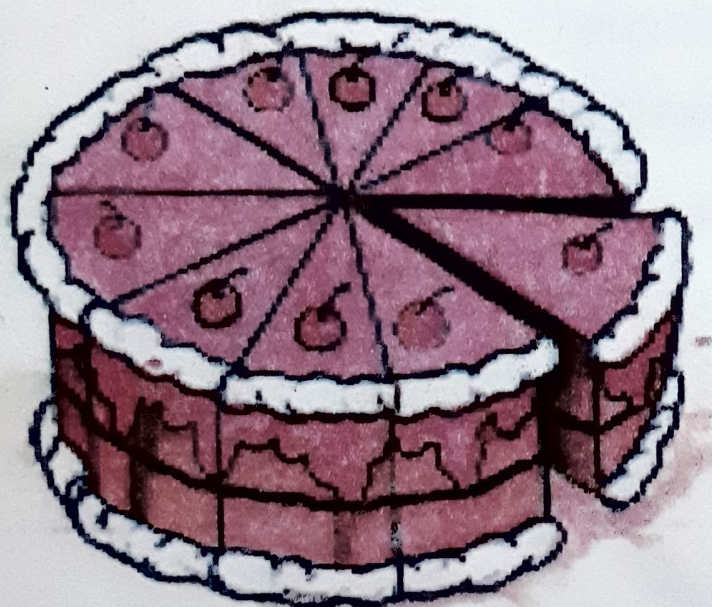
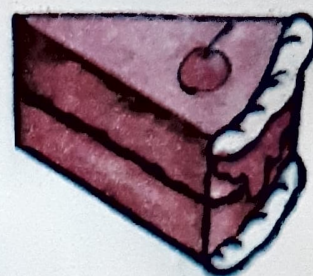


Reading and Writing of the Decimal Number

Like Saniya's birthday, cake was distributed also on Sheela's birthday. Madam asked, has everyone got equal piece of the cake? Everyone said 'yes'. Imagine, what would happen if we had distributed the cake among ten children? Let's see -



total 10 equal parts



1 part

Here, we will write this one part as a fraction $\frac{1}{10}$. In it, the numerator is and the denominator is . This one part is one tenth of that cake which is called tenth or one tenth of the whole.

- This one tenth is written in the form of

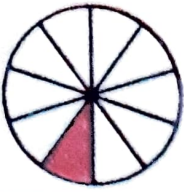
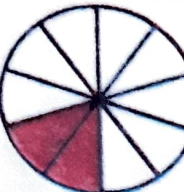
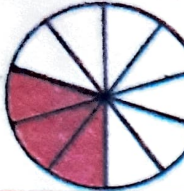
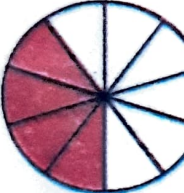
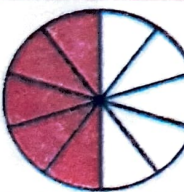


When there is no digit at the place of ones in a decimal number, we write 0 (zero) before the decimal. For example - we write 0.8 for .8.



fraction like this $\frac{1}{10}$

- We write it 0.1 as the decimal number.

Picture	Number	Fraction	Decimal	How to read
	1 tenth	$\frac{1}{10}$	0.1	zero point one
	2 tenth	$\frac{2}{10}$	0.2	zero point two
	3 tenth	$\frac{3}{10}$	0.3	zero point three
	4 tenth	$\frac{4}{10}$	0.4	zero point four
	5 tenth	$\frac{5}{10}$	0.5	zero point five

Now with the help of the table you can tell what would $\frac{1}{10}, \frac{2}{10}, \frac{3}{10}, \dots, \frac{9}{10}$

be called? How would we read and write it as a decimal fraction?

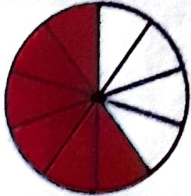
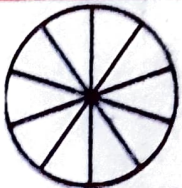
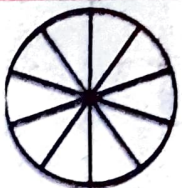
We saw that-

Decimal is like a point (.) which is put in the middle of the ones and tenth digit.





Look, understand and complete it -

Decimal	Read as	Fraction	Number	picture
0.6	zero point six	$\frac{6}{10}$	6 tenths	
0.5	zero point five	_____	_____	
_____	_____	$\frac{4}{10}$	_____	
_____	Zero point eight	_____	8 tenths	
0.9	_____	$\frac{9}{10}$	9 tenths	

Understanding of the hundredths and thousandths place -

Today while discussing in the mathematics class our teacher told us, when we divide an object in 10 equal parts, each part of that object is called its one tenth. Similarly, if an object has 100 equal parts, each part of that object is called its hundredth part.



Let's see and understand -

This is a box with hundred equal blocks.

Sir asked Rani- Out of these hundred blocks, one block is coloured. What part will the coloured block represent out of these hundred blocks ?

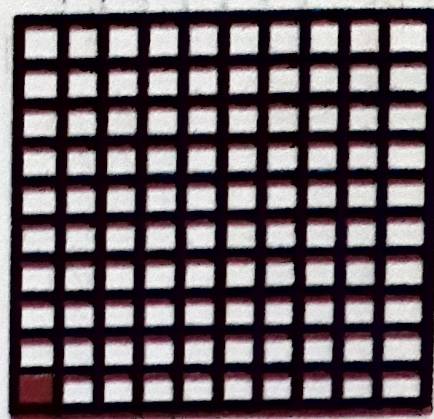
Rani - One hundredth part.

Sir - Well done! Farida, how will you write it in the form of a fraction?

Farida- $\frac{1}{100}$

Sir - Very good! Deepu, how will you write it in the form of decimal?

Deepu- 0.01



Let's see and understand -

No. of coloured blocks in hundred equal blocks	Number	Fraction	Decimal	Read as
1 coloured block	1 hundredth	$\frac{1}{100}$	0.01	zero point zero one
2 coloured blocks	2 hundredths	$\frac{2}{100}$	0.02	zero point zero two
10 coloured blocks	10 hundredths	$\frac{10}{100}$	0.10	zero point one zero
11 coloured blocks	11 hundredths	$\frac{11}{100}$	0.11	zero point one one
99 coloured blocks	99 hundredths	$\frac{99}{100}$	0.99	zero point nine nine

In this way we should develop the understanding of thousandths, ten thousandths and more decimal fraction numbers.



Look, understand and complete it -

Number	Fraction	Decimal	Read as	In the picture
1 hundredth	$\frac{1}{100}$	0.01	zero point zero one	in hundred equal blocks  coloured block
25 hundredths	_____	_____	_____	in hundred equal blocks  coloured blocks
98 hundredths	_____	_____	_____	in hundred equal blocks  coloured blocks
1 thousandths	$\frac{1}{1000}$	0.001	zero point zero zero one	in 1000 equal blocks  coloured blocks
100 thousandths	_____	_____	_____	in 1000 equal blocks  coloured blocks
999 thousandths	_____	0.999	zero point nine nine nine	in 1000 equal blocks  coloured blocks

Expanded form of the decimal numbers-

Let's make place value chart to understand the expanded form of the decimal numbers.

Suppose, number 45.63 is to be expanded.

Let's show it in the place value chart -

According to the place value the expanded form of 45.63

Tens	Ones	Tenths	Hundredths
10	1	$\frac{1}{10}$	$\frac{1}{100}$

Tens	Ones	Tenths	Hundredths
4	5	6	3

$$\begin{aligned}
 & 4 \text{ tens} + 5 \text{ ones} + 6 \text{ tenths} + 3 \text{ hundredths} \\
 \text{or} & 4 \times 10 + 5 \times 1 + 6 \times \frac{1}{10} + 3 \times \frac{1}{100} \\
 \text{or} & 40 + 5 + \frac{6}{10} + \frac{3}{100} \\
 \text{or} & 45 + 0.6 + 0.03
 \end{aligned}$$

It is the expanded form of 45.63



Let's see this too-

Converting expanded form into decimal fraction number-

$$200 + 40 + 8 + 8 \text{ tenths} + 9 \text{ hundredths}$$

Solution- $200 + 40 + 8 + 8 \text{ tenths} + 9 \text{ hundredths}$

$$= 200 + 40 + 8 + \frac{8}{10} + \frac{9}{100}$$

$$= 200 + 40 + 8 + 0.8 + 0.09$$

$$= 248 + 0.8 + 0.09$$

$$= 248.89$$

We read it like this-

Two hundred forty eight point eight nine, not as two hundred forty eight point eighty nine.



Do it yourself

1- Write the expanded form of decimal fraction numbers given below-

(a) 40.023

(b) 97.123

(c) 107.23

2- Show the given decimal fraction numbers in the place value chart-

(a) 473.374

(b) 20.02

(c) 97.78

We have learnt

- Whole numbers are written to the left side of the decimal.
- Numbers written after the decimal are read separately.
- If there is no whole number to the left side of the decimal, we write zero at that place.
- Identifying the tenths, hundredths, and thousandths places in decimal numbers and finding their values.





Exercise

1- Write the decimal fraction of the numbers given in expanded form-

(a) $\frac{7}{10} + \frac{3}{100}$ (b) $60 + 3 + \frac{1}{10} + \frac{9}{100}$ (c) $8 + \frac{0}{10} + \frac{3}{100}$

2- Write the expanded form of the decimal fraction numbers given below-

(a) 0.035 (b) 74.62 (c) 40.624

3- Convert the given decimal numbers into fractions-

(a) 0.59 (b) 0.78 (c) 0.07 (d) 0.045

4- Convert the given fraction numbers into decimal numbers-

(a) $\frac{8}{10}$ (b) $\frac{9}{100}$ (c) $\frac{28}{100}$ (d) $\frac{12}{1000}$

5- Write in numbers-

(a) Thirteen point nine five (b) Seven point zero three
(c) Zero point seven three nine (d) One hundred seventeen point seven one

6- Write the digit of the given place values in 65.479-

(a) Tenths place (b) Hundredths place (c) Thousandths place

7- Make a place value chart of the decimal fraction numbers given below-

(a) 1.578

(b) 63.04

(c) 5.001

(d) 51.021