



ALGEBRA FACTORING STUDIO & POLYNOMIAL TILES

Kinesthetic Quadratics, Factoring & Polynomial Binomial Arrays

PACKAGING SPEC: 3x1x7U Gridfinity Storage Box with Dual-Stage Factoring Lid | TOTAL PIECES: 34

SKU: ALGB-01

BUILD REV: a793ddd

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	Quadratic Flat Tile (+x²)	1x	Green Silk PLA	ALGB-ALGE-27be3b1	\$6.49
②	Quadratic Flat Tile (-x²)	1x	Purple Silk PLA	ALGB-ALGE-34c80ce	\$6.49
③	Linear Rod Tiles (+x)	5x	Green Silk PLA	ALGB-ALGE-2d21624	\$3.99
④	Linear Rod Tiles (-x)	5x	Purple Silk PLA	ALGB-ALGE-2d21624	\$3.99
⑤	Constant Miniblocks (+1)	9x	Yellow Glow PLA	ALGB-ALGE-76cc68a	\$2.49
⑥	Constant Miniblocks (-1)	9x	Red Glow PLA	ALGB-ALGE-76cc68a	\$2.49
⑦	Factoring Corner L-Rails	2x	Blue-Gray PLA	ALGB-ALGE-ac06e0d	\$4.99
⑧	3x1 Storage Bin & Stage Lid	1x	Matte Black PLA	ALGB-ALGE-49cb192	\$13.50



NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE

Single replacement tile? Order by Part ID at stackcalc.io/parts

PACKING BENCH QC CHECKLIST

- ☒ 30 math tiles + 2 corner rails verified (32 working components)
- ☒ Lid factoring channel seats rods with 0.15mm slide tolerance
- ☒ Snap-detent lid retention locks firmly for silent zero-rattle carry
- ☒ Under-floor inspection plaque verified: SKU ALGB-01 | REV a793ddd

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ±0.05 mm Mitutoyo Calibrated

PEDAGOGICAL DESIGN INTEGRITY NOTICE

Pedagogical Note: Student tiles display pure mathematical symbols (+x², -x, +1). All engineering revisions are permanently archived on this companion card.

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



ALGEBRA FACTORING STUDIO & POLYNOMIAL TILES – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/algebra-boxes/#product-videos | RESOLUTION: 1080p 60FPS

VIDEO: ALGB-01

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/algebra-boxes/

Instant classroom video demonstration.
Zero app install • iOS, Android & Chromebook

LESSON: Algebra Factoring Studio 3D CAD Lesson

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

- 1

1. DEPLOY FACTORING RAILS
Unsnap the 3x1 box lid and lock the two L-rails into the desktop corner guide to establish the Cartesian origin.
- 2

2. BUILD THE QUADRATIC ARRAY
Seat quadratic x^2 tiles in the origin, align linear x rods along rails, and fill the remaining rectangle with $+1$ unit tiles.
- 3

3. READ BINOMIAL FACTORS
Read the horizontal and vertical outer rail lengths directly to solve $(x + a)(x + b)$ with zero pencil-and-paper guesswork.

CURRICULUM & STANDARDS

Target Level: **Grades 7–11 (Pre-Algebra through Algebra II)**

- CCSS.MATH.CONTENT.HSA.SSE.A.2 (Structure in Expressions)
- CCSS.MATH.CONTENT.HSA.APR.A.1 (Arithmetic with Polynomials)
- TEKS 111.39.c.10.E (Factoring Trinomials & Binomials)

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):
school-orders@stackcalc.io
W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:
stackcalc.io/parts
24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo $\pm 0.05\text{mm}$ Calibrated

STACKCALC LEARNING LABS
100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM
Sized at 135x90mm for standard 150mm laser beds.
SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL
stackcalc.io
Educational Refill Service



FRACTION STUDIO PROPORTIONAL TOWERS

4-Way Multi-Notational Fraction Blocks (1/1 to 1/12)

PACKAGING SPEC: 3x1x7U Gridfinity Storage Box with Comparison Stage Lid | TOTAL PIECES: 80

SKU: FRAC-01

BUILD REV: a793ddd

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	1.0 Whole Block (12/12)	1x	Gold Silk PLA	FRAC-FRAC-b9630b7	\$11.25
②	1/2 Half Blocks (6/12)	2x	Emerald Silk PLA	FRAC-FRAC-b9630b7	\$7.50
③	1/3 Third Blocks (4/12)	3x	Cyan Silk PLA	FRAC-FRAC-b9630b7	\$4.95
④	1/4 Fourth Blocks (3/12)	4x	Purple Silk PLA	FRAC-FRAC-b9630b7	\$4.95
⑤	1/5 Fifth Blocks (16.8mm)	5x	Amber Silk PLA	FRAC-FRAC-37bb864	\$4.95
⑥	1/6 Sixth Blocks (2/12)	6x	Cobalt Silk PLA	FRAC-FRAC-b9630b7	\$4.95
⑦	1/7 through 1/9 Blocks	24x	Silk Rainbow	FRAC-FRAC-b9630b7	\$3.49
⑧	1/10 Tenth Blocks (8.4mm)	10x	Magenta Silk PLA	FRAC-FRAC-cb7bfa9	\$3.49
⑨	1/11 & 1/12 Twelfth Blocks	23x	Tricolor Silk PLA	FRAC-FRAC-7573399	\$3.49
⑩	3x1 Gridfinity Box & Lid	1x	Matte Black PLA	FRAC-FRAC-7bb962a	\$15.00

✓ NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE
Single replacement tile? Order by Part ID at stackcalc.io/parts

PACKING BENCH QC CHECKLIST

- ✓ All 78 fraction blocks verified across 12 denominator tiers
- ✓ 4-face tactile debossing verified: Fraction, Decimal, %, RPN key
- ✓ Height calibration verified: 12x (1/12) exactly equals 1.0 (84.0mm ±0.0mm)
- ✓ Stacking detents engage cleanly without binding or loose play

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ±0.05 mm Mitutoyo Calibrated

PEDAGOGICAL DESIGN INTEGRITY NOTICE

Zero Lost Piece Guarantee: If a student misplaces any individual fraction block, use the exact Part ID above on stackcalc.io/parts for immediate single-block replacement dispatch.

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



FRACTION STUDIO PROPORTIONAL TOWERS – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/fraction-studio/#product-videos | RESOLUTION: 1080p 60FPS

VIDEO: FRAC-01

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/fraction-studio/

Instant classroom video demonstration.
Zero app install • iOS, Android & Chromebook

LESSON: Fraction Studio Proportional Stacking Le

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

- 1

1. SEAT 1.0 REFERENCE TOWER

Place the 84mm gold Whole block onto the comparison stage to establish the 1.0 height datum.
- 2

2. ALIGN EQUIVALENT HEIGHTS

Stack 1/2, 1/4, and 1/8 blocks side-by-side to visually prove equivalencies ($1/2 + 1/4 + 1/4 = 1.0$).
- 3

3. ROTATE MULTI-NOTATION FACES

Compare Fraction (1/4), Decimal (0.25), Percentage (25%), and RPN key faces simultaneously.

CURRICULUM & STANDARDS

Target Level: **Grades 3–8 (Elementary & Middle School)**

- CCSS.MATH.CONTENT.3.NF.A.1 (Understand Fractions as Numbers)
- CCSS.MATH.CONTENT.4.NF.A.2 (Comparing & Equivalent Fractions)
- TEKS 111.5.b.3.A (Representing Fractions with Concrete Models)

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):
school-orders@stackcalc.io
W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:
stackcalc.io/parts
24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo ±0.05mm Calibrated

STACKCALC LEARNING LABS
100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM
Sized at 135x90mm for standard 150mm laser beds.
SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL
stackcalc.io
Educational Refill Service



CLASSROOM PLANETARY CLOCK & INTERVAL SYSTEM

Geared Epicyclic Kinematics, Hour Quadrants & Modular Intervals

PACKAGING SPEC: 3x2x6U Gridfinity Storage Box with Digital Clock Practice Lid | TOTAL PIECES: 19

SKU: TIME-01

BUILD REV: a793ddd

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	Monolithic Epicyclic Core (12:1)	1x	Dual Silk & PETG	TIME-CLOC-db69de7	\$19.50
②	Hour Dial Quadrants (Q1-Q4)	4x	Matte Black & Gold	TIME-CLOC-db69de7	\$5.50
③	Interval Blocks (:00, :15, :30, :45)	6x	Red+Blue Silk PLA	TIME-CLOC-1f0896e	\$4.50
④	Period Indicator Blocks (AM/PM)	6x	Glow Red PLA	TIME-CLOC-aa0a73c	\$3.50
⑤	Hour & Minute Phosphor Hands	2x	Glow Green PLA	TIME-CLOC-db69de7	\$3.00
⑥	3x2 Storage Bin & Digital Lid	1x	Matte Black PLA	TIME-CLOC-db69de7	\$16.50



NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE

Single replacement tile? Order by Part ID at stackcalc.io/parts

PACKING BENCH QC CHECKLIST

- ☒ Epicyclic gear mesh verified: 1 full minute ring turn advances hour hand by 12 positions
- ☒ Planetary carrier plate rotates smoothly with zero binding
- ☒ Digital practice lid sockets mate with standard 19.6mm interval blocks
- ☒ Snap-fit lid holds clock core securely during inverted transit

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ± 0.05 mm Mitutoyo Calibrated

PEDAGOGICAL DESIGN INTEGRITY NOTICE

Print-In-Place Precision: The planetary core contains internal planetary bearings printed assembled. Never force with tools; spins freely by hand out of the box.

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



CLASSROOM PLANETARY CLOCK & INTERVAL SYSTEM – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/classroom-clock/#product-videos | RESOLUTION: 1080p 60FPS

VIDEO: TIME-01

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/classroom-clock/

Instant classroom video demonstration.
Zero app install • iOS, Android & Chromebook

LESSON: Geared Epicyclic Kinematics & Time E

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

- 1

1. ROTATE MINUTE RING

Turn the outer minute ring by hand; the internal 12:1 epicyclic gear core advances the hour hand smoothly.
- 2

2. INSERT 15-MIN QUADRANTS

Drop colored quadrant sectors (:15, :30, :45) into the dial bed to visualize fractions of an hour and elapsed time.
- 3

3. DIGITAL LID PRACTICE

Seat interval blocks into the 3x2 storage lid to bridge analog dial reading with digital clock notation.

CURRICULUM & STANDARDS

Target Level: **Grades K–4 (Time, Angles & Fractions of an Hour)**

- CCSS.MATH.CONTENT.1.MD.B.3 (Tell and Write Time in Hours & Half Hours)
- CCSS.MATH.CONTENT.2.MD.C.7 (Tell Time to the Nearest 5 Minutes)
- TEKS 111.4.b.9.E (Determine Solutions for Problems Involving Intervals)

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):

school-orders@stackcalc.io
W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:

stackcalc.io/parts
24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo ±0.05mm Calibrated

STACKCALC LEARNING LABS

100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM

Sized at 135x90mm for standard 150mm laser beds.
SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL

stackcalc.io
Educational Refill Service



TEN-FRAMES & PLACE VALUE ARITHMETIC LAB

Dual-State Reversible Counters & Regrouping Miniblocks

PACKAGING SPEC: 3x1x7U Gridfinity Storage Box with Dual Ten-Frame Stage Lid | TOTAL PIECES: 54

SKU: BASE-10

BUILD REV: a793ddd

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	Dual-State Counters (Side A: Red)	40x	Glow Red PLA	BASE-TENF-ad3013d	\$2.49
②	Dual-State Counters (Side B: Green)	40x	Glow Green PLA	BASE-TENF-ad3013d	\$2.49
③	Ten-Group Solid Miniblocks ('10')	6x	Silk Purple PLA	BASE-TENF-fecbfd9	\$2.99
④	Operator Notation Miniblocks	6x	Silk Gold PLA	BASE-TENF-fecbfd9	\$2.99
⑤	3x1 Storage Bin & 10-Frame Lid	1x	Matte Black PLA	BASE-TEN-090c2c7	\$13.50

PACKING BENCH QC CHECKLIST

- ☒ 40 tactile counters + 12 notation miniblocks verified (52 blocks)
- ☒ Counters seat securely in both top-socket and inverted male-plug orientations
- ☒ Dual ten-frame lid bays accommodate 2x10 arithmetic arrays perfectly
- ☒ Concentric tactile groove debossing verified on all counter faces

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ±0.05 mm Mitutoyo Calibrated

PEDAGOGICAL DESIGN INTEGRITY NOTICE

Tactile Design: Concentric rings provide distinct finger feel for early learners and visually impaired students. Fully sanitizable with warm soapy water.



NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE

Single replacement tile? Order by Part ID at stackcalc.io/parts

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



TEN-FRAMES & PLACE VALUE ARITHMETIC LAB – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/ten-frames/#product-videos | RESOLUTION: 1080p 60FPS

VIDEO: BASE-10

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/ten-frames/

Instant classroom video demonstration.
Zero app install • iOS, Android & Chromebook

LESSON: Ten-Frames & Regrouping Arithmetic D

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

- 1. PLACE TEN-FRAME TRAY**
Set the 2x5 dual-row tray on the desk; tactile counter sockets orient with thumb notches facing forward.
- 2. MODEL 'MAKING TEN'**
Seat 7 red counters in the top row/column, fill the remaining 3 with green counters to prove $7 + 3 = 10$.
- 3. MULTI-TRAY REGROUPING**
Stack twin trays using Gridfinity detents to demonstrate carrying, borrowing, and two-digit place value.

CURRICULUM & STANDARDS

Target Level: [Grades K-3 \(Foundational Number Sense & Place Value\)](#)

- CCSS.MATH.CONTENT.K.OA.A.4 (For Any Number 1-9, Find the Number)
- CCSS.MATH.CONTENT.1.OA.C.6 (Add and Subtract Within 20 Demonstration)
- TEKS 111.2.b.2.B (Read, Write, and Represent Whole Numbers with Base-Ten Blocks)

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):

school-orders@stackcalc.io
W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:

stackcalc.io/parts
24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo $\pm 0.05\text{mm}$ Calibrated

STACKCALC LEARNING LABS

100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM

Sized at 135x90mm for standard 150mm laser beds.
SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL

stackcalc.io
Educational Refill Service



PROBABILITY DICE & MODULAR SPINNER PACK

Fair Geometry Polyhedrals & Interchangeable Frictionless Spinner

PACKAGING SPEC: 1x1x6U Gridfinity Storage Box with Spinner Rotor Snap Lid | TOTAL PIECES: 9

SKU: PROB-01

BUILD REV: a793ddd

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	Tetrahedral Die (d4)	1x	Matte Black & Gold	PROB-DICE-04a0fd2	\$4.50
②	Standard Hexahedral Die (d6)	1x	Matte Black & Gold	PROB-DICE-04a0fd2	\$4.50
③	Octahedral Die (d8)	1x	Matte Black & Gold	PROB-DICE-04a0fd2	\$4.50
④	Dodecahedral Die (d12)	1x	Matte Black & Gold	PROB-DICE-04a0fd2	\$5.00
⑤	Icosahedral Die (d20)	1x	Matte Black & Gold	PROB-DICE-04a0fd2	\$5.50
⑥	Balanced Spinner Rotor Plate	1x	Cyan Silk PLA	PROB-SPIN-7e5ce9b	\$5.00
⑦	Low-Friction Pivot Snap Pin	1x	Clear PETG	PROB-SPIN-7e5ce9b	\$2.50
⑧	1x1 Gridfinity Bin & Dial Lid	1x	Matte Black PLA	PROB-DICE-04a0fd2	\$9.50

✓ NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE
Single replacement tile? Order by Part ID at stackcalc.io/parts

PACKING BENCH QC CHECKLIST

- ✓ All 5 polyhedral dice verified for center-of-mass balance & crisp edges
- ✓ Spinner spins freely for ≥ 8 seconds on calibrated low-friction pivot
- ✓ Decimal dial numerals (0-9) debossed crisply with high tactile contrast
- ✓ Dice bay holds all 5 dice securely without rattling during transport

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ± 0.05 mm Mitutoyo Calibrated

PEDAGOGICAL DESIGN INTEGRITY NOTICE

Fair Die Calibration: Infill is dynamically weighted to ensure mathematically uniform roll probabilities across all faces.

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



PROBABILITY DICE & MODULAR SPINNER PACK – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/dice-and-spinner/#product-videos | RESOLUTION: 1080p 60FPS

VIDEO: PROB-01

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/dice-and-spinner/

Instant classroom video demonstration.
Zero app install • iOS, Android & Chromebook

LESSON: Theoretical vs. Experimental Probability

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

- 1

1. SNAP ROTARY NEEDLE

Place the calibrated needle pointer onto the 10-sector dial lid using the low-friction retention pin.
- 2

2. FLICK FOR UNIFORM ODDS

Flick the needle: low-friction bearing collar spins freely for ≥ 8 seconds before settling on a random sector.
- 3

3. COMPARE DICE VS. SPINNER

Roll precision polyhedrals (d4–d20) alongside spinner trials to calculate law of large numbers distributions.

CURRICULUM & STANDARDS

Target Level: **Grades 6–10 (Statistics, Probability & Discrete Math)**

- CCSS.MATH.CONTENT.7.SP.C.5 (Understand Likelihood of a Chance Event)
- CCSS.MATH.CONTENT.7.SP.C.7 (Develop a Uniform Probability Model)
- TEKS 111.27.b.6.I (Determine Experimental and Theoretical Probabilities)

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):
school-orders@stackcalc.io
W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:
stackcalc.io/parts
24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo $\pm 0.05\text{mm}$ Calibrated

STACKCALC LEARNING LABS
100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM
Sized at 135x90mm for standard 150mm laser beds.
SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL
stackcalc.io
Educational Refill Service



STACKCALC SC-32 SCIENTIFIC RPN CALCULATOR

4-Register RPN Engine, Retro LCD, Diamond Keycaps & Origami Stand

PACKAGING SPEC: Full-Perimeter Crush-Proof Mailer Box with Puzzle Stand Cradle | TOTAL PIECES: 11

SKU: SC-32-HW

BUILD REV: a793ddd

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	Ergonomic Tapered Chassis (Award)	1x	Matte Black PLA	SC-CHAS-7f90abd	\$18.00
②	Top Cowl Cap (Bezel Lock)	1x	Matte Black PLA	SC-TOP-1b5eb96	\$9.00
③	Unified Faceplate (Diamond Keys)	1x	Silk Gold & Black	SC-UNIF-fa414c5	\$15.00
④	Tactile Silicone Membrane	1x	Semi-Clear TPU	SC-TPU-4fc46b9	\$7.50
⑤	Crush-Proof Puzzle Stand (4-Piece)	1x	Matte Black PLA	SC-PUZZ-3f1ad78	\$12.50
⑥	TPU Shock-Absorbing Travel Pouch	1x	Flex Charcoal TPU	ACC-TPU-9a0acfb	\$14.00
⑦	M2x8mm Stainless Hex Screws (4x)	1x	Stainless 304	SC-FAST-001	\$2.00
⑧	1.5mm L-Shape Hex Key & Rubber Feet	1x	Steel & Silicone	SC-TOOL-001	\$2.50



NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE

Single replacement tile? Order by Part ID at stackcalc.io/parts

PACKING BENCH QC CHECKLIST

- ☒ All 35 captive keys actuate cleanly with tactile snap feedback
- ☒ High-contrast transfective LCD displays all 4 stack levels (X, Y, Z, T)
- ☒ Dual-angle puzzle stand locks firmly into 25° desk and 65° typing wedge
- ☒ M2 stainless threaded brass heat-set inserts pass 1.2 N·m torque check
- ☒ Hardware components cataloged and verified via official Reference Card

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ±0.05 mm Mitutoyo Calibrated

AIR FREIGHT & POSTAL BATTERY NOTICE

BATTERY PROTOCOL: CR2032 coin-cell battery is NOT included due to international postal & air freight lithium restrictions. Please insert one standard 3V CR2032 battery into the gold terminal with '+' positive side UP before turning on.

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



STACKCALC SC-32 SCIENTIFIC RPN CALCULATOR – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/sc32-calculator/#product-videos | RESOLUTION: 1080p 60FPS

VIDEO: SC-32-HW

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/sc32-calculator/

Instant classroom video demonstration.
Zero app install • iOS, Android & Chromebook

LESSON: SC-32 Scientific RPN Architecture &

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

- 1

1. INSERT CR2032 BATTERY
Insert one standard 3V CR2032 battery into the gold terminal (+) side UP (postal/air freight excluded).
- 2

2. ASSEMBLE PUZZLE STAND
Dovetail the 4 interlocking corner trusses into either 25° desk viewing or 65° upright typing wedges.
- 3

3. EXECUTE RPN CALCULATIONS
Enter operands into stack registers (e.g., [4] [ENTER] [5] [+] -> displays 9 in X register).

CURRICULUM & STANDARDS

Target Level: **High School, University & Professional Engineer**

- 4-Register RPN Stack Architecture (X, Y, Z, T Display Registers)
- Full Scientific Trigonometry & Hyperbolics (sin, cos, tan, ln,
- Clean Monolithic Embedded Firmware Core (RPNCore Engine)

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):
school-orders@stackcalc.io
W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:
stackcalc.io/parts
24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo ±0.05mm Calibrated

STACKCALC LEARNING LABS
100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM
Sized at 135x90mm for standard 150mm laser beds.
SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL
stackcalc.io
Educational Refill Service



UNIT CIRCLE VOLVELLE & TRIGONOMETRIC CALCULATOR

Dual-Rotor Polar-Cartesian Coordinate Transformation Volvelle

PACKAGING SPEC: Modular Protective Slipcase with Precision Snap Pivot Pin | TOTAL PIECES: 5

SKU: VOLV-01

BUILD REV: a793ddd

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	Stator Base Plate (0°–360° Special Angles)	1x	Matte Black PLA	VOLV-VOLV-a1782c9	\$9.50
②	Polar Coordinate Rotor (Radians & π)	1x	Silk Gold PLA	VOLV-VOLV-a1782c9	\$6.50
③	Exact Sine/Cosine Radial Cursor Arm	1x	Cyan Silk PLA	VOLV-VOLV-a1782c9	\$4.50
④	Frictionless Center Snap Pivot Pin	1x	Clear PETG	VOLV-VOLV-a1782c9	\$2.50
⑤	Protective Travel Storage Slipcase	1x	Flex Charcoal TPU	VOLV-VOLV-a1782c9	\$5.50

PACKING BENCH QC CHECKLIST

- ☒ Concentric rotation turns smoothly with zero radial play
- ☒ All 16 special angle radial tick marks (0, $\pi/6$, $\pi/4$...) align exactly
- ☒ Exact radical coordinate fractions readable under ambient light
- ☒ Snap rivet retains rotor securely without overtightening

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ± 0.05 mm Mitutoyo Calibrated

PEDAGOGICAL DESIGN INTEGRITY NOTICE

Zero-Backlash Radial Cursor: Cursor arm glides smoothly across the radian track. If needed, rinse with cool water to maintain frictionless rotation.



NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE

Single replacement tile? Order by Part ID at stackcalc.io/parts

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



UNIT CIRCLE VOLVELLE & TRIGONOMETRIC CALCULATOR – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/unit-circle-volvelle/#product-videos | RESOLUTION: 1080p 60FPS

VIDEO: VOLV-01

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/unit-circle-volvelle/

Instant classroom video demonstration.

Zero app install • iOS, Android & Chromebook

LESSON: Unit Circle Volvelle Trigonometric Trans

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

1

1. ALIGN SPECIAL ANGLE

Rotate the inner rotor disc to any of the 16 unit circle special angles (0° , 30° , 45° , 60° ...).

2

2. READ EXACT RADICALS

View exact coordinates ($\cos \theta$, $\sin \theta$) and radian values ($\pi/6$, $\pi/4$, $\pi/3$) through the radial viewing window.

3

3. GLIDE CURSOR ARM

Trace polar coordinates directly to Cartesian (x, y) projections without calculating approximations.

CURRICULUM & STANDARDS

Target Level: **Grades 9–12 & AP Pre-Calculus / Calculus**

- CCSS.MATH.CONTENT.HSF.TF.A.2 (Unit Circle Definition of Trig Functions)
- CCSS.MATH.CONTENT.HSF.TF.A.3 (Use Special Triangles on the Unit Circle)
- TEKS 111.42.c.2.P (Determine the Values of the Six Trigonometric Functions)

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):

school-orders@stackcalc.io
W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:

stackcalc.io/parts
24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo $\pm 0.05\text{mm}$ Calibrated

STACKCALC LEARNING LABS

100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM

Sized at 135x90mm for standard 150mm laser beds.
SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL

stackcalc.io
Educational Refill Service



MATH DOMINO STUDIO & 12-FRAME REGROUPING LAB

28 Double-Six Dominoes, 2 Blanks, 12-Frame Tray & Doubling Lid

PACKAGING SPEC: 3x1x7U Gridfinity Storage Box with Stackable Doubling Snap Lid | TOTAL PIECES: 32

SKU: DOMI-01

BUILD REV: 807b88e

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	Double-Six Dominoes (0-0 to 6-6)	28x	Matte White PLA	DOMI-TILE-01a2b3c	\$2.25
②	Customizable Blank Dominoes	2x	Matte White PLA	DOMI-BLNK-01a2b3c	\$2.25
③	6x2 12-Frame Regrouping Tray	1x	Cyan Silk PLA	DOMI-TRAY-d4e5f6a	\$7.50
④	Doubles Practice Snap Lid (1+1 to 6+6)	1x	Matte Black PLA	DOMI-LID-b7c8d9e	\$7.50
⑤	3x1x7U Storage Enclosure Body	1x	Matte Black PLA	DOMI-BOX-a1b2c3d	\$12.00



NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE

Single replacement tile? Order by Part ID at stackcalc.io/parts

PACKING BENCH QC CHECKLIST

- ☒ All 28 double-six domino tiles + 2 blanks verified (30 miniblock tiles)
- ☒ Dual-sided design: StackCalc 4-register logos on underside, stacking s
- ☒ 12-frame tray features bridge-through-10 tactile demarcation (10 + 2 =
- ☒ Doubling snap lid with 12 miniblock sockets locks firmly for rattle-fr

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ±0.05 mm Mitutoyo Calibrated

PEDAGOGICAL DESIGN INTEGRITY NOTICE

Zero Lost Piece Guarantee: If a student misplaces an individual domino, order single replacements on stackcalc.io/parts for \$2.25.

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



MATH DOMINO STUDIO & 12-FRAME REGROUPING LAB – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/math-dominoes/#product-videos | RESOLUTION: 1080p 60FPS

VIDEO: DOMI-01

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/math-dominoes/

Instant classroom video demonstration.

Zero app install • iOS, Android & Chromebook

LESSON: Math Domino Studio & Part-Whole Deco

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

1

1. POP THE DOUBLES LID

Practice addition facts by matching domino doubles [1|1] through [6|6] into the top lid sockets.

2

2. 12-FRAME DECOMPOSITION

Seat dominoes into the 6x2 tray; use the tactile divider to model $10 + 2 = 12$ place value bridging.

3

3. DISCRETE PROBABILITY

Tally sum occurrences across all 28 tiles to construct empirical bell-curve frequency distributions.

CURRICULUM & STANDARDS

Target Level: **Grades K–4 (Early Numeracy, Addition Doubles & Triples)**

- CCSS.MATH.CONTENT.1.OA.C.6 (Add and Subtract Within 20, Demonstrate fluency in adding and subtracting within 20 using objects, drawings, and equations.)
- CCSS.MATH.CONTENT.2.OA.B.2 (Fluently Add & Subtract Within 20 Using Strategies)
- TEKS 111.3.b.3.A (Compose and Decompose Numbers Up to 20)

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):

school-orders@stackcalc.io

W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:

stackcalc.io/parts

24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo $\pm 0.05\text{mm}$ Calibrated

STACKCALC LEARNING LABS

100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM

Sized at 135x90mm for standard 150mm laser beds.

SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL

stackcalc.io

Educational Refill Service



PRIME FACTOR STUDIO – IN-BOX USER GUIDE

Kinesthetic Number Theory, Proportional Logarithmic Stacking & Analog Slide Rule

STUDENT & TEACHER COMPANION • KEEP INSIDE BOX LID • 70 PRIME BLOCKS + 13U STORAGE BOX

SKU: PRIME-01

USER GUIDE

1. WHAT IS THE PRIME FACTOR STUDIO?

FEEL THE PRIMES. MULTIPLY WITH HEIGHT.

Standard base-10 counting blocks add lengths (1+1=2). Prime Factor blocks are logarithmically proportional:
 $\log(a \times b) = \log(a) + \log(b)$
When you stack blocks into a tower, adding their physical heights automatically multiplies their numbers!

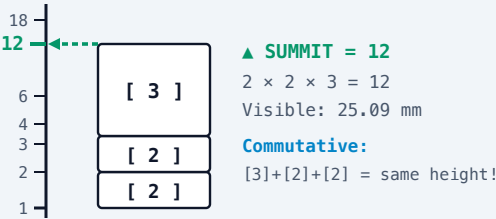
CALIBRATED LOGARITHMIC DATUM

- Unit Datum: Block [2] = 1U = 7.00 mm visible height
- Log Modulus: K_log = 23.2535 mm / decade
- Prime Formula: $h_{vis}(p) = K_{log} \times \log_{10}(p)$

ANALOG SLIDE RULE STAGE (N = 2..1000)

The rear wall of your 13U storage box is an analog slide rule. Stand any prime tower against the wall – its summit points directly to its exact product on the scale!

VISUAL PROOF: TOWER 12 = [2] + [2] + [3]



2. KIT PARTS INVENTORY (70 BLOCKS)

PRIME	QTY	STACK HEIGHT (U)	PALETTE COLOR
[2]	29x	7.00 mm (1.00U)	Cobalt Silk PLA
[3]	17x	11.09 mm (1.58U)	Amber Gold Silk
[5]	8x	16.25 mm (2.32U)	Archival White PLA
[7]	4x	19.65 mm (2.81U)	Slate Blue-Gray
[11]	3x	24.21 mm (3.46U)	Amber Gold Silk
[13]	3x	25.90 mm (3.70U)	Archival White PLA
[17]	2x	28.61 mm (4.09U)	Slate Blue-Gray
[19]	2x	29.73 mm (4.25U)	Amber Gold Silk
[23]	2x	31.67 mm (4.52U)	Slate Blue-Gray
13U Bin	1x	91.0 mm (13U)	Bilateral Scale
Snap Lid	1x	10.4 mm Stage	Detented Closure

TOTAL: 70 Prime Blocks + Storage Bin + Detented Stage Lid = 72 Parts

4-COLOR THEOREM PALETTE DESIGN

- Strict map-coloring algorithm ensures no adjacent prime blocks share the same filament color hue.
- Enables instant visual and tactile identification by students across the full 70-block classroom set.
- 100% compliant with MATERIAL_AND_MARKING_SPEC.md

3. WHY KEEP THIS REFERENCE CARD?

✓ NO LOST PIECE LEFT BEHIND

Classroom manipulatives get lost. Never abandon an incomplete set! Every individual prime block is permanently stocked for single replacements.

Scan back QR or visit stackcalc.io/parts
Direct single-tile dispatch (\$2.49+ anti-arbitrage margin)

✓ SELF-AUDITING CLEAN-UP SOCKETS

Pack-up is a built-in math game! Each floor socket is debossed with its tower's product:
 $2^{11}=2048$, $3^7=2187$, $5^4=625$, $7^4=2401$...
Interior wall notches align with each factor, and towers level at the Z=81mm summit waterline. Snapfinity lid locks firmly for silent zero-rattle carry.

✓ HANDS-ON TUTORIAL ON REVERSE

Flip this card over for a complete step-by-step lesson on finding Least Common Multiple (LCM) using Tower 12 and Tower 18, plus the Law of Conservation of Prime Matter!
Keep this card stored inside the box lid!

STACKCALC LEARNING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Non-Toxic, BPA-Free, Food-Safe Thermoplastic PLA & PETG.

FUNDAMENTAL THEOREM OF ARITHMETIC

Every integer > 1 has a unique prime factorization decomposition.
SIDE A: IN-BOX USER COMPANION GUIDE | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io
Replacement Refills: stackcalc.io/parts



LESSON GUIDE: HOW TO FIND THE LEAST COMMON MULTIPLE (LCM)

Step-by-Step Hands-On Tutorial: Finding $\text{LCM}(12, 18) = 36$ & The Law of Conservation of Primes

CLASSROOM KINESTHETIC LESSON • CCSS.MATH.CONTENT.6.NS.B.4 • TEKS 111.26.B.6.7.A

SKU: PRIME-01

LESSON TUTORIAL

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/prime-studio/

Watch 3D video of LCM, GCD & Towers
Zero app install • Works on iPad & Chromebook

CURRICULUM STANDARDS

- CCSS.MATH.CONTENT.6.NS.B.4
(Find LCM of whole numbers ≤ 12)
- CCSS.MATH.CONTENT.4.OA.B.4
(Factor pairs & multiples in 1-100)
- ✓ **Grades 4–9 Math & Pre-Algebra**

1 STEP 1: FACTOR & BUILD TOWERS 12 & 18

Decompose numbers 12 and 18 into prime building blocks:

- Tower 12: Stack [2] + [2] + [3] ($2 \times 2 \times 3 = 12$)
- Tower 18: Stack [2] + [3] + [3] ($2 \times 3 \times 3 = 18$)

Slide Rule Verification:

Stand each tower against the box rear wall. Their summits align precisely with graduation marks 12 and 18!



TOWER 12



TOWER 18

Summit Height Comparison:

- Tower 12 Summit: 25.09 mm (Mark 12)
- Tower 18 Summit: 29.18 mm (Mark 18)

3-4 STEPS 3 & 4: ASSEMBLE THE LCM TOWER

3. TAKE THE PRIME UNION (HIGHEST POWERS):

To cover multiples of both, take the most of each prime:

- Prime 2: Tower 12 has two [2]s → Take two [2] blocks
- Prime 3: Tower 18 has two [3]s → Take two [3] blocks

4. STACK THE LCM TOWER (THE CEILING)

Stack: [2] + [2] + [3] + [3] = 36

→ **Least Common Multiple: $\text{LCM}(12, 18) = 36$**

Slide Rule Check: Summit lands directly on mark 36!

Tower 36 is the lowest common physical ceiling both
Tower 12 (needs $\times 3$) and Tower 18 (needs $\times 2$) can reach.

2 STEP 2: FIND SHARED OVERLAP (THE GCD)

Stand Tower 12 and Tower 18 side-by-side.

Identify the blocks they share in common (intersection):

- Tower 12 has: [2], [2], [3]
- Tower 18 has: [2], [3], [3]

Shared Overlap: Exactly one [2] and one [3]

ASSEMBLE TOWER GCD: [2] + [3] = 6

Stack one [2] and one [3]: total height points to 6.

→ **Greatest Common Divisor: $\text{GCD}(12, 18) = 6$**

Euclid's GCM: In geometry, this 6-unit tower is the
longest rod that measures evenly into both 12 ($2\times$) & 18 ($3\times$)!

5 STEP 5: THE CONSERVATION THEOREM

Stack Tower 12 directly on top of Tower 18.

Next, stack Tower GCD (6) on top of Tower LCM (36):

- Tower 12 + 18: [2]+[2]+[3] + [2]+[3]+[3] = 216
- Tower GCD + LCM: [2]+[3] + [2]+[2]+[3]+[3] = 216

★ THE BIG AHA! EQUAL PHYSICAL HEIGHT

Both combined towers have the exact same physical height!

$\text{GCD}(A, B) \times \text{LCM}(A, B) = A \times B$

$6 \times 36 = 12 \times 18 = 216$

Law of Conservation of Primes: No blocks are lost or gained!

TRY THESE CLASSROOM CHALLENGES

- $\text{LCM}(8, 12) = 24$ • $\text{LCM}(15, 20) = 60$ • $\text{LCM}(20, 50) = 100$
- Prove each pair on the slide rule using prime union towers!

KINESTHETIC NUMBER THEORY

Logarithmic towers turn abstract arithmetic into physical heights.
SIDE B: LCM TUTORIAL & CONSERVATION THEOREM | PAPER SPEC

TEACHER & REFILL PORTAL

stackcalc.io/education
Single Refills: stackcalc.io/parts



PRIME FACTOR STUDIO – PACKING BENCH & QC SPEC

Laser Floor Ablation, Assembly Inspection & Parts Replacement Manifest

PACKAGING SPEC: 3x1x13U Gridfinity Storage Box with Bilateral Slide Rule Stage (N=2..1000) | TOTAL PIECES: 62

SKU: PRIME-01-PACK

BUILD REV: a793ddd

COMPONENT SCHEMATIC INVENTORY & REPLACEMENT CODES

#	PART DESCRIPTION	QTY	MATERIAL / FINISH	PART ID (REV)	FEE
①	Prime Block [2] (1U = 7.00mm)	22x	Cobalt Silk PLA	PRIM-BLCK-02	\$2.49
②	Prime Block [3] (1.58U = 11.09mm)	14x	Amber Silk PLA	PRIM-BLCK-03	\$2.49
③	Prime Block [5] (2.32U = 16.25mm)	8x	Archival White PLA	PRIM-BLCK-05	\$2.49
④	Prime Block [7] (2.81U = 19.65mm)	4x	Slate Blue-Gray PLA	PRIM-BLCK-07	\$2.49
⑤	Prime Block [11] (3.46U = 24.21mm)	3x	Amber Silk PLA	PRIM-BLCK-11	\$2.99
⑥	Prime Block [13] (3.70U = 25.90mm)	3x	Archival White PLA	PRIM-BLCK-13	\$2.99
⑦	Prime Block [17] (4.09U = 28.61mm)	2x	Slate Blue-Gray PLA	PRIM-BLCK-17	\$2.99
⑧	Prime Block [19] (4.25U = 29.73mm)	2x	Amber Silk PLA	PRIM-BLCK-19	\$2.99
⑨	Prime Block [23] (4.52U = 31.67mm)	2x	Slate Blue-Gray PLA	PRIM-BLCK-23	\$2.99
⑩	3x1x13U Storage Bin & Stage	1x	Archival White PETG	GEN-PRIM-3bf2795	\$16.50
⑪	Snapfinity Detented Stage Lid	1x	Archival White PETG	GEN-PRIM-LID01	\$7.50



NO LOST PIECE LEFT BEHIND LIFETIME GUARANTEE

Single replacement tile? Order by Part ID at stackcalc.io/parts

PACKING BENCH QC CHECKLIST

- ☒ All 60 prime blocks verified: 22x[2] through 2x[23]
- ☒ Harmonized 1U log datum: h(2)=7.00mm, K=23.2535 mm/dec
- ☒ Floor sockets debossed with product capacities (to 2401)
- ☒ Snapfinity lid dual-stage detents lock for quiet carry

CALIFORNIA LAB INSPECTION PASS

Inspector Stamp: [QC-CALIF-01 PASSED]

Dimensional Datum: ±0.05 mm Mitutoyo Calibrated

PEDAGOGICAL DESIGN INTEGRITY NOTICE

PACKING BENCH & LASER CALIBRATION: Laser engrave floor plaques at 35W, 300mm/s, 500 DPI. Verify 12 tower heights against the Z=77.0mm internal datum before snapping lid. 100% 4-color theorem verified.

STACKCALC ENGINEERING LABS

Designed & Manufactured in Mountain View, California, USA.
100% Lead-Free, BPA-Free, Non-Toxic Thermoplastic PLA/PETG.

ARCHIVAL COMPANION REFERENCE

This card serves as your official kit manifest & warranty registration.
SIDE A: REPLACEMENT MANIFEST & CAD SCHEMATIC | OFFICE LASER PAPER SPEC

OFFICIAL PORTAL

stackcalc.io/parts
Direct Replacement Service



PRIME FACTOR STUDIO – PACKING BENCH & QC SPEC – VIDEO GUIDE

Scan QR code with smartphone or classroom tablet for interactive 3D video demonstration

VIDEO PORTAL: stackcalc.io/products/prime-studio/#product-videos | RESOLUTION: 1080p 60FPS

ID: PRIME-01-PACK

FORMAT: 135x90mm

SCAN FOR 3D VIDEO DEMO



OPEN CAMERA & SCAN

stackcalc.io/products/prime-studio/

Instant classroom video demonstration.

Zero app install • iOS, Android & Chromebook

LESSON: Prime Studio Packing & Assembly QC P

KINESTHETIC QUICK-START GUIDE (60-SECOND ONBOARDING)

- 1

1. VERIFY TOWER HEIGHTS

Seat all 70 blocks into the 12 floor sockets. Ensure every tower aligns with its debossed product badge (2048, 2187, 1875, 2401, 2662...).
- 2

2. CHECK FACTOR NOTCHES & DATUM

Confirm all packed towers align with interior wall factor joint notches and level off at the Z≈81mm summit waterline.
- 3

3. SNAP DETENT ENGAGEMENT

Snap the dual-stage detented stage lid onto the rim. Verify zero rattle during 3-axis inversion shake test.

CURRICULUM & STANDARDS

Target Level: [Workshop Packing Bench & Manufacturing QC](#)

- ISO 9001 / California Lab Quality Verification Spec
- Mitutoyo ±0.05mm Height Datum Inspection Standard
- 4-Color Map Graph Color Separation Protocol

✓ 5 LAMINATED CHALLENGE CARDS ENCLOSED

DISTRICT PROCUREMENT & REFILLS

School Purchase Orders (Net-30):

school-orders@stackcalc.io

W-9, Sole Source Affidavit & Vendor Pack on file.

Single-Piece Refill Portal:

stackcalc.io/parts

24h single tile dispatch (\$2.49+ anti-arbitrage margin).

California Studio • Mitutoyo ±0.05mm Calibrated

STACKCALC LEARNING LABS

100% Non-Toxic, BPA-Free, High-Impact Thermoplastic.
All student tiles 100% clean of technical markings.

INTERACTIVE COMPANION SYSTEM

Sized at 135x90mm for standard 150mm laser beds.

SIDE B: VIDEO MANUAL & CURRICULUM ONBOARDING | OFFICE LASER PAPER SPEC

DISTRICT PORTAL

stackcalc.io

Educational Refill Service