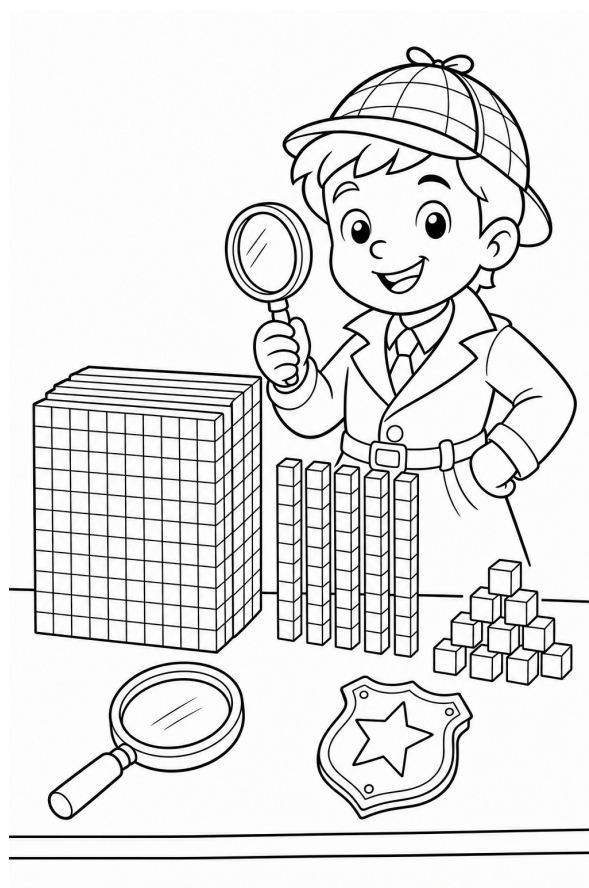


THE HUNDREDS BUREAU

The Case of the Miscalculated Bundles



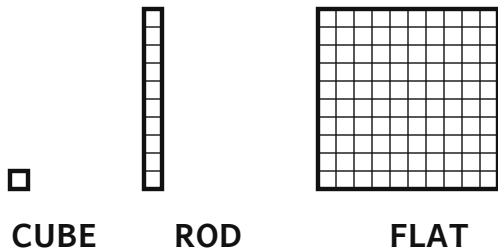
Special Agent: Penelope

Shortchange Sam is back — and now he's cheating the town's **big** counts. Learn to build any number to 1000 out of flats, rods, and cubes — and catch every trick.

Meet the Blocks

Three tools. Learn them and you can build any number to 1000.

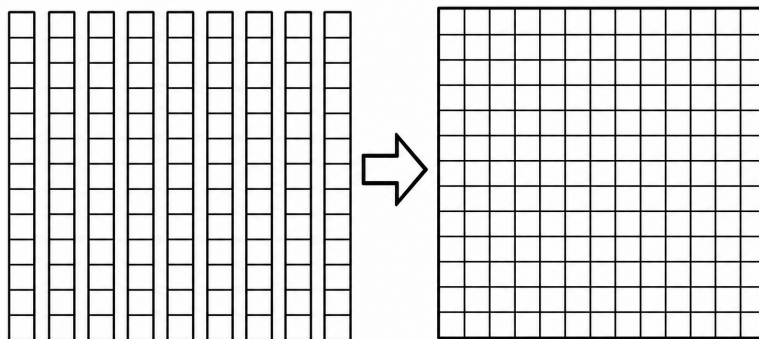
LEARN



1 (one) 10 (a ten) 100 (a hundred)

Every big number is built from three blocks. A **cube** is one. Snap ten cubes in a line and you get a **rod** — a **ten**. Now the new secret of this Bureau: stack **ten rods** side by side and they fill a square — a **flat**, worth **one hundred**.

A hundred is a bundle of ten tens. Ten cubes make a rod; ten rods make a flat. Count the little squares in the flat above — there are exactly **100**.



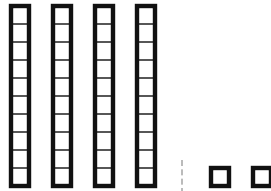
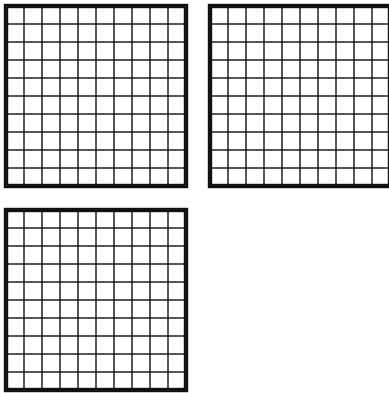
ten ten-rods → one hundred-flat

- 1 Write what each block is worth: cube = _____ rod = _____ flat = _____
- 2 Finish the building rule: TEN cubes make one _____. TEN rods make one _____.
- 3 How many **cubes** would it take to fill one rod? _____ To fill one whole flat? _____

Build a Number

Flats first, then rods, then cubes — always in that order.

THE METHOD



To build **342**: three flats (that's **300**), four rods (**40**), two cubes (**2**). Read it hundreds-first: **342**.

Read blocks the same way — count flats, then rods, then cubes.

- 1 Read each block pile and write the number in the box.

a) =

b) =

c) =

- 2 Now YOU build. Draw the blocks for **205** in the box. (Careful — how many rods does 205 have?)

draw flats, rods, and cubes for 205 here...

The Place-Value Chart

A tidy home for every digit: hundreds, tens, ones.

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HUNDREDS flats	TENS rods	ONES cubes
3	4	2

A **place-value chart** gives each block its own column: **flats** in HUNDREDS, **rods** in TENS, **cubes** in ONES. This chart says **342** — 3 hundreds, 4 tens, 2 ones. The column a digit sits in tells you what it is worth — that is why it is called **place value**.

Watch the empty spots. A number like 602 has NO tens. You still write a **0** in the tens column to hold the place, or the 6 and 2 would slide together and lie to you.

1 Write each number into a chart. Do not skip a column!

a) write 458:

HUNDREDS flats	TENS rods	ONES cubes

b) write 602:

HUNDREDS flats	TENS rods	ONES cubes

2 This chart shows a number. What is it?

HUNDREDS flats	TENS rods	ONES cubes
2	5	8

=

3 Sam wrote “47” for **four hundred seventy**. What did he forget, and what is the real number? _____

Add or Take 10 and 100

The one-column trick: touch a single spot, not the whole number.

THE METHOD

Adding **100** means adding **one flat**. Look at **462** in the chart: drop in one more flat and only the **hundreds** column changes.

HUNDREDS flats	TENS rods	ONES cubes
4	6	2

+100

→

HUNDREDS flats	TENS rods	ONES cubes
5	6	2

4 hundreds became 5 hundreds. The tens and ones never moved: **$462 + 100 = 562$** .

Adding **10** adds one rod — only the **tens** column changes.

Rule: +100 or -100 changes **ONLY** the hundreds digit. +10 or -10 changes **ONLY** the tens digit. Change one column, leave the rest alone.

1 In the chart above, which column changed when we added 100? _____

2 Solve each. Change just one column in your head!

2a) **340** (+10) →

2b) **517** (+100) →

2c) **683** (-10) →

2d) **725** (-100) →

3 Fill the rule: adding 100 changes the _____ digit; adding 10 changes the _____ digit.

4 Sam's trap: " **$299 + 10$** just changes the tens to a 10!" Try it — what really happens, and what is the answer? _____ **5**

finished? color the star! ☆

Which Is Bigger?

Compare hundreds *FIRST* — the biggest block decides.

THE METHOD

To compare two numbers, do NOT count all the blocks. Start with the biggest block: **compare the hundreds first**. Only if the hundreds tie do you look at the tens, then the ones.

428

vs

431

Same hundreds ($4 = 4$). Now the tens: 2 tens vs 3 tens — 3 wins, so **431 > 428**. We never even needed the ones.

Sam's trick: a longer-LOOKING number isn't always bigger, and a number with a big ones-digit can still LOSE. The hundreds decide first. (Sound familiar? At the Coin Bureau, *more coins* did not mean more money either — you had to count the value. Same rule, bigger numbers.)

1 Write > (greater) or < (less) in each box. Compare hundreds first!

615

561

(write > or < in the box)

208

280

(write > or < in the box)

700

699

(write > or < in the box)

2 Sam's hardest round: which is bigger, **90** or **100**? Careful — he's hoping you guess by how it looks. _____

Why? _____

3 Write a number that is bigger than **351** but smaller than **360**:

Words & Expanded Form

Say it, write it, and pull it apart.

LEARN

Every number can be written three ways. In **numerals**: **342**. In **words**: three hundred forty-two. In **expanded form** you pull it apart into the value of each block:

$$342 = 300 + 40 + 2$$

That is 3 flats (300) + 4 rods (40) + 2 cubes (2). Expanded form just writes down what each column is really worth.

The zero warning: in **four hundred seven** you hear no tens. That is **407**, not 47 — the **0** holds the empty tens place: **400 + 0 + 7**.

1 Break each number into expanded form.

a) **356** = + +

b) **428** = + +

c) **630** = + +

2 Write **four hundred seven** in numerals: Is there a zero in the tens place? YES / NO (circle one)

Now expanded: + +

3 Write each in numerals:

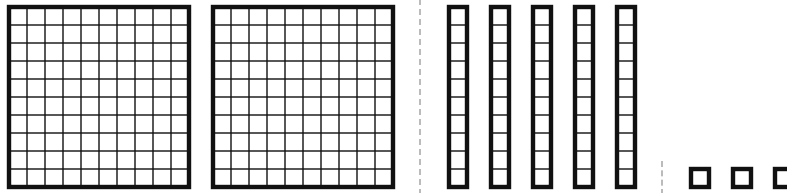
two hundred thirteen = **five hundred** =

4 Write **274** in words: _____

Sam's Bundle Scam

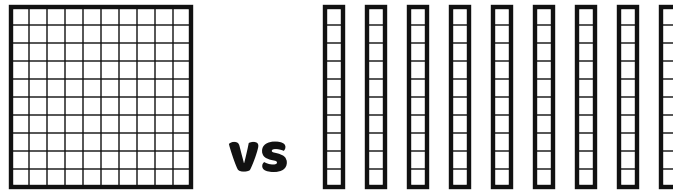
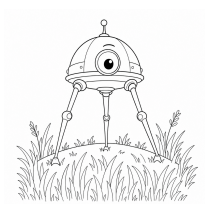
Final mission: catch Sam miscounting the town's tokens.

- 1 The town counted its tokens into this pile. How many tokens? Count flats, rods, then cubes.



Total tokens:

- 2 Sam offers a trade: "I'll swap your **one flat** for my **nine rods** — nine is more than one, such a deal!" Count both. Is it a fair trade? YES / NO (circle one)



Your flat =

Sam's rods =

Who has more, and by

how much? _____

- 3 The Martian scout stacks 2 flats, 4 rods, 8 cubes.

Expanded form:

+

+

In words:

- 4 Sam bets his **245**-token pile beats the Martian's **248**-token pile. Compare hundreds-first — who really wins? _____

CASE CLOSED: a hundred is ten tens, and no fast-talking swap changes that. You counted every flat, rod, and cube and caught Sam cold. Well done, Agent Penelope.