

Developing Strategies with Dominoes & Doubles

Tactile Concrete-Pictorial-Abstract (CPA) Station Guide • CCSS.MATH.1.OA.C.6

Student Name: _____

Date: _____

Model: SC-6

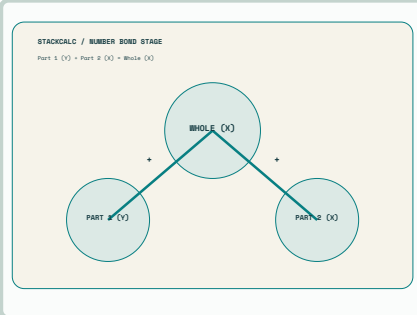
Check Score: ____ / 4

STUDENT SELF-CHECK RULE (NO CHEATING):

Build with blocks and solve on paper first! Use your SC-6 calculator ONLY to verify answers on the 4-line LCD screen.

STATION LAB TUTORIAL: BENCH SCHEMATIC & CPA PROGRESSION

1. 2D Bench Blueprint



Kit: Number Bond Stage

2. Desk Setup (Concrete -> Pictorial)

Physical Bench Setup:

Place double dominoes (4|4, 5|5) into the tray. Add 1 loose peg for near doubles.

Sketch Model on Paper:

Draw double domino dots with +1 callout circle.

3. Step-by-Step LCD Stack Trace (SC-6)

MODE: **123** Base-10 Arithmetic

1. **6** X: **6** Key 6 into X

2. **ENTER** Y: **6** | X: **6** Stack lift copies 6

3. **+** X: **12** Double 6: 6 + 6 = 12

4. **1** Y: **12** | X: **1** Key +1 into X

EXPECTED LCD X: **13 (Double 6 + 1)**

1 Use double 4 to solve 4 + 5.

Manipulative Model & Desk Sketch (Show your work):

Final Math Answer:

☐ Verified on SC-6

2 Use double 5 to solve 5 + 6.

Manipulative Model & Desk Sketch (Show your work):

Final Math Answer:

☐ Verified on SC-6

3 Use double 7 to solve 7 + 8.

Manipulative Model & Desk Sketch (Show your work):

Final Math Answer:

☐ Verified on SC-6

4 What is double 8?

Manipulative Model & Desk Sketch (Show your work):

Final Math Answer:

☐ Verified on SC-6

Station Diagnostic & Solution Key: Unit 2

Developing Strategies with Dominoes & Doubles • Manipulative Setup, Diagnostic Rubric & Verification Flow

MANIPULATIVE HARDWARE STATION INVENTORY & 3D PRINT PREPARATION

Station Kit: Math Domino Studio (12-Frame Tray)

CAD / STL Source File:

Recommended Filaments:

CAD Blueprint: number_bond_stage

Education/scad/math_dominoes_parts.scad

Oceanic Teal Stage with White Dominoes (PLA)

Target Device: SC-6 Elementary

Standard: Gridfinity 42mm Pitch / 0.6mm Inset Markings

#	Math Problem Prompt	Expected Math Answer	Self-Check Keystrokes & RPN Stack
1	Use double 4 to solve 4 + 5. Standard: CCSS.MATH.1.OA.C.6	9	[4] [ENTER] [+] [1] [+]
2	Use double 5 to solve 5 + 6. Standard: CCSS.MATH.1.OA.C.6	11	[5] [ENTER] [+] [1] [+]
3	Use double 7 to solve 7 + 8. Standard: CCSS.MATH.1.OA.C.6	15	[7] [ENTER] [+] [1] [+]
4	What is double 8? Standard: CCSS.MATH.1.OA.C.6	16	[8] [ENTER] [+]

TEACHER DIAGNOSTIC GUIDE: COMMON MISCONCEPTIONS & REMEDIATION

Key Misconception to Target During Station Observation:

Ensure students relate 4+5 back to known double 4+4=8.

How the Manipulatives & Calculator Foster Self-Correction:

Students solve with pencil and physical blocks first. When they self-check on the SC-6, any discrepancy between their written answer and the calculator's 4-line LCD immediately prompts them to re-inspect their physical bench model or regrouping, turning errors into productive struggle without teacher intervention.

Station Facilitation & Pacing Tip:

Keep 3D printed trays docked on standard Gridfinity baseplates to prevent loose parts on student desks. Encourage students to articulate their CPA steps: name the block representation (Concrete), point to their drawn tape/bond model (Pictorial), and verify register values (Abstract).

CLASSROOM SCORING & STATION MASTERY RUBRIC

Exemplary (18–20 pts):

Complete, accurate manipulative sketches; exact math answers; independently verified self-check on LCD stack.

Proficient (14–17 pts):

Correct math answers; minor sketch omissions; verified on calculator with minimal teacher prompting.

Developing (10–13 pts):

Understands problem concept but made computational slips; successfully self-corrected using calculator LCD.

Intervention (<10 pts):

Relied on calculator before solving on paper, or struggled with underlying physical manipulative models.