How Making Games Help Us Understand Math Dates: July 9 and 10th; Time: 1pm - 4pm Roberto Joseph, Hofstra University

Many parents are concerned about their kids falling behind in math during the summer months, and this is now a concern more than ever due to the coronavirus pandemic. Every summer the learning gap is especially detrimental for kids who already struggle with math. Many parents look to math tutoring centers, but that can feel like more school when kids want time off from the hustle and grind of school. In addition to not feeling confident about math, the attitude many kids have is... "when are we ever going to use this math? Why do I need to learn this, I am never going to need it." This is a question we hear often from students, and I am sure parents and math teachers out there can relate. With the pressure to get kids to pass a standardized exam, oftentimes there is no room to play with math. Students need to see how math is applied to all types of interesting scenarios, not just the ones they encounter in word problems.

The goal of this workshop is to take you on a journey into the application of mathematics in making games. The question we will try to answer is "how we can begin to enhance the elementary and secondary school math curriculum by looking at how math is used to create the games we love to play?" Dr. Joseph believes that we can engage and keep kids from feeling they 'can't do math if we approach learning math by having them use it to make games. If you want to make a ball bounce around the screen or trigger an action when two objects collide, you need to know a little bit of arithmetic and coordinate geometry and how to calculate the distance formula. If you want to make a rock-paper-scissors game or other games of chance, you need to learn about random numbers and probability. If you want to make a Mario Brothers style game, then you need to understand the mathematics behind the physics of jumping and gravity. If you are ready to build a technological toolkit that can be used to teach mathematical concepts, then this workshop is for you!



Presenter Bio:

Dr. Joseph is an Associate Professor of Teaching, Learning and Technology in Hofstra's School of Education. He is program director for the School of Education's Master of Arts in Technology for Learning, and the Advanced Certificate in Educational Technology program. Dr. Joseph is a former New York City Public high school mathematics teacher and computer coordinator. His primary research areas lie in culture in educational technologies and systemic change in education, on which he has published articles and books. Dr. Joseph is committed to assisting schools to create meaningful learning environments to answer the future needs of students and society. He can be contacted at <u>Roberto.Joseph@hofstra.edu</u> and his homepage is (<u>link</u>).