COMMON CORE

A Story of Units

Grade K – Module 1

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Session Objectives

- Examine the sequence of concepts across the module.
- Study mathematical models and instructional strategies from *A Story of Units.*
- Prepare to implement this and subsequent modules of *A Story of Units.*

Participant Poll
- Classroom teacher
- School leader
- Principal
- District leader
- Other VIP

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Curriculum Overview of *A Story of Units*

Review of Module Structure

Module Overview

| Topic | Topic | Topic |

| L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 |

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Module Overview

- Read the descriptive narrative.
- Make note of important information that will help educators understand the content and prepare to implement this module.

Agenda

Lesson Structure
Instructional Sequence
Module Review
Preparation for Implementation

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Introduction to the Lesson Structure

Counting Beans and Fingers to 3 (K.CC.4a)

- Left hand mat prepares for counting the Math Way
- Students count using 1:1 correspondence
- Uses "exactly the same" terminology of the objective

Lesson 1, Fluency Practice

Introduction to the Lesson Structure

Show Me Beans (K.CC.4a)

- Students count using 1:1 correspondence
- Requires counting out a specific number of objects
- Prepares for counting the Math Way

Lesson 1, Fluency Practice

Introduction to the Lesson Structure

Counting with the Number Glove to 3 (K.CC.5)

- Promotes counting the Math Way (from left pinky to right pinky)
- Teacher uses glove on right hand, which looks like the left hand from students' perspective

Lesson 1, Fluency Practice

The Role of Fluency

Maintenance staying sharp on previously learned skills

Preparation targeted practice for the current lesson

Anticipation skills that ensure that students will be ready for the in-depth work of upcoming lessons

Introduction to the Lesson Structure

Please draw a picture of this sock.
- Ties to objective: compare drawings of the sock and use *exactly the same* or *not exactly the same* during the Student Debrief
- Mathematizes the world
- Associates drawings with math

Lesson 1, Application Problem

Application Problems

- Real world problem solving
- Placement in lesson depends on function
- Opportunity for informal assessment

Problem-solving process:

Read the problem

Draw and label a model to represent the problem

Write an equation and a complete word sentence

Concept Development

- New material
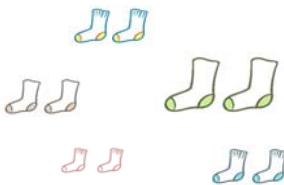- Timing includes 10 minutes for Problem Set
- Moves from simple to complex

Problem Set

- Time frame rather than task frame
- Closely related to the other lesson components
- A good place to begin lesson planning

Introduction to the Lesson Structure

Lesson 1, Concept Development
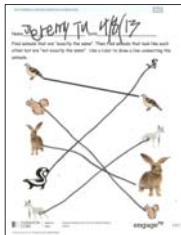
Introduction to the Lesson Structure

Lesson 1, Student Debrief

Introduction to the Lesson Structure

- Are your shoes **exactly the same**?
- Does the left look exactly the same as the right?
- Let's look at our pictures of the sock. Is this picture the same as this one?
- The sock was exactly the same, why are our pictures **not exactly the same**?
- How can you tell if two things are exactly the same or not exactly the same?

Lesson 1, Student Debrief

Student Debrief

- Class conversation to reflect on the day's learning

- Make connections between parts of the lesson, concepts, strategies, and tools

- Students ultimately articulate the learning objective

Exit Ticket

- Daily formative assessment to drive instruction

- Time frame rather than task frame

- Tool for lesson planning

Agenda

Lesson Structure
Instructional Sequence
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Attributes of Two Related Objects

- **Lesson 1:** Analyze to find two objects that are *exactly the same* or *not exactly the same*.
- **Lesson 2:** Analyze to find two similar objects – *these are the same, but...*
- **Lesson 3:** Classify to find two objects that share a visual pattern, color, and use.

Topic A

Exploring Similarity

- Identify and compare attributes
- Connects to geometry work in Module 2
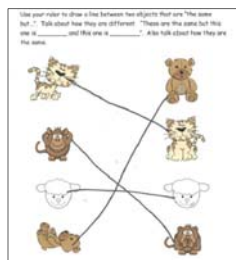- Sets a foundation for understanding similarity of expressions

Are these the same?	YES NO

Exactly the same	$10 = 10$
The same, but...	$10 = 5 + 5$
Different	$10 \neq 12$

Topic A

The Same, but…

Lesson 2

Match by Pattern, Color, or Use

Lesson 3

Classify to Make Categories and Count

- **Lesson 4:** Classify items into two pre-determined categories.
- **Lesson 5:** Classify items into three categories, determine the count in each, and reason about those the last number named determines the total.
- **Lesson 6:** Sort categories by count. Identify categories with two, three, and four within a given scenario.
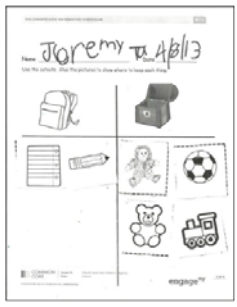
Topic B

Sorting

Objective: Classify items into two pre-determined categories.

Lesson 4

Sort and Tell How Many in Each Group

Sun	Raindrops	Snowflakes

Lesson 5

Sort by Count

2	3	4

Lesson 6

Sort by Count

Why did you color both sets of triangles blue but the sets of happy faces different colors?

Lesson 6

Numerals to 5 in Different Configurations, Math Drawings, and Expressions

- **Lesson 7:** Sort by count in vertical columns and horizontal rows. Match to numerals on cards.
- **Lesson 8:** Answer *how many* questions to 5 in linear configurations with 4 in an array configuration. Compare ways to count 5 fingers.
- **Lesson 9:** Within linear and array dot configurations of numbers 3, 4, and 5, find hidden numbers.
- **Lesson 10:** Within circular and scattered dot configurations of numbers 3, 4, and 5 find hidden partners.
- **Lesson 11:** Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.

Topic C

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Counting Configurations

Simple → Complex
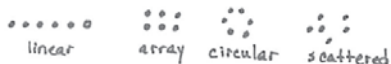
linear   array   circular   scattered

Topic C

COMMON CORE

Fluency Break

Sunrise/Sunset Counting to 5 (K.CC.2)
- Students rote count to 5
- The movement mimics the increasing quantity as they count forward and the decreasing quantity as they count back
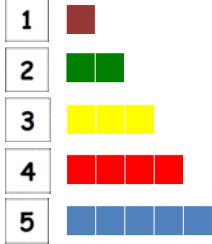
Lesson 7

COMMON CORE

Match Numerals to Quantities

- Introduce numerals 1, 2, 3, 4, and 5
- Sort cubes by color
- Count each group and match the numeral

Lesson 7

Match Numerals to Quantities
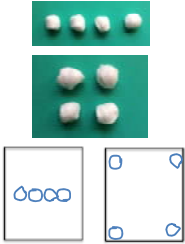
Lesson 7

Counting Objects and Drawings

- Students manipulate the objects
- Include array configuration (4)
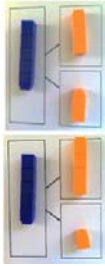- Students draw circles in different configurations

Lesson 8

Hidden Partners

- First experience with decomposition
- Find smaller numbers inside larger numbers
- Discover multiple hidden partners
- Precursor to use of number bond in Module 4 (template shows relationship of parts and whole)

Lesson 9

Application Problem

Use your personal white board:
  Draw 5 dogs playing. Draw a fence that keeps exactly 3 of them inside.

Lesson 10

Counting Path

circular   scattered

Lesson 10

Number Stories

There are 3 flowers. Two flowers are red and 1 flower is purple.

| 2 | 1 | 3 |

2 + 1

Lesson 11

The Concept of Zero and Working with Numbers 0-5

- **Lesson 12:** Understand the meaning of zero. Write the numeral 0.
- **Lesson 13:** Order and write numerals 0-3 to answer *how many* questions.
- **Lesson 14:** Write numerals 1-3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.
- **Lesson 15:** Order and write numerals 4 and 5 to answer how many questions in categories; sort by count.
- **Lesson 16:** Write numerals 1-5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.

Topic D

Zero the Hero

- The math word for none is zero
- "Curve from the top; be a hero! Close the loop and make a zero."
- Be prepared to supplement the handwriting work in this lesson with additional practice

Lesson 12

Writing 1, 2, and 3

- Rhymes
- Writing frames
- Plan to incorporate more numeral writing practice after this lesson

Lesson 13

Decomposition with Number Sentences

$$3 = 2 + 1$$

Lesson 14

Decomposition with Number Sentences

Lesson 14

Writing 4 and 5

Lesson 15

Sequencing and Embedded Numbers

- Play Mix and Fix with 5-group cards- sequencing 1, 2, 3, 4, 5.

| 1 | 2 | 3 | 4 | 5 |

- Find embedded numbers in 4 and 5

Lesson 16

Working with Numbers 6-8 in Different Configurations

- **Lesson 17:** Count 4-6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.
- **Lesson 18:** Count 4-6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1-6 in order.
- **Lesson 19:** Count 5-7 linking cubes in linear configurations. Match with the numeral 7. Count on fingers from 1 to 7 and connect to 5-group images.
- **Lesson 20:** Reason about sets of 7 varied objects in circular and scattered configurations. Write numeral 7.
- **Lesson 21:** Compare counts of 8 in linear and array configurations. Match with numeral 8.
- **Lesson 22:** Arrange and strategize to count 8 beans in circular and scattered configurations. Write numeral 8.
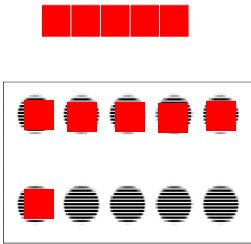
Topic E

Introducing 5-Groups

- This is the first time the 5-group is named for students
- Use the 5-group mat to count up to 6 in linear configuration

Lesson 17

Counting Out a Set

- Counting out a particular number of objects from a larger set is challenging.
  - Remember the target number
  - Accurately count with 1:1 correspondence
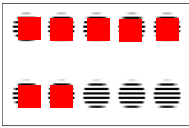 - Stop adding objects when the target number is reached

Lesson 18

Introducing 7

- Use 5-group mat to see 7 as 5 and 2.
- Make a connection between the 5-group mat and fingers

Lesson 19

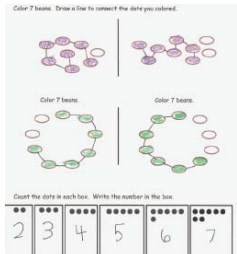## Showing the Counting Path

- Track the counting path
- Compare to a friend's counting path
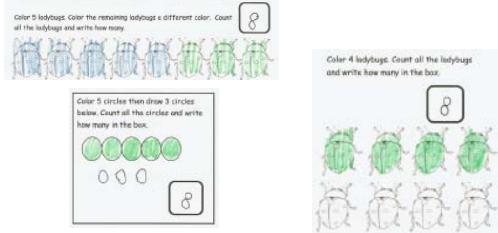- Sequencing numbers
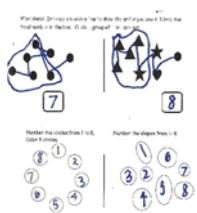
Lesson 20

Introducing 8

Lesson 21

Showing the Counting Path

Read the lesson and unpack by considering the following:

- How do the questions on the Problem Set correlate with the instruction in the Concept Development?
- How does the Problem Set move from simple to complex?
- How do the Fluency Activities and Application Problem support the objective?
- You have to cut 10 minutes from this lesson. How do you do it?

Lesson 22

Working with Numbers 9-10 in Different Configurations

- **Lesson 23:** Organize and count 9 varied geometric objects in linear and array configurations. Place objects on 5-group mat. Match with numeral 9.
- **Lesson 24:** Strategize to count 9 objects in circular and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with pencil. Number each object.
- **Lesson 25-26:** Count 10 objects in linear and array configurations. Match with numeral 10. Place on the 5-group dot mat. Write numeral 10.
- **Lesson 27:** Count 10 objects and move between all configurations.
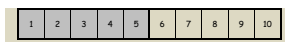- **Lesson 28:** Act out *result unknown* story problems without equations.

Topic F

Acting Out Story Problems

- Introducing the number path
- Acting out stories by standing on a large scale number path

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Lesson 28

One More Than with Numbers 0-10

- **Lesson 29:** Order and match numeral and dot cards from 1 to 10. State one more than a given number.
- **Lesson 30:** Exploration: Make math stairs from 1 to 10 in cooperative groups.
- **Lesson 31:** Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.
- **Lesson 32:** Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.
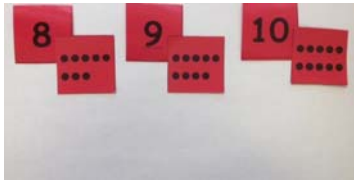
Topic G

Exploring One More

- Foundational to ordering and comparing numbers.
- Students can find missing numbers in a consecutive list of numbers.
- Sets a foundation for using counting on strategies.

Topic G

"I have 1. 1 more is 2."

Lesson 29

Make Math Stairs

Lesson 30

One more in a circular configuration
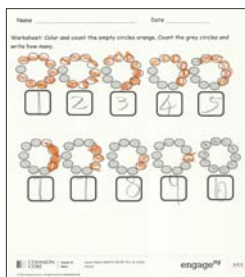
Lesson 31

One more starting with numbers other than 1
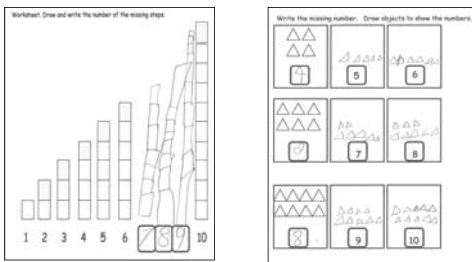
Lesson 32

One Less Than with Numbers 0-10

- **Lesson 33:** Order quantities from 10 to 1 and match numerals.
- **Lesson 34:** Count down from 10 to 1 and state 1 less than a given number.
- **Lesson 35:** Arrange number towers in order from 10 to 1 and describe the pattern.
- **Lesson 36:** Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

Topic H

Counting from 10 to 1

Lesson 33

"10. 1 less is 9."
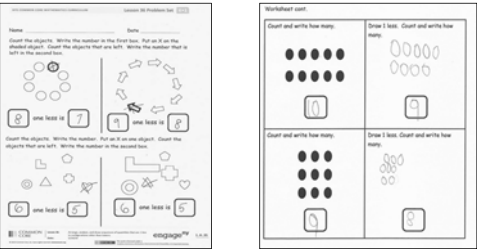
Lesson 34

Descending Math Stairs

Lesson 35

One less in a circular, scattered, and array configuration

Lesson 36

Number Fair! – Culminating lesson

?

Lesson 37

Assessment Info

- 1:1 assessment
- Interview style
- Broken into topics
- Assesses only the focus standards
- Rubric for scoring

End-of-Module Assessment

Assessment Info

- Take 5 minutes to administer the Topics G & H assessment tasks with a partner (take turns being the teacher)
- How do these tasks measure the skills and understanding that are addressed in this module?

End-of-Module Assessment

Agenda

Lesson Structure
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Progression Study

- What are the Progressions?

- Explore: *K-5, Operations and Algebraic Thinking Progression*

    - Group 1: Read pages 4-5

    - Group 2: Read pages 6-7

    - Group 3: Read pages 8-11

- Highlight the information relevant to the content of this module.

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Progression Study

Study Lessons 7 & 8 and Lessons 9 & 23.

Then, turn and talk:

- How do these lessons engage students in the work described in the Progression?

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Coherence Within the Module

Analyze the progression of each lesson component across the Module.

- What does the sequence of Fluency Practices accomplish as a whole?

- How does the sequence of Application Problems connect to topic/module?

- How does the sequence of Concept Development and Student Debrief build toward mastery of the topic/module?

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Coherence Within the Module

Analyze the progression of each lesson component across the Module.

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Agenda

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Practice a Planning Protocol

Focus: Kindergarten Module 1 Topic F
- With any topic from *A Story of Units*, read the module overview and the topic opener.
- Study the module assessment, paying particular attention to the sample responses provided.

Practice a Planning Protocol

- Read through the first lesson of Topic F (Lesson 23).
- Then, take note of the lesson objective and re-examine the topic assessment tasks with the objective in mind. What major concept is necessary to successfully complete the assessment?
- Study the Concept Development and Problem Set. How do the CD/PS develop the major concept that is required in the assessment? What parts of the CD/PS go beyond this major concept?

Practice a Planning Protocol

- How will this knowledge empower teachers to support specific groups of learners?
- Turn to the subsequent lesson (Lesson 24), and examine the Problem Set. How does this Problem Set build on the last? How are the two Problem Sets similar and how are they different?
- Will students have an opportunity in Lesson 24 to continue development of Lesson 23's objective? What level of mastery of Lesson 23's objective is necessary in preparation for Lesson 24?

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Practice a Planning Protocol

- How does the new plan for implementation impact the student debrief?
- Are any adjustments needed to the fluency and/or application components of the lesson?

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Practice a Planning Protocol

Repeat this process for each lesson.
- Read lesson.
- Study assessment tasks for topic. Identify critical portions of concept development and problem set.
- Consider needs of specific students.
- Refer to subsequent Problem Set. Revise implementation plan as needed.
- Make adjustments to the student debrief as needed.
- Consider the other lesson components, ensuring a balance of rigor.

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Biggest Takeaway

I now know…
I need to figure out…

Key Points

- When making instructional decisions in order to meet the needs of specific students, there are only two rules:
  - Honor the objective!
  - Honor the balance of rigor!
- *Counting and cardinality work sets the stage for work with operations and algebraic thinking in K-5.*
- *Sorting and matching activities prepare students to closely examine an object's attributes and classify the object based on those attributes.*

Next Step

The first thing I'll do to prepare is…

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