

6 1st Unit 6

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Unit Title: Geometry and Measurement			Estimated Time
Essential Standards: 1.MD.1, 1.MD.2, 1.MD.3, 1.G.1, 1.G.2, 1.G.3 Supporting Standards: 1.OA.6, 1.NBT.1, 1.MD.4 End of Unit Common Assessment and Pear Codes			
FCPS Supporting Links		Additional Supporting Links	
Pacing Guide Standards Progression FCPS Math Guidance Document Basic Fact Fluency Resources Elementary Intellectual Preparation Cycle FCPS Social-Emotional-Behavioral Standards Virtual Professional Learning Resources		Unit 1 Unit 2 Unit 3 Unit 4 Unit 5 Unit 6 CSA Examples (concrete, semi-concrete, & abstract) Unit 6: Unit Flow & Progression Video * Instructional Implications EoU most common errors	
		Kentucky Academic Standards Achieve the Core Progression Documents Number and Operations in Base Ten Operations and Algebraic Thinking Measurement Geometry Literary Connections Target of the Standards - conceptual, procedural, and applied Multilingual Glossary of Vocabulary Illustrated Vocabulary Cards Unit 6 Language Support for English Learners Manipulative List * Centers Library Overview, Workmats, and **See HQIR/Resource Considerations Column for C	
Big Ideas		Vibrant Learning Opportunities	
- We can describe how long something is by comparing it to other objects. - We can describe the time of day by reading clocks. - We can describe shapes, compose compound shapes, and see smaller shapes within larger shapes. - When we divide a shape into two equal parts, the parts are called halves. - When we divide a shape into four equal parts, the parts are called fourths or quarters. - We can recognize and identify coins by name and value. - It is important to use math vocabulary to describe shapes, time, length, and money. For more information, view the Math Background pages 555o-555t* in the Teacher's Guide.		Unit 6 Math In Action Lesson - Craft A Kite In this lesson, children apply skills from the previous units to solve problems related to kites. Problems involve using shapes to build a composite shape of a kite, using kites to explore halves and fourths, and using kites to make and analyze a data display. <i>1.MD.1, 1.MD.4, 1.G.1, 1.G.2, 1.G.3</i> Additional Springboard Ideas	
Essential Questions		Common Preconceptions/Misconceptions	

How can we divide shapes in different ways? What are the special attributes, names, and values of each coin? How can we describe a shape? How can we compose a new shape from smaller shapes? How can you order and compare lengths? How can you measure an object in different ways? What tools can we use to tell time? How do the positions of the two hands on an analog clock show the time?	• Students often leave gaps when measuring units or overlap the units, resulting in inaccurate measurements. It is also common for students to start by not measuring from endpoint to endpoint. • Students may not line up the ends of the objects being measured by not starting at the same starting point when comparing lengths. When measuring, students with a line or another straight object can be used as guides. Students can place objects against as they compare and contrast. • Be sure shapes are presented in different orientations as the vertex of a triangle not always pointing up. When measuring, students may have difficulty identifying the length of a shape in a non-traditional orientation. When measuring, the student can turn the shape until it looks like a standard shape. • If students have trouble identifying the faces of a shape, then help them trace the faces onto a piece of paper or flat shapes. • Students often confuse the hands on a clock. When measuring, it may be helpful to first introduce the minute hand before introducing the hour hand. • When partitioning shapes, if students are having trouble, because they think they need to draw a line, then give them some straws or sticks to partition shapes into parts. After partitioning, check by counting the parts before measuring.
Standards for Mathematical Practices	Kentucky Interdisciplinary Literacy Practices
MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics. MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning.	1. Recognize that text is anything that communicates meaning. 2. Employ, develop, and refine schema to understand and analyze text. 3. View literacy experiences as transactional and transformational. 4. Utilize receptive and expressive language to understand self, others, and the world. 5. Apply strategic practices, with scaffolding, to approach new literacy tasks independently, to approach new literacy tasks. 6. Collaborate with others to create new meaning. 7. Utilize digital resources to learn and share. 8. Engage in specialized, discipline-specific literacy practices. 9. Apply high-level cognitive processes to analyze and evaluate about text. 10. Develop a literacy identity that promotes learning.
Essential Standards	Sample Learning Intentions & Success Criteria

◆ Indicates a consideration for planning and instruction

! Indicates a misalignment with Kentucky

Cluster: Measure lengths indirectly and by iterating length units.

KY.1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object. MP.6

☐ Conceptual ☐ Procedural ☐ Application

Students use nonstandard tools to estimate and measure objects. They compare the lengths of three different objects.

Coherence [KY.K.MD.1](#)→KY.1.MD.1→[KY.2.MD.4](#)

We are learning to order three objects by length so we can compare the lengths of two objects by using a third object.

I know I am successful when:

- I can directly compare the lengths of three objects.
- I can place three objects in the correct order by length.
- I can indirectly compare two objects using a third object as a reference.
- I can describe the lengths of three objects as they relate to each other.

KY.1.MD.2 Express the length of an object as a whole number of same-size length units, by laying multiple copies of a shorter object (the length unit) end to end with no gaps or overlaps. MP.2, MP.5

☐ Conceptual ☐ Procedural ☐ Application

Students measure numerous items with different sizes of nonstandard units. The smaller the unit, the more units needed to measure the object.

Coherence KY.1.MD.2→[KY.2.MD.2](#)

We are learning to use multiple copies of one object so we can measure the length of larger objects.

I know I am successful when:

- I can accurately measure the length of object
 - starting at the beginning
 - stopping at the end
 - leaving no gaps or overlaps.
- I can measure an object using different sizes of nonstandard units.
- I can explain that the smaller the unit, the more units are needed.
- I can explain that the larger the unit, the fewer units are needed.

Attending to the Standards for Mathematical Practice

Students compare and order objects by analyzing their lengths. For example, they wonder which desk is taller and use a string to compare each desk and determine its relative height (MP.2). Students describe the objects' length in relative terms, understanding "bigger" and "smaller" are not as specific as "longer" and "shorter" for describing length (MP.6). Students understand they use an object as a unit of measure. For example, a paperclip can be used to measure the length of a book and a desk. If it takes two paperclips for the length of the book and one for the length of the desk, students can determine the desk is longer than the book (MP.2).

Cluster: Work with time and money.

KY.1.MD.3 Assign values to time and money.

- a. Tell and write time in hours and half-hours using analog and digital clocks.**
- b. Identify the coins by values (penny, nickel, dime, quarter).
MP.6, MP.8**

☐ Conceptual ☐ Procedural ☐ Application

a. Students understand 60 minutes = 1 hour.

b. A penny has a value of one cent; a nickel has a value of five cents; a dime has a value of 10 cents; a quarter has a value of 25 cents.

Note: This standard requires students to identify coins by name along with their corresponding value only (e.g., a quarter is worth twenty-five cents). In grade one, coins should not be used as models or manipulatives for the purposes of teaching place value, counting (by ones or skip counting), or addition and subtraction.

Coherence [KY.K.MD.1](#)→KY.1.MD.3→[KY.2.MD.8](#)

We are learning to use analog and digital clocks so we can tell and write the time.

I will know I am successful when:

- I can explain the purpose of the hour and minute hands on an analog clock.
- I can tell how many minutes are in an hour.
- I can tell time to the hour and half-hour on an analog clock.
- I can tell time to the hour and half-hour on a digital clock.

We are learning about coins so we can identify their values.

I know I am successful when:

- I can recognize and identify a penny, a nickel, a dime, and a quarter.
- I can identify the values of coins (penny, nickel, dime, quarter).

Attending to the Standards for Mathematical Practice

Students realize the specific logic of an analog clock, recognizing the shorter moving part on an analog clock is on its position (relative to the encircling numerals) indicates what hour it is (MP.6). Students recognize patterns in how hands operate. For example, they notice at 4:30, the minute hand is halfway around the clock (at the six) and the hour hand is between the four and the five (MP.8). Students understand four-thirty is expressed numerically using a digital clock. Students use appropriate terms to describe coins and connect the coin names to their values (MP.2, MP.6).

Cluster: Reason with shapes and their attributes.**KY.1.G.1 Distinguish between defining attributes versus non-defining attributes; build and draw shapes to possess defining attributes. MP.7**

☐ Conceptual ☐ Procedural ☐ Application

Defining attributes include, but are not limited to, number of sides or open/closed shapes. Non-defining attributes include, but are not limited to, color, orientation, or overall size.

Coherence [KY.K.G.4](#)→KY.1.G.1→[KY.2.G.1](#)

We are learning about attributes so we can build and draw shapes.

I know I am successful when:

- I can distinguish between defining attributes and non-defining attribute.
- I can name and describe shapes using appropriate attributes.
- I can build shapes with a given set of defining attributes.
- I can draw shapes with a given set of defining attributes.

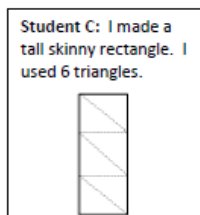
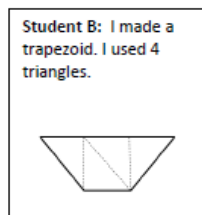
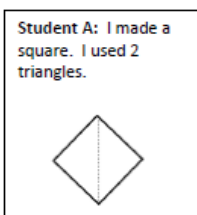
KY.1.G.2 Compose shapes.

- a. Compose two-dimensional shapes to create rectangles, squares, trapezoids, triangles, half-circles, quarter-circles, and composite shapes to compose new shapes from the composite shapes.**
- b. Use 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 shapes. MP.1, MP.4**

☐ Conceptual ☐ Procedural ☐ Application

Students do not need to learn formal names such as “right rectangular prisms.”

Example: What shapes can you create with triangles?



Coherence [KY.K.G.6](#)→KY.1.G.2

We are learning about 2D and 3D shapes so we can compose new shapes.

I know I am successful when:

- I can compose 2D shapes to create a composite shape.
- I can compose 3D shapes to create a composite shape.

KY.1.G.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. MP.3, MP.6

☐ Conceptual ☐ Procedural ☐ Application

Students see the relationship of taking the same shape and partitioning it into equal pieces. For example, they compare the size of the pieces when it's half of a shape or a fourth of the shape.



Coherence [KY.K.G.6](#)→KY.1.G.3→[KY.2.G.3](#)

We are learning about equal shares so we can partition circles and rectangles.

I know I am successful when:

- I can partition circles into two and four equal shares.
- I can partition rectangles into two and four equal shares.
- I can describe the shares using the words halves, fourths, and quarters.
- I can describe the whole as a combination of equal shares.
- I can explain why decomposing a whole into more shares creates smaller shares (4 shares of a cookie would be smaller than 2 shares.)

Attending to the Standards for Mathematical Practice

Through analyzing many shapes and making sense of what they have in common, students determine what attributes define a shape (MP.7). For example, students describe defining characteristics of a triangle as having three sides, three angles or three points and describe non-defining characteristics such as blue, big or heavy (MP.7). Students use their knowledge of defining attributes to build and/or draw examples and non-examples of these shapes, attending to what makes a shape what it is to define the shape (MP.6). Students may compare their drawings and discover a square is a square regardless of its orientation (MP.7).

Supporting Standards

Sample Learning Intentions & Success Criteria

KY.1.OA.6 Add and subtract within 20.

- Fluently add and subtract within 10.**
- Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making 10; decomposing a number leading to a 10; using the relationship between addition and subtraction; and creating equivalent but easier or known sums. MP.2, MP.7, MP.8**

☐ Conceptual ☐ Procedural ☐ Application

Students solve addition and subtraction tasks (with sums and differences within 10) efficiently, accurately, flexibly, and appropriately. Being fluent means students choose flexibly among methods and strategies to solve contextual and mathematical problems, they understand and explain their approaches, and they produce accurate answers efficiently.

Examples of Strategies

- Make 10
 - $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$
- Decompose a number leading to a ten
 - $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$
- Use the relationship between addition and subtraction
 - *I know $8 + 4 = 12$ and I also know $12 - 8 = 4$*
- Create equivalent, but easier or known sums
 - *I can add $6 + 7$ by creating $6 + 6 + 1 = 12 + 1 = 13$*

Note: Fluency is an ongoing process that will take much of the year.

[KY.1.NBT.4](#)

We are learning about math strategies so we can add and subtract within 20.

I know I am successful when:

- I can use a counting-on or counting-back strategy to add and subtract.
- I can compose and decompose addends to make a ten to help me add and subtract.
- I can use doubles facts to add and subtract.
- I can use known doubles facts to help me solve near doubles facts.
- I can use reasoning to choose the most efficient strategy when adding and subtracting.
- I can explain my reasoning for choosing the strategy I used to solve a problem.

Coherence KY.K.OA.2 →KY.1.OA.6→ KY.2.OA.2 KY.K.OA.3	
KY.1.NBT.1 Count and represent numbers. a. Count forward to and backward from 120, starting at any number less than 120. b. In this range, read and write numerals and represent a number of objects with a written numeral. MP.2, MP.5, MP.8 ☐ Conceptual ☐ Procedural ☐ Application Students use strategies based on place value, properties of operations, and the relationship between addition and subtraction; however, when solving any problem, students choose any strategy. A written representation shows a strategy using words, pictures, and/or numbers. Coherence KY.K.CC.2→KY.1.NBT.1→KY.2.NBT.2	We are learning to count forward and backward so we can understand the relationship of numbers. I know I am successful when: • I can count forward to 120 starting from any number. • I can count back from 120 starting from any number. • I can count by 10s to 120. • I can recognize patterns in the 120 chart that can help me when counting to 120. We are learning to read and write numbers so we can represent objects with numerals. • I can read and write numbers up to 120. • I can represent a group of objects with a written numeral.
KY.1.MD.4 Investigate questions involving categorical data. a. Pose a question that can be answered by gathering data. b. Determine a strategy for gathering data from peers. c. Organize and represent data in a table/chart with up to three categories. d. Interpret data to answer questions about the table/chart that connects to the question posed, including the total number of data points, how many in each category and how many more or less are in one category than in another. MP.1, MP.3, MP.4, MP.6 ☐ Conceptual ☐ Procedural ☐ Application Students create a table or chart to organize data. KY.2.MD.9 Coherence KY.1.MD.4→KY.2.MD.10	We are learning about data so we can ask and answer questions about a table or chart. I know I am successful when: • I can pose a question that can be answered by gathering data. • I can determine a strategy to gather data. • I can organize and represent data in a table or chart with up to three categories. • I can count and read the data in a table or chart. • I can determine how many more or less are in one category than in another. • I can ask and answer questions using data in a table or chart.