

MATHEMATICS COMMON CORE CURRICULUM UNIT #3 Grade K*

North Smithfield School Department

TITLE OF UNIT: Numbers, Measurement and Shapes **GRADE :** K

DATE PRESENTED: _____ **DATE DUE:** _____

LENGTH OF TIME: 7 Weeks (5 weeks of explicit of instruction and 2 weeks of assessment & re-teaching)

OVERVIEW OF UNIT:

Students will use the numbers 0 – 30 to complete a variety of counting and number activities, such as, oral counting, number writing and comparing numbers. They will explore and understand concepts that describe and compare measurable attributes. They begin to analyze and describe two- and three- dimensional shapes.

ESSENTIAL QUESTIONS

- *What number patterns do you hear? Twenty-one, twenty-two, twenty-three,...*
- *What number patterns do you see? 11, 12, 13, ...*
- *How do you know this group has more than the other group? What strategy did you use?*
- *What would you have to do to make the two groups the same or equal?*
- *How do you know this numeral is more than the other numeral? What strategy did you use?*
- *What do you see?*
- *Which is taller/shorter, heavier/lighter, longer/shorter? How do you know?*
- *How can you tell which item is taller/shorter, heavier/lighter, longer/shorter?*
- *What happens to the attributes of a shape (or object) when I move it? Why?*
- *How many different ways can you sort these shapes?*
- *What two-dimensional shapes do you see in this three-dimensional shape?*

STANDARDS: Common Core Math Standards – Grade level domains K-5

| Counting and Cardinality CC | Operations and Algebraic Thinking OA | Number and Operations in Base Ten NBT | Number and Operations – Fractions NF | Measurement and Data MD | Geometry G |
|--|---|--|---|--|---------------------------------------|
| <input type="checkbox"/> K.CC.1 <input type="checkbox"/> K.CC.3 <input type="checkbox"/> K.CC.6 <input type="checkbox"/> K.CC.7 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> K.MD.1 <input type="checkbox"/> K.MD.2 | <input type="checkbox"/> K.G.4 |
| | | | | Modeling with Geometry G-MG | |

STANDARDS: Mathematical Practices grades K-12

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|---|--|--|---|
| 1. Make sense of problems and persevere in solving them | 3. Construct viable arguments and critique the reasoning of others | 5. Use appropriate tools strategically | 7. Look for and make use of structure |
| 2. Reason abstractly and quantitatively | 4. Model with mathematics ★ | 6. Attend to precision | 8. Look for and express regularity in repeated reasoning |

FOCUS MATHEMATICS STANDARDS:

- Know number names and the count sequence. **K.CC.1,3**
- Measurement and Data **K.MD.1,2**
- Compare numbers. **K.CC.6,7**
- Geometry **K.G.4**

Applied Learning Standards:

problem solving
communication
critical thinking
research
reflection/ evaluation

Expectations for Student Learning (High School only):

ENDURING UNDERSTANDING:

At the end of this unit, students will continue to build upon their understanding and application of number knowledge using the numbers 0 – 30. They will learn how to describe and compare measurable attributes and how to analyze & compare two – and three- dimensional shapes.

PRIOR KNOWLEDGE:

- Use numbers and counting as a means for solving problems, predicting and measuring quantity.
- Use words such as more than, less than and add/subtract to express some number concepts.
- Begin to order, compare or describe objects according to size, length, height and weight using standard or non-standard forms of measurement.
- Describe and name common shapes.
- Group objects according to their size and shapes.

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STUDENT OBJECTIVES, SKILLS and/or NEW KNOWLEDGE:

- Saying the number names in a count sequence is a rote process. While it is foundational to counting, it does not indicate understanding of the relationship between quantity and number.
- Oral and written patterns exist in the counting sequence (e.g., +1 pattern, +10 pattern, etc.)
- Number names can be written as numerals.
- Two quantities can be compared to determine which quantity is more, less or equal to the other quantity.
- The size of groups can be compared in multiple ways.
- Two numbers can be compared to determine which number is .more, less, or equal to the other.
- Numbers can be compared in multiple ways.
- Objects have multiple attributes.
- Measurable attributes can be compared directly or indirectly.
- Attributes are measured using a unit of measure.
- Measurable attributes can be compared directly or indirectly.
- Attributes are measured using a unit of measure.
- Attention to starting points, gaps, and overlaps is important to measure accurately.
- Measurable attributes do not change when an object is moved (conservation).
- Two-dimensional and three-dimensional shapes can be analyzed, compared and sorted based on their attributes.
- When sorted, a single item may belong to more than one category.

SUGGESTED PROBLEMS:

ACTIVITIES, PRODUCTS, PERFORMANCE, and ASSESSMENTS: see curriculum introduction

- | | | | |
|---------------------------------------|----------------------------|--|---|
| 1. Application to real world problems | 6. Graphic organizers | 14. Problem/Performance based/common tasks | 18. Technology |
| 2. Creating charts/collecting data | 7. Graphing | 15. Real-life applications involving graphing | 19. Summarizing and note-taking |
| 3. Collaboration - interpersonal | 8. Interviews | 16. Represent numbers | 20. Tests and quizzes |
| 4. Conferencing | 9. Journals | 17. Rubrics/checklists (mathematical practice, modeling) | 21. Writing genres Arguments/ opinion Informative |
| 5. Exhibits | 10. KWL charts | | |
| | 11. Mathematical Practices | | |
| | 12. Modeling ★ | | |
| | 13. Oral presentations | | |

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HIGHER ORDER THINKING SKILLS: Web's Depth of Knowledge 2 – 4 or Bloom's Taxonomy

Web's Depth of Knowledge

- skill/conceptual understanding
- strategic reasoning
- extended reasoning

Bloom's Taxonomy

- apply
- analyze
- synthesize/create
- evaluate

ADDITIONAL RESOURCES: see curriculum for specifics

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VOCABULARY

Counting and Cardinality

- Count
- Counting sequence
- Digit
- Match
- Number
- Numeral
- Object
- One more
- Ones
- Organize
- Quantity
- Remove
- Tens
- Total
- Zero

Measurement and Data

- Attribute
- Biggest
- Category
- Classify
- Compare
- Different
- Equal
- Greater than/less than
- Heavier
- Height
- How long?
- Length
- Lighter
- Longer than
- Measurable
- Pair
- Same
- Shorter (than)
- Similar
- Smallest
- Sort
- Starting point
- Taller
- Weight
- Width

Geometry

- Above
- Behind
- Below
- Beside
- Between
- Circle
- Cone
- Cube
- Cylinder
- Different
- Edge
- Face
- Flat/ lying in plane
- Hexagon
- In front of
- Next to
- Octagon
- Rectangle
- Rhombus
- Same
- Side
- Solid
- Sphere
- Square
- Three-dimensional
- Two-dimensional
- Trapezoid
- Triangle
- Vertices “corners”

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LESSON PLAN for UNIT _____

LESSONS

- Lesson # 1 Summary:

- Lesson #2 Summary:

- Lesson #3 Summary:

OBJECTIVES for LESSON # _____

- Materials/Resources:**

- Procedures:**
 - Lead -in

 - Step by step

 - Closure

- Instructional strategies:** see curriculum introduction

- Assessments:** see curriculum introduction
 - **Formative**

 - **Summative**