NUMBER EXPANDER

## Understanding that a number like 285 has 28 tens and 5 ones

1. Optional: Explore unbundling a number such as 285 as 28 tens and 5 ones.

- Have the students show the number with base ten blocks: 2 hundreds, 8 tens 5 ones.
- Have the students exchange 2 hundreds into tens. That is 20 tens with the 8 already there.
- **Ask:** 2 hundred is made up of how many tens? (20 tens)
- **Ask:** With the 8 tens already there, how many tens are there altogether? (28 tens)
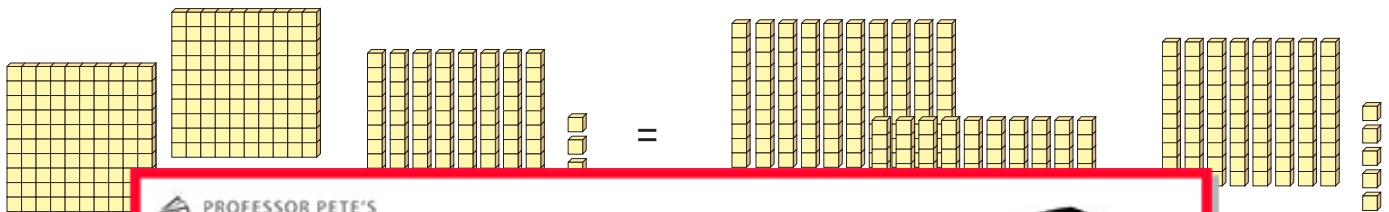
=

2. Show the
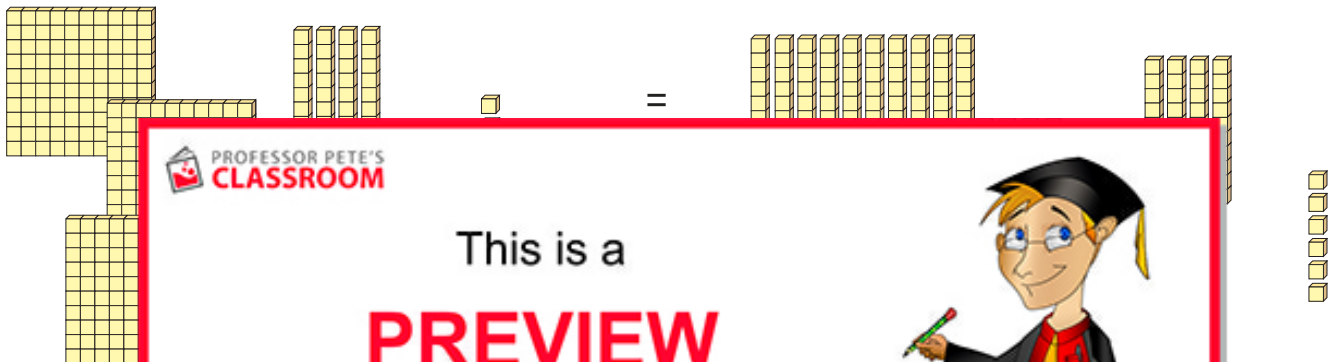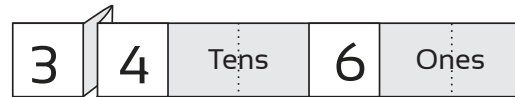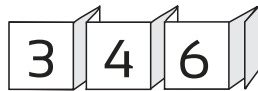
- Enter 2
- Have s

GO 285

GO 28 Tens 5 Ones

- Click on the Tens and the Ones place, then **GO** .
- Have the students notice the 28 tens and 5 ones. Have the students count them to be sure.
- **Ask:** If we want to bundle them back up to hundreds, how many hundreds did we make? (2 hundreds) And how many tens are left over? (8 tens)
- Repeat with other numbers. This suggested list has some with zeros in various places and also some teen numbers.

652	487
783	205
611 (take care with teen numbers)	913
706	689
848	607
970 (check students have the zero in the correct place)	850

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

- How many tens are there? (34 tens) Are there any ones that make up that number? (6 ones)

- Open the expander on the tens place.

- Write 346 = 34 tens + 6 ones

4. Use the

- Leave

- Enter

- Point

- **Ask:**

- **Ask:** What makes you sure of that? (the 80 tens makes 8 hundreds and there are 7 tens and 3 ones left over.)

- Click the Tens place and the Ones place in the EXPANDER to close it then click **GO** .

- Chose more numbers and show them regrouping.
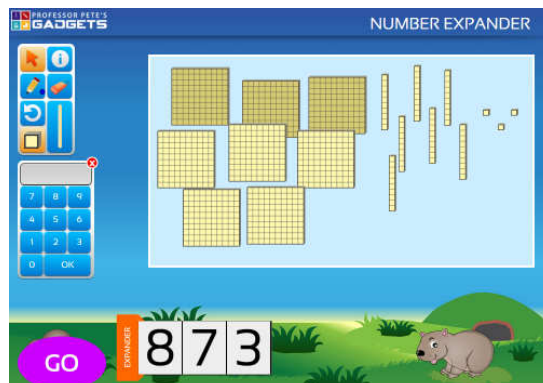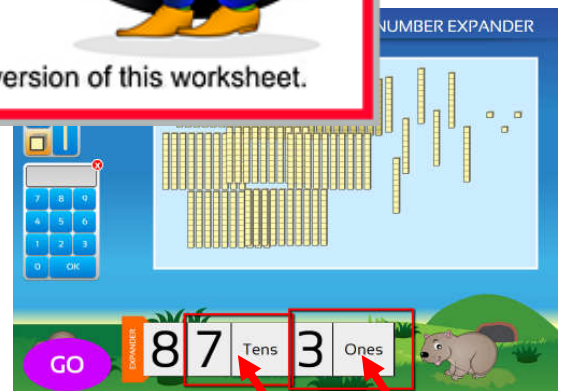
NUMBER EXPANDER

5. Explore unbundling a number such as 374 into ones with the Number Expander Gadget

- **Ask:** If I exchange all the hundreds and tens into ones, how many ones are there altogether? (374 ones)

- Use the Number Expander Gadget and enter 374 > OK.

- In the EXPANDER, click on the Ones place and open it. Click **GO** .

- Watch the hundreds animate into tens then ones, and the tens animate into ones.

- Count the total if students are not sure. There are 374 ones.

- **Ask:** ...

- Click ...

- Watch ...

- Open ... ways.

- There are 4 ways to expand 374

- **Write:**

      374 = 3 hundreds 7 ten 4 ones
      374 = 37 tens 4 ones
      374 = 374 ones
      374 = 3 hundreds 74 ones

6.   Complete worksheets.