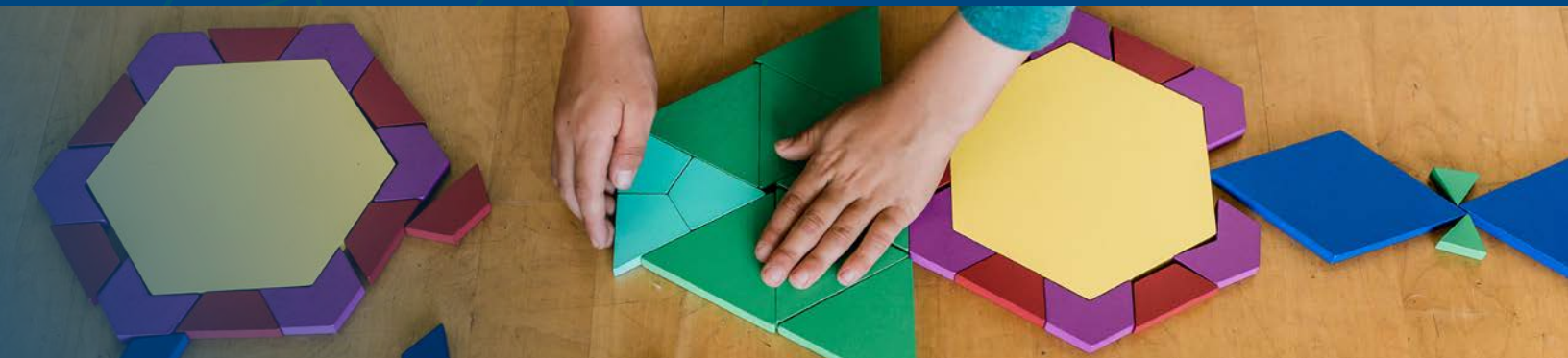


MATH FOR LOVE PROGRAM PROFILE



The Math for Love games and activities spark students' curiosity, encourage them to struggle with new mathematics concepts and skills, and build their mathematical understanding through playful explorations.

The Math for Love program includes more than 20 games and activities that can be used as supplementary activities in the regular classroom and can also be implemented as a grade-based K–5 summer program. Below we share how participation in Math for Love influenced student and teacher math learning and enjoyment.

In what ways does participating in Math for Love influence student and teacher math learning and enjoyment?

The games and similar play-based activities created by Math for Love can be integrated into regular classroom instruction, used after school with caregivers, or bundled into a summer program. Math for Love has also created five additional board games that can be used outside of school to build fluency with numbers and operations. The Math for Love program also takes seriously how to work with teachers and caregivers, providing written tools and workshops to make sure that teachers and caregivers are comfortable with the play-based approach. In this manner, students as well as the teachers and caregivers involved have the opportunity to learn through playful explorations, develop their fluency with numbers and operations, and enjoy doing mathematics with others.

This is a product of the Overdeck Family Foundation funded Math ReEngagement Project that profiled innovative math programs that can be used outside the school day. WestEd conducted high-level studies of each program by administering student and teacher surveys and organizing observations and/or teacher interviews. Learn more about this work and view other profiles at: [WestEd.org/MathReEngage](https://www.wested.org/MathReEngage).

We surveyed more than 120 teachers who used the Math for Love games and activities. Analysis of their feedback has led us to three key ways in which participating in Math for Love influences student and teacher math learning and enjoyment:

- Students increased their understanding of key math concepts and their problem-solving skills.
- Participation in games and activities built student enjoyment in mathematics.
- Students' positive experiences and evidence of learning encouraged teachers to expand their instructional practices.

Each of these findings is detailed below.

Students increased their understanding of key math concepts and their problem-solving skills.

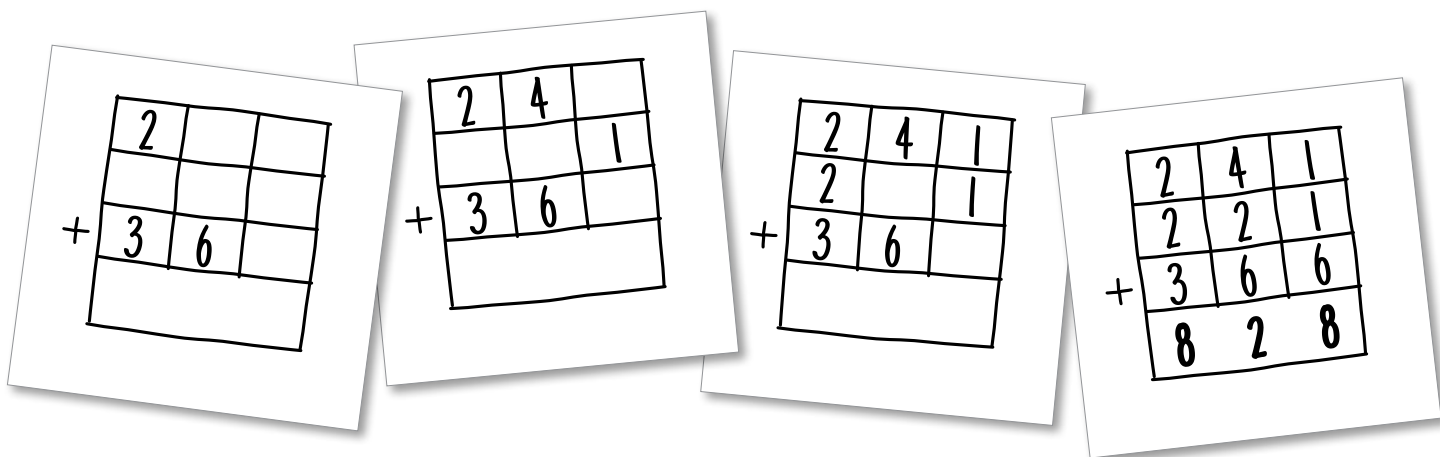
Each Math for Love game and activity has learning content goals that align with grade-level standards. The attention to exploration and play aims to build students' number sense and foster joy with numbers. In Don't Break the Bank, a place value/addition game, each student draws a grid. Every round a die is rolled, and students choose where to put that number into their grid. After nine rounds, the three 3-digit numbers are added together, and the goal is not to "break the bank," or for those numbers to exceed 999. The series of images below shows how this played out for one student.

Example games include dice and easily printed gameboards in which, for example, students roll three dice and choose which numbers to multiply and which to add to get the highest value. All games have instructions that are written for students and encourage students to reason mathematically with grade-level peers.

Almost 90 percent of teachers surveyed agreed or strongly agreed that the Math for Love games and activities had a positive impact on their students' understanding of math. Overall, teachers reported that students learned how numbers related to one another and learned how to represent their thinking. Teachers also shared the following:

The kids were able to show higher level math thinking and make connections involving different math operations.

My class gained a better understanding of solving word problems. At the start, they struggled with identifying what the word problem was asking for but the games and practice helped them learn.



Participation in games and activities built student enjoyment in mathematics.

More than 92 percent of teachers surveyed agreed or strongly agreed that the Math for Love Summer Curriculum had a positive impact on their students' interest in or enjoyment of math. They highlighted students' participation as well as learning:

There was much more participation because very little paper and pencil was being done. They just thought they were playing, yet they were critically thinking. It also built self-confidence.

Teachers appreciated seeing students learning from the games and activities. When teachers were asked about what the most successful moments were when teaching Math for Love this summer, teachers noted seeing their students' interest in and learning from games:

The students loved playing the games. They actively worked on their fact fluency while having fun! And they learned!

Teachers' perceived impact of the program on student understanding and enjoyment suggests that teachers found the program valuable for their students. In their detailed responses, teachers emphasized that students both learned mathematics and had fun while doing so.

Students' positive experiences and evidence of learning encouraged teachers to expand their instructional practices.

Teachers found that mathematical games and explorations facilitate student learning. When asked how their use of Math for Love Summer Curriculum will influence their teaching, 75 percent of teachers said that they will definitely include more games, hands-on activities, or these specific Math for Love activities in their classroom in the coming school year.

Teachers' interest in using the Math for Love Summer Curriculum in their future instruction is not surprising given how most teachers found that student participation in it supported student learning and enjoyment of mathematics. Teachers also found that the materials made it "easy to do centers" and activities "ran themselves." One teacher reported that the activities were easy to implement because students were "helping each other and so I could work with another group at the same time." In this manner, the activities allowed teachers to provide enriching activities to all students while providing one-on-one support as well.

Additionally, teachers noted that the games increased their own engagement in teaching math:

If a new teacher was thinking, "Oh, math is not going to be great to teach," this made me more engaged. I showed students how to do it, and they wanted to play and wanted me to play. Then, it was easier to teach the concepts. Instead of a worksheet, quiz, or test, we played a game.

Games provided teachers with a way to enjoy teaching and support student learning. Teachers also learned how to provide students more opportunities to independently explore mathematics:

I used to feel like if I'm not showing them, then they don't know. But using the Math for Love Summer Curriculum, it was easier to let students explore. It was easier for me to let go. Students were working and didn't seem too frustrated, and they were learning! I also saw friendships being made and lots of smiling.

The Math for Love Summer Curriculum and the structures and activities within it set up students to explore mathematics without direct teacher modeling. Of teachers surveyed, 85 percent would recommend

the program to their colleagues because of the games, student enjoyment, and student learning. One teacher who would recommend the program also noted her own learning:

At first, I was cautious about this program. I did not think this would be engaging. But from the first moment I started Math for Love, my students loved it. I was so happy and an absolute believer. Thank you for the surprise I gained from using your program. I will not only recommend this for summer, but I believe there is value in using this program every day.

Implications and Next Steps

Programs and materials like Math for Love build in time for playing and exploring with mathematics. Time spent exploring math leads to student learning and enjoyment and fosters teachers' love of math as well!

LEARN MORE AT mathforlove.com



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