# 1 Math Unit 03: Addition Facts to 20: Use Strategies

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

Unit Overview

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

CONCEPTUAL UNDERSTANDING

- **Build on Counting Skills** Lessons 3-1 and 3-2 develop the conceptual links between counting and addition. Students count on or back 1, 2, or 3 to add single-digit numbers with a sum within 20. These lessons support students as they move away from counting all toward efficient strategy use. Counting on from a given number is nicely illustrated on the number line, providing a solid base for long-term number-line use.

$$8 + 9 = ?$$
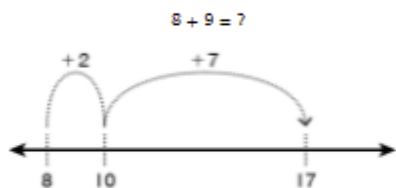
- **Find Patterns and Relationships in Addition and Subtraction Equations** As students see that the same part-part-whole model generates both an addition and subtraction equation, they build understanding of the inverse relationship between the operations.

- **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 help students visualize 10. Students use ten-frames in Lesson 3-5 as they investigate making 10 to add.

$$7 + 5 = ?$$ Make 10.

So, 7 + 5 and 10 + 2 have the same sum.

$10 + 2 = \underline{12}$ so, $7 + 5 = \underline{12}$.
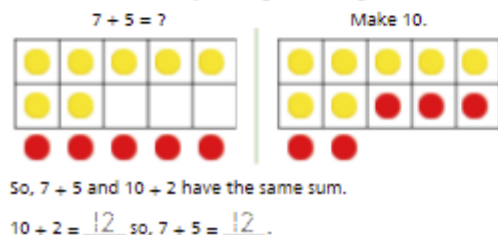
PROCEDURAL SKILL AND FLUENCY

There are no fluency expectations in this topic.

- **Add Within 20** In Topic 3, students use strategies for adding within 20. They count on, use doubles and near doubles, and make 10. Students use connecting cubes, ten-frames, number lines, and equations to represent problem situations.

	Think	Think	So
3	9	10	3
+ 9	+ $\boxed{1}$	+ $\boxed{2}$	+ 9
?	10	$\boxed{12}$	$\boxed{12}$

APPLICATIONS

- **Addition and Subtraction Situations** Throughout Topic 3, students use addition facts to solve real-world problems. These problems represent addition situations of "add to," "put together," and "compare." Lesson 3-8 gives special emphasis to solving real-world problems.

Leslie has 8 pencils.
She has 9 fewer pencils than Grace.
How many pencils does Grace have?

____ ◯ ____ = ____

Grace has ____ pencils.

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.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).

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
- 3.1-Count On to Add
- 3.2-Count On to Add Using an Open Number Line
- 3.3-Doubles
- 3.4-Doubles Plus
- 3.5-Make 10 to Add
- 3.6-Continue to Make 10 to Add
- 3.7-Explain Addition Strategies
- 3.8-Solve Addition Work Problems with Facts to 20
- 3.9-Critique Reasoning

Supplemental Materials:

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