

## Active Participation in Math Class

These strategies support active student participation in math lessons and allow teachers to assess the developing proficiency levels of all students in the class by walking around to monitor student responses. These strategies are especially effective during the Mental Math part of an Everyday Mathematics lesson.

- **Use white boards:** Give each student a white board, dry erase marker and an eraser. As you ask questions, have each student write his/her answer on the white-board and hold it up for your review. This is an especially effective routine to use at the beginning or end of lessons as it allows the teacher to quickly assess students' independent performance levels. The teacher may use this information to plan future instruction and/or to form flexible small group instruction for reteaching or enrichment. Plan to make the use of whiteboards an every day strategy in your classroom. This way each student in the class must grapple with each question. Usually only one student answers each question while others watch and listen.
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- **Thumbs up/Thumbs Down:** Students in math classes must learn to evaluate the solutions and arguments of their classmates. Requiring students to signal agreement or disagreement sets the expectation that students are actively listening to their classmates' explanations. Pair this strategy with asking students to repeat what another student said and students must stay actively tuned in to what's happening in the classroom at all times.
  - **Show me the answer:** Look for opportunities to incorporate visual components into student responses. For example:
    - Use student digit cards to have students form the largest or smallest number from those digits. Or dictate a number and have students form the number using their digit cards. The teacher may then ask students to hold up the digit in the hundreds place or in the ten-thousands place. See [More Place Value Activities](#) for additional suggestions.
    - Give students small response cards: even/odd, prime/composite, yes/no, area/perimeter and ask students to hold up the correct card to respond to questions.
  - **Think-Pair-Share:** Include this simple routine to increase student math talk in your classroom. Explain to students that you will do a Think-Pair-Share on the next question:
    - Ask the question and encourage students to think quietly about how they would respond to the question. One variation asks students to quietly write a response to the question in their math journals. [Think-Write-Pair-Share]
    - After one or two minutes, ask students to share their response with their partner, taking turns so that each partner explains his/her thinking. Walk around the room to monitor student responses.
    - After a few minutes, call on random students to explain how their partnership responded to the question and whether or not they agreed.
    - This strategy is especially effective for students who are reluctant participants as they get to rehearse their response in front of one classmate. Students may also choose to use a partner's words or phrases in addition to their own, if called upon to talk before the whole class.
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- **Let go and let students...:** This phrase reminds teachers to put students in charge of their learning and in charge of explaining themselves. This practice incorporates multiple effective strategies to support student learning:

- Give students the chalk or marker and ask them to come to the board or overhead to explain their thinking. Resist asking students to tell you what they did while you write what they did. Asking students to write as they explain allows them to organize their thinking and provides insight to teachers about what strategies and organizational methods students use effectively and independently. This strategy also provides practice for the expected independent test performance.



- Ask another student to repeat a student's explanation or insight. Resist the urge to repeat or paraphrase each student's response. Ask classmates to do this instead, fostering active participation/listening skills in all students.
- Ask students to read directions or problems aloud rather than reading them yourself. Once again, this practice encourages students to develop effective reading skills for math activities and tests. If reading levels are an issue in your classroom, you might begin with buddy reading, pairing students to effectively mitigate this issue.
- Ask students to define math vocabulary terms in their own words. Post the best definitions around the room.
- Post samples of effective problem-solving solutions that meet tough requirements of the problem-solving rubric you use to grade student responses. Make overheads of student samples and review them regularly so that all students see examples of effective ways to organize solutions and explain thinking.
- Expect students to be capable of some independent work. Voice this expectation to students as in "I want to see how each of you does on Math Boxes #3 and #4 today, so please begin with those boxes. I believe that everyone can do these by themselves and I will be around to check. After you finish these two math boxes, you may do the others in any order you choose."



- Quickly spin off students who are capable of independent work. Provide enrichment activities that go beyond current grade-level expectations and require higher-order thinking skills for solutions. Encourage these students to play harder versions of math games (i.e. more cards, larger numbers, etc.)
- Differentiate and scaffold instruction to effectively meet the varied needs of learners in your classroom. Provide enrichment activities for talented students while you work with small groups who need additional instruction or scaffolded support/encouragement during independent practice. Use flexible grouping based on informal assessment of student responses during instruction.