MATHEMATICS COMMON CORE CURRICULUM UNIT #1 Grade 1*
North Smithfield School Department

TITLE OF UNIT: Add & Subtract within 20   **COURSE OR GRADE : 1**

DATE PRESENTED: _____ **DATE DUE:** _____ **LENGTH OF TIME:** Several weeks, quarter, semester

OVERVIEW OF UNIT:

In this unit students will add and subtract within 20. Student will understand and apply the properties of and the relationship between addition and subtraction. Students will extend the counting sequence and understand place va**lue.**

> ### ESSENTIAL QUESTIONS
> *What kinds of problems can be modeled and solved using addition and subtraction?*
> *How does knowing addition combinations help you subtract?*
> *What number comes next (before) ? how do you know?*

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
☐	☐ 1.OA 3,4,5,6	☐ 1.NBT 1,2	☐	☐	☐
	☐	☐		☐ **Modeling with Geometry G-MG**	

STANDARDS: Mathematical Practices grades K-12

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

FOCUS MATHEMATICS STANDARDS:

- Add and subtract within 20. 1.OA.5, 6
- Understand and apply properties of operations and the relationship between addition and subtraction. 1.OA.3, 4

- Extend the counting sequence. 1.NBT.1
- Understand place value.   1.NBT.2

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Applied Learning Standards:

problem solving   communication   critical thinking   research   reflection/ evaluation

Expectations for Student Learning (High School only):

ENDURING UNDERSTANDING:

Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. Students use properties of addition to create and use increasing sophisticated strategies based on these properties to solve addition and subtraction problems within 20. Students will be able to read and write numerals to 120 and extend the counting sequence beginning at any number less than 120.

PRIOR KNOWLEDGE:

- Count fluently to 25

- Read and recognize numbers through 20

- Count by numbers, such as twos and fives

- Addition means "put together" and subtraction means "take apart"

STUDENT OBJECTIVES, SKILLS and/or NEW KNOWLEDGE:

- Numbers can be added in any order to achieve the same sum.

- Addition and subtraction are connected. Addition names the whole in terms of the parts, and subtraction names a missing part.

- Subtracting a whole from a part is not the same as subtracting a part from a whole. (7 – 3 is not the same as 3 – 7.)

- Subtraction can be done using addition, through finding the missing addend.

- Patterns and relationships in addition and subtraction combinations can help build fluency.

- Addition and subtraction of whole numbers are based on sequential counting with whole numbers.

- Numbers can be decomposed and recomposed to solve addition and subtraction problems.

- Strategies for addition and subtraction can be more or less efficient in different situations.

- Quantities can be represented by a written numeral.

- Counting can begin at any number and go forward or backward.

- There are patterns in numbers.

- Some patterns of the count sequence make counting predictable.

- The position of digits in numbers determines the value they represent (which size group they count).

- Two-digit numbers can be decomposed into a unit of ten ones and some more ones.

- Groups of ten can be thought of as a unit that can be counted and used to describe quantities.

SUGGESTED PROBLEMS:

1.OA.3 Basic
- http://www.k-5mathteachingresources.com/support-files/turnaroundtrains.pdf
- http://www.k-5mathteachingresources.com/support-files/dominofactfamilies1.oa3.pdf

1.OA.4 Basic
- http://www.k-5mathteachingresources.com/support-files/tenframesubtraction.pdf

1.OA.5 Basic
- http://www.k-5mathteachingresources.com/support-files/showonemore.pdf
- http://www.k-5mathteachingresources.com/support-files/showonemore.pdf (Advanced = show 2, 3 etc. more)

1.OA.6 Basic
- http://www.illustrativemathematics.org/illustrations/1169

1.OA.6 Advanced
- http://www.illustrativemathematics.org/illustrations/1084

1.NBT.1 Basic
- http://www.illustrativemathematics.org/illustrations/680   (game)
- http://www.illustrativemathematics.org/illustrations/681
- http://www.illustrativemathematics.org/illustrations/405

1.NBT.2 Basic
- http://www.illustrativemathematics.org/illustrations/1150

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		20. Tests and quizzes
4. Conferencing	9. Journals	16. Represent numbers	21. Writing genres Arguments/ opinion Informative
5. Exhibits	10. KWL charts	17. Rubrics/checklists (mathematical practice, modeling)	
	11. Mathematical Practices		
	12. Modeling ★		
	13. Oral presentations		

*Referenced templates from *Common Core Curriculum Maps, English Language Arts* and *The Understanding By Design Guide to Creating High Quality Units*

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

Web's Depth of Knowledge	**Bloom's Taxonomy**
• skill/conceptual understanding	• apply
• strategic reasoning	• analyze
• extended reasoning	• synthesize/create
	• evaluate

ADDITIONAL RESOURCES: see curriculum for specifics

- ☐   http://www.readtennessee.org/math/teachers/k-3_common_core_math_standards/first_grade.aspx

VOCABULARY

- Add
- Addend
- Addition
- Add-to
- Base ten blocks
- Combine
- Combine ones to make a ten
- Compare
- Compose
- Count
- Count back
- Count backward
- Count forward
- Count on
- Decompose
- Decompose to make friendly numbers
- Difference

- Digits
- Doubles
- Equal
- Equal to
- Equations
- Estimate
- Greater than
- Greatest
- Groups of/bundles of
- Horizontal form
- Hundreds
- Join
- Least
- Leftovers
- Less than
- Minus
- More than

- Most
- Not equal to
- Number line Number relationship
- Ones
- Patterns
- Place value
- Quantity
- Remove Same as
- Separate
- Strategies
- Strategies
- Subtract
- Subtraction
- Sum
- Take from
- Tens
- True/false
- Vertical form

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**

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