1 Math Unit 05: Subtraction within 20: Facts and Strategies

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 2**
Length: **15 days**
Status: **Published**

Unit Overview

Subtraction within 20: Facts and Strategies

In this unit, students first relate counting to subtraction. Then they use the strategies count back, count on, make a 10, use addition, and fact families to subtract within 20. Students use these strategies to help prepare for when they subtract 2-digit numbers using place value and properties of operations.

Students use various tools and strategies to find differences within 20. Students use number lines and ten-frames to decompose and adjust addends. They also make fact triangles to relate addition and subtraction. This work is foundational to understanding subtraction and is applied when students regroup to subtract greater numbers and to solve problems involving subtraction.

Students will extend their understanding of these subtraction concepts to find differences within 20. These include:

- **Count back and count on:** Students use number lines to model an original number, and then find a difference buy either jumping back a number of times to an ending number or counting the jumps back by a number being subtracted.
- **Fact Families:** Students use fact triangles and related facts to find unknowns in a subtraction equation.
- **Equations:** Students decide whether given subtraction equations are true or false.
- **Make a 10:** Students use ten-frames and number bonds to decompose the number being subtracted to make a 10 first, then they find the difference between 10 and the remaining part of the number they decomposed.

What Students Are Learning

- Students relate counting to subtraction. They use subtraction as a more efficient means to find a difference.
- Students use number lines, drawings, ten-frames, number bonds, and equations to illustrate subtraction.
- Students us a known fact to write related facts.
- Students determine if a subtraction equation is true or false.

Number Routines

- Would You Rather?
- Find the Pattern, Make a Pattern
- What Did You See?
- Let's Count

- Notice & Wonder
- Is It Always True?

Standards

1.OA.C.5	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
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).
1.OA.D.7	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.
1.OA.D.8	Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers.

Materials

Core Materials:

Reveal Math

5.1 Relate Counting to Subtraction

5.2 Count Back to Subtract

5.3 Count On to Subtract

5.4 Make a 10 to Subtract

5.5 Use Near Doubles to Subtract

5.6 Build New Solids

5.7 Use Fact Families to Subtract

5.8 Find an Unknown in a Subtraction Equation

5.9 True Subtraction Equations

Supplemental Materials:

- ST Math
- Happy Numbers
- 3 Act Lessons
- Building Fact Fluency Kit
- Brainingcamp Manipulatives

- Nearpod Lessons
- Brainpop Resources
- Online Resources

Technology

8.1.2.DA.1	Collect and present data, including climate change data, in various visual formats.
8.1.2.DA.4	Make predictions based on data using charts or graphs.
8.1.2.AP.1	Model daily processes by creating and following algorithms to complete tasks.
8.1.2.AP.2	Model the way programs store and manipulate data by using numbers or other symbols to represent information.
8.1.2.AP.4	Break down a task into a sequence of steps.
8.2.2.ED.2	Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Assessment

Formative Assessment

- Unit Readiness Diagnostics
- Lesson Checks
- Exit Tickets
- Teacher Observation

Summative Assessment

- Unit Assessment Performance Task
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

Differentiated Instruction
Accommodate Based on Students' Individual Needs: Strategies

Time/General • Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture notes/outline	**Processing** • Extra response time • Have students verbalize steps • Repeat, clarify, or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners	**Comprehension** • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide immediate feedback • Small group instruction • Emphasize multi-sensory learning	**Recall** • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence • Visual and verbal reminders • Graphic organizers
Assistive Technology • Computer/whiteboard • Tape recorder • Spell-checker • Audio-taped books	**Tests/Quizzes/Grading** • Extended time • Study guides • Focused/chunked tests • Read directions aloud	**Behavior/Attention** • Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback	**Organization** • Individual daily planner • Display a written agenda • Note-taking assistance • Color code materials

504

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video

- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Math Diagnosis & Intervention System

At-risk of Failure

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

Gifted & Talented

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

Interdisciplinary Connections

K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an

	object helps it function as needed to solve a given problem.
ETS1.B	Developing Possible Solutions
	Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions, such as climate change, to other people.
2.2.2.PF	Physical Fitness
RI.MF.1.6	With prompting and support, use text features (e.g., diagrams, tables, animations) to describe key ideas.
W.IW.1.2.B	Develop the topic with facts or other information and examples related to the topic.

Career Readiness, Life Literacies & Key Skills

Creativity and Innovation: Brainstorming can create new, innovative ideas.

- **9.4.2.CI.1:** Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).

Example: Students will share ideas of multiple strategies and draw models to illustrate their perspective to the solution path they utilize to solve word problems.

Critical Thinking and Problem-Solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

- **9.4.2.CT.2:** Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).

Example: Students will work in small groups and collaborate to identify possible solutions paths to word problems, utilizing the strategies they have learned to solve addition and subtraction operations, such as place value charts, number lines, hundred chart, ten frames, etc., that could best illustrate the solution to the problem.

Digital Citizenship: Individuals should practice safe behaviors when using the Internet.

- **9.4.2.DC.3:** Explain how to be safe online and follow safe practices when using the Internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).

Example: Students will model appropriate use of all digital platforms and share examples of their work that exhibit proper use of various platforms.

Interaction of Technology and Humans: Technology has changed the way people live and work. Various tools can improve daily tasks and quality of life.

- **8.2.2.ITH.3:** Identify how technology impacts or improves life.

Example: Students will track their progress using Reveal Math or other math programs often utilized in class. Students will discuss the pros and cons of using the program with the teacher. Students will use analog and digital clocks.

Career Ready Practices

STEM Career: Animal Trainer- Students talk about the work of an animal trainer.

Students determine the number of hay bales left after feeding the elephants.

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.