Common Core Math in 2nd Grade

Second graders will continue their work understanding the way our number system works using place values of ones, tens, hundreds, etc. They'll recognize that the 3 in the number 357 represents 3 hundreds rather than "just being a three" and that 12 tens is the same as 1 hundred and 2 tens. Later this will make it clear that adding two hundred to 357 is just a matter of adding 2 to the 3 in the hundreds place.

Kids will work on skip counting by various numbers including tens and hundreds both to increase skill for addition and subtraction using these place values but also as a foundation for multiplication.

While second graders will continue to use many different strategies for adding and subtracting, they use their understanding of the way numbers are built to move toward methods that will always work quickly and accurately.

Geometric concepts they're studying at the same time reinforce the number sense they're working on, provide real world contexts, and give a good foundation for understanding more advanced concepts. For instance, you'll notice that students work with measuring lengths. They might add two different lengths together or compare the lengths of two objects (which would require subtraction). Using bar graphs, clocks, or money they might practice these same skills. In second grade they also do things like partition rectangles into squares and other equal shapes in preparation for understanding both multiplication and fractions.

Examples:

Bundling and Unbundling https://www.illustrativemathematics.org/illustrations/144 (see reverse)

The first part of this task is straightforward, but in part b) of this task, the kids have to think a bit more. They're breaking apart the number 14 tens into 10 tens and 4 tens. Then, they recognize that the group of 10 tens can be "bundled" into a group of 1 hundred. This is just what they will need to understand in order to add something like 152 + 91 using the standard algorithm where we line up the ones and the tens and the hundreds and add in columns. Adding 2 and 1 in the ones place is straightforward, but when they add the 5 and 9 in the tens place, the 14 they get will have to be regrouped (or "carried").

Tips for parents:

- Practice in everyday situations. For example, ask your child to compare the price of two different items and decide how much you would save. Count by 2's, 3's, 4's, etc. to figure out how many there are of something rather than counting one at a time.
- You may find that there are methods of writing basic arithmetic that are unfamiliar to you. Often, these are just ways of recording more of the thinking that goes into the math. Try to understand the process yourself, checking in with the teacher if need be. If you do want to share the way you learned make sure you can also explain the thinking around it as well as how it relates to the ways things are being done in class.
- Have your child explain how she found an answer using words or pictures, sometimes even if the process is easy for her.

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For further information see:
ime.math.arizona.edu/progressions/ and
illustrativemathematics.org

Bundling and Unbundling.
https://www.illustrativemathematics.org/illustrations/144

Make true equations. Write one number in every space. Draw a picture if it helps.

a. 1 hundred + 4 tens = _____ ; 4 tens + 1 hundred = _____
b. 14 tens = 10 tens + _____ tens; 14 tens = _____ hundred + 4 tens; 14 tens = _____ ones
c. 7 ones + 5 hundreds = _____
d. 8 hundreds = _____
e. 106 = 1 hundred + _____tens + _____ones; 106 = _____tens + _____ones ;
106 = _____ones
f. 90 + 300 + 4 = _____

Commentary

Students determine the number of hundreds, tens and ones that are necessary to write equations when some digits are provided. Student must, in some cases, decompose hundreds to tens and tens to ones. The order of the summands does not always correspond to the place value, making these problems less routine than they might

Solutions

a. 140, 140.The first problem asks for the same number (140) in different ways. This emphasizes that order doesn't matter in addition – yet order is everything when using place-value notation.

b. 14 tens = 10 tens + 4 tens14 tens = 1 hundred+4 tens14 tens = 140.In this problem, the base-ten units in 140 are bundled in different ways. In the first line, "tens" are thought of as units: 14 things = 10 things + 4 things.

c. 507.By scrambling the usual order, the third problem requires students to link the values of the parts with the order of the digits in the positional system. Also, to encode the quantity, the student will have to think: "no tens," emphasizing the role of 0.7 ones + 5 hundreds = 507

d. 800.In the fourth problem, the zeros come with a silent "no tens and no ones": 8 hundreds = 800

e. 106 = 1 hundred + 0 tens + 6 ones106 = 10 tens + 6 ones106 = 106 onesIn this problem, the base-ten units in 106 are bundled in different ways. This is helpful when learning how to subtract in a problem like 106 – 34 by thinking about 106 as 100 tens and 6 ones.

f. 394. The sixth problem is meant to illustrate the notion that If the order is always given "correctly," then all we do is teach students rote strategies without thinking about the size of the units or how to encode them in positional notation.90 + 300 + 4 = 394