Chapter- 6

Rounding off-Estimation

STUDY NOTES

I am reading this chapter to know:

- Rounding off numbers
- Estimation in number operations
- Story sums on estimation

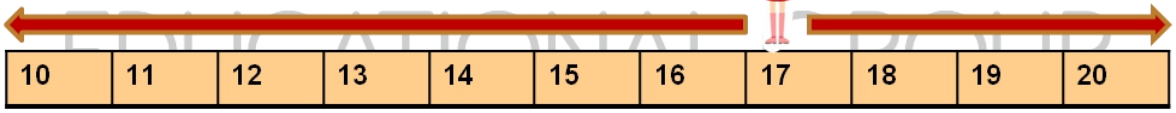
There are a number of situations in which we do not need the exact quantity but need only a reasonable guess or an estimate.For example, while stating how many spectators watched a particular international hockey match, we state the approximate number say 51,000, we do not state the exact number.

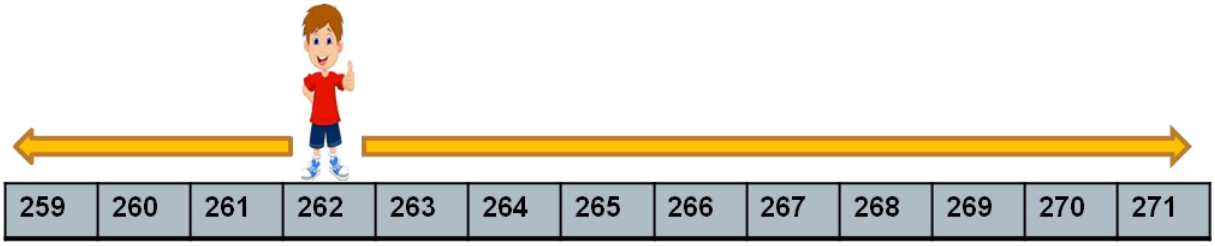
NEWS PAPER

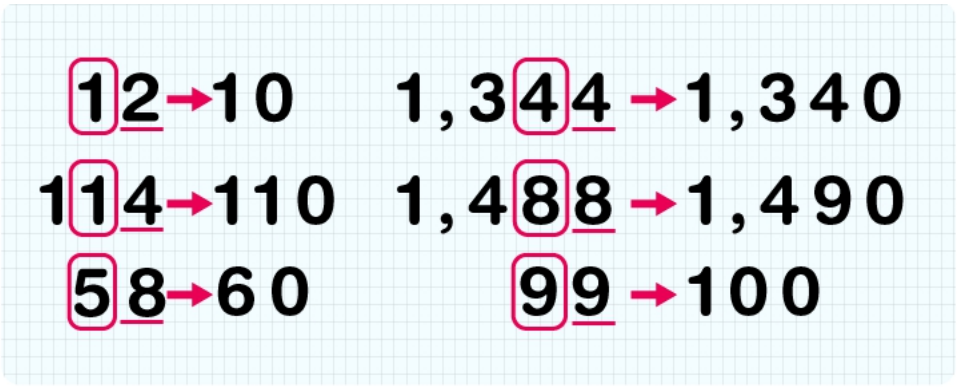
Over 13 million passengers are carried over 63,000 kilometre route of railway track everyday.

Approximately, 2000 people were killed and more than 50000 injured in a cyclonic storm in coastal areas of India and Bangladesh

9000 people watched the match on Sunday.







Rounding Off Large Numbers/Rounding Off Whole Numbers

Rounding off to the nearest 10

If the digit in the ones place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones place by '0'.

Example: 5,817,424 ⟶ 5,817,420 (4<5)

If the digit in the ones place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones digit by '0' and add 1 to the tens place.

Example: 62,75,985 ⟶ 62,75,990 (Here, digit at ones place is = 5)

Rounding off to the nearest 100

If the digit in the tens place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones and tens places by '0'.

Example: 5,817,424 ⟶ 5,817,400 (2<5)

If the digit in the tens place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones and tens places by '0' and add 1 to the hundreds place.

Example: 62,75,885 ⟶ 62,75,900 (8>5)

Rounding off to the nearest 1000

If the digit in the hundred place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones, tens and hundred places by '0'.

Example: 5,817,424 ⟶ 5,817,000 (4<5)

If the digit in the hundreds place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones, tens and hundred places by '0' and add 1 to the thousands place.

Example: 62,75,985 ⟶ 62,76,000 (9>5)

Rounding off to the nearest 10,000

If the digit in the thousands place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones, tens, hundred and thousand places by '0'.

Example: 5,813,424 ⟶ 5,810,000 (3<5)

If the digit in the thousands place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones, tens, hundred and thousands places by '0' and add 1 to the ten thousands place.

Example: 62,75,985 ⟶ 62,80,000 (=5)

Rounding off to the nearest 1,00,000

If the digit in the ten thousands place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones, tens, hundred, thousand and ten thousand places by '0'.

Example: 58,13,424 ⟶ 5,800,000 (1<5)

If the digit in the ten thousands place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones, tens, hundreds, thousands and ten thousands places by '0' and add 1 to the lakh place.

Example: 62,75,985 ⟶ 63,00,000 (7>5)

Estimation helps us to get a general idea about situations involving addition, subtraction, multiplication or division. It can be extremely useful to calculate costs, expenditure, profits, losses, etc. while dealing with the actual numbers.

An estimation is the answer close to the actual answer.

To estimate sum and difference, we first round off each number to the nearest tens, hundreds, thousands or millions and then apply the required mathematical operation.

ACTIVITY

GOOD HABITS !

Piyali and Pallavi wanted to solve the puzzle given in a newspaper. It said :

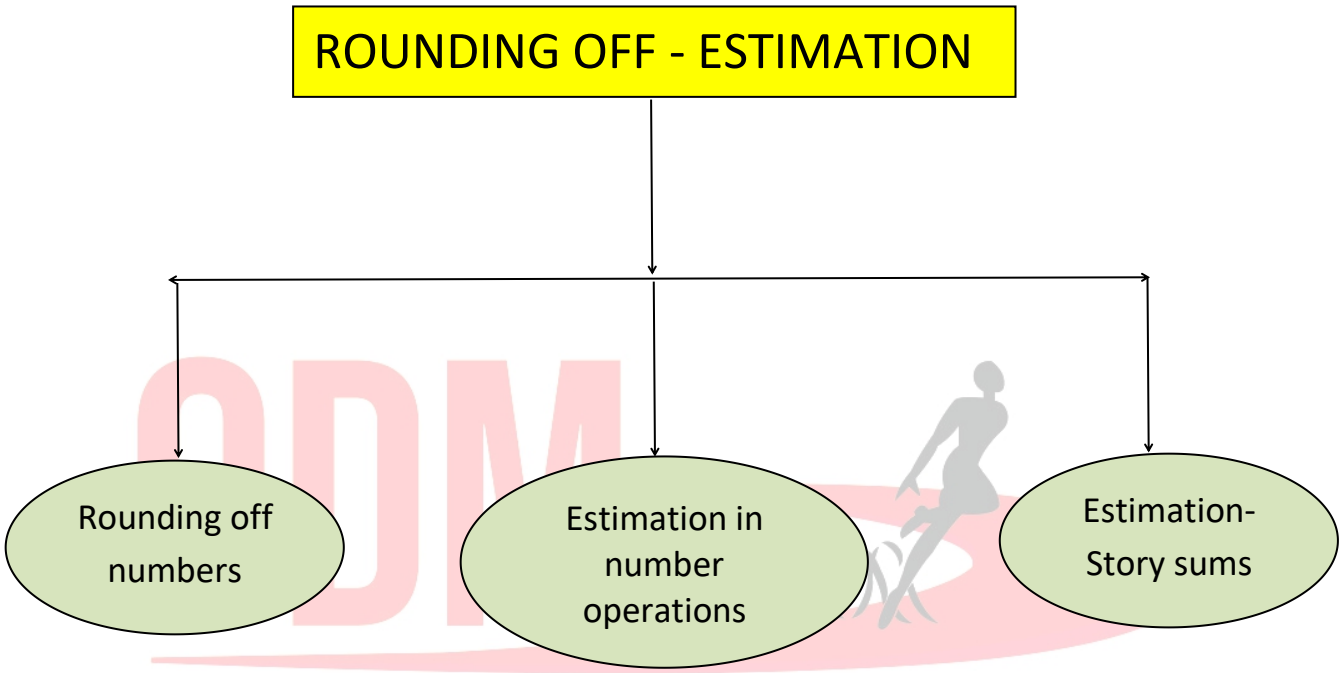
On rounding off the numbers, you will explore a good habit that everyone should adapt.

1. 34,928 (rounded off to nearest ten) ← X
2. 8,52,762 (rounded off to nearest lakh) ← R
3. 2,34,111 (rounded off to nearest hundred) ← E
4. 39,582 (rounded off to nearest 100) ← C
5. 3,92,627 (rounded off to nearest lakh) ← S
6. 1,12,43,312 (rounded off to nearest ten lakh) ← I

The rounded off numbers are written below. Fill in the correct alphabets at the correct places to solve the puzzle.

2,34,100	**34,930**	**2,34,100**	**9,00,000**	**39,600**	**1,10,00,000**	**4,00,000**	**2,34,100**

MIND MAP



IMPORTANT NOTES

Approximation or round-off should be done only when require or asked for. Some times it may not be suitable --

For example :

Suppose you are going on a tour and were to catch a train that leaves at 10:50 a.m. You should not think for approximate time or you might miss the train !