

STEM Learning with the Evaluated STEMadium Baseball App

Take me out to the (digital) ballpark with this research-based STEM gaming app

SCOTTS VALLEY, CALIFORNIA, UNITED STATES, March 10, 2022 /EINPresswire.com/ -- dfusion, a social and behavioral science research firm in Scotts Valley, CA announces the release to the public of STEMadium, an educational app that uses the science inherent in the game of baseball to increase STEM knowledge in middle-school students. STEMadium was developed and evaluated with funding from the National Institute of General Medical Sciences (grant #R44GM130278).



The project team behind STEMadium set out to create a stand-alone learning resource that would keep students motivated and supported to learn science, engineering, technology, and math (STEM). Building on the Science of Sport/Baseball curriculum, the creative team designed engaging, dynamic content for the STEMadium mobile app. Players customize their own player avatar, interact with diverse player characters facing their own challenges, explore and customize the stadium, earn coins, solve puzzles, and work towards winning The Big Game to save the team and stadium from evil corporate characters.

To get to that Big Game, STEMadium players complete 8 lessons demonstrating STEM concepts and applying them to a baseball context. For example, in the lesson called "Launch Angle," players explore the effects of different angles and force of trajectory on distance, calculating the perfect angle for a home run. In "Reaction time," they calculate the time it takes a baseball to reach home plate. And in "Nutrition for Peak Performance" players utilize fractions, ratios, and proportions to create a nutritious, calorie-specific smoothie in a churning blender. Together, the 8 lessons cover 4 STEM motivation objectives, 11 math standards, and 4 science standards. The STEMadium app is used in classrooms during the school year and camps in summer.

A randomized controlled trial of STEMadium was conducted by ETR in 2021 with middle school students around the U.S. The app was shown to significantly improve several STEM knowledge and skill scores among players, with additional improvement in calculating algebraic functions. Youth who initially did not think math was especially useful significantly improved their perception of math usefulness and became more interested in STEM careers.

To learn more about the STEMadium study and app, visit <https://www.stemadium.com>.

STEMadium was created by dfusion Inc. in collaboration with Science of Sport and ETR.

dfusion (www.dfusioninc.com) builds upon science-based behavior change models and learning theories to facilitate behavior change for health, prevention, and adherence. A passion for innovation drives dfusion's unique applications of cutting edge and classic technologies to health and prevention.

Science of Sport (www.sciencesport.org) is a 501(c)(3) non-profit dedicated to developing curriculum and programming that promotes Science, Technology, Engineering and Mathematics (STEM).

ETR (www.etr.org) is a non-profit organization committed to improving health outcomes and advancing health equity for youth, families, and communities.

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