STEAM Program

At Meadowbrook Middle School one of our model programs includes Science, Technology, Engineering, Arts, and Math (STEAM). In preparing for 21st century careers, a new breed of learners has emerged. To support these scholars, Meadowbrook offers groundbreaking, technology-based courses at the middle school level. Content and elective courses focus on core knowledge of STEAM subjects, while providing students opportunities to apply and integrate knowledge, for problem-solving while addressing challenges. Career Technical Education credentialed teachers develop instructional practices to address career pathways, typically addressed at the high school or collegiate level. Meadowbrook's program is distinguished from other middle schools in the district as the only program to offer these groundbreaking courses. Unique to our district, we have implemented content area project-based learning to support and accelerate English Language Learners and other underserved populations.

Introductory technology courses are initial opportunities for our 6th grade students to delve into STEAM. The Exploring Technology elective exposes students to three STEAM courses, one per trimester. The introductory courses provide a pathway to advanced career-based courses in engineering, computer graphics, digital photography, digital media production, and publication in 7th and 8th grades.

Computer graphic arts is one of the fastest growing fields. Our students are provided the opportunity to evaluate, design, and create projects with Photoshop and Illustrator. When using cutting edge software and technology, students practice "The Principles of Design". Through project-based learning, students create authentic products, which are showcased throughout the district and community.

Digital Photography is a necessary component of most industries. Recognizing the need in the field of photography, Meadowbrook offers a course which allows students to learn and practice various aspects of digital photography. Beyond the basic elements of capturing images, students work with specialized software associated with digital media print.

Gateway to Technology features a project-based curriculum designed to challenge and engage the natural curiosity and imagination of students. Students are afforded opportunities to envision, design, and test ideas as they study mechanical and computer control systems.

These courses also utilize a flipped classroom model with blended learning in the forefront. Students take ownership of their learning similar to online collegiate courses. The integration of STEAM courses has increased our online resources and curriculum, available to students outside the school day. The flipped classroom design allows students to work at a pace, place, path, and time that is conducive to individual learning styles and needs. This design allows greater time for the instructor to work one-on-one with students. This model provides physical, social, emotional, and intellectual support for all students.

In addition to elective opportunities, Meadowbrook offers a course based on Project Lead the Way (PLTW), which is Science Through Technology. Our course targets underserved students, including English Language Learners. By integrating engineering, hands-on, project-based learning, this course provides an alternative to the traditional learning environment. With a multi-tiered system of support, students work with peers from all three grade levels. Students focus on engineering principles, problem-solving strategies, design and modeling as collaborative teams to learn content. Beyond content, students develop stronger leadership and problem-solving skills which extends into other content areas. This course allows for small group and one-on-one interaction. In addition to the interactive strategies used, note-taking and reading support are purposefully integrated to help these underserved students, which results in resiliency and confidence.

STEAM coursework provides unique experiences considered to be competitive, rigorous, differentiated, rewarding, and focused on the next generation of learners.

Meadowbrook's STEAM program directly supports the following areas of the PUSD LCAP and State Priorities (SP 1-8):

- Supporting high quality teachers in their implementation of standards to ensure college and career readiness (CCR). (State Priority 1 & 2)
    - Provide teachers with embedded technology coaching in classrooms
    - Well defined professional development plans to include continuous year round learning and training
    - Next Generation Science Standards professional development
- Provide multiple pathways of learning and engagement to increase CCR and close achievement gaps. (State Priorities 4,5,6,7,8)
    - Response to intervention and instruction for reading, math and science
    - Proactive student engagement
    - Support the use of educational technology and blended learning (includes project based learning and flipped classroom models)
    - Extended pathways for career technical education students
    - Support implementation of visual and performing arts strategic plan

With high standards and the tools to succeed our students consistently rise to the occasion. Each year Digital Media Production students win *"IVIE" (Innovative Video in Education)* awards from the San Diego County Office of Education; showcase final projects in San Diego's very own Museum of Photographic Arts; and, enter into various competitions at the San Diego County Fair. Typically, Meadowbrook students are awarded *Best in Class* and *Best in Show* awards. Students successfully compete against not only middle and high school students, but also community colleges students. Meadowbrook's goal continues to be providing a well-rounded, quality

program designed to meet diverse student needs and provide opportunities to support future success in college and career.

With project-based curriculum and hands-on learning, the STEAM courses focus on 21st century skills aligned to Common Core National Standards. Teaching and learning has been extended beyond the classroom through the use of industry-standard equipment. Learning occurs through real-life scenarios, which apply in-depth, cognitively demanding, and technologically oriented instructional approaches.

Nicole, a two-year student explained the benefits of their course experience. They expressed hands-on project-based activities increased their engagement in learning and that her confidence and leadership skills improved. She explained that the confidence gained has overlapped into other content area courses. Joaquin, a PLTW student, recognized his growth in problem-solving and communication skills. A common theme among the students was an increase in engagement, interest, leadership, and problem-solving; all skills necessary for future success in preparation for college and career readiness. Socially students explained the benefit of a multi-grade level environment; beyond meeting new friends, new perspectives and insight is gained.

Community of Kindness Program

In 2011, Meadowbrook staff chose to extend the district's *Character Counts* program to support the "whole child." Staff realized when students feel safe and supported, the ability to learn and grow is accelerated. From the mindset and culture of caring for all students, arose the *Community of Kindness*, a needs-based school-wide curriculum. Implementing *Community of Kindness* promotes self-awareness and a mindset to enhance the caring climate of our school community. From the onset the goal has been to empower our students. Meadowbrook chose to take a positive spin to move above and beyond the district's Anti-Bullying policy by focusing on what to do rather than what not to do. We place emphasis on encouraging students to actively promote kindness. This distinguished program encourages using a positive, pro-active philosophy instead of reactive stance toward negative social behaviors, like bullying. Together students and staff developed a motto "Kindness Starts Here" as a reminder that kindness begins within ourselves.

Through our passion we work to make a difference. The program offers monthly lessons and activities created collaboratively by counselors, teachers and students on campus to model kindness, address culturally relevant topics, and provide mechanisms for support and success. At Meadowbrook, we have a select number of students, Mustang Leaders, who are selected to be active leaders in the *Community of Kindness* lead team. In addition to monthly lessons, motivational speakers have shared stories to educate and support the philosophy behind our program. In 2018, based on student feedback regarding the need for strategies to deal with life's pressures and suicide prevention, Meadowbrook partnered with non-profit organization *With Hope: The Amber*

Craig Foundation to offer suicide prevention education training to parents, staff and students.

Meadowbrook's **Community of Kindness** directly supports the following areas of the PUSD LCAP and State Priorities (SP 1-8):

- Strengthen and maintain a safe, healthy, positive and attractive learning environments for all learners (State Priorities 2, 4, 5, 8)
  - School-wide kindness lessons and activities
  - Bullying prevention
  - Suicide prevention education for staff, students and parents
  - Addition of a counselor
  - Alternative to suspension: restorative practices and positive behavior intervention
- Develop a collaborative learning structure and system for adults and students to increase achievement. (State Priorities 2, 4, 5, 8)
  - Teachers, counselors and students create kindness lessons to be taught school-wide
  - Student leaders help facilitate lessons with other students

Gathering data from students and staff drives lesson design for this program. Student surveys are administered in order to gather feedback on the effectiveness of our lessons. Based on our most recent survey of 319 students, we found the following:
- **78%** of students say they have been more kind to other students since we started the Community of Kindness.
- **86%** of students say they are more likely to help other students since we started the Community of Kindness.
- **74%** of students say they are learning a lot from the kindness lessons.
- **82%** of students believe we should continue doing the monthly kindness lessons.

Meadowbrook's safe and caring environment has allowed students a voice. In our site's tradition of gratitude, students feel safe enough to share special thoughts. One of Meadowbrook's students Sara shared "Today I am grateful for all of the amazing people in my life who are always by my side every step of the way ..." Myles shared "I am grateful for my school Meadowbrook. I am grateful for Meadowbrook because it is a part of a very good school system. In schools like this it produces good learning which will help people later on in life, this is good for everyone..." Finally, Gage explained "I am grateful for laughter because without laughter the world would be a boring and dull place. Laughter is the best kind of medicine because even if you're are sad, sick, or in a bad place in life laughter can make those pains go away."

Meadowbrook Middle School has excelled at supporting all students. Our school-wide measurements on the school performance dashboard, are green and blue in all areas over the past two years. This includes a move in suspension rate from

yellow to green. Our chronic absenteeism is also rated in the green zone. Both programs have had a positive impact on all students learning and social-emotional well-being which impacts the positive school culture. Students know they belong to the Meadowbrook school family in which they feel safe, supported, and can excel.