In Spanish class, freshmen explored the theme of “Cruzando fronteras” (crossing borders) through bilingual spoken word poetry and artwork. They worked with spoken word professionals, took part in workshops and performed their work locally. They created anthologies of their work, available at the HTH bookstore at http://www.hightechhigh.org/books. Proceeds go to support refugee students.

Estoy Perdido
by Alonzo Stamps

Estoy perdido
Y nunca me van a encontrar
I am not physically tied,
But mentally bound,
Y tiemblo cuando pienso en estar
Solo.
Because of my fear of being stoned,
Con piedras,
Breaking my weak withered bones,
Releasing the monstruo in me,
Pero siento que el monstruo es mí.
To be or not be,
That monstruo that I call me,
Now I see,
Or do I?

If it has merged with me,
I must split myself,
This way I can gain wealth,
No dinero,
But self,

Cause I believe in self wealth,
Creciendo
Knowing,
Because without self
Tú estás perdido,
And never to be found,
And mentally bound,
Como yo.

Until I find me,
And then I will fly farther
than your eye can see,
Cause when I find me,
Yo sere, Unstoppable,
Cause I will rule,
Me,
Nadie puede o me va a juzgar de mí,
But if they do,
It won’t matter cause,
I will have myself together,
Y en fin,
WHAT ELSE MATTERS?

To learn more about this project and others visit www.hightechhigh.org and Jenny White’s digital portfolio at http://staff.hightechhigh.org/~jwhite
Children’s Astronomy Book Project
Aaron Commerson, Math/Physics, High Tech High
Juli Ruff, Humanities, High Tech High

Students created an illustrated book to teach young children about our universe. In pairs, students chose and researched topics in astronomy. They wrote essays about their topics, learning about outlining, thesis sentences, topic sentences, supporting evidence, and MLA citation in their Humanities class. They then composed stories about their topics for 8-10 year olds, creating storyboards with scripts and hand drawn art, and editing mock books through several rounds of critique. Their stories and artwork, published through blurb.com, are available at the HTH bookstore: http://www.hightechhigh.org/books.

Teacher Reflection
The most rewarding aspect was the numerous drafts the students completed for their essay. I was glad they understood that correctness was the goal, and however many drafts it took to achieve that goal was what they had to do. Some students did more than eight drafts. Reading that many essays was a challenge, but by taking this seriously we sent the message that doing something was not good enough. It had to be done right.

—Aaron Commerson

Student Reflection
One important thing we got out of this project was realizing how to communicate and collaborate well. The idea of the story was hard to come up with, as well as editing it to ensure the content was correct and understandable. Even making pictures was a challenge, because we had a tough time deciding what to do and how to do it. In the end, we were able to learn some valuable skills that we will need to use in our future at HTH, including communication, time management and, if we create another product for children, the ability to simplify concepts.

—Ethan Chan and Michael Thompson, 9th grade

To learn more about this project and others visit www.hightechhigh.org and Aaron Commerson’s and Juli Ruff’s digital portfolios at http://staff.hightechhigh.org/~acommerson & http://staff.hightechhigh.org/~jruff
Sangaku or San Gaku (算額) are Japanese geometrical puzzles on wooden tablets, created during the Edo period (1603–1867) in Japan by members of all social classes. The finished puzzles were hung in Buddhist temples and Shinto shrines as offerings. Around nine hundred still exist in Japan today. Our students applied their knowledge of Euclidean geometry and mathematics, along with new geometric tools, to create their own artistic geometry puzzles. These now hang in High Tech High as offerings to peers and visitors.

**Teacher Reflection**

I wanted students to work with their existing mathematical skills to create and solve their own questions. I also wanted them to get stuck in situations where they had to learn new geometric tools to advance their puzzle. Finally, I wanted to integrate mathematics with art. Both require mastery of a collection of tools to communicate original creative thought. We experienced an intense month of drafts and revisions, with repeated sessions of peer and teacher critique. The finished puzzles are beautiful examples of student learning, and the pride of accomplishment throughout the team is palpable.

—Daisy Sharrock

**Student Reflection**

Coming up with a Euclidean geometry problem was one of the most challenging things I have ever done. Yet it was fun and taught me a great deal. I learned how to better solve problems, and I had to use all of my creativity to come up with a finished, challenging puzzle. I changed my puzzle idea twice, and when I finally came up with a good one, I had to take time to solve it myself. I feel this has been the best project I have ever completed in math. It was engaging and challenging, and I really learned about the geometry that was in my puzzle.

—Emma Jackson, 10th grade

To learn more about this project and others visit www.hightechhigh.org and Daisy Sharrock’s and Jeff Robin’s digital portfolios at http://staff.hightechhigh.org/~dsharrock & http://staff.hightechhigh.org/~jrobin
Students experienced the beauty of math by creating murals using specific geometric shapes. They prepared a proposal, including a blueprint, a to-scale colored miniature, a business letter describing their work, and an estimated budget. Student groups presented their work to a selection committee at Qualcomm, Inc. Qualcomm then chose the winning mural designs, which the students painted at full scale as a class.

**Teacher Reflection**
Geometry and art are deeply interconnected disciplines. Repeating simple geometric patterns over and over again can create astonishingly beautiful results, as in the famed mosaics of Moorish Spain. And geometry is a crucial ingredient in more conventional artwork, used to create a sense of perspective or of balance. This project helped students to appreciate both the beauty of mathematics (by incorporating geometric shapes into their designs) and its practical value (by estimating, for example, the amount of paint needed to implement their designs).

Qualcomm provided financial support and gave students a serious professional challenge: presenting their work and ideas in front of a large, unfamiliar audience. Watching student after student speak with clarity and confidence was exhilarating—one of my proudest moments as a teacher.

**Student Reflection**
This project broadened my horizons on geometry and art. It opened my eyes to how two different subjects come together every day. The main thing I learned was leadership. I learned how to communicate with my group members, and how to delegate work evenly. We were able to showcase our creativity and learn about geometry, art, and business through our relationship with Qualcomm.

—Rayna Kim, 10th grade

To learn more about this project and others visit [www.hightechhigh.org](http://www.hightechhigh.org) and Lauren Niehaus’s digital portfolio at [http://staff.hthcv.hightechhigh.org/~lniehaus](http://staff.hthcv.hightechhigh.org/~lniehaus)
 Physics A to Z
Andrew Gloag, Physics/Math, High Tech High

The decision to make a Physics A to Z guide came from merging physics concepts with the style of the London A-Z travel guide. Each student completed research on a physics concept of their choice, with the intention that their best ideas would become book pages. We used David Macaulay's The Way Things Work to see how illustrations can help explain science, as well as The Cartoon Guide to Physics and the illustrated version of A Brief History of Time to gain inspiration for what those visuals might look like. Students created all of the art, and we spent class time refining the visual elements on the pages. The final book is available at the HTH bookstore: http://www.hightechhigh.org/books.

Teacher Reflection
This project lasted eight weeks, with each student writing several drafts and creating illustrations along the way. It was crucial that the students read and critiqued each other’s work. We regularly posted the work online in a Moodle discussion forum for whole-class critiques, which meant that every student was familiar with all the science. Shuffling the topics students had chosen into 26 different lettered sections was a challenge—for example, we combined several pages into an “E is for Electricity” section. Many of the illustrations were drawn by hand and then reproduced in Photoshop. Some students used Adobe illustrator or Google SketchUp, while others used watercolor. The finished book gave the students a sense of accomplishment, and the professional finish gave me a sense of pride in what we achieved.

Student Reflection
In this project we were balancing science and writing, teamwork and private study, learning and teaching, collaboration and cooperation. By the end, it was clear that all of our topics were interconnected. This opened our eyes to the true meaning of science: a powerful collaborative force empowering individuals of different talents and strengths to make a difference in society while learning about the world.

—Rachel Roberts, 10th grade

To learn more about this project and others visit www.hightechhigh.org and Andrew Gloag’s digital portfolio at http://staff.hightechhigh.org/~ajgloag
Philosopher Shrines Salon Night
Peter Jana, English, High Tech High
Jeff Robin, Art, High Tech High

How is social order maintained? Students explored this question in a study of early modern political philosophy where they decoded complex texts and shared ideas in Socratic seminars. Contemporary texts, simulations, skits, and creative writing supplemented core readings from Hobbes, Locke, Rousseau, and Adam Smith. In a salon night exhibition, students displayed philosopher shrines and engaged in philosophical discussions. The shrines housed objects representing key ideas from the philosophers, in front of a backdrop designed and painted in art class. Students explained the objects, performed skits illuminating the concepts, and participated in Socratic seminars where parents also took part.

Teacher Reflection
This was my third philosophical salon, but the first to include philosopher shrines. The shrines—along with the simulations, skits, and seminars—were an essential means of engaging students with the primary sources. The highlight of salon night was when parents got a chance to “roll up their sleeves” and get in the trenches with their kids, and kids demonstrated they could engage in analytical adult discourse.
—Peter Jana

Student Reflection
We held seminars after each text. We would spend days reading and taking notes, asking questions and trying to understand the text. Then all of our hard work was put to use in seminars. Your perspective was tested and what was said either strengthened your belief or sometimes changed your mind completely. The seminars helped connect the readings to each other, and helped tremendously with constructing the shrines. The shrine objects made us think and connect to the readings on a deeper level.
—Pauline Vela, 10th grade

To learn more about this project and others visit www.hightechhigh.org and Peter Jana’s and Jeff Robin’s digital portfolios at http://staff.hightechhigh.org/~pjana & http://staff.hightechhigh.org/~jrobin
Urban Homesteading Project
Colleen Gavan, Environmental Science, HTHI
Jennifer Mullin, Engineering, HTHI

High Tech High International (HTHI) seniors designed sustainable solutions for urbanites, including aquaponics systems, hydroponics gardens, solar ovens, a grey water system, a portable solar shower, and structures for housing backyard chickens. They exhibited these products and showed community members how to start similar projects in their own homes.

Teacher Reflections
Students applied their ideas about sustainable living and appropriate technologies toward viable solutions. They presented their designs in our courtyard workspace, which became an urban homesteading showcase.

—Jennifer Mullin

Just when I thought I wouldn’t be able to squeeze one last drop of motivation from the seniors’ reserves, they exceeded my expectations with an exhibition that was engaging for the public and themselves. They knew their stuff!

—Colleen Gavan

Student Reflections
The best part was the exhibition, when we had our clay oven cooking delicious homemade pizzas. It was fun to see people’s faces when we told them how we made the oven, but even more important was that we had made something useful that people could create in their own backyards.

—Allison Ferrini, 12th grade

It was amazing to see how Tilapia, with their unique digestive tracts, can filter water and supply nutrition for plants growing in a system. At the exhibition I presented not only to “ordinary” people but also to an aquaponics professional. If a high school student like me can create change, then societies can emulate the same idea to decrease pollutants.

—Bryan Kelley, 12th grade

To learn more about this project and others, visit www.hightechhigh.org and Colleen Gavan’s digital portfolio at http://blogs.hightechhigh.org/cgavan
Illuminated Journals
Pat Holder, Humanities, High Tech High

Inspired by Ken Kesey’s *Jail Journal*, which links writing with original art, students selected a journal entry of their own and created a design to bring it to life. They turned their humanities class into an art studio and constructed a permanent display for the work on the classroom wall.

Teacher Reflection
We open class with journaling almost every day. This exercise broadens the bandwidth between students’ thoughts and their more formal writing, and has created a context for our class discussions. However, journals lose their power when students think their writing will just end up on the shelf. I urged my students to look at their journals as a grab bag that could provide the foundation for public expression through art. They responded by presenting insightful political perspectives, efforts at understanding their sexuality, unease with newfound class-consciousness, attempts at making sense of death, and other issues central to the humanities. In the end, the real benefit for me was that I was reminded of the need to hear what really matters to my students and incorporate their voices into my teaching.

Student Reflection
We turned our writing into an art piece that involved us putting ourselves in vulnerable positions. For my piece to be honest, I had to put myself in a state of mind where I couldn’t care what people thought of me. When you hide yourself from people because you’re scared to tell them about the real you, you’re hiding a person that can change the opinion of other people. I wrote my piece to let everyone know that I ain’t ashamed of being who I am. I didn’t do this project for the grade. I did it so people can get to know the real me. If there was a grade for letting yourself be vulnerable I should get an A grade. Don’t grade me on my work for how powerful it is, because I just want to be rewarded with people accepting me.

—11th grader

To learn more about this project and others visit [www.hightechhigh.org](http://www.hightechhigh.org) and Pat Holder’s digital portfolio at [http://staff.hightechhigh.org/~pholder](http://staff.hightechhigh.org/~pholder)
In a hidden garden revived from the 1920s, seniors from High Tech High Media Arts installed art and media among the flowers and fruits they had cultivated that fall. The projects spanned five disciplines and culminated in an exhibition celebrating the interconnectedness of nature.

**Shine (Art & Humanities)**
Inspired by the Japanese Shoji tradition, students wrote Haiku poems and silk screened them onto hand-built lamps that illuminated the landscape on exhibition night. Visit [http://staff.hthma.hightechhigh.org/~jkrause](http://staff.hthma.hightechhigh.org/~jkrause) & [http://staff.hthma.hightechhigh.org/~rnichols](http://staff.hthma.hightechhigh.org/~rnichols)

**The Experience of Environment (Environmental Science & Multimedia)**
Science and digital art came together in sound, video and interactive installations that examined the social, economic and physical complexities of our environment. Visit [http://staff.hthma.hightechhigh.org/~mnoble](http://staff.hthma.hightechhigh.org/~mnoble)

**Fractal Projections (Art, Mathematics & Multimedia)**
Through mathematical analysis and computer graphic design, students produced fractal art slides that were cast onto the interior garden walls. Visit [http://staff.hthma.hightechhigh.org/~dstahnke](http://staff.hthma.hightechhigh.org/~dstahnke)

**The Hidden Garden (Environmental Science)**
Creating and nurturing a community garden, students explored environmental science themes like biodiversity, composting/waste reduction, nutrient cycling, and sustainability. Visit [http://staff.hthma.hightechhigh.org/~joreilly](http://staff.hthma.hightechhigh.org/~joreilly)

**Teacher Reflection**
Students were asked to produce digital media projects that were both scientifically rigorous and artistically interesting. After several tiers of brainstorming, pre-production and individual project advising, students and teachers alike were beaming over their productions.

—Margaret Noble