

Building any number to 99: tens and units together

CURRICULUM ALIGNMENT

NUM.PVT.2a

understand that digits have different values depending on their place or position in a number.

INTERACTIVES **Place Value Blocks (Dienes)** · challenge, display, explore

WHAT THIS LESSON TEACHES

Any two-digit number is made of some tens (bundles of ten) and some loose units. The left digit tells the tens; the right digit tells the units.

→ 34 is 3 tens and 4 units: three ten-rods and four loose cubes.

→ 40 is 4 tens and 0 units: four ten-rods and nothing loose.

MODEL THIS ON THE BOARD

BUILDING 86 PUPILS ON THE MAT

- 1 Read the number 86 on the school noticeboard.
- 2 The left digit is **8**, so place **8** ten-rods in the tens column.
- 3 The right digit is **6**, so place **6** unit cubes in the units column.
- 4 Check: 8 tens and 6 units together make 86.

LESSON ARC

Open on the noticeboard figure 86: how many ten-rods would build it? On the place-value-blocks interactive, walk four builds — 34, 52, 76, then 40 with an empty units column — naming tens before units each time. Pupils then call tens-and-units first while classmates build teacher-called numbers on the mat. Five quiet minutes to draw 34 on the place-value grid in copybook. Class Challenge runs 23 → 45 → 70 → 87 at the board. Close by naming what each digit in 34 is worth, then hand over to the Student Activity Book.

TEACHING MOVES

1. **Getting Started.** Read the noticeboard line aloud — 86 pupils today — and take three hands-up answers for how many ten-rods that needs. Listen for 'eight tens'. If someone says 'eighty-six ones', ask whether bundling into tens would make the count quicker.
2. **Watch and Notice.** Build 34, 52 and 76 on the place-value mat, pausing after each for the class to chorus '— tens and — units' before you move on. On 40, leave the units column empty and hold: 'what is the zero doing?' before naming 4 tens and 0 units.
3. **Try It Together.** Call numbers under 100 one at a time (27, 53, 68, 91). Whole class names tens and units first; one pupil builds; class agrees or corrects out loud. Rotate four builders. Watch for units digits landing in the tens column and revoice left-digit-is-tens.
4. **Draw 34 in your copy.** Give the full five minutes. Walk the rows looking for three ten-rods, four unit cubes, and 34 written underneath. This is whole-class copybook practice, not marking — careful drawers need the time before Class Challenge.
5. **Class Challenge.** Keep the board work brisk: class names tens and units, one pupil builds, class checks, next number. Linger on 70 so the empty units column is said aloud. If someone builds 32 for 23, point at the columns — which digit is doing the tens job?

6. **What Did We Notice?** Ask what the 3 stands for in 34, then the 4. Revoice: 'the 3 stands for three tens; the 4 stands for four unit cubes.' Head off bare 'three and four' by asking what each digit is worth.

COMMON MISCONCEPTIONS

⚠ A pupil builds 32 when asked for 23 — the digits are right but the columns are swapped.

Point at the two columns on the mat. Ask which side holds the ten-rods, then have the class re-say '2 tens and 3 units' before the pupil rebuilds.

⚠ Pupils treat the zero in 40 as 'nothing to say' and only announce 'four tens', dropping the units place. Leave the units column visibly empty and press: 'how many loose cubes?' Get 'zero units' spoken aloud so the placeholder job of 0 is named.

⚠ Pupils describe 34 as 'three and four' with no place named — face value only.

Rebuild 34 beside three loose cubes and four loose cubes. Same digits, different value. Ask what each digit is worth in its column.

DIFFERENTIATION

EMERGING

- Call only numbers under 40 with no zero (21, 33, 14) so the build stays small and both columns have something in them.
- On the copybook grid, pre-draw the ten-rod outlines so the pupil only adds the four unit cubes and writes 34.

DEVELOPING

- After a clean build, flip the ask: show 5 rods and 3 cubes and have the pupil write the number before saying it.
- On 70, ask why we still write a digit in the units place even though no cubes are there.

PROFICIENT

- Stretch the Class Challenge call: 'build a number with 0 units and more than 5 tens — tell us how you knew the digits.'
- After 87, ask: 'what number is one ten more? One unit less? Write both without rebuilding from scratch.'

➤ **Cross-curricular:** Link to daily attendance — count today's class as tens and leftover units and post it beside the noticeboard figure.

ANSWER KEY

Scaffold: visual check on the page

Q1: 2 tens and 3 units

Q2: 4 tens and 5 units

Q3: 3 tens and 4 units

Q4: 7 tens and 0 units

Q5: 8 tens and 7 units

Q6: 5 tens and 9 units

a) Always : The 3 is in the tens place, so it is worth 30.

b) Always : 6 tens is 60 and there are no units left over.

c) Never : Units always sit in the right-hand place.

d) Never : A true two-digit number has from 1 to 9 tens.

EXTENSION SHEET · STRETCH ANSWERS

S1: 35

S2: 21

S3: 57

S4: 25