Grade 3 Unit 4 Measurement and Geometry

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

Course Pacing Guide

Unit 4 - Measurement and Geometry

4.1 - Measuring with a Ruler - 2 Days

4.2 - Application: Line PLots - 1 Day

4.3 - Exploration - Exploring Measures of Distance and Comparisons of Mass - 1 Day

4.4 - Polygon Review - 2 Days

4.5 - Special Quadrilaterals - 2 Days

4.6 - Perimeter - 1 Day

4.7 - Area and Perimeter - 1 Day

1 Day - Review Area and Perimeter

4.8 - Area and Composite Units - 1 Day

4.9 - Number Sentences for Area of Rectangles - 1 Day

4.10 - Playing "The Area and Perimeter" Game - 1 Day

4.11 - Open Response - Building a Rabbit Pen - 2 Days

4.12 - Rectilinear Figures - 2 Days

4.13 - Unit 4 Progress Check - 2 Days

Unit Overview

In this unit, students will be able to:

- measure to the nearest half inch
- generate measurement data and represent it on a scaled line plot
- explore geometric attributes of polygons
- classify quadrilaterals into categories based on their attributes
- identify and measure the perimeters of polygons
- distinguish between perimeter and area

- develop multiple strategies to determine the areas of rectangles
- apply strategies of area to rectilinear shapes

Enduring Understandings

By the End of Unit 4, expect children to:

- measure lengths to the nearest half-inch and represent the data on a line plot where the horizontal scale is marked off in whole numbers and halves.
- recognize area as an attribute of plane figures.
- measure areas by counting unit squares.
- find the area of a rectangle with whole-number side lengths by tiling.
- solve problems involving perimeters of polygons.
- understand that shapes in different categories may share attributes.

Essential Questions

4.1 - What are the different parts of a ruler? How can you use halves and quarters to measure most accurately?

4.2 - How can you represent data on a line plot?

4.3 - What measurements can you use to measure distance? How can you compare mass?

4.4 - What are the characteristics of polygons?

4.5 - What is the definition of a quadrilateral? What are its characteristics?

4.6 - How do you find the perimeter of an object?

4.7 - What is the difference between area and perimeter?

4.8 - How can you use composite units to find area?

4.9 - What do number sentences for areas look like?

4.10 - What strategies can you use when playing the "Area and Perimeter" Game?

4.11 - Can you create various models of area?

4.12 - How can you use area of rectangles to find the area of rectilinear figures?

New Jersey Student Learning Standards (No CCS)

MA.3.MD.B.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
MA.3.MD.C.5	Recognize area as an attribute of plane figures and understand concepts of area measurement.
MA.3.MD.C.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).
MA.3.MD.C.7	Relate area to the operations of multiplication and addition.
MA.3.MD.D.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
MA.3.G.A.1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

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.RL.3.4	Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.

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 Stratgies and Tools

- ruler
- tape measure
- Quick Look Cards
- Geoboard
- pattern blocks

Learning Activities/Games

- 4.3 and 4.7 - Name That Number
- 4.4 - What's My Polygon Rule?
- 4.4 - Multiplication Draw
- 4.5 - Shading Shapes
- 4.10 - The Area and Perimeter Game

Differentiated Instruction

- See Teacher's Manual p 325, 331, 337, 343, 349, 355, 361, 369, 375, 381, 397- for Readiness, Enrichment, and Extra Practice Activities
- 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
- Game Based Learning

Formative Assessments

Link to Google Form Exit Tickets

Summative Assessment

Unit 4 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)

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

Alternate Assessments

Progress Monitoring by Standard on Link-It

Resources & Technology

Haddonfield Third Grade Drive

IXL

BB1-BB22 - Measurement (3rd Grade)

U9-U11 - Line Plots (3rd Grade)

CC4 - Polygons (3rd Grade)

AA2 - Polygons (5th Grade)

DD3 - Quadrilaterals (3rd Grade)

DD1-DD8 - Triangles and Quadrilaterals (3rd Grade)

FF1-FF21 - Area and Perimeter (3rd Grade)

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