UNIT 02 TEACHER CORE LESSON • COMMON CORE / TEKS (EUREKA, ENVISION, BRIDGES) (GRADES K–1 • SC-6)

Composing Numbers: Part + Part = Whole

Number Bonds & Part-Part-Whole • Standard: CCSS.MATH.1.OA.C.6

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1. MATHEMATICAL CONCEPT & STACK APPROACH: Physically compose two parts on the two rows of the Place Value Tray into a whole and connect to addition.

Every addition problem composes two independent parts into a single whole (Part 1 + Part 2 = Whole). Placing Part 1 on the top row (Shelf Y) and Part 2 on the bottom row (Shelf X) makes both parts visible before they are joined.

2. MODELING WITH BLOCKS & STUDENT PREDICTION

Published Block Kit: Place Value Studio (Two-Row Tray & Digit Blocks)

Hands-On Setup: Place the [4] Digit Block in Row 1 (Part 1) and the [3] Digit Block in Row 0 (Part 2) of the Ones column on your Place Value Tray.

Student Prediction (Before Calculator): Combine both parts in the Ones column: 4 + 3 = 7 (swap to the [7] Digit Block).

3. CALCULATOR EXECUTION (SC-6 KEYCAPS & 4-LEVEL STACK TRACE)

Keystroke Flow: [4] [ENTER] [3] [+]

Key Pressed	Screen (X)	Internal 4-Level Stack Effect (T, Z, Y, X)
[4]	4	Part 1 (4) enters register X
[ENTER]	4	4 copied up to register Y; represents Row 1 (Part 1)
[3]	3	Part 2 (3) enters register X; represents Row 0 (Part 2)
[+]	7	Plus combines Part 1 (Y) + Part 2 (X) = Whole (7) in X!

4. CONTEXT (Part-Part-Whole Number Bonds & Friends of Ten) • From Blocks to the Stack (SC-6 Manual) — Ch. 3: Number Bonds, Ch. 8: Missing Addend Mysteries & Appendix B: Station F.2

When students place two parts on the top and bottom rows of the Place Value Tray, they see addition and subtraction as two views of the exact same relationship: joining Part 1 and Part 2 builds the Whole, while removing Part 1 from the Whole reveals Part 2.

Core Investigation (Student Warm-Up A):

Place [5] in Row 1 (Part 1) and [4] in Row 0 (Part 2) of your Place Value Tray. Combine the two parts to find the Whole.

Teacher Answer Key: 9 ([9] Digit Block; 5 + 4 = 9).

Decomposing the Whole: Finding the Missing Part

Developing Number Sense • Standard: CCSS.MATH.1.OA.B.4

1. FOLLOW-UP EXTENSION CONCEPT, BLOCKS & PREDICTION

Concept & Stack Approach: Finding a missing addend (6 + ? = 10) is the inverse of composing a sum. By placing the known Whole (10) on the top shelf and subtracting the known Part (6), you isolate the unknown part.

Blocks & Prediction: Place [1][0] in Row 1 of the Place Value Tray (Whole = 10) and [6] in Row 0 (Known Part 1 = 6). Prediction: What missing part combines with 6 to make 10? (10 - 6 = 4).

2. EXTENSION CALCULATOR SEQUENCE & STACK TRACE

[1] [0] [ENTER] [6] [-]

Key Pressed	Screen (X)	Internal 4-Level Stack Effect
[1]	1	Enter Whole (10)
[0]	10	10 in register X
[ENTER]	10	Whole (10) lifted to register Y
[6]	6	Known Part 1 (6) enters register X
[-]	4	Minus subtracts known Part from Whole: Missing Part is 4!

3. TARGET MISCONCEPTIONS & HANDS-ON BLOCK REMEDIATIONS

Misconception 1: Pressing [+] immediately after the first number without pressing [ENTER] to separate Part 1 and Part 2.

Hands-On Block Remediation: Point to the two rows of the Place Value Tray: pressing [ENTER] is the physical divider that lifts Row 1 (Part 1) up to Register Y before Row 0 (Part 2) is typed into Register X.

Misconception 2: Adding the whole and the known part when solving for a missing addend (e.g., computing 10 + 6 instead of 10 − 6).

Hands-On Block Remediation: Place [1][0] in Row 1 (Whole) and [6] in Row 0 (Known Part) of the Place Value Tray; show that the Whole (10) goes into Register Y, the known part (6) enters X, and [−] reveals the missing part.

Extension Challenge (Student Warm-Up B):

A number bond has a Whole of 8 and a known Part of 5. Find the missing Part 2.

My Paper Answer: _____ **[ ] Verified on SC-6 (Online Key: stackcalc.io/curriculum/answers)**

STUDENT LAB WORKSHEET • UNIT 02 (SC-6)

Part-Part-Whole & Number Bonds on the Place Value Tray

Name: _____ Date: _____ Class: _____

STUDENT REFERENCE GUIDE: PART-PART-WHOLE NUMBER BONDS ON THE TWO-ROW TRAY

- Row 1 (top row) of the Place Value Tray holds Part 1, and Row 0 (bottom row) holds Part 2.
- Putting both parts together (Part 1 + Part 2) composes the Whole.
- To find a missing part when you know the Whole: start with the Whole and subtract the known Part (Whole - Part 1 = Part 2)!

Key Sequence: 4 ENTER 3 +

Investigation 1: To make a Whole of 6, Part 1 is 2. What is the missing Part 2?

1. Draw Your Blocks on the Tray:



2. Number Bond & Two Quantities:

First Quantity (Top Row):

Second Quantity (Bottom Row):

Combine (+, −, or ×):

3. My Prediction:

_____

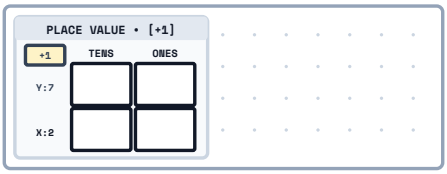
Final Verified Answer:

_____

[ ] Checked on SC-6

Investigation 2: In a number bond, Part 1 is 7 and Part 2 is 2. What is the Whole when you combine both parts?

1. Draw Your Blocks on the Tray:



2. Number Bond & Two Quantities:

First Quantity (Top Row):

Second Quantity (Bottom Row):

Combine (+, −, or ×):

3. My Prediction:

_____

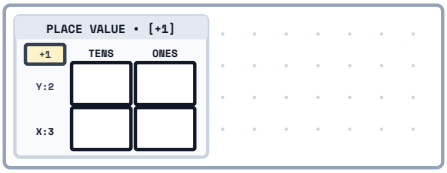
Final Verified Answer:

_____

[ ] Checked on SC-6

Investigation 3: Three parts join together: first combine 2 and 3, then add 4 to that sum. What is the Whole?

1. Draw Your Blocks on the Tray:



2. Number Bond & Two Quantities:

First Quantity (Top Row):

Second Quantity (Bottom Row):

Combine (+, −, or ×):

3. My Prediction:

_____

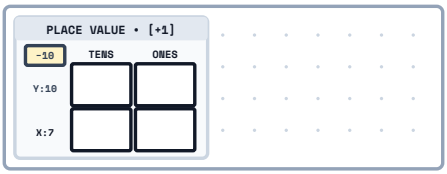
Final Verified Answer:

_____

[ ] Checked on SC-6

Investigation 4: Ten birds sit on a fence. Seven fly to a tree. How many stay on the fence?

1. Draw Your Blocks on the Tray:



2. Number Bond & Two Quantities:

First Quantity (Top Row):

Second Quantity (Bottom Row):

Combine (+, −, or ×):

3. My Prediction:

_____

Final Verified Answer:

_____

[ ] Checked on SC-6

UNIT 02 PRACTICE WORKSHEET A • GRADES K–1 (SC-6)

Unit 02 Practice A: Core Fluency

Name: _____ Date: _____ Score: _____ / 10

TIER 1 • LEVEL 1: BUILDER FOUNDATION • STUDY THESE 2 WORKED EXAMPLES BEFORE SOLVING PRACTICE A (#1–#10) ON PAPER FIRST

EXAMPLE 1 **Combine Part 1 = 4 (Row 1) and Part 2 = 3 (Row 0).**

Whole = Part 1 + Part 2 = 4 + 3 = 7. Key: [4] [ENTER] [3] [+].

Verified Answer: 7

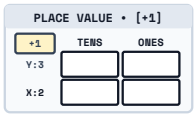
EXAMPLE 2 **Write both addition facts for the bond (6, 2 → 8).**

6 + 2 = 8 and 2 + 6 = 8 (Commutative Property).

Verified Answer: 8

1 Tier 1 • Builder

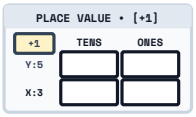
Part 1 = 3, Part 2 = 2. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

2 Tier 1 • Builder

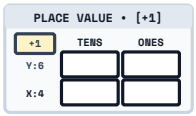
Part 1 = 5, Part 2 = 3. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

3 Tier 1 • Builder

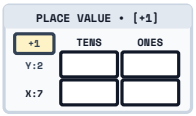
Part 1 = 6, Part 2 = 4. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

4 Tier 1 • Builder

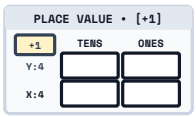
Part 1 = 2, Part 2 = 7. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

5 Tier 1 • Builder

Part 1 = 4, Part 2 = 4. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

6 Tier 1 • Builder

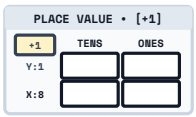
Part 1 = 7, Part 2 = 3. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

7 Tier 1 • Builder

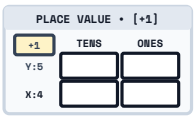
Part 1 = 1, Part 2 = 8. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

8 Tier 1 • Builder

Part 1 = 5, Part 2 = 4. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

9 Tier 1 • Builder

Part 1 = 3, Part 2 = 6. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____

10 Tier 1 • Builder

Part 1 = 8, Part 2 = 2. Find the Whole:



Paper Step: _____ [ ] SC-6 Ans: _____