Alloway Township School
Home of the Tigers

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Grade 2 Unit 1 — Dates: 9/9/24 - 10/31/24

Rationale for Unit 1 Expectations

Building upon grade 1 work adding within 100 using concrete models, drawings, and strategies, grade 2 learners use addition and subtraction within 100 to solve both one- and two-step word problems for a variety of situations. Learners represent situations with the unknown in any position as well as using a symbol to represent the unknown. To extend this, learners generate measurement data and represent the data in line plots while then solving problems involving these data representations. Throughout Unit 1, learners should be working towards demonstrating fluency for addition and subtraction within 20 using mental strategies.

Unit 1 Description & Expectations

Days of Instruction: 38 days (*1 day is included for iReady Diagnostic 1)
Unit Completion Date: 10/30 (Fact Practice Day on 10/31)
Unit Topics/Themes: Modeling and Solving Addition and Subtraction Problems (Strategies such as making a ten and doubles plus one will help you add and subtract, You can use what you know about the relationship between addition and subtraction to help you solve problems, Organizing data into graphs can help you answer questions about data, Knowing how to model a situation with pictures and diagrams can help you solve the problem)

Topic: Setting Learning Routines (Lesson 0)
Topic: Mental Math Strategies for Addition & Subtraction (Lesson 1 & 2)
Topic: Even and Odd Numbers (Lesson 32)
Topic: Solve One-Step Word Problems (Lesson 3)

Topic: Draw and Use Bar Graphs and Picture Graphs (Lesson 4)
Topic: Solve Two-Step Word Problems (Lesson 5)
Topic: Unit Review and Assessment
Topic: Solve Addition and Subtraction Problems (Math in Action)

Whole Group Instruction	Differentiation: Teacher Table	Differentiation: Independent Practice/Small Group Center
Guidelines		
35-50 minutes of daily instruction using Core Resources	**25-40 minutes of daily differentiation**	
Number Sense Making Routines: (5-10 minutes daily) Number sense is built through experiences. Vary your sense making routines based on the needs of your classroom. They may be a whole group activity, but they also may be done as a small group depending upon the need. Example areas of focus: Verbal Counting, Object Counting, Cardinality, Subitizing, Spatial Relationships, One/Two More & Less, Benchmark Numbers, Part-Part-Whole, Magnitude, etc. **Core Resource for Whole Group Instruction:** Ready Classroom Math (30-45	**Number of groups to meet with each day: two** When planning for differentiation, it is important to first think about what each student needs. You may have different focuses for different groups of students. Below are	Activities should be aligned to specific skills & standards addressed during whole group instruction and practice of fluency standards.

minutes daily) Ready Classroom Math design & expectations: ● **Understand Lessons** - Focus on developing conceptual understanding and help students connect new concepts to familiar ones as they learn new skills and strategies. ● **Strategy Lessons** - Focus on helping students persevere in solving problems, discuss solution strategies, and compare multiple representations through the *Try-Discuss-Connect* routine. Strategy Lessons are taught over multiple days (usually 3-5 days) and consist of different sessions. ○ ***Explore Session***(s) follow the *Try-Discuss-Connect Routine* and draw on students' prior knowledge and make connections to new concepts. ○ ***Develop Session***(s) develop strategies and understanding through problem solving and discourse. ○ ***Refine Session***(s) are when students work independently with a partner, while the teacher monitors performance and differentiates instruction. ● **Math in Action Lessons (Grades 2-6)** - Feature open-ended problems with many points of entry and more than one possible solution. In Math in Action Lessons students apply strategies and build procedural fluency. *Try - Discuss - Connect Routine* is primarily used in Explore and Develop Sessions in Ready Math. Each Step in this routine will have expected Language Routines, Teacher Moves and Conversation Tips. *Language Routines* are predictable, repeatable formats that help students process word problems and communicate their growing understanding. *Teacher Moves* are powerful facilitation techniques to guide conversations in which students talk with each other rather than responding to the teacher. *Conversation Tips* are specific hints that show students what it means to engage in academic discourse. The six tips show students what it means to	suggestions to consider when planning for small group differentiated instruction. **Gifted Students:** When planning for students who are gifted, consider differentiating the content, process, or product. **Tier I Remedial Groups:** When planning for remedial work (additional work on grade level concepts), identify your Essential Understandings, Objectives, Standards, skills being taught, and Learner Outcomes, then, anticipate the most <u>common unique needs and common misconceptions</u>. Doing this will help you to plan effectively, and form groups based on daily exit tickets and Ready Unit Prerequisite Report. Support students using scaffolding and/or additional practice for grade level concepts and skills. **Tier II or Tier III Remedial Groups**: When planning your grade level instruction for students that are in Tier II or Tier III considerations of each	

participate in academic discourse: listening attentively, explaining ideas, justifying, building on the ideas of others, disagreeing respectfully and making connections. ● **Try It** - The teacher displays the *Start* question to draw on prior knowledge to the day's session. The teacher guides students in making sense of the problem, and to slow down to recognize and understand important information in the problem before beginning to solve. Teacher displays the problem and uses: ○ *Language Routines* - Three Reads, Co-Crafted Questions, Notice/Wonder and Say It Another Way ○ *Teacher Moves* - Turn & Talk and Individual Think Time (*Typically 10 seconds to 2 minutes*) Students apply what they have learned while making sense of the problem to represent the situation using a Part-Part-Whole model and begin solving. ● **Discuss It** - Students work in pairs to share their thinking - even incomplete thinking. Students should analyze their representations and strategies while using sentence frames when appropriate. The teacher strategically selects and sequences students' representations and strategies based upon the learning goal of the lesson. While circulating the teacher should use: ○ *Language Routines* - Compare & Contrast and Collect & Display ○ *Teacher Moves* - Turn & Talk, Individual Think Time and Four Rs (*Repeat, Reword, Rephrase, Record*) Selected students present and explain their solution methods and listen to critiques of others. The teacher facilitates the discussion and the class looks at highlighted strategies in the *Picture It* and *Model It* sections. ● **Connect It** - The teacher and students connect representations and strategies using a combination of individual work time and partner and whole-class discourse. Carefully selected questions lead students to recognize important mathematical ideas that were initially presented in	individual students' Math Intervention Plan need to be taken. Interventions and number sense relationships should be leveraged to support students with grade level content (bridging foundational concepts to support students' work at grade level content). Resources should be aligned to core content instructional resources (ie, Tools for Instruction, Fluency Skills & Practice pages, Prerequisite Lessons, Reteach Activities, Vocabulary pages, etc.), while a direct explicit connection between intervention strategies and grade level content is built.	

the **Try It** problem. The teacher should use: ○ *Language Routines* - Collect & Display and Compare & Connect ○ *Teacher Moves* - Turn & Talk, Individual Think Time and Four Rs **Closing: (2-5 minutes daily)** The closure should be directly related to the goal of the lesson. Formal closure to lessons may consist of synthesizing information learned during the lesson that relates to the objective. For example, students could share with the class something new that they learned that day (the question should be detailed and related to the goal/objective), complete an exit ticket (related to the goal/objective), reflect on what challenged them (related to the goal/objective), etc.		
Whole Group Instruction	**Differentiation: Teacher Table**	**Differentiation: Independent Practice/Small Group Center**
Unit Resources		
● Suggested Pacing Guide ● Ready Unit Flow and Progression Video ● Ready Math Background: Models, Progressions, and Teaching Tips ● Ready Interactive Tutorials ● Ready Unit Self Reflection ● Ready Unit Review ● Ready Discourse Cards/Cube ● Ready Digital Math Tools ● Ready Daily Session Slides ● Silent Hand Signals ● Grade 2 Writing in Math Tasks ● Georgia Frameworks (K-5) ● Howard County, MD:	● Scheduling Small Groups and Rotations ● CFAs ● RCM Fluency Practice Pages ● RCM Prerequisite Lessons ● RCM Tools for Instruction Lessons ● RCM Discourse Bookmarks ● K-5 Math Teaching Resources (no direct links to free documents!) ● Virtual Manipulatives:	● Scheduling Small Groups and Rotations ● RCM Unit Game ● RCM Literacy Connections Activities ● RCM Discourse Bookmarks ● K-5 Math Teaching Resources (no direct links to free documents!) ● Howard County, MD: ○ Gr 2

○ Gr 2 ● Achieve the Core Coherence Map ● Illustrative Mathematics ● You Cubed ● San Francisco Unified School District (SFUSD) ○ Gr2 ● Three Act Tasks: ○ Ms. Castillo's Math (K-5) ○ Graham Fletcher (K-6) ○ Robert Kaplinsky (K-6) ● Sense Making Routines: ○ Subitizing Slides (Steve Wyborney) ○ Esti-Mysteries (Steve Wyborney) ○ Even More Esti-Mysteries (Steve Wyborney) ○ Estimation Clipboard (Steve Wyborney) ○ Which One Doesn't Belong (Christopher Danielson) ○ Math Visuals (Berkley Everett) ○ Would You Rather...? (John Stevens) ○ Numberless Word Problems (Brian Bushart) ○ Number Talk Images (Tracey Zager & Pierre Tranche) ○ Daily Routines to Jumpstart Math Class (Curriculum Shared Drive) ○ Clothesline Math (Dan Kaufmann) ○ Math Spy (Dan Kaufmann) ○ Same or Different (Brian Bushart) ○ Same But Different (Sue Looney) ○ Splat (Steve Wyborney) ○ Open Middle (Robert Kaplinsky)	○ TheMathLearningCenter - ten frames, counters, time, number line, math rack, geoboards ○ SplatSquare-InteractiveHundredsChart ○ Virtual Rekenrek ○ Dreambox Teacher Tools	

● PBS Learning Media - instructional videos, interactive ● Online Manipulatives on Mathigon		
Whole Group Instruction	**Differentiation: Teacher Table**	**Differentiation: Independent Practice/Small Group Center**
Assessments		
● Ready Unit Assessment ● Ready Lesson Quizzes ● Ready - Math In Action ● CFAs ● Exit Tickets	● Daily log of small group instruction ● Anecdotal Notes ● Grade Level Math Interview ● CFAs ● RCM Fluency Practice Pages ● RCM Prerequisite Lessons ● RCM Tools for Instruction Lessons ● Exit Tickets ● Achieve the Core Coherence Map ● Illustrative Mathematics	Examples of accountability measures: Recording sheets, Fluency Practice Pages, exit tickets, rubrics, reflections, etc.
Whole Group Instruction	**Differentiation: Teacher Table**	**Differentiation: Independent Practice/Small Group Center**
Standards		
2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **BENCHMARKED Unit 2*	In addition to Whole Group Standards, you may choose to focus on grade level fluency standards or other priority standards listed below: **** Unit 1 Center Focuses:**	

2.OA.B.2 With accuracy and efficiency, add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers. (See standard 1.OA.C.6 for a list of mental strategies.) 2.OA.C.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends. 2.DL.A.1 Understand that people collect data to answer questions. Understand that data can vary. 2.DL.A.2 Identify what could count as data (e.g., visuals, sounds, numbers). 2.DL.B.4 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.	**2.OA.B.2** With accuracy and efficiency, add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers. (See standard 1.OA.C.6 for a list of mental strategies.) **2.NBT.A.2** Count within 1000; skip-count by 10s, and 100s.

Unit 1 Pacing Guide

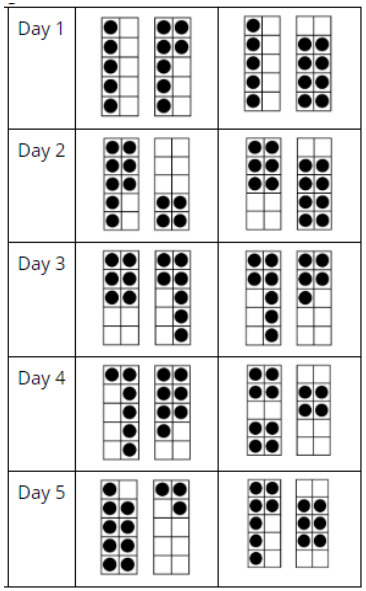
Topic: Setting Learning Routines		
Student Learning Standard(s):	**1.OA.C.6**	-Add and subtract within 20, demonstrating accuracy and efficiency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
Math Practices:	• MP.1 Make sense of the problem and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.3 Construct viable arguments and critique the reasoning of others. • MP.4 Model with Mathematics. • MP.5 Use appropriate tools strategically. • MP.6 Attend to precision. • MP.7 Look for and make use of structure. • MP.8 Look for and express regularity in repeated reasoning.	

Days: 6 9/9 - 9/16 **9/11 counted for iReady Diagnostic 1.*	**Focus**: Major Content in Gr 1	**Benchmarked Standard:** N **Fluency Standard**: Y

Critical Knowledge & Skills	
Objective:	**We are learning to**: think and talk like mathematicians.
Essential Question(s):	How do routines help us learn?

Core Resources	
Core Whole Group Resources	**Core Formative Assessment**
Ready Classroom Math Lessons **Lesson 0**: Sessions for the First Five Days Alternate lesson for Lesson 5 Session 0 *This lesson's materials are ONLY online on the Teacher Toolbox. Setting Number Talk & Sense Making Activity Expectations Introducing and practicing Silent Hand Signals	None - Math skills taught in this lesson 0 will be assessed in lesson 1

Additional Leveled Resources		
Activities and Additional Resources for Whole Group	**Differentiated Independent Activities/Center Ideas**	**Teacher Table Differentiated Resources**
-Anchor Chart Links Addition Strategies -Number Sense Lessons/Resources -Interactive Tools	-Mindset Resources: Week of Inspirational Math (WIM) Videos to Watch: -Believe in Yourself -Brains Grow and Change	-Teaching Channel 2nd Grade Addition Number Talk (This is an example for Teachers to view)

-SFUSD Skip Counting Routine -SFUSD Number Talk BLM 	-Speed is Not Important -Strategies for Learning Mathematics -The Importance of Struggle Activities: -And I'm a Mathematician -Dot Card and Number Talks -Good Group Work -My Keychain **Resources listed below are from Gr 1 Unit 1 Guidance Doc:** -RCM Interactive Practice: *Number Partners for 10, Use Strategies for Addition and Subtraction Facts* -RCM Center Activities - *Doubles and Doubles +1* -RCM Enrichment Activities - *The Triple Maker* Math Fluency Centers from K-5 Math Teaching Resources	

Vocabulary for Students	**Mentor Text List**

Topic: Mental Math Strategies for Addition and Subtraction and Even and Odd Numbers		
Student Learning Standard(s):	**2.OA.B.2**	With accuracy and efficiency, add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers. (See standard 1.OA.C.6 for a list of mental strategies.)

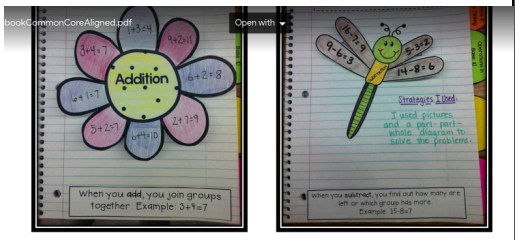
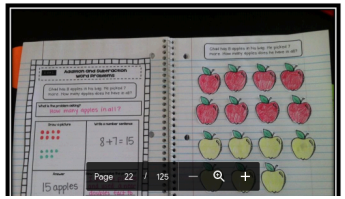
	2.OA.C.3	Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
Math Practices: (add 7 & 8 as needed)	• MP.1 Make sense of the problem and persevere in solving them. • MP.3 Construct viable arguments and critique the reasoning of others. • MP.5 Use appropriate tools strategically. • MP.7 Look for and make use of structure. • MP.2 Reason abstractly and quantitatively. • MP.4 Model with Mathematics. • MP.6 Attend to precision. • MP.8 Look for and express regularity in repeated reasoning.	
Days: 11 9/17 - 9/23 (Lesson 1) 9/24 - 9/27 (Lesson 32) 9/30 - 10/4 (Lesson 2)	**Focus**: Add & Subtract Major Even and Odd Supporting	**Benchmarked Standard:** Y **Fluency Standard**: Y
Critical Knowledge & Skills		
Objective:	**We are learning to**: *Lesson 1* ● Use the strategies of counting on (S1 & S2), making a ten (S1 & S2), and doubles plus one (S3) to add two on-digit numbers. ● Interpret models such as pictures, equations, and open number lines that represent the reasoning behind various strategies. (S1 - S3) ● Use addition strategies to represent and solve word problems. (S4 & S5) Lesson 32 ● Identify odd and even numbers (s1, s2) ● Relate doubles and doubles +1 facts to odd and even numbers (s4) ● Use counting on by twos, to identify even numbers (s3) *Lesson 2* ● Use mental math strategies to subtract one-digit numbers within 20. (S1 - S5) ● Understand and use the relationship between addition and subtraction to subtract one-digit numbers within 20. (S3)	

Essential Question(s):	What is mental math? How are drawings useful in math? (Even and Odd)

Core Resources	
Core Whole Group Resources	**Core Formative Assessment**
Ready Classroom Math Lessons **Lesson 1**: Mental Math Strategies for Addition *Lesson Materials:* - **Lesson:** Per student: 20 counters (10 each of two different colors) 18 connecting cubes (9 each of two different colors), a number path labeled from 6-15, *Activity Sheet:* Number Lines - **Activities:** *Per student*: 15 counters - **Math Tool Kit:** counters, connecting cubes, 10 frames, blank number lines - **Digital Math Tool:** Counters and Connecting Cubes **Lesson 32**: Even and Odd Numbers - Lesson Materials **Lesson** *per student* 20 connecting cubes, copy of Start Slide (session 2) **Activities** *per student* 20 connecting cubes, crayons, poster board *Activity Sheet* number line from 0-20, 1-cm grid paper, hundred chart **Math Toolkit** counters, hundred charts, 0-20 number line, sticky notes **Lesson 2**: Mental Math Strategies for Subtraction *Lesson Materials:* - **Lesson:** *Per student* 20 counters, number chart 1-20, *Activity Sheet:* 10-frames, Number Lines - **Activities:** *Per Student:* 40 counters, 28 connecting cubes (6 blue, 8 red, and 14 yellow), paper plate with a line dividing it in half, and a second line dividing the lower half in half *Activity Sheet*: Digit Cards 0-9	-RCM Lesson 1 Quiz & 32 Combined -RCM Lesson 2 Quiz

- **Math Tool Kit:** counters, 10 frames, number chart 1-20, blank number lines
- **Digital Math Tool**: Counters and connecting cubes

Additional Leveled Resources

Activities and Additional Resources for Whole Group	Differentiated Independent Activities/Center Ideas	Teacher Table Differentiated Resources
- Anchor Chart Links Addition and Subtraction Even Steven & Odd Todd Even or Odd Odd and Even Hands -Unit 1 Digital Anchor Charts - Interactive Tools NCTM Interactive Ten Frame - Interactive Notebook   - Brainpop Jr:	- iReady Individual Path - iReady Teacher Assigned Lessons - *Use Mental Math Strategies to Add* - *Practice: Use Mental Math Strategies to Add* - *Practice: Add Within 10* - *Use mental Math to Add (Make a Ten), Part 1* - *Use Mental Math to Add (Make a Ten), Part 2* - *Practice: Use Mental Math to Add (Make a Ten)* - *Use Mental Math to Add (Near Doubles)* - *Think Addition to Subtract* - *Think Addition to Subtract (Make a Ten)* - *Practice: Think Addition to Subtract* - RCM Interactive Practice: *Add To" Word Problems Within 10, Even and Odd Numbers* - RCM Center Activities - **RCM Fluency Skills and Practice Pages** - RCM Enrichment Activities - **Learning Games:** - Hungry Guppy - Hungry Fish - Match - Cupcake - Pizza	- RCM Prerequisite Lessons - RCM Tools for Instruction - RCM Math Center Activity - RCM Enrichment Activity **-Strategies to Encourage:** **Near Doubles** Use double ten frames to model -Illustrative Mathematics 2.OA.B.2 Building Towards Fluency 2.OA.B.2 Hitting the Target Number -Georgia Frameworks 2.OA.B.2 Strategy Video (approx. 10 minutes - use what you need from it rather than showing the whole video) -K-5 Math Teaching Resources 2.OA.3 Even Odd Scoop Literature Connection 2.OA.3 *Even Steven Odd Todd* Activity

Basic Addition Basic Subtraction Even and Odd	-Howard Country, MD 2.OA.B.2 Independent Activities -K-5 Math Teaching Resources: 2.OA.B.2 Find Ten 2.OA.B.2 Magic Squares 2.OA.B.2 Sum Search 2.OA.B.2 Four in a Row Subtraction 2.OA.B.2 Doubles Plus Two 2nd Grade Addition Games Toothy: Basic Addition Basic Subtraction Odd or Even - Red and Blue Tiles	-Engage NY – Module 6: Lesson 17 Relate Doubles to Even Numbers Lesson 18 Pair Objects & Skip Count Evens Lesson 19 Investigate the Pattern of Even Numbers Lesson 20 Use a Rectangular Array to Investigate Odds and Evens - K5 Worksheets - Even and Odd Assessment

Vocabulary for Students - Unit 1 Digital Word Wall

Add	Addend	Count on
difference	Equation	Fact family
Open number line	subtract	Sum
Unknown number	Even	Odd

Mentor Text List

Addition Read Alouds:

Two of Everything by Lily Toy Hong
Ten Flashing Fireflies by Philemon Sturges
The Napping House by Audry Wood and Don Wood
Quack and Count by Keith Baker
Counting Crocodiles by Judy Sierra
Night Noises by Mem Fox
The Shopping Basket by John Burningham
Anno's Counting House by Misumasa Anno
Double the Ducks by Stuart J. Murphy
The M&M's Addition Book by Barbara McGrath
**Some of these read alouds have accompanying activities from K-5 Math Teaching Resources*

	Even and Odd Read Alouds: *The Crayon Counting Book* by Jerry Pallotta *Even Steven and Odd Todd* by Kathryn Cristaldi *Missing Mittens* by Stuart J. Murphy *My Even Day* by Doris Fisher and Dani Sneed *One Odd Day* by Doris Fisher and Dani Sneed **Subtraction Read Alouds:** *Ten Red Apples* by Pat Hutchins *Turtle Splash! Countdown at the Pond* by Cathryn Falwell *Handa's Surprise* by Eileen Browne *Five Little Monkeys' Storybook Treasury* by Eileen Christelow *10 Fat Turkeys* by Tony Johnston *Monster Math* by Anne Miranda *Ten Timid Ghosts* by Jennifer O'Connell *If You Were a Minus Sign* by Trisha Shaskan *The M&M's Subtraction Book* by Barbara McGrath **Some of these read alouds have accompanying activities from K-5 Math Teaching Resources*

Topic: Solve One-Step Word Problems		
Student Learning Standard(s):	**2.OA.A.1**	Use addition and subtraction within 100 to solve one-(and two) step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions, e.g. by using drawings and equations with a symbol for the unknown numbers to represent the problem.
Math Practices:	• MP.1 Make sense of the problem and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.3 Construct viable arguments and critique the reasoning of others. • MP.4 Model with Mathematics. • MP.5 Use appropriate tools strategically.	
Days: 5	**Focus**: Major	**Benchmarked Standard:** Y

10/7 - 10/11		**Fluency Standard**: N
Critical Knowledge & Skills		
Objective:	**We are learning to**: - Analyze one-step addition and subtraction word problems and write equations to represent the problems (s1, s4) - Use fact families as a strategy to solve one-step problems and build number sense (s1, s5) - Interpret models that represent one-step problems (s2, s3)	
Essential Question(s):	What thinking process do I use to solve math problems?	

Core Resources	
Core Whole Group Resources	**Core Formative Assessment**
Ready Classroom Math Lessons **Lesson 3**: Solve One-Step Word Problems ***(*Combine Sessions 4 & 5)*** - **Lesson**: *per student*: 15 two color counters, 20 counters - **Activities** *per students*: 20 counters, 1 small paper plate, 1 large paper plate, 3 large construction paper squares, 2 small construction paper squares with "-" or "=" on them, *Activity Sheet*: 10 frame - **Math Toolkit:** counters, 10-frames, blank bar models - **Digital Math Tool**: Counters and connecting cubes	-RCM Lesson Quizzes

Additional Leveled Resources		
Activities and Additional Resources for Whole Group	**Differentiated Independent Activities/Center Ideas**	**Teacher Table Differentiated Resources**
- Anchor Chart	-iReady Individual Path	-RCM Prerequisite Lessons

Solving Word Problems - Number Sense Lessons/Resources - Interactive Tools - Brainpop Jr: Solving Word Problems Choosing an Operation	- iReady Teacher Assigned Lessons: N/A - RCM Interactive Practice: N/A - RCM Center Activities - RCM Enrichment Activities - **Learning Games:** - Cupcake - Pizza - Addition and Subtraction Word Problems - Penguin Addition Word Problem Art - Problem Solving with Monsters - Toothy: Story Problems - First Grade Story Problems - Second Grade	- RCM Tools for Instruction - RCM Center Activities - RCM Enrichment Activities - Pencil & Sticker -K-5 Math Teaching Resources 2.OA.1 Add to - result unknown

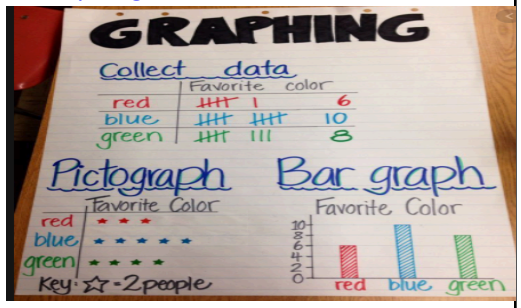
Vocabulary for Students	Mentor Text List
Equal sign Equation	**Addition Read Alouds:** *Two of Everything* by Lily Toy Hong *Ten Flashing Fireflies* by Philemon Sturges *The Napping House* by Audry Wood and Don Wood *Quack and Count* by Keith Baker *Counting Crocodiles* by Judy Sierra *Night Noises* by Mem Fox *The Shopping Basket* by John Burningham *Anno's Counting House* by Misumasa Anno *Double the Ducks* by Stuart J. Murphy *The M&M's Addition Book* by Barbara McGrath **Some of these read alouds have accompanying activities from K-5 Math Teaching Resources* **Subtraction Read Alouds:** *Ten Red Apples* by Pat Hutchins

	Handa's Surprise by Eileen Browne *Five Little Monkeys' Storybook Treasury* by Eileen Christelow *10 Fat Turkeys* by Tony Johnston *Monster Math* by Anne Miranda *Ten Timid Ghosts* by Jennifer O'Connell *Elevator Magic* by Stuart J. Murphy *Turtle Splash! Countdown at the Pond* by Cathryn Falwell *If You Were a Minus Sign* by Trisha Shaskan *The M&M's Subtraction Book* by Barbara McGrath **Some of these read alouds have accompanying activities from K-5 Math Teaching Resources**Twenty is Too Many* by Kate Duke

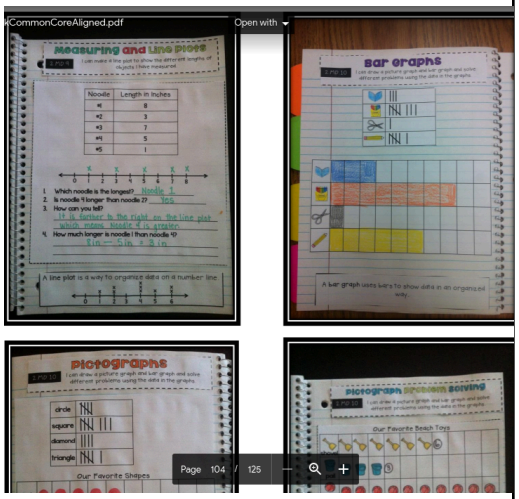
Topic: Draw and Use Bar Graphs and Picture Graphs		
Student Learning Standard(s):	**2.DL.A.1**	Understand that people collect data to answer questions. Understand that data can vary.
	2.DL.A.2	Identify what could count as data (e.g., visuals, sounds, numbers).
	2.DL.B.4	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set up with up to four categories. Solve simple put together, take-apart, and compare problems using information present in a bar graph.
Math Practices: (add 7 & 8 as needed)	• MP.1 Make sense of the problem and persevere in solving them. • MP.3 Construct viable arguments and critique the reasoning of others. • MP.5 Use appropriate tools strategically.	• MP.2 Reason abstractly and quantitatively. • MP.4 Model with Mathematics. • MP.6 Attend to precision.
Days: 5 10/15 - 10/21	**Focus**: Understand Data Additional Representing Data Supporting	**Benchmarked Standard:** N **Fluency Standard**: N
Critical Knowledge & Skills		
Objective:	**We are learning to**: - Collect data to display in a bar graph or picture graph (S3) - Compare data in a tally chart, table, picture graph, and bar graph (S1) - Interpret graphs by reading and comparing the data shown in the graph (S1, S2) - Complete a picture graph and bar graph (S3) - Create a bar graph from a given set of data (S3, S4) - Solve addition and subtraction word problems within 20, based on data (S4, S5)	

Essential Question(s):	How do we display information in math?

Core Resources	
Core Whole Group Resources	**Core Formative Assessment**
Ready Classroom Math Lessons **Lesson 4**: Draw and Use Bar Graphs and Picture Graphs - **Lesson:** *Per Student*: counters *Activity sheet*: 10-Frames - **Activities:** *Per student;* concrete objects to sort and graph *For display*: a large piece of chart paper with horizontal and vertical grid marks *Activity Sheet:* 1-Inch grid paper **Math Toolkit:** counters, connecting cubes, 10-frames, grid paper	-RCM Lesson Quizzes

Additional Leveled Resources		
Activities and Additional Resources for Whole Group	**Differentiated Independent Activities/Center Ideas**	**Teacher Table Differentiated Resources**
- Anchor Chart Graphing  -Unit 1 Digital Anchor Charts	-iReady Individual Path - iReady Teacher Assigned Lessons - N/A - RCM Interactive Practice: N/A - RCM Center Activities - RCM Enrichment Activities - Teddy Graham Graphs - Winter Bar Graphs and Picture Graphs - Reading Bar Graphs - Name Graph	-RCM Prerequisite Lessons - RCM Tools for Instruction - RCM Center Activities - RCM Enrichment Activities - Reading Bar Graphs - Bar Graphs

- Number Sense Lessons/Resources
- Interactive Tools
- Interactive Notebook



- Toothy: *Graphs*
- Brainpop Jr: Tally Charts and Bar Graphs
  Line Graphs
  Pictographs
- Introduction to Graphs

Vocabulary for Students	Mentor Text List
Bar graph Picture graph data	*Giraffe Graphs* by Melissa Stewart *The Great Graph Contest* by Loreen Leedy *Jellybeans* by Charlotte Stadler *Lemonade for Sale* by Stuart J. Murphy *Tally O'Malley* by Stuart J. Murphy *Tiger Math: Learning to Graph from a Baby Tiger* by Ann Whitehead Nagda

	Tim's Ice Cream Store by Rachel Griffiths

Topic: Solve Two-Step Word Problems		
Student Learning Standard(s):	**2.OA.A.1**	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problems.
Math Practices: (add 7 & 8 as needed)	• MP.1 Make sense of the problem and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.3 Construct viable arguments and critique the reasoning of others. • MP.4 Model with Mathematics. • MP.5 Use appropriate tools strategically. • MP.6 Attend to precision. • MP.7 Look for and make use of structure. • MP.8 Look for and express regularity in repeated reasoning.	
Days: 5 10/22 - 10/28	**Focus**: Major	**Benchmarked Standard:** Y **Fluency Standard**: N
Critical Knowledge & Skills		
Objective:	**We are learning to**: - Analyze two-step word problems to determine the series of operations needed to solve them (S1-5) - Interpret models that represent a two-step problem (S1-5)	
Essential Question(s):	What thinking process do I use to solve math problems?	

Core Resources	
Core Whole Group Resources	**Core Formative Assessment**
Ready Classroom Math Lessons **Lesson 5**: Solve Two-Step Word Problems - **Lesson**: *Per Student:* 25 counters - **Activities:** *Per Student:* 20 two-color counters, *Per Pair*: 20 counters, half sheets of paper with problems written on them *Activity Sheet*: 10-frames **Math Toolkit**: connecting cubes, counters, 10 frames, number bonds, open number lines, bar models **Digital Math Tool**: counters and connecting cubes	-RCM Lesson Quizzes

Additional Leveled Resources		
Activities and Additional Resources for Whole Group	**Differentiated Independent Activities/Center Ideas**	**Teacher Table Differentiated Resources**
-Anchor Chart Two-Step Word Problems -Number Sense Lessons/Resources -Interactive Tools	-iReady Individual Path - iReady Teacher Assigned Lessons - *Solve Two-Step Problems* - RCM Interactive Practice: N/A - RCM Center Activities - RCM Enrichment Activities - **Learning Game:** - *Cupcake* - *Pizza* - Addition and Subtraction Word Problems - Penguin Addition Word Problem Art - Problem Solving with Monsters - Toothy: *Two-Step Story Problems*	-RCM Prerequisite Lessons - RCM Tools for Instruction - RCM Center Activities - RCM Enrichment Activities - Pencil & Sticker -K-5 Math Teaching Resources 2.OA.1 Add to - result unknown

Vocabulary for Students	Mentor Text List
Count on Subtract	*The Action of Subtraction* by Brian Cleary *A Fair Bear Share* by Stuart J. Murphy *Hershey's Kisses Addition Book* by Jerry Pallotta *Hershey's Kisses Subtraction Book* by Jerry Pallotta *Mission: Addition* by Loreen Leedy *The M&M's Subtraction Book* by Barbara McGrath *Safari Park* by Stuart J. Murphy *Subtraction Action* by Loreen Leedy *The Subtraction Book* by Jerry Pallotta

Topic: Unit Review and Unit Assessment	
Days: 2	**Unit Review:** 10/29 **Unit Assessment Date**: 10/30
Scoring Submission in LinkIt:	**Data Review Date**:

**Math In Action Lessons can be completed if time allows within the unit. They may also be used for differentiation for G&T students.*

Topic: Solve Addition and Subtraction Problems

Student Learning Standard(s):	**2.OA.B.2** **2.OA.A.1** **2.DL.B.4**	- Fluently add and subtract within 20 using mental math strategies. - Use addition and subtraction within 100 to solve one-(and two) step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions, e.g. by using drawings and equations with a symbol for the unknown numbers to represent the problem. - Draw a picture graph and a bar graph (with single-unit scale) to represent a data set up with up to four categories. Solve simple put together, take-apart, and compare problems using information present in a bar graph.
Math Practices: (add 7 & 8 as needed)	• MP.1 Make sense of the problem and persevere in solving them. • MP.3 Construct viable arguments and critique the reasoning of others. • MP.5 Use appropriate tools strategically. • MP.7 Look for and make use of structure. • MP.2 Reason abstractly and quantitatively. • MP.4 Model with Mathematics. • MP.6 Attend to precision. • MP.8 Look for and express regularity in repeated reasoning.	
Days:	**Focus**: Major	**Benchmarked Standard:** Y **Fluency Standard**: Y
Critical Knowledge & Skills		
Objective:	**We are learning to**: draw graphs to represent data and solve word problems involving those graphs.	
Essential Question(s):	What thinking process do I use to solve math problems?	

Core Resources	
Core Whole Group Resources	**Core Formative Assessment**

Ready Classroom Math Lessons **Math In Action** OR PBL: *Solve Addition and Subtraction Problems* - Students may work individually or in small groups. Students are given a group of objects. They will then create different addition and subtraction scenarios with their objects and create word problems to represent those situations with. Students can then do a project walk and work out each other's word problems and create a bar graph using the objects/answers from their classmates.	

Additional Leveled Resources		
Activities and Additional Resources for Whole Group	**Differentiated Independent Activities/Center Ideas**	**Teacher Table Differentiated Resources**
- Anchor Chart Solving Word Problems -Unit 1 - Number Sense Lessons/Resources Number Sense Bundle - Interactive Tools	-iReady Individual Path -iReady Teacher Assigned Lessons -RCM Interactive Practice: NAME -RCM Center Activities -RCM Enrichment Activities	-RCM Prerequisite Lessons -RCM Tools for Instruction

Computer Science (8.1) and Design Thinking (8.2)	
8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network. 8.1.2.NI.2: Describe how the Internet enables individuals to connect with others worldwide. 8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. 8.1.2.NI.4: Explain why access to devices need to be secured. 8.1.2.IC.1: Compare how individuals live and work before and after the implementation of new computing technology. 8.1.2.DA.2: Store, copy, search, retrieve, modify, and delete data using a computing device. 8.1.2.DA.3: Identify and describe patterns in data visualizations. 8.1.2.DA.4: Make predictions based on data using charts or graphs. 8.1.2.AP.4: Break down a task into a sequence of steps 8.1.2.AP.5: Describe a program's sequence of events, goals, and expected outcomes.	8.2.2.ED.1: Communicate the function of a product or device. 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. 8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ITH.2: Explain the purpose of a product and its value. 8.2.2.ITH.3: Identify how technology impacts or improves life. 8.2.2.ITH.4: Identify how various tools reduce work and improve daily tasks. 8.2.2.EC.1: Identify and compare technology used in different schools, communities, regions, and parts of the world.

Preparation for College, Careers, and Beyond	
Career Ready Practices	**Personal Financial Literacy (9.1), Career Awareness, Exploration, and Preparation (9.2), Life Literacies and Key Skills (9.4))**
CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP3. Attend to personal health and financial well-being. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies.	9.4.2.CI.1: Demonstrate openness to new ideas and perspectives 9.4.2.CI.2: Demonstrate originality and inventiveness in work 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem 9.4.2.CT.2: Identify possible approaches and resources to execute a plan 9.4.2.CT.3: Use a variety of types of thinking to solve problems 9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool 9.4.2.DC.1: Explain differences between ownership and sharing of information. 9.4.2.DC.2: Explain the importance of respecting digital content of others.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9. Model integrity, ethical leadership and effective management.
CRP10. Plan education and career paths aligned to personal goals.
CRP11. Use technology to enhance productivity.
CRP12. Work productively in teams while using cultural global competence.

9.4.2.DC.3: Explain how to be safe online and follow safe practices when using the internet
9.4.2.DC.4: Compare information that should be kept private to information that might be made Public
9.4.2.DC.5: Explain what a digital footprint is and how it is created.
9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments.
9.4.2.DC.7: Describe actions peers can take to positively impact climate change
9.4.2.GCA:1: Articulate the role of culture in everyday life by describing one's own culture and comparing it to the cultures of other individuals
9.4.2.TL.2: Create a document using a word processing application.
9.4.2.TL.3: Enter information into a spreadsheet and sort the information.
9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.
9.4.2.TL.5: Describe the difference between real and virtual experiences.
9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools
9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts

Personal Financial Literacy (Standard 9.1)	
Strand A	**Income and Careers**
Strand B	**Money Management**
Strand C	**Credit and Debt Management**
Strand D	**Planning, Saving, and Investing**
Strand E	**Becoming a Critical Consumer**
Strand F	**Civic and Financial Responsibility**
Strand G	**Insuring and Protecting**
Career Awareness, Exploration, and Preparation (Standard 9.2)	
Strand A	**Career Awareness (by end of Grade 4)**
Strand B	**Career Exploration (by end of Grade 8)**
Strand C	Career Preparation (by end of Grade 12)

Cross-Curricular Connections	
Interdisciplinary Connections	**Technology Integration and Literacy**

● Literature connections (math mentor texts identified in “Resources and Activities”) ● Math journals ● Math word wall ● Literacy Connections & Activities Ready Classroom Math	Online links and possible resources for the integration of technology into lessons are embedded within the “Possible Resources and Activities” column for each Topic area.

Possible Modifications and Accommodations

Special Education/504 Plans

**All teachers of students with special needs must review each student’s IEP. Teachers must then select the appropriate modifications and/or accommodations necessary to enable the student to appropriately progress in the general curriculum.*

Possible Modifications/Accommodations

- Number line on desk
- Extra time on timed calculation assessments
- Use of a calculator or chart of basic facts for computation
- Use of a graphic organizer to plan ways to solve math problems
- Use of concrete materials and objects (manipulatives)
- Opportunities for cooperative partner work
- Assign fewer problems at one time (e.g., assign only odds or evens)
- Basic computation – use counters
- Differentiated center-based small group instruction
- Fractions – use fraction blocks

At-Risk

The possible list of modifications/accommodations identified for Special Education students can be utilized for At-Risk students. Teachers should utilize ongoing methods to provide instruction, assess student needs, and utilize modifications specific to the needs of individual students.

Refer to the individual student Math Plan for **specific interventions.*

Gifted

**Teachers should select the appropriate modifications and/or accommodations for Gifted and Talented according to the following suggestions.*

Differentiating instruction based on:

- **Content:** *What* is taught or the material used
- **Process:** *How* it is taught or support given or student grouping or environment
- **Product:** What students produce

To differentiate **content** consider:

- Using different resources that have less explicit information (e.g., tiering assignments - consider what would make the content more complex to digest for gifted students)
  - **For Example**: tiering problem solving scenarios making a gifted learner’s scenario more complex
  - **For Example**: gifted students could work on deriving the procedure for an abstract concept
- Organizing ideas through graphic organizers
- Using a learning contract (learning contracts are *individualized* and allow students to participate in designing their own learning which is motivating for gifted students)
- Using jigsaws
- Using orbital studies (differ from independent investigations and is meant as an extension of the topics covered in class into specific fields of study e.g., manufacturing)

To differentiate the **process** consider:

English Language Learners

- Continue practicing vocabulary
- Demonstrate that vocabulary can have multiple meanings
- Encourage bilingual supports among students
- Provide visual cues, graphic representations, gestures, and pictures
- Rephrase math problems when appropriate
- Build knowledge from real-world examples
- Provide manipulatives and symbols
- Have students estimate each other’s heights
- Have students measure themselves and one another
- Have students relate an object they know with a unit of measure
- Encourage peer discussions regarding how students are thinking about math
- RCM Unit Connect Language Development to Mathematics

● Provide a copy of mathematical equations, class notes, and examples for math notebooks ● Highlight or underline key words in word problems ● If a manipulative is used during instruction, allow its use on a test ● Place value – use place value blocks ● Provide graph paper for arrays ● Provide reteach pages if necessary ● Provide several ways to solve a problem if possible ● Offer small and large graph paper options ● Provide visual aids and anchor charts ● Tiered lessons and assignments		● How students are grouped ● Tiering materials used (e.g., graphic organizers varying in complexity, types of questions asked - DOK level) ○ **For Example**: *Below-Grade-Level Question*: ●●●●●● **+ ? =** ●●●●●●●●●● *On-Grade-Level Question* (Grade 1): 6 **+ ? =** 10 *Above-Grade-Level Question*: Jon has 6 puppies. He wants to have 10 puppies. How many more puppies does he need to buy? To differentiate the **product** consider: ● Using a choice board (the difficulty of the activity should be noted for each choice and should be at least 3 levels) ● Using a menu of options (each item is assigned a point value and students select the route to take) ● Using open ended tasks (have more than one correct answer and/or more than one way to get to/explain an answer) o **For Example**: (Grade 2) Use the digits 0 to 9, at most one time each, to make a true statement. ⬜⬜ – ⬜⬜ = ⬜⬜ + ⬜⬜ (Open Middle Link) o **For Example:** (Grade 3) Using the digits 1 to 9 exactly one time each, place a digit in each box to make the sum as close to 1000 as possible. ⬜⬜⬜ + ⬜⬜⬜ + ⬜⬜⬜ (GeoGebra Link)	
Individualized Learning Opportunities			
Possible independent study and online learning opportunities are embedded within the “Possible Resources and Activities” column for each Topic area. iReady			