Mathematics
Unit 4: Geometry and Measurement

Essential Understandings	▪ Shapes can be used to describe the physical world. ▪ Different tools are used to measure different things. ▪ Standard units provide common language for communicating measurement.
Essential Questions	▪ What is a polygon? ▪ How can one use attributes to recognize and classify polygons? ▪ What are the tools for measurement and how are they used? ▪ What are congruent figures? ▪ How can one mark the passage of time? ▪ How can one measure length? ▪ What is area? ▪ How can one find surface area? ▪ What is perimeter? ▪ How can one find perimeter? ▪ What is the value of a half dollar and dollar? ▪ What are the equivalent values for nickels, dimes, quarters, and dollars? ▪ How can one measure temperature? ▪ What is capacity? ▪ How does one measure capacity?
Essential Knowledge	▪ A polygon is a closed figure having all straight sides. ▪ One can use attributes to determine how polygons are alike and different. ▪ Congruent figures have the same shape and the same size. ▪ Length is measured with standard units (i.e., rulers and measuring tapes) and nonstandard units. ▪ Area is a two-dimensional space measured in square units. ▪ Perimeter is the measure of lines forming a polygon. ▪ Capacity is the amount of available space within a three-dimensional shape.
Vocabulary	▪ <u>Terms</u>: ○ polygon, solution, decompose, construct, area, perimeter, half-dollar, dollar, change, capacity, quantity, height, length, width, similar, point, vertices, edge, face, side, analog, digital, scale, congruent, prism, weight, interval

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Essential Skills	▪ Recognize, name, and create various polygons. (A) ▪ Classify two dimensional geometric figures by focusing on their properties. (A) ▪ Use manipulatives to create shapes using geometric figures to compose and decompose other shapes. (A) ▪ Identify cubes, cones, cylinders, spheres, and prisms. (A) ▪ Identify congruent figures. (I) ▪ Use the measurement of time: there are 24 hours in a day. (R, A) ▪ Use an analog clock and digital clock to tell time to the nearest five minutes. (I, R, A) ▪ Write time in digital form to the nearest five minutes. (I, R, A) ▪ Measure length of objects to the nearest one-half inch or centimeter. (I, R, A) ▪ Estimate the length of objects to the nearest inch and/or centimeter. (I, R, A) ▪ Use manipulatives to measure the area of polygons. (I, R) ▪ Use manipulatives to measure the perimeter of polygons. (I, R, A) ▪ Name and give the value for half dollar and dollar. (I, R, A) ▪ Find equivalent values for nickels, dimes, quarters, and dollars. (I, R, A) ▪ Count and write value of a set of coins to $1.99. (I, R, A) ▪ Determine the amount of change up to a dollar. (A) ▪ Estimate and measure temperature by using a thermometer. (A) ▪ Use manipulatives to measure the capacity of three dimensional objects. (I, R)

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Related Maine Learning Results	C. Geometry Geometric Figures C1.Students recognize, classify, and create geometric figures in two and three dimensions. a. Identify shapes in the physical environment. b. Classify figures as circles, triangles, and quadrilaterals by focusing on their properties. c. Create shapes by using objects to combine and decompose other shapes. Geometric Measurement C2.Students understand how to measure length and capacity and use appropriate units. a. Measure length and capacity by direct and indirect comparison. b. Measure length and capacity by direct and indirect comparison. c. Measure the length of objects to whole inches and centimeters. B. Data Measurement and Approximation B1.Students understand and use units of time, temperature, and money. a. Apply and use sequences of hours in a day, days in a week, and months in a year b. Tell time to the hour and half hour. c. Identify and give the value of different coins. d. Find the total value of coins up to $1.00. e. Read temperature on thermometers with scales marked with one degree intervals.