Grade 1

Eureka Essentials

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Overview

How to Read **Eureka Essentials**

How to Approach Pacing

- ➢ Cover Major Cluster Standards more thoroughly and move through other Standards more quickly
  - **Major Clusters**: Modules 1-2, 4, 6
  - **Additional/Supporting Clusters**: Modules 3, 5
  - *If pacing is a challenge, return to Module 5 after Module 6 Topics A-C (Lessons 1-17)*
- ➢ Use lesson connections (in purple text) to foresee when and how certain concepts will be revisited and further developed in later lessons
- ➢ Embed "reteaching" into the next lesson's activities (Fluency Practice, Application Problems, Concept Development, etc.) rather than repeat a prior lesson when formative assessments indicate lack of student understanding
- ➢ Omit or differentiate lessons labelled ↻ **Review/reinforce** based on students' strengths and needs
- ➢ Follow suggestions for omission or consolidation of lessons labelled  **Cut/consolidate** based on students' strengths and needs

References

- Great Minds Eureka Math Teacher Edition version 3.0 (2015)
- California Common Core State Standards (2013)
- Mathematics Framework for California Public Schools: Kindergarten Through Grade Twelve (2016)

Module 1: Sums and Differences to 10 (Grade K Module 4 Reviewed & Continued)

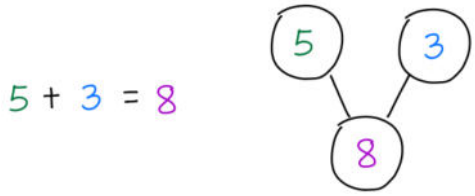
Definitions:

- **Addition**:

  (# of things start with) + (# of things add on)

  # of things all together

  - Word sentences & equations
    - "8 = 5 + 3" means "8 is the same number as 5 and 3 all together"
    - **"One more than"**: "one more than 5" means "how many all together when one is added to 5"
  - Number bonds & equations
    - Part + Part = Whole

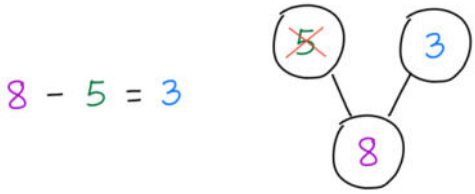


- **Addend**: a number that is part of a sum (e.g., 1 is an addend of 1 + 0)
- **Subtraction**:

  (# of things start with) - (# of things take away)

  # of things leftover

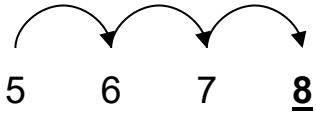
  - Word sentences & equations
    - "8 - 5 = 3" means "the leftover of 8 take away 5 is the same number as 3"
    - **"One (zero) less than"**: "one (zero) less than 10" means "how many leftover when one (zero) is taken away from 10"
  - Number bonds & equations
    - Whole - Part = Part



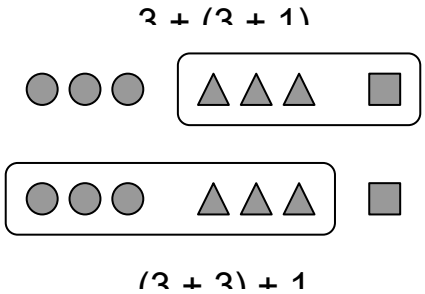
- **Equal sign**: "8 **=** 5 + 3" means "8 **is the same number as** 5 and 3 all together"

Key Ideas:

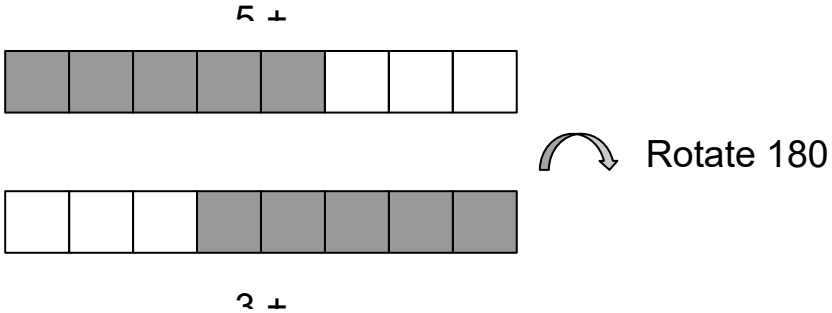
- **"Count on" method**: "5 + 3" is the same number as (equals) "starting at 5 and counting on 3 (6, 7, 8)"



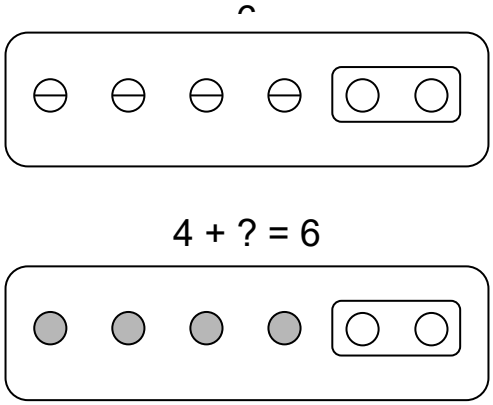
- **Associative property of addition**: 3 + (3 + 1) = (3 + 3) + 1



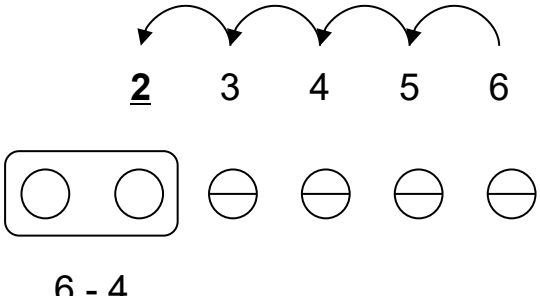
- **Commutative property of addition**: 5 + 3 = 3 + 5



  - **Reasoning**: when we switch the order of the addends, we do not add or take away anything so the total stays the same
- **Subtraction as addition with unknown addend**: "6 - 4 = __" also means "4 + __ = 6"



- **"Count back" method**: "6 - 4" is the same number as (equals) "starting at 6 and counting back 4 (5, 4, 3, 2)"



Materials:

- Linking or snap cubes [Topics A-C, E, H]

Topic A: Embedded Numbers and Decompositions

Decomposing into 5 and an Unknown Number

Goals:

- Decompose numbers 5 to 10 into the sum 5 + __
  - Example:

✓ Check: Problem Set problem #4

Decomposing into Two Unknown Numbers

Goals:

- Decompose numbers 5 to 10 into the sum __ + __

✓ Check: Problem Set problem #3

"One More Than" and Addition Equation

Goals:

- Review definition of "one more than" (Grade K Module 1) and definition of addition (Grade K Module 4)
- Decompose numbers 5 to 10 into the sum __ + 1

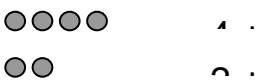
✓ Check: Problem Set problem #2

Topic B: Counting On from Embedded Numbers

Decomposition of 6

Goals:

- For Concept Development: Introduce the "count on" method to find a sum
- Generate addition expressions of 6
- Preview the commutative property of addition (Topic E)
    - Example:



Check: Problem Set

Decomposition of 7

Goals:

- Echo Lesson 4 for decomposing 7:
    - For Concept Development: Use the "count on" method to find a sum
    - Generate addition expressions of 7
    - Preview the commutative property of addition (Topic E)

      Check: Problem Set

Decomposition of 8

Goals:

- Build on **Lessons 4-5** for decomposing 8:
    - For Concept Development: Use the "count on" method to find a sum
    - Find an unknown addend when the sum is 8

      Check: Problem Set #1

Notes to teacher:

- Will revisit/reinforce in **Lessons 11-12 and 16** to solve unknown addend equations

Decomposition of 9

Goals:

- Echo Lesson 6 for decomposing 9:

- For Concept Development: Use the "count on" method to find a sum
- Find an unknown addend when the sum is 9

✓ Check: Problem Set #3

Notes to teacher:

- Will revisit/reinforce in **Lessons 11-12 and 16** to solve unknown addend equations

Decomposition of 10

Goals:

- Build on **Lessons 4-7** for decomposing 10:
  - For Concept Development: Use the "count on" method (and Rekenrek bracelet) to find a sum
  - Generate addition expressions of 10
  - Preview the commutative property of addition (Topic E)

✓ Check: Problem Set #1

Notes to teacher:

- Will revisit/reinforce addition within 10 in Topic F

Materials: See p. 122 of Teacher Edition for instructions to make Rekenrek bracelet

Topic C: Addition Word Problems

"Add To with Result Unknown" and "Put Together with Result Unknown" Word Problems

Goals:

- Solve word problems involving addition within 10 by drawing pictures, writing equations, and completing solution statements

✓ Check: Problem Set problems #2, #3

"Put Together with Result Unknown" Word Problems (Continued)

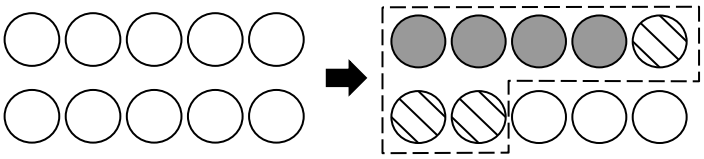
Goals:

- Build on **Lesson 9** to solve addition word problems using 5-groups

  Resources: 5-group mat template to scaffold addition with 5-groups

  - Example:

    4 + 3 = __

    4 + 3 = 7

  Check: Problem Set problems #1, #2

"Add To with Change Unknown" Word Problems

Goals:

- Solve word problems that involve finding the second addend given the sum and the first addend (e.g., 4 + __ = 7)

  Check: Problem Set problem #2

"Add To with Change Unknown" Word Problems (Continued)

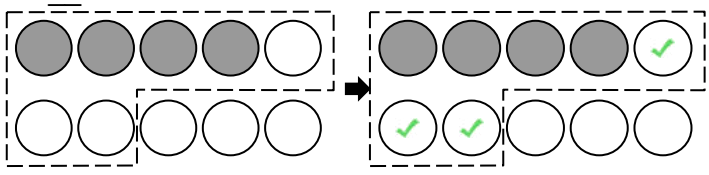
Goals:

- Build on **Lessons 10-11** to solve unknown addend word problems using 5-groups

  Resources: 5-group mat template to scaffold addition with 5-groups

  - Example:

    4 + __ = 7

    4 + 3 = 7

  Check: Problem Set problem 2

Notes to teacher:

- Will revisit/reinforce in **Lesson 25** to solve "add to with change unknown" word problems using subtraction

Creating Word Problems

Goals:

- Create story to match given addition equation

  ✓ Check: Problem Set problems #1, #3

Topic D: Strategies for Counting On

Counting On 1, 2, or 3

Goals:

- Build on **Lessons 4-8** to use the "count on" method to add 1, 2, or 3

  ✓ Check: Problem Set problem 2

Counting On 1, 2, or 3 (Continued)

Goals:

- ↻ Review/reinforce Lesson 14

  ✓ Check: Problem Set problem #1c

Counting On to Find Unknown Addend

Goals:

- Build on **Lessons 11-12 and 14-15** to find the second addend given the first addend and the sum (e.g., 4 + __ = 7), using the "count on" method

  ✓ Check: Problem Set problem #3

Notes to teacher:

- Will revisit/reinforce in **Lessons 26-27** using the number path

Topic E: The Commutative Property of Addition and the Equal Sign

Equivalent Expressions

Goals:

- Review definition of equal sign and observe:
  - To check if two expressions are equal (equivalent), check that the two expressions count to the same number
- Write equivalent addition expressions as an equation (e.g., 4 + 3 = 0 + 7)

✓ Check: Problem Set problem #2

True and False Number Sentences

Goals:

- Build on **Lesson 17** to:
  - Determine if a number sentence is true (i.e., the two expressions are equal) or false (i.e., the two expressions are not equal)
  - Change a false number sentence into a true number sentence

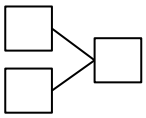
  ✓ Check: Problem Set problems #2d-e

Commutative Property

Goals:

- Observe the commutative property of addition and use the property to write equivalent expressions or equations

- Example:



5 + 3 = 8 (or 8 = 5 + 3)
3 + 5 = 8 (or 8 = 3 + 5)

✓ Check: Problem Set problems #1c, #3

Addition Strategy: Counting On from Larger Addend

Goals:

- Build on **Lesson 19** by using the commutative property of addition to rename/rewrite 1 + 7 as 7 + 1
- Observe that it is faster to add starting with the larger number because then we only need to count-on the smaller number

✓ Check: Problem Set problem #5

Suggestions: Write continuous equations to show logical reasoning and connections (and to prepare for Module 2)

- Example:

  3 + 5
  = 5 + 3 ← commutative property of addition
  = 8

Topic F: Development of Addition Fluency Within 10

Addition Strategy: Doubles

Goals:

- Use the associative property of addition and "doubles" (adding two numbers that are the same) as a strategy to find a sum
  - Example:

    3 + 4
    = 3 + (3 + 1)
    = (3 + 3) + 1 ← associative property of addition
    = 6 + 1 ← "doubles" (3 + 3 = 6)
    = 7

Check: Problem Set problem #5

Addition Chart Patterns

Cut/consolidate: Can consolidate with Lesson 23 (see more suggestions in *Eureka Math's Notes on Pacing*, p. 4 of Teacher Edition)

Goals:

- Introduce definition of addend
- Observe zero is the additive identity: adding by zero "gets back" the first addend (e.g., 1 + 0 = 1)
- Build on **Lesson 19** to observe the commutative property of addition in the addition chart

Addition Chart Patterns (Continued)

Goals:

- Build on **Lessons 4-8** to observe all addition expressions of 6-10 in the addition chart

Connections Between Addition Expressions

Goals:

- ↻ Review/reinforce Lessons 1-23: Explain relationships between different addition expressions (e.g., 2 + 2 and 3 + 1 both equal 4; can use the doubles 2 + 2 when adding 2 + 3)

Topic G: Subtraction as an Unknown Addend Problem

Suggestions: Move down Topic G (Lessons 25-27) and insert between Lessons 28 and 29 so that the basic meaning of subtraction ("take away") can be revisited first (Lesson 28)

"Add To with Change Unknown" Word Problems

Goals:

- Use definition of subtraction to observe:
  - Key Ideas: Subtraction as addition with unknown addend
- Build on **Lessons 11-12** to solve unknown addend word problems using subtraction

Check: Problem Set problem #2

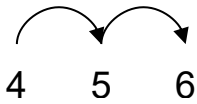
Counting On Using Number Path

Goals:

- Build on **Lessons 16 and 25** by counting on using the number path to find a difference (answer to subtraction)
  - Example:

    "6 - 4 = __" means "4 + __ = 6"

    Key Ideas: Subtraction as addition with unknown addend

    Count on 2 (from 4 to 6)

    4 + 2 = 6 so 6 - 4 = 2

Check: Problem Set problem #2

Suggestions: Include zero on the number path

Counting Back Using Number Path

Goals:

- Use the "count back" method on the number path to find a difference

  Check: Problem Set problem #9
- ↻ Review/reinforce Lesson 26

  Check: Problem Set problem #3

Suggestions: Include zero on the number path

Topic H: Subtraction Word Problems

"Take From with Result Unknown" Word Problems

Goals:

- Solve word problems involving subtraction

  ✓ **Check**: Problem Set problem #3

"Take Apart with Addend Unknown" Word Problems

Goals:

- Solve word problems that involve finding the number of objects in a subgroup ("the rest") by using subtraction as addition with unknown addend
  - Example:
    "Six children are at a sleepover. Four children are wearing black shoes. The rest are wearing white shoes. How many children are wearing white shoes at the sleepover?"
    4 + ☐ = 6 (so 6 - 4 = ☐)

  ✓ **Check**: Problem Set problem #3

"Add To with Change Unknown" Word Problems

Goals:

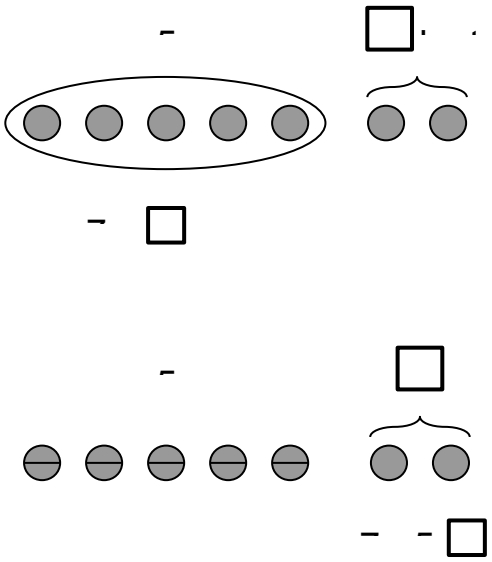
- ↻ **Review/reinforce** Lesson 25

  ✓ **Check**: Problem Set problem #3

"Take From with Change Unknown" Word Problems

Goals:

- Solve word problems that involve finding the number of objects taken away from the whole group (total)
    - Example:
      "I borrowed 7 books from the library. On my way home, I lent some of the books to a friend. There are 5 books still in the backpack. How many books did I lend?"



✓ Check: Problem Set problem #3

"Put Together/Take Apart with Addend Unknown" Word Problems

Goals:

- ↻ Review/reinforce Lessons 25 and 29
  ✓ Check: Problem Set problem #1
- Create math story represented by given number bond
  ✓ Check: Problem Set problem #3

Topic I: Decomposition Strategies for Subtraction

"One (Zero) Less Than" and Subtraction Equation

Goals:

- Review definition of "one (zero) less than" (Grade K Module 1)
- Observe that subtracting zero "gets back" the first number (e.g., 10 - 0 = 10)

✓ Check: Problem Set problems #3, #4

"*n* - *n*" and "*n* - (*n* - 1)"

Goals:

- Observe *n* - *n* = 0 (e.g., 10 - 10 = 0)
  - **Reasoning**: When we take away all (the objects), we are left with nothing.

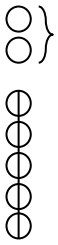
  ✓ Check: Problem Set problem #3
- Observe *n* - (*n* - 1) = 0 (e.g., 10 - 9 = 1)
  - **Reasoning**: For teachers, *n* - (*n* - 1) = *n* - *n* + 1 = 0 + 1 = 1.

  ✓ Check: Problem Set problem #4

Subtracting 5 and Doubles

Goals:

- Observe that *n* - 5 is the number leftover when the first 5 (e.g., left hand that shows 5, red beads in 5-group) is taken away from *n*
  - Example:



  ✓ Check: Problem Set problem #2
- Build on **Lesson 21** to recognize when subtraction is "splitting up a double" (e.g., 8 - 4 = 4)

  ✓ Check: Problem Set problem #8

Subtracting from 10

Goals:

- Subtract from 10 using 5-groups and decompositions of 10

  ✓ Check: Problem Set problems #4, #7

Subtracting from 9

Goals:

- Echo Lesson 36 for subtraction from 9:
  - Subtract from 9 using 5-groups and decompositions of 9

    ✓ Check: Problem Sets #4, #7

Topic J: Development of Subtraction Fluency Within 10

Related Addition and Subtraction Facts

Goals:

- ↻ Review/reinforce Lessons 19, 22-23, 25-37

Related Addition and Subtraction Facts (Continued)

Goals:

- ↻ Review/reinforce Lessons 19, 22-23, 25-37

Module 2: Introduction to Place Value Through Addition and Subtraction Within 20

Key Ideas:

- Addition [Lessons 1-11, 27-28]:
  - Because of the associative and commutative properties of addition, we can add numbers in *any order* and still keep the sum (total) the same
    - Example:
      5 + 3 + **5**
      = **5 + 5** + 3
      = 10 + 3
      = 13
- Subtraction [Lessons 12-25, 27, 29]:
  - We can subtract from *any part* of the minuend (total) that is greater than or equal to the subtrahend and still keep the difference the same
    - Example:
      17 - 9
      = **10** + 7 **- 9**
      = **10 - 9** + 7
      = 1 + 7
      = 8
  - "Count on to make 10" strategy [Lessons 16, 19]
    - Building on Module 1 Lessons 25-27 "count on" strategy
    - Example:
      "11 - 9 = " also means "9 + = 11"
- Place value [Lessons 26-29]
  - Numbers 11-19 are composed of a ten and 1-9 ones

Materials:

- Pattern blocks [Topic A]
- Linking or snap cubes [Topics A-B]
- Hide zero cards or place value strips [Topic D]

Topic A: Counting On or Making Ten to Solve *Result Unknown* and *Total Unknown* Problems

Key Ideas: Because of the associative and commutative properties of addition, we can add numbers in *any order* and still keep the sum (total) the same

Suggestions: Write continuous equations (see examples below) rather than separate equations to keep track of all parts (addends) of the expression (sum)

Cut/consolidate: Can omit Lessons 5, 9, and 11 if "embed conversations about efficiency and strategy comparison throughout Module 2" (*Eureka Math's Notes on Pacing*)

Adding Three Numbers

Goals:

- Rearrange addends to "make 10"
  - Example:

5 + **3 + 5**

= 5 + **5 + 3** ← commutative property of addition

= (5 + 5) + 3 ← associative property of addition
= 10 + 3
= 13

Check: Problem Set problems #2, #3

Suggestions: Cover the last problem of the Concept Development on p. 18 of Teacher Edition (corresponds with above equations), or problem 3 or 4 of the Problem Set, to ensure students are prepared for the Homework problems

Adding Three Numbers (Continued)

Goals:

- ↻ **Review/reinforce** Lesson 1

✓ Check: Problem Set problems #5, #8

Adding with 9: Making 10

Goals:

- Build on **Lesson 1** and decompose the other addend to make 10 with 9
  - Example:

    9 + **3**
    = (9 + **1**) **+ 2**
    = 10 + 2
    = 12

✓ Check: Problem Set problem #2

Adding with 9: Making 10 (Continued)

Goals:

- ↻ Review/reinforce Lesson 3

✓ Check: Problem Set problem #5

Adding with 9: Comparing Efficiency of Methods

Goals:

- ↻ Review/reinforce Lessons 3-4

✓ Check: Problem Set problem #6

Adding with 9: Making 10 in Different Ways

Goals:

- Decompose either addend and use associative (and commutative) property of addition to make 10 in different ways
  - Example: 5 + 9
    - Decompose 5 to make 10 with 9 (**Lessons 3-4**)

      5 + 9
      = (**4 + 1**) + 9
      = 4 + (1 + 9) ← associative property of addition
      = 4 + 10
      = 10 + 4 ← commutative property of addition
      = 14
    - Decompose 9 to make 10 with 5

      5 + **9**
      = 5 + (**5 + 4**)
      = (5 + 5) + 4 ← associative property of addition
      = 10 + 4
      = 14

✔ **Check**: Problem Set problem #3

Adding with 8: Making 10

Goals:

- **Echo** Lesson 3 for adding with 8:
  - Decompose the other addend to make 10 with 8
    - Example:

      8 + **3**
      = (8 + **2**) **+ 1**
      = 10 + 1
      = 11

✔ **Check**: Problem Set problem #2

Adding with 8: Making 10 (Continued)

Goals:

- **Echo** Lesson 4 for adding with 8:
  - ↻ **Review/reinforce** Lesson 3

✓ Check: Problem Set problem #5

Adding with 9: Comparing Efficiency of Methods

Goals:

- Echo Lesson 5 for adding with 8:
  - ↻ Review/reinforce Lessons 7-8

✓ Check: Problem Set problem #6

Adding with 7, 8, and 9: Making 10 in Different Ways

Goals:

- Echo Lesson 6 for adding with 7, 8, and 9:
  - Decompose either addend and use associative (and commutative) property of addition to make 10 in different ways

    - Example: 7 + 6
      - Decompose 7 to make 10 with 6 (**Lessons 3-4**)

        7 + 6
        = (**3 + 4**) + 6
        = 3 + (4 + 6) ← associative property of addition
        = 3 + 10
        = 10 + 3 ← commutative property of addition
        = 13
      - Decompose 6 to make 10 with 7

        7 + **6**
        = 7 + (**3 + 3**)
        = (7 + 3) + 3 ← associative property of addition
        = 10 + 3
        = 13

✓ Check: Problem Set problems #2, #3

Adding with 7, 8, and 9: Evaluating Solutions

Goals:

- ↻ **Review/reinforce** Lessons 3-10

  ✓ **Check**: Problem Set problems #1, #2

Topic B: Counting On or Taking from Ten to Solve *Result Unknown* and *Total Unknown* Problems

 **Key Ideas**: We can subtract from *any part* of the minuend (total) that is greater than or equal to the subtrahend and still keep the difference the same

 **Suggestions**: Write continuous equations (see examples below) rather than separate equations to keep track of all parts of the expression

 **Cut/consolidate**: Can omit Lesson 21 if "embed conversations about efficiency and strategy comparison throughout Module 2" (*Eureka Math's Notes on Pacing*)

Subtracting 9: Taking from 10

Goals:

- Build on Module 1 **Lesson 36** (subtraction from 10) to subtract 9 from 11-19: rearrange subtrahend (9) to take from 10
  - Example:

    17 - 9
    = **10** + 7 **- 9**
    = **10 - 9** + 7
    = 1 + 7
    = 8

  ✓ **Check**: Problem Set problem #3

Subtracting 9: Taking from 10 (Continued)

Goals:

- ↻ **Review/reinforce** Lesson 12

  ✔ **Check**: Problem Set problem #3

Subtracting 9: Taking from 10 with 5-groups

✂ **Cut/consolidate**: Can consolidate with Lesson 15

Goals:

- Build on **Lessons 12-13** to subtract 9 from 10-20 by taking from 10 with 5-group drawings

  ✔ **Check**: Problem Set problem #3

Subtracting 9: Taking from 10 with 5-groups (Continued)

Goals:

- ↻ **Review/reinforce** Lesson 14

  ✔ **Check**: Problem Set problem #4

Subtracting 9: Counting On to Make 10

Goals:

- Build on Module 1 **Lessons 25-27** ("count on" strategy) to subtract 9 from 11-19: "count on to make 10"
  - Example:

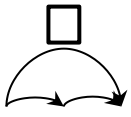
    11 - 9 = means 9 + ☐ = 11

    9 + 1 + ___ = 11

    10 + ___ = 11

    10 + 1 = 11

    So 9 + **2** = 11 and 11 - 9 = **2**



  ✔ **Check**: Problem Set problem #2

Suggestions: Use number line or path

Subtracting 8: Taking from 10

Goals:

- Echo Lesson 12 for subtracting 8:
  - Rearrange subtrahend (8) to take from 10
    - Example:

      15 - 8
      = **10** + 5 **- 8**
      = **10 - 8** + 5
      = 2 + 5
      = 7

    Check: Problem Set problem #2

Subtracting 8: Taking from 10 with 5-groups

Goals:

- Echo Lesson 15 for subtracting 8:
  - Build on **Lesson 17** to subtract 8 from 11-19 by taking from 10 with 5-group drawings

    Check: Problem Set problem #4

Subtracting 8: Counting On

Goals:

- Echo Lesson 16 for subtracting 8: “count on to make 10”

  Check: Problem Set problem #6

Subtracting 7, 8, and 9

Goals:

- Build on **Lessons 12-19** to subtract 7 from 11-19 using multiple strategies (count on from 10 with number path, take from 10 with fingers, number bond, 5-group rows)

  ✓ Check: Problem Set problem #6

- ↻ Review/reinforce subtracting 8 and 9 from 11-19

  ✓ Check: Problem Set problems #2, #3

Subtracting 7, 8, and 9: Evaluating Solutions

Goals:

- Echo Lesson 11 for subtraction:
  - ↻ Review/reinforce Lessons 12-20

    ✓ Check: Problem Set problems #1, #2

Topic C: Strategies for Solving *Change* or *Addend Unknown* Problems

"Put Together/Take Apart with Addend Unknown" Word Problems

Goals:

- Echo Module 1 Lesson 29 for addition with unknown addend (subtraction) within 20
  - Solve word problems that involve finding the number of objects in a subgroup ("the rest")
    - Example:
      "Mark has 14 crayons. Eight of the crayons are on the table, and some more crayons are in the box. How many crayons are in the box?"
      8[+] = 14 (so 14 - 8[=])

    ✓ Check: Problem Set problem #1

"Add To with Change Unknown" Word Problems

Goals:

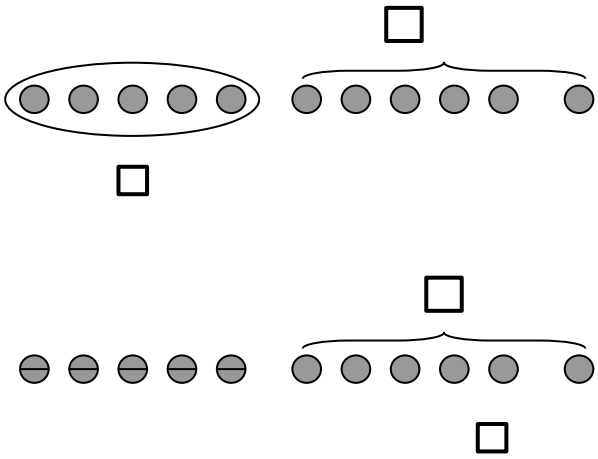
- Echo Module 1 Lessons 25 and 30 for addition with unknown addend (subtraction) within 20
  - Solve word problems that involve finding the number of objects added to make the whole group (total)
    - Example: Application Problem
      "In the morning, there were 8 leaves on the floor under the ficus tree. During the day, more leaves fell on the floor. Now, there are 13 leaves on the floor. How many leaves fell during the day?"
      8 + = 13 (so 13 - 8 =)

Check: Problem Set problem #3

"Take From with Change Unknown" Word Problems

Goals:

- Echo Module 1 Lesson 31 for subtraction (addition with unknown addend) within 20
  - Solve word problems that involve finding the number of objects taken away from the whole group (total)
    - Example:
      "Today, I was passing the same tree (from the Application Problem). There were 11 birds in the tree when I first looked at it. I looked away. When I looked back, there were 5 birds. How many birds flew away?"



11 - = 5 means 11 - 5 =

Check: Problem Set problem #1

Equivalent Expressions

Goals:

- Build on Module 1 **Lessons 17-18** to check if two expressions are equivalent (i.e., that a number sentence is true): check that the two expressions count to the same number (definition of equal sign)
    - Example:
      "16 - 9 = 1 + 6" (i.e., is a true number sentence) because 16 - 9 = 7 and 1 + 6 = 7, so 16 - 9 and 1 + 6 both count to the same number, 7.

Check: Problem Set problems #8a, #9a

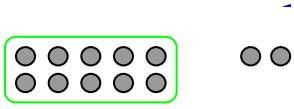
Topic D: Varied Problems with Decompositions of Teen Numbers as 1 Ten and Some Ones

Suggestions: For Lessons 28-29, write continuous equations (see examples in Topic A) rather than separate equations to keep track of all parts (addends) of the expression (sum)

Place Value for Numbers 10-19

Goals:

- Use place value to recognize numbers 10-19 as "1 ten and *n* ones"
    - Example:



Check: Problem Set problems #4, #7, #10

Place Value for Numbers 10-19 (Continued)

Goals:

- Build on **Lessons 1-18 and 26** to write the answer to an addition or subtraction problem as "1 ten and *n* ones"

  ✓ Check: Problem Set problems #1, #7, #11

Place Value and Making 10 for Addition

Goals:

- ↻ Review/reinforce Lessons 1-10 and 26-27: Transition to using equations only

  ✓ Check: Problem Set problem #6

Place Value and Taking from 10 for Subtraction

Goals:

- ↻ Review/reinforce Lessons 12-24 and 26-27: Use place value (**Lesson 26**) to transition to using equations only

  ✓ Check: Problem Set problem #7

Module 3: Ordering and Comparing Length Measurements as Numbers

Definitions:

- **Endpoint**: a point where an object begins or ends
- **To compare lengths/heights** (Grade K Module 3): to identify which object is taller/longer, shorter
    - To compare lengths, endpoints of objects must line up (and the objects must extend in the same direction)
    - Length of object stays the same even when its location changes
- **To measure length** with (or using) a specified **length unit**: to count the number of length units that fit
    (1) side by side (no overlap or extra space between) and
    (2) from one endpoint to the other endpoint of the object
- **To estimate (approximate) length**: to find the number of units that is closest to the actual length of the object
- **A number on the centimeter ruler**: the number of centimeter length units (cubes) counted between 0 and that number

Key Ideas:

- The increasing (or decreasing) order of lengths corresponds to the increasing (or decreasing) order of length measurements

When the length is...	the length measurement is...
longer	*more* centimeters a *larger* number (count further to reach the number)
shorter	*fewer* centimeters a *smaller* number

- An object has different length measurements when different length units are used
    - Corollary: Importance of labeling length measurement with units
- Find the difference between lengths (how much longer/shorter is *A* than *B*?) visually (counting on/back with cubes) and numerically (writing addition or subtraction equations)

Materials:

- String [Topic A]
- Centimeter (or base ten) cubes or strip [Topics B-C]
- Rulers [Topic B]
- Linking or snap cubes [Topic C]

- Large and small paper clips [Topic C]
- Other non-standard length units like toothpicks [Topic C]

Topic A: Indirect Comparison in Length Measurement

Comparing Length Directly

Goals:

- Define compare lengths/heights
- Compare lengths using definition

✓ Check: Problem Set problems #2, #5

Suggestions:

- Use Application Problem to introduce the topic of comparing length of objects
- In preparation for Problem Set, give an example where *fixed* objects are spaced apart with non-aligned endpoints
  - Suggested strategy: use fingers to "hold" length of one object to compare with other object

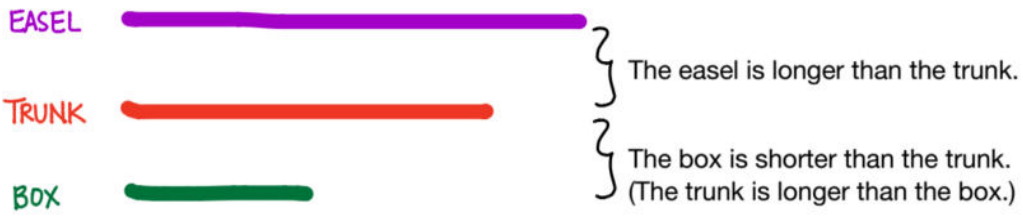
Comparing Length Indirectly

Goals:

- Use string of equal length to the reference object (e.g., car trunk) to indirectly compare length of reference object to other objects (e.g., easel, box)
- Observe transitive property: if *A* is longer (shorter) than *B* and *B* is longer (shorter) than *C*, then *A* is longer (shorter) than *C*

Suggestions: Scaffold by showing relationships visually

- Example:



Therefore, the easel is longer than the box.

- Observe that, if both *A* and *B* are longer (shorter) than *C*, then more information is needed to compare *A* to *B*

✓ Check: Problem Set problems #1, #7

Suggestions: Use the Application Problem to

- Distinguish **height** (length from the ground straight up towards the sky) from length
- Introduce the phrase “taller than”
- Formatively assess students’ prior knowledge of comparing length of 3 objects

Ordering Lengths

Goals:

- Compare lengths of non-straight paths by counting unit segments (blocks) and observe:

If the path has...	then the path is...
more unit segments (blocks)	*longer*
fewer unit segments (blocks)	*shorter*

Check: Problem Set problems #5-7

- Order lengths from shortest to longest

Check: Problem Set problem #10

Materials: Masking tape (see instructions on p. 45 of Teacher Edition)

Topic B: Standard Length Units

Measuring Length with Centimeter Cubes

Goals:

- Define measure length
- Use above definition and centimeter cube as length unit to measure length of objects in centimeters
  - Record length measurements of classroom objects on Lesson 4 Recording Sheet

Check: Problem Set problems #4, #5, #11

Materials: See p. 63 of Teacher Edition

Measuring Length with Centimeter Ruler

Goals:

- Introduce metric (centimeter) ruler as universal tool for measuring length and define a number on the centimeter ruler
- Transition to stating length measurement as "__ centimeters" instead of "__ centimeter cubes"
- For Problem Set problem #4: define estimate length

Check: Problem Set problem #2

Comparing, Measuring, and Ordering Lengths

Goals:

- Use definition of compare lengths (**Lesson 1**) to order lengths of objects before measuring
- Measure lengths of objects using centimeter cubes (**Lesson 4**), and observe:

  Key Ideas: The increasing (or decreasing) order of lengths corresponds to the increasing (or decreasing) order of length measurements

When the length is...	the length measurement is...
longer	*more* centimeters a *larger* number (count further to reach the number)
shorter	*fewer* centimeters a *smaller* number

- Find the difference between lengths (how much longer/shorter is *A* than *B*?) visually (counting on/back with cubes) and numerically (writing addition or subtraction equations)

- Will revisit/reinforce in **Lesson 9**

✓ Check: Problem Set problem #2

Topic C: Non-Standard and Standard Length Units

Measuring Length with Non-Standard Units

Goals:

- Use definitions of measure length (**Lesson 4**) and estimate length (**Lesson 5**) to measure lengths of objects with non-standard units like paper clips
- Measure an object with different length units and observe:

  Key Ideas:
  - An object has different length measurements when different length units are used
    - Example: A pencil is 4 large paper clips long but 6 small paper clips long
  - Corollary: Importance of labeling length measurement with units

✓ Check: Problem Set problems #1c-d, #2c-d

Measuring Length with Non-Standard Units (Continued)

Goals:

- ↻ Review/reinforce Lesson 7

  ✓ Check: Problem Set problems #1e-f (or Exit Ticket)

  Suggestions: Have students measure each object with *two* length units to target Key Ideas

Difference in Length

Goals:

- ↻ Review/reinforce latter part of Lesson 6:

- Find the difference between lengths (how much longer/shorter is *A* than *B*?) visually (counting on/back with cubes) and numerically (writing addition or subtraction equations)

✓ Check: Problem Set problems #2, #3, #6

Topic D: Data Interpretation

Collecting and Organizing Data

Goals:

- Collect data with up to three categories (e.g., favorite of three books)
- Organize data into 5 groups and use tally marks to represent counts in a category

  ✓ Check: Problem Set problem #1
- Ask and answer questions about
  - total number of data points (e.g., total number of students)
  - number of data points in each category (e.g., number of students who like book A)
  - number of data points more or less in one category than in another
  - category with most or least data points

✓ Check: Problem Set problems #2, #3, #4

Collecting and Organizing Data (Continued)

Goals:

- ↻ Review/reinforce Lesson 10
- Collect data in a variety of ways (e.g., each student says choice aloud when called on, students raise hand when choice called out)

Bar Graphs

Goals:

- Collect data and organize as bar graph (horizontally left to right OR vertically top to bottom)

- Use length comparison to compare number of data points between categories

✓ Check: Problem Set problems #1, #2

Bar Graphs (Continued)

Goals:

- Interpret data in bar graph (vertically bottom to top)
- Find the difference between category totals (how many more/fewer students liked *A* than *B*?) pictorially (counting on/back with cubes) and numerically (writing addition or subtraction equations)

✓ Check: Problem Set problems #2, #4

Module 4: Place Value, Comparison, Addition and Subtraction to 40

Summary:

- Place value within 40 [Lessons 1-6]
- Comparison within 40 [Lessons 7-10]
- Addition and subtraction [Lessons 4-5, 11-29]
    - Addition and subtraction of **multiples of 10** within 40
    - Addition of **two-digit and one-digit numbers** within 40
    - Word problems involving addition within 20
    - Addition of **two-digit numbers** within 40

Definitions:

- **Addition**: “30 + 7” means “the (total) number when we count 30 and then 7 more”
    - “7 more than 30” means “7 added on to 30” (“30 + 7”)
    - “30 and 7” means “30 + 7”
- **“1 more than”**: “1 more than 36” means “36 + 1”
- **“1 less than”**: “1 less than 36” means “36 - 1”
- **“10 more than”**: “10 more than 36” means “36 + 10”
- **“10 less than”**: “10 less than 36” means “36 - 10”
- **Greater than, less than, equals**

Word form	*Symbolic form*	*Meaning (Definition)*
3 is greater (bigger, more) than 2	3 > 2	3 comes after 2 when counting
2 is less (smaller, fewer) than 3	2 < 3	2 comes before 3 when counting
3 + 0 equals 2 + 1	3 + 0 = 2 + 1	3 + 0 counts to the same number as 2 + 1

Key Ideas:

- Because of the associative and commutative properties of addition, we can add numbers in *any order* and still keep the sum (total) the same
- “1 more” or “less” changes the ones digit
- “10 more” or “less” changes the tens digit

Materials:

- Linking or snap cubes [Topics A-D, F]
- Pennies and dimes [Topics A-D]
- Hide zero cards or place value strips [Topic A]

Topic A: Tens and Ones

Suggestions: Review dimes and pennies (for example, do "Change for 10 Pennies for 1 Dime" fluency activity in Lessons 1-2 and/or "Dime Exchange" fluency activity in Lessons 3-4) to prep for Lesson 6

Counting by Ones versus Tens

Goals:

- Observe that counting to 40 by tens is more efficient (quick and accurate) than counting by ones
- Count total number of objects arranged into groups of ten (e.g., ten-stick) and 1-9 ones
- Build on Module 2 Topic D to decompose two-digit numbers into tens (multiple of ten) and ones; represent decomposition with number bond

Check: Problem Set problems #4, #5, #14

Materials: See note on p. 13 of Teacher Edition

Place Value for Numbers 10-40

Goals:

- Build on **Lesson 1** to:
  - Decompose two-digit numbers into tens (multiple of ten) and ones
  - Represent numbers in place value chart

  Check: Problem Set problems #3, #9
- Introduce "Say Ten Way"
  - Example: "17" is "1 ten 7"

  Check: Problem Set problem #17

Two-Digit Numbers as Tens and/or Ones

Goals:

- Represent two-digit number "*nm*" as "*n* tens and *m* ones" or as "*nm* ones"

- Example: “34” is “3 tens and 4 ones”, “34 ones”

✓ Check: Problem Set problem #2

Two-Digit Numbers as Addition

Goals:

- Use definition of addition to express two-digit number as sum of tens and ones

✓ Check: Problem Set problems #4, #8

Patterns with 10 More or Less, 1 More or Less

Goals:

- Use definitions of “1 more than”, “1 less than”, “10 more than”, “10 less than” and prior knowledge within 20 (Application Problem) to observe:

  🔑 Key Ideas:

  - “1 more” or “less” changes the ones digit
  - “10 more” or “less” changes the tens digit
- Introduce “quick ten” drawing (vertical line for ten, circle for one)

✓ Check: Problem Set problems #7, #8, #11, #12

Dimes and Pennies as Tens and Ones

Goals:

- Use dime to represent ten and penny to represent one

  ✓ Check: Problem Set problems #3, #6
- ↻ Review/reinforce Lesson 5 (1 or 10 more, less) using dimes and pennies as tens and ones

  ✓ Check: Problem Set problems #11, #13

Topic B: Comparison of Pairs of Two-Digit Numbers

Comparing Numbers

Goals:

- Define greater than, less than
- Use above definitions to identify the greater or lesser of two numbers

✓ Check: Problem Set problems #3, #5, #10, #11

Comparing Numbers: Word Sentence

Goals:

- Build on **Lesson 7** to:
  - Compare numbers and complete the comparison (word) sentence by writing in the comparison phrase given the numbers
  - Order numbers from least to greatest or greatest to least

✓ Check: Problem Set problems #1, #4

Comparing Numbers: Number Sentence

Goals:

- Introduce greater than, less than symbols
  - Tip: Symbol "opens" to larger number and "closes" to smaller number
- Build on **Lesson 8** to compare numbers and complete the comparison number sentence (inequality or equation) by writing in the numbers given the comparison symbol

✓ Check: Problem Set problems #1, #2f & g

Comparing Numbers: Number and Word Sentences

Goals:

- Build on **Lessons 8 and 9** to compare numbers and state the comparison in symbol and word form

  ✓ Check: Problem Set problems #2c-e

Topic C: Addition and Subtraction of Tens

Adding and Subtracting Tens from Multiples of 10

Goals:

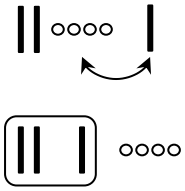
- Add and subtract multiples of ten by counting number of tens and writing the corresponding equation
  - Example: 4 tens take away 3 tens makes 1 ten, 40 - 30 = 10

  ✓ Check: Problem Set problems #4, #5

Adding Tens to Two-Digit Numbers

Goals:

- Build on **Lessons 2-4 and 11** to add a multiple of ten to a two-digit number by:
  - Decomposing the two-digit number into tens and ones
  - Counting the total number of tens (and ones)
  - Writing the corresponding equations
    - Example:



24 + 10
= **20** + 4 + **10**
= (**20 + 10**) + 4
= 30 + 4
= 34

Key Ideas: Add in any order

Check: Problem Set problems #3, #5

Topic D: Addition of Tens or Ones to a Two-Digit Number

Suggestions: Write continuous equations (see examples below) rather than separate equations to keep track of all parts (addends) of the expression (sum)

Cut/consolidate: Can consolidate or omit Lessons 16-18

Adding One-Digit Number: Count On (and Make 10)

Goals:

- Build on **Lessons 2-4 and** Module 2 to add two-digit number and one-digit number by:
  - Decomposing the two-digit number into tens and ones
  - Using "count on" (and "make 10") strategy with the ones
    - Example:

13 + 7 = 10 + (**3** + **7**) = 10 + 10 = 20

Key Ideas: Add in any order

Check: Problem Set problems #3, #8, #9

Adding One-Digit Number: Count On and Make 10

Goals:

- Build on **Lesson 13**:
  - Decompose the two-digit number into tens and ones
  - Use "count on" and "make 10" strategy with the ones
    - Example:

19 + 3 = 10 + (**9** + **1**) + 2 = 10 + 10 + 2 = 22

Key Ideas: Add in any order

Check: Problem Set problems #6, #8

Adding One-Digit Number: Single-Digit Sums

Goals:

- Build on **Lessons 2-4 and 12** to add two-digit number and one-digit number
  - Example: 9 + 5, 19 + 5, 29 + 5
    - **9 + 5**
      = **14**
    - **19 + 5**
      = 10 + (**9 + 5**)
      = 10 + **14**
      = 24

      Key Ideas: Add in any order
    - **29 + 5**
      = 20 + (**9 + 5**)
      = 20 + **14**
      = 34

      Key Ideas: Add in any order

Check: Problem Set problems #5, #6, #7

Adding Tens or Ones to Two-Digit Numbers

Goals:

- ↻ **Review/reinforce** Lessons 12-15

  ✓ **Check**: Problem Set problems #2, #3, #4

Adding Tens or Ones to Two-Digit Numbers (Continued)

Goals:

- ↻ **Review/reinforce** Lessons 12-15

  ✓ **Check**: Problem Set problems #4, #6, #7

Adding Tens or Ones to Two-Digit Numbers (Continued)

Goals:

- ↻ **Review/reinforce** Lessons 12-15

  ✓ **Check**: Problem Set problems #1b-c, #4

Topic E: Varied Problem Types Within 20

"Put Together/Take Apart with Total Unknown" and "Add To with Result Unknown" Word Problems

Goals:

- Solve word problems involving addition within 20 by using pictorial tape diagrams

Addend (Part) Unknown Word Problems

Goals:

- Build on Module 2 Topic C to solve word problems that involve finding an unknown addend (part) by using pictorial tape diagrams

Total/Result Unknown and Addend Unknown Word Problems

Goals:

- ↻ **Review/reinforce** Lessons 19-20

Creating Word Problems

Goals:

- Create (or identify) word problem from given tape diagram

  ✓ **Check**: Problem Set problems #2, #3

Topic F: Addition of Tens and Ones to a Two-Digit Number

 **Suggestions**: Write continuous equations (see examples below) rather than separate equations to keep track of all parts (addends) of the expression (sum)

 **Cut/consolidate**: Can consolidate or omit Lessons 28-29

Two-Digit Numbers as Ten(s) and 10 or More Ones

Goals:

- Decompose two-digit numbers into multiple of tens and 10+ ones

  ✓ **Check**: Problem Set problem #1

Adding Two-Digit Numbers: Sum of Ones ≤ 10

Goals:

- Build on **Lessons 2-4 and 11-15** to add two-digit numbers:
  - Decompose each two-digit number into tens and ones
  - Add the tens and ones
    - Example:

Key Ideas: Add in any order

24 + **1**6
= 20 + **4** + 10 + **6**
= 20 + 10 + **4** + **6**
= 30 + 10
= 40

✓ Check: Problem Set problem #2e-f

Adding Two-Digit Numbers: Sum of Ones ≤ 10 (Continued)

Goals:

- ↻ Review/reinforce Lesson 24

✓ Check: Problem Set problems #1c-d

Adding Two-Digit Numbers: Sum of Ones > 10

Goals:

- Build on **Lessons 24-25**:
  - Decompose each two-digit number into tens and ones
  - Add the tens and ones
    - Example:

Key Ideas: Add in any order

19 + **1**5
= 10 + **9** + 10 + **5**
= 10 + 10 + **9** + **5**
= 20 + **14**
= 20 + 10 + 4
= 30 + 4
= 34

← **Lesson 12** (Adding tens to two-digit number)

✓ Check: Problem Set problem #2c

Adding Two-Digit Numbers: Sum of Ones > 10 (Continued)

Goals:

- ↻ **Review/reinforce** Lesson 26

  ✓ **Check**: Problem Set problems #2d, f

Adding Two-Digit Numbers

Goals:

- ↻ **Review/reinforce** Lessons 24-27

  ✓ **Check**: Problem Set problems #2c-e

Adding Two-Digit Numbers (Continued)

Goals:

- ↻ **Review/reinforce** Lessons 24-27

  ✓ **Check**: Problem Set problems #1d-f

Module 5: Identifying, Composing, and Partitioning Shapes

Summary:

- Geometry: attributes, classification, and compositions of shapes [Lessons 1-6]
- Fractions: "equal" partitions of shapes [Lessons 7-9]
- Telling time: half-partition of circle [Lessons 10-13]

Definitions:

- Two-dimensional "flat" shapes:
  - **Parallel lines**: lines that go in the same direction and will never cross
  - **Triangle**: closed shape with three sides
  - **Rectangle**: closed shape with four sides (quadrilateral) and four right (L-shaped) angles
  - **Rhombus**: closed shape with four sides (quadrilateral) of same length
  - **Square**: closed shape with four sides (quadrilateral) of same length *and* four right (L-shaped) angles
    - Square is rhombus *and* rectangle
  - **Trapezoid**: closed shape with four sides (quadrilateral) and at least one pair of opposite sides is parallel
  - **Parallelogram**: closed shape with four sides (quadrilateral) *and* both pairs of opposite sides are parallel
    - Rhombus, rectangle, square are special parallelograms
  - **Hexagon**: closed shape with six sides
- Three-dimensional "solid" shapes:
  - **Face**: flat part of a three-dimensional shape
  - **Cone**: three-dimensional shape with only one circle or oval face and one "point"
  - **Cylinder**: three-dimensional shape with two circle faces and "straight" sides
  - **Sphere**: curved three-dimensional shape with no face or point
  - **Rectangular prism**: three-dimensional shape with six rectangle faces
  - **Cube**: three-dimensional shape with six square faces
- **Half**
  - To "cut a shape into halves" means "to cut a shape into two parts with equal space ('equal parts')"
  - "1 half of a shape" means "1 part when a shape is cut into halves"
- **Quarter**
  - To "cut a shape into quarters" means "to cut a shape into four parts with equal space ('equal parts')"
  - "1 quarter of a shape" means "1 part when a shape is cut into quarters"

- **To tell time to the hour**

Time	Analog Clock	Digital Clock (hour:minutes)
1 o'clock	hour (short) hand pointed at **1** minute (long) hand pointed at 12	**1**:00
h o'clock	hour (short) hand pointed at **h** minute (long) hand pointed at 12	**h**:00

- **To tell time to the half hour**

Time	Analog Clock	Digital Clock (hour:minutes)
Three-thirty *Half past* **3** o'clock	hour (short) hand pointed **halfway between 3 and 4** minute (long) hand pointed *at 6*	**3**:*30*
Hour-thirty *Half past* **h** o'clock	hour (short) hand pointed **halfway between h and h + 1** minute (long) hand pointed *at 6*	**h**:*30*

Materials:

- "Straw kit" (see p. 12 of Teacher Edition) [Topic A]
- Attribute blocks
- Geosolids [Topics A-B]
- Three-dimensional shapes found in home or school (suggestions on p. 47) [Topics A-B]
    - Lesson 6: one set of shapes for each pair of students
- Pattern blocks [Topics B-C]
- Tangrams [Topics B-C]
- Clocks [Topic D]

Topic A: Attributes of Shapes

Two-Dimensional Shapes: Description

Goals:

- Distinguish between closed and open shapes (examples on Lesson 1 Template 1, p. 33 of Teacher Edition)
- Distinguish closed shapes based on attributes (e.g., corners/points, curves, straight sides, number of sides

✓ Check: Problem Set problems #1, #2, #5

Suggestions:

- Focus on *attributes* of shapes, reserve naming shapes for subsequent lessons
- Replace the term “square corner” with “L-shaped corner” to avoid confusion over square as a shape versus a corner

Two-Dimensional Shapes: Classification

Goals:

- Define parallel, triangle, rectangle, rhombus, square, trapezoid, hexagon
  - Review from Kindergarten: triangle, rectangle, square, hexagon
  - New in Grade 1: parallel, rhombus, trapezoid
- Classify shapes using above definitions

✓ Check: Problem Set problems #2, #3

Three-Dimensional Shapes: Classification

Goals:

- Define face, cone, cylinder, sphere, rectangular prism, cube
  - Review from Kindergarten: sphere, cylinder, cube, cone
  - New in Grade 1: rectangular prism
- Classify shapes using above definitions

✓ Check: Problem Set problem #2

Topic B: Part-Whole Relationships Within Composite Shapes

Two-Dimensional Composite Shapes: Pattern Blocks

Goals:

- Use pattern blocks to create composite shapes (larger shapes made of smaller shapes)

  ✓ Check: Problem Set problems #1, #3, #4

Two-Dimensional Composite Shapes: Tangrams

Goals:

- Identify shapes in composite shape

  ✓ Check: Problem Set problem #1b

- Use tangram pieces to create composite shapes
  - Introduce parallelogram (because in tangram set, though not in Grade 1 Standards)

  ✓ Check: Problem Set problem #2

Three-Dimensional Composite Shapes

Goals:

- Use three-dimensional shapes to create composite shapes

  ✓ Check: Problem Set problems #1, #2

Topic C: Halves and Quarters of Rectangles and Circles

Suggestions: To check “equal parts” (parts that take up the same amount of space (area)), trace a part onto wax/patty paper and then see if it can fit exactly on top of the other part(s) after sliding/rotating/flipping

“Equal Parts” of a Shape

Goals:

- Identify when a shape is composed of “equal parts” (parts that take up the same amount of space (area))

  ✓ **Check**: Problem Set problems #1c-f

Halves and Quarters

Goals:

- Define half, quarter
- Partition the space inside (area) of circles and rectangles into halves or quarters using above definitions

  ✓ **Check**: Problem Set problems #1b-c, #d-e
- Identify one half, one quarter of a circle or rectangle using above definitions

  ✓ **Check**: Problem Set problems #3a-b, #4a-b

Halves and Quarters (Continued)

Goals:

- Observe that a shape cut into quarters (more equal parts) will make each part smaller, halves (fewer equal parts) will make each part larger

  ✓ **Check**: Problem Set problem #1

Topic D: Application of Halves to Tell Time

Telling Time to the Hour

Goals:

- Tell time to the hour on an analog clock and digital clock

  ✓ Check: Problem Set problems #1a-b, #2b-c

Telling Time to the Half Hour

Goals:

- Reason that half of an hour is 30 minutes by
  - observing that the minute hand has traveled half of the clock's face when it starts at 12 and ends at 6, and
  - counting the minute marks from 12 to 6 by ones or groups of five minutes
- Tell time to the half hour on an analog clock and digital clock

  ✓ Check: Problem Set problems #1, #2c, #3c-d

Telling Time to the Half Hour (Continued)

✂ Cut/consolidate: Can omit Concept Development's Sequences C-D (no problem in Problem Set or Homework; Sequence D is beyond Grade 1 standards) and consolidate with Lesson 13

Goals:

- For Sequences A-B: ↻ Review/reinforce Lessons 10-11

  ✓ Check: Problem Set problems #6, #7
- For Sequence C: Build on **Lessons 10-11** by identifying the time based on the position of the hour hand
- For Sequence D: Solve word problems involving telling time to the hour or half hour

Telling Time to the Half Hour (Continued)

Goals:

- Build on **Lessons 11-12** to tell time on analog clocks that have fewer hour markings or labels

  Check: Problem Set problem #4

Module 6: Place Value, Comparison, Addition and Subtraction to 100

Summary:

- Place value to 120 [Lessons 3-9]
- Addition and subtraction [Lessons 10-19]
    - Addition and subtraction of **multiples of 10** within 100
    - Addition of **two-digit and one-digit numbers** within 100
    - Addition of **two-digit numbers** within 100
    - Addition and subtraction (comparison) word problems [Lessons 1-2, 25-27]

Key Ideas:

- Because of the associative and commutative properties of addition, we can add numbers in *any order* and still keep the sum (total) the same

Materials:

- Linking or snap cubes [Topics A-B]
- Place value strip or hide zero cards template [Topic B]
- Dimes [Topic C], and pennies, nickels, quarters [Topic E]

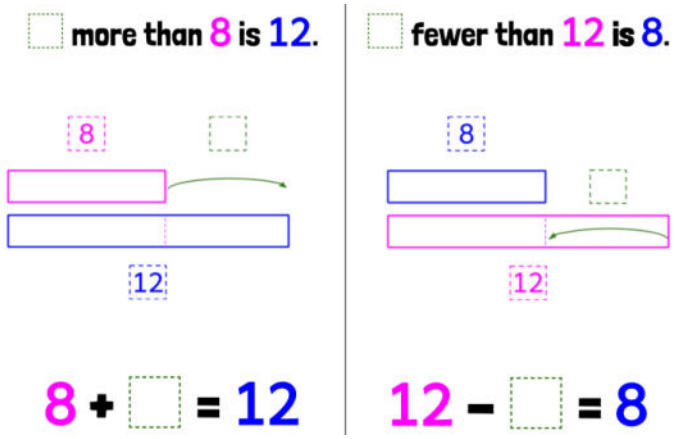
Topic A: Comparison Word Problems

Resources: Template to scaffold solution process for Lessons 1-2 and 25-26

"Compare with Difference Unknown" Word Problems

Goals:

- Build on Module 4 **Lesson 20** to solve word problems that involve finding an unknown difference (addend) by using linking cubes, linear models (tape diagrams or number lines), and equations
  - Example:
    "Rose wrote 8 letters. Nikil wrote 12 letters. How many more letters did Nikil write than Rose?" ("How many fewer letters did Rose write than Nikil?")



8 + 4 = 12, so Nikil wrote 4 more letters than Rose.
(12 - 4 = 8, so Rose wrote 4 fewer letters than Nikil.)

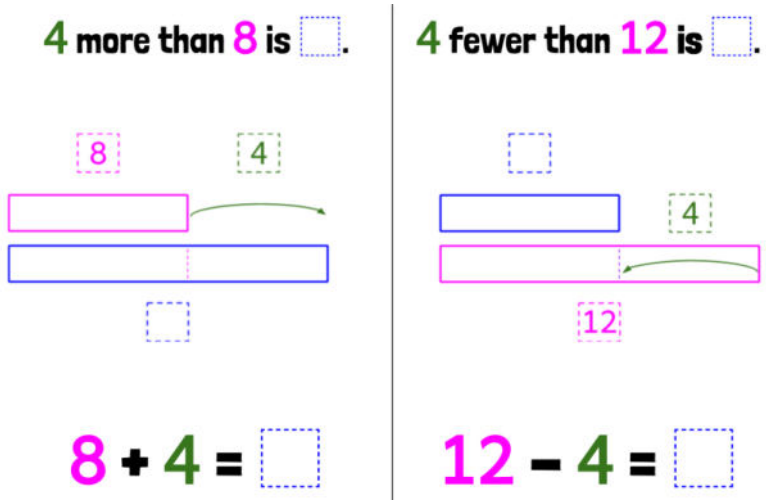
Check: Problem Set problem #2

"Compare with Bigger or Smaller Unknown" Word Problems

Goals:

- Build on **Lesson 1** to solve word problems that involve finding an unknown sum or difference by using linear models (tape diagrams or number lines) and equations
  - Example:
    "Rose wrote 8 letters. Nikil wrote 4 more letters than Rose. How many letters did Nikil write?"

("Nikil wrote 12 letters. Rose wrote 4 fewer letters than Nikil. How many letters did Rose write?")



8 + 4 = 12, so Nikil wrote 12 letters.
(12 - 4 = 8, so Rose wrote 8 letters.)

✓ Check: Problem Set problems #1, #2

Topic B: Numbers to 120

Place Value for Numbers to 100

Goals:

- Build on Module 4 **Lessons 1-2** for two-digit numbers up to 100:
  - Count total number of objects arranged into groups of ten (e.g., ten-stick) and 1-9 ones

    ✓ Check: Problem Set problems #2, #6
  - Represent two-digit number "*nm*" as "*n* tens *m* ones" in place value chart, and vice versa

    ✓ Check: Problem Set problems #9b-c

Two-Digit Numbers as Addition

Goals:

- Echo Module 4 Lesson 4 for two-digit numbers up to 100:
  - Use definition of addition to express two-digit number as sum of tens and ones

    Check: Problem Set problems #2, #3

Patterns with 10 More or Less, 1 More or Less

Goals:

- Echo Module 4 Lesson 5 for two-digit numbers up to 100:
  - Use definitions of "1 more than", "1 less than", "10 more than", "10 less than" to observe:

    Key Ideas:
    - "1 more" or "less" changes the ones digit
    - "10 more" or "less" changes the tens digit

    Check: Problem Set problems #1b & d, #2c-d

Comparing Numbers: Number and Word Sentences

Goals:

- Echo Module 4 Lesson 9 for two-digit numbers up to 100:
  - Use definitions of greater than, less than to compare numbers and state the comparison in word and symbol form

    Check: Problem Set problems #1a & c, #2a-b

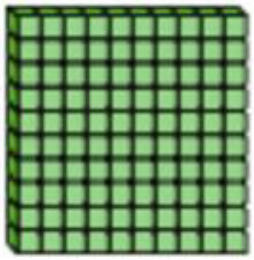
Counting to 120

Goals:

- Use place value to count and write numbers to 120

  Check: Problem Set problem #2

Suggestions: Use place value chart and base ten blocks to support reasoning behind counting and writing numbers 100 to 120

Hundred	Tens	Ones
		
1	0	1

Numbers to 120 as Tens and Ones: Symbols and Words

Suggestions: Do Lesson 9 before Lesson 8 because Lesson 8 is more concrete and Lesson 9 is more abstract

Goals:

- Build on **Lesson 9**:
  - Decompose numbers to 120 into tens (multiple of ten) and ones, and represent in place value chart with only tens and ones

    Check: Problem Set problem #1e-f
  - Use place value to rewrite (or match) number from “tens and ones” representation(s) to three-digit number

    Check: Problem Set problem #1g & i

Numbers to 120 as Tens and Ones: Drawings and Symbols

Goals:

- Build on **Lesson 3** for numbers up to 120:
  - Count total number of objects arranged into groups of ten (e.g., ten-stick) and 1-9 ones, and represent in place value chart with only tens and ones
- Build on **Lesson 7**:

- Use place value to rewrite number from “tens and ones” representation to three-digit number

Check: Problem Set problem #6

Topic C: Addition to 100 Using Place Value Understanding

Suggestions:

- Write continuous equations (see examples below) rather than separate equations to keep track of all parts (addends) of the expression (sum)
- Use base-ten blocks to support understanding of equations and drawings, if needed

Adding and Subtracting Tens from Multiples of 10

Goals:

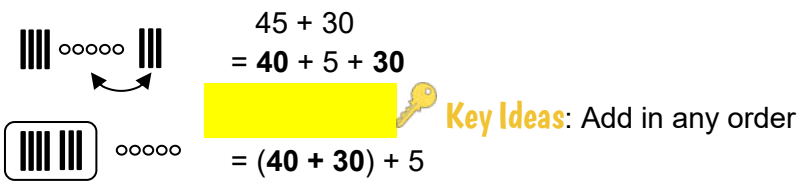
- Build on Module 4 **Lesson 11** for two-digit numbers up to 100:
  - Add and subtract multiples of ten by counting number of tens or dimes (1 dime represents 10 cents) and writing the corresponding equation
    - Example:
      4 tens + 3 tens = 7 tens
      4 dimes + 3 dimes = 7 dimes
      40 + 30 = 70

Check: Problem Set problems #4, #5, #8

Adding Tens to Two-Digit Numbers

Goals:

- Echo Module 4 Lesson 12 for two-digit numbers up to 100:
  - Decompose the two-digit number into tens and ones
  - Count the total number of tens (and ones)
  - Write the corresponding equations
    - Example:



= 70 + 5
= 75

Check: Problem Set problems #3, #5d

Adding Two-Digit Number: Sum of Ones ≤ 10

Goals:

- Build on **Lesson 11** and Module 4 **Lesson 13** for two-digit numbers up to 100:
  - Decompose the two-digit number into tens and ones
  - Count the total number of tens and ones
  - Write the corresponding equations
    - Example:
      24 + 13
      = 20 + 4 + 10 + 3
      Key Ideas: Add in any order
      = (20 + 10) + (4 + 3)
      = 30 + 7
      = 37

Check: Problem Set problems #1b & f

Adding Two-Digit Numbers: Sum of Ones > 10

Goals:

- Build on **Lesson 11** and Module 4 **Lesson 13** for two-digit numbers up to 100:
  - Decompose the two-digit number into tens and ones
  - Count the total number of tens and ones or use “count on” and “make 10” strategy with the ones
  - Write the corresponding equations
    - Example: 59 + 13
      = (50 + 9) + (10 + 3) or = 59 + (1 + 12)
      = (50 + 10) + (9 + 3) or = (59 + 1) + 12
      Key Ideas: Add in any order
      = 60 + 12
      = 60 + 10 + 2
      = 70 + 2
      = 72

✓ Check: Problem Set problem #1c

Adding Two-Digit Numbers: Sum of Ones > 10 (Continued)

Goals:

- ↻ Review/reinforce Lesson 13

✓ Check: Problem Set problem #1g

Adding Two-Digit Numbers: Place Value

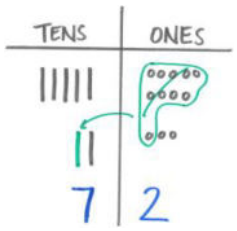
Goals:

- Build on **Lessons 13-14** by using vertical "quick tens and ones" drawings to represent addition of two-digit numbers and write sum

✓ Check: Problem Set problem #1e

Suggestions:

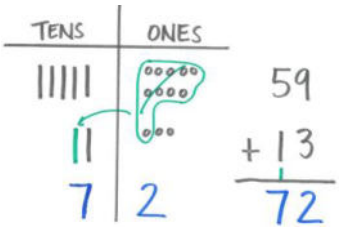
- Draw "quick tens and ones" into place value chart
- In addition to circling 10 ones, cross out and draw a quick ten



Adding Two-Digit Numbers: Place Value and Standard Algorithm

Goals:

- Build on **Lesson 15** by showing vertical addition alongside "quick tens and ones" drawing to add two-digit numbers



✓ **Check**: Problem Set problem #1b

Adding Two-Digit Numbers: Place Value and Standard Algorithm (Continued)

Goals:

- ↻ **Review/reinforce** Lesson 16

✓ **Check**: Problem Set problems #1b & d

Topic D: Varied Place Value Strategies for Addition to 100

Adding Two-Digit Numbers (Continued)

Goals:

- ↻ **Review/reinforce** Lessons 13 and 16

✓ **Check**: Problem Set problems #1, #2, #4

Adding Two-Digit Numbers (Continued)

Goals:

- ↻ **Review/reinforce** Lessons 13 and 16

✓ **Check**: Problem Set problems #4, #5

Topic E: Coins and Their Values

Cut/consolidate: Can omit Topic E (Lessons 20-24) because "Recognize and identify coins, their names, and their value" (1.MD.3 Part 2) is not part of California's Grade 1 Standards

Pennies, Nickels, and Dimes

Goals:

- Introduce nickel: 1 nickel = 5 pennies (cents)
- Identify value of sets of coins (pennies, nickels, dimes)
- Decompose the value of nickel(s) or dime(s) using pennies and/or nickels

Check: Problem Set problems #2, #4

Quarters

Goals:

- Introduce quarter: 1 quarter = 25 pennies (cents)
- Decompose the value of quarter using pennies, nickels, and dimes

Check: Problem Set problem #4

Suggestions: Write values and addition equation below coins to show value of set of coins

Decomposing Value of Coins

Goals:

- Introduce dollar coin: 1 dollar (coin) = 100 pennies (cents)
- Build on **Lessons 20-21** to decompose value of coin using combination of coins
- For Homework problems #2, #3: identify and compare values of sets of different coins

Suggestions: Do not assign problems #2, #3 for homework; use to introduce Lesson 23

Check: Problem Set problem #2

Identifying and Completing Values of Sets of Coins

Goals:

- Add pennies to make set of coins have given total value
- Identify values of sets of different coins

Check: Problem Set problems #1b-c, #2b

Suggestions: Write values and addition equation above or below coins to show value of set of coins

Dimes and Pennies as Tens and Ones

Goals:

- Build on **Lessons 7-8** and Module 4 Lesson 6 to represent numbers to 120 using dimes and pennies

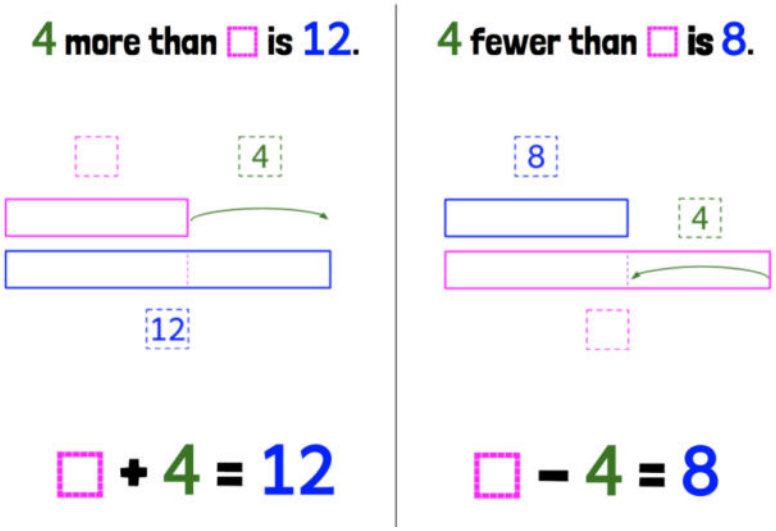
  Check: Problem Set problem #1c

Topic F: Varied Problem Types Within 20

"Compare with Bigger or Smaller Unknown" Word Problems (Continued)

Goals:

- Build on **Lessons 1-2** to solve word problems that involve finding an unknown "starting number" (addend or minuend (total)) by using linear models (tape diagrams or number lines) and equations
  - Example:
    "Nikil wrote 12 letters. She wrote 4 more letters than Rose. How many letters did Rose write?"
    ("Rose wrote 8 letters. She wrote 4 fewer letters than Nikil. How many letters did Nikil write?")



8 + 4 = 12, so Rose wrote 8 letters.
(12 - 4 = 8, so Nikil wrote 12 letters.)

✓ Check: Problem Set problems #1, #2

MC

"Compare" Word Problems

Goals:

- ↻ Review/reinforce Lessons 1-2 and 25

MC

"Compare" Word Problems (Continued)

Goals:

- ↻ Review/reinforce Lessons 1-2 and 25

Topic G: Culminating Experiences

MC

Adding and Subtracting Within 10 and 20

Goals:

- ↻ **Review/reinforce** Modules 1-2 (addition and subtraction within 10 or 20)

Adding and Subtracting Within 10 and 20 (Continued)

Goals:

- ↻ **Review/reinforce** Modules 1-2 (addition and subtraction within 10 or 20)

End-of-Year Task

Goals:

- ↻ **Review/reinforce** Modules 1-6