

Bead Shop Bundles

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Overview

Students run a bead shop. Beads come in single beads, bags of 10 and boxes of 100. They pack orders, write order numbers with digits, words and expanded form, and explain place value.

Time: 2 class periods · **Product:** Bead Order Cards
Standards: 2.NBT.A.1, 2.NBT.A.1.a, 2.NBT.A.1.b, 2.NBT.A.3
Prerequisite skills: Count to 120 (Grade 1); Tens and ones to 100

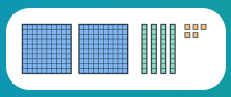
Learning targets

- I can explain that 100 is ten tens.
- I can tell how many hundreds, tens, and ones are in a number.
- I can write numbers with digits, words, and expanded form.

Timing and materials

- Day 1 (40 min): bags and boxes with base-ten blocks (Parts 1–2).
- Day 2 (40 min): writing orders three ways and the order cards (Parts 3–4).

Materials: Base-ten blocks or paper base-ten cutouts (printable support page); Small cups or bags as “bags of 10”; Index cards for order cards. No accounts, paid products or student personal information are needed.



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The three versions

- Remedial: hints for a first step, partly filled tables, sentence frames and fewer open choices; the same learning targets.
- Standard: the full task set at grade level; students choose their strategies and models.
- Advanced: open design constraints, missing information, error analysis and a written justification; no hints.

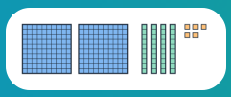
All versions use the same context and learning targets, so groups can share and compare work.

Implementation notes

- Use real bundles: 10 cubes in a cup, 10 cups make a box.
- Have students say the value of each digit aloud.
- Advanced students find different ways to pack the same number (e.g. 3 boxes and 14 bags) and explain why they are equal.
- Before Part 1, read the challenge aloud and ask students to restate the goal.
- Close with a gallery walk: each group explains one strategy.

Rubric

Learning target	4 Exceeds	3 Meets	2 Approaching	1 Beginning
I can explain that 100 is ten tens.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can tell how many hundreds, tens, and ones are in a number.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can write numbers with digits, words, and expanded form.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can explain my thinking with pictures, numbers and words.	Clear for every part	Clear for most parts	Some explanation	Little explanation
My bead order cards is complete and matches my math.	Complete, neat, accurate	Complete	Partly complete	Not complete



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Solutions · Remedial KEY

Part 1: Bags and Boxes

A bag holds 10 beads. A box holds 10 bags.

1. How many beads are in one box?

100 beads

2. How many bags make 300 beads?

30 bags

Part 2: Packing Orders

Pack each order with boxes, bags, and single beads.

Order	Boxes (100)	Bags (10)	Single beads (1)
245			
130			

3. Order: 245 beads. How many boxes, bags, and single beads?

2 boxes, 4 bags, 5 single beads

4. Order: 130 beads. How many boxes, bags, and single beads?

1 box, 3 bags, 0 single beads

Part 3: Writing Orders

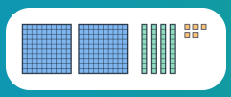
Write each order three ways.

5. Write 245 in expanded form.

200 + 40 + 5

6. Write 130 in expanded form.

100 + 30



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Part 4: Order Cards

Make an order card for a number of beads you choose from 100 to 999.

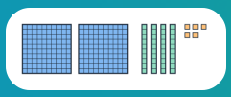
7. Write the number in digits, in words, and in expanded form, and draw the boxes, bags and beads.

Answers vary; all forms must show the same number.

Extension

An order is 9 boxes, 9 bags and 9 beads. One more bead is added. What is the new number?

1,000 beads (999 + 1)



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Solutions · Standard KEY

Part 1: Bags and Boxes

A bag holds 10 beads. A box holds 10 bags.

1. How many beads are in one box?

100 beads

2. How many bags make 500 beads?

50 bags

Part 2: Packing Orders

Pack each order with boxes, bags, and single beads.

Order	Boxes (100)	Bags (10)	Single beads (1)
406			
382			

3. Order: 406 beads. How many boxes, bags, and single beads?

4 boxes, 0 bags, 6 single beads

4. Order: 382 beads. How many boxes, bags, and single beads?

3 boxes, 8 bags, 2 single beads

Part 3: Writing Orders

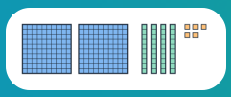
Write each order three ways.

5. Write 406 in expanded form.

400 + 6

6. Write 382 in expanded form.

300 + 80 + 2



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Part 4: Order Cards

Make an order card for a number of beads you choose from 100 to 999.

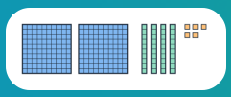
7. Write the number in digits, in words, and in expanded form, and draw the boxes, bags and beads.

Answers vary; all forms must show the same number.

Extension

An order is 9 boxes, 9 bags and 9 beads. One more bead is added. What is the new number?

1,000 beads (999 + 1)



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Solutions · Advanced KEY

Part 1: Bags and Boxes

A bag holds 10 beads. A box holds 10 bags.

1. How many beads are in one box?
100 beads

2. How many bags make 800 beads?
80 bags

Part 2: Packing Orders

Pack each order with boxes, bags, and single beads.

Order	Boxes (100)	Bags (10)	Single beads (1)
705			
590			

3. Order: 705 beads. How many boxes, bags, and single beads?
7 boxes, 0 bags, 5 single beads

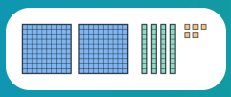
4. Order: 590 beads. How many boxes, bags, and single beads?
5 boxes, 9 bags, 0 single beads

Part 3: Writing Orders

Write each order three ways.

5. Write 705 in expanded form.
700 + 5

6. Write 590 in expanded form.
500 + 90



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Part 4: Packing Puzzle

The shop is out of boxes, so it packs with bags and single beads only.

7. How many bags and single beads make 705?

70 bags and 5 single beads

8. Leo packed 3 boxes and 14 bags. Ana packed 4 boxes and 4 bags. Who packed more beads? Explain.

They packed the same: 300 + 140 = 440 and 400 + 40 = 440.

9. Uma wrote seven hundred five as 7005. Explain the mistake.

Seven hundred five is 7 hundreds, 0 tens, 5 ones: 705.

Extension

An order is 9 boxes, 9 bags and 9 beads. One more bead is added. What is the new number?

1,000 beads (999 + 1)