

ESTIMATE		
UNDERSTAND	Definition	Students make an approximate calculation or determine an approximate answer of a problem.
	When to Teach This Strategy	<ul style="list-style-type: none"> When teaching the importance of determining whether a solution is reasonable When teaching how to determine an approximate calculation before arriving at a final, accurate solution <p>If you see students who . . .</p> <ul style="list-style-type: none"> struggle to make accurate calculations
PREPARE	Why We Teach It	Estimating is a strategy that supports students by giving them an approximate calculation for a problem's solution. Also, it helps students determine whether their solution to a problem is reasonable as well as how to recognize when an error might have been made. Additionally, estimating strengthens a student's mental computation skills.
	Secrets to Success	For students to be successful with this strategy they must <ul style="list-style-type: none"> understand what the problem is asking them to solve and have a solid understanding of place value.
TEACH	How We Teach It	<p>Modeling a think-aloud during the "I Do" focus lessons:</p> <p>Explain to students that they are going to learn a math strategy that will help them come up with an approximate solution before actually solving the problem. Add that it is important that when they think about numbers, they're able to visualize how <i>big</i> or <i>small</i> a number's value is.</p> <p>First, we read through the problem. Then, we use our understanding of place value to help us <i>round</i> a number's value to the nearest <i>ten</i>, <i>hundred</i>, <i>thousand</i>, and so on. This will make it easy to find a quick, approximate solution that can be compared with the final solution once the problem has been solved. The estimate and the solution should be similar to each other.</p> <p>After modeling this strategy three or four times with several different math problems, we provide student practice during the "We Do" focus lesson by giving them several more math problems. We have students practice estimating a solution to each problem and then solve the problems to compare their solution with their estimate.</p>
		<p>Suggested Language</p> <ul style="list-style-type: none"> How will my knowledge of place value help me estimate in this problem? Is my accurate solution close to my estimated solution?
SUPPORT	Instructional Pivots	<ul style="list-style-type: none"> Use a number line to show students how you arrive at an estimated value. For example, if my problem is $147 + 2,006 = x$, I would show students that by rounding to the nearest <i>ten</i> in 147, I would arrive at 150, and by rounding to the nearest <i>thousand</i> in 2,006, I would come up with 2,000. My estimate would be $150 + 2,000 = 2,150$. This is close to the actual solution! Provide students with a blank, laminated number line and a dry erase marker. This way, they can plot values on the number line as they work on their estimation skills.
	Partner Strategies	<p>These strategies may provide support before, during, and after teaching this strategy:</p> <ul style="list-style-type: none"> Draw a Picture Use a Math Formula Think Aloud Look for a Pattern Create an Organized List Work Backward Monitor and Adjust