DIVISION OF DECIMAL BY 2-DIGIT AND 3-DIGIT NUMBERS

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Subject

Mathematics

Prepared By

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Grade Level

5

Overview

This lesson plan covers teaching content for;

1. Dividing decimal by a two-digit and 3-digit whole number using the formal written method where appropriate, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.

Objectives

Students should be able to;

1. Make real life connections for the skill of dividing decimals.
2. Divide decimal by a two-digit and 3-digit whole number.

Activity Starter/Instruction

1. To divide a decimal number by a whole number, place value system to rewrite a decimal number is helpful in framing an easy division equation. Following the method of long division or short division as per the multi-digit divisor, an equation can be solved as illustrated in the example;
2. Divide 3.24 by 3
   - Rewritten as $\dfrac{324}{100 \times 3}$
3. 3.24 can be written as a fractional value with denominator indicating the place value of decimal, at hundredth place)
4. $\dfrac{324}{3} \times \dfrac{1}{100} = 108 \times \dfrac{1}{100} = 1.08$
5. Using short division: 3.24/3 = 1.08

Teacher Guide

Day 1/ Lesson 1: 15 Mins

1. Explain to pupils that when dividing a decimal number by a whole number, they will divide as though they were whole numbers. Simply put the decimal point directly above its position in the dividend.
2. Teacher writes an example of dividing 77.5 by 25.
3. 77 divided by 25 equals 3, with a remainder of 2. Then drop down the following digit. Seeing as the 5 is the first decimal number, write the decimal point in the quotient, and divide 25 by 25, which equals 1. 1 × 25 = 25, thus 25 goes in once with no remainder.

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        3.1
   25 | 77.5
       75
       25
       25
        0
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4. The result of this decimal division by a whole number is 3.1 and the remainder is zero.

Materials Required

-White Board

-Marker

-Moving Remainders Board Game

-1 Die

-Calculator

Additional Resources

- https://www.mathgoodies.com/lessons/decimals_par
- https://www.mathsisfun.com/dividing-decimals.html
- http://www.cpalms.org/Public/PreviewResourceLesso
- https://www.educationworld.com/a_lesson/boxcars/

Additional Notes

Guided Practice

Day 2/ Lesson 2: 15 Mins

1. Pupils will be doing a relay race to solve decimal division problems.

2. Pupils will be divided into groups of four. Each student will get a different task: divide, multiply, bring down, or subtract. You can assign students groups and tasks, or allow them to choose their own groups and tasks.

3. Explain that you will give the class a division decimal problem. The "divide" person will begin by writing the problem on the whiteboard.

4. The rest of the group will line up behind them in order of their tasks. When you say "go," the person dividing will complete the first step of the problem. They will then hand the marker to the next person, who will complete her task. This will continue until the problem is solved.

5. The entire group will sit down when the problem is complete to show the teacher they are finished.

6. Tell pupils that they are allowed to help their teammates, but they cannot leave the line or yell.

7. Remind pupils that they don't want to talk too loudly, or another group may hear them!

8. Remind pupils that in order to win, they must not only finish first, but also have the correct answer.

Guided Practice

Day 3/ Lesson 3: 20mins

1. Player 1 rolls the die thrice and write a division problem using the number on the die and the first number on the game board. (The dividend is the starting number and the divisor is the number on the die. Ex: $21.56 \div 111$)

2. Player 1 uses paper and pencil to solve the problem. Player 2 uses a calculator to check.

3. Player 1 moves the number of spaces as shown by the remainder (the number after the decimal point). Ex: $21.56 \div 111 = 0.194 \sim 0.2$ (to 1 decimal place) so the player moves 2 spaces. Player 1 is stuck if the problem rounded up to 1 decimal place is zero.

4. Players take turns throughout game. If a player remains stuck on a number for two turns, on the third turn he or she may move the game piece one place forward before rolling the die.

5. The winner is the one who gets to the end first or travels farthest before time is called.

Summary

- Ask students what the most challenging part of the activities.
- Remind students that it is important to think carefully and take their time when completing math problems to ensure they are done correctly!

Assessment Activity

Tell students to solve series of problems and list the steps they used to solve it (e.g., Divide, Multiply, Bring Down, and Subtract).

Assessment Activity

Understand that some common errors include mixing up or forgetting steps for division, placing the decimal point in the wrong place, or simple multiplication errors. If several students have made the same mistake, address this by reteaching the skill in a small group.