Grade 3 Unit 6 - Operations

Content Area: **Math**
Course(s):
Time Period: **Trimester 2**
Length: **4 Cycles**
Status: **Published**

Course Pacing Guide

Unit 6: More Operations

4 Cycles

12 Lessons

6.1 - Trade-First Subtraction - 2 Day

6.2 - Playing Baseball Multiplication - 1 Day

6.3 - Taking Inventory of Known Facts Strategies - 1 Day

6.4 - Fact Power and Beat the Calculator - 1 Day

6.5 - Exploring Geometry Problems, Measurement Data, and Polygons - 1 Day

6.6 - Multiplication and Division Diagrams - 2 Days

6.7 - Multiplication with Larger Factors - 2 Days

6.8 - Number Sentences with Parentheses - 2 Days

6.9 - Open Response - Writing Number Stories - 2 Days

6.10 - Order of Operations - 2 Days

6.11 - Number Models for Two-Step Number Stories - 2 Days

Unit 6 Review - 1 Day

6.12 - Assessment - Unit 6 Progress Check - 1 Day

Correct and Reflect - 1 Day

Unit Overview

In this unit, students will be able to:

- compare different approaches to solving the same problem.
- reflect on which strategies are efficent and appropriate.
- take inventory of known multiplication facts
- model multistep number stories with one or more equations and represent the unknown qualities with letters.
- note the order of operations.
- kearn how parentheses function as grouping symbols that affect the order of operations.

Enduring Understandings

By the End of Unit 6, expect children to:

- use multiplication within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations.
- determine the unknown whole number in a multiplication equal relating three whole numbers.
- use doubling (an application of the distributive and associative properties), and break - apart (an appliation of the distributive property) as strategies to multiply.
- know from memory all square products and products of 1-digit numbers and 1, 2, 5, and 10, and to fluently multiply within 100 using strategies including doubling and breaking apart.
- make sense of and solve two-step number stories using the four operations; represent these number stories using equations; and assess the reasonableness of answers using mental computation and estimation strategies, including rounding.
- fluently add within 1000 using strategies and algorithims based on place value, properties of operations, and/or the relationship between addition and subtraction; fluenty subtract within 1000 using counting up, expand and trade, trade first, or other strategies.

Essential Questions

6.1 - What are the steps of the trade-first method of subtraction?

6.2 - How can playing Baseball Multiplication help to build fact fluency?

6.3 - What are square products? How can you use them as helper facts?

6.4 - What strategies can you use to assess your multiplication facts?

6.5 - What are the parts of quadrilaterals? What tools can you use to measure to the nearest 1/2 inch? How can you compare the perimeter of polygons?

6.6 - How can you use mnultiplication and division diagrams to solve number stories?

6.7 - How can your understanding of basic facts help you solve multiplication problems with larger factors?

6.8 - How do parentheses affect the way you solve a number sentence?

6.9 - What strategies can you use to write a two-step number story?

6.10 - What are the order of operations?

6.11 - How can you solve two-step number stories and show equations to match?

New Jersey Student Learning Standards (No CCS)

MA.3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MA.3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
MA.3.OA.B.5	Apply properties of operations as strategies to multiply and divide.
MA.3.OA.C.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
MA.3.OA.D.8	Solve two-step word problems using the four operations. 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.
MA.3.NBT.A.2	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Amistad Integration

Amistad Integration Document

The Girl With a Mind for Math: The Story of Raye Montague by Julia Finley Mosca

Holocaust/Genocide Education

- Teach district mandated diversity lessons
- Incorporate Responsive Classroom Program into classroom community

Interdisciplinary Connections

LA.RL.3.1	Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
LA.W.3.1.A	Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.
LA.W.3.1.B	Provide reasons that support the opinion.
LA.W.3.1.C	Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinion and reasons.
LA.W.3.1.D	Provide a conclusion.

Technology Standards

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.3	Use a graphic organizer to organize information about problem or issue.
TECH.8.1.5.A.4	Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.
TECH.8.1.5.A.5	Create and use a database to answer basic questions.

21st Century Themes/Careers

CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Financial Literacy Integration

9.1.4.B.1 Differentiate between financial wants and needs.

9.1.4.B.2 Identify age-appropriate financial goals.

9.1.4.B.3 Explain what a budget is and why it is important.

9.1.4.B.4 Identify common household expense categories and sources of income.

9.1.4.B.5 Identify ways to earn and save.

9.1.4.C.1 Explain why people borrow money and the relationship between credit and debt.

9.1.4.C.2 Identify common sources of credit (e.g., banks, credit card companies) and types of credit (e.g., loans, credit cards, mortgages).

9.1.4.C.3 Compare and contrast credit cards and debit cards and the advantages and disadvantages of using

each.

9.1.4.C.4 Determine the relationships among income, expenses, and interest.

9.1.4.C.5 Determine personal responsibility related to borrowing and lending.

9.1.4.C.6 Summarize ways to avoid credit problems.

9.1.4.D.1 Determine various ways to save.

9.1.4.D.2 Explain what it means to “invest.”

9.1.4.D.3 Distinguish between saving and investing.

9.1.4.E.1 Determine factors that influence consumer decisions related to money.

9.1.4.E.2 Apply comparison shopping skills to purchasing decisions.

9.1.4.F.1 Demonstrate an understanding of individual financial obligations and community financial obligations.

9.1.4.F.2 Explain the roles of philanthropy, volunteer service, and charitable contributions, and analyze their impact on community development and quality of living.

9.1.4.G.1 Describe how valuable items might be damaged or lost and ways to protect them.

Instructional Strategies & Learning Activities

Instructional Strategies

- base 10 blocks
- number cards
- quick look cards
- straws
- yard sticks
- pattern blocks
- rulers
- fraction circles

Learning Activities

- 6.1, 6.5 - Salute!
- 6.2, 6.3, 6.5 - Baseball Multiplication
- 6.2 - Baseball Multiplication with 10s
- 6.4, 6.10 - Beat the Calculator
- 6.4 - Fraction Memory
- 6.5 - Multiplication Draw
- 6.7 - Multiplication Top It
- 6.8 - Name That Number

- 6.8 - What's My Polygon Rule?

Differentiated Instruction

- See Teacher's Manual p. 539, 545, 551, 557, 563, 569, 577, 583, 599, 605,
- Use Data from Tech-Exit Tickets, Exit Slips, and Progress Monitoring to group students for each skill
- Student "May Do" Activities
- Sentence and Discussion Stems - Especially for Open Response
- Visual Anchor Charts for current, previous, and next lessons
- Interactive Notebook
- Hands On Learning/Activities

Formative Assessments

Exit Tickets in Haddonfield 3rd Grade Drive

Summative Assessment

Unit 6 Progress Check - See Everyday Math Online Resources or Assessment Handbook

Benchmark Assessments

Teachers may use:

~EDM4 Beginning of the Year Assessment (To create initial groupings based on EDM4 skills)

~EDM4 EOY Assessment (for SGO---to show year long growth at EOY)

~Winter Link It Form B (To create strategy groups based on specific skills and standards)

Alternate Assessments

Progress Monitoring by Standard on Link-It

Resources & Technology

Haddonfield Third Grade Google Drive

IXL Skills:

Third Grade D - Subtraction

Third Grade F - Multiplication Skill Builders

Third Grade I - Understand Division

Third Grade J - Division Skill Builders

Third Grade N2 - Understanding Parentheses

BOE Approved Texts

McGraw Hill Education - Everyday Math Manual - Volumes 1 and 2

Closure

See Exit Tickets Above

- Gallery Walk - On chart paper, small groups of students write and draw what they learned. After the completed works are attached to the classroom walls, others students affix post-its to the posters to extend on the ideas, add questions.
- Low-Stakes Quizzes - Give a short quiz using technologies like Kahoot or a Google form.
- Have students write down three quiz questions (to ask at the beginning of the next class).
- Question Stems - Have students write questions about the lesson on cards, using question stems framed around Bloom's Taxonomy. Have students exchange cards and answer the question they have acquired.
- Kids answer the following prompts: "What takeaways from the lesson will be important to know three years from now? Why?
- Have students dramatize a real-life application of a skill.
- Have kids orally describe a concept, procedure, or skill in terms so simple that a child in first grade would get it.
- Direct kids to raise their hands if they can answer your questions. Classmates agree (thumbs up) or disagree (thumbs down) with the response.
- Have kids create a cheat sheet of information that would be useful for a quiz on the day's topic.

- Kids write notes to peers describing what they learned from them during class discussions.
- Ask students to write what they learned, and any lingering questions on an "exit ticket". Before they leave class, have them put their exit tickets in a folder or bin labeled either "Got It," "More Practice, Please," or "I Need Some Help!"
- After writing down the learning outcome, ask students to take a card, circle one of the following options, and return the card to you before they leave: "Stop (I'm totally confused. Go (I'm ready to move on.)" or "Proceed with caution (I could use some clarification on . . .)"

ELL

- Alternate Responses
- Advance Notes
- Extended Time
- Teacher Modeling
- Simplified Written and Verbal Instructions
- Frequent Breaks
- E-Dictionaires
- Google Translate

Special Education

- Shorten assignments to focus on mastery of key concepts.
- Evaluate the classroom structure against the student's needs (flexible structure, firm limits, etc.).
- Keep workspaces clear of unrelated materials.
- Keep the classroom quiet during intense learning times.
- Provide a computer for written work.
- Seat the student close to the teacher or a positive role model.
- Provide an unobstructed view of the chalkboard, teacher, movie screen, etc.
- Give directions in small steps and in as few words as possible.
- Number and sequence the steps in a task.
- Have student repeat the directions for a task.
- Provide visual aids.
- Go over directions orally.
- Provide a vocabulary list with definitions.
- Permit as much time as needed to finish tests.
- Allow tests to be taken in a room with few distractions (e.g., the library).
- Have test materials read to the student, and allow oral responses.
- Divide tests into small sections of similar questions or problems.
- Allow the student to complete an independent project as an alternative test.
- Show a model of the end product of directions (e.g., a completed math problem or finished quiz).
- Stand near the student when giving directions or presenting a lesson.
- Mark the correct answers rather than the incorrect ones.

- Permit a student to rework missed problems for a better grade.

504

- preferential seating
- extended time on tests and assignments
- reduced homework or classwork
- verbal, visual, or technology aids
- modified textbooks or audio-video materials
- behavior management support
- adjusted class schedules or grading
- verbal testing
- excused lateness, absence, or missed classwork
- pre-approved nurse's office visits and accompaniment to visits
- occupational or physical therapy

At Risk

- Use of mnemonics
- Have student restate information
- Provision of notes or outlines
- Concrete examples
- Assistance in maintaining uncluttered space
- Weekly home-school communication tools (notebook, daily log, phone calls or email messages)
- Lab and math sheets with highlighted instructions
- Graph paper to assist in organizing or lining up math problems
- Use of manipulatives
- No penalty for spelling errors or sloppy handwriting
- Follow a routine/schedule
- Teach time management skills
- Verbal and visual cues regarding directions and staying on task
- Adjusted assignment timelines
- Visual daily schedule
- Immediate feedback
- Work-in-progress check
- Pace long-term projects
- Preview test procedures
- Film or video supplements in place of reading text
- Pass/no pass option
- Cue/model expected behavior
- Use de-escalating strategies
- Use peer supports and mentoring
- Have parent sign homework/behavior chart

- Chart progress and maintain data

Gifted and Talented

- Offer the Most Difficult First
- Pretest for Volunteers
- Offer choice
- Speak to Student Interests
- Allow G/T students to work together
- Tiered learning
- Focus on effort and practice
- Encourage risk taking