Grade 2 Unit 1: Add within 100

Content Area: **Math**
Course(s): **Math Grade 2**
Time Period: **MP1**
Length: **45**
Status: **Published**

NJSLS Math

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.
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.
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.OA.C.4	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.
2.NBT.B.5	With accuracy and efficiency, add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
2.NBT.B.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.
2.NBT.B.9	Explain why addition and subtraction strategies work, using place value and the properties of operations.

Unit Focus

- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.
- Use place value understanding and properties of operations to add.

Standards for Math Practice

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.

MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Critical Knowledge & Skills

NJSLS Math	Suggested Math Practices	Critical Knowledge and Skills
2.OA.B.2 (**M**) 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.	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concepts: • No new concepts introduced. Students will be able to: • Add within 10 using mental strategies with accuracy and efficiency. • Subtract within 10 using mental strategies with accuracy and efficiency. Learning Goal 1: • Fluently add and subtract within 10 using mental strategies.
2.OA.A.1 (**M**) 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. Climate Change Example: Students may solve two-step word problems involving a climate change related issue in their school, such as food waste, recycling, reusing and/or reducing the consumption of goods. They may add and subtract within 100 while using drawing or equations to represent the climate change related issue.	MP.1 Make sense of problems 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.	Concepts: • No new concepts introduced Students will be able to: • Count on and put together to add to solve one- and two-step word problems. • Take from or take apart to subtract to solve one- and two-step word problems. • Use drawings and equations to represent the problem. Learning Goal 2: • Add and subtract within 20 to solve 1- and 2-step word

	MP.8 Look for and express regularity in repeated reasoning.	problems with unknowns in any position.
2.OA.C.3 (**S**) 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.	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning	Concepts: • Even: groups having even numbers of objects will pair up evenly. • Odd: groups having odd numbers of objects will not pair up evenly. Students will be able to: • pair up to 20 objects, count by 2s and determine whether the group contains an even or odd number of objects. • Write an equation to express an even number as a sum of two equal addends. Learning Goal 3: • Write an equation to express an even number as a sum of two equal addends.
2.OA.C.4 (**S**) Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concepts: • Arrays as arrangements of objects. Students will be able to: • With objects arranged in an array, use repeated addition to find the total. • With objects arranged in an array, write an equation to express repeated addition. Learning Goal 4: • Use addition to find the

		total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.
2.NBT.B.5 (**M**) With accuracy and efficiency, add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concepts: • No new concepts introduced. Students will able to: • With accuracy and efficiency, add within 100 using strategies based on place value. • With accuracy and efficiency, add within 100 using strategies based on properties of operations. Learning Goal 5: • Use a variety of strategies (place value, properties of operation) to add within 100.
2.NBT.B.9 (**M**) Explain why addition and subtraction strategies work, using place value and the properties of operations. (Clarification: Explanations should be supported by drawings or objects.)	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	Concepts: • No new concepts introduced. Students will be able to: • Explain, using objects and drawings, why addition strategies based on place value work. • Explain, using objects and drawings, why addition strategies based on properties of operations

	strategically. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	work. Learning Goal 6: • After applying addition strategies based on place value and the properties of operations, explain why these strategies work using drawings or objects [for example, 37 + 12 equals 30 + 7 + 10 + 2 (place value) which equals 30 + 10 + 7 + 2 (property of operations)].
2.NBT.B.6 (**M**) Add up to four two-digit numbers using strategies based on place value and properties of operations.	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concepts: • No new concepts introduced. Students will be able to: • Add three two digit numbers using place value strategies and properties of operations. • Add four two digit numbers using place value strategies and properties of operations. Learning Goal 7: • Add up to four two-digit numbers using strategies based on place value and properties of operations.

School/District Formative Assessment Plan

- Topic 1-1 through 1-10 Quick Check (found in Savvas Realize)
- Topic 2-1 through 2-5 Quick Check (found in Savvas Realize)
- Topic 3-1 through 3-7 Quick Check (found in Savvas Realize)

- Topic 4-1 through 4-9 Quick Check (found in Savvas Realize)

School/District Summative Assessment Plan

- Topic 1 Assessment
- Topic 2 Assessment
- Topic 3 Assessment
- Topic 4 Assessment

Benchmark & Alternative Assessments

- STAR Renaissance
- Performance Tasks (found in Savvas Realize)

Focus Mathematical Concepts

Pre-requisite skills

- Add and subtract within 20 using strategies such as counting on, making ten, and decomposing a number leading to a ten (1.OA.C.6).
- Add and subtract within 20 using strategies such as relationship between addition and subtraction, and using easier or known sums within 10 (1.OA.C.6).
- Add and subtract within 10 with accuracy and efficiency (1.OA.C.6).
- Represent a word problem using objects, drawings, or equations using a symbol for the unknown (1.OA.A.1).
- Solve addition and subtraction word problems within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions (1.OA.A.1).
- Compose tens when adding two-digit numbers, if necessary (1.NBT.C.4).
- When adding two-digit numbers, one adds tens and tens, ones and ones (1.NBT.C.4).

- Add a two-digit number and a one-digit number within 100 using concrete models (e.g., base ten blocks) or drawings (1.NBT.C.4).
- Add a two-digit number and a one-digit number within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction (1.NBT.C.4).
- Add a two-digit number and a multiple of 10, within 100, using concrete models (e.g., base ten blocks) or drawings (1.NBT.C.4).
- Add a two-digit number and a multiple of 10, within 100, using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction (1.NBT.C.4).
- Subtract multiples of 10 from multiples of 10 using concrete models or drawings (multiples of 10 less than or equal to 90) (1.NBT.C.6).
- Subtract multiples of 10 from multiples of 10 using strategies based on place value or properties of operations (multiples of 10 less than or equal to 90) (1.NBT.C.6).
- Explain the reasoning used when subtracting multiples of 10 from multiples of 10 (multiples of 10 less than or equal to 90) (1.NBT.C.6).
- Determine if equations involving addition and subtraction within 20 are true or false using the meaning of the equal sign (1.OA.D.7).

Common Misconceptions

- Students may not represent 10 ones as 1 ten when using the base ten model. When solving word problems, the students only focus on the numbers within the problem without reading the written words.

Number Fluency

- 2.OA.B.2 Add and subtract within 20 using mental strategies; Know single digit sums from memory.
- 2.NBT.B.5 Add and subtract within 100.

District/School Tasks

- Pick A Project (found in Savvas Realize)
- Performance Tasks (found in Savvas Realize)

District/School Primary, Supplemental, & Intervention Resources

- Envisions by Savvas
- STAR Renaissance
- Freckle Math
- Connecting Math Concepts
- Corrective Math

Instructional Best Practices/Open Educational Resources

Illustrative Mathematics

Desmos

Numeracy Tasks

Building Thinking Classrooms Tasks

Open Middle Math Tasks

Resources from Dr. Eric Milou

Career Readiness, Life Literacies, and Key Skills

9.1.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.4.2.IML.2	Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

Computer Science and Design Thinking

8.1.2.DA.1	Collect and present data, including climate change data, in various visual formats.
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.

Interdisciplinary Connections

RI.CR.2.1	Ask and answer questions to demonstrate understanding of key details in an informational text, referring explicitly to the text as the basis for the answers.
2-ESS1-1	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
RI.IT.2.3	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in a sequence within a text.
2-ESS2-2	Develop a model to represent the shapes and kinds of land and bodies of water in an area.
W.WR.2.5	Generate questions about a topic and locate related information from a reference source to obtain information on that topic through shared and independent research.
W.SE.2.6	Prioritize information provided by different sources on the same topic while gathering ideas and planning to write about a topic.
SL.II.2.2	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
SL.UM.2.5	Use multimedia; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.