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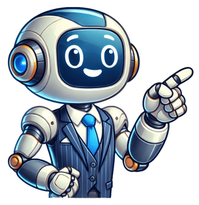

Strategies for math

What are the secrets to making maths teaching truly effective? Everyone wants kids to succeed in maths, but how do we make that happen? In most schools, tests are used to measure students' understanding, but few teachers want to teach just for the test. Using too many worksheets and "drill and kill" exercises can make maths boring and meaningless. But the truth is, good teaching and good grades aren't opposites. Being intentional and using creative approaches can get kids excited about maths and succeed in their learning. Here are some key strategies and attitudes that can help make your class's best maths year ever! Math educator Marilyn Burns once wrote a book called "Math: Facing an American Phobia" (Math Solutions, 1998). The title says it all – in America, we think you're either born good at maths or not. But if you tell adults they hate reading, they'll be shocked. Tell them they hate maths and they'll nod in agreement! As teachers of young children, we must help our students believe that everyone is a mathematician, just like everyone can read. Give kids positive and successful maths experiences from an early age and point out how maths is used every day. Ask your students to write down all the maths they did at home the day before – looking at clocks, using spatial words, or hearing about weather? Make them see that they're already daily mathematicians! Support this with targeted feedback – tell them what they got right, not just "that was good." The reality is everyone can do maths and do it well. As teachers, we must believe it and help our students truly experience it too. Becoming experts at anything takes work, but the feeling of satisfaction when you see results is amazing! Instead of thinking kids' success in maths depends on how much talent they're born with, tell them that practice and persistence make anyone good at maths. Ask your students about their experiences with sports – how long did it take to learn a new skill? New students arrive with some skills, but they need practice. Math is similar; it requires effort, just like sports. The results in math are visible, making practice enjoyable. At the beginning of the year, give a comprehensive math assessment to see what students need to learn. Explain that this test helps you plan your lessons, so you can focus on areas where they need improvement. Students should circle unknown concepts and express interest in learning them. This exercise encourages collaboration and lets you tailor instruction. Later in the year, repeat the assessment, score it, and hand back the results for comparison. Seeing their progress will motivate students to learn even more. Assessments are not separate from instruction; they guide your teaching. Use exit tickets, quizzes, or open-ended questions to gauge understanding and adjust lessons accordingly. Be flexible with your lesson pace. Observe students working on problems, ask questions, and make adjustments as needed. This approach allows for individualized instruction and helps prevent students from falling behind. By pacing yourself flexibly, you can create an engaging learning environment that motivates students. To teach math confidently, it's essential to have a deep understanding of the subject. Consider attending conferences or workshops on math teaching to refresh your knowledge and expertise. This will enable you to share your passion for math with your students and make lessons more enjoyable for everyone involved. It's a great experience when teachers share successful teaching methods with each other. Many states have branches of NCTM (National Council of Teachers of Mathematics) that provide programs from preschool through high school, which is very encouraging. Alternatively, you can read books on math-teaching ideas by experts like John Van de Walle, Marilyn Burns, and Susan O'Connell to get some inspiration. Try starting a book club with your colleagues - these books are full of creative lesson plans and motivation. We need it just as much as the kids do. When Common Core State Standards were introduced, people mainly focused on content standards in the beginning document, but there was also a section highlighting eight desirable qualities for young mathematicians. These traits include: * Solving problems without giving up * Thinking about numbers in different ways * Explaining and understanding others' thinking * Showing work in various formats * Utilizing math tools and justifying their choice * Working carefully and double-checking their work * Applying existing knowledge to solve problems * Identifying rules and patterns to solve problems These can be a great poster idea or starting point for discussions. For more lesson ideas, refer to "Putting the Practices Into Action" by Susan O'Connell and John SanGiovanni. Talking about math with students helps them process new information and build on their thinking. Engage students in conversations where they explain why they solved a problem in a certain way. This approach allows teachers like Delise Andrews to gain insight into what students know and understand, rather than just drilling them for answers. This strategy assumes that students feel comfortable expressing themselves mathematically and also listening respectfully to others' reasoning. To learn more about this approach, check out the "Free Let's Talk Math Poster". Sometimes as educators we get caught up in meeting curriculum demands and forget to give students time to reflect on their learning. This reflection can be done through writing, class discussion, small groups, or even interviews with the teacher. Giving them space to think about what they've learned, what they still don't understand, and what they want to learn more about provides valuable information for both the teacher and the student. To foster a deeper understanding of mathematics, educators can adopt a hands-on approach by providing students with opportunities for exploration and discovery. One strategy is to give students an index card at the end of a lesson and ask them to reflect on what they learned, what they still don't understand, and what they'd like to learn more about. This not only provides valuable feedback but also conveys that the teacher cares about their learning journey. Rather than spoon-feeding answers and strategies, educators should pose open-ended questions and allow students time to grapple with mathematical concepts. This approach mirrors real-life situations where problem-solving often requires trial and error. By providing just enough information and allowing students to work at their own pace, teachers can help them develop a growth mindset about mathematics. Incorporating hands-on activities and manipulatives is crucial for math learning. Students benefit from experiencing mathematical concepts in a physical way, using tools such as counting blocks, cubes, tiles, or other small objects. Calculators, scales, rulers, and measuring instruments can also be used to model real-world applications. To maximize student engagement, educators should allocate time for individual work, partner work, and small-group work. Allowing students to explore and discover concepts on their own terms helps them develop problem-solving skills and a deeper understanding of mathematical relationships. Partner groups allow students to collaborate and develop essential skills like cooperation and listening. Kids get excited about math when solving real-life problems, such as designing a fun house. Games can make learning more enjoyable while promoting strategic thinking and fluency. Establishing routines in the classroom can boost confidence and competence. For instance, starting with a number sense routine and finishing with reflection on the day's learning. To foster positive attitudes towards math, consider rewarding achievements with certificates, stickers, or badges. Make rewards math-oriented, like collecting numbers 1-100 or earning a Mathematician Certificate of Achievement. At least once a week, ask interesting questions like: What's the best way to multiply two numbers? How do you measure a wall if you had to paint it? Make parents aware at the beginning of the year that you'll be asking one such question each week, and assure them there's no one right answer. Explain this process so students understand people in their home use math daily, value it, and approach problems differently. This helps kids see math as relevant. To make math more relatable, assign routine tasks for students to find examples of the concepts you're teaching (e.g., patterns, addition, geometry) at home or in their neighborhood. Have them report back with written notes about what they found. Soon, they'll automatically look out for connections and see how math is relevant. We often underestimate reading as a math strategy, but it's almost unbeatable for preparing students to learn new concepts. Reading aloud can teach us a lot, engage students, and make math more creative. It connects imagination to math, helping children see abstract concepts in their lives. Try incorporating math-connected books into your lessons! Some students learn math by memorizing procedures without understanding the "why" behind them. While this might be sufficient for basic calculations, it's not enough when faced with complex problems or changes to procedures. To help these students develop a deeper understanding, ask follow-up questions like, "Can you prove that 9 x 9 = 81?" and model ways to provide proof, such as using pictures, tally marks, or real-world examples. This fosters conceptual understanding and helps students apply math in various situations. Many kids love art, so consider integrating art and math instruction for an effective teaching strategy. Geometry concepts like shapes, symmetry, and transformations can be applied in fun art projects. Art projects can also teach patterns, measurement, ratios, arrays, and more. Try the Geometric Art Project! Estimation is an important but often neglected skill. It's about making an educated guess based on experience and what you can see. Ask kids for an estimate before they give you an answer or begin calculations to build understanding and number sense. Try Estimation Activities That Take the Guesswork Out of Teaching Math! Make math real by starting projects in school that use math to make things happen, like a class store or classroom lunch. This helps kids see the relevance and usefulness of math skills. A school garden is another great way to apply math concepts while promoting character education goals like cooperation and respect for the earth. Collaborate with other teachers to improve your math instruction skills by meeting with a teacher partner to share and discuss a unit you're starting. Start by discussing goals, then work backward and share strategies that have worked or didn't. Getting kids moving can make math more engaging and motivating. You could try activities like making angles, creating snap/clap sequences, or shape scavenger hunts. These strategies help increase energy and interest. Be open-minded to different approaches when solving math problems, as there are often multiple ways to do things. For example, adding two-digit numbers involves stacking them up, doing column addition, regrouping if needed, and checking the answer by reversing the operation. Is there another way to solve this? Ask questions that spark thinking, like "What's the best way to find out how many books are in a pile?" or "What do you know about multiplication?" This helps students engage with the material, share their ideas, and develop flexible thinking. To teach effectively, educators must shift their focus from mere test preparation to engaging students in meaningful learning experiences. By incorporating creative approaches and strategies into instruction, teachers can foster excitement about mathematics and equip students with essential life skills. Rather than relying solely on rote memorization, math education should aim to develop a deep understanding of mathematical concepts and their applications in real-world contexts. These rewarding moments will keep your students motivated and pushing forward as you explore the top 9 math strategies for engaging lessons. Keep reading to discover all of our top math strategies for keeping your students excited about math. 1. Explicit Instruction Start with a solid foundation by setting up your lesson at the whiteboard, demonstrating upcoming activities, and focusing on new vocabulary and concepts. Don't linger too long; move on to the next fun strategy once introduced. 2. Conceptual Understanding Help your students grasp the "why" behind math concepts using visual aids and manipulatives. Math isn't just two-dimensional; let students explore it from all sides with hands-on activities like molding clay or playing with magnets. Even simple materials like wooden blocks can create great lessons. 3. Using Concepts in Math Vocabulary Use various ways to describe mathematical concepts, such as taking away instead of subtraction. Label and demonstrate math ideas throughout your classroom to help students become comfortable with unfamiliar terms. For example, use blocks to illustrate division, labeling the dividend, divisor, quotient, and remainder. 4. Cooperative Learning Strategies Encourage students to work together, allowing more advanced students to lead and helping them solidify their knowledge. Students can share their understanding of an idea, leading to a better grasp of complex concepts. Looking for ways to engage students in math activities? Try these ideas: Encourage teamwork by asking small groups to create their own word problems based on something they care about. Make homework more enjoyable with games like Prodigy Math Game, which allows students to practice math skills while having fun and staying motivated. For struggling students, provide a "puzzle piece" approach where each student gets a piece of information needed to solve the problem. Take time to verbalize math problems with your students and address common troubles they may encounter. Give your students regular reflection time to process their work and think critically about what they've learned. Looking back at both group and individual activities is essential after each session to foster critical thinking and problem-solving skills. Encourage group members to discuss what went well, what didn't work, and share any new insights or approaches they've discovered. This not only highlights the value of teamwork but also acknowledges that everyone brings unique perspectives to the table. In addition to group discussions, consider journaling math encounters with students to show how often math is used in everyday life. Ask them to document their experiences outside of class and reflect on how math skills can be applied at home. Making math more enjoyable is crucial for student engagement. Consider incorporating games and activities that make learning math facts fun, such as board games, quizzes, or even simple tasks with engaging tools. This approach can help build essential math skills while instilling excitement in students. Teachers should also experiment with new strategies to refresh their math instruction. Start by trying a few approaches that you're familiar with and see what works best for your classroom. Consider signing up for Prodigy's teacher account, which allows you to monitor progress and introduce students to the Prodigy Math Game, an engaging platform that makes learning math facts both fun and effective.