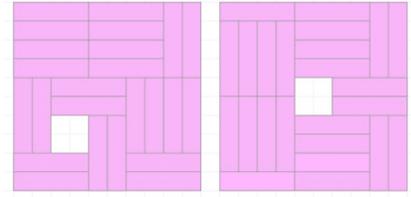


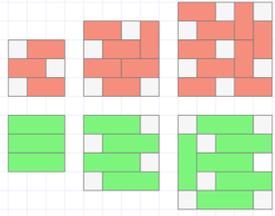


Cuisenaria and Common Core Connections  
*NNMC Math Teachers Circle Workshop July 9-12, 2018*  
*Leader: Ana Vasilic, Northern New Mexico College*



Standards for Mathematical Practice: 1, 2, 6, 7, and 8

- MP1: “Make sense of problems and persevere in solving them”.
- MP2: “to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own”.
- MP6: “Attend to precision.”
- MP7: “Mathematically proficient students look closely to discern a pattern or structure.”
- MP8: “Look for and express regularity in repeated reasoning.”



Standards for Mathematical Content

Number & Operations in Base Ten

**Kindergarten**

**Introduction: “Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.”**

CCSS.MATH.CONTENT.K.OA.A.3

Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ).

**Grade 1**

**Introduction: “Measure lengths indirectly and by iterating length units.”**

CCSS.MATH.CONTENT.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. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

**Introduction: “Reason with shapes and their attributes.”**

CCSS.MATH.CONTENT.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.

CCSS.MATH.CONTENT.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.1

### [CCSS.MATH.CONTENT.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.

## Grade 2

**Introduction: “Reason with shapes and their attributes.”**

### [CCSS.MATH.CONTENT.2.G.A.1](#)

Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.1 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

### [CCSS.MATH.CONTENT.2.G.A.2](#)

Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

### [CCSS.MATH.CONTENT.2.G.A.3](#)

Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

## Grade 3

**Introduction: “Geometric measurement: understand concepts of area and relate area to multiplication and to addition.”**

### [CCSS.MATH.CONTENT.3.MD.C.5](#)

Recognize area as an attribute of plane figures and understand concepts of area measurement.

#### [CCSS.MATH.CONTENT.3.MD.C.5.A](#)

A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.

#### [CCSS.MATH.CONTENT.3.MD.C.5.B](#)

A plane figure which can be covered without gaps or overlaps by  $n$  unit squares is said to have an area of  $n$  square units.

### [CCSS.MATH.CONTENT.3.MD.C.6](#)

Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

### [CCSS.MATH.CONTENT.3.MD.C.7](#)

Relate area to the operations of multiplication and addition.

#### [CCSS.MATH.CONTENT.3.MD.C.7.A](#)

Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

#### [CCSS.MATH.CONTENT.3.MD.C.7.B](#)

Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

[CCSS.MATH.CONTENT.3.MD.C.7.C](#)

Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths  $a$  and  $b + c$  is the sum of  $a \times b$  and  $a \times c$ . Use area models to represent the distributive property in mathematical reasoning.

[CCSS.MATH.CONTENT.3.MD.C.7.D](#)

Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

## Grade 4

**Introduction: “Draw and identify lines and angles, and classify shapes by properties of their lines and angles.”**

[CCSS.MATH.CONTENT.4.G.A.1](#)

Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

[CCSS.MATH.CONTENT.4.G.A.3](#)

Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.