UNIT 4 FOUNDATIONS FOR PLACE VALUE

Established Goals:
Standards

Counting & Cardinality

K.CC.1 Count orally to 70 by ones and tens.

Operations & Algebraic Thinking

K.OA.3 Decompose numbers less than or equal to ten into pairs of numbers in more than one way and record with a drawing or equations (e.g., write 7 as 2 + 5 and 6 + 1).

K.OA.4 Given a number less than 10, find a number that makes 10 (e.g., 1 + 9, 2 + 8, 3 + 7, 4 + 6, 5 + 5, etc.).

K.OA.5 Use mental math strategies to solve addition and subtraction facts within 5.

Numbers in Base Ten

K.NBT.1 Compose and decompose numbers from 11 to 19 into a group of ten and one(s) with or without manipulatives. Record each composition or decomposition through a drawing or equation

Mathematical Practice Standards

Look for and make use of structure.

Make sense of problems and persevere in solving them.

Model curriculum unit 4

Model with mathematics.

Use appropriate tools strategically.

Attend to precision.

Transfer

Students will be able to:

Develop and use strategies for combining and separating two quantities up to 10.

Understand the patterns of numbers

Use grouping of numbers to understand place value

Meaning

ENDURING UNDERSTANDING	ESSENTIAL QUESTIONS
• Numbers connect to a quantity. • Using groups to count and combine is more efficient than counting by ones. • The place value of ten numbers is made up of one group of ten and some number of ones. • Addition and subtraction involve combining or separating small amounts. • Compose and decompose numbers up to 10 with objects and pictures	How can we organize a set of objects so they are easy to count and combine? How will I know if I need to add or subtract? What symbols do I use to create number sentences to show joining or separating groups or numbers? How do I recognize what strategy to use for a specific problem?

Acquisition

KNOWLEDGE	SKILLS
Students will know how to… • How to count orally to 70s by ones and tens. • + is called the plus sign and is used to put groups together or add more to a group. • -is called the minus sign and is used when taking away from a group. • = is called the equal sign and is used when finding the sum or difference.	*Students will be skilled at…* • Apply strategies to solve addition and subtraction within 10. • Identify and demonstrate that teen numbers are one ten frame and some ones. • Write simple number sentence • Decompose a given number into 2 groups and create a number

Look for and express regularity in repeated reasoning	• Numbers are in a pattern. • After 9, numbers become 2 digit numbers. • Tens column is the first digit. • Ones column is the second digit.	sentence. (7=5+2)

Vocabulary	Instruction and Pacing (suggested order to teach)	
decompose, compose, number sentence, whole, part, add, tens column, ones column	**Compose and Decompose Numbers up to 10**	**2 Weeks**
	Strategies to Add & Subtract (eg. Make 10 and Mental Math)	**2 Week**
	Compose and Decompose Numbers 11 - 19	**2 Weeks**
	Fluency Standard (Add & Subtract 0-5)	**Entire Unit**
	Counting & Cardinality (Count to 70 by ones & tens)	**Entire Unit**
	Benchmark Testing & Reteaching	**2 Weeks**

Common Misconceptions	Proper Conceptions
Students make errors when writing equations by misplacing addends or sums	Touch and count objects in the group and write the number in each group
Students see 2 groups of objects for addition, and don't know where to start	Always start with counting the objects in the first group.
Students are confused with the "plus" sign	The "plus" sign shows joining
Students forget the meaning of the "plus" sign	The + "plus" sign in another way of saying 3 "and" 2 is 5
Students forget the meaning of the "equal" sign	The = "equal" sign is another way of saying 3 and 2 "is" 5
Students have difficulty finding sums	Counting the number in each group and putting them together gives the sum
In subtraction, students are unsure why they are crossing out pictures or objects	Marking an X means taking away
In subtraction students are unsure why they match objects one to one	Pairing objects can help to see which group has more and how many more
In subtraction students forget the meaning of the "minus" sign	The – "minus" sign means take away
Why do addition and subtraction sentences have no words?	Number sentences use numbers and signs instead of words

Resources

Common Core Standards ,New Jersey Model Curriculum

Envisions Math Program Suggested Topics

Topic 9 Composing & Decomposing Numbers to 10

Topic 10 Composing Numbers 11-19

Topic 11 Decomposing Numbers 11-19

MANIPULATIVES AND GRAPHIC ORGANIZERS – Two Sided Counters, Teddy Bear Counters, Unifix Cubes, Ten Frames, Place Value Mats (Tens, Ones)Templates for Communicators/Smart Pal Sleeves

, http://illuminations.nctm.org, https://www.illustrativemathematics.org

https://gradekcommoncoremath.wikispaces.hcpss.org/Kindergarten+Home

Additional Resources for ELL Learners

http://www.njctl.org/courses/math/kindergarten-math/operations-and-algebraic-thinking/

http://www.njctl.org/courses/math/kindergarten-math/numbers-in-base-ten/

http://www.njctl.org/courses/math/kindergarten-math/measurement/

http://www.njctl.org/courses/math/kindergarten-math/geometry-and-patterns/

http://www.state.nj.us/education/modelcurriculum/math/ellscaffolding/1u4.pdf

Math site for parents and Math from different countries http://www.aaamatematicas.com/

****Spanish Version of Envisions Digital Path & Printable Resources**

Differentiation and Accommodations

Provide graphic organizers
Provide additional examples and opportunities for additional problems for repetition
Provide tutoring opportunities
Provide retesting opportunities after remediation (up to teacher and district discretion)
Teach for mastery not test
Teaching concepts in different modalities
Adjust pace and homework assignments

ELL Modifications

- Assess/teach prerequisite skills
- Student illustrated word wall of important math terms
- Read picture books for shapes and measurement to build vocabulary.
  - http://nzmaths.co.nz/picture-books-measurement-content
- Use different colored clock hands to make paper student clocks to assist students in correctly identifying the time.
- Bring in real life examples of two and three dimensional shapes. Allow students to explore shapes and gain experience to match the math vocabulary (vertices, faces, etc.)
- Students should gain practice measuring and comparing real objects before completing written exercises.
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- Allow students to act out word problems, moving around room as necessary.
- When solving word problems, rather than solely reading, give students a printed copy so they can read along and highlight/circle numbers. Provide room for students to write number sentences and draw pictures on the same document.
- Use different colors to color code plus sign and minus sign to help students attend to the operation.
- Use math manipulatives to solve all math problems (two color counters, teddy bear counters, etc.)
- Complete hands on sorting activities before paper and pencil activities.
  - http://www.kindergartenkindergarten.com/sorting-by-attributes/

Utilize Envision Spanish Version/Interactive

21st Century Skills	Critical Thinking, Creative Thinking, Collaborating, Communicating, and Technology Literacy
Instructional	Fairfield Township School recognizes the importance of the varying methodologies that may be successfully employed by teachers within the

Strategies	classroom and, as a result, identifies a wide variety of possible instructional strategies that may be used effectively to support student achievement. These may include, but not be limited to, strategies that fall into categories identified by the Framework for Teaching by Charlotte Danielson: • Communicating with students • Using questioning and discussion techniques • Engaging students in learning • Using assessment in instruction • Demonstrating Flexibility and Responsiveness
Interdisciplinary Connections	ELA, Science, and Technology

Performance Task

Your goal is to pick 10 of your favorite toys in the classroom. You are a good friend and your friend is upset that they have no toys. You share some of your toys with your friend. Put your toys into two groups, the toys you will play with and the toys your friend will play with. The challenge is to draw the story on a piece of paper then create a number sentence. You need to have all ten toys in your drawing and they need to be separated into the two groups and you need to have the number sentence on your paper.

Rubric

3- Students drew all ten toys and drew them into two groups (their toys and their friend?s toys) and they correctly wrote the number sentence and can explain the number story.(4 tasks)

2-Students did 2 or 3 of the tasks correctly.

1-Students did 1 task correctly.

0- Did not attempt

ASSESSMENTS

Suggested Formative Assessment

Problem of the Day

Lesson Quizzes

Exit Ticket

Anecdotal Records (Topic Observation Checklist)

Suggested Summative Assessment - Grade Level developed Unit/Envisions Topic Tests/ Ed Connect Tests/ State Unit Benchmark/Performance Task