

# Grade 3 Unit 2 Number Stories and Arrays

Content Area: **Math**  
Course(s):  
Time Period: **Trimester 1**  
Length: **6 Cycles**  
Status: **Published**

## Course Pacing Guide

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Unit 2 - Number Stories and Arrays

- 2.1 Extended Facts: Addition and Subtraction - 2 Days
- 2.2 Number Stories - 1 Day
- 2.3 More Number Stories - 1 Day
- 2.4 Multi-Step Number Stories, Part 1 - 1 Day
- 2.5 Multi-Step Number Stories, Part 2 - 1 Day
- 2.6 Equal Groups - 2 Days
- 2.7 Multiplication Arrays - 2 Days
- 2.8 Open Response - Picturing Division - 2 Days
- 2.9 Modeling Division - 1 Day
- 2.10 Playing Division Arrays - 1 Day
- 2.11 Frames and Arrows - 2 Days
- 2.12 Explorations - Exploring Fraction Circles, Liquid Volume, and Area - 1 Day
- 2.13 Assessment - Unit 2 Progress Check - 1 Day

4 Cycles

13 Lessons

## Unit Overview

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In this unit, students will be able to:

- make sense of one and two step number stories involving all four operations
- represent situations with diagrams, arrays, pictures, words, and number models.
- create, share, compare, and interpret representations of various problems.
- add to their problem solving strategies.
- further their understanding of multiple ways to solve a problem.

## **Enduring Understandings**

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By the End of Unit 2, expect children to:

- interpret multiplication in terms of equal groups by drawing arrays or equal groups to match number stories.
- use drawings to interpret whole-number quotients of whole numbers.
- solve word problems in situations involving equal groups and arrays by using drawings, repeated addition, or skip counting to represent the problem.
- fluently multiply using strategies for all products of one-digit numbers and 1,2,5 and 10.
- make sense of and represent two-step number stories involving addition and subtraction.
- add and subtract within 1000 using tools along with strategies based on place value and/or the relationship between addition and subtraction.

## **Essential Questions**

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- 2.1 - How can you use basic addition and subtraction facts to help you solve extended addition and subtraction facts?
- 2.2 - What tools can you use to solve number stories?
- 2.3 - Can you show more than one way to solve a number story?
- 2.4 - What are the different steps in solving multi-step number stories?
- 2.5 - What strategies can you use to find the different operations in a multi-step number story?
- 2.6 - How can you use equal groups to help you solve multiplication problems involving 0 and 1?
- 2.7 - How can you use arrays to solve multiplication problems?
- 2.8 - What drawings can you make to picture division? How can you share and revise your work to make it more complete?
- 2.9 - What do you do in a division problem with remainders?

2.10 - What patterns can you find when playing Division Arrays?

2.11 - What patterns do you notice in Frames and Arrows?

2.12 - What is a fraction? How can you find the area of a shape?

## **New Jersey Student Learning Standards (No CCS)**

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MA.3.OA.A.1	Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each.
MA.3.OA.A.2	Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ 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.
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.C.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$ , one knows $40 \div 5 = 8$ ) 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**

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[Amistad Integration Document](#)

[The Girl With a Mind for Math: The Story of Raye Montague](#) by Julia Finley Mosca

## **Holocaust/Genocide Education**

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

## **Interdisciplinary Connections**

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LA.W.3.4	With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
LA.W.3.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
LA.W.3.6	With guidance and support from adults, use technology to produce and publish writing as well as to interact and collaborate with others.

## Technology Standards

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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.CS2	Select and use applications effectively and productively.

## 21st Century Themes/Careers

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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.
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## Financial Literacy Integration

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- 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.

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## **Instructional Strategies & Learning Activities**

### **Instructional Strategies**

- base 10 blocks
- number cards
- Quick Look Cards
- counters
- pan balance and standard masses
- fraction circles

### **Learning Activities**

- 2.1 - Addition Top It
- 2.1 - Subtraction Top It
- 2.1 - Salute!
- 2.2 - Multiplication Draw
- 2.5 - Roll to 1,000
- 2.7 - Array Bingo
- 2.10 - Division Arrays

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## **Differentiated Instruction**

- See Teacher's Manual p.125, 131, 137, 143, 149, 155, 161, 177, 183, 189, 195,
- 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**

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### Unit 2

2-1 <https://docs.google.com/forms/d/1KcZP2so8CV4-0w9z3yPtge9KqchGol2Br0DW0MpTOxY/copy?usp=sharing>

2-1 <https://docs.google.com/forms/d/1hzGULn8Qu4ij4FN7bmjZHy4Ih4VRNwFJLIkR-ejduE/copy?usp=sharing>

2-1 <https://docs.google.com/forms/d/1K1jt3q0iQDwZuNY9Ft5m16arEYfBHB-U4LnXTLvIIAc/copy?usp=sharing>

2-2 and 2-3 [https://docs.google.com/forms/d/1TY\\_bWRg-VsdD6CI-WYnVu2GGympWeked4eECi2uDavQ/copy?usp=sharing](https://docs.google.com/forms/d/1TY_bWRg-VsdD6CI-WYnVu2GGympWeked4eECi2uDavQ/copy?usp=sharing)

2-4 <https://docs.google.com/forms/d/1FT3tz45P3YcjaKeEFSqIfCfxE7rTeujT-5gMsRFv9sc/copy?usp=sharing>

2-11 <https://docs.google.com/forms/d/1qIawv9k2JT3Hr4xsPlciVk7UY9LpcISBoqIcaS4-IQ/copy?usp=sharing>

## **Summative Assessment**

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Unit 2 Progress Check - See Everyday Math Online Resources or Assessment Handbook

## **Benchmark Assessments**

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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)

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

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## **Alternate Assessments**

Progress Monitoring by Standard on Link-It

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## **Resources & Technology**

Haddonfield Third Grade Drive -

IXL Related Skills:

Third Grade E1-8 (Understanding Multiplication - Equal Groups)

Third Grade I1-5 (Quotients of Whole Numbers)

Third Grade F1, F2, F3, F6, F11 (Multiplication 0, 1, 2, 5, 10)

Third Grade C1-C18, D1-D9 (Addition and Subtraction Problems)

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## **BOE Approved Texts**

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

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## **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 . . .)"

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## ELL

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

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## 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

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- 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

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- 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**

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- 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