5 Math Unit 08: Divide Decimals

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 2**
Length: **8 Days**
Status: **Published**

Unit Overview

Dividing Multi-Digit Whole Numbers

The unit opens with the use of different sized glasses and jugs to illustrate division by decimals. This is an opportunity to help students form a concrete understanding that dividing doesn't always mean "make smaller." Using context helps students see how many units "fit into"another quantity. Models may help students make informal connections to dividing a whole number by a decimal. This can help students understand that dividing by smaller pieces can produce more. A strategy used to divide a decimal by a decimal is to multiply the dividend and divisor by the same power of ten.

What Students Are Learning

- Students use strategies based on place value to divide decimals.
- Students estimate quotients of decimals
- Students represent division of decimals by a whole number
- Students use place value understanding and equivalent expressions to divide decimals by whole numbers
- Students divide whole numbers by decimals using grids and equivalent expressions
- Students divide decimals by decimals using area models to find partial quotients for equivalent equations.

Number Routines

- Where Does It Go?
- About How Much?
- Which one doesn't beong?
- Decompose It
- Notice & Wonder
- Is it always true?

Standards

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.
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.

Materials

Core Materials:

Reveal Math

8.1 Division Patterns with Decimals and Powers of 10

8.2 Estimate Quotients of Decimals

8.3 Represent Division of Decimals by a Whole Number

8.4 Divide Decimals by Whole Numbers

8.5 Divide Whole Numbers by Decimals

8.6 Divide Decimals by Decimals

Supplemental Materials:

- ST Math
- Happy Numbers
- 3 Act Lessons
- Building Fact Fluency Kit
- Brainingcamp Manipulatives
- Nearpod Lessons
- Brainpop Resources
- Online Resources

Technology

DA	Data & Analysis
	Data can be organized, displayed, and presented to highlight relationships.
8.1.5.DA.1	Collect, organize, and display data in order to highlight relationships or support a claim.
	Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.
8.1.5.DA.3	Organize and present collected data visually to communicate insights gained from different views of the data.
8.1.5.DA.4	Organize and present climate change data visually to highlight relationships or support a claim.
8.2.5.ED.2	Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
8.2.5.ED.3	Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Assessment

Formative Assessment

- Unit Readiness Diagnostics
- Lesson Checks
- Exit Tickets
- Teacher Observation

Summative Assessment

- Unit Assessment Performance Task
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

<table>
<tr><th colspan="4">Differentiated Instruction</th></tr>
<tr><td colspan="4">Accommodate Based on Students Individual Needs: Strategies</td></tr>
<tr>
<td>Time/General
Extra time for assigned tasks
Adjust length of assignment
Timeline with due dates for reports and projects
Communication system between home and school
Provide lecture notes/outline</td>
<td>Processing
Extra response time
Have students verbalize steps
Repeat, clarify, or reword directions
Mini-breaks between tasks
Provide a warning for transitions
Reading partners</td>
<td>Comprehension
Precise step-by-step directions
Short manageable tasks
Brief and concrete directions
Provide immediate feedback
Small group instruction
Emphasize multi-sensory learning</td>
<td>Recall
Teacher-made checklist
Use visual graphic organizers
Reference resources to promote independence
Visual and verbal reminders
Graphic organizers</td>
</tr>
<tr>
<td>Assistive Technology
Computer/whiteboard</td>
<td>Tests/Quizzes/Grading
Extended time</td>
<td>Behavior/Attention
Consistent</td>
<td>Organization
Individual</td>
</tr>
</table>

• Tape recorder • Spell-checker • Audio-taped books	• Study guides • Focused/chunked tests • Read directions aloud	daily structured routine • Simple and clear classroom rules • Frequent feedback	daily planner • Display a written agenda • Note-taking assistance • Color code materials

504

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video
- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Math Diagnosis & Intervention System

At-risk of Failure

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators
- Reteach pages

- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

Gifted & Talented

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

Interdisciplinary Connections

3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
RI.MF.5.6	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on web pages) and explain how the information contributes to an understanding of the text in which it appears.
SL.PE.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

Career Readiness, Life Literacies & Key Skills

9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
9.2.5.CAP.4	Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
9.4.5.CT	Critical Thinking and Problem-solving
9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
	People can choose to save money in many places such as home in a piggy bank, bank, or credit union.
9.1.5.FI.1	Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies.
9.1.5.PB.1	Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.

Career Ready Practices

STEM CAREER: Pastry Chef Student talks about her aspiration to be a pastry chef. Student shops for baking supplies. Student uses division to determine price she pays for different baking supplies.

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.