

Lesson 41 **NUMBER**

The decade numbers: whole bundles, none left over

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

A decade number is made of whole tens only, with nothing left over. The units place is always empty and held by a 0, like 20, 30 or 40.

→ 30 is three ten-rods and no unit cubes.

→ In 40 the 0 holds the units place; without it the number would look like 4.

MODEL THIS ON THE BOARD

FULL EGG BOXES MAKE A DECADE

- 1 Each egg box holds **10** eggs and is full, so there are no loose eggs.
- 2 Here are **3** full boxes: that is three tens.
- 3 Write **3** in the tens place and **0** in the units place to show nothing left over.
- 4 The decade number of eggs is **30**.

LESSON ARC

Open with three full egg boxes on the IWB (or physical ones): how many eggs without lifting a lid? Pivot to place-value blocks and show 30, 50, 80, 90 as whole ten-rods with an empty units column — pause on what the 0 is doing. Pupils build 20, 40, 60, 70 together counting in tens as each rod lands, write 10–50 in a careful copybook line, then run the Class Challenge builds. Close with 40 beside 4 so the zero's job is named in pupil words.

TEACHING MOVES

1. **Getting Started.** Show three closed full egg boxes (or the IWB image). Take three hands-up answers only — listen for 'three tens' or 'thirty' before anyone counts one-by-one. Revoice the tens language before you touch the blocks.
2. **Watch and Notice.** Build 30, 50, 80, 90 one at a time with ten-rods only. After each build, pause on the empty units column and ask 'what is the 0 doing there?' Hold until a pupil names holding the empty place; revoice: the 0 keeps the units place empty so the other digit still means tens.
3. **Try It Together.** Call 20, then 40, then 60, then 70. Wait for the class to say how many rods before the pupil at the board builds. Keep the counting-in-tens chant going as each rod lands. If a unit cube drops into the units column, freeze and ask 'does a decade number need any loose ones?'
4. **Write the decades in your copy.** Pupils write 10, 20, 30, 40, 50 in one careful line on the decade-number strip or in their copy. Walk the row glancing only at the zeros — a missing zero is the slip to notice quietly. This is whole-class practice, not marking.
5. **Class Challenge.** Keep the board work brisk. Before each build (30, 50, 80, 90) ask 'what is the zero doing in this number?' If a loose cube sneaks in, leave it and let the class spot it before Check — don't re-teach each one.

6. **What Did We Notice?** Put 40 beside 4 on the board. Take three hands-up answers to ‘what job does the zero do?’ Listen for ‘it would look like 4’ or ‘the tens digit would lose its place’. Revoice: the zero holds the empty units place so the 4 still means four tens.

COMMON MISCONCEPTIONS

⚠ Pupils write 40 as 4 — they drop the zero and treat the tens digit like a units digit.

Put the 40 model beside a single unit-cube 4. Point: without the 0 the 4 slides into the units place and only means four. Rebuild 40 with four rods and an empty units column.

⚠ A pupil drops a unit cube into the units column when building 30 or 50 — ‘it looks unfinished without something there’.

Freeze the board. Ask the class: does a decade number need any loose ones? Link back to the closed egg boxes — full boxes only, nothing spare.

⚠ Pupils say the 0 ‘means nothing’ or ‘doesn’t count’, so they can’t explain why it must be written.

Cover the 0 on 40 so only 4 shows. ‘Same digit — different job.’ Uncover and revoice: the 0 holds the empty units place so the 4 keeps meaning four tens.

DIFFERENTIATION

EMERGING

- Stay with 10, 20 and 30 on the IWB while others move higher; pre-place the ten-rods and let the pupil only confirm the empty units column.
- On the writing strip, provide the tens digit already written so the pupil only adds the 0 in the units place.

DEVELOPING

- After 10–50 in the copy, use the empty tens-and-units frames on the strip for 60, 70, 80 and say each one as ‘___ tens and no units’ before writing.
- Before the next Class Challenge build, ask: if I cover the 0 on 80, what number do we see — and what did we lose?

PROFICIENT

- Pose on the board: write a number that uses a 4 but is not a decade number — how do you know it isn’t? Copybook moment, then one pupil shares.
- Ask: what is the biggest decade number you can build with nine ten-rods? What would ten rods force you to do next? Leave it as a think-aloud, not a new procedure.

✂ **Cross-curricular:** Link back to the egg-box hook — full cartons of 10 in a shop or farm count; decade totals with nothing left over.

ANSWER KEY

a) 0 3 0

b) 0 5 0

c) 0 8 0

Q1: 20

Q2: 40

Q3: 50

Q4: 80

Q5: 90

Q6: 70

a) **Always** : By definition a decade number is whole tens only, so the units digit is always 0.

b) **Always** : 30 is three whole tens with nothing left over in the units place.

c) **Never** : 45 has 5 in the units place, so it is not whole tens only.

d) **Never** : Ending in 5 means loose units are left over, so it cannot be a decade number.

EXTENSION SHEET · STRETCH ANSWERS

S1: 57

S2: 77

S3: 96

S4: 57