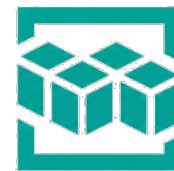




TARGETED ACTIVITY



Place-Value Builders

Composing Units

Cut, build, and compose units to score — a place-value game



Grades 2–3



10–15 min



Solo or pairs



Print & cut kit

About this game



How it works

- Print and cut the place-value pieces — units of 100 (10×10), units of 10 (10×1), and units of 1.
- Flip a Build card and build that number on the mat, then add the next card to it.
- When ten pieces gather in a column, exchange them for one larger unit — and score a point.



Why it matters

- Composing a new unit is a physical move students make — and the way they score points.
- Every piece is the same square, so students see that ten units of 10 make one unit of 100.
- The kit and Build cards are reusable — the same pieces power the Unit Detective game.

Materials & terms



Materials

- The Build cards — Sets A, B, and C (pages 6–8) — print and cut apart.
- The printable piece sheets (pages 9–10) — print at actual size (100%).
- Already have base-ten blocks? Use your unit, rod, and flat pieces for 1, 10, and 100 instead of the cutouts.
- Scissors, and a bag or envelope to store the pieces.
- The place-value building mat (page 11) — print a second copy for Set C.



Terms

unit

a unit of 1, a unit of 10, or a unit of 100

compose

put ten equal units together to make one larger unit

decompose

break a number into units of 100, 10, and 1

combine like units

add units of 1 with units of 1, units of 10 with units of 10

exchange

trade ten of one unit for one larger unit

expanded form

write 138 as $100 + 30 + 8$



Build & Bank — solo game

- 1 Shuffle a set of Build cards face down. Flip one and build that number on your mat.
- 2 Flip another card and add it — place the new pieces in the matching columns.
- 3 When a column reaches ten, exchange for one larger unit. Bank 1 point for each exchange.
- 4 Keep flipping and adding cards. Read your new total after every card.
- 5 Stop when you pass 500. Your score is the points you banked — the units you composed.



SCORING

1 point each time you compose a new unit — ten units of 1 → one unit of 10, ten units of 10 → one unit of 100.

Bonus point if you call the exchange before you add the card.



Unit Builder Race — pairs game

- 1 Each player takes a mat and a set of pieces. Put the Build cards in the middle.
- 2 Both players flip the same card and build or add that number on their own mat.
- 3 When a column reaches ten, exchange and say “ten units of ____ make one unit of ____.” Bank 1 point per exchange.
- 4 Play five cards, then read your totals.
- 5 Most points banked wins. If it is a tie, the higher total wins.



CHALLENGE

Before you add a card, predict which column will need an exchange — a correct call earns a bonus point.

Check each other’s exchanges. A piece placed in the wrong column loses that point.

Set A — Build a number

Print and cut these cards apart. Flip one and build the number on your mat.

46

92

138

163

205

218

247

276

Say it as you build: “I have ___ units of 100, ___ units of 10, and ___ units of 1.”

Set B — Build & add

Build both numbers on the mat, then combine like units. Each card needs at least one exchange.

$$47 + 85$$

$$68 + 56$$

$$156 + 68$$

$$128 + 96$$

$$234 + 88$$

$$175 + 29$$

$$63 + 79$$

$$216 + 47$$

Every Set B card composes at least one new unit — that is a point banked.

Set C — Challenge

Harder sums that compose more than one new unit. Build, add, and exchange carefully.

$$268 + 156$$

$$347 + 285$$

$$159 + 276$$

$$188 + 137$$

$$254 + 168$$

$$375 + 149$$

$$293 + 128$$

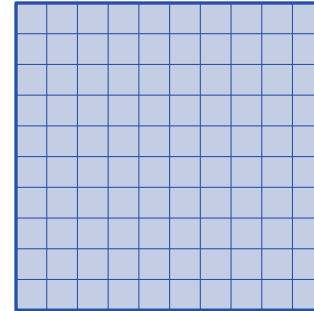
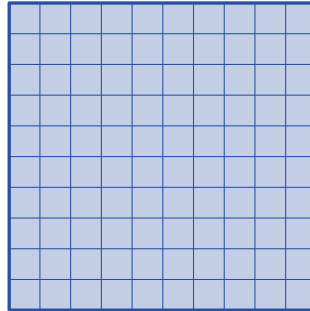
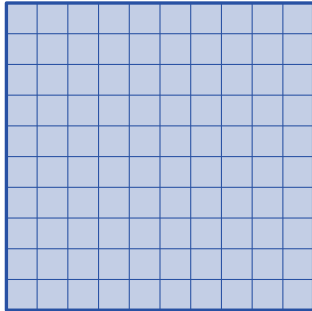
$$186 + 259$$

Set C sums can use more than four hundred-units — print a second building mat and place the extra hundreds there.

Units of 100 & 10

Print at actual size (100%). Cut out each piece. Already have base-ten blocks? Use those instead of the cutouts.

UNITS OF 100 (10×10) — 3 pieces



UNITS OF 10 (10×1)

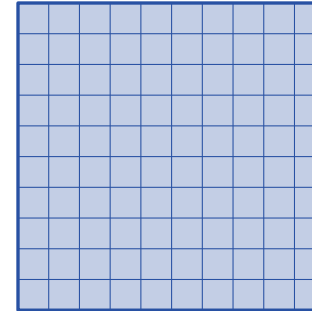
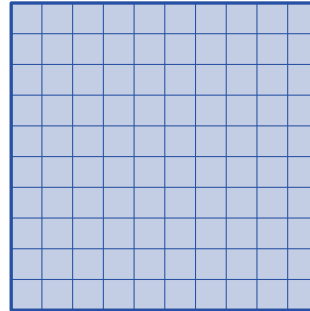
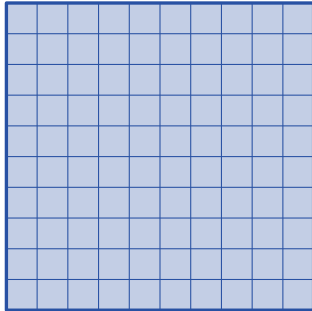


PRINT & CUT

Units of 100, 10 & 1

Print at actual size (100%). Cut apart the pieces and store them with the others.

UNITS OF 100 (10×10) — 3 more pieces (6 total)



UNITS OF 10 (10×1)



UNITS OF 1



Place-value building mat

Place your cut-out pieces in each column. Exchange ten pieces in a column for one piece in the next column to the left.

The Hundreds column fits four hundred-units (2×2). For Set C, print a second mat when a sum needs more than four.

Hundreds	Tens	Ones

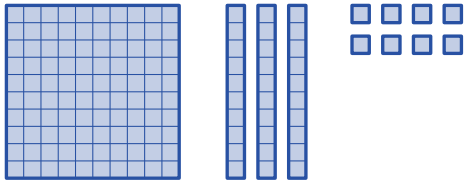


SAY IT AS YOU BUILD

I have _____ units of 100, _____ units of 10, and _____ units of 1.

Building & exchanging

This is 138:



1 unit of 100 · 3 units of 10 · 8 units of 1

EXCHANGE TO COMPOSE

Ten units of 1 → one unit of 10.

Ten units of 10 → one unit of 100.

Trade whenever a column reaches ten; the number is the same, shown with larger units.

EVERY PIECE IS THE SAME SQUARE

A unit of 10 is ten units of 1 in a row. A unit of 100 is ten units of 10 — one hundred units of 1. Because every square is the same size, the pieces from every sheet fit together and can be traded exactly.

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