Idaho State University | Albion Center for Professional Development

Game On: Enhancing Math Learning with Interactive and Engaging Practice

Course Syllabus

Course Description

The purpose of this professional development course is to empower educators with practical, research-backed strategies for transforming math instruction into an interactive, student-centered experience. Teachers will gain tools to create dynamic lessons that spark curiosity, deepen understanding, and sustain motivation. By exploring gamified learning, digital platforms, collaborative techniques, and real-world connections, participants will leave equipped to make math meaningful and memorable for every student. This course isn't just about teaching math—it's about inspiring a love for learning that lasts.

This course enhances classroom teaching effectiveness and supports improved student outcomes by introducing new knowledge in interactive, student-centered math instruction through gamified learning, digital tools, storytelling, and real-world connections.

Course Objectives

At the end of this course you should be able to:

1. Integrate interactive digital tools, game-based learning, and storytelling techniques into math lessons to enhance student engagement, curiosity, and comprehension.
2. Explore strategies to encourage student creativity and problem-solving, making math more relatable and motivating.
3. Implement varied assessment strategies and provide constructive feedback to foster long-term student engagement and achievement.
4. Design a dynamic classroom environment that promotes sustained learning and growth through interactive and game-based elements.
5. Apply key engagement principles from video games—such as clear objectives, immediate feedback, and interactive challenges—to enhance math instruction.
6. Utilize storytelling as a tool to improve student connection with mathematical concepts and real-world applications.
7. Foster collaboration and personalization in math education to create meaningful and student-centered learning experiences.
8. Transform students' perception of math by making it a more interactive, motivating, and rewarding experience.

Modules

- Module 1: Introduction to Interactive Math Learning, Quiz 1
- Module 2: Math Education Gamification, Quiz 2
- Module 3: How Digital Tools Can Increase Engagement, Quiz 3

- Module 4: Student Creativity and Teacher Resources, Quiz 4
- Module 5: Storytelling and Math, Quiz 5
- Module 6: Real-World Applications, Quiz 6
- Module 7: Assessment and Feedback, Quiz 7
- Module 8: Sustaining Engagement, Quiz 8

Grading

Each quiz must be passed at an 80% or higher (three attempts allowed).

Format

This is a self-paced, asynchronous (no required live meetings) course. Throughout the PD course, you will find it helpful to take notes along the way to assist with the quizzes. Within each module, you will find reflection assessments that are not graded but will help in your journey through the course. There is an interactive forum in the course to help you connect with peers and instructors, share ideas, and collaborate on best practices throughout your learning journey.