Unit 8 Chapter 05 Divide Decimals

Content Area: **Mathematics**
Course(s): **Math 5**
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Summary

In Chapter 5 Students will continue extending understanding of the division algorithm to include decimals. They will learn to multiply the dividend and divisor by a power of 10 when the divisor is a decimal and to add extra zeros to the right of a decimal point in the dividend when necessary.

Standards

MA.5.NBT.A.2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
MA.5.NBT.B.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
TECH.8.1.5.A.CS1	Understand and use technology systems
TECH.8.1.5.A.CS2	Select and use applications effectively and productively.

Student Learning Objectives

Students learn to:

- find patterns in quotients when dividing by powers 10.
- model division of decimals by whole numbers.
- estimate decimal quotients.
- divide decimals by whole numbers.
- model division of decimals by decimals.
- place the decimal point in decimal division.
- write zero in the dividend to find a quotient.
- solve multi-step decimal problems using the strategy *work backward*.

Essential Questions

- How can patterns help you place the decimal point in a quotient?
- How can you use a model to divide a decimal by a whole number?
- How can you estimate decimal quotients?

- How can you divide decimals by whole numbers?
- How can you use a model to divide by a decimal?
- How can you place the decimal point in the quotient?
- When do you write a zero in the dividend to find a quotient?
- How do you use the strategy *work backward* to solve multi-step decimal problems?

Enduring Understandings

Students will understand that:

- patterns of powers of 10 can help place the decimal point in a quotient.
- concrete models, drawings ,and strategies related to place value help us understand dividing decimals.
- familiar strategies for estimating quotients (compatible numbers, basic facts) can be used when dividing decimals.
- it is important to learn how to calculate amounts with decimals because our money system is based in decimals.
- when dividing decimals by decimals, you can multiply the divisor by a power of 10 to change it to a whole number before dividing as long as the multiply the dividend by the same power of ten.
- you can write a zero in the dividend when there aren't enough digits in the dividend to complete division.
- the strategy *working backward* can be used if the total but you do not know one of the parts.

Application

Students will be able to independently use their learning to:

- find patterns in quotients when dividing by powers 10.
- model division of decimals by whole numbers.
- estimate decimal quotients.
- divide decimals by whole numbers.
- model division by decimals.
- place the decimal point in decimal division.
- write zero in the dividend to find a quotient.
- solve multi-step decimal problems using the strategy work backward.

Skills

Students will be skilled at:

- finding patterns in quotients when dividing by powers 10.
- modeling division of decimals by whole numbers.
- estimate decimal quotients.
- dividing decimals by whole numbers.
- modeling division by decimals.
- placing the decimal point in decimal division.
- writing zero in the dividend to find a quotient.

- solving multistep decimal problems using the strategy work backward.