4 Math Unit 07: Division Strategies with Multi-Digit Dividend and 1-Digit Divisors

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 2**
Length: **14 days**
Status: **Published**

Unit Overview

Division Strategies with Multi-Digit Dividends and 1-Digit Divisors

In this unit, students will use their understanding to find whole number quotients and remainders with up to 4-digit dividends and 1-digit divisors. Students will extend their understanding of using compatible numbers to estimate products to using compatible numbers to estimate quotients. Students will also apply their prior understanding of using partial products and area models to find products of mutli-digit numbers to using area models and partial quotients to divide with multi-digit numbers.

Students will begin the unit by using different strategies to divide multiples of 10, 100, and 1,000 by 1-digit divisors. AT the end of the unit, students will interpret remainders in the context of a given problem and solve multi-step problems involving quotients and remainders.

Students will extend their ability to fluently multiply and divide within 100 learned in previous grades. These include:

- **Divide Multiples of 10, 100, and 1,000:** Students use basic facts, the relationship between multiplication and division, place value, and number patterns to divide multiples of 10 by 1-digit divisors.
- **Estimate Quotients:** Students use compatible numbers and ranges to estimate quotients to divide multi-digit dividends by 1-digit divisors.
- **Divide Multi-Digit Dividends by 1-Digit Divisors:** Students use partial quotients and area models to divide multi-digit dividends by 1-digit divisors.
- **Interpret Remainders:** Students interpret remainders in the context of a problem.
- **Solve Multi-Step Problems:** Students will solve multi-step word problems involving division.

What Students Are Learning

- Students use their prior understanding to divide multi-digit dividends by 1-digit divisors and interpret remainders.
- Students use their understanding of compatible numbers and related division facts to estimate quotients.
- Students solve multi-step word problems involving division with multi-digit numbers.

Number Routines

- Find the Missing Values
- Can You Make the Number?
- Greater Than, Less Than
- Notice & Wonder
- Numberless Word Problem

Standards

4.OA.A.3	Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
4.NBT.B.6	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area model.

Materials

Core Materials:

Reveal Math

7.1 Divide Multiples of 10, 100, or 1,000

7.2 Estimate Quotients

7.3 Find Equal Shares

7.4 Understand Partial Quotients

7.5 Divide 4-Digit by 1-Digit Divisors

7.6 Understand Remainders

7.7 Make Sense of a Remainder

7.8 Solve Multi-Step Problems Using Division

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

Differentiated Instruction			
Accommodate Based on Students Individual Needs: Strategies			
Time/General	**Processing**	**Comprehension**	**Recall**
• Extra time for assigned tasks • Adjust length of	• Extra response time • Have students verbalize steps	• Precise step-by-step directions	• Teacher-made checklist

assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture notes/outline	• Repeat, clarify, or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners	• Short manageable tasks • Brief and concrete directions • Provide immediate feedback • Small group instruction • Emphasize multi-sensory learning	• Use visual graphic organizers • Reference resources to promote independence • Visual and verbal reminders • Graphic organizers
Assistive Technology • Computer/whiteboard • Tape recorder • Spell-checker • Audio-taped books	**Tests/Quizzes/Grading** • Extended time • Study guides • Focused/chunked tests • Read directions aloud	**Behavior/Attention** • Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback	**Organization** • Individual 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

Climate Change:

- Climate Change Example: Students may, knowing that energy and fuels are derived from natural resources and that their uses affect the climate, use the four operations to solve multi-step word problems posed with whole numbers, having whole-number answers and that are based on energy, fuels, and natural resources.
- Climate Change Example: Students may, knowing that energy and fuels are derived from natural resources and that their uses affect the climate, use the four operations to solve word problems related

to the use of natural resources and involving distance, time, liquid volume, and/or the mass of objects.

RI.CI.4.2	Summarize an informational text and interpret the author's purpose or main idea citing key details from the text.
ETS1.B	Developing Possible Solutions
	Testing a solution involves investigating how well it performs under a range of likely conditions.

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
	The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.
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.3	Describe how digital tools and technology may be used to solve problems.
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).
9.1.5.FI	Financial Institutions
	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.

Career Ready Practices

STEM CAREER: Construction Manager What's a Construction Manager? Student talks about the work of construction managers. Student explains how to divide 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.