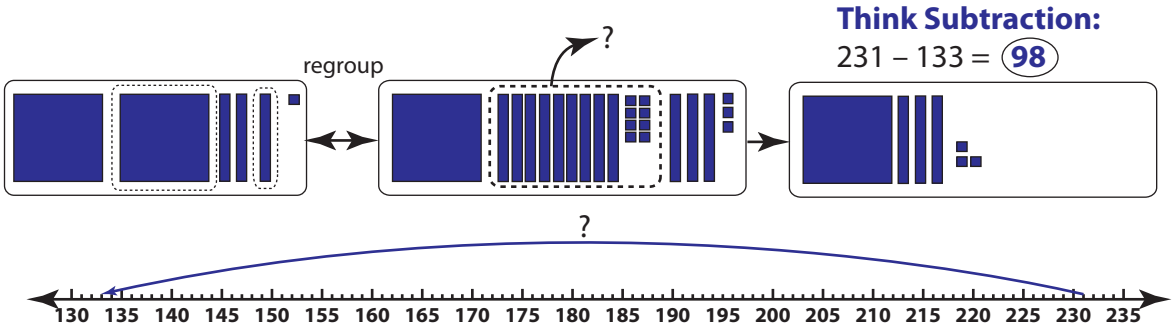
Result Unknown

Carol saved $231 from doing chores. She spent $98 to buy some school clothes. How much money does she have left?



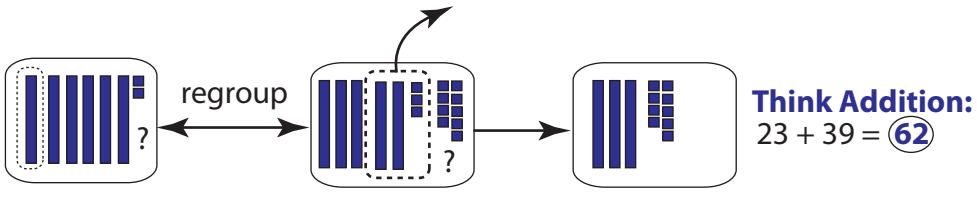
Change Unknown

Carol saved $231 from doing chores. She spent some of it to buy some school clothes. She has $133 left. How much did she spend?

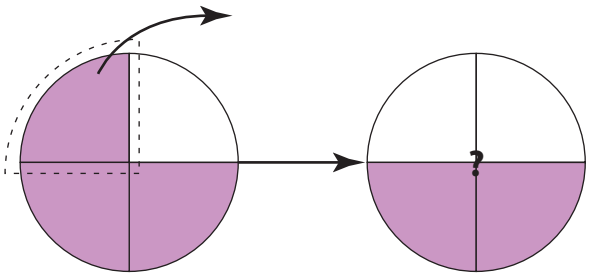
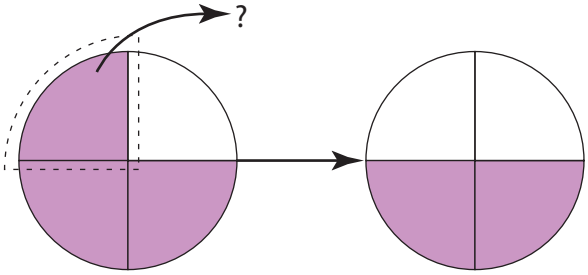
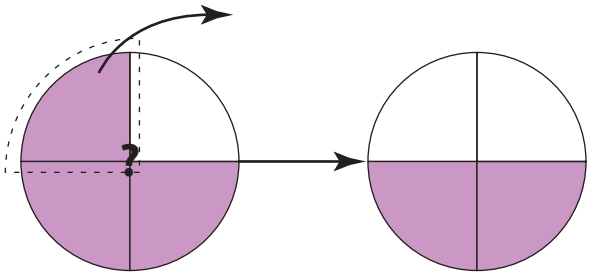


Initial Unknown

Gillian had some shells in her bucket. She gave her brother 23 of them. She has 39 left. How many did she begin with?



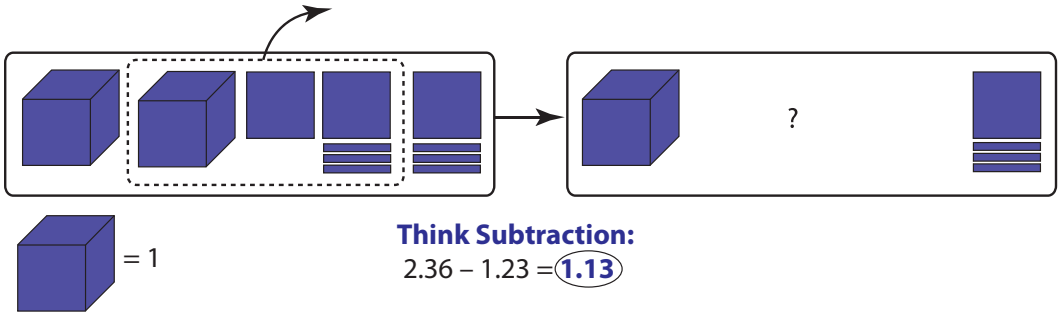
Addition and Subtraction Grade 4
Separate

Result Unknown	Maya had ¾ of a pizza. She gave her friend ¼ of the pizza. How much does she have left?  **Think Subtraction:** $\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$
Change Unknown	Maya had ¾ of a pizza. She gave her friend some of the pizza. She has ²⁄₄ left. How much did she give her friend?  **Think Subtraction:** $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$ **or** $\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$
Initial Unknown	Maya had part of a pizza. She gave her friend ¼ of the pizza. She has ²⁄₄ left for herself. How much did she have to start with?  **Think Addition:** $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

Addition and Subtraction Grade 5
Separate

Result Unknown

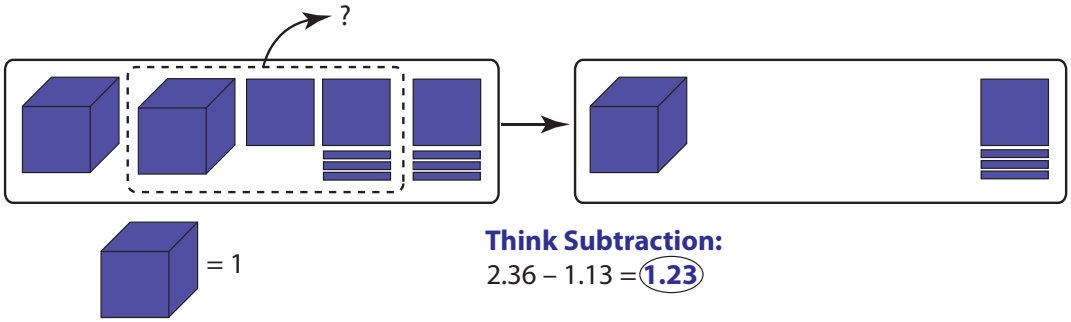
A pile of sugar has a mass of 2.36 kg. If you use 1.23 kg of the sugar, what is left?



Think Subtraction:
2.36 – 1.23 = **1.13**

Change Unknown

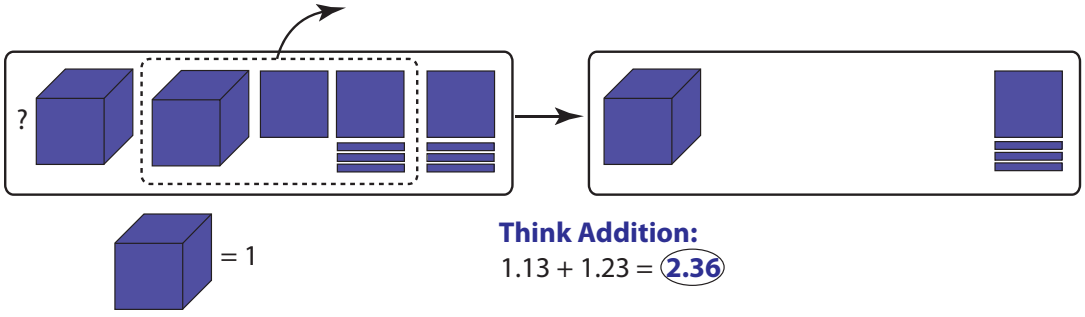
A pile of sugar has a mass of 2.36 kg. If you use some and you have 1.13 kg of the sugar left, how much did you use?



Think Subtraction:
2.36 – 1.13 = **1.23**

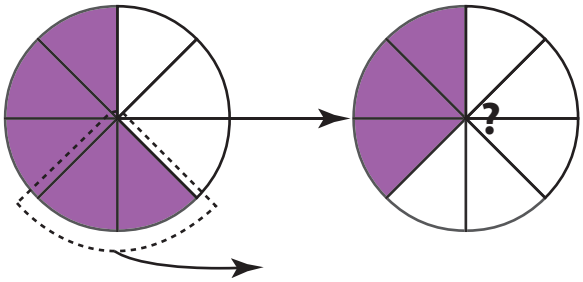
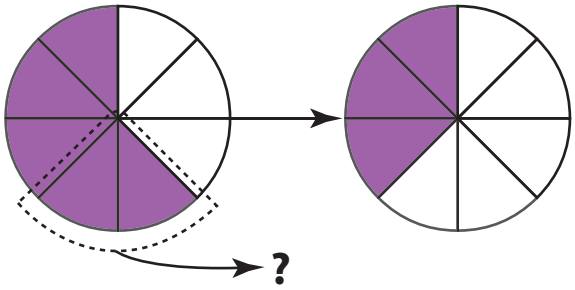
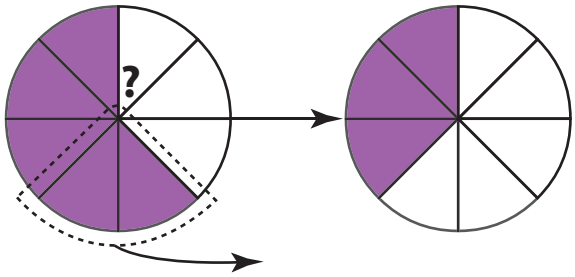
Initial Unknown

You had a pile of sugar. If you use 1.23 kg of the sugar and you have 1.13 kg left over, what was the mass of the original pile?



Think Addition:
1.13 + 1.23 = **2.36**

Addition and Subtraction Grade 6
Separate

Result Unknown	Bob had 5/8 of a pizza. He gave is friend Mike 2/8 of the pizza. How much did he keep for himself?  **Think Subtraction:** $\frac{5}{8} - \frac{2}{8} = \frac{3}{8}$
Change Unknown	Bob had 5/8 of a pizza. He gave is friend Mike some of the pizza. He kept 3/8 for himself. How much did he give Mike?  **Think Subtraction:** $\frac{5}{8} - \frac{3}{8} = \frac{2}{8}$
Initial Unknown	Bob had some pizza. He gave is friend Mike 2/8 of the pizza. He kept 3/8 for himself. How much did he have to start?  **Think Addition:** $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$