

Giving Students a Choice of Tools for Solving Math Problems

As teachers align their lessons to college- and career-ready standards, some parents are asking why their children need to learn more conceptual math and why they need multiple strategies for solving problems. Some suggest that simply learning the standard algorithm for a math problem ($2+2=4$, $6\times 8=48$, etc.) is enough.

We agree that students need to learn the set of rules or procedures that can be followed when doing calculations. In some cases, that's the best tool for the job.

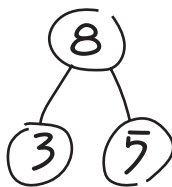
But in other instances, students need more options—more tools in their toolbox. There might be better ways of solving the problem. And by knowing multiple strategies, students gain a deeper understanding of mathematics and how to use it in daily life. Consider the following example....

NUMBER BONDS CAN HELP

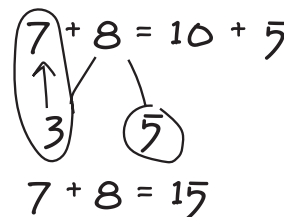
Add 998 and 337.

If you ask a 1st grader to add 998 and 337 and he or she only knows the standard algorithm, he or she will probably struggle to get the answer. This problem is likely too advanced, more like a 2nd- or 3rd-grade problem. But for a 1st grader who knows number bonds, the problem is a cinch.

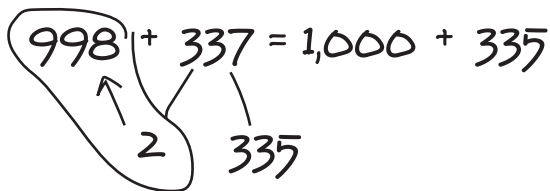
IN KINDERGARTEN, Eureka Math students learn to break numbers into small, manageable units:
 $3 + 5 = 8$, or $8 - 3 = 5$, or $8 - 5 = 3$.



IN FIRST GRADE, students can see that $7 + 8$ is the same as $10 + 5$.



Once they see and understand that, they can also quickly solve $998 + 337$. Step 1 is to make 998 a more manageable number, such as 1,000. That means adding 2 to 998, which is easily done by breaking 337 into $2 + 335$. And then subtracting that 2 from 337.



Then, it's easy to add $1,000 + 335 = 1,335$. And $998 + 337 = 1,335$.