Grade 2 Math Unit 7

Content Area: **Math**
Course(s):
Time Period: **Trimester 3**
Length: **3 Weeks**
Status: **Published**

Course Pacing Guide

This pacing guide should include the vision and mission of the course. It will be the same for all units in your course.

The simpler, the better. Pacing guide flaws come when they are too constricting, so big ideas is best (Cobb, McClain, de Silva Lamberg, & Dean, 2003; Wiggins, Wiggins, & McTighe, 2005)

Model

Unit	MP/Trimester	Weeks
Unit 1 Establishing Routines	1	3
Unit 2 Fact Strategies	1	4
Unit 3 More Fact Strategies	1	3
Unit 4 Place Value and Measurement	2	4
Unit 5 Addition and Subtraction	2	3
Unit 6 Whole Number Operations and Number Stories	2	3
Unit 7 Whole Number Operations and Measurement and Data	3	3
Unit 8 Geometry and Arrays	3	3
Unit 9 Equal Shares and Whole Number Operations	3	4

Unit Overview

In this unit, children further explore addition and subraction strategies and use them to add three or more numbers. They use units of yards and meters to measure distances. At the end of the unit, they collect data and display it in a frequency table and a line plot. Children's learning will focus on three clusters of the New Jersey State Learning Standards, as well as in-depth work on tow of the Mathematical Practices.

Enduring Understandings

- Numbers can be manipulated to achieve a goal.
- Making estimates and then checking them by measuring can help children develop good measurement sense.

Essential Questions

- What can you do with numbers?
- What is data?

New Jersey Student Learning Standards (No CCS)

MA.2.OA.A	Represent and solve problems involving addition and subtraction.
MA.2.OA.A.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MA.2.OA.B	Add and subtract within 20.
MA.2.OA.B.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
MA.2.NBT.A	Understand place value.
MA.2.NBT.A.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
MA.2.NBT.A.1a	100 can be thought of as a bundle of ten tens — called a “hundred.”
MA.2.NBT.A.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
MA.2.NBT.B	Use place value understanding and properties of operations to add and subtract.
MA.2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
MA.2.NBT.B.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.
MA.2.NBT.B.7	Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
MA.2.NBT.B.8	Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
MA.2.NBT.B.9	Explain why addition and subtraction strategies work, using place value and the properties

	of operations.
MA.2.MD.A.1	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
MA.2.MD.A.2	Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
MA.2.MD.A.3	Estimate lengths using units of inches, feet, centimeters, and meters.
MA.2.MD.A.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
MA.2.MD.B.5	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
MA.2.MD.B.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2,..., and represent whole-number sums and differences within 100 on a number line diagram.
MA.2.MD.D.9	Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
MA.2.G.A.1	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

Amistad Integration

Holocaust/Genocide Education

Interdisciplinary Connections

LA.RL.2.7	Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.
LA.SL.2.2	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

Technology Standards

TECH.8.1.2	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e., games, museums).
TECH.8.1.2.A.CS1	Understand and use technology systems.

TECH.8.1.2.B.1	Illustrate and communicate original ideas and stories using multiple digital tools and resources.
TECH.8.1.2.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
TECH.8.1.2.E.1	Use digital tools and online resources to explore a problem or issue.
TECH.8.1.2.E.CS1	Plan strategies to guide inquiry
TECH.8.1.2.E.CS2	Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
TECH.8.1.2.E.CS3	Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.
TECH.8.1.2.F	Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
TECH.8.1.2.F.CS1	Identify and define authentic problems and significant questions for investigation.
TECH.8.2.2.E	Computational Thinking: Programming: Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.
TECH.8.2.2.E.1	List and demonstrate the steps to an everyday task.
TECH.8.2.2.E.CS1	Computational thinking and computer programming as tools used in design and engineering.

21st Century Themes/Careers

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP8.1	Career-ready individuals readily recognize problems in the workplace, understand the

	nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.
CRP.K-12.CRP11	Use technology to enhance productivity.
CRP.K-12.CRP11.1	Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.
CRP.K-12.CRP12.1	Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.

Financial Literacy Integration

Money in Our Community Part 2 (Exchange of money for goods)

PFL.9.1.4.B.1	Differentiate between financial wants and needs.
PFL.9.1.4.B.2	Identify age-appropriate financial goals.
PFL.9.1.4.B.3	Explain what a budget is and why it is important.
PFL.9.1.4.B.4	Identify common household expense categories and sources of income.
PFL.9.1.4.B.5	Identify ways to earn and save.
PFL.9.1.4.C.1	Explain why people borrow money and the relationship between credit and debt.
PFL.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).
PFL.9.1.4.C.3	Compare and contrast credit cards and debit cards and the advantages and disadvantages of using each.
PFL.9.1.4.C.4	Determine the relationships among income, expenses, and interest.
PFL.9.1.4.C.5	Determine personal responsibility related to borrowing and lending.
PFL.9.1.4.C.6	Summarize ways to avoid credit problems.
PFL.9.1.4.D.1	Determine various ways to save.
PFL.9.1.4.D.2	Explain what it means to “invest.”
PFL.9.1.4.D.3	Distinguish between saving and investing.
PFL.9.1.4.E.1	Determine factors that influence consumer decisions related to money.
PFL.9.1.4.E.2	Apply comparison shopping skills to purchasing decisions.
PFL.9.1.4.F.1	Demonstrate an understanding of individual financial obligations and community financial obligations.
PFL.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.
PFL.9.1.4.G.1	Describe how valuable items might be damaged or lost and ways to protect them.

Instructional Strategies & Learning Activities

Planning Lesson Parts and Features:

- Lesson Opener (Before You Begin...)
- Differentiation Options

Instruction:

- Mental Math
- Daily Calendar/Weather/ School Day Count Routines
- Math Message
- Math Message Follow-up
- Focus Activities
- Assessment Check-In
- Practice Activity ~ Practice Page or Game
- Math Boxes ~ Spiral Review
- Home Link ~ At-Home Practice

Lessons:

Lesson 7-1 ~ Playing *Hit the Target*

Lesson 7-2 ~ Open Response - Four or More Addends (2-Day Lesson)

Lesson 7-3 ~ Playing *Basketball Addition*

Lesson 7-4 ~ Measuring in Yards

Lesson 7-5 ~ Measuring in Meters

Lesson 7-6 ~ Generating Data: Standing Jumps and Arm Spans

Lesson 7-7 ~ Representing Data: Standing Jumps

Lesson 7-8 ~ Representing Data: Arm Spans

Lesson 7-9 ~ Explorations - Exploring Shape Attributes, Graphs, and Measurments

Lesson 7-10 ~ Assessment - Unit 7 Progress Check (2-Day Lesson)

Differentiated Instruction

- Use of Base-10 BLocks and other manipulatives
- Access to Number Line/ Number Grid
- Inquiry/Problem-Based Learning
- Learning preferences integration (visual, auditory, kinesthetic)
- Sentence & Discussion Stems

- Tiered Learning Targets
- Learning Through Play
- Meaningful Student Voice & Choice
- Relationship-Building & Team-Building
- Self-Directed Learning
- Choice Boards
- Student Data Inventories
- Mastery Learning (feedback toward goal)
- Goal-Setting & Learning Contracts
- Game-Based Learning
- Grouping
- Rubrics
- Learning Menus
- Jigsaws
- Learning Through Workstations
- Concept Attainment
- Mentoring
- Assessment Design & Backwards Planning

Formative Assessments

Mental Math Responses

Lesson Practice Book Pages

Math Boxes

Exit Slips

Responses to Questions

Completed Homework

Summative Assessment

EM4 Unit 7 Progress Check

Benchmark Assessments

End-of- the-Year Cummulative Second Grade Math Assessment

Alternate Assessments

Resources & Technology

Suggested Trade Books

A Very Hungry Caterpillar by Eric Carle

Me & the Measure of Things by Joan Sweeney

Measuring Penny by Loreen Leedy

How long or How Wide? A Measuring Guide by Brian P. Cleary

Websites:

Measurement

vlc.cemseprojects.org (virtual learning community)

connectED.mheducation.com

www.khanacademy.com

BOE Approved Texts

McGraw-Hill Education: Everyday Mathematics

4th Edition

www.everydaymath,com

Closure

Such as:

- Kids write write a sample math problem or drawing to show what they learned
- Students complete and Post-It Note denoting "What stuck with me today...?"
- Parent Hotline - Give students an interesting question about the lesson without further discussion.

Email their guardians the answer so that the topic can be discussed over dinner.

- DJ Summary - Learners write what they learned in the form of a favorite song. Offer to let one or two sing thier summary.
- Students complete and "Exit Slip" that contains a math problem to be solved using the math strategy learned in the lesson
- Low-Stakes Quizzes - Give a short quiz using technologies like Kahoot or a Google form.
- Have students write down three quiz/math problems questions (to ask at the beginning of the next class).
- 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. .
- Have students complete the following sentence: "The [concept, skill, word] is like _____ because _____."
- 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!"
- 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.

ELL

Such as:

- Alternate Responses
- Number Grids; Number Lines
- Extended Time
- Teacher Modeling
- Simplified Written and Verbal Instructions
- Frequent Breaks
- E-Dictionaires
- Google Translate
- Use of Manipulatives

Special Education

List is not inclusive but may include examples such as:

- Use of manipulatives such as Base-10 Blocks to model Math Problems
- Shorten assignments to focus on mastery of key concepts.

- Specify and list exactly what the student will need to do to complete the task.
- Give directions in small steps and in as few words as possible.
- Have student repeat the directions for a task.
- Provide visual aids.
- Go over directions orally.
- Number and sequence the steps in a task.
- Evaluate the classroom structure against the student's needs (flexible structure, firm limits, etc.).
- Keep workspaces clear of unrelated materials.
- Offer and provide Privacy Shields for students who need quiet or are easily distracted
- Reduce visual distractions in the classroom (mobiles, etc.).
- Provide a computer for written work.
- Seat the student close to the teacher or a positive role model.
- Provide an unobstructed view of the teacher, whiteboard, math charts etc.
- Keep extra supplies of classroom materials (pencils, books) on hand.
- Maintain adequate space between desks.
- 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.
- Average grades out when assignments are reworked, or grade on corrected work.
- Use a pass-fail or an alternative grading system when the student is assessed on his or her own growth.

504

Examples of accommodations in 504 plans include but are not limited to:

- 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
- verbal testing

At Risk

Examples may include:

- Use of manipulatives
- Math sheets with highlighted instructions
- Graph paper to assist in organizing or lining up math problems
- Use of mnemonics
- Have student restate information
- Provision of notes or outlines
- Concrete examples
- Use of a study carrel
- Assistance in maintaining uncluttered space
- Weekly home-school communication tools (notebook, daily log, phone calls or email messages)
- 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
- Preview test procedures
- 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

Examples may include:

- Offer challenge choices
- Encourage risk taking
- Provide challenge independent practice alternate work
- Allow G/T students to work together
- Tiered learning
- Focus on effort and practice