Grades 2-3: Subtracting Using a Place Value Chart

- A place value chart is a picture showing how numbers break down into the ones place, tens place, hundreds place, and so on. It can help with addition and subtraction (and even multiplication and division, too!).

- This skill sheet focuses on subtracting numbers up to three digits (one, tens, and hundreds). However, you can make a place value chart that goes all the way to the trillions place or higher—just keep adding columns to the left.

- Here is what the number 256 looks like on a place value chart. The 6 black circles are ones. The 5 blue rectangles are tens. The 2 red squares are hundreds.

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<thead>
<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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Let’s use the place value chart to subtract 256-211:

1) Start by again drawing in the shapes for the ones, tens, and hundreds of the first number, 256. It’s a good idea to draw your ones first because you will always start adding or subtracting from the ones place.

2) Cross off or erase the number of ones, tens, and hundreds in the second number, 211, starting with the ones place. We cross off 1 one, 1 ten, and 2 hundreds.

3) Finally, we just count up the total number of shapes in each place value, and we have our final answer. 256-211 = 45. We can write a zero under the hundreds place in our chart, but we don’t usually write a zero at the beginning of our final answer.

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IMPORTANT RULES:

⇒ If you ever need to take away more ones, tens, or hundreds than you have in the first number, you need to borrow them from the next place value up. For example, if you only have 5 ones, but you need to take away 6 ones, you can borrow 1 ten and cash it in for 10 ones. Then, you will have 15 ones, which is more than you need to be able to take away 6 ones.

⇒ You also have to start borrowing in your ones place. You can show borrowing by drawing an arrow from the thing you borrow to a bundle of 10 in the next lower place value.

Look at the example to see how we use borrowing and bundling when we subtract 256-107.

1) We start by drawing in the ones, tens, and hundreds for the first number, 256.

2) We start subtracting 107 from the ones place, but wait—we can’t take away 7 ones because we only have 6! The arrow in the picture shows that, to solve this problem, we borrow 1 ten from the tens place and cash it in for 10 ones. This 1 ten is gone from the tens place after we borrow it and cash it in.

3) Now, we have 16 ones to work with, so we can now take away 7 ones by crossing out or erasing 7 circles in the ones place. We have 9 ones left.

4) The number in the tens place in the number 107 is a zero, so that means we take away 0 tens. In other words, we don’t need to cross any out. We can just count up how many are left (remember that the one we borrowed isn’t in the tens place anymore). We have 4 tens left.

5) In our hundreds place, we need to take away 1 hundred because there is a 1 in the hundreds place of the number 107. We cross out 1 hundred to show we take it away. Our final answer is 149 because we have 9 ones, 4 tens, and 1 hundred left over.

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<td>1</td>
<td>4</td>
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What about subtracting vertically?

• The bundling and borrowing may remind you of borrowing from the next place over when subtracting numbers vertically, “the old way.”

• Using the place value chart, we show that 1 ten is the same as 10 ones, for example, so it makes sense to bring these over to the ones place when we need them.

For More on This Topic: https://www.youtube.com/watch?v=ao70h-WHKc8