

1 Math Unit 04: Subtraction Facts to 20: Use Strategies

Content Area: **Mathematics**
Course(s):
Time Period: **January**
Length: **3 Weeks**
Status: **Published**

Unit Overview

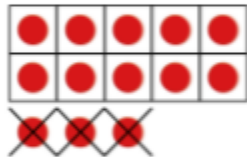
A rigorous curriculum emphasizes conceptual understanding, procedural skill and fluency, and applications.

CONCEPTUAL UNDERSTANDING

- **Understand 10 as a Benchmark Number** Our number system is a base-10 system. The number 10 plays a key role in place value and operations. Ten-frames have been used throughout Kindergarten and Grade 1 to help students visualize 10. Early in Topic 4, students develop a strong conceptual understanding of making 10 to subtract by using ten-frames. This understanding allows students to determine how many to count back to reach 10 as they make 10 to subtract.

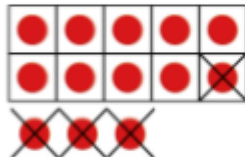
$$13 - 4 = ?$$

First, take away 3 to make 10.



$$13 - 3 = 10$$

Then, take away 1 more because you need to subtract 4 in all.



$$10 - 1 = 9$$

- **The Addition-Subtraction Relationship** Subtraction is inversely related to addition. Students need a strong understanding of this relationship to help them learn facts and to solve different problem types. In Topic 4, students use part-part-whole models to represent this relationship. They think addition to solve subtraction facts. They also solve word problems in which they need to understand the whole and the parts in the problem in order to determine what is missing. Topic 4 provides multiple opportunities to help students understand the addition-subtraction relationship.
- **Understanding Different Problem Situations** Students continue to build their conceptual understanding of subtraction by using a variety of strategies to solve word problems. Topic 4 presents students with “take from” and “compare” situations to ensure that they understand that both situations represent subtraction.

PROCEDURAL SKILL AND FLUENCY

There are no fluency expectations in this topic.

- **Subtract Within 20** In Grade 1, students begin to develop fluency with subtraction within 10 by using the relationship between addition and subtraction and by using counting strategies. In Topic 4, students draw on these subtraction skills by revisiting these strategies and by making 10.

$$16 - 7 = ?$$

Start with 7.
Add 3 to make 10.
Then add 6 more to make 16.

You added 3 and then 6 more.
 $3 + 6 = 9$. You added 9 in all.
So, $16 - 7 = 9$.

APPLICATIONS

- **Addition and Subtraction Situations** Lesson 4-8 specifically introduces “take from” and “compare” subtraction situations. These situations allow students to apply their understandings of subtraction in context. Students solve problems with unknowns in all positions. In Lesson 4-9, students apply what they know about addition and subtraction to write word problems for addition or subtraction situations.

Jim picks some red flowers.
He also picks 7 yellow flowers.
He picks 15 flowers in all.
How many red flowers did Jim pick?

$$\underline{\quad} + 7 = 15$$

 red flowers

Standards

- | | |
|-------------|---|
| MA.1.OA.A.1 | Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. |
| MA.1.OA.B.3 | Apply properties of operations as strategies to add and subtract. |
| MA.1.OA.B.4 | Understand subtraction as an unknown-addend problem. |

MA.1.OA.C.5

Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

MA.1.OA.C.6

Add and subtract within 20, demonstrating fluency 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 $6 + 6 + 1 = 12 + 1 = 13$).

For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.

Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)

Materials

Core Materials:

- [EnVision Math](#)
- 4.1-Count to Subtract
- 4.2-Make 10 to Subtract
- 4.3-Continue to Make 10 to Subtract
- 4.4-Fact Families
- 4.5-Use addition to Subtract
- 4.6-continue to Use Addition to Subtract
- 4.7-Explain Subtraction Strategies
- 4.8-Solve Word Problems with Facts to 20
- 4.9 Reasoning

Supplemental Materials:

- [ST Math](#)
- [Happy Numbers](#)
- [3 Act Lessons](#)
- [Building Fact Fluency Kit](#)
- [Brainiaccamp Manipulatives](#)
- [Nearpod Lessons](#)
- [Brainpop Resources](#)
- [Math Diagnosis and Intervention System](#)
- [Online Resources](#)

Technology

Algorithms & Programming

8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.

8.1.2.AP.4: Break down a task into a sequence of steps.

Data & Analysis

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

- 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.

Assessment

Formative Assessment

- Teacher Observation
- Daily Quick Checks
- Quizzes
- Exit Tickets

Summative Assessment

- Topic Tests
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

- Follow IEP Plan which may contain some of the following examples...
- 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

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

Topic 1 Math and Science Project - Using different presentations tools, students will collect different types of paper. Talk about the uses of paper. Tell how strong each type of paper is. Tell how the paper feels. Tell if the paper can soak up water.

ELA:

RI.2.10. Read and comprehend informational texts, including history/social studies, science, and technical texts, at grade level text complexity proficiently with scaffolding as needed.

Science:

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.

21st Century Life Literacies & Key Skills

Critical Thinking and Problem Solving

- 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).
- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

Technology Literacy

- 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.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts

Career Ready Practices

- 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.