

Higher Order Thinking Skills

Primary 5

Lesson 1:

Unit Transfer Method (I)

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LESSON 1: BEFORE & AFTER SCENARIOS

How to Identify?

There are four basic scenarios where the Before and After may be applied.

SINGLE UNCHANGED

	A	B
Before		
Change		
After		

→

TOTAL UNCHANGED

	A	B
Before		
Change		
After		

→

DIFFERENCE UNCHANGED

	A	B
Before		
Change		
After		

→

ALL CHANGING

	A	B
Before		
Change		
After		

→

GUIDED EXAMPLE 1

Single Unchanged

John and Freddy shared some stamps in the ratio of 15:4.
When their friend, Andy gave Freddy another 55 stamps,
the ratio of Freddy's stamp to John's stamps became 3:5.
How many more stamps did John have more than Freddy at first?

GUIDED EXAMPLE 2

Single Unchanged

There are red and green marbles in a bag.
When 75 green marbles are added,
the percentage of red marbles decreases from 30% to 20%.
How many red marbles are there in the bag?

GUIDED EXAMPLE 3

Total Unchanged

Henry and Alice have some saving.
Henry has 45% less than Alice.
If Alice gives \$60 to Henry,
Henry will have 40% less than Alice in the end.
How much did Henry have at first?

GUIDED EXAMPLE 4

Total Unchanged

Denny and Eddie have some stamps in their collection.
Denny has 8% more stamps than Eddie.
Eddie decided to give some stamps to Denny.
As a result, Eddie now has $\frac{1}{7}$ stamps less than Denny.
Given that Eddie has 480 stamps in the end,
find out how many stamps did Eddie give to Denny.

GUIDED EXAMPLE 5

Difference Unchanged

There were a group of children in the park.
One hour later, 30 boys and 30 girls left the park.
As a result, the percentage of boys decreased from 40% to 30%.
How many children were there in the park at first?

GUIDED EXAMPLE 6

Difference Unchanged

William is 30 years older than his niece, Susan.
How old will William be when he is 4 times as old as Susan?

GUIDED EXAMPLE 7

All Changing

Kristin has a box of black pens and a box of red pens.

The number of black pens is twice the number of red pens.

Kristin removes 4 black pens and 3 red pens from the boxes each time.

After a few rounds, there are 18 black pens and 1 red pen left in the two boxes.

What was the total number of pens Kristin has?

(NCPS SA1 Q42)

GUIDED EXAMPLE 8

All Changing

There were 4 times as many red pens as blue pens in a box.
415 red pens and 46 blue pens were removed from the box.
As a result, the number of blue pens became thrice the number of red pens.
How many red pens were there at the end?

3. Henry and Andy collected some coins.
Andy collected 25% more coins than Henry.
If Henry gives 26 coins to Andy,
he will have 50% less than Andy in the end.
Find out how many coins did Andy have at first.
4. At first, the ratio of Sally's savings to Melvin's savings was 7 : 6.
After Sally spent \$52 on a bag,
the ratio of Sally's savings to Melvin's savings became 5 : 8.
What was Melvin's savings at first?

5. Jane and Shirley each had an equal amount of money at first. After Jane gave \$250 to Shirley, the ratio of Jane's money to Shirley's money was 3 : 8. How much money did Jane have in the beginning?
6. Efron is 30 years younger than Danny. The ratio of Danny's age to Efron's age now is 8 : 3. In how many years' time will the ratio of Danny's age to Efron's age be 5 : 3?

7. There were some children in the swimming pool.
The ratio of the number of boys to the number of girls was 3 : 2.
When 20 boys had left, the ratio of the number of boys to the total number of children at first became 7 : 15.
Find the number of boys at the end.
8. Benson had 3 times as many beads as Kingsley.
After Benson gave 45 beads away and Kingsley lost 7 beads,
Kingsley had 3 times as many beads as Benson.
How many beads did Kingsley have in the end?

9. A gardener planted 3 times as many tulips as carnations in the garden. When 12 tulips withered and 48 more carnations were planted in the garden, there was an equal number of each kind of flower. What was the total number of tulips at first?

(Fengshan Pri/P6 Prelim/Q36)

10. There were 55 oranges and 97 mangoes in the carton.
Ali put more oranges and mangoes were put in the carton.
The oranges put in the carton were $\frac{5}{3}$ times as many as the mangoes.
As a result, the number of oranges became $\frac{11}{13}$ as many as the number of mangoes.
Find the number of oranges Ali put in the carton.

11. Shop A has 156 kg of rice. Shop B has 72 kg of rice. After both shops sold an equal amount of rice, the ratio of rice that shop A has to shop B is 4:1. Find the amount of rice sold by each shop.