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Course: Kindergarten Math; Eureka Math Squared
Unit Number: 5
Unit Title: Addition and Subtraction
Timeframe:

Stage 1: Identify Desired Results	
Essential Question: *What thought-provoking questions will foster inquiry, meaning making and transfer?* • *An essential question is open-ended; it has no simple "right answer."* • *Is meant to be investigated, argued, looked at from different points of view* • *Encourages active "meaning making" by the learner about important ideas.* • *Raises other important questions.* • *Naturally arises*	• How can knowing 10 ones and some ones help me to learn the patterns in bigger numbers? • How can knowing my teen numbers help me solve real-world problems? • How can what I know about counting to 30 help me learn to count to 100?
Scaffold Questions: *What questions can we ask students that break the essential question into smaller pieces of content?*	• How can I count objects into piles of 10? • How can I count these piles up together to work my way up to counting by tens and ones to 100? • How do I add 10 ones to other ones to make a teen number using objects? • How do I add 10 ones to other ones to make a teen number without objects? • How can I learn the pattern of the teen numbers so I can read and write them correctly? • How can I use the "Say 10 way" and "Hide Zero" strategy to help me?
Brief Summary of Unit:	**Topic A:**Represent Addition

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	Students make a major leap forward in their understanding of number sentences. They represent addition stories by using number sentences with mathematical symbols, such as 4 + 2 = 6, and read their work by using mathematical language, “4 plus 2 equals 6.” They also recontextualize the number sentence by using it to retell the story. Students work with three problem types in this topic: *add to with result unknown*, *put together with total unknown*, and *take apart with both addends unknown*. By the end of the topic, students can find the total of an addition sentence without a story context. **Topic B:**Represent Subtraction Students solve subtraction problems and represent their thinking by using number sentences with mathematical symbols. For example, 5 – 3 = 2. They work with a single problem type, *take from with result unknown*, to understand subtraction as taking away. Students use familiar story structure (beginning, middle, and end) to write and understand subtraction sentences: “I had 5 watermelon slices. I ate 3 of them. Now there are 2 watermelon slices. 5 minus 3 equals 2.” **Topic C:**Make Sense of Problems Students transition from working with addition and subtraction separately to thinking about both as they determine which operation can be used to solve. As they focus on story context and the information presented, they build their capacity for sense-making and perseverance. This topic also presents a number of opportunities for students to practice finding partners to 10 through story and measurement contexts. **Topic D:** Make Use of Structure Students look for and make use of structure by looking for and making use of patterns. They learn what a pattern is and how to recognize and extend patterns, and they use patterns to extend their work with numbers. Students apply their knowledge of patterns to help them answer *how many* questions.

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Desired Understanding: *The long-term accomplishments that students should be able to do with knowledge and skill, on their own. Frames Standards as long-term performance accomplishments. Answer the questions Why? And What can you do with this?*	**K.Mod4.AD5** Compose shapes to form larger shapes. **K.Mod5.AD1** Count forward from a number other than 1. **K.Mod5.AD2** Represent addition with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations. **K.Mod5.AD3** Represent subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, and equations. **K.Mod5.AD4** Solve *add to*, *take from*, *put together*, and *take apart with result unknown* story problems within 10 by using addition and subtraction. **K.Mod5.AD5** Record solutions to story situations in which both addends are unknown with an addition sentence. **K.Mod5.AD6** Add and subtract within 10 by using objects, drawings, or other math tools. **K.Mod5.AD7** Decompose numbers within 10 into pairs in more than one way and **record** with equations such as 5 = 2 + 3 and 5 = 4 + 1. **K.Mod5.AD8** Find the partner to 10 for any number 1–9. **K.Mod5.AD9** Add fluently within 5.

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	K.Mod5.AD10 Subtract fluently within 5.
Common Core State Standards (CCSS) - Mathematics *List all of the standards in this unit.*	**K.CC.A.1** Count to 100 by ones and by tens. **K.CC.A.2** Count forward beginning from a given number within the known sequence (instead of having to begin at 1). **K.CC.A.3** Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). **K.CC.B.4** Understand the relationship between numbers and quantities; connect counting to cardinality. **K.CC.B.5** Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. **K.OA.A.1** Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. **K.OA.A.2** Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

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	K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). **K.OA.A.4** For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. **K.OA.A.5** Fluently add and subtract within 5. **K.G.B.6** Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”
Mathematical Practices *Which of the mathematical practices will be focused on during this unit?*	Highlight those from unit As a result of ambitious math instruction, students will: • MP1 Make sense of problems and persevere in solving them • MP2 Reason abstractly and quantitatively • MP3 Construct viable arguments and critique the reasoning of others • MP4 Model with mathematics • MP5 Use appropriate tools strategically • MP6 Attend to precision • MP7 Look for and make use of structure • MP8 Look for and express regularity in repeated reasoning
Essential Standards* *List the Essential Standards that will be taught and assessed in this unit.*	**K.OA.A.1** Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

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	K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. **K.OA.A.3** Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). **K.OA.A.4** For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. **K.OA.A.5** Fluently add and subtract within 5. **K.G.B.6** Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”
Crossover standards* *Connection to other content areas (Option)*	**Speaking & Listening:** SL.K.1.A - Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). SL.K.3 - Ask and answer questions in order to seek help, get information, or clarify something that is not understood
Alignment to the Vision of High Quality	Highlight those included from unit **Teacher Actions:** ● Teacher establishes clear goals for the mathematics that students are learning, situates targets within

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Instruction in Mathematics *(How do the instructional targets in this unit align to the district's vision of high quality instruction?)*	learning progressions, and uses the targets to guide instructional decisions. ● Teacher engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allows multiple entry points and varied solution strategies. ● Teacher engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving. ● Teacher facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments. ● Teacher uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships. ● Teacher builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems. ● Teacher consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships. ● Teacher uses evidence of student thinking to assess progress toward mathematical understanding **and to** adjust instruction continually in ways that support and extend learning. ● Teacher provides instructional scaffolding with the gradual release model of instruction to ensure students are able to construct meaning of mathematics. Student Actions: ● Students solve problems without giving up. ● Students think about numbers in many different ways. ● Students explain and justify their thinking and understand the thinking of others. ● Students show, analyze and revise their work in many different ways. ● Students use math tools and explain why they chose them. ● Students calculate accurately and efficiently, evaluate their work, and clearly communicate their thinking. ● Students use what they know to solve new problems. ● Students solve problems by looking for rules and patterns and evaluate their results.

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- Students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.

RAPS math vision

In order to create these mathematically rich classrooms, Teachers:

1. Establish mathematical learning targets.
2. Implement tasks that promote reasoning and problem solving
3. Use and connect representations.
4. Facilitate meaningful mathematical discourse.
5. Pose purposeful questions.
6. Build procedural fluency from conceptual understanding.
7. Support productive struggle in learning mathematics.
8. Elicit and use evidence of student thinking

As a result of ambitious math instruction, students will:

- MP1 Make sense of problems and persevere in solving them
- MP2 Reason abstractly and quantitatively
- MP3 Construct viable arguments and critique the reasoning of others
- MP4 Model with mathematics
- MP5 Use appropriate tools strategically
- MP6 Attend to precision
- MP7 Look for and make use of structure
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Stage 2: Determine Acceptable Evidence

(With the exception of formative assessments, all assessments listed in this section are required elements of the district's curriculum and the data associated will be collected in the district's performance management driver system.)

Measure of Understanding (Performance Task) *(How will students demonstrate their attainment of the desired understanding?)*	Culminating Task: Lesson 27 This lesson invites students to count and record a collection of objects by using tools and strategies of their choice. Students demonstrate and celebrate growth with counting concepts and written recordings while the teacher gathers formative assessment data. Class discussion focuses on recording with number sentences and counting from a number greater than 1.
Assessing the Performance Task *(How will we evaluate quality student work in the performance task? How will we determine that students can use their learning*	Module 5 Observational Assessment Recording Sheet Observation Checklist

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independently?)	
Summative Assessments *(How will we know if students can demonstrate mastery of the unit's content, skills, and common core state standards?) Can overlap the performance-based evidence, thereby increasing the reliability of the overall assessment (especially if the performance task was done by a group)*	Use district assessments from report card End of Module Observational Checklist
Interim Assessments	Continue Observational Checklist
Formative Assessments	
Student Self-Reflection and Self-Regulation	Module 5 Observational Assessment within Module 5 Overview

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(Student-Centered) *(How will we measure students' ability to think meta-cognitively?)*	
State Assessment Practice *(How will we measure students' ability to interact with content and skills in an MSTEP-like or SAT-like format?)*	NWEA
Stage 3: Learning Plan **(Summary of Key Learning Events and Instruction)**	
What activities, experiences and	Students develop a conceptual understanding of addition and subtraction. They represent situations with number sentences and model story problems in various ways.

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lessons will lead to achievement of the desired results and success at the assessments? *The learning events –* • *should be derived from the goals of Stage 1 and the assessments of Stage 2 to ensure alignment and effectiveness of the activities.* • *should match the level of rigor within the standard* • *support student Acquisition, Meaning Making, and Transfer.*	
Learning Targets *What will students be taught? What should they know? What should they be able to do?*	Eureka Squared Learning Targets link: https://docs.google.com/presentation/d/11or-lORkeYKOD1WCiDw50OrezQHuzXrlpHP7TPJnZk0/edit?usp=sharing

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How will the unit be sequenced and differentiated to optimize achievement for all learners? *Teaching -* • *should reflect the instructional approaches most appropriate to the goals (not what is easiest or most comfortable for the teacher).* • *should employ resources most appropriate to the goals (not simply march through a textbook or commercial program).* • *be responsive to differences in learners' readiness, interests, and preferred ways of learning.*	Before this module, students do not need prior experience with Eureka Math curriculum or other preschool curriculum to be successful. However, skills acquired from the preschool curriculum may directly support work from this module. Throughout this module individual student learning will be monitored using formative and observational assessment. The classroom teacher will be responsive and supportive to student learning by utilizing math WIN time and small group instruction to solidify student understanding of current module content or challenge for future module content. The sequence of module learning content will remain unchanged as the Eureka Math 2 curriculum has been created and developed in research based sequential progressing order.
Key Vocabulary	**addition** When we put groups or parts together to find the total, that's called addition. (Lesson 1)

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equals

When writing a number sentence, instead of saying or writing “makes” or “is,” mathematicians use the equal sign and say “equals.” A mathematician reads 2 + 3 = 5 as “2 plus 3 equals 5” and 4 – 3 = 1 as “4 minus 3 equals 1.” (Lesson 1)

Students were initially introduced to the term equals in module 3 in the context of comparing two numbers, e.g., 5 = 5. In module 5, students advance their understanding of the term to include comparing an expression and a number, e.g., 2 + 3 = 5.

minus

When writing a number sentence, instead of saying or writing “take away,” mathematicians use the minus sign and say “minus.” A mathematician reads 4 – 3 = 1 as “4 minus 3 equals 1.”

(Lesson 9)

pattern

When we see a pattern, we can decide what comes next. For example, a pattern can help us know what color, size, or number comes next. (Lesson 22)

Students are introduced to two kinds of patterns in module 5, repeating patterns and growing patterns. These patterns are not named, instead students focus their attention on how different patterns help them predict different kinds of things, e.g., color, size, or number.

plus

When writing a number sentence, instead of saying or writing “and,” mathematicians use the plus sign and say “plus.” A mathematician reads 2 + 3 = 5 as “2 plus 3 equals 5.” (Lesson 1)

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	subtraction When something gets taken away and we find how many are left, it's called subtraction. (Lesson 8) **Count equal fewer greater hexagon length less line long more number number sentence part partners to *x* sort strategy total triangle whole**
Resources *Description or link to resources*	