INTEGRATED LEARNING AND INFORMATION SCIENCE

Research shows that technology and research skills, along with literacy and maker projects, resonate more deeply with students when they are integrated into the classroom curriculum. From JK–12th grade, Parker students thrive with multi-disciplinary, collaborative learning. Above, 1st grade students test their Art Bots.
Parker students learn to think, create, adapt and invent. We structure our Integrated Learning and Information Sciences (ILIS) Department curriculum to enable students to follow interests and pursue passions while making connections between concepts, the classroom and the community. Through project-based learning, the foundation of our program, students engage in research and develop agility in accessing, discerning and applying information. We incorporate technology and media thoughtfully to ignite social awareness and launch their imaginations.

A focus on Design Thinking and Maker Empowerment encourages students to recognize designs and systems in the world around them and tinker, remake and create. Our staff consists of librarians/media specialists and educational technology experts who work to equip students to not only use print and digital research materials, but also create new knowledge. The ILIS staff works in the Kovler Family Library, the ILIS Collaboration Lab space, Story Studio, classrooms and campus.

Our in-house design studio, the TIDES (Technology, Innovation, Design and Entrepreneurship for Society) Garage, provides students access to 3D printers, laser cutters, sewing machines and a variety of technological tools for learning, challenge and expression.

Working collaboratively across grade levels, building mastery year after year, students develop the skills and mindset to impact their school and the world as thinkers, doers and makers.
Making Literature Come Alive, Bringing Technology to Life

ILIS unites library and technology education and faculty, teachers, students and grade levels for collaborative learning. Students inquire, discover, invent and tinker together in the Kovler Family Library, the TIDES Garage and other creative spaces and classrooms throughout the school. Below are just a few examples of how Parker brings learning to life. For more information, visit fwparker.org/library.

A Studying Peace | Junior Kindergarten
JK classes explored the topic of peace using the book What Does Peace Feel Like?, a collection of poems about how peace feels, smells and looks. Students then shared the meaning of peace to them by drawing pictures and using an app called Chatterpix to add sound recordings to the pictures. Students took pictures of their peace drawings with iPads and, using the app, added mouths to their pictures and recorded their voices to share the place that peace has in their lives, creating a talking picture.

B Study Among the Stars | Senior Kindergarten
SK classes used the Kovler Family Library’s resources to enhance their study of the solar system with a wide range of tools. Using fiction and nonfiction books, students talked about the difference between nonfiction and fiction and shared questions about the solar system.

Next, students rotated among different stations in the library to discover more information about the topic. One group used the library’s PebbleGo online database to learn more about the sun; another group explored the online resource to learn more about meteors and asteroids. Students listened to the articles and collected interesting facts.
Another group worked with Google Cardboard and Google Expedition, a virtual reality application, to immerse themselves in the solar system.

The final group used the Merge Cube, an augmented reality device which acts as a surface for the video and visuals to pop out. SKers used iPads to view the Merge Cube to see the solar system pop out into view. Students were able to rotate the cube to see different perspectives of the solar system from different angles and tap on a planet or the sun to see it up close and learn more facts and information.

For the final part of the project, students built and drew solar systems in small groups and sketched the path that a rocketship would follow to see all the planets.

**Literacy, Laser Cutters and Makers | Fourth Grade**

Fourth grade students read books with animals as the main characters and used library resources to sketch out their plans—first drawing complete illustrations of their animals, including details from the books, then breaking the drawings back into separate shapes. Students then used Google Drawing to digitally render the shapes with the program’s shape tools, thinking about size and scale. They then uploaded their original creations to the Glowforge laser cutter to cut their pieces on wood before using soft maker materials, including felt, fabric, paint and googly eyes, to add the final details. Finally, students displayed their work for the entire school community to share.

**Pinball Wizards | Fifth Grade**

Fifth grade teachers worked with the ILIS team to connect their annual outdoor education experience with themes in the book *The Knight in Rusty Armor* and homemade pinball machines—a perfect combination! After a close reading of the text, students worked in groups to map out the book’s themes and make connections with challenges they faced during their overnight trip to Lorado Taft.

Next, each group used a PinBox 3000 kit to plan, design and build a working cardboard pinball machine. Students then infused their creations with themes and made them clearly visible. As a final step, the 5th grade teachers orchestrated an opportunity for students to test their peers’ creations and field feedback from other users to learn what worked for their machines and what they might consider adding or changing to improve their games in the future.
**Make a Geodesic Dome | JK–Fifth Grade**
In a Maker Wednesday gathering after school, a group of curious students, teachers and parents gathered with members of the ILIS Department in the TIDES Garage to combine and decorate cardboard pieces and assemble half of a geodesic dome.

**Literature, Light and Laser Cutting | Fifth Grade**
Fifth graders created their own light-catching shadow boxes that highlighted the connections they made from reading the book *The Midwife's Apprentice* by Karen Cushman as part of their Medieval England study. With simple cardboard and tissue paper materials and the skills they learned using the TIDES Garage laser cutter, they produced beautiful shadow boxes.

**Passion Projects | Middle School**
Inspired by Google's “20% Time” creative idea generation concept, Passion Projects (sometimes called Genius Hours) fired Parker imaginations. Teachers posed a question to Middle school students: “If you had eight weeks to work on ANYTHING, what would you choose?” Seizing the opportunity, students used design thinking strategies and maker tools to create self-invented projects in areas of passionate interest. During the project cycle, students learned a lot about their topics and, perhaps most importantly, about themselves. Projects ranged from an exploration into the Japanese art form of Hikaru Doro Dango (a shiny mud ball) to novel writing and original song composition.

**NaNoWriMo | All Grades**
An annual event, developed under the guidance of writer and library staff member Eric Rampson, National Novel Writing Month (NaNoWriMo) takes place in the Kovler Family Library in November with the traditional program and again in April for Camp NaNoWriMo. The program helps students recognize and nurture their inner writers, set a word count goal for the month and work toward completing an entire novel. Students who complete their word count goals are honored with publication of their work and both print and digital copies joining the library's circulating collection. To date, Parker has published more than 35 student novels by 20 student authors.
Students enrolled in our Upper School Social Entrepreneurship class spend the semester engaged in authentic educational experiences, as well as case studies and curated readings, to learn more about how individuals and organizations use business skills and strategies to innovatively and sustainably solve social, environmental and economic problems. Outside speakers frequently visited to offer their expertise and “real-world” examples of entrepreneurship in action. Most recently, Parker parent Matt Maloney shared his personal experience in founding GrubHub and reinforced much of what students had learned that year.
This is the Education of the Future.

More information
fwparker.org/ILIS