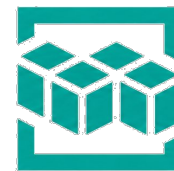




TARGETED ACTIVITY



Unit Detective

Composing Units

Build, combine, and compose units in 3-digit addition



Grades 2–3



15–25 min



Solo or 2–4



20 cards · 2 sets

About this activity



What's involved

- Build two three-digit numbers with identical unit squares — units of 100, 10, and 1.
- Combine the like units, then exchange to compose a new unit of 10 or a new unit of 100.
- Two card sets keep it replayable at two levels of challenge.



Why it matters

- Students see and build the units that make each number, instead of following a column trick.
- Composing a new unit of 10 or 100 becomes something students do with their own hands.
- Reinforces place value, expanded form, and addition within 1,000.

Materials & terms



Materials

- Set A and Set B cards (pages 6–7), printed and cut apart.
- Unit squares (base-ten pieces), or paper to draw them.
- A place-value mat or blank paper.
- A timer or stopwatch (optional).
- Pencil and recording paper (optional).



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 & compose — solo



Solo

- 1 Shuffle a set of cards and place them face down.
- 2 Flip a card and build both numbers with unit squares.
- 3 Combine the like units. Exchange ten units of 1 for one unit of 10, and ten units of 10 for one unit of 100.
- 4 Write the total, then check it on the answer key (page 8).
- 5 Set the card aside and keep going — play again to beat your best time.



TIP

Look at the units of 1 first — if they reach ten, you compose a unit of 10.

Then check the units of 10 for a new unit of 100.



Build & compose — small group

1

Place a set face down in the middle of the table.

2

On your turn, flip the top card so everyone can see it.

3

Everyone builds the two numbers and finds the total on their own.

4

Compare models. The first player with the correct total — built and shown — keeps the card.

5

When the set runs out, the player with the most cards wins.



TIP

Agree on the total by pointing to the units in your models, not just the number.

Start with Set A; move to Set B when the group is ready.

Set A cards — adding to 200

Print and cut apart. Build each problem, combine like units, and compose the new unit of 10.

CARD 1

$$128 + 44$$

CARD 2

$$16 + 119$$

CARD 3

$$137 + 25$$

CARD 4

$$63 + 118$$

CARD 5

$$145 + 36$$

CARD 6

$$108 + 59$$

CARD 7

$$74 + 119$$

CARD 8

$$126 + 45$$

CARD 9

$$152 + 29$$

CARD 10

$$117 + 66$$

Set B cards — adding past 200

Print and cut apart. These may compose a new unit of 10 and a new unit of 100 — check every place.

CARD 1

$$214 + 152$$

CARD 2

$$132 + 245$$

CARD 3

$$163 + 152$$

CARD 4

$$138 + 125$$

CARD 5

$$156 + 149$$

CARD 6

$$147 + 185$$

CARD 7

$$176 + 158$$

CARD 8

$$128 + 96$$

CARD 9

$$245 + 167$$

CARD 10

$$189 + 134$$

Answer key (teacher / self-check)

SET A • adding to 200

1. $128 + 44 = 172$ one unit of 10

2. $16 + 119 = 135$ one unit of 10

3. $137 + 25 = 162$ one unit of 10

4. $63 + 118 = 181$ one unit of 10

5. $145 + 36 = 181$ one unit of 10

6. $108 + 59 = 167$ one unit of 10

7. $74 + 119 = 193$ one unit of 10

8. $126 + 45 = 171$ one unit of 10

9. $152 + 29 = 181$ one unit of 10

10. $117 + 66 = 183$ one unit of 10

SET B • adding past 200

1. $214 + 152 = 366$ neither

2. $132 + 245 = 377$ neither

3. $163 + 152 = 315$ one unit of 100

4. $138 + 125 = 263$ one unit of 10

5. $156 + 149 = 305$ both

6. $147 + 185 = 332$ both

7. $176 + 158 = 334$ both

8. $128 + 96 = 224$ both

9. $245 + 167 = 412$ both

10. $189 + 134 = 323$ both

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