

1 Math Unit 01: Understand Addition and Subtraction

Content Area: **Mathematics**
Course(s):
Time Period: **September**
Length: **6 Weeks**
Status: **Published**

Unit Overview

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

CONCEPTUAL UNDERSTANDING

• **Understand Addition and Subtraction** The main emphasis of Topic 1 is a conceptual understanding of addition and subtraction. Various representations and acting out help students understand “add to,” “put together,” “take from,” “take apart,” and “compare” situations. This early foundation supports the deep understanding that is essential when students move from one-step problems to multi-step situations. This foundational knowledge of addition and subtraction also supports the development of the concepts of multiplication and division.

• **Understand a Situation Beyond Key Words** When teaching students how to solve word problems, it is important to note that they should not rely too heavily on the use of key words in determining which operation to use for a problem.

It is important, for example, to stress that while “more” suggests an “add to” situation, it does not necessarily mean to add the numbers in the problem. An understanding of the relationship between the given quantities and the unknown quantity is necessary in order to choose an appropriate operation.

PROCEDURAL SKILL AND FLUENCY

The content in this topic provides a foundation for demonstrating fluency with addition and subtraction within 10 in Topic 2.

• **Sums and Differences** The main emphasis of Topic 1 is on building conceptual understanding about addition and subtraction situations. Students’ work with procedural skills and fluency involving sums and differences will begin in Topic 2.


APPLICATIONS

• **Operations in Context** Every lesson in Topic 1 addresses problem solving. Rather than launching a series of lessons with numerals alone, this topic emphasizes the meaning of the operation embedded within a particular story or situation. This allows students to see right from the start how people use mathematics to think about and solve real-world problems.

You can solve problems with both addends unknown.

7 penguins in all
Some are inside a cave.
Some are outside.

Here is one way.


$$\begin{array}{rcccl} 7 & = & 2 & + & 5 \\ \text{whole} & & \text{part} & & \text{part} \end{array}$$

• **Read-Aloud Strategies for Early Readers** Early in Grade 1, some students will need support reading problems. In addition to reading problems to students, use these strategies to build understanding of problems:

- Have students listen to the problems without looking at the page or screen. Talk about the words and numbers they hear. Record them graphically.
- Display the written problem. Talk about the pictures they see and the words that match what is written.
- Model what happens in the story. Act it out.
- Talk it out. Have students model the story with a partner.
- Draw it out. Have students do the drawing, recording, or the writing.

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.4	Understand subtraction as an unknown-addend problem.
MA.1.OA.D.7	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.

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

For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.

Materials

Core Materials

- [EnVision Math](#)
- 1.1 Add To
- 1.2 Put Together
- 1.3 Both Addends Unknown
- 1.4 Take From
- 1.5 Compare Situations
- 1.6 More Compare Situations
- 1.7 Change Unknown
- 1.8 Practice Adding and Subtracting
- 1.9 Problem Solving: Construct Arguments

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

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.