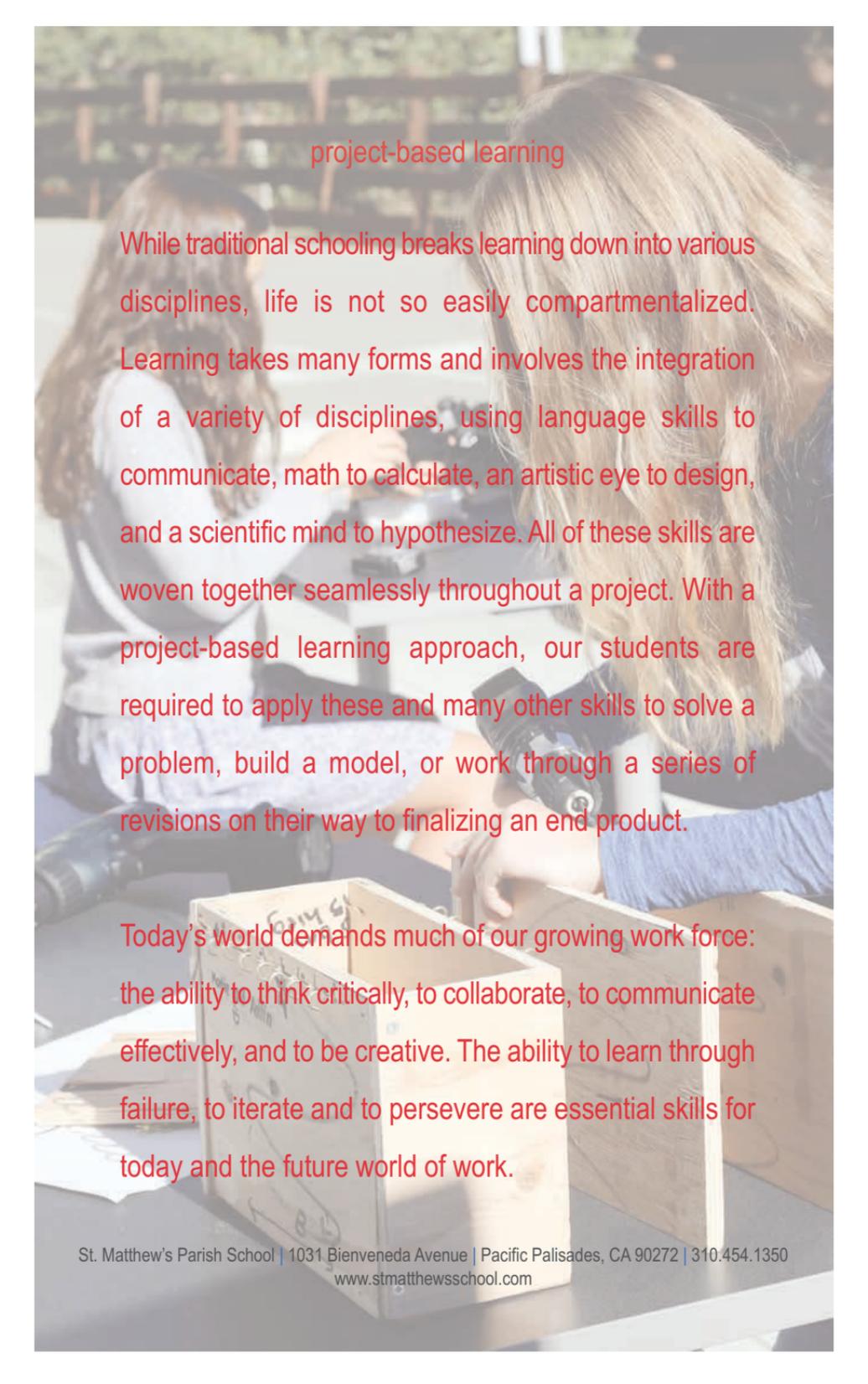# St. Matthew's spotlights

Technology and Innovation

Don't ask a student what they want to be when they grow up, ask them what problem they want to solve...then give them the environment to build the knowledge, skills, and abilities they need to solve that problem.

- Jaime Casap, Chief Education Evangelist at Google

project-based learning

While traditional schooling breaks learning down into various disciplines, life is not so easily compartmentalized. Learning takes many forms and involves the integration of a variety of disciplines, using language skills to communicate, math to calculate, an artistic eye to design, and a scientific mind to hypothesize. All of these skills are woven together seamlessly throughout a project. With a project-based learning approach, our students are required to apply these and many other skills to solve a problem, build a model, or work through a series of revisions on their way to finalizing an end product.

Today's world demands much of our growing work force: the ability to think critically, to collaborate, to communicate effectively, and to be creative. The ability to learn through failure, to iterate and to persevere are essential skills for today and the future world of work.

what is the maker movement?

The concept of ideating, designing, and building products and projects in DIY fashion has arisen in recent years in the form of the Maker Movement. Maker Fairs across the world take place annually, gathering people from various industries (artists, designers, programmers, engineers, hobbyists) who share this passion for making. Out of this storm of innovation has come a number of new technologies such as advanced microcontrollers, 3D pens, and other digital fabrication tools lending themselves well to the classroom environment.

design thinking

The Design Thinking model views empathy as the center and motivation for design. Understanding the "client" in the design process allows for greater clarity and understanding when trying to solve a problem. Design Thinking incorporates the iterative process, embracing failure as a valuable step along the way to success.

student technology leaders

Eighth Grade students from the Student Technology Leaders elective provide technical support to teachers and peer students. They host a support desk Genius Bar and learn to run the school's 3D printers, laser cutters and other maker tools.

Give the pupils something to do, not something to learn; and the doing is of such a nature as to demand thinking; learning naturally results.

– John Dewey

pirl

The genesis for PIRL (the Project & Idea Realization Lab) came from a convergence of thoughts on learning in the areas of Project-Based Learning and Design Thinking, along with influences of the Maker Movement. PIRL is an open, flexible space that incorporates these approaches and a variety of tools to enhance the learning experience across all disciplines and grade levels.

Students in the 8th grade DEEP (Diving Education Enrichment Program) project use PIRL to design and build their underwater submarines, while 6th grade history uses the space for constructing replicas of ancient civilizations. Students in the technology elective class work with digital fabrication tools while creating a "passion project".

tools and materials

- 3D Printing
- Microcontrollers, Sensors, and Motors
- Recording Studios
- Green-Screen
- Robotics
- Textiles and Sewing Machines
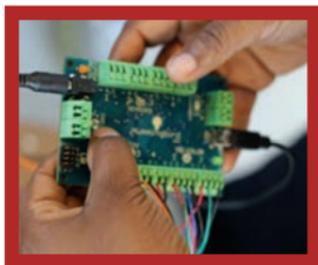
pirl terrace

This outdoor space, with moveable tables and pull-down electrical connections, allow students to bring their work outside. Portable writing surfaces allow for idea generation and discussion. The PIRL Terrace classroom provides access to all the power tools and the laser cutter.

tools and materials

- Power Tools (drill press, miter saw, sander)
- Laser Cutting
- Hand Tools

launch pad

Launch Pad is St. Matthew's newest innovative space, designed for the smaller makers in Kindergarten-Grade 4. Low tech meets high tech and imaginative play exists alongside S.T.E.A.M. exploration. Launch Pad utilizes age-appropriate tools and materials to encourage creativity, engineering, and design thinking. Our students explore circuitry, basic coding, and robotics. Cardboard, blocks, pipe cleaners, and other materials provide the building blocks for their imaginations.

tools and materials

- iPads
- 3D Pens
- Little Bits
- Robotics (Bee Bots, Dash and Dot)
- OSMO
- Lego Wall
- Marble Run
- Needle Felting
- Engineering and building materials