In the Toy Story project, second graders explored the essential question, “What is the magic of toys?” To investigate this idea deeply, our students visited a local preschool and became buddies with these young children. They surveyed their new friends to learn about the types of toys they like, their favorite colors, favorite characters and so much more. After finding trends in the data collected, the students used this information to design the perfect toy for their preschool buddy. After many drafts, critiques, revisions and prototypes the students took their designs to MakerPlace (a DIY workshop in San Diego) in order to professionally create the toys. Students also studied story elements by reading a variety of stories that have a toy as the main character. They incorporated the elements they learned into a story about the toy they created for the preschooler. And then they learned the writing process in order to publish their story in a board book for their buddies. Finally, our second graders returned to the preschool to give both the toy and the book to the preschoolers.

Teacher Reflections
When designing this project, it was important for us to have a product that was minds on, hands on, and hearts on. Since every second grader loves toys we thought that would be the perfect fit. This project felt like a great blend of allowing the students to have choice and be creative while learning many essential math, reading, and writing skills. Throughout the project, we wondered if our students would be upset to give away a toy and story they had worked so hard on but we were pleasantly surprised at their eagerness to give a gift to another child. We felt like the authentic audience in the project was also another driving force in its success.

Student Reflections
“The magic of toys is they can come to life. They encourage kids. They’re adventurous. They help kids imagine.” —Joshua

“The magic of toys is that they have feelings too. They can talk!” —Zuri

To learn more visit: http://jsteffan9.wix.com/digitalportfolio#!toy-story/c5ic
Practicing English by Playtesting Games

Jonathan deHaan,
University of Shizuoka, Japan

In this project, 85 university students in Japan, all of whom liked board and card games, were supported for three 90-minute classes through the process of playtesting a card game for an independent designer on the Board Game Designer’s Forum (www.bgdf.com). Groups read the game rules and the designer’s questions about his game, then prepared the components and played several times. After a short lecture and exercises on giving polite suggestions in English (e.g., “you might not want to…” and “it would be really great if you could…”), students collaboratively wrote feedback and a short message. Their feedback was sent to the designer, who wrote an extensive response to the class expressing his gratefulness for the amount, variety and quality of their feedback. Each student reflected on the tasks and brainstormed how they could use their English skills to communicate and contribute in their personal areas of interest.

Teacher Reflection
Each stage of the project seemed meaningful: the students read carefully in order to play; they had a great time exploring a new game together; and they thought and wrote critically. I think the success of playtesting projects depends on matching students with the right game (length, complexity, language). Students could be asked to use online analysis tools like http://www.lexxtutor.ca/vp/eng/ or http://www.lexicool.com/text_analyzer.as to find new and important language. Video game playtesting using sites such as http://www.betawatcher.com/, http://massively.joystiq.com/category/betawatch, http://gamingbetas.com/ or http://www.deathbybeta.com/ might also work well. I want to do more to help students use their language skills to communicate and collaborate in other (self-chosen) niche Internet communities.

Student Reflection
Some said that the project was “really fun,” “a little difficult, but got easier,” and “it improved my critical thinking skills.” Other said it was “rare and meaningful;” “the years of studying English bear fruit. English enables us to have connection with many people in the world.”

To learn more visit: http://jonathandehaan.net/
At the beginning of the year the kindergarteners learned about their own community and how individuals depend on one another, and then their attention turned to the communities around them. Through an interdisciplinary, collaborative project that lasted five months, the students tackled these essential questions: How are plants and animals helpers in their communities? How can we help protect our local ponds? To build content knowledge, students studied the wildlife at several locations in the local watershed, built and observed their own pond models in science exploratory, and became an expert on one local pond animal with the help of students from Matt Leader’s 11th grade biology class. In the end, each student created three distinct products: 1) A “Wild Pond Protectors” television episode using a combination of stop motion animation and live action video to teach viewers about how pond animals use special features for survival. 2) A conservation poster featuring their animal that will be displayed in the San Dieguito River Park. 3) A page for our collaborative children’s book, Protect Our Ponds!

Teacher Reflections
We exhibited our project work with a Pond Discovery Center in the spring and intended to move on to a new project, but the students were more dedicated to their work than ever after exhibition. They really wanted to spread their message of conservation to an even bigger audience, and it was their idea to create a television show and posters, so we followed the interests of the students and continued the project for two more months. In addition to teacher collaboration, having community partners, an authentic audience, and meaningful work in the classroom can really inspire students, even kindergarteners, to make a real difference!

Student Reflections
“Don’t kill bees because they pollinate the flowers” —Bryan Ramirez
“I felt good about exhibition because we got to celebrate ponds.” —Desmond McDonald

To learn more visit: http://sglennlee.weebly.com
In Their Skin
Karly Robinson, 8th Grade Humanities
High Tech Middle Media Arts

In Harper Lee’s *To Kill a Mockingbird*, Atticus Finch famously encourages his daughter Scout to try to see things from other people’s points of view, to “climb into (their) skin and walk around in it.” All too often we focus on our immediate impressions when considering other’s perspectives, forgetting that there is a world and a history that tails our every move. During this project, students examined three major themes in 1860 - 1960 American history: racism, modernization, and youth culture. The class read *To Kill a Mockingbird* and students chose a book with similar themes to read in a group. Using these readings as guide, students wrote a work of fiction based on a character’s journey in *To Kill a Mockingbird*. In order to be able to fully inhabit their characters, students needed to do significant research about their character’s world.

**Teacher Reflection**
This project is now in its third iteration and each year I find new entry points to make this classic novel relevant to a modern audience. This project is about so much more than reading, writing and research. It’s about understanding the motivations that drive individuals and society. Through the research and the fictional writing, students are forced to consider these forces as they construct character stories that fit with the time periods and development within the book. Parents who hated this part of the required reading when they were in school are often surprised to see how much their kids (some of them reluctant readers) thrive in this project.

**Student Reflection**
I learned a lot about the past from *To Kill a Mockingbird*. I thought it was a well portrayed story of a terribly true time period. Every time I read a well written story it helps my writing improve. *To Kill a Mockingbird* gave me a knowledge of that time that I really needed to make a good character. The research process helped me find reliable secondary and primary sources.

—Rose Wilson

To learn more visit: https://sites.google.com/a/hightechhigh.org/krobinson/home
In this nine-week project, students worked in groups of four to design an enclosure for a soon-to-be-renovated section of the San Diego Zoo called Africa Rocks. Using the actual shapes and dimensions for the planned enclosures, all group members offered input on what the enclosure should contain (structures, vegetation, viewing areas, etc). Each group member had an individual job within the project: Site Plan Designer, Project Manager/Blogger, Education Expert, or Sketch-Up Technician. Throughout the process, students utilized critique from adults in the field (architects, zoologists, landscape designers) to work through drafts/designs of their enclosure. Eventually, each group presented their designs to a panel of volunteers and employees from the San Diego Zoo.

Teacher Reflections
Having the students design an enclosure in the Zoo’s Africa Rocks using the actual architectural site plans was a stroke of luck that led to a natural “buy in” for the project. The students became passionate experts about the animals in their enclosures—often having heated debates, based on their research, about design decisions such as water depth, sleeping locations, and number of play structures. When they moved into their individual job for the project, students were able to demonstrate their own strengths, either perfecting an area in which they had previous experience, or pushing themselves to learn a new skill. Having a final audience of actual zoo experts was a powerful experience for 7th graders, which they took seriously. The zoo panelists were able to give authentic feedback and ask probing questions about each group’s design choices.

Student Reflections
I could put all of my artist talents in the illustration part of the project, and it showed me how architects draw up buildings and how they work. It was cool to get critique from real architects. —Simran

I liked how we got to use real dimensions and got to see the layout of the zoo. It was really a challenge creating an enclosed space in 3-D, but I really enjoyed it. Now I can design my dream home... —Guy

To learn more visit: http://millerwilliams.weebly.co
Creative Collective: An Integrated Project of the Arts

Charlie Linnik, Art; Mike Vasquez, Multimedia
High Tech Middle

Our 6th and 7th grade students collaborated to create an art piece that combined the digital and visual arts. Each group created one unified piece that showed how design choices, color schemes and imagery would enhance and support the overall emotion and tone of the piece. Students learned how color psychology helps artists understand the power of color, and students applied color theory to help them develop color schemes and palettes. Students designed custom fonts by hand which conveyed the tone of their piece, then used Adobe Illustrator to create a vector graphic version of their typography, necessary for use with a laser cutter.

Teacher Reflections
Students take separate visual and digital arts classes over the course of their middle school experience. This project offered students an opportunity to see how it is possible to blend different types of media in the creation of an art product. The integration of our classes helped students to see how the arts are composed of multiple styles, mediums and techniques; no longer was hand made art and technology separate in the art process. Creative Collective helped students to understand the process involved in solving creative problems/challenges and how art can be a beautiful by-product of this process. Students were more open to the art process and engaged in finding solutions as a result of being given these creative challenges.

Student Reflection
It was fun to combine these two types of art classes, and to work with the 7th graders. I used to think art was either on the computer or handmade. Now I see how they can be used together to make one stronger art piece. At first the creative challenges were hard, but after a while we worked together and came up with good ideas and solutions. The project ended up being so much bigger by mixing the classes and the grades.

—Giselle, 6th grade

To learn more visit: http://dp.hightechhigh.org/~mvasquez/ or http://charlielinnik.weebly.com/
Making New Members Feel Welcome: A Design Thinking Challenge
Corey Topf, William Cotter, and Joseph Bonnici
Roosevelt Innovation Academy, Peru

To kick off the school year, a mix of grade 10, 11, and 12 students were given a design challenge in the form of a question: “How can I help new people feel welcome to Colegio Roosevelt and make their transition to our secondary school better?” Students were divided into three mixed-age groups. Each group was assigned a different target audience that included new teachers, new students to the school, and new students entering middle school. Using methods of design thinking, along with the Lean Startup “Learn, Build, Measure” cycle, students had three days to design a solution. They presented their proposed solutions to an audience of parents, counselors, board members and fellow students, who judged the projects for desirability, feasibility, and viability.

Teacher Reflection
Rather than begin the school year with the traditional syllabus and “rules of the class,” we wanted students to feel what the Roosevelt Innovation Academy was all about by experiencing its core principles for one week. In this design process project, students learned how to define project roles, set deadlines and understand the needs of an authentic audience, while developing empathy and a real world solution.

Student Reflections
I learned the importance of having everyone on the “same page” during the project and how communication is much more effective in smaller groups. Also, I learned the importance of having a good prototype so that you can get good feedback on your idea. —10th grade student

I learned that we don’t always learn by listening; it’s achieved more effectively by doing. This is because when taking action, we go more in depth and this drives motivation. —11th grade student

We were able to overcome the distrust that held us apart by clarifying what kept us together: our passion towards learning. We learned that “group work” was most effective when we found out each other’s strengths and organized ourselves around them. —12th grade student

For a video summary of the process visit: https://www.youtube.com/watch?v=FlyBrZXBOA0; To learn more about the Roosevelt Innovation Academy visit: http://www.rooseveltinnovationacademy.com/
The goal of this project was to create a 100% sustainable aquaponics garden that the school community could enjoy and use. Students learned how urbanized gardens positively affect the community, how the aquaponics system itself works and is regulated, and how other sustainable garden practices, such as vermi-composting and use of heirloom seeds promote sustainability. In humanities, students wrote OpEd pieces and created original political cartoons on topics relating to controversial food topics (such as fat shaming, false advertising, misleading nutrition, etc.). In chemistry students learned the science behind what fat does to our body as well as the chemistry of aquaponics.

Teacher Reflections
This project was truly student-led and student-driven throughout. They made daily work plans for themselves (and followed through), encouraged each other, problem solved together, and made connections within their communities to make this project a success. They also articulated their vision in their writing and political cartoons, revising their work five and six times, for no grade, to make sure they were proud of their finished products. At exhibition, all students were fully engaged, passionate, and eager to share what they had learned and what they had worked so hard to build. At every step, the students showed resilience and tenacity, completely driven by their passion to make the world a better place. In the process, we felt much less like teachers and more like mentors, working to support the vision and excitement of our students.

Student Reflections
I really liked how we took a serious look about what comprises the American food diet especially the industrial side of it. It has made me conscious about what I eat. I enjoyed seeing this project come together and seeing everyone working as a well-oiled machine. —Will

I enjoyed building the aquaponics system and learning that we can use environmental resources to make a sustainable garden —Rebecca

I learned a lot about wood building, chemistry, writing OpEd pieces, aquaponics, gardening, and most of all friendship. —Connor

To learn more visit: http://cgree4.wix.com/colleengreen#!projects/cm8a