

# Maranatha Gears Up STEAM Program with New Makerspace

*Open to the Public Thursday, February 15 at Open House Event 6:30-8pm*

By Kathy Wall



**The Makery<sup>®</sup> is the first dedicated Elementary (K-5) Science classroom in MCS history. MCS will be opening the makerspace to the public during an Open House and Info Night event, 6:30-8pm, Thursday February 15.**

Maranatha Christian Schools will be welcoming the community to come to its campus and learn more about its overall educational program with a STEAM emphasis. In addition to an Elementary Open House, the event will include a Junior High and High School Info Night.

At the event, MCS will be opening its doors for the public to see its new Elementary science classroom, The Makery<sup>®</sup>, which opened at the start of the new school year in September of 2017. The makerspace is one of the many projects that resulted from a strategic plan to re-evaluate the school's mission in 2014. Since the launch of the plan, MCS has been committed to enhancing the sciences across all divisions.

The plan included a vision that emphasized building a college preparatory program, which resulted in MCS adding more emphasis to its STEAM curriculum and programs. MCS parents, many of whom are in STEAM related fields, actively participated in the strategic planning process. They enthusiastically supported the goal of

growing the STEAM program schoolwide. STEM is a burgeoning field – STEM job growth in the past 10 years is 3 times that of any other field, and by this year, it is estimated that 2.4 million STEM jobs will go unfilled.

MCS' STEAM program starts in Preschool and builds into Elementary in order to give students a foundation that will spark student interest and build their confidence in the sciences throughout K-12 education – so the idea to add a makerspace was a 'home run' for the science-focused school. "Children are naturally curious, creative and like to figure out how things work. When given a fun classroom full of stuff to build with, glue together, draw and measure – student learning and enthusiasm takes off," said MCS Elementary Principal, Mary Cook.

The new classroom idea also fits well with MCS' long term educational strategy, which states the intention to prepare students for college, including the ability to be accepted to universities with strong science, technology, engineering, arts and math programs.

The plan to build The Makery® was two years in the making. Administrators identified the growing trend towards Elementary STEAM programs, and carefully researched a smart solution that would integrate smoothly with the opening of MCS' new High School building in 2017. The new High School structure, complete with 2 STEAM labs, allowed extra space to be made available for the Elementary STEAM program, and paved the way for the vision to become reality.

The Administrators paid attention to every detail, even creating a unique name, 'The Makery®,' and designing a distinctive logo mark, complete with colorful gears to represent the sharing, designing and exploring aspects of STEAM.

The custom design of the room included the collaborative efforts of Elementary Principal Mary Cook, members of the teaching staff, a consultant from Groupwerk Inc. and the D&D Learning Company as the vendor. In addition to room design and function, Groupwerk Inc. played a critical role in helping to seamlessly integrate new equipment with existing items to enhance the classroom while keeping the budget in line. With the team in place, MCS was well on its way to having a dedicated room where young students could explore, design and share STEAM education in a fun and creative environment. Even MCS parents actively participated in The Makery®, funding a final 3-week push to purchase tech enhancements for the classroom before its grand opening.

Some key areas the Administrators focused on regarding the room design were: *flexibility and agility* to create a learning environment that could be reshaped quickly to meet a wide variety of learning conditions while promoting student movement; *digital space* to connect the students to the classroom cloud and add another dimension to the physical space; *the addition of color* to make the space more interesting and engaging and *storage space* to allow better organization of materials and to help prevent visual clutter and while promoting creativity.

Special features of the room allow smooth integration of technology and learning including a teacher's rolling task chair with sit/stand presentation station, a LEGO® wall for creative play, a 'Think Tank' wallboard for generating fresh ideas, interlocking floor mats for individual work or group play, and a variety of rolling tables, utility carts and whiteboards (that double as room dividers). These elements play a key role in flexible and fast collaboration while also allowing students to quickly break back into independent learning.

Since The Makery® opened its doors, the classroom has been a huge success. Elementary students were extremely excited about the room, and are featured in a touching 'Thank you' video dedicated to the parents. The video captured the Elementary students as they bubbled over with enthusiasm over The Makery®, talking

about all of the amazing things they were going to learn about STEAM in the new room. In a recent poll conducted by the teachers, students overwhelmingly said their favorite part of the school day was when they were in The Makery®.

MCS teachers are excited about the possibilities of Elementary students seeing the joy in science in this new venue, “No longer are the students doing experiments that are done step by step,” said Elementary teacher, Mrs. Werner, “but the students are asked to solve real and relevant problems. The students love it!”

Skilled in knowing how to create the ‘A-Ha!’ moment, MCS teachers will be using The Makery® to guide their classes through open ended challenges using problem solving techniques. Recently Mrs. Werner assigned a class to a project that was designed to challenge the student’s math and logic skills. Students were asked to create a container that would hold 173 popped popcorn kernels. Groups of students worked together to solve the problem, building containers with paper and tape to accomplish the task. Initially after all of the designs were tested, the entire class failed the challenge – but the failure became an instigator for pursuing a workable model. The kids begged for more time, and consequently created a successful container.

“Challenges spark more critical thinking and logic,” summed up Mrs. Werner, “I love the excitement and engagement that is happening. I’m sure this is why The Makery® is called the coolest room on campus!”

The Elementary Robotics Team, the Hydrobots, dove into their First LEGO League project of the year in the Makery®, and also used it as a venue to teach a science lesson to their fellow 5<sup>th</sup> grade students. The team researched and created water filters using turkey basters, cotton balls, coffee filters, activated charcoal and other supplies. They also taught fellow classmates how to assemble the kits, and distributed them worldwide through Operation Christmas Child. The Makery® was essential in giving the team a dedicated space to build the kits while having everything they needed to teach at their fingertips.

MCS will continue to expand its overall STEAM offering by launching its first High School engineering program next year. The classes will roll out in sequence, featuring multiple courses over time. The first class will be Engineering Design, a full year course. Students will work individually and in teams to solve problems using 3D modeling software.

Educators are confident that the early exposure to science methodology and group dynamics in The Makery® will dovetail nicely into upper division classes in the future. MCS also has plans for new science curricula, classes and instructors to be added across divisions as the school continues to grow and expand its STEAM program in alignment with the long term Strategic Plan – ultimately to encourage students to become innovators and to have a lifelong love of learning.

“Beyond mastering content, individuals need to be innovators, learn from failures and keep moving on. You need to cut across disciplines and be able to ask the questions that help build connections. People need to be lifelong learners and be driven by an intellectual curiosity to try to figure things out.” – *Ted Wells, vice president and chief strategy officer at STEMconnector®, in Washington, D.C.*

\*NOTE: ‘A’ for Arts in MCS’ curricula changes the acronym ‘STEM’ to ‘STEAM.’ MCS differentiates its program by including the Arts to complement Science, Technology, Engineering and Math for a whole child learning experience.