

06 Geometry and Measurement

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **4 weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

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

- Building Shapes
- Halves
- Fourths
- 2-Dimensional Shapes
- 3-Dimensional Shapes
- Time to the Half Hour
- Data
- Number Grid Puzzles
- 10 More/10 Less

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Essential Questions:

- How can attributes help you to build shapes?
- What does equal mean?
- How can shapes be partitioned into equal parts?
- How can data be interpreted through graphing?
- Why is it important to understand place value patterns?

Enduring Understandings:

- Shapes can be partitioned into equal parts.
- Shapes can be combined to form new shapes.
- Data can be organized and represented in categories.
- Understanding place value and the value of digits can help you to identify number grid patterns.

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-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.6	Attend to precision.
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.B.2	Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
MA.1.NBT.C.4	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
MA.1.NBT.C.5	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
MA.1.NBT.C.6	Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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 and explain the reasoning used.
MA.1.MD.B.3	Tell and write time in hours and half-hours using analog and digital clocks.
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.
MA.1.G.A.3	Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

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

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.1.5	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
WRK.K-12.P.1	Act as a responsible and contributing community members and employee.
WRK.K-12.P.4	Demonstrate creativity and innovation.
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 distinguish between defining attributes and non-defining attributes of shapes.
- I can interpret data with up to three categories.
- I can relate the strategy used to add within 100 to a written method and explain the reasoning used.
- I can relate the strategy used to subtract multiples of 10 from multiples of 10 to a written method and explain the reasoning used.
- I can add within 20 using strategies.
- I can subtract within 20 using strategies.
- I can add within 100 using concrete models or drawings and 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 mentally find 10 more or 10 less than a given two-digit number without counting and explain the reasoning used.
- I can organize and represent data with up to three categories.
- I can subtract multiples of 10 (in the range of 10-90) from multiples of 10 using concrete models or drawing and strategies.
- I can understand that 10 can be thought of as a bundle of ten ones.
- I can understand that in adding two-digit numbers, one adds tens and tens, ones and ones, and sometimes it is necessary to compose a ten.
- I can understand that the two digits of a two-digit number represent amounts of tens and ones.
- I can understand the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two three, four, five, six, seven, eight, or nine tens (and 0 ones).
- I can understand the numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight or nine ones.
- I can demonstrate fluency for addition within 10.
- I can demonstrate fluency for subtraction within 10.
- I can tell and write time in half-hours using analog and digital clocks.

Declarative Knowledge

Students will understand that:

- Shapes can be constructed based upon their defining and non-defining attributes.
- Shapes can be partitioned into equal parts.
- Shapes can be combined to create new shapes.
- Data can be interpreted through graphs.
- Place value can be used to solve number-grid puzzles

Procedural Knowledge

Students will be able to:

- Distinguish between defining attributes and non-defining attributes of shapes.
- Interpret data with up to three categories.
- Build and draw shapes to possess defining attributes.
- Compose new shapes from composite shapes.
- Compose three-dimensional shapes to create a composite shape.
- Compose two-dimensional shapes to create a composite shape.
- Mentally find 10 more or 10 less than a given two-digit number without counting and explain the reasoning used.
- Organize and represent data with up to three categories.
- Subtract multiples of 10 (in the range of 10-90) from multiples of 10 using concrete models or drawing and strategies.
- Tell and write time in half-hours using analog and digital clocks.

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 8 Cumulative Assessment
- End of Year Assessment (SGO)

RESOURCES (Instructional, Supplemental, Intervention Materials)

Calendar Math

EDM Lessons:

- Lesson 8-1
- Equal vs. Unequal
- Lesson 8-2
- Lesson 8-3
- Lesson 8-4
- Lesson 8-5
- Lesson 8-6
- Lesson 8-7
- Lesson 8-8 (2 Days)
- Lesson 8-9 (2 Days)
- Lesson 8-10
- Lesson 8-11
- Lesson 8-12

Games:

- I Spy (Lessons 8-1, 8-6): Describing and identifying shapes
- Time Match (Lessons 8-3, 8-8, 8-9): Telling time
- Make My Design (Lessons 8-5, 8-10): Creating composite shapes
- Addition Top-It (Lesson 8-7): Solving addition facts and using relation symbols
- Penny-Dime-Dollar Exchange (Lesson 8-8): Exchanging ones for tens and tens for hundreds
- Before and After (Lesson 8-10): Finding numbers that are 1 less or 1 more than a given number

IXL**Brain Pop, Jr.:**

- Basic Parts of a Whole
- Plane Shapes
- Solid Shapes
- Time to the Quarter and Half Hour (focus on the half hour only)
- Tally Charts and Bar Graphs

Read Alouds/Literature Links:

- Round is a Mooncake: A Book of Shapes (*by Roseanne Thong*)
- Rabbit and Hare Divide an Apple (*by Harriet Ziefert*)
- The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear (*by Don Wood*)
- Picture Pie: A Circle Drawing Book (*by Ed Emberley*)
- Lemonade for Sale (*by Tricia Tusa*)

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

Materials: See Unit 8 Materials List on page 674 of Teacher's Lesson Guide 2 for needs beyond manipulatives

Additional Resource charts and tools:

- number line
- number grid
- tally charts
- ten frames
- blank bar graphs
- Two Equal Shares poster
- Four Equal Shares poster

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