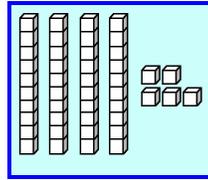


Regrouping in Subtraction, Part 1

We will now study regrouping (also called “borrowing”) in subtraction.

As a first step, we study breaking a ten-pillar into ten little cubes.

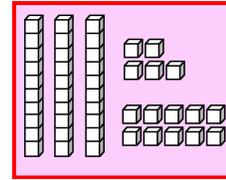
This is called **regrouping**, because one ten “changes groups” from the tens group into the ones.



4 tens 5 ones

First we have 45. We “break” one ten-pillar into little cubes.

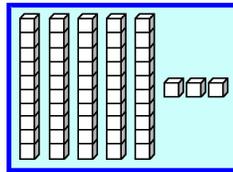
Break
a ten.
→



3 tens 15 ones

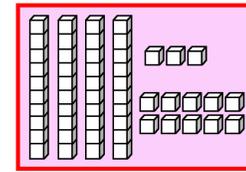
Now we have 3 tens and 15 ones. It is still 45, but written in a different way.

Here is another example. First we have 5 tens 3 ones. We “break” one ten-pillar into 10 little cubes. We end up with 4 tens 13 ones.



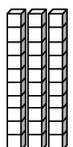
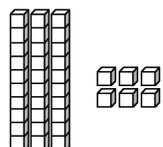
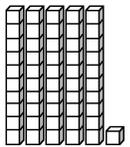
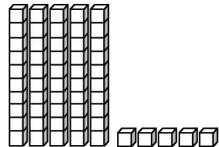
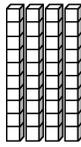
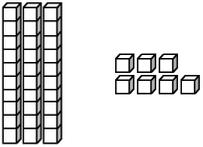
5 tens 3 ones

Break
a ten.
→



4 tens 13 ones

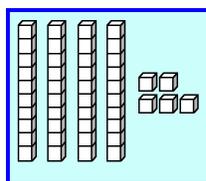
1. Break a ten into 10 ones. What do you get? Draw or use manipulatives to help.

<p>a.  →</p> <p>3 tens 0 ones → ___ tens ___ ones</p>	<p>b.  →</p> <p>___ tens ___ ones → ___ tens ___ ones</p>
<p>c.  →</p> <p>___ tens ___ ones → ___ tens ___ ones</p>	<p>d.  →</p> <p>___ tens ___ ones → ___ tens ___ ones</p>
<p>e.  →</p> <p>___ tens ___ ones → ___ tens ___ ones</p>	<p>f.  →</p> <p>___ tens ___ ones → ___ tens ___ ones</p>

Let's study subtraction. The pictures on the right illustrate $45 - 17$.

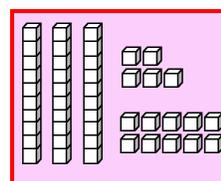
First, a ten is broken into 10 ones.
So, 4 tens 5 ones becomes
3 tens 15 ones.

After that, cross out (subtract)
1 ten 7 ones.



4 tens 5 ones

Break
a ten.
→



3 tens 15 ones

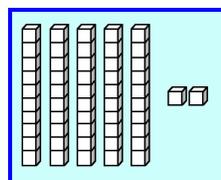
Cross out 1 ten 7 ones (from the *second* picture).

What is left? ___ tens ___ ones

The pictures on the right illustrate $52 - 39$.

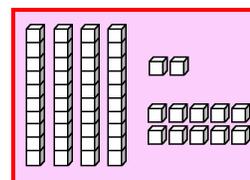
First, a ten is broken into 10 ones.
So, 5 tens 2 ones becomes
4 tens 12 ones.

After that, cross out (subtract)
3 tens 9 ones.



5 tens 2 ones

Break
a ten.
→

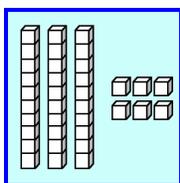


4 tens 12 ones

Cross out 3 tens 9 ones (from the *second* picture).

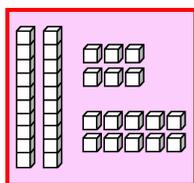
What is left? ___ tens ___ ones

2. Fill in. Always subtract (cross out some) from the *second* picture.



3 tens 6 ones

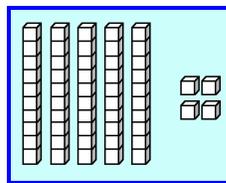
Break
a ten.
→



2 tens 16 ones

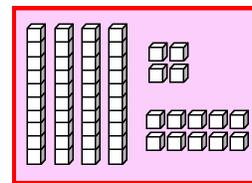
a. Subtract 8 ones (from the *second* picture).

What is left? ___ tens ___ ones



___ tens ___ ones

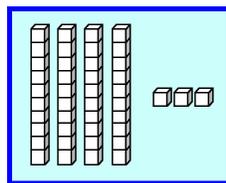
Break
a ten.
→



___ tens ___ ones

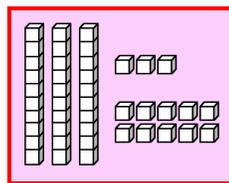
b. Subtract 2 tens 7 ones.

What is left? ___ tens ___ ones



___ tens ___ ones

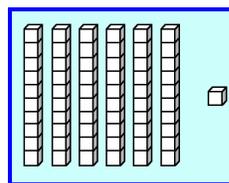
Break
a ten.
→



___ tens ___ ones

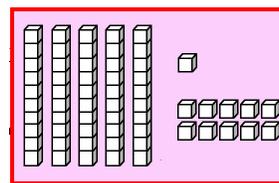
c. Cross out 2 tens 5 ones.

What is left? ___ tens ___ ones



___ tens ___ ones

Break
a ten.
→



___ tens ___ ones

d. Cross out 4 tens 4 ones.

What is left? ___ tens ___ ones

3. First, break a ten. Then subtract ones and tens separately. Look at the example.

<p>a.</p> $\begin{array}{r} 5 \text{ tens } 5 \text{ ones} \Rightarrow \quad \color{green}{4} \text{ tens } \color{green}{15} \text{ ones} \\ - \quad 3 \text{ tens } \quad 7 \text{ ones} \\ \hline \quad \color{green}{1} \text{ ten } \quad \color{green}{8} \text{ ones} \end{array}$	<p>b.</p> $\begin{array}{r} 7 \text{ tens } 2 \text{ ones} \Rightarrow \quad \color{green}{} \text{ tens } \color{green}{} \text{ ones} \\ - \quad 3 \text{ tens } \quad 5 \text{ ones} \\ \hline \quad \color{green}{} \text{ tens } \quad \color{green}{} \text{ ones} \end{array}$
<p>c.</p> $\begin{array}{r} 6 \text{ tens } 0 \text{ ones} \Rightarrow \quad \color{green}{} \text{ tens } \color{green}{} \text{ ones} \\ - \quad 2 \text{ tens } \quad 7 \text{ ones} \\ \hline \quad \color{green}{} \text{ tens } \quad \color{green}{} \text{ ones} \end{array}$	<p>d.</p> $\begin{array}{r} 6 \text{ tens } 4 \text{ ones} \Rightarrow \quad \color{green}{} \text{ tens } \color{green}{} \text{ ones} \\ - \quad 3 \text{ tens } \quad 8 \text{ ones} \\ \hline \quad \color{green}{} \text{ tens } \quad \color{green}{} \text{ ones} \end{array}$
<p>e.</p> $\begin{array}{r} 7 \text{ tens } 6 \text{ ones} \Rightarrow \quad \color{green}{} \text{ tens } \color{green}{} \text{ ones} \\ - \quad 4 \text{ tens } \quad 7 \text{ ones} \\ \hline \quad \color{green}{} \text{ tens } \quad \color{green}{} \text{ ones} \end{array}$	<p>f.</p> $\begin{array}{r} 5 \text{ tens } 0 \text{ ones} \Rightarrow \quad \color{green}{} \text{ tens } \color{green}{} \text{ ones} \\ - \quad 2 \text{ tens } \quad 2 \text{ ones} \\ \hline \quad \color{green}{} \text{ tens } \quad \color{green}{} \text{ ones} \end{array}$
<p>g.</p> $\begin{array}{r} 8 \text{ tens } 1 \text{ one} \Rightarrow \quad \color{green}{} \text{ tens } \color{green}{} \text{ ones} \\ - \quad 6 \text{ tens } \quad 5 \text{ ones} \\ \hline \quad \color{green}{} \text{ tens } \quad \color{green}{} \text{ ones} \end{array}$	<p>h.</p> $\begin{array}{r} 6 \text{ tens } 3 \text{ ones} \Rightarrow \quad \color{green}{} \text{ tens } \color{green}{} \text{ ones} \\ - \quad 2 \text{ tens } \quad 8 \text{ ones} \\ \hline \quad \color{green}{} \text{ tens } \quad \color{green}{} \text{ ones} \end{array}$

4. Jessica had 27 colored pencils and her brother and sister had none. Then Jessica gave 10 of them to her brother, and four to her sister.

- How many pencils does Jessica have now?
- How many more pencils does Jessica have than her brother?
- How many more pencils does Jessica have than her sister?