

03 Measurement and Shape Exploration

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **2.5 Weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

In this unit, students will focus on the following skills and concepts:

- Comparing the lengths of objects
- Measuring lengths
- Exploring Shapes
- Building with Base-10 Blocks
- Tally Charts
- Bar Graphs

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Essential Questions:

- How do we measure the length of an object?
- How do we compare the lengths of two objects?
- How can representing data help us to interpret it and draw conclusions?
- Why do we need to identify shapes?
- Why would we compose and decompose shapes?

Enduring Understandings:

- Lengths of objects can be compared to lengths of other objects.
- Measurement is an iteration of same-size units.
- There are many ways to analyze data.
- Shapes are characterized by their defining attributes.
- Shapes can be made from two or more other shapes.

CONTENT AREA STANDARDS

1.M

A. Measure lengths indirectly and by iterating length units

B. Tell and write time

C. Work with money

1.DL

A. Represent and interpret data

1.G

A. Reason with shapes and their attributes

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.4	Model with mathematics.
MA.1.OA.C.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).
MA.1.NBT.A.1	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
MA.1.MD.A.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
MA.1.MD.A.2	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.
MA.1.MD.C.4	Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
MA.1.G.A.1	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
MA.1.G.A.2	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.SL.1.1	Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
LA.SL.1.1.A	Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
LA.SL.1.1.B	Build on others' talk in conversations by responding to the comments of others through multiple exchanges.

LA.SL.1.2	Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
WRK.K-12.P.1	Act as a responsible and contributing community members and employee.
WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
TECH.9.4.2.IML.1	Identify a simple search term to find information in a search engine or digital resource.

STUDENT LEARNING TARGETS

- I can compare the lengths of two objects indirectly by using a third object.
- I can distinguish between defining attributes and non-defining attributes of shapes.
- I can interpret data with up to three categories.
- I can add within 20 using strategies.
- I can subtract within 20 using strategies.
- I can build and draw shapes to possess defining attributes.
- I can compose new shapes from composite shapes.
- I can compose three-dimensional shapes to create a composite shape.
- I can compose two-dimensional shapes to create a composite shape.
- I can express the length of an object as a whole number of length units, by laying multiple copies of a shorter object end to end.
- I can order three objects by length.
- I can organize and represent data with up to three categories.
- I can represent a number of objects with a written numeral between 0-120.
- I can understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.
- I can count to 120, starting at any number less than 120.
- I can demonstrate fluency for addition within 10.
- I can demonstrate fluency for subtraction within 10.
- I can read numerals to 120.
- I can write numerals to 120.

Declarative Knowledge

Students will understand that:

- The lengths of objects can be compared by placing them side by side to determine which is longer or shorter.
- Lengths of objects can be compared indirectly by using a third object.
- Length units must be the same length.
- Measuring involves placing units without overlapping or leaving gaps.
- Units must be placed parallel to the path or object being measured.
- Data can be organized, represented, and interpreted using tally charts and bar graphs.
- Bar graphs use bars of varying lengths to represent data.

Procedural Knowledge

Students will be able to:

- Order objects by length.
- Compare the lengths of objects.
- Estimate the lengths of objects.
- Iterate length units to measure objects.
- Name the rules for measuring objects.
- Distinguish between defining and non-defining attributes of shapes.
- Build shapes with specified attributes.
- Compose two-dimensional shapes.
- Compose three-dimensional shapes.
- Collect data to create a tally chart.
- Develop a bar graph.
- Ask and answer questions about a graph.
- Add within 20 using strategies.
- Subtract within 20 using strategies.
- Represent a number of objects with a written numeral between 0-120.
- Count to 120, starting at any number less than 120.
- Demonstrate fluency for addition within 10.
- Demonstrate fluency for subtraction within 10.
- Read numerals to 120.
- Write numerals to 120.

EVIDENCE OF LEARNING

Benchmark Assessments

Benchmark Assessments conducted three times per year, using

-Pear Assessment (Standards Based Assessments)

-iXL

Alternate Assessments

- Portfolios
- Verbal Assessment (instead of written)
- Multiple choice
- Modified Rubrics
- Performance Based Assessments

Formative Assessments

- Journal Pages
- Home Links/Worksheets
- Self-Assessments/Student Friendly Scales
- White board responses
- Entrance/Exit Tickets
- Participation
- Teacher Observation
- IXL

Summative Assessments

- Weekly Quizzes
- End of Unit Assessment
- End of Unit Self Assessment
- End of Unit Challenge (optional - if time allows)
- End of Unit Open Response Assessment (optional - if time allows)

RESOURCES (Instructional, Supplemental, Intervention Materials)

Calendar Math

EDM Lessons:

- Lesson 4-1
- Lesson 4-2
- Lesson 4-3
- Lesson 4-4
- Lesson 4-5
- Lesson 4-6 (2 Days)

Game:

- Domino Top It (Lessons 4-2, 4-7, 4-9): Finding and comparing sums

Brain Pop, Jr.:

- Nonstandard Measurement
- Tally Charts and Bar Graphs

IXL

Read Alouds/Literature Links:

Manipulatives Tool Kits(<https://www.hand2mind.com/item/individual-student-manipulative-kits-grades-k-2-set-of-4>)

Materials: See Unit 4 Materials List on page 298 of Teacher's Lesson Guide 1 for needs beyond manipulatives

Additional Resource charts and tools:

- number line
- number grid
- tally charts
- ten frames

See Shared Drive First Grade/Math for additional resources to support units:

https://drive.google.com/drive/u/1/folders/0B1b4mf8z6FE-UmhUSUxzemRVZ2M?resourcekey=0-DWNrdgPPiT7uDqFqM_7Ogw

INTERDISCIPLINARY CONNECTIONS

- Technology/Multimedia: Educational Tech Applications
- Career Readiness: Utilize critical thinking to make sense of problems and persevere in solving them.

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.

- modify activity
- simplify directions
- check-ins
- visuals
- manipulatives
- graphic organizers
- sentence starters
- wait time
- additional time for tasks
- verbal responses
- illustrations