Vision Empower & XRCVC

Teacher Instruction KIT

Decimal fractions

Syllabus: Karnataka State Board
Subject: Math
Grade: 5
Textbook Name: Karnataka State Board
Chapter Number & Name: 14. Decimal fractions

1. OVERVIEW

1.1 OBJECTIVE AND PREREQUISITES

Objective

- Understand the relationship between fractions and decimals
- Express fractions as decimals and decimals as fractions
- Understand how to express length, money, weight etc in decimals

Prerequisite Concept

- Fractions and decimals

TIK_MATH_G4 _CH9_Fractions and Decimals

Content Index

*Kindly Note: Activities marked with * are mandatory*

Perform Textbook Activity
Provide Homework

2. LEARN

2.1 KEY POINTS

Fractions and decimals both serve the same purpose of describing parts of a whole, i.e. they are two ways of expressing non-whole values.

A number written with a decimal point is known as decimal fraction or decimal number.

Decimal number is the other way of writing fraction.

A decimal fraction is a fraction whose denominator is 10, 100, 1000...

A point placed between units place and one-tenths place is called the decimal point. It separates the integral part from the fractional part of a decimal number.

The digits to the left of the point are the integral part or whole part.

The digits to the right of the point are the decimal part or fraction part.

The decimal part is less than one whole.

2.2 LEARN MORE

3. ENGAGE

3.1 INTEREST GENERATION ACTIVITY

FRACTIONS

Activity 1: Fractions seeds

Materials required: Seeds/pebbles

*Prerequisites:*Fractions

Activity Flow

Give students a group of 30 or 40 seeds and then ask them to find the fraction of the group of seeds.

Example: What is $2/3$ of 30 seeds? The whole groups of 30 seeds have to divide into 3 equal groups and hence each group will have 10 seeds. Then we have to take 2 groups out of 3 groups. Finally we will have 20 seeds altogether which is $2/3$ of 30.

3.2 CONCEPT INTRODUCTION ACTIVITIES

RELATIONSHIP BETWEEN FRACTIONS AND DECIMALS

Activity 2: Relationship between fractions and decimals

Materials required: Tactile rulers

Prerequisites: To measure the length

Activity Flow

1. Distribute the tactile rulers to the children.

2. If they are not familiar with the device, take a couple of minutes to show them how it works.

3. Explain to them that the distance between any 2 consecutive lines on the device can actually be divided into 10 equal parts.

4. Ask them to slide the small display between any 2 lines slowly and observe the numbers that pop up. Could everybody find numbers from 0 to9? Explain that these are the parts into which the gap between 2 centimetres has been divided.

5. Ask them how they would represent this in the form of a fraction. To represent 1 part out of 10, what would be the numerator and denominator? (1 would be the numerator and 10 the denominator).

6. Now explain that this can be represented in a new way called decimals.

7. Show the children how to convert this fraction ($1/10$) into a decimal.

PARTS OF A DECIMAL

Activity 3: Parts of a decimal

Materials required: Tactile ruler, rubber geometry board, plastic sheet, and stylus.

Prerequisites: Measuring length

Activity Flow

1. Draw a line of 5.5 centimetres. Make as many copies as necessary to distribute 1 per child.

2. Ask children to measure this line. If this is their first time using a caliper to measure, teach them how to use it.

3. Explain that this line has 5 cm and then some more. The line is more than 5 cm but less than 6 cm long. It has 5 whole centimetres or 5 parts of 1 centimetre.

4. Ask them how this can be written in the form of a fraction ($55/10$).

5. Now show them how to write this as a decimal.

6. Explain that the whole number part is written to the left of the decimal point while the fractional parts are written to the right.

CONVERTING DECIMALS INTO FRACTIONS

Activity 4: Converting decimals into fractions

Materials required: None

Prerequisites: Decimals and fractions

Activity Flow

Explain to students that to determine how to write a fraction as a decimal, they need to look at the denominator, or the bottom number in a fraction. The fractions they will use today have denominators of 10 or 100.

2. Tell students to listen to how you say the fraction $53/10$.

3. Ask them to write this fraction on the Taylor Frame.

4. Write the decimal 0.53 *and show it to the children.*

5. Explain that the denominator of 100 tells them to take the digits in the numerator, or the top number, and fill the tenths and hundredths places to get 0.53.

6. Give students the example of $7/10$. *Explain that this denominator of 10 tells them to fill in one digit in the tenths place.*

7. Give a final example of $8/100$. *Explain the use of 0 as a placeholder in the tenths place since both the tenths and hundredths places have to be filled to show* 0.08.

CONVERSION

Activity 5: Conversion war

Materials required: Deck of braille playing cards, playing tray with 2 compartments

Prerequisites: Fraction

Activity Flow

1.Ask the children to sit in pairs.

2.Give each group of students a deck of cards.

3. Separate cards into two piles of face cards and number cards. Put them into the 2 compartments of the tray.

4. Tell students that on their turn, they will draw a number card that will serve as the numerator.

5. Instruct them to draw one card from the face card deck for the denominator, where a king equals 10, and a queen equals 100. Explain that the jack is a wild card, and students can decide whether to use 10 or 100.

6. As each person draws 2 cards from the 2 piles in turn, the other person in the pair converts the fraction so formed into a decimal.

7. The pair who finishes all the face cards first becomes the winner.

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE*

- Measuring length, weight, volume,
- Money
- Cooking
- Measuring ingredients
- Hotels - ordering

4. EXERCISES & REINFORCEMENT

4.1 PRACTICE EXERCISES

HOMEWORK PROBLEMS

Activity 6: Homework problems

Materials required: None
Prerequisites: Decimal fractions

Activity Flow

Write the numeral representing each of the following.

1. *Zero point one two*
2. *Six point eight four*
3. *Ten point five*

Fill in the blanks

1. *8 mm =___cm*
2. *75 mm = ___ cm*
3. *8 cm 75 mm = ___ cm*

Write the following fractions as decimal fractions.

1. 8 / 10
2. 16 / 10
3. 7 / 100

Write the following decimal fractions as fractions

1. 0.9
2. 0.02
3. 3.8
4. 14.57
5. 6.84

4.1 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