

COMMON CORE LESSON

3rd Grade Computation

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CCSS-M Standard: 3.NBT.A.2

Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Problem

Kaylah sees a road sign with cities and their distances from her current location. The sign shows that Baltimore is 309 miles away and Annapolis is 280 miles away. In all, how many miles is between Baltimore and Annapolis?

(Solve this problem any way you like.)

Possible Student Questions

- ▶ *What is happening in the story?*
- ▶ *What information do you need?*
- ▶ *What math can be used to solve the problem?*
- ▶ *What equation(s) can be written to model the problem?*
- ▶ *What strategy might you use to solve this?*
- ▶ *Are there multiple ways to approach/solve this problem?*

(Move the equation to the bottom.)

Adding Up/Partial Sums

$$280 + \underline{\quad} = 309$$

$$280 + 20 = 300$$

$$300 + 9 = 309$$

$$280 + 29 = 309$$

29 miles

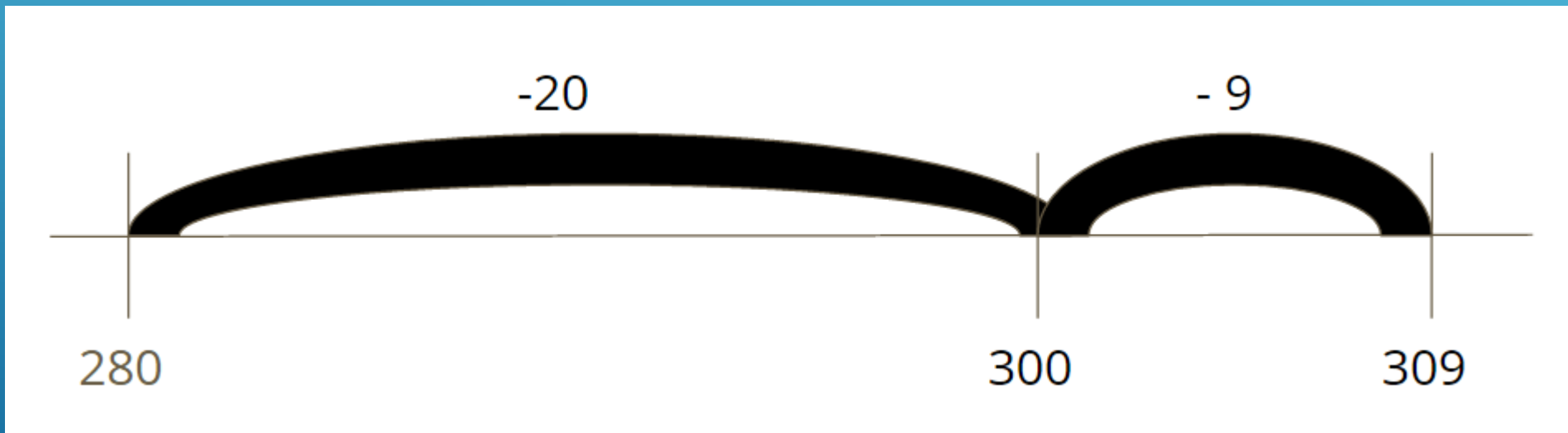
Counting Back/Partial Differences

$$309 - \underline{\quad} = 280$$

$$309 - 9 = 300$$

$$300 - 20 = 280$$

Number Line



Standard Algorithm

$$\begin{array}{r} 2 \ 10 \\ \cancel{309} \\ - \underline{280} \\ \hline 29 \end{array}$$

How close does the following statement come to your view on the broader impact of the CCSS-M beyond the classroom?

“Reinforcement of math learning at home is declining because parents don’t understand the way math is being taught”

85% - Very close or somewhat close to my view

13% - Not too close/ Not close at all to my view

3% - Not sure

(Numbers may not total to 100 percent due to rounding.)

STATEMENTS AND INTERPRETATIONS

Original Statement	What a Parent/ Administrator Might Think	A Stronger, Carefully Composed Statement
<p>"The [mathematics program] still addresses skills, but it also includes concepts."</p>	<p>"Why are they bringing skills up? They must be taking those away. My child/U.S. kids have to know basics. How can I put a stop to this?"</p>	<p>"The skills in the [mathematics program] are expanding from what we once learned and now include . . ."</p>
<p>"It is important for students to learn from one another, so I will be more in the role of facilitator."</p>	<p>"The teacher is not teaching? My child does better when things are explained clearly. When I come to see you teach, what am I looking for if you are just letting the kids learn on their own?"</p>	<p>"In our classroom, we learn from one another. I give carefully selected tasks for students to discuss, and then we talk about them together so that everyone has a chance to learn the mathematics we are doing, and that approach gives me the chance to work one-on-one as needed."</p>
<p>"This year, we are doing a whole new mathematics program that the state has adopted."</p>	<p>"My worst nightmare—an experiment of something new during the years my child is in middle school. This will cause problems for the rest of his life."</p>	<p>"We are doing some new things in order to make sure your child is well prepared for . . . [or that our program is the best available]. You might have noticed that last year we [added writing as a component to our math program]. This year, here are the big things we hope to accomplish. . . ."</p>

Van de Walle, J., Bay-Williams, J. M., Lovin, L.A., & Karp, K. S. (2014). *Teaching Student Centered Mathematics: Grades 6-8* (2nd edition). New York, NY: Pearson.

QUESTIONS FOR FAMILIES TO HELP CHILDREN WITH HOMEWORK

These guiding questions are designed to help your child think through his or her math homework problems. When your child gets stuck, ask the following:

- What do you need to figure out? What is the problem about?
- What words are confusing? What words are familiar?
- Did you solve problems like this one in class today?
- What have you tried so far? What else can you try?
- Can you make a drawing, table, or diagram to help you think about the problem?
- Does your answer make sense?
- Is there more than one answer?
- What math words or steps do you use in class?

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MORE TEACHERS ARE TEACHING STUDENTS MULTIPLE METHODS TO SOLVE PROBLEMS.

- ▶ 65 percent of K–5 teachers and 41 percent of 6–8 teachers report that they are “teaching multiple methods to solve a problem” more often than they did before the CCSS-M were implemented. Just 2–5 percent at all grade bands report doing this less frequently.
- ▶ Many teachers appear to have reservations about this shift, however, with 53 percent overall agreeing that “students are frustrated because they are being asked to learn many different ways to solve the same problem.”

TEACHERS WITH STUDENTS WHO ARE BELOW GRADE LEVEL HAVE A MORE NEGATIVE VIEW OF THE IMPACT OF THE STANDARDS.

The 18 percent of survey respondents who primarily teach students who are remedial or significantly below grade level in math evince significantly more pessimism about the impact of CCSS-M on students than teachers who primarily teach on-grade-level students.

In particular, the former are:

- ▶ Less likely to agree that “students are developing a stronger number sense and more ability to apply math in real-world situations”
- ▶ More likely to report that fewer students “are able to do simple calculations with speed and accuracy”
- ▶ More likely to report that more students “consistently rely on the teacher for help”
- ▶ More likely to agree that “students are frustrated because they’re being asked to learn many different ways to solve the same problem”

WHAT'S UP WITH MIDDLE SCHOOL TEACHERS?

Middle school teachers tend to have more of a negative assessment of students' math abilities. But why?

- ▶ It seems likely that the CCSS-M place dramatically higher expectations on middle school students and much of the content introduced in these grades is new for both teachers and students.
- ▶ Moreover, it's possible that middle school teachers haven't received the professional development required to navigate successfully this transition.
- ▶ Or perhaps middle school students who have had to transition into the CCSS-M during elementary school failed to acquire the skills necessary to succeed in middle school math.