BAL BHARATI PUBLIC SCHOOL, PITAMPURA

SUBJECT: - MATHEMATICS

CLASS: - VI

WEEK: 12th October'20 to 16th October 20

NO. OF BLOCKS :3

CH -7: FRACTIONS

GUIDELINES

Dear Students

Kindly refer to the following notes/video links for the Chapter- "FRACTIONS" PART -3 and thereafter do the questions in your Mathematics notebook.

NOTE- Students can download the NCERT textbook using

the following link: -

http://ncert.nic.in/textbook/textbook.htm?hemh1=0-16

Subtopics:

1) Addition of Unlike Fractions
2) Subtraction of Unlike Fractions
3) Word problems

Learning Outcomes :

Each Student will be able to

(i)   Differentiate between like and unlike fractions

(ii)   Addition and Subtraction of Unlike fractions

Teaching Aids used :

E-lesson

Whiteboard or register using Device Camera

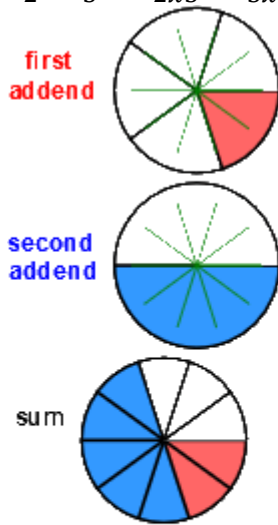YouTube videos

Khan Academy link

LESSON DEVELOPMENT

SUBTOPIC 1

ADDITION OF UNLIIKE FRACTIONS

We have learnt to add and subtract like fractions. It is also not very difficult to add fractions that do not have the same denominator. When we have to add fractions we first find equivalent fractions with the same denominator and then proceed.

For example , Add : $\frac{1}{2} + \frac{1}{5}$

$$\frac{1}{2} + \frac{1}{5} = \frac{1 \, x5}{2x5} + \frac{1x2}{5x2} = \frac{5}{10} + \frac{2}{10} = \frac{5+2}{10} = \frac{7}{10}$$

first addend

second addend

sum

$$\frac{1}{5} \quad + \quad \frac{1}{2} \quad = \quad \frac{(2+5)}{10} \quad = \quad \frac{7}{10} \quad = \quad \frac{7}{10}$$

first addend   second addend   Write with common denominator 10. Then add.   Simplify
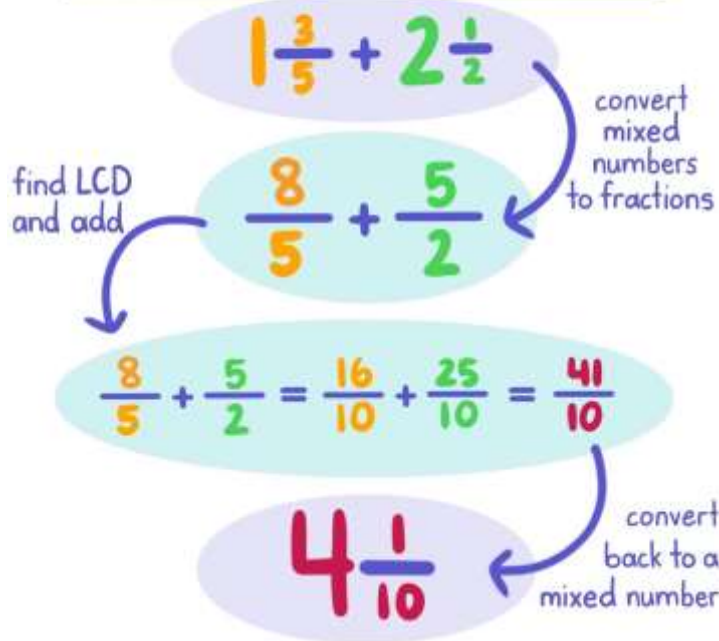
Addition of Unlike Fractions

Add $\frac{1}{2}$, $\frac{2}{3}$ and $\frac{4}{7}$.

Solution:

Let us find the LCM of the denominators 2, 3 and 7.

The LCM of 2, 3 and 7 is 42.

$$\frac{1}{2} = \frac{1 \times 21}{2 \times 21} = \frac{21}{42}$$

$$\frac{2}{3} = \frac{2 \times 14}{3 \times 14} = \frac{28}{42}$$

$$\frac{4}{7} = \frac{4 \times 6}{7 \times 6} = \frac{24}{42}$$

Now, $\frac{21}{42} + \frac{28}{42} + \frac{24}{42}$

$$= \frac{21+28+24}{42}$$

$$= \frac{73}{42}$$

Adding Mixed Numbers

$$1\tfrac{3}{5} + 2\tfrac{1}{2}$$

convert mixed numbers to fractions

$$\frac{8}{5} + \frac{5}{2}$$

find LCD and add

$$\frac{8}{5} + \frac{5}{2} = \frac{16}{10} + \frac{25}{10} = \frac{41}{10}$$

$$4\tfrac{1}{10}$$

convert back to a mixed number

Class Assignment (To be done in Maths practice notebook)

EXERCISE 7.6 : Q1 (a, b ,c , j , l)

a) $\dfrac{2}{3}$, $\dfrac{1}{7}$

b) $\dfrac{3}{10}$ $\dfrac{7}{15}$

c) $\dfrac{4}{9}$, $\dfrac{2}{7}$

i) $\dfrac{1}{2}$, $\dfrac{2}{3}$, $\dfrac{3}{4}$

k) $1\dfrac{2}{3}$, $2\dfrac{1}{3}$

Home Assignment (to be done in Maths Notebook)

EXERCISE 7.6 : Q1 (d ,e ,f , j ,l)

Refer to the following link :   Addition of Unlike fractions

BLOCK II

LESSON DEVELOPMENT

Subtraction of Unlike fractions

The difference of two or more like Unlike fractions can be obtained as follows :

Let us, thus, subtract $\frac{3}{4}$ **and** $\frac{2}{5}$

We have $\frac{3}{4}$ - $\frac{2}{5}$ **=** $\frac{3 \times 5}{4 \times 5}$ - $\frac{2 \times 4}{5 \times 4}$ **=** $\frac{15-8}{4 \times 5}$ **=** $\frac{7}{20}$

Subtract Unlike Fractions

$$\frac{2}{3} - \frac{1}{4} = \frac{2 \times 4}{3 \times 4} + \frac{1 \times 3}{4 \times 3}$$

$$= \frac{8}{12} - \frac{3}{12}$$

$$= \frac{5}{12}$$

$\frac{2}{3}$

$$= \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

$\frac{1}{4}$

$$= \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$$

Subtraction of Unlike Fractions

Subtract $\frac{3}{8}$ from $\frac{5}{12}$.

Let us find the LCM of denominators
8 and 12. LCM is 24.

$\frac{3}{8} = \frac{3 \times 3}{8 \times 3} = \frac{9}{24}$ and

$\frac{5}{12} = \frac{5 \times 2}{12 \times 2} = \frac{10}{24}$

Now, subtract $\frac{9}{24}$ and $\frac{10}{24}$.

$\frac{10}{24} - \frac{9}{24} = \frac{10-9}{24} = \frac{1}{24}$

$$3\frac{2}{5} - 1\frac{4}{7} = \frac{17}{5} - \frac{11}{7}$$

change to improper fractions

$$= \frac{17 \times 7}{5 \times 7} - \frac{11 \times 5}{7 \times 5} = \frac{119}{35} - \frac{55}{35}$$

change to the LCD of 35

$$= \frac{119 - 55}{35} = \frac{64}{35}$$

Refer to the following link :

https://www.youtube.com/watch?v=2DPivVFCdqA
https://www.youtube.com/watch?v=N21Wh4Jqftc

Class Assignment (To be done in Math practice notebook)

EXERCISE 7.6 : Q1 (g , h)

Q1 (g) $\frac{3}{4}$ - $\frac{1}{3}$

(h) $\frac{5}{6}$ - $\frac{1}{3}$

Home Assignment (to be done in Math fair Notebook)

EXERCISE 7.6 : Q 1 (m , n)

BLOCK III
LESSON DEVELOPMENT

Word problems based on addition and subtraction of Unlike fractions

The students will understand the given statement and analyse the steps of Working.

Q3. Naina was given $1\frac{1}{2}$ piece of cake and Najma was given $1\frac{1}{3}$ piece of cake. Find the total amount of cake was given to both of them.

Solution

Piece of cake given to Naina = $1\dfrac{1}{2}$

Piece of cake given to Najma = $1\dfrac{1}{3}$

Piece of cake given to Naina and Najma = $1\dfrac{1}{2} + 1\dfrac{1}{3} = \dfrac{3}{2} + \dfrac{4}{3}$

$$= \dfrac{3 \times 3}{2 \times 3} + \dfrac{4 \times 2}{3 \times 2}$$

$$= \dfrac{9}{6} + \dfrac{8}{6} = \dfrac{17}{6} = 2\dfrac{5}{6}$$

Hence the total amount of piece given to both = $2\dfrac{5}{6}$

4. Fill in the boxes:

(a) □ − 5 / 8 = 1 / 4

(b) □ − 1 / 5 = 1 / 2

Solutions:

(a) □ − 5 / 8 = 1 / 4

□ = 1 / 4 + 5 / 8

□ = [(1 × 2 + 5)] / 8

□ = 7 / 8

(b) □ − 1 / 5 = 1 / 2

□ = 1 / 2 + 1 / 5

□ = [(1 × 5) + (1 × 2)] / 10

□ = (5 + 2) / 10 = 7 / 10

7. Nandini's house is 9 / 10 km from her school. She walked some distance and then took a bus for 1 / 2 km to reach the school. How far did she walk?

Solutions:

Distance of the school from house = 9 / 10 km

Distance she travelled by bus = 1 / 2 km

Distance walked by Nandini = Total distance of the school – Distance she travelled by bus

= 9 / 10 – 1 / 2

= [(9 × 1) – (1 × 5)] / 10

= (9 – 5) / 10 = 4 / 10 = 2 / 5 km

∴ Distance walked by Nandini is 2 / 5 km

Class Assignment (To be done in Maths practice notebook)
EXERCISE 7.6 : Q 3 , 7 , 9

Home Assignment (to be done in Maths fair Notebook)
EXERCISE 7.6 : Q 2 , 6 , 8

Refer to the link

1. https://www.youtube.com/watch?v=ZmqsOLx9_bY&feature=youtu.be
2. https://www.youtube.com/watch?v=PKh5B9xyzSc&vl=en

Summary

1. Fractions which have the same denominator are called like fractions. Fractions which have different denominators are called unlike fractions.
2. Addition and Subtraction of Unlike fractions

If the numerator and denominator both are different then we have to make the denominator same by finding the equivalent fraction of both the fractions then compare the fractions as like fractions. Unlike fractions can be added or subtracted .

Practice Assignment

1. https://reviewgamezone.com/mc/candidate/test/?test_id=16537&title=Adding%20And%20Subtracting%20Fractions

1. On Monday, Erin wrote $4\frac{2}{3}$ pages of her research paper. On Tuesday, she decided to delete $1\frac{1}{5}$ pages. How many pages are left?

a) $3\frac{7}{15}$

b) $3\frac{1}{3}$

c) $4\frac{1}{15}$

d) $2\frac{7}{10}$

2. **Farran purchased a carton of milk. She drank 1/8 of the carton. How much of the carton of milk does Farran have left?**

a) 7/8

b) ½

c) ¼

d) 3/4

Q 3 - Add $\dfrac{2}{5} + \dfrac{3}{8}$

A $\dfrac{31}{40}$

B $\dfrac{29}{40}$

C $\dfrac{33}{40}$

D $\dfrac{37}{40}$

Q 4 - Subtract $\dfrac{5}{8} - \dfrac{7}{12}$

A $\dfrac{5}{24}$

B $\dfrac{1}{24}$

C $\dfrac{3}{24}$

D

Q 5 - Add $\dfrac{2}{7} + \dfrac{3}{8}$

A $\dfrac{31}{56}$

B $\dfrac{35}{56}$

C $\frac{37}{56}$

D $\frac{39}{56}$

Q 6 - Subtract $\frac{6}{5} - \frac{5}{7}$

A $\frac{15}{35}$

B $\frac{17}{35}$

C $\frac{19}{35}$

D $\frac{22}{35}$