3 Math Unit 03: Multiplication and Division

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 1**
Length: **12 Days**
Status: **Published**

Unit Overview

Multiplication and Division

In this unit, students use a variety of representations to show multiplication and division situations. Visual representations of equal groups lay the foundation for multiplication and division. Real-life objects are used first, with students moving to representing multiplication and division with manipulatives, and then with numbers and symbols.

By the end of this unit, students should recognize whether a problem should be thought of as a multiplication or a division situation depending on how it is written. They also recognize that multiplication and division relate to each other because they represent the same number of objects and the same number of groups.

Students extend their understanding of addition and equal-group concepts learned in previous grades. These include:

- **Repeated addition**: Students use equal groups to find the product in multiplication equations.
- **Arrays**: Students use arrays to represent equal groups and can help solve multiplication and division equations.

What Students Are Learning

- Students understand that multiplication represents the total number of objects in equal groups.
- Students understand that division can represent equal sharing or equal grouping.
- Students use representations to understand the relationship between multiplication and division.

Number Routines

- Would You Rather?
- Decompose It
- Find the Pattern, Make a Pattern
- Notice & Wonder
- Is It Always True?
- Numberless Word Problem
- Which Doesn't Belong?

Standards

3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.OA.A.2	Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.

3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3.OA.B.5	Apply properties of operations as strategies to multiply and divide.

Materials

Core Materials:

Reveal Math

3.1 Understand Equal Groups

3.2 Use Arrays to Multiply

3.3 Understand the Commutative Property

3.4 Understand Equal Sharing

3.5 Understand Equal Grouping

3.6 Relate Multiplication and Division

3.7 Find the Unknown

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 • 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	**Processing** • Extra response time • Have students verbalize steps • Repeat, clarify, or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners	**Comprehension** • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide immediate feedback • Small group instruction	**Recall** • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence • Visual and verbal reminders • Graphic

		• Emphasize multi-sensory learning	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

3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
RL.TS.3.4	Utilize and reference features of a text when writing or speaking about a text, referring to parts of stories, dramas, and poems, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.
W.IW.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

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.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.FP.1	Illustrate the impact of financial traits on financial decisions.
	There are specific steps associated with creating a budget.
9.1.5.PB.1	Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.

Career Ready Practices

STEM in Action

STEM Career: Construction Manager: Finn talks about the work of construction managers.

Finn Makes a Plan: Finn uses division to assign workers to his construction sites.

- **Career Readiness, Life Literacies & Key Skills: Construction Manager**

- 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.