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CORWIN

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Mathematics Tasks for the Thinking Classroom, Grades
K-5.

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TASK 28: ALL ABOUT THAT BASE

TASK

This task has students explore base-10 representations for numbers up to 100 using base-10 blocks.

Content: representing numbers up to 100 using base-10 blocks, composing, decomposing, regrouping numbers to 100

Competencies: willingness to take risks, perseverance

Seen Before: numbers to 50, decomposing numbers into tens and ones (e.g. 1 ten = 10 ones)

Before You Launch: Make sure that every group has 10 one-blocks and 10 ten-blocks. This task works well with the banner.

LAUNCH SCRIPT

Teacher: Hello my magnificent mathematicians! [show base-10 blocks]. These are called base-10 blocks and they can be used to represent many different numbers. What do you think this represents? [teacher holds up a one-block]



Students: 1!

Teacher: Absolutely! What do you think this represents? [teacher holds up a ten-block]

Students: 10!



Teacher: Wonderful! Today, I will give you a number. Your job is to build that number with base-10 blocks and then draw what the blocks look like on your board. For example, how many tens do I need to make 11?

Students: 1!

Teacher: [teacher draws long rectangle to indicate a ten-block]

Teacher: How many one cubes would I need to make 11?

Students: 1!

Teacher: [teacher adds a small square to indicate a one-block]

Teacher: How many tens and ones do you need to make 14?

TASK SEQUENCE

Type 1: Constructing and Drawing Numbers With Base-10 Blocks Without Regrouping

Use the base-10 blocks to build each number and draw what you built on your board:

- | | | | |
|-------|-------|-------|--------|
| 1. 14 | 4. 35 | 7. 67 | 10. 93 |
| 2. 17 | 5. 42 | 8. 78 | 11. 99 |
| 3. 29 | 6. 54 | 9. 83 | |

Type 2: Drawing Base-10 Blocks to Calculating Numbers With and Without Regrouping

Hints: When you drew 93, how many tens did you use? Interesting; how many ones did you use? Could that help you solve this?

Draw these base-10 blocks and calculate what number they make:

12. 1 ten and 6 ones
13. 2 tens and 15 ones
14. 19 ones and 2 tens
15. 14 ones and 3 tens
16. 4 tens and 1 ones

Without drawing these, calculate what number they make:

17. 3 tens and 21 ones
18. 5 tens and 28 ones
19. 42 ones and 4 tens
20. 50 ones and 4 tens
21. 49 ones and 5 tens

Type 3: Drawing Numbers With Base-10 Blocks With Restrictions

Draw each number:

22. 15 using only one-blocks
23. 27 using less than 2 ten-blocks
24. 34 using more than 4 one-blocks
25. 50 using some one-blocks

- 26. 66 using less than 5 ten-blocks
- 27. 81 using more one-blocks than ten-blocks
- 28. 100 using ten-blocks and one-blocks

CONSOLIDATION TASKS

Teacher: I have written on the board three questions like the ones you just did in your group, but I may have put them in the wrong order. Turn to your neighbor and discuss what the order should be and why.

- A What number is made from 12 ones and 2 tens? (Type 2)
- B Draw 38 using more than 10 ones (Type 3)
- C Draw 25 using ones and tens (Type 1)

STUDENT NOTES TO THEIR FUTURE FORGETFUL SELVES

Example 1:

Draw 36 using base ten blocks



Example 2:

What number is made from 2 ten-blocks and 13 one blocks?

(CHECK-YOUR-UNDERSTANDING QUESTIONS

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Draw each number using ten-blocks and one-blocks:

- A. 31
- B. 68
- C. 82

