Vision Empower & XRCVC
Teacher Instruction KIT

Fractions

Syllabus: Karnataka State Board
Subject: Mathematics
Grade: 6
Textbook Name: Math Text cum workbook
Chapter Number & Name: 7. Fractions

1. OVERVIEW
1.1 OBJECTIVE AND PREREQUISITES

Objective
Students will be able to:
- Find the equivalent fraction for any fractional numbers.
- Compare two fractional numbers.
- Convert improper fractions into mixed fractions.

Prerequisite Concept
- Writing in fraction form, locating fractions on the number line and comparing fractions.
  TIK_MATH_G6_CH5_Fractions

Content Index
*Kindly Note: Activities marked with * are mandatory*

3.3   LET'S DISCUSS: RELATE TO DAILY LIFE
4.   EXERCISES & REINFORCEMENT
4.1 PRACTICE EXERCISES
        Activity 7: Practice and recall

4.2   IMPORTANT GUIDELINES
            name : Fractions

            run : 2019

            org : VisionEmpower

            number: VE_TIK_M_G6-7

            user: admin@example.com

2. LEARN
2.1 KEY POINTS

- A fraction is a number representing part of a whole.
- Fraction: A basic way to interpret a fraction (common fraction) is by dividing a whole object into several equal parts. The denominator tells how many equal parts the whole is subdivided into. The numerator tells the number of those parts that are under consideration.
- Equivalent fraction: Equivalent fractions are different fractions that name the same number. Examples: Two-thirds is equivalent to four-sixths.
- Mixed fraction: A mixed number is a combination of a whole number and a fraction. For example, if you have two whole apples and one-half apple, you could describe this as $2 + \dfrac{1}{2}$ apples, or $2 + \dfrac{1}{2}$ apples.

2.2 LEARN MORE - None

3. ENGAGE
3.1 INTEREST GENERATION ACTIVITY

Activity 1: Activity Name
Materials Required: None
Prerequisites: Fractional representation.

Activity Flow

- *Ask the following questions to the students*
1. *How will you give 4 chapatis equally to 4 people? How many chapatis will each get?*
2. *How will you give 4 chapatis equally to 8 people?*
   Dividing each chapati into 2 pieces, so each will get 1 piece.
3. *Geetha has 3 chapatis in her tiffin box. How will she share 3 chapatis with her friend Meena? How many full chapatis will each one get?*
4. *Children made 8 paper balls.*
   a. *Geetha threw three paper balls. What fraction did she throw? The answer is $\frac{3}{8}$.*

      Explain to the students, out of 8 balls she threw three balls so the fractional representation is $\frac{3}{8}$.

   b. *Jake threw two paper balls. What fraction did he throw? The answer is $\frac{2}{8}$.*

   c. *Meena threw 1 paper ball. What fraction did she throw? The answer is $\frac{1}{8}$.*

   d. *What fraction is left? The answer is $\frac{2}{8}$.*

3.2 CONCEPT INTRODUCTION ACTIVITIES

FRACTION

Activity 2: Introducing the concept of fraction
Materials Required: Egg cartons, tennis balls/seeds/sand (or anything else to fill up parts of the egg carton)
Prerequisites: Writing in fraction form. Refer to TIK_MATH_G6_CH5_Fraction, Activity 3 and 4

Activity Flow

- *Distribute egg crates to the students (1 per student, if possible). If possible, try to procure egg crates having at least 6 compartments.*
- *Ask them how many compartments or holes they can find in the egg crate.*
- *Distribute the item chosen as a filler: tennis balls, seeds, sand, etc.*
- *Ask the students to fill 3 of the holes with the chosen filler.*
- *If the egg carton is the whole, how many parts have been filled? What is the fraction?*
  - *3 parts have been filled out of 6 compartments then the fractional representation is $\frac{3}{6}$.*

○ *Similarly, make other fractions with egg cartons, until the students understand that a fraction is nothing but parts of a whole.*

Activity 3: Fraction war (Greater and smaller fraction)
Materials Required: Playing Braille cards and ice cream sticks.
Prerequisites: Comparing fractions. Refer to TIK_MATH_G6_CH5_Fraction, Activity 5.

Activity Flow

- *If two fractions have a common denominator, the fraction with the larger numerator is the larger fraction. Ex:* $\dfrac{3}{5} > \dfrac{2}{5}$

- *If two fractions have a common numerator, the fraction with the smaller denominator is larger. Ex:* $\dfrac{1}{4} > \dfrac{1}{8}$

  ● *Shuffle and deal the cards.*
  ● *Each player puts their cards faced down in a pile.*
  ● *Both players turn over TWO cards at the same time and put the ice cream stick in between as the fraction line.*
  ● *The player whose cards has the larger fraction wins all four cards.*
  ● *If players turn over equivalent fractions, then there is a fraction war.*
  ● *Each player places 2 new cards face down and the 3rd & 4th card face up (one above the pencil and one below).*
  ● *Whoever has the higher fraction wins all the cards.*
  ● *The game can continue until one player has all the cards or for a given amount of time.*

EQUIVALENT

Activity 4: Equivalent fractions
Materials Required: Kit Kat or any other food item that can be cut into pieces.
Prerequisites: None

Activity Flow

  ● *Divide the children into 2 groups.*
  ● *Ask 1 group to cut their Kit Kats into 2 halves and ask the fractional representation of each part.*
    ○ $\dfrac{1}{2} + \dfrac{1}{2}$
  ● *Ask the other group to cut theirs into 4 equal halves and ask the fractional representation of each part.*

○ $\dfrac{1}{4} + \dfrac{1}{4} + \dfrac{1}{4} + \dfrac{1}{4}$

● *Now explain to the students, combining two $\dfrac{1}{4}$ parts is equal to $\dfrac{1}{2}$.*

○ $\dfrac{1}{4} + \dfrac{1}{4} = \dfrac{1}{2}$

● *Each child can physically put the Kit Kat together and understand that $\dfrac{2}{4}$ is the same as $\dfrac{1}{2}$.*

○ *combining two $\dfrac{1}{4}$ and comparing with the size of $\dfrac{1}{2}$ (KitKat).*

● *With the help of this example, explain what equivalent fractions are and give more examples.*

To obtain equivalent fraction:

For each fraction, we can find its equivalent fraction by multiplying both numerator and denominator with the same number.

For example,

To find the equivalent fraction of $\dfrac{2}{3}$,

$$\dfrac{2}{3} \times \dfrac{3}{3} = \dfrac{6}{9}$$

$$\dfrac{2}{3} = \dfrac{6}{9}$$

Activity 5: Improper and mixed fractions
Materials Required: Candy/ Toffees
Prerequisites: None

Activity Flow

● *A proper fraction is a number representing part of a whole. In a proper fraction the denominator shows the number of parts into which the whole is divided and the numerator shows the number of parts which have been considered. Therefore, in a proper fraction the numerator is always less than the denominator.*
For example:

A chapatti is divided into four equal pieces. The fractional representation of each piece is $\frac{1}{4}$. Here, the denominator shows the number of parts into which the chapatti is divided and the numerator shows the number of parts which have been considered.

Improper fraction:
- *A fraction where the numerator is greater than the denominator.*

For example,

5 chapati is divided among 4 people so all them had one full chapati and a quarter of the fifth chapati. The fractional representation is $5/4$. Here, the numerator is bigger than the denominator.

Mixed Fraction:
- *A mixed fraction has a combination of a whole and a part. In the above example, each of them had one full chapati and a quarter of the fifth chapati. It can be written as $1\frac{1}{4}$.*

To convert an improper fraction into a mixed fraction:

Let's take the same example $\frac{5}{4}$.

Divide 5 by 4, you will get 1 in the quotient and 1 in the remainder.
i.e. $5 \div 4 = 1\ R\ 1$;
$\frac{5}{4} = 1\frac{1}{4}$

- *Supply the children with a specific number of candies and ask them to manipulate the number to show different improper fractions.*
- *For instance, if you give the children 15 toffees they could make $\frac{8}{7}$ or $\frac{10}{5}$.*
- *Challenge the children to use their toffees to create the smallest improper fraction and largest improper fraction possible.*
- *As an extension activity, have the children convert each improper fraction he creates into a mixed number.*

Activity 6: Modified fraction war
Materials Required: Pack of Braille cards
Prerequisites: None

Activity Flow

- *Before beginning this game, remove all face cards from a deck of cards.*
- *Have each player draw two cards from the deck and create the largest improper fraction possible.*
- *If a player draws two cards that are the same number, one card should be discarded and another card drawn.*
- *The player with the largest improper fraction takes all the cards for that round.*
- *It may be helpful for your child to change the improper fractions to mixed numbers to determine who has the largest fraction. The player with the most cards at the end of the game wins!*

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE

We use fractions in many places.
For example,
- Medicine dosages are often determined with a fraction of parts to weight. For a small child, the doctor prescribes ¼th or ½ of the tablet. For adults, the dosage will be different.
- Every time we cut an apple, an orange, or any kind of fruit, we are taking a piece of the whole.
- Time is commonly measured in fractions.
- We represent exam marks also in fractions. For example, Geetha scored 30 out of 40. i,e $\dfrac{30}{40}$.

4. EXERCISES & REINFORCEMENT

4.1 PRACTICE EXERCISES
Activity 7: Practice and recall
Materials Required: None
Prerequisites: None

Activity Flow

1. *Express the following as mixed fractions:*
   - *a.* $\dfrac{20}{3}$
   - *b.* $\dfrac{11}{5}$

    c. $\dfrac{17}{7}$

    d. $\dfrac{28}{5}$

2. *Find the equivalent fraction of* $\dfrac{3}{5}$.

Teaching Tips
None

References
None

4.2 IMPORTANT GUIDELINES

Exercise Reading
It is very important that the children practice their learnings as well as their Reading. Hence have the children read out the newly learned concepts from their textbooks or other available resources.

Perform Textbook Activity
It is good practice to have the children perform the textbook activities. Your textbook activities might not be accessible hence go through this resource to learn how to make textbook content accessible

Provide Homework
To evaluate their understanding and to help the student revise and implement the new learnt concept ensure to provide them with homework. Students should perform one or two of the questions mentioned above or from the textbook exercises with the teacher in Class and the remaining may be given for homework. Also, ensure that the student knows their special skills linked to independently using their accessible books as it will be critical to doing homework independently

End of Document