

# Unit Transfer Method

## Primary 5

Before & After

Lesson 3: Difference Unchanged

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## LESSON 3: DIFFERENCE UNCHANGED QUANTITIES

### DEFINITION

The **difference** in quantity remains unchanged before-change and after-change.

Before: Ali has \$10 and Ben has \$35.

Change: Each of them receives \$3 from their father.

After: Does their Difference in money Before and After changes? (Yes / No)

	Ali	Ben	Diff
Before			
Change			
After			

Conclusion:

#### ▪ Age difference

Before: A is 40 years old and B is 10 years old.

Change: 4 years ago

After: Their age difference remains unchanged.

	Ali	Ben	Diff
Before			
Change			
After			

Conclusion:

**GUIDED EXAMPLE 1**

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Ali is 46 years old.

He is 24 years older than his son.

How many years ago was Ahmad's age 2.5 times his son's age?

**GUIDED EXAMPLE 2**

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In the year 1998, Mike was 18 and his uncle was 46.  
In which year was Mike's uncle 5 times as old as Mike?

**GUIDED EXAMPLE 3**

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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 4**

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Belinda had 159 beads and Emily had 282 beads.  
After both girls gave away an equal number of beads,  
Emily had 2.5 times as many beads as Belinda.  
How many beads did Belinda have in the end?

**GUIDED EXAMPLE 5**

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The number of pupils in the soccer club was 4 times the number of pupils in golf club.  
After an equal number of pupils joined each club,  
there were 0.5 times as many pupils in the golf club as there were in the soccer club.  
If there were 30 pupils in the golf club now,  
find how many pupils were there in the soccer club at first?



**GUIDED EXAMPLE 6**

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Jug A contained 2.8 litres of water.

Jug B contained 4.4 litres of water.

After an equal amount of water was removed from each jug,

Jug A now had  $\frac{1}{5}$  as much water as Jug B.

How much water was there in both jugs in the end?

**BUILD YOUR UNDERSTANDING**

1. Naomi is 26 years old.  
She is 18 years older than her brother.  
How many years ago was Naomi 4 times as old as her brother?

2. Ravi and Charmaine shared some sweets in the ratio of 9 : 11.  
After both of them gave away 48 sweets each,  
the ratio of Ravi's sweets to that of Charmaine's sweets became 5 : 7.  
How many sweets did they have altogether in the end?

3. Lionel is 3 years old. His father is 28 years older than him.  
In how many years would Lionel be  $\frac{1}{3}$  of his father's age?

4. Ginny baked 116 cookies and Mabel baked 176 cookies.  
After each of them gave away an equal number of cookies,  
Mabel had 7 times as many cookies as Ginny.  
How many cookies did both girls give away altogether?

5. Pauline had \$1143 and Julie had \$1878.  
After spending the same amount of money each,  
the ratio of Pauline's money to Julie's money then became 3 : 10.
- a) How much money did each of them spend?  
b) How much money did they have left altogether?

6. A container contains some red and some green marbles.  
At first, the number of red marbles was 30% that of the number of green marbles.  
After adding 75 marbles of each colour, the number of red marbles becomes 80% that of the green marbles.  
How many marbles of each colour were there at first?