Unit 1: Fluently Add and Subtract

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Unit 1: Fluently Add and Subtract

Department of Curriculum and Instruction

Belleville Public Schools

Curriculum Guide

Mathematics: Grade 2

Unit 1: Fluently Add and Subtract

Belleville Board of Education

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Unit Overview

Unit 1 will cover seven topics including (T1) Fluently Add and Subtract, (T2) Work with Equal Groups, (T3) Add within 100 using Strategies, (T4) Fluently Add witin 100, (T5) Subtract within 100 using Strategies, (T6) Fluently Subtract within 100, and (T7) Solving Addition and Subtraction Problems.

Enduring Understandings

Topic 1 focuses on:

- Counting on is a strategy that can be used to find sums. The order of the addends does not change the sum.
- Basic addition facts that are near doubles can be found using a related doubles fact.
- Some addition facts can be found by changing to an equivalent fact with 10.
- Patterns in a 0-10 addition facts table are useful for adding numbers and for developing mental math strategies and number sense.
- A number line is a tool you can use to help you count on or count back to subtract.
- Addition and subtraction have an inverse relationship. The inverse relationship between addition and subtraction can be used to find subtraction facts; every subtraction fact has a related addition fact.
- Some subtraction facts can be simplified by making use of the numbers' relationship to 10.
- The addends determine efficient strategies, such as making 10 or using double facts, for finding addition facts. "Think of a related addition fact" is an efficient strategy for finding a subtraction fact.
- Objects, diagrams, and equations can help you solve different types of word problems.
- Good math thinkers use math to explain why they are right. They can talk about the math others do, too.

Topic 2 focuses on:

- Numbers can be classified as even or odd by showing numbers as two equal parts.
- A group of objects (or number) can also be classified as even or odd by analyzing skip-counting

patterns. An even number can be written as a sum of equal addends.
- An array shows equal groups, so you can write equations, using repeated addition, to find the total number of objects in an array.
- You can make arrays and write equations, using repeated addition, to help you solve problems.
- Good math thinkers use math they know to show and solve problems.

Topic 3 focuses on:

- Patterns on a hundred chart can be used to add numbers and to develop mental math strategies and number sense.
- Two-digit numbers can be broken apart and added in different ways. You can represent how you break apart and add numbers with hops or jumps on an open number line.
- Two-digit numbers can be broken apart using tens and ones and added in different ways. You can represent how you break apart and add numbers with hops or jumps on an open number line.
- Two-digit numbers can be broken apart using tens and ones and added in different ways.
- When adding two-digit numbers, you can add an amount to one addend and subtract the same amount from another addend, to make addition easier.
- There are different ways to add two-digit numbers. Certain strategies may be better to use for a problem than others.
- Some problems can be solved in one step. Other problems can be solved in two-steps --first, by solving a sub-problem or by answering a hidden question, and then, by using that answer to solve the original problem.
- Good math thinkers know how to pick the right tools to solve math problems.

Topic 4 focuses on:

- When adding two-digit numbers, you can add the ones and tens separately and then add these partial sums to find the total sum. Partial sums addition provides a bridge between mental addition and the standard algorithm.
- When adding two-digit numbers, you can add the ones and tens separately and then add these partial sums to find the total sum. Partial sums addition provides a bridge between mental addition and the standard algorithm.
- The standard addition algorithm for two-digit numbers breaks the calculation into simpler calculations using place value, starting with ones and then tens. Answers to simpler calculations are used to find the final sum.
- Addition algorithms and addition strategies can be used to add more than two 2-digit numbers; and numbers can be added in any order.
- Addition algorithms and addition strategies can be used to add more than two numbers; and numbers can be added in any order.
- Some problems can be solved in one step. Other problems can be solved in two steps-- first, by solving a sub-problem or by answering a hidden question, and then, by using that answer to solve the original problem.
- Good math thinkers use math they know to show and solve problems.

Topic 5 focuses on:

- Patterns on a hundred chart can be used to subtract numbers and to develop mental math strategies and number sense.
- You can represent how to subtract tens from a two-digit number with hops or jumps on an open number line.
- Two-digit numbers can be broken apart using tens and ones to subtract in different ways. You can represent how you break apart and subtract numbers with hops or jumps on an open number line.
- Two-digit numbers can be broken apart using tens and ones to subtract in different ways. You can represent how you break apart and subtract numbers with hops or jumps on an open number line. You can count back or add up to subtract.
- One-digit numbers can be broken apart to make it easier to subtract them mentally.
- Two-digit numbers can be broken apart to make it easier to subtract them mentally.
- When subtracting two-digit numbers, you can add the same amount to both numbers in the problem, or you can subtract the same amount from both numbers in the problem, to make subtraction easier.
- You can use bar diagrams, equations, and the relationship between addition and subtraction to help you solve one- and two-step word problems. In the case of two-step problems, you need to find the answer to the first step, and then use it to solve the second step.
- Good math thinkers use math to explain why they are right. They can talk about the math that others do, too.

Topic 6 focuses on:

- To subtract, sometimes it is necessary to regroup 1 ten as 10 ones.
- You can use pencil and paper to subtract and to record the regrouping in the tens and ones places.
- The standard subtraction algorithm can be used to break the calculation into simpler steps, starting with the ones and then moving to the tens.
- The standard algorithm for subtracting a two-digit number from a two-digit number is just an extension of the algorithm for subtracting a one-digit number from a two-digit number.
- You can use pencil and paper to subtract a two-digit number from a two-digit number.
- The inverse relationship between addition and subtraction can be used to solve and check subtraction.
- Subtraction problems involving two-digit numbers can be solved using subtraction strategies or the standard subtraction algorithm. When using the algorithm, if there are not enough ones to subtract, then regroup 1 ten as 10 ones before subtracting the ones, and then the tens.
- The relationship between addition and subtraction can be used to solve one-step and two-step word problems. In the case of two-step problems, the answer to the first step must be found before solving the second step.
- Good math thinkers know how to think about words and numbers to solve problems.

Topic 7 focuses on:

- You can write equations to model and solve word problems using a symbol, such as a question mark (?), to represent the unknown.
- You can use drawings and equations to make sense of the words in word problems; and you can use strategies and algorithms to solve the problems and to check your work.
- Sometimes a problem has an unstated, or hidden, question that you need to answer before you can find the final answer.
- Sometimes the answer to one problem is needed to find the answer to another problem.

- Good math thinkers know how to think about words and numbers to solve problems.

Essential Questions

(T1): Fluently Add and Subtract

- What are strategies for finding addition and subtraction facts?

(T2): Work with Equal Groups

- How can you show even and odd numbers?
- How do arrays relate to repeated addition?

(T3): Add within 100 using Strategies

- What are strategies for adding numbers to 100?

(T4): Fluently Add witin 100

- What are strategies for adding numbers to 100?

(T5): Subtract within 100 using Strategies

- What are strategies for subtracting numbers to 100?

(T6): Fluently Subtract within 100

- What are strategies for subtracting numbers to 100?

(T7): Solving Addition and Subtraction Problems

- How can you solve word problems that use adding and subtracting?

Exit Skills

Topics 1-7 Cluster:

- Fluently add and subtract within 20
- Work with equal groups
- Use place value understanding and properties of operation to add and subtract
- Add within 100 using strategies
- Fluently add within 100
- Subtract within 100 using strategies
- Fluently subtract wihtin 100
- Represent and solve problems involving addition and subtraction

New Jersey Student Learning Standards (NJSLS)

The Math Practices, as put forth by the National Council of Teachers of Mathematics (NCTM), are connected within all lessons:

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.

MP.6 - Attend to precision.

MP.7 - Look for and make use of structure.

MP.8 - Look for and express regularity in repeated reasoning.

MA.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.
MA.2.OA.B.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
MA.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.
MA.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.
MA.2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

MA.2.NBT.B.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.
MA.2.NBT.B.9	Explain why addition and subtraction strategies work, using place value and the properties of operations.

Interdisciplinary Connections

Math and Science Projects / STEM Connections embedded within TE, EnVision Math e.g. pg. 1

Topic 1: Material Math

- Discuss with students the different observable properties of paper, such as color, texture, hardness, flexibility, and absorbancy.
- Ask students to think about different uses of paper in their daily lives. Have them describe how they use paper.
- Extension - Have students draw a picture to show a math story problem about one of the addition or subtraction facts from their flashcards.

Topic 2: Plants, Animals, and Arrays

- Discuss with students how the animals and plants come together in their neighborhood or in a nearby park.
- Have students talk about plants or animals they see in groups and look for patterns.
- Extension - Have students write an equation to show the total number of plants or animals in each array that they drew for their books.

Topic 3: Earth Changes and Addition Strategies

- Ask students about Earth changes that they can see, hear, and feel; and changes that they cannot see happening.
- Discusss with students ways in which the Earth changes suddenly and over time.
- Extension - As a class, make a list of Earth changes that happen quickly; and another list of Earth changes that happen slowly, over time. Then have students draw pictures to show and explain thet things on the lists.

Topic 4: Making and Using Models

- Discuss with students that scientists believe the islands of Hawaii were formed by volcanic eruptions under the sea.
- Ask students to imagine the process of how volcanoes can become islands and how islands can change over time.
- Extension - Have students do research to find how many active volcanoes there are in teh islands of Hawaii.

Topic 5: Heating, Cooling, and Subtraction

- Discuss with students how heating and cooling can change water and ice.
- Ask students if they know what happens to water when it is heated, and what happens to water when it is placed in the freezer.
- Extension - Have students list three examples of changes, caused by heating or cooling that can be reversed; as well as three others that cannot be reversed.

Topic 6: Finding Water and Finding Differences

- Ask students if they have noticed that more of Earth is covered with water than with land.
- Discuss with students where water, snow, and ice can be found on Earth.
- Extension - Have students write and solve a subtraction story problem about a body of water, involving 2-digit numbers. Have them draw a picture that relates to thier story.

Topic 7: Solving Problems

- Discuss with students how trees can help slow down the wind to protect the land.
- Ask students if they know of ways to protect the land from the damage caused by wind and water.
- Extension - Have students draw a picture that relates to an addition or subtraction problem that they wrote for their books.

LA.W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
LA.SL.2.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
LA.SL.2.1.A	Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
LA.SL.2.1.B	Build on others' talk in conversations by linking their explicit comments to the remarks of others.
LA.SL.2.1.C	Ask for clarification and further explanation as needed about the topics and texts under discussion.
LA.SL.2.3	Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

Learning Objectives

After completing Unit 1, students will be able to:

Topic 1:

- Use counting on to add numbers and add numbers in any order.
- Use doubles and near doubles to add quickly and accurately.
- Use the strategy of making a ten to add quickly and accurately.
- Use number patterns on an addition facts table to complete related addition equations that show basic facts.
- Count on and count back on a number line to subtract.
- Think addition to subtract quickly and accurately.
- Make a 10 to subtract quickly and accurately.
- Add and subtract quickly and accurately using mental math strategies.
- Use addition and subtraction to solve word problems.
- Use words, pictures, numbers, and symbols to construct viable math arguments.

Topic 2:

- Tell if a group of objects is even or odd.
- Use different ways to tell if a group of objects shows and even or odd number.
- Find the total number of objects in a set of rows and columns.
- Make arrays with equal rows or equal columns to solve addition problems.
- Model problems using equations, drawings, arrays, and bar diagrams.

Topic 3:

- Add within 100 using place-value strategies and a hundred chart.
- Add tens to two-digit numbers using an open number line.
- Use an open number line to add tens and ones within 100.
- Add within 100 using place-value strategies.
- Break apart numbers into tens and ones to find their sum.
- Break apart addends and combine them in different ways to make numbers that are easy to add mentally.
- Choose and use any strategy to add two-digit numbers.
- Use drawings and equations to solve one-step and two-step problems.
- Choose an appropriate tool and use it to solve a math problem.

Topic 4:

- Add using place value and partial sums.
- Add numbers using partial sums.
- Use models to add 2-digit numbers and then explain the work.
- Add 2-digit numbers and then explain the work.
- Add three or four 2-digit numbers.
- Use mental math strategies and models to add more than two numbers.
- Use drawings, models, and equations to solve one- and two-step problems.
- Make models to help solve math problems.

Topic 5:

- Use a hundred chart to subtract tens and ones.
- Use an open number line to subtract tens.
- Use an open number line to subtract tens and ones.
- Add up to subtract using an open number line.
- Break apart 1-digit numbers to make it easier to subtract mentally.
- Break apart 2-digit numbers to make it easier to subtract.
- Make numbers that are easier to subtract, and use mental math to find the difference.
- Solve one-and two-step problems using addition or subtraction.

- Critique the thinking of others by using what is known about addition and subtraction.

Topic 6:

- Exchange one ten for 10 ones.
- Use place value and models to subtract 2-digit and 1-digit numbers.
- Use place value and regrouping to subtract.
- Use place value and models to subtract 2-digit numbers.
- Use place value to subtract 2-digit numbers.
- Add to check subtraction.
- Subtract 2-digit numbers and decide when to regroup and when not to regroup.
- Use models and equations to solve word problems.
- Reason about word problems and use bar diagrams and equations to solve them.

Topic 7:

- Model problems using equations with unknowns in any position.
- Use drawings and equations to make sense of the words in problems.
- Model and solve two-step problems using equations.
- Use different ways to solve two-step problems.
- Use reasoning to write and solve number stories.

Suggested Activities & Best Practices

- Consider Extension Activity e.g. Topic 1-1, pg. 1R

- Further suggested activities embedded within each Topic

Assessment Evidence - Checking for Understanding (CFU)

- Common Formative Assessments (Formative)
- Common Summative Assessments (Summative)
- District Benchmark (Benchmark)
- Do Now (Formative)
- EnVision Performance Task (Alternative)
- Exit Tickets (Formative)
- Higher-order Questioning / Rich Discussion (Formative)
- Illustrations (Alternative)

- Journals (Formative)
- KWL Chart (Formative)
- Learning Center Activities (Formative)
- Quick Check (enVisionmath) (Formative)
- Quick Write (Formative)
- Quizzes (Formative)
- Rubrics (Summative)
- Surveys (Formative)
- Teacher Observation Checklist (Formative)
- Think-Pair-Share (Formative)
- Turn-and-Talk / Share-Out (Formative)
- Unit Assessments (Summative)
- WIK / WINK (Formative)

Primary Resources & Materials

EnVision Math Teacher Edition

PearsonRealize.com

Ancillary Resources

New Jersey Student Learning Standards for Mathematics

NJSLS Mathematics Crosswalk

IXL Learning

NCTM Illuminations

Prodigy Game

Technology Infusion



Alignment to 21st Century Skills & Technology

Mastery and infusion of **21st Century Skills & Technology** and their Alignment to the core content areas is essential to student learning. The core content areas include:

- English Language Arts;
- Mathematics;
- Science and Scientific Inquiry (Next Generation);
- Social Studies, including American History, World History, Geography, Government and Civics, and Economics;
- World languages;
- Technology;

- Visual and Performing Arts.

CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
CRP.K-12.CRP6.1	Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.
CRP.K-12.CRP8.1	Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.
CRP.K-12.CRP11.1	Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
TECH.8.1.2.A.CS1	Understand and use technology systems.
TECH.8.1.2.A.CS2	Select and use applications effectively and productively.
TECH.8.1.2.E.1	Use digital tools and online resources to explore a problem or issue.
TECH.8.2.2.A.1	Define products produced as a result of technology or of nature.
TECH.8.2.2.A.2	Describe how designed products and systems are useful at school, home and work.

21st Century Skills/Interdisciplinary Themes

- Communication and Collaboration
- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy

- Life and Career Skills
- Media Literacy

21st Century Skills

- Civic Literacy
- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy

Differentiation

- Use the "Quick Check" feature on Pearson Realize (embedded in each Unit) to help determine the strategy for differentiating instruction; the "Assess and Differentiate" page will prescribe the differentiated instructional activity

Differentiations:

- Small group instruction
- Small group assignments
- Extra time to complete assignments
- Pairing oral instruction with visuals
- Repeat directions
- Use manipulatives
- Center-based instruction
- Token economy
- Study guides
- Teacher reads assessments aloud
- Scheduled breaks
- Rephrase written directions
- Multisensory approaches
- Additional time
- Preview vocabulary
- Preview content & concepts
- Story guides
- Behavior management plan
- Highlight text
- Student(s) work with assigned partner
- Visual presentation
- Assistive technology
- Auditory presentations
- Large print edition
- Dictation to scribe

Hi-Prep Differentiations:

- Alternative formative and summative assessments
- Choice boards
- Games and tournaments
- Group investigations
- Guided Reading
- Independent research and projects
- Interest groups
- Learning contracts
- Leveled rubrics
- Literature circles
- Multiple intelligence options
- Multiple texts
- Personal agendas
- Project-based learning
- Problem-based learning
- Stations/centers
- Think-Tac-Toes
- Tiered activities/assignments
- Tiered products
- Varying organizers for instructions

Lo-Prep Differentiations

- Choice of books or activities
- Cubing activities
- Exploration by interest
- Flexible grouping
- Goal-setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills
- Open-ended activities
- Think-Pair-Share
- Reading buddies
- Varied journal prompts
- Varied supplemental materials

Special Education Learning (IEP's & 504's)

- Consider Intervention Activity and/or Reteach e.g. Topic 1-1, pg. 9A

- Use suggestions under Technology Center section in Pearson Realize to target students with disabilities

- Use the Pacer Center Action Information Sheet for research-based ideas on accommodations and modifications

- Allow for open-note/open-book assessments
- Check classwork frequently for understanding
- Conduct preview of content, concepts, and vocabulary
- Consider behavior management plan
- Implement accommodations/modifications as dictated in the student's IEP/504 plan
- Modified test content/format
- Modified written assignments
- Multi-sensory presentation
- Pre-annotate text
- Preferential seating
- Promote pair work
- Provide extended time on various assignments
- Provide printed/online copies of lesson notes
- Secure attention before providing instruction/directions
- Use assistive technology

English Language Learning (ELL)

- Use Teaching Tool 48 as a graphic organizer to help students connect a visual to the vocabulary term

- Use Teaching Tool 49 to connect students' understanding of vocabulary terms with actual meanings

- Use suggestions under English Language Learners section in Pearson Realize to target beginning, intermediate, and advanced learners e.g. Topic 1-1, pg. 5A

- Use suggestions under Technology Center section in Pearson Realize to target ELLs

- Allow for multiple student revisions
- Allow for open-note / open-book assessments
- Allow multiple forms of student products (projects, models, slide-shows, etc.) to demonstrate student learning
- Ask and give information using key words
- Demonstrate listening comprehension by responding to questions
- Develop basic sight vocabulary
- Differentiate assessments to reflect selected objectives
- Express ideas in single words
- Leverage computer spell checker
- Modify reading assignments to correlate with lexile level

- Peer tutoring / Peer note-taking
- Speak using content area vocabulary in context
- Teacher-created Study Guide
- Use prior experiences to understanding meanings
- Use videos, illustrations, pictures, and drawings to explain or clarify

At Risk

- Decrease the amount of work represented or required by assigning the "Do You Understand?" and the "Do You Know How?" sections of each lesson

- Use suggestions under Technology Center section in Pearson Realize to target at-risk students

- Use suggestions under Intervention Activity e.g. Topic 14-1, Error Intervention, pg. 6

- Allow for multiple student revisions
- Allow for open-note / open-book assessments
- Allow multiple forms of student products (projects, models, slide-shows, etc.) to demonstrate student learning
- Allow students to select from given assignment choices
- Differentiate assessments to reflect selected objectives
- Mark students' correct and acceptable work, not the mistakes
- Peer tutoring / Peer note-taking
- Promote student collaboration on in-class / outside class assignments
- Reduce lengthy outside reading assignments
- Teach key aspects of a topic - eliminate non-essential information
- Teacher-created Study Guide
- Use authentic assessments with real-life problem-solving
- Use videos, illustrations, pictures, and drawings to explain or clarify

Talented and Gifted Learning (T&G)

- Use suggestions under Extension for Early Finishers section in Pearson Realize to target advanced learners

- Use suggestions under Advanced Activity Centers to target advanced learners e.g. Topic 1-1, pg. 9A

- Administer Unit Assessment to determine level of proficiency
- Allow gifted children to create and publish a class newspaper to distribute
- Allow students to work at a faster pace
- Complete activities aligned with above grade-level text using Benchmark results
- Consider parental input about the education of their gifted children
- Create a blog or social media page about a topic of interest
- Create a plan to solve an issue presented in the class or in a text

- Debate issues with research to support arguments
- Involve students in academic contests
- Promote advanced problem-solving
- Remember that gifted children may not excel in all areas
- Set individual goals
- Utilize exploratory connections to higher-grade concepts
- Utilize project-based learning for greater depth of knowledge

Sample Lesson

Unit Name: Fluently Add and Subtract within 20, Lesson 1-1: Addition Fact Strategies

NJSLS: 2.OA.B.2 Fluently add and subtract within 20 using mental strategies.

Objective: Use counting on to add numbers and add numbers in any order.

Anticipatory Set/Do Now: Pose the Solve-and-Share Problem- Provide each student with 20 connecting cubes (10 of one color and 10 of another color). In this problem, students use cubes to determine whether a change in the order of the addends in an addition fact will change the sum of that addition fact. Use cubes to show 4+5. Then explain what happens to the total number of cubes if the order of the numbers being added is changed.

Learning Activity: Have students use connecting cubes to demonstrate their understanding of addition facts. Ask guiding questions as needed, and share and discuss solutions with students. Have students generate two or more equations to show they can add in any order. Students can work in groups with connecting cubes. Students can also create fact family projects.

Student Assessment/CFU's: Have students complete an Exit Ticket explaining what they learned from the lesson. Have students use reasoning to explain how they know the sum of each side of the equation is equal to 7. It might help to have students use connecting cubes to model problems.

Materials: Connecting Cubes

21st Century Themes and Skills: Communication and Collaboration, & Critical thinking and Problem-solving

Differentiation/Modifications: If students are having difficulty trying to reverse the order of the addends in the equations, have them model each addend with connecting cubes. Read directions aloud and model how to solve the problem whole-group. Lastly, create worksheets based on students' abilities and levels.

Integration of technology: Use of a SMART Board can be beneficial for the integration of technology.