

NUMBER EXPANDER

Understanding that a number like 247 has 24 tens and 7 ones

- 1. Explore unbundling a number such as 247 as 24 tens and 7 ones.
- Have the students show the number with bundling sticks; 2 hundreds, 4 tens 7 ones.
- Have the students unbundle 2 hundreds into tens. That is 20 tens with the 4 tens already there.
- Ask: 2 hundred is made up of how many tens? (20 tens)



- Click on the tens and the ones place, then GO
- Have the students notice the 24 tens and 7 ones. Have the students count them to be sure.
- **Ask:** If we want to bundle them back up to hundreds, how many hundreds would we make? (2 hundreds) And how many tens are left over? (4 tens)
- Repeat with other numbers. This suggested list has some numbers with zeros in various places and also some teen numbers.

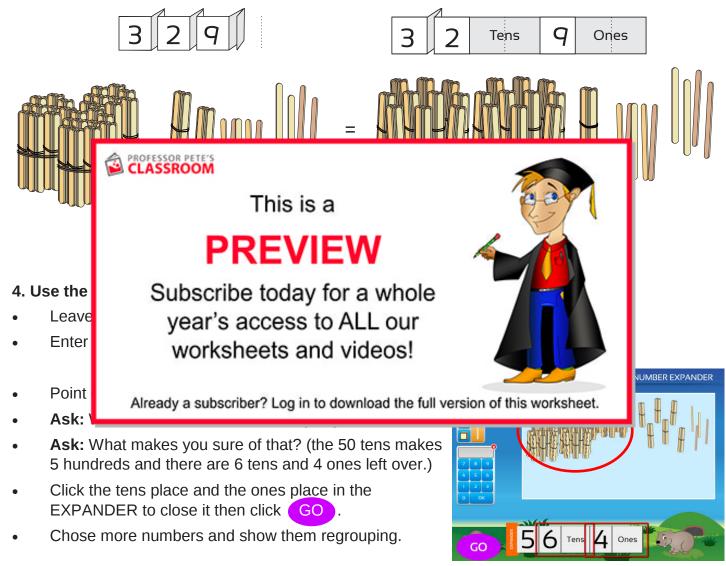
864	625
368	101
514 (take care with teen numbers)	511
905	785
782	309
450 (check students have the zero in the correct place)	680



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3. Explore unbundling a number such as 329 into tens with the number expander

- How many tens are there? (32 tens) Are there any ones that make up that number? (9 ones)
- Open the expander on the tens place.
- Write 329 = 32 tens + 9 ones







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5. Explore unbundling a number such as 217 into ones with the Number Expander Gadget

- Ask: If I unbundle all the bundles into ones, how many ones are there altogether? (217 ones)
- Use the Number Expander Gadget and enter 217 > OK.
- In the EXPANDER, click on the ones place and open it. Click GO



- Watch the bundling sticks regroup back in their 2 hundreds 1 ten and 7 ones.
- Open the EXPANDER on the hundreds place only. Click GO
- 217 is 2 hundreds and 17 ones.
- There are 4 ways to expand 217
- Write:

217 = 2 hundreds 1 ten 7 ones

217 = 21 tens 7 ones

217 = 217 ones

217 = 2 hundreds 17 ones

6. Complete the worksheets.