

Numbers All Around Us: Rekenrek Subitizing & Ten-Structures

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

Student Name: _____

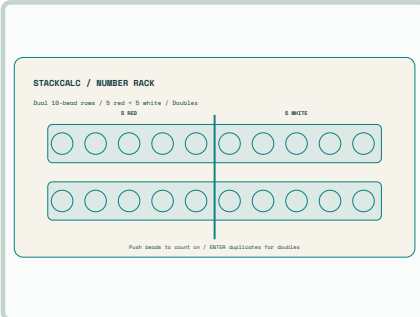
Date: _____

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**

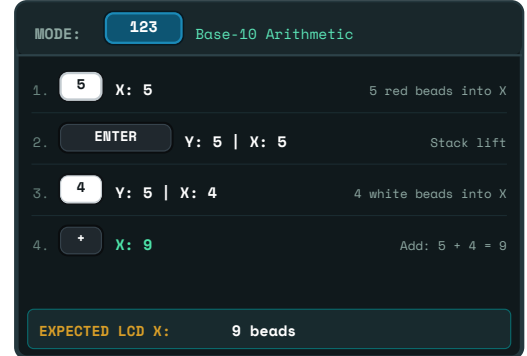
Kit: Number Rack

2. Desk Setup (Concrete -> Pictorial)**Physical Bench Setup:**

Push 5 red beads and 3 white beads together in a single rapid slide.

Sketch Model on Paper:

Sketch the beads on a 2-wire diagram: 5 red + 3 white = 8.

3. Step-by-Step LCD Stack Trace (SC-6)**1 5 red beads and 2 white beads. Total?**

Manipulative Model & Desk Sketch (Show your work):

Final Math Answer:

☐ Verified on SC-6**2 5 red beads and 1 white bead. Total?**

Manipulative Model & Desk Sketch (Show your work):

Final Math Answer:

☐ Verified on SC-6**3 5 red beads and 5 white beads. Total?**

Manipulative Model & Desk Sketch (Show your work):

Final Math Answer:

☐ Verified on SC-6**4 All 10 beads on wire. Slide 3 back right.**

Manipulative Model & Desk Sketch (Show your work):

Final Math Answer:

☐ Verified on SC-6

Station Diagnostic & Solution Key: Unit 1

Numbers All Around Us: Rekenrek Subitizing & Ten-Structures • Manipulative Setup, Diagnostic Rubric & Verification Flow

MANIPULATIVE HARDWARE STATION INVENTORY & 3D PRINT PREPARATION

Station Kit: Number Rack (20-Bead Dual Rod)

CAD / STL Source File:

Recommended Filaments:

CAD Blueprint: number Rack

Education/scad/number Rack_parts.scad

White Frame with Signal Red & White Beads (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	5 red beads and 2 white beads. Total? Standard: CCSS.MATH.1.OA.C.6	7	[5] [ENTER] [2] [+]
2	5 red beads and 1 white bead. Total? Standard: CCSS.MATH.1.OA.C.6	6	[5] [ENTER] [1] [+]
3	5 red beads and 5 white beads. Total? Standard: CCSS.MATH.1.OA.C.6	10	[5] [ENTER] [5] [+]
4	All 10 beads on wire. Slide 3 back right. Standard: CCSS.MATH.1.OA.C.6	7	[1][0] [ENTER] [3] [-]

TEACHER DIAGNOSTIC GUIDE: COMMON MISCONCEPTIONS & REMEDIATION

Key Misconception to Target During Station Observation:

Look for subitizing: students should recognize 5 red instantly without 1-by-1 counts.

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.