

12 Practices to Improve Students' Mental Math

1 Introduce Mnemonic Devices

Mnemonic devices -- cues such as rhymes and acronyms to help recall information -- can help students who struggle with basic fact fluency.

2 Read Math Books

There are many math books that effectively contextualize the processes behind solving equations, helping students commit them to memory.

3 Provide Relevant Word Problems

Math word problems enliven repetitive content, as you can tailor questions to student interests.

4 Play Estimation Games in Class

Helping students develop skills and techniques to simplify equations in their heads, there are many popular estimation games that only involve dice and paper.

5 Play Fact Fluency Games in Class

There are even more fact fluency games -- such as math bingo -- that engage students as they build recall and reproduction skills.

6 Encourage the Use of Math Apps and Websites

An engaging supplement to drills and worksheets, students can use digital programs at home and in class.

7 Round Up when Multiplying by 9

Tell students to round up the 9 to 10. Then, after solving the new equation, they can subtract the number they just multiplied by 10 from the answer. For example, $67 \times 10 - 67$ is the same as 67×9 .

8 Double and Halve

To mentally multiply two integers when one is an even number, continuously halve the even number and double the other. For example, 528×3 is easier to solve than 33×48 .

9 Cover-Copy-Compare

Create and distribute a math facts sheet to each student, which is divided into two columns. The left should contain facts, whereas the right has empty space for responses. Students must study the facts in the left column, reproducing them from memory in the right column one at a time. If the first response matches the fact in the left, the student moves onto the next one. If incorrect, the student keeps trying.

10 Use the Taped Problem Approach

Obtain or make an audio recording of basic math problems, with short pauses between stating the problem and revealing the answer. As you play the audio, students must solve the equation before the answer is stated.

11 Building Blocks

Familiarize students with building blocks such as multiplication tables or fractions, decimal, and percent equivalents. For example, $\frac{1}{2} = 0.5 = 50\%$.

12 Number Talks

Pose an abstract math problem. Take 18×5 as an example problem and ask students to solve it in their heads. In any given class, you'll likely find they answered correctly -- but in many different ways. Number talks are a perfect way to illustrate that there's creativity in math.