

BRACH
INKBANK
ARTS
JERROBIN

*Do not buy this book. Put it down and
DO THE PROJECT FIRST. Now!*

*If I could have chosen my teacher when I
was at school, it would be Jeff. We would
argue lots as I would think my work was
better than it was, but Jeff would show me
how to make it better and in turn become
a better person.*

*There are lots of people who can talk
about education; Jeff can do it. And he can
show you. And he can make it simple
enough for you to understand. Whatever
the opposite of bullshit is, that is Jeff Robin.*

*Now put the book down and make
something.*

Gwyn ap Harri
CEO of XP Schools Doncaster, UK

Jeff Robin is one of the most remarkable
teachers in the world. I have spent 45
years collecting beautiful student work and,
with my colleagues at Harvard University
and EL Education, created an online
museum of student work as well as
exhibits on the walls of Harvard. No
teacher has more work represented in that
collection and those exhibits than Jeff
Robin. Every art teacher, and every teacher
of any subject with creativity in their heart,
will find inspiration and ideas in the pages
of this book.

Ron Berger
Senior Advisor, EL Education

While making Most Likely to Succeed we
shot hours of footage of Jeff—90% of
which was Jeff complaining about how lazy
he and his co-workers had become. He's
the Sergeant of Arms of project based
learning and, as annoying as he is, anyone
interested in education ought to listen to
him.

Greg Whiteley
Director/Producer
Most Likely to Succeed

**TEACH
LIKE AN
ARTIST
JEFF ROBIN
EDITED BY JEAN KLUVER**



"If the art teacher is not
in trouble, they are not
doing their job."



I was looking for an art teacher for a new school we were starting. I knew I wanted a working artist and someone who wasn't afraid to experiment. Twenty years later, I realize how incredibly lucky I was. Jeff didn't just teach art, he created the aesthetic culture of High Tech High. Jeff covered every surface of the school with student work, making it seem more like a gallery or an exploratorium than a school. That made it a fun and beautiful place to go to school and to work, but more importantly, it sent the constant message that the most important thing to all of us was what the students created.

What I love about this book is that it is like the diary of a lifelong learner. Every single project that Jeff did, every single student who suggested a different path or rebelled against his ideas, every academic who visited and disagreed with him, taught him something new that he turned around and used the next time.

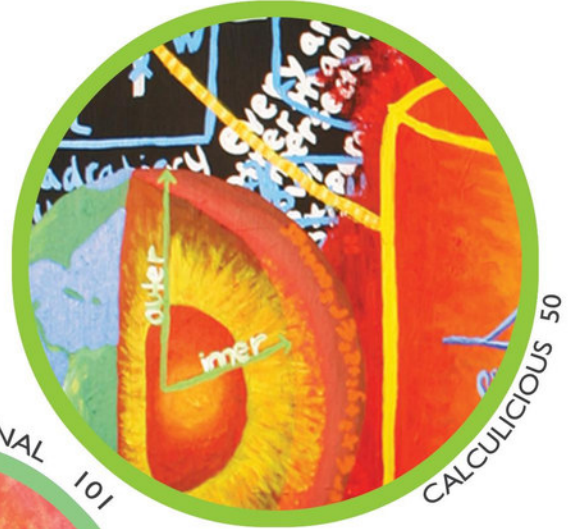
If you read this book and feel simultaneously incredibly inspired and browbeaten, welcome to my world! When Jeff came into my office, I knew I was in trouble... it usually meant we were not living up to our principles in some way. But my favorite thing to do at school was to go into Jeff's room -- where the scene usually involved 25 teenagers working intently, images projected on walls, drafts strewn about, a playlist blasting, and little or no "teaching" going on... to the naked eye. How did he get them working like that, with each other, happy, on projects that were professional quality art, and more importantly, that they loved? Read on to find out...

Larry Rosenstock,
*Founder and CEO Emeritus,
High Tech High, San Diego*

ANALOG FLASH FOR WINDOWS 36



FRIDA KAHLO JOURNAL 101



CALCULICIOUS 50

BLOOD BANK 56



PHYSNEWTON 70



FAILURES 134

THE SHIFT 98



MASTER TO MASTERS 122

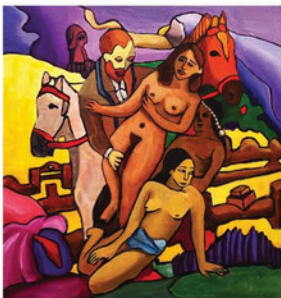
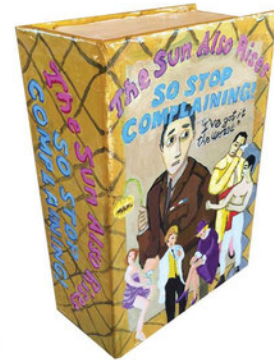
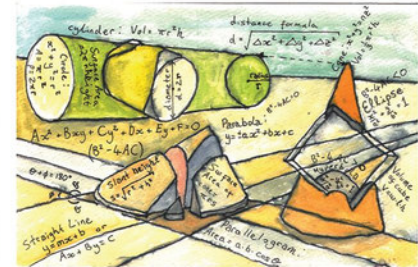
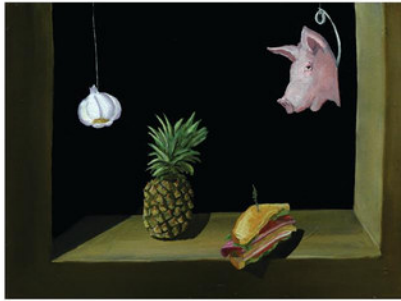


CATALOG OF PROJECTS

DO THE PROJECT YOURSELF	4
TEACH LIKE AN ARTISTS	5
LISTENING WITH YOUR EYES	6
THE AMERICAN HALF-CENTURY OF ART	8
ALTAR PROJECT	9
TWENTIETH-CENTURY BOX	10
55-WORD SHORT STORY	12
BOY'S BATHROOM	13
BUSTS	14
CONSULTANCY	15
JOIN THE CANON	16
OMOIDE BENTO	24
HISTORY OF SCULPTURE FLATTENED ON THE WALL	25
THE SHIFT IN ART HISTORY WALL	26
MODERN ARCHITECTURE WALL	27
BEHOLD, HIGH TECH HIGH	28
A BITE OF THE NORTON SIMON	30
GET BENT	32
ANALOG FLASH FOR WINDOWS	36
A FIGHT WITH GRAVITY	44
CALCULICIOUS	50
BACON PAINTINGS	54
BLOOD BANK	56
ECONOMICS ILLUSTRATED	58
PROJECTS BETWEEN MEGAPIXELS	60
ART SHOWS	62
WHERE BOOK TREES GROW	64
TRIPS	66
COMBINED TWO IMAGES MINI PROJECT	68
PHYSNEWTON	70
STAIRCASE TO NOWHERE	74
ART THE SOCIAL VORTEX	78
THE GARDEN OF EARTHLY DELIGHT	82
DEATH OF ALLEGORY	84
7.7 MILE BOX	86
GATES OF HELL	88
INTERSESSION MURAL	90
PLEIN AIR	94
OBJECT PAINTING	96
THE SHIFT	98
RED + YELLOW	100
FRIDA KAHLO JOURNAL	101
PICASSO'S INFLUENCE ON HIGH TECH HIGH ARTIST	102
THE STRAIN IN ART	104
SERIES OF FOUR	106
REALISM	108
MOTIVE AND MOTIF	110
THE NEW PATH OF THE BUDDHA	112
THE FAILURES OF WAR	114
WELCOME TO THE MONKEY HOUSE GRAPHIC NOVEL PROJECT	118
IMMIGRANT REFUGEE	120
MASTER TO MASTERS	122
DERMTECH	126
SANGAKU	132
X-Y-X PLOTTING FOR REAL	133
FAILURES	134
RATIONALIZATIONS	135
CLASS BOOKS	136

DO THE PROJECT YOURSELF

Just some of my exemplars over 17 years

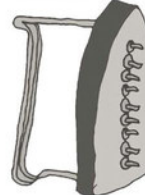


Assumption at 0, Man Ray

I have loved art since I was a kid. I was born in Philadelphia and we went to the Philadelphia Museum of Art alot, and I always returned to the Museum of Rocky when I used to visit relatives.



Sculpture of "Rocky"



"Iron with Nails" Man Ray 1921

The art works I remember the most from the museum were: a painting of bathers by Renoir and an iron with spikes on it, by Man Ray. I remember the first time I saw it, I thought that's art?



TEACH LIKE AN ARTIST

As an artist, I am trying to frame understanding in my compositions. I try to fit everything I need in the picture and nothing more or less. It is a lot like being a poet; every word in a poem is thoughtfully chosen and carefully edited to express just what the poet meant. In the same way an artist and writer tune and rework, teachers need to do the same. This book shows my planning, my exemplars, and what the students understood by the evidence of what they made.

My experience as an artist taught me to continue to look at my work and improve. That is why I put so much stock in preparation and doing the project before my students.

Artists are influenced by the world around them.
Artists transform ideas into their creations.
Artists live, work and play art. All of their experiences could and should be seen in their artwork.
Artists communicate through visuals, sound, symbols (writing), and tactile experiences.
Artists don't stop working.
A good artist evolves and is constantly communicating.

Now replace the word Artist with Teacher. Don't we all want to be taught this way?

Doing the project I was asking my students to do first is the key to all good teaching. It also lets you know:

What will the students learn by doing this?
Is it essential to the learning goals you want to achieve?
Will this project work?
What are the bottlenecks?
What materials do you need?
How long will it take?
Most importantly, is this a fun project to do?

After thinking about it for a long time, this book is evidence that doing the project will let the teacher know everything they need to know to help the students learn. I have spoken hundreds of times to thousands of people and told them about my practice, helped them come up with cool projects and the only thing that would ever help is doing the project first. It really is the beginning and the end of teacher training.

Ken Rignall, my grad school professor, would come to the print shop at California College of Arts and Crafts every morning at 6:00 am. I would roll in at 7:00 am, not bad for a grad student, but I had taught for four years, so this was normal for a teacher.

What was not typical for a professor was Ken would be there doing the demonstrations that he would be doing with his students later in the day. One day early on, I asked him, "You have been teaching for 25 years; you don't have this down by now?" He said, "I need to know if this will help these students, is it the right time, sequence, will it be valuable right now to them, is this demonstration still possible with the materials on hand. And most importantly, Jeff, will they have fun with it? No one ever learns something for life if it isn't fun or at least positive." This conversation was worth the MFA.

When I went to High Tech High, I made the projects I was asking my students to do. The few times I did not, it was a mess. Doing the project yourself sets the floor and gives you a tangible exemplar to show your students.

I get that it was hard for people to hear from me, over and over again, "Do the project yourself, first." I was the art teacher, too blunt, irreverent for a school setting (I said fuck a lot), and I was a workaholic. I have lots of talking points and animations, Voice and Choice, What PBL is not, Notice and Connect, and the list goes on. But doing the project first is that single act of humility that shows you are doing what the students are doing and it is valuable.

This is a book of my exemplars and my students' work. I try to honestly explain where the projects came from and how I managed my students. A lot of people helped me, foremost my wife, Maribel. I was obsessed with every project, talked about every student and their work, and made it seem like my teaching was the most essential thing in the world and she was incredibly supportive.

One of my funniest and saddest obsessive stories was when I had just spoken to a group of education reporters at the New York Times, and they ate it up. I showed them the kind of work I was doing with my students, and they wanted to know how they could get their kids into a school like mine. Afterwards, I felt like a rock star. I went to a Chelsea bar I had heard about. I sat down and ordered an Old Fashioned. As the bartender was burning the orange garnish, the man sitting next to me asked, "What are you drinking?" I told him what it was and how this place is famous for them, he ordered one too and asked me if this is my usual spot. I told him, "No, I am from San Diego." He asked, "What are you doing in New York?" I spoke uninterrupted about my day, my projects, my teaching, and how I killed it at the New York Times. I realized I was talking too much and apologized for my braggery explanation. I asked him, "What do you do?" He put out his hand and said, "Alex Rodriguez, New York Yankees." "Oh man" I said, "I am so sorry" he laughs and said it was nice to hear about someone who loves to teach and cares about kids so much and that it was weird that I did not know who he was. This story shows my exuberance for and narcissism about teaching. I loved it, and my students had fun and made great art. I hope you enjoy this catalog of work.



Badge given by
Gwyn ap Harri
at XP schools in
Doncaster, England, to
teachers that do the
project first. I am
honored that I could help.

Listening with your eyes

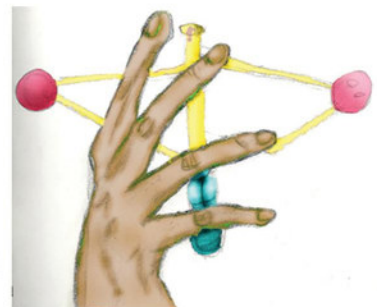
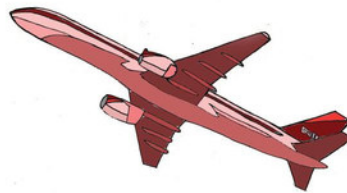
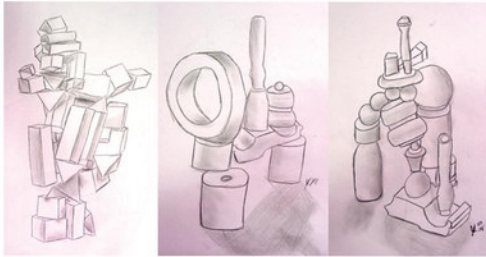
was a project that the students asked me to do. They said, "Why don't you teach us the traditional way to draw? Why are we using so much technology?" and "Don't you know how?" So, I agreed; I told them it would be challenging, frustrating, and humiliating, and they all agreed. I taught them how I was taught contour drawing, 2d, and 3d shapes, one-point perspective, shading, line, form, and patterns.

I wanted this project to be open-ended, I knew they would begin to hate to draw and then hate me if we spent the whole semester criticizing each other's work. If you don't like the way you draw, learn to love the way you draw, it's you, and that is great. If you want the perfect little copy of the real thing, take a picture.

Every time an individual student would excel in one particular lesson, I had them run with it. Students would deep-dive into one style. Within 3-4 weeks, every student was creating a series of work in their style. It made for a beautiful school, exhibition and life lesson.



LISTENING WITH YOUR EYES ART



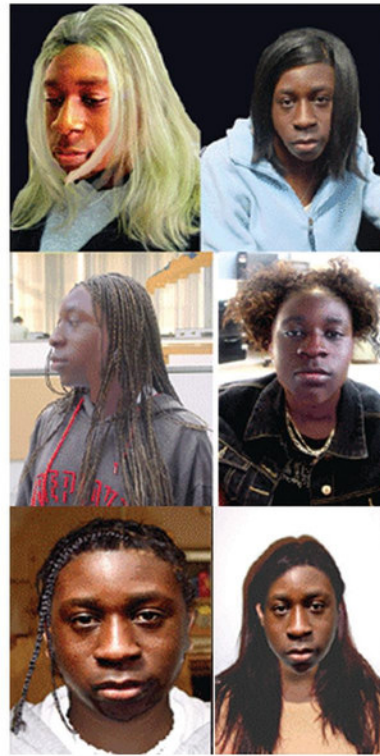
ART+HUMANITIES THE AMERICAN HALF CENTURY OF ART

I was teaching second-semester 11th-grade humanities. The students had studied American history till about 1939 the semester before. As a group, we discussed what was different about America than the rest of the world during and after World War II. One of the areas was the arts. There was no rebuilding of the broken cities here, only growth in American culture and economy, a perfect storm, ideas and money to make new art.

My students researched American artists who made exciting advances in artistic concepts, and they investigated the art they liked. They then chose an artist to emulate their style, not so much the subjects.

The results were fantastic; we got new Frankenthalers, Nevelsons, Warhols, and more. Along with each of their paintings, they wrote a description of the artist's work.

I showed the students Abstract Expressionism, Post Painterly Abstractionism, Minimalism, Pop Art, and Postmodernism. We discussed their motivations and motifs or lack thereof, and the students pitched their ideas. As a group, we critiqued and revised the art and the writing together. As High Tech High was only a year old, many teachers, parents, and some students had difficulty with the art. Many of the pieces my students made ruffled feathers. I think that was a function of most schools' empty walls and that San Diego is and was a very conservative town. I just told them, "you haven't seen anything yet."



Created By: Julian Gunder
Inspired By: Andy Warhol

Andy Warhol is considered the founder and significant figure of the pop art movement. Warhol was also a filmmaker who made a series of experimental films dealing with topics like boredom, time, and repetition. I mimicked Warhol's style of repetition. Often Warhol would take any given object and show it many times on one canvas making slight changes to every drop.

To do this project, I took pictures of different women and edited them in Photoshop. I've gotten many responses and interpretations about my art, such as "Hmmm, that's Interesting" and "How Unique." However, the most common response I get is, "Damn, that's an ugly woman!" Overall, I enjoyed doing this project, and I look forward to making more Pop art.



Created By: Lance Daschle
Inspired By: Jeff Koons



Jeff Koons is a Post-Modernist among one of the most controversial artists in the last 20 years. His work often resembles the transformation of an everyday object into what he calls art. I decided to imitate Jeff Koon's artwork because I like his message about our culture, religion, and sexuality.

I made this piece of art to be of borderline taste like Koons. Not to offend anyone but to challenge the viewer's reality. That is what Jeff Koons would have done. I feel. However, I have to defend myself in regards to this artwork. I am a Christian, so it is not the case for someone to say that this is sacrilegious. However, my Spanish teacher was troubled in Spain, where she is from, figures of Christ are sold in front of every church. I think she was surprised that it is up in a school and that we would not take it down. She was born and raised under Franco. He and she are not us.



Created By: Ker Thao
Inspired By: David Hockney

David Hockney has initially been a painter but started experimenting with photography in the 1980s. His Motivation for creating his photo collages was to introduce two elements that a single photograph did not possess, which were layered time and space.

My collage depicts a whole sequence of elements that take place over a period of time in one big picture that shows it all at once. I used blurred images to show movement, whereas the background is transparent and static. My collage is also not a perfect rectangle like single photographs; it has no clear boundaries, representing the boundless nature of actual vision.





My Exemplar - Above my desk

ALTAR PROJECT ART+CULTURE

I lived in Mexico for two years and grew to love antiquity and colonial art, especially the altars. As a Jew, this is our forbidden fruit. I looked up one day and realized I had built an altar to what I love; the students could do that as well.

Students created a plan for their Altars using Method, Subject, and Reasons (MSR). MSR: Method - materials or techniques of creation / Subject - What is the subject of the artwork? / Reason - Why did the artist create this work? What was the context? They used MSR to investigate cultural and historic altars and then used those MSRs to create their altars. This autonomy aspect is where the students could use their cultural, religious, spiritual, or sense of humor to express themselves. There were no right or wrong answers, and everyone was successful.



My teaching

partner had shown me a box publication, McSweeney's 19, and said that this was the historical and literary work she wanted the students to make. It looked a lot like Duchamps' Boîte en Valise work, so that was fine by me. I went out and bought 100 wood cigar boxes and set off to make an exemplar.

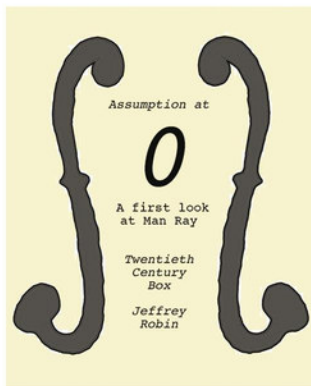


McSweeney's Issue 19

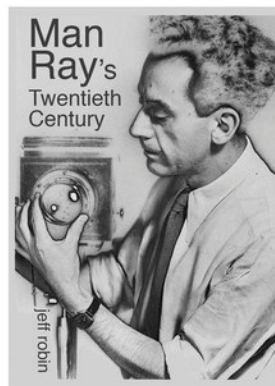


Marcel Duchamp: Boîte-en-valise

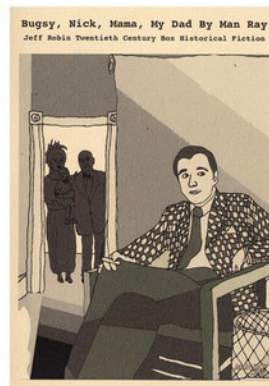
I wanted this project to be open-ended, appealing to any of the students' historical interests. I came up with: any noun from the Twentieth Century in a box. My prototype was to be obscure so as not to take an idea away from a student. I thought first about the Lusitania. Then I realized I know quite a bit about that boat; its sinking and the war. I thought of an artist that I never got into, and Man Ray came to mind. I never got into him or his work. He seemed over-referenced by all art students taking a photography class. I wrote and illustrated how I chose Man Ray and what little I knew of him and his work in the first booklet, "An Assumption at 0." Then I did proper research work with references using images for the second booklet, "Man Ray's Twentieth Century." Then I found a primary document and made an "Explodation," which adds images to the document to explain the content with visuals. Finally, there would be a historical fiction booklet using the subject and hand watercolor pictures for illustration. There also needed to be an artifact that could be placed in the box. I made one from found objects as Man Ray would have, look up: "Readymades".



Assumption at 0



Research Booklet



Historical Fiction



Artifact



Man Ray Twentieth Century Box

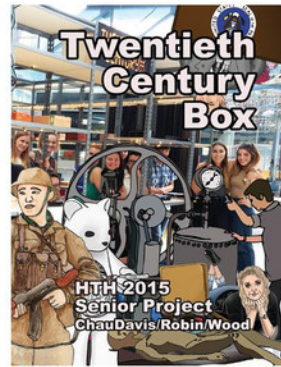


Explodation

TWENTIETH CENTURY BOX ART+ENGLISH+HISTORY



Students at Exhibition in a Box



The book has 267 pages from 43 students.



MURAKAMI



NASA

These are student boxes with:
Assumption at 0 booklet
Historical Research booklet
Explodation
Historical Fiction booklets
Artifact



PATTON

ART+ENGLISH 55 WORD STORIES AND COLLAGES

The genre of 55-word short story writing was our inspiration for this first assignment of the semester. I made a twist with the collage; the story had to be about the image the students made in art class. We did not hold them strictly to it, but their collages were their muses.

I made a collage and then coated it with a thick layer of resin. The students loved the shiny art as only teenagers would. Each student made 2 or 3 images and then chose the one they wanted to dip in resin. Then we said, "Now write a 55-word short story about this image. It was fun and exciting—lots of laughing and some crying.



55 WORD STORIES AND COLLAGES

THE STUDENTS OF
KELLY WILLIAMS
AND
JEFF ROBIN

HIGH TECH HIGH



Bird in the Sky by Aimee Nunez

Her school was off in the distance; she sighed not wanting to take another step. Her little brother looked somewhat smaller with his backpack on. "Look at that bird!" he said in awe. As she gazed up, terror struck her face. Before she could grab her brother's hand, sounds of war sirens filled the air.



Dinner at the Winchester's by Olivia Aguilar

Loud chatter was heard from down the marble staircase. In her duffel bag was a black dress she would wear to disappear among the guests. She put her strategic plan into place as she appeared by the wine bar. She was out of sight as soon as Mr. Winchester spilled his merlot and choked.



The Hand-Horse by Ethan Chan

The hand-horse didn't smell, taste, see, or hear. It merely felt. But oh, the euphoria of touch! "Merely" inadequately describes the tactile sensation. Luscious textures were voraciously devoured as unparalleled artistic inspirations. The boy thought it a magnificent creature, akin to himself. Childish imagination, perhaps? Nay; reality holds no ocular inhibitions for the blind.



BOY'S BATHROOM ART+CULTURE

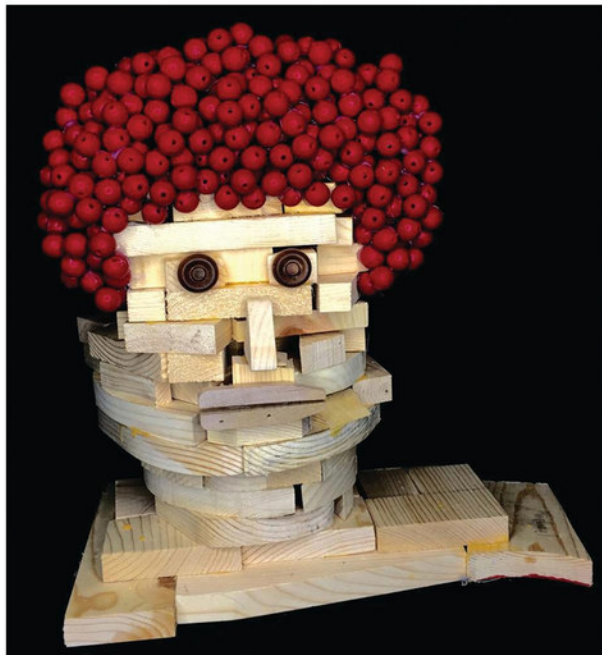
The boys were damaging the bathroom. Our students were lovely kids, respectful, and fun to teach. But they would go into the bathroom and punch holes in the wall. In the early days of HTH, these kids were in an "office style" building, in office style clothing for the first time, and they let it all out in the bathroom. Some traditional teachers wanted to lock the bathrooms. I felt that if we put great art that they could relate to and even give them a laugh, that would soothe their angst. We later added jazz playing 24/7 that made the bathroom feel like a beautifully curated space.



ART BUSTS

These busts represent the finest in High Tech High Sculpture. While the students did not study or even hear a lecture about busts or completely understand the place in art history busts hold, they did a good job.

The students were supposed to find an image to riff off of to create their busts. Some did, and some did not. Then, they used the large pile of cut-offs from another project I had saved for years to develop their figures. They were displayed on a high shelf at High Tech High until the students took them home.





CONSULTANCY ART+MONEY

The ROP (Regional Occupational Program) was funding my class. The program directors wanted ROP teachers to show how their students could make money with the skills they learned in class. I thought that it was incredibly bourgeois. I had my students make paintings for staff and administrators. They were paid well for their work.

The students met and interviewed prospective customers about what kind of painting they would like. Then the students presented their maquette of the painting and then painted when approved. Most customers came back for more work.



ART+ENGLISH+HISTORY JOIN THE CANON

The idea for this project came from a book, *The Annotated Mona Lisa*, by Carol Strickland. It was a book I initially used as a backup book for teaching AP art history; then, I used it as an art history primer for my painting classes over the years. It has double-page spreads of influential artists that Strickland thought were pivotal, Michelangelo, Goya, Picasso, and Warhol. I thought it would be great for my students to write themselves and their art into a book too.

I tried doing the project myself first! (This was in August 2016, I taught this in Spring 2017) I did three small paintings in the styles of my recent artwork. I have been making art for 30 years, and while my "artist hand" can be seen in my art, it has changed. I like trying new mediums and get into bouncing back and forth from the allegorical to the abstract. I then wrote up the relationship between the styles and made a double-page spread. It took a week or so; however, I am a professional. I knew that the students were going to need a scaffolded approach. I needed to develop a plan.

David Hockney b. 1937

David Hockney has had a long career in art, art theory, science and social activism. His artistic vision looks at the relationship between art and technology. In his book "Secret Knowledge" he highlighted Rembrandt and Vermeer's use of camera obscura, and challenging perspective of how an artist sees the world. His use of photography and its relationship to painting and perspectives is a hallmark of his ever changing work. His further use of iPad painting pushes the intersection of technology and painting.

Vanishing points and shadows representation were a European invention. Chinese scrolls from the 15th century had no shadows or vanishing points. For that matter the International style paintings from the 14th century in Italy did not have shadows or linear space, think Masaccio and Duccio. This lack of perspective gave the suggestion of space expanding in every direction. This idea is hundreds of years old has been Hockney's muse in his recent work since 2000. No shadow, no vanishing points, a constant movement of images. Looking at the way we depict space and the way we behave in space is his reason for creating art.



Hockney reinvents cubism with photography. His "Joiners" of many photos collage together to build a single image. The image I made *Boy in a Hat* 2016 creates a photograph with movement and different perspectives, a lot like Duchamp's *Nude Descending Staircase* 1912



Hockney's iPad paintings using the Layers App, enabled him a more portable Plein Air platform and a nocturnal one as well. Like Hockney's *Yosemite* 2011 I went to *Torrey Pines* reserve and created an image with my iPad using the Layers App.



Like *Mulholland Drive* 1983, with multiple perspectives on a single picture plane, I painted *Point Loma* 2016, with similar brush and color work and defining Point Loma from multiple perspectives.

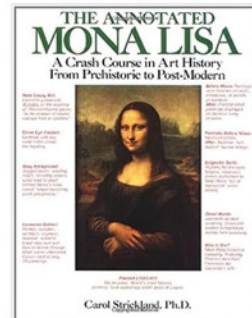
MSR & I for David Hockney

Method: Using technology to enable his art to go beyond one point of view.

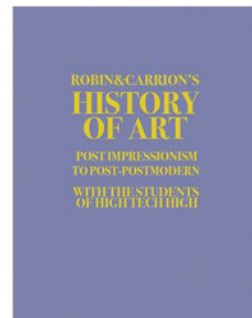
Subject: Multiple point perspectives in a single picture plane.

Reason: Like Renaissance artists influenced by tech of their time, he is mimicking their creative inspirations using new tech to further multiple perspectives on an image.

Influences: Chinese 15th Century Scrolls, Renaissance Painters Photography and Cubism



Our Inspiration



Our Book

The first exemplar was the work I made in the style of David Hockney. I then wrote a one-page explanation of his career. My idea was that the students could first focus on others and then on their work.

Jeffrey Robin b. 1967

Jeffrey Robin is an artist and a teacher. He freely admits that he started to practice studio art because he got a job as an art teacher, but in reality, he really started as a child while photographing human tissue in his father's pathology lab. His experience with photography

(landscapes, journalism, scientific, and weddings) is what gave him his ability to compose. Composition is his real strength as an artist. Robin is self-conscious about his drawing style and ability. This anxiety about his inability to draw is leftover from his modernist,



Road Sculptures Acrylic on Panel 2016 This "Synapse" painting is an example of Robin's abstract work. This free and spontaneous style is as close to letting go as he can get. This style coalesced while viewing Roberto Matta abstract murals and trying to paint for the sake of painting.

mid-twentieth century middle class upbringing. He once said to a group of artist, "I can draw realistically if I want to or had to." Everyone disagreed. They said, "You are good at what YOU do." This concept grew into his theme and rationalization: "If you don't like the way you draw, learn to love the way your draw." This idea is where his abstract work comes from.

The Synapse Compositions are splashes of competing colors accented with a slightly differing value stacked in layers on top of each other. They are finished with white/pink and black/white shapes that have a characteristic sewn seam. The paintings have to address formalistic concepts contrast, value, composition, value, line, and shape without using any thought to realistically render anything.

This is the only time he feels that he can just paint, which is an erroneous concept that there is ever a time that one can just paint without thinking. The shading and highlights make Robin feel that the 2D shapes are three-dimensional synapses that he might have imaged as a young man when he worked with a scanning electron microscope.

Method, Subject and Reason for Creation and Influences of Jeffrey Robin

Method: Outlined images with black lines and then colored in like a 3 year old's coloring book.

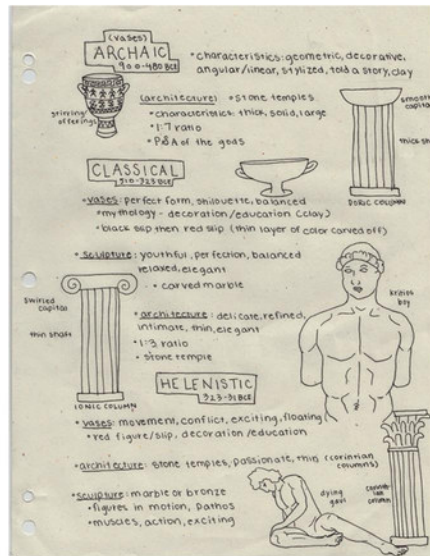
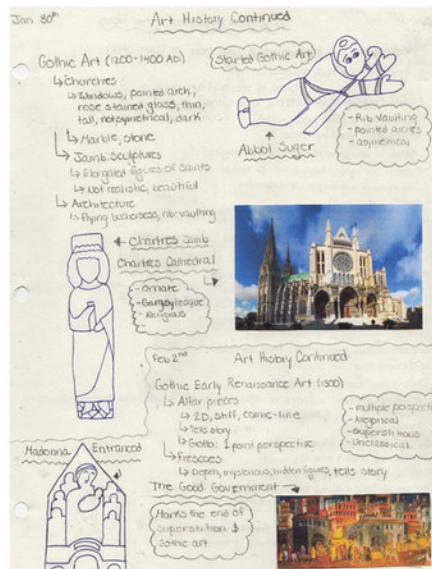
Subjects: Nothing, Synapses and Figures

Reason: To fill empty spaces

Influences: Max Beckman, Pablo Picasso, Jeremy Farson, Philip Guston, Roberto Matta and 46 years of watching television.

I then created work in my styles and wrote myself into the western canon of art history. My idea was that these pages they handed in were the product for the book. I did the project myself even after 27 years of teaching. I learned a lot from experience, so I could better guide my students.

MINI-LESSONS FOR JOIN THE CANON



My Exemplar- Giotto to Robin

Beautiful Notes From Lectures Every Morning



Art history chart with student copies

Learning to paint by copying the masters

EXPLODATION!!!™



Like the Roman Forums the Church was the center of Romanesque-Gothic life.

The Romanesque and the Gothic periods were consecutive. They occurred roughly in the same geographic area, throughout western Europe. The similarities were: there were churches at the center of the towns, villages and cities, they showed the power and authority of the Catholic Church and they were places to congregate and build a community.

Physically they were built of stone and brick, they could hold vast amounts of people, most Europeans at the time lived in mud huts so this was overwhelming to them. Both styles were therefore massive and impressive to behold and enter. One could only imagine that a peasant from the 9th century that lived of one potato a day and home was a drafty mud hut and then they would walk into the palace of God, golden solid and highly decorated. Their belief in God and the church would be solidified.

These excess probably led to the Protestant Reformation where many in and out of the church felt that the glitz and gold were too much, and that the money they were collecting would be better off for the poor and the communities that they served.

Perhaps the most interesting fact of all: they were not designed by architects, they were built by master builders and the people of the region. They would just start building, presumably the master builder had done this kind of thing before, there were many Romanesque and Gothic churches that collapsed and there are many that still exist today.

The differences are great between these two styles. Romanesque architecture from 700-1100 AD had a low thick bunker feel. The building themselves with sometimes 10 foot thick walls and solid buttress added to this look, like they could take a direct hit from a tornado and not come crumbling down. There were rounded arch portals (entryways, like in the romans had, hence the name), they also had groin vaulting where two round arches intersected each other. Above the doors were Tympanums where Jesus sat in judgment. The damned on the right and the repentant on the left, filled with visions of heaven and hell. They would have large towers that would call the town to mass. The most famous is the Campanella (tower) of Pisa.

Inside Romanesque cathedrals were dark, few windows, only in the clearstory and the sculpture and the art were distorted, stylized and grotesque. Some times there were images in the human form however that was in the period prior to the Gothic movement.

In Contrast Gothic churches were like skyscrapers, they were not symmetrically balanced like the Romanesque they has a free form reach for the heavens. Pointed arches, Rose windows, flying buttresses to lighten the feel of the building and allowed for windows and there was an elongated vision of only heaven in the jamb sculptures surrounding the multiple doored portals. Topped with gargoyles and ribbed vaulting in the ceilings that accentuated the height and heavenly possibilities of the church. These Gothic monuments still exist today where they still inspire.



Martin Luther hammering 95 revolutionary opinions on the church doors.

Basilica of San Michele Maggiore of Pavia



Saint-Albain Southern Burgundy



Pisa Cathedral, the Pisa Baptistry and Campanile (Tower) c.1120

Romanesque Tympanum sculpture 800 ad France



St. Mary's Cathedral in Lincoln, England 471



Gargoyles have a practical purpose: they're spouts, enabling rainwater to drain off the roof



Jamb Statue



The ribbed vault Chartres Cathedral



Flying Buttress Amiens Cathedral



Rose Window and a pointed arch



Brick buildings faced with cut stone, like the Romans



St Peter in Golden Sky Church, Pavia, Italy, 8th-12th century

Memorial of Antwerp cathedral builder Pieter Appelmans



Aulnay, France Saint Pierre



Heaven

Hell

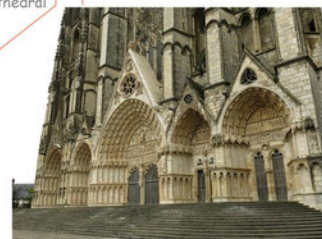
Romanesque Tympanum Southern France



Clerestory denoted an upper level of a Roman basilica or of the nave of a Romanesque.



Rouen cathedral 1030-1880



Bourges Cathedral France 1230

Explosion comparing and contrasting two artist, periods, or styles

Paul Cezanne, b. 1839 Jaelin

Paul Cezanne, born 1839 in Southern France, was an important figure in the Post-Impressionist period. Known for his interpretive landscapes and still-life paintings, Cezanne pushed art forward by diverging from the focus on intense realism we see in earlier periods. Influenced by important figures in Romanticism like Delacroix, as well as early impressionists like Manet, he helped bridge the gap from conservative 19th century art into the many new and radical styles of the 20th century.

Cezanne was primarily an oil painter. He used thin layers of paint, brown and green outlines, and sweeping brush strokes. There is always intention to the direction of Cezanne's strokes, as seen in his painting of Mt. Victoire where the trees and greenery are vertical strokes running perpendicular to the lines of the hills. This, along with his geometric composition, gives his paintings a sense of balance. Cezanne geometrically constructed his images from the ground up. This is also seen in his painting of Mt. Victoire, in which the titular mountain towers above the surrounding landscape, a triangular monolith above rectangular hills.

Cezanne was key influencer upon cubism. Picasso, probably the most prominent cubist of all time, even called Cezanne "The father of us all." It's easy to see the influence when comparing Cezanne's style of composition to a piece of deconstructive cubism, and looking at the polygons that make up those images. Art historians see Cezanne as an important bridging figure from the realism focused styles of the past to the expressive and interpretive methodology of later periods. His art was a key stylistic liason in our canonical timeline of art, and influenced many later styles which remain prominent today.



Cezanne often built his paintings around a single polygonal centerpiece, as seen in his 1904 work **Le Mont Sainte Victoire**. I emulate this here with my painting of the Matterhorn.



Like Cezanne's "**Apples and Oranges**" Still-Life, my painting of these two men at the summit of a mountain is constructed around center-aligned triangles.

Method: Oil Paint

Subject: Primarily Landscapes and Still-Lifes

Reason: To interpretively paint what I saw, instead of focusing on realism and precision like earlier styles.

Influence: Cezanne helped bring art forward from older, realistic styles into more interpretative work. He had a particularly notable influence on cubists, namely Picasso and Matisse. The interpretive and geometric construction of Cezanne's images is very similar to what is seen in cubist work.

Sarah Staley is organized and interested in many topics. She loves to learn new things, but at times can be very timid when changing what she is accustomed to. As an artist, Staley enjoys painting and trying new types of art. In the past she has worked with acrylic paints and a bit with watercolor but wanted to really focus on watercoloring since she doesn't have much experience with it. Watercolor gives her a chance to step out of her comfort zone and create art that is new to her.

Through her paintings, Staley uses photographs she previously took on trips which express personal connection and significance to her. Using her photographs as subjects, it allows her to express the importance of some of the places she has visited and her enjoyment in traveling to those locations. As a person, Staley loves to travel. Her ultimate goal in life is to explore the world and immerse herself in amazing opportunities.



This piece was a recreation of a photo Staley took on her family trip to Bishop California around Christmas time 2015. It includes messy pencil outlines and detailed features, like the trees.

Sarah Staley b. 1999

When creating her art, she is able to show the beauty seen in nature and recreate photos taken on her travels from her perspective. This allows her to reminisce in past memories, and create art so others can see her passion towards traveling.

To create her art, Staley uses watercolor and light pencil outlines to make loose unorganized paintings. She then blocks out the lighter base colors before adding layers of darker tints until she reaches the right shade. From there she adds detail and creates more texture in her art. As a person, Staley can get caught up in her daily tasks and lose sight of the amazing things around her. As a child, Staley remembers her mom telling her, "If you don't learn to loosen up a little, you will just keep stressing for the rest of your life." Through her art, she is able to express herself with less structured lines. It gives her a chance to step back and lose control while appreciating the amazing locations she has traveled. Through her landscape paintings, Staley takes most of her inspiration from the beautiful locations she has visited and the many alluring landscapes in nature. This allows her to withdraw herself from everyday tasks and perceive what the world has to offer. Staley also finds inspiration in artist Tony Conner's messy yet clear watercolor landscapes. Conner uses pencil outlines and created many snowy landscapes of where he lived in Vermont.

Although Staley enjoys her comfort zone, she felt that stepping back and doing the opposite of what people would expect was a great chance to see art from a different viewpoint. For Sarah Staley, this new exploration allows room for growth and the ability to enjoy an unfamiliar experience.

Methods: Using watercolor and minimal outlines to create a loose unorganized painting

Subject: Photographs taken on previous trips that express personal connection and significance

Reasoning: Love for traveling and hope to travel more in the future

Influence: Watercolor artist: Tony Conner because of her messy yet clear and colorful landscapes and beautiful landscapes seen in nature

Performance art is an art form that is often less recognized, but still possess the same craft, thought, and meaning as any acrylic painting or sculpture. Zoe Marsh (1998-present) is a dancer based out of San Diego, who has embraced these dance arts from a young age. There, she developed her technique and artistry in performance, along with the skills to story tell and choreograph her own pieces. Her attention to detail and nuances in music creates uniqueness in her choreography, distinguishing Marsh's style as her own.

Marsh's method starts with a specific song. Her choreography is based upon what that song provides - what story it tells her, what rhythm the music has, the emotion in the singer's voice, etc. These patterns inspire small calculated movements to the build of bigger movement. "I start with the song because I want it to tell a story, not just look aesthetically pleasing," Marsh says. "You can have a dance with beautiful movement, but no meaning behind it, but I find it much more effective in connecting with your audience when they can feel empathetic towards you and what you dance for." The method of choreographing starts with improvisation to the song. The purpose of this is to make the choreography feel natural to the body of the dancer. She says, "Forced movement is awkward for the dancer and the audience will no doubt feel it too." These techniques have been influenced by choreographers she worked with and admired throughout her life. These artists include Amber Hendrix, Mikeal Villela, and Travis Wall. Their influence is seen in both Marsh's process of choreographing and in her movement.

The subject of Marsh's stories are often based upon personal events, observations, or emotions of hers. Often times, they are an outlet or relief of emotion for her. Because of this, much of her choreography is an expression of anger or sadness. "Dance is stuck in a place where so many performances express some kind of tragedy," she says, "I'm guilty of it too. But it's not a fair representation of the art form." Because of this, Marsh tries to incorporate many styles of music and various styles of dance. For example, while she usually choreographs contemporary or lyrical styles, in a recent piece, *Stay*, she pushed herself to choreograph a urban hip hop piece.

Zoe Marsh b. 1998

She also pushes herself to improve her choreography in her home style, contemporary. This is seen in her piece, *Give Me Love*. The dance consists of a spectrum of textures, movements, and speeds. These two pieces demonstrate a spectrum of Marsh's work.



<https://www.youtube.com/marshart>

MSR & I for Zoe Marsh

Method: Improvisation to a song to develop movement

Subject: Personal experiences and emotion

Reason: Used as outlet for creativity, energy, and emotion

Influence: Music, various choreographers

Zoe Marsh did art in George Grosz's style, using his Method-Subject-Reason (MSR) to create art. Then she made her work. She did not have to paint. She had photographs taken of her dancing and wrote herself into art history using MSR. Progressive teachers let students create what is essential to them.

Ezra Haddock b. 1998

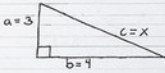
Throughout his childhood, Ezra Haddock was never particularly gifted with a brush or pencil. Save for a few lucky exceptions, much of Haddock's art class creations displayed no indication that he would be the next Thomas Moran. However, during his senior year of high school, Haddock discovered Sol Lewitt and the Conceptual Art Movement. Ezra was drawn to how LeWitt and other Conceptual artists believed that the value of art was not contingent upon the technical proficiency of the artist, but rather the artist's ability to represent a concept or thought. For someone who's progression of artistic talent seemed to be permanently mired in the third grade, there was now a beacon of hope.

The belief within the Conceptual Movement is that art is created by the mind's interpretation of what's on the canvas, not what the canvas actually portrays. Thus, Haddock wanted his compositions to make the viewer think about ideas, not aesthetics. Ezra preferred the subjects of his work to be mathematical equations, tools he felt that many people take for granted. To Haddock, the thoughtless application of these equations was akin to painting by numbers. Like a child's coloring book, these equations come readymade, the interaction between components already pre-determined. All the user has to do is match the right number with its corresponding variable, a practice that Haddock felt stripped mathematics of its artistic value. After all, no one ever proclaimed himself Van Gogh after finishing a coloring book.

The purpose of Ezra's art was to help the viewer understand that equations were more than just mathematical instruments. His method of meticulously showcasing each equation's proof was to prompt the realization these were the beautiful products of human ingenuity and the laws of math. Like what a good painting does for a surreal landscape, an equation articulates the reality of our circumstances. Haddock's art taught viewers the mathematical language, giving them a new medium with which to make sense of the world.

The Pythagorean Theorem by Ezra Haddock

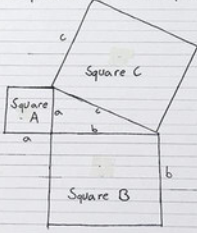
Part I: Given side A and side B, Find side C of the following triangle



$$a^2 + b^2 = c^2$$

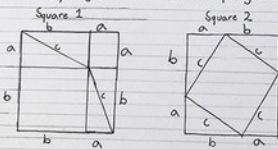
$$3^2 + 4^2 = c^2 \rightarrow 9 + 16 = c^2 \rightarrow 25 = c^2 \rightarrow \sqrt{25} = \sqrt{c^2} \rightarrow 5 = c$$

Part II: The Pythagorean Theorem states: "The square on the hypotenuse of a right triangle is equal to the sum of the squares on the two legs."



Area of Square A = a^2
Area of Square B = b^2
Area of Square C = c^2
Thus,
 $a^2 + b^2 = c^2$

Part III: Pythagoras' Proof of the Pythagorean Theorem



Area of Square 1 = Area of Square 2
Area of Square 1: $a^2 + b^2 + 4(\frac{1}{2}ab)$
Area of Square 2: $c^2 + 4(\frac{1}{2}ab)$
Thus,
 $a^2 + b^2 + 4(\frac{1}{2}ab) = c^2 + 4(\frac{1}{2}ab)$
 $a^2 + b^2 = c^2$

The Quadratic Formula by Ezra Haddock

Part I: Find the x-intercepts of the following quadratic function:

$$f(x) = -5x^2 + 3x + 8$$

Use Standard Form of a Quadratic: $f(x) = ax^2 + bx + c \rightarrow a = -5, b = 3, c = 8$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \rightarrow \frac{-3 \pm \sqrt{3^2 - 4(-5)(8)}}{2(-5)} \rightarrow \frac{-3 \pm \sqrt{9 + 160}}{-10}$$

$$\rightarrow \frac{-3 \pm \sqrt{169}}{-10} \rightarrow \frac{-3 \pm 13}{-10} \rightarrow \frac{-3 + 13}{-10}, \frac{-3 - 13}{-10} \rightarrow \frac{10}{-10}, \frac{-16}{-10} \rightarrow -1, \frac{8}{5}$$

Solutions: x-intercepts @ $x = \frac{8}{5}$ and $x = -1$

Part II: Solving by Completing the Square

$$f(x) = -5x^2 + 3x + 8 \rightarrow -5x^2 + 3x + 8 = 0 \rightarrow -5x^2 + 3x = -8$$

$$\frac{-5x^2 + 3x}{-5} = \frac{-8}{-5} \rightarrow x^2 - \frac{3}{5}x = \frac{8}{5}$$

Side Work: $\frac{-3}{5} \div 2 = \frac{-3}{10} \rightarrow \left(\frac{-3}{10}\right)^2 = \frac{9}{100}$

$$x^2 - \frac{3}{5}x + \frac{9}{100} = \frac{8}{5} + \frac{9}{100} \rightarrow x^2 - \frac{3}{5}x + \frac{9}{100} = \frac{160}{100} + \frac{9}{100} \rightarrow x^2 - \frac{3}{5}x + \frac{9}{100} = \frac{169}{100}$$

$$\left(x - \frac{3}{10}\right)^2 = \frac{169}{100} \rightarrow \sqrt{\left(x - \frac{3}{10}\right)^2} = \sqrt{\frac{169}{100}} \rightarrow x - \frac{3}{10} = \pm \frac{13}{10}$$

$$x - \frac{3}{10} = \frac{13}{10}, x - \frac{3}{10} = -\frac{13}{10} \rightarrow x = \frac{3}{10} + \frac{13}{10}, x = \frac{3}{10} - \frac{13}{10} \rightarrow x = 1 + \frac{8}{5}, x = -1$$

Part III: Proving the Quadratic Formula by completing the square

$$f(x) = ax^2 + bx + c \rightarrow ax^2 + bx + c = 0 \rightarrow ax^2 + bx = -c$$

$$\frac{ax^2 + bx}{a} = \frac{-c}{a} \rightarrow x^2 + \frac{b}{a}x = \frac{-c}{a}$$

Side Work: $\frac{b}{a} \div 2 = \frac{b}{2a} \rightarrow \left(\frac{b}{2a}\right)^2 = \frac{b^2}{4a^2}$

$$x^2 + \frac{b}{a}x + \frac{b^2}{4a^2} = \frac{-c}{a} + \frac{b^2}{4a^2} \rightarrow x^2 + \frac{b}{a}x + \frac{b^2}{4a^2} = \frac{-4ac}{4a^2} + \frac{b^2}{4a^2} \rightarrow x^2 + \frac{b}{a}x + \frac{b^2}{4a^2} = \frac{b^2 - 4ac}{4a^2}$$

$$\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2} \rightarrow \sqrt{\left(x + \frac{b}{2a}\right)^2} = \sqrt{\frac{b^2 - 4ac}{4a^2}} \rightarrow x + \frac{b}{2a} = \pm \frac{\sqrt{b^2 - 4ac}}{2a}$$

$$x = -\frac{b}{2a} \pm \frac{\sqrt{b^2 - 4ac}}{2a} \rightarrow x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

MSR & I

Method: detailed mathematical proofs

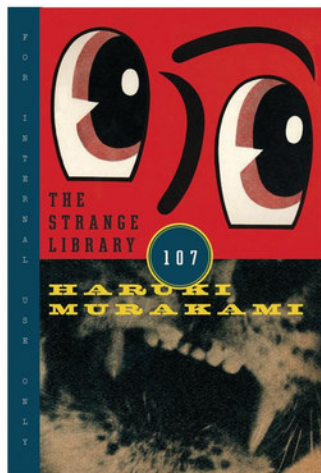
Subject: mathematical equations

Reason: to show the hidden beauty of mathematics

Influence: Sol Lewitt and the Conceptual Art Movement, Hanne Darboven's math art

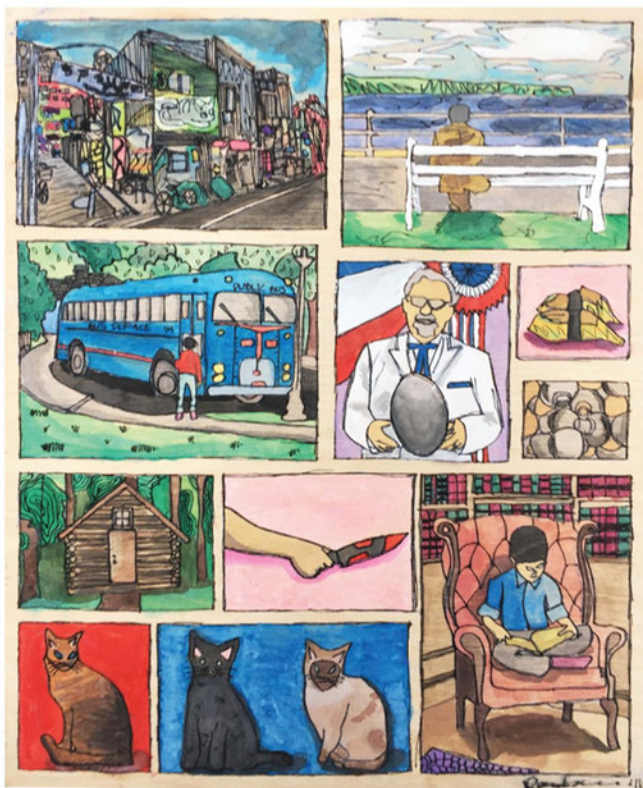
Ezra Haddock liked math. I turned him on to Sol LeWitt, a minimalist artist that used math as a subject and a way to express his artistic sensibilities. Ezra then set about making his art about the math that he saw as "Beautiful Math." Ezra is one of my heros; he did great work and stood up for me and project based learn when it counted.

ART+ENGLISH OMOIDE BENTO



I had the students start with hand colored collages and then move to the bento box drawings. They found images, altered them and transferred these pictures to their board, and then watercolored them. Watercolor on plywood is one of the mediums that I developed to enable everyone to create art. The students made their paintings and then wrote stories using the images as inspiration and a guide.

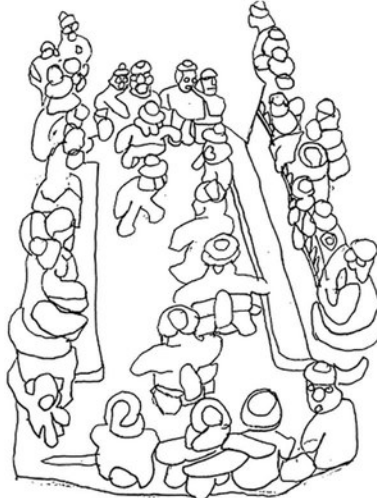
I was on vacation in Japan with my family. We were taking the bullet train from Tokyo to Hiroshima, and I bought a bento box at the train station to eat on the way. It had lots of little compartments filled with beautiful things. I had no idea what they were, but I ate them anyway. To keep in the trip's theme, we were all reading Haruki Murakami books, Japanese magical realism. My son at the time was 11, and we drew pictures of the things that were described in the book in a Strange Library and then drew a bento box around each piece. I thought that was an excellent way to interpret a story. Imagine if the students then used these vivid drawings they made in their bento box drawing to create a new story inspired by the pictures they made.



HISTORY OF SCULTURE FLATTENED ON THE WALL ART



I was at the Museo Rufino Tamayo in Oaxaca on spring break and saw a ceramic sculpture from a Mexican tomb showing players engaged in the Mesoamerican ballgame. Probably from Nayarit, perhaps 300 BC to 250 AD. I thought, what a great idea for a project.



I made a drawing by tracing the lines, which flattened the image. I then put the drawing in Photoshop and added color and value to model the outlined figures.



I transferred the drawing to a piece of 1/2" plywood, painted it, and then cut it out with a jigsaw. I knew that cutting the image out of the background would make painting more accessible and still look great.

When the semester started, I showed the students my work. They began farming the internet for sculptures to flatten, paint and make a "Cut Out." We began to talk about western art and non-western art. My class was filled with students from cultural backgrounds from all over the world, so we indulged our identities and others' traditions. To organize the work the students would make a "cutout" from the western canon and outside of the western traditions and write about the referenced sculpture. The examples of student work are from two students, both in and out of the canon references.



An Anxious Friend • Celeste Byers
Artist: Max Ernst
This statue was created during World War 2 and the Holocaust in a terrible time where over 30 million people died. Max Ernst served in World War 1 and made this sculpture 2 years after he fled to the United States from France with his 1st wife, Peggy Guggenheim, since he was interned as an enemy alien.



Seated Egyptian Scribe • Celeste Byers
Scribes occupied a privileged position in ancient Egypt. Egyptians used the size of their sculptures to show the social order. The pharaoh was larger than life size, scribes and court officials were life size, and workers and peasants always shown working. Sculptures of scribes were made to accompany the pharaoh at death in their tomb so when they went onto the next life they would have their scribe.

Kwakiutl • Alert Bay • Sarah Davis
Western Coast mask was created for males to use in their dramatic public performances in the winter ceremonial season. Masks similar to Kwakiutl were meant to be seen in flickering firelight, while it rapidly opened and closed. This created the illusion that the wearer could transform himself from human to eagle as he danced.



Dan's Rico • Sarah Davis
The lights are bunched together to highlight the colors as intensely vivid. As stated by Robert Smithson, "Flavin turns gallery space into gallery time." Dan Flavin displayed his unique style through his Puerto Rican Light, where it is stressed that the piece can disappear at any moment when the light switch is turned off.

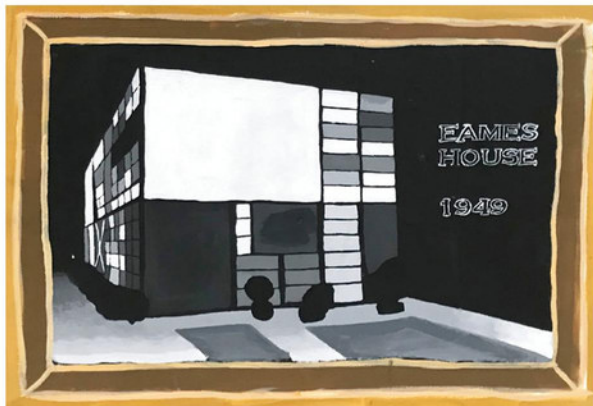
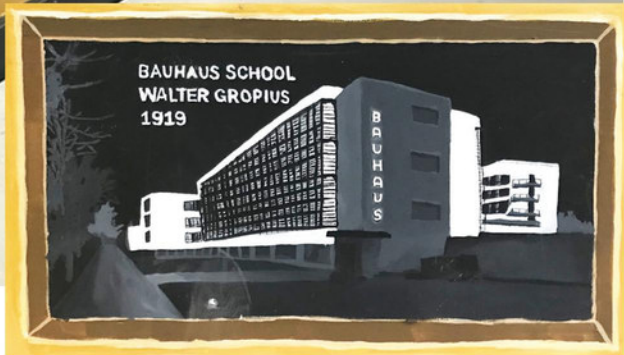
ART THE SHIFT IN ART HISTORY WALL



My class did a project about the shift in art styles throughout history. We wanted a wall to exhibit our work. Below on the faux wainscoting, we created a mural depicting the progression of Roman architecture styles.

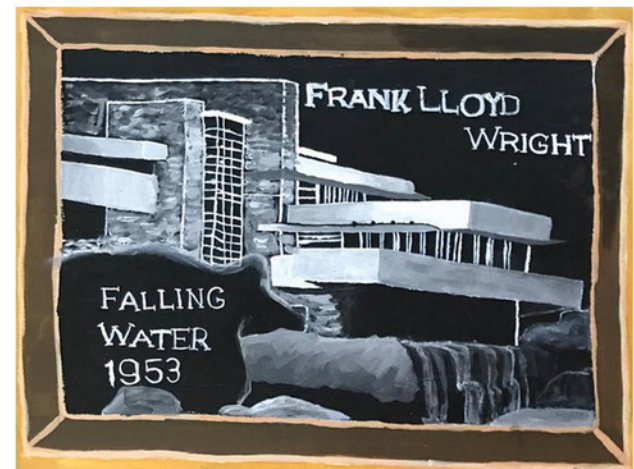


MODERN ARCHITECTURE WALL ART



I had a group of seniors that were interested in modern architecture. They wanted to paint a mural across from The Shift mural with Twentieth-century architecture, showing its "superiority" to the ancient Roman buildings. We agreed to a Modern architecture mural that would show essential touchstones. Many students that finished their projects participated in this mural over the years. Both of these murals were made to reference architecture history. I want there to be a formal education component for passers-by.

I tried to add these little touches of referencing high art and art history all over the school. I have always been disappointed in the pandering to the student's pop art, pop music, and pop culture in schools. They get enough marketing at home.



This project began

in May 2012 when the education directors from the Museum of Contemporary Art San Diego, Anne Kindseth and Christina Scorza, contacted my teaching partner, Kelly Williams. They asked if we wanted to bring our students for multiple visits to the museum to gain a greater understanding of the artwork and have a chance to make our art.

Kelly and I met and discussed with the directors several times before the launch of the "Behold, America!" exhibition. Kelly and I presented the project idea to the students and called it "Behold, High Tech High!" The project entailed three visits to the MCASD, research of the art, and an exploration of the concept of frontiers, followed by a presentation of what they learned at a museum showcase. Their study consisted of:

Method - What materials and mediums did the artist use to create the work?

Subject - What is the subject of the artwork?

Reason - Why did the artist create this work? What was the context?

Frontier - What is the frontier that the artist discovered, crossed into, or exposed?

We first showed the students a PDF of the work on display at the museum. They each had to research two pieces of art and present these to the class. This is a technique that allows the students to become familiar with the art before the museum visit so that when they visit the museum, it is like they have two friends there already.

The students traveled around with the docents and us looking and talking about frontiers at the first visit. Each student chose three to four works of art that they were interested in investigating further. We completed this visit in two consecutive days with only 23 students per trip so we could speak to each student individually,

Following the museum visit, the students researched their chosen pieces, devised ideas about the frontier, and developed an alternative way of explaining their new rationale. Then, in a setting that resembled a television game show, the students competed for the artwork they wanted to focus on and ultimately present to the public. They had to present their idea and research with enthusiasm and factual content to obtain the right to their first, second, or third choice.

The most excited, well-versed student was rewarded with the opportunity to explain their work simply because they cared about their subject and had a passion for their choice.

On the third visit, the students arrived at the MCASD in La Jolla dressed to impress. They had their content card around their necks, which displayed their essay detailing the method of creation, the artwork's subject, the reason why the artist made the work, and the student's rationale for the artwork's frontier. Then, on the reverse side of the card, the students displayed a visual image designed to foster a greater understanding of the museum artwork. Someone asked why we needed these cards, and I explained that it is a validation to the public that you have researched the artist and the work and thought about the meaning enough to create your art. The students do not have Ph.D. or MFA after their names, so they needed to show they knew something more than the casual viewer.

The museum doors opened at 5 pm, and the crowds swelled. The noise grew as our students rocked. They were charming, knowledgeable, cordial, and confident; they blew the visitors away. Many people commented on how great the students were, but my favorite response was from a couple on their second date and had no idea that the free night at the museum came with 47 students explaining the work. The visitor said, "Could I have these kids meet us at the LA county museum next week? I don't think I could enjoy a museum without them." That was priceless.

Haley Goodwin
passionately
describes a
Georgia O'Keefe
painting at the
San Diego
Contemporary
Art Museum in La Jolla



BEHOLD, HIGH TECH HIGH! ART+ENGLISH+HISTORY



This project had the best exhibition I ever had or witnessed at HTH in the 17 years I worked there. The students did this work; there was no faking it or saying, "well, they are kids." They rocked it; they were real professionals. Jeff Robin

Darlene Montesano explains Jamex and Einar De La Torre's, *El Fix*, (1997) to visitors

The card around her neck is her research; on the reverse side is an art piece she made that was inspired by *El Fix*. (see *Below the dress of Mexican soda bottles*) This visual component helped the student share their ideas about the work at the museum.



EL FIX

Blown Glass, Mixed Media, 1997

Darlene Montesano
Student High Tech High UCSD

Jamex and Einar De La Torre are Mexican-Americans artists who use the medium of glassblowing to evoke the cultural complexities concerning the theme of borders.

During their teen years, the De La Torre brothers moved from Guadalajara, Mexico to the United States. Both brothers identify with the Mexican culture and are able to depict its faults. They use "....glass as one component of a rich visual language in which the qualities of glass-color, malleability and light-interact with a multitude of found objects" (Fauntleroy, Gussie). The brothers use glassblowing in order to convey their cultural views on Mexico and America.

Jamex and Einar De La Torre's frontier is to show the delicate balance Mexico has between religion and immorality. In their work, *El Fix*, glass intestines are constructed into the shape of Mexico portraying Mexico as a fragile country. A crucifix needle is then placed in the 'arm' of Mexico making the reference to a drug addict's uncontrollable desire for drugs and the need for a 'fix'. On the other hand, the crucifix shape of the needle refers to Mexico's need for a religious fix.

Baby Jesus is located in the center of Mexico inside a vulva, creating emphasis on the birth of religion. Mexican citizens find Christianity to be a symbol of hope; without any religious affairs, Mexico would become dysfunctional. Before the conquistadors arrived to the new world, there was not a monotheistic religion. Instead, the Indians believed there were many gods. During the era of religious conversion, the conquistadors assassinated many Indians in the name of religion. Such religious fervor is keeping Mexico alive and emphasizes Mexico's delicate balance. Without religion, Mexico would not be given its constant fix and as a consequence would fall apart.

Although the De La Torre brothers portray the dark side of Mexico in the art piece *El Fix*, other icons reflect the opposite. An example is the blood around the intestines. Blood is a symbol for brotherhood representing the unity of the Mexican citizens. Therefore, the real frontier in this art piece is to accept one's culture. After all, Mexico is part of a Chicano's self identity.

Fauntleroy, Gussie. "De La Torre Brothers and Border Baroque." Home. N.p., 2009. Web. 30 Sept. 2012.



This poster is from the back of the card

During the summer,

I went with my two children when they were 2 and 5 years old to the Norton Simon Museum in Pasadena. I brought a student with me too so that she could help me with the kids. As we walked around the museum she said, "I wish I could paint like this." I told her she could, just a bite at a time. So we all went into the garden and drew small bites of the paintings we liked. One month later, I returned with my class of 50.

Before we went to the Norton Simon, I wanted the students to get a sense of the art there at the museum. I had them farm the museum's website. They needed to find and present 16 examples of art that they liked to the class. These were the criteria of artwork I wanted them to see. When they presented, they had to explain why they chose what they chose.

A disturbing work

A work that shows repetition

A work that shows royalty

A work that shows classicism

A work that shows mythology

A work that shows a struggle

A work that is a sculpture

A work that shows social injustice

A work that is not European

A work that shows love

A work that shows desire

A work that makes no sense even with the description

A work that shows sadness but still is beautiful

A nude, and why do you think that artist made this?

You need evidence

A work that shows just how crazy the artist was

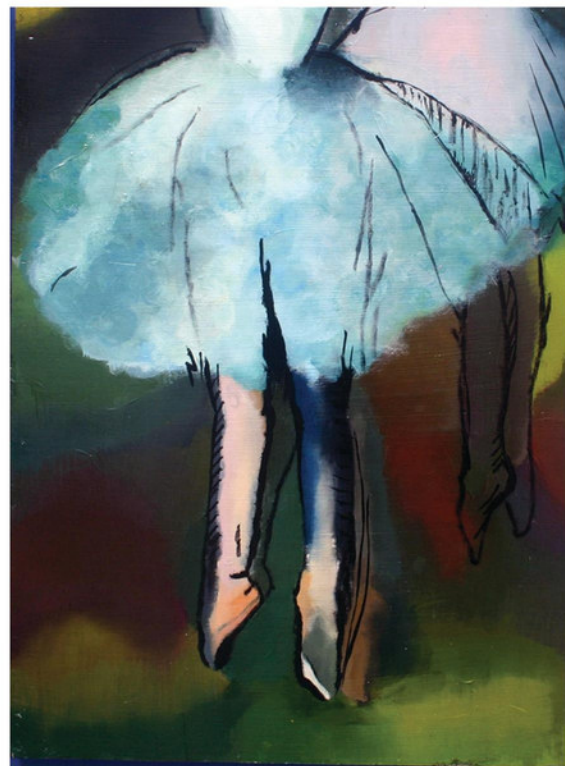
A work that shows how open-minded you are



Portrait of Baron Joseph Vialètes de Mortarieu, 1806
Original painting by Jean-Auguste-Dominique Ingres, 1780-1867
Bite by Jeanette Lowrie

This exercise worked like a charm. The students knew the artwork, so when they walked into the museum, it was like seeing old friends. One student tried to get another student to mess around in the garden and not do the work. The other kid said, "I'm excited to be here. Let me do my work." I felt bad for the student that wanted to mess around. He was absent when we did the first part of the project. I walked around with him, and he was able to engage. The rest of the students were engaged and busily working.

When the students returned from the Museum, they narrowed their choices and then began to paint a portion of a "Bite" of one of the paintings they liked. In English class, they wrote a story that would go with this new image that they were painting.



Dancers in the Rotunda at the Paris Opera, 1895
Original painting by Edgar Degas, 1834-1917
Bite by Chris Nho

A BITE OF THE NORTON SIMON ART+ENGLISH

The young ballerina often retreated to her velvet lounge chair. She gently stretched her long sore legs atop and rested her head between the arm and back of the chair. Her eyes focused on the thin wooden rail extended a precise couple of inches from the wall.

"Amelia Bedeau, please! It's time to practice." Her ballet instructor stressed this point every time she began to take a break. The glare in her eyes remained and her head kept its relaxed tilt. The wooden ballet rail represented so many things in her life: much of her life's happiness and much of its sorrow. As a trained ballerina she was seen as an image of graceful beauty; dressed and performed as if she was a lifeless doll. She spent most of her days at the nearby ballet studio practicing each move with the help of the rail. Coincidentally, this had become her primary focus in life; she spent the majority of her childhood dancing not realizing what else was out in the world. Although with each passing recital, she relentlessly gave up more of her time to dedicate towards her practice she still absolutely enjoyed this artful dance. Beginning from when she was about six years old, she has been practicing and performing ballet. Unlike many of her classmates, Amelia did not come from a wealthy family but she also was not poor; there was always enough food on the table to feed her large family and enough clothes to go around. At a very young age, Amelia attended her first ballet performance. Her mother had set aside a small amount of money in order to take her eldest daughter to the theater house to see her personal favorite recital, *The Nutcracker*. Amelia had fallen in love with the fanciful idea of being a ballerina. The glorious costumes intrigued her, and each graceful movement stopped her heart. She loved this intimate outing with her mother: a chance to spend a quality evening with her and see a magnificent show that would soon inspire her passion and goals.

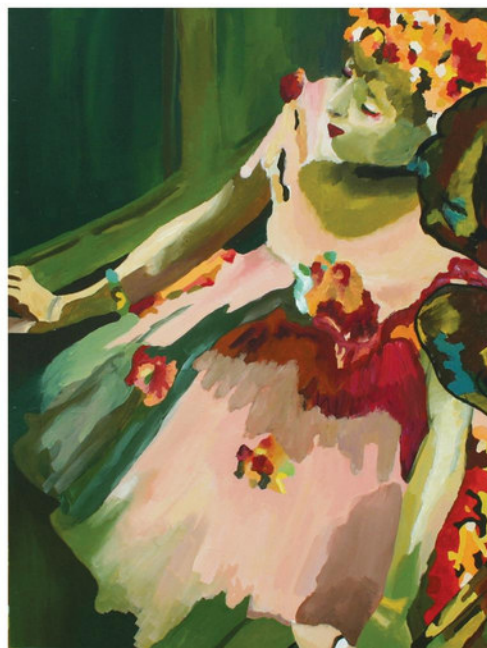
Amelia finally lifted her head and turned her legs, beginning to rise from the floral upholstery as if she was a blue jay leaving a garden. She stretched her back and shoulders as she moved towards the rail. Her neck slowly bent forward and she moved her head in a lethargic circular movement, clearing her thoughts.

"Heels together, first position... now Amelia, you may begin," Ms. Delancy often recited the most basic of positions even to well practiced girls as Amelia was at age sixteen. It was a habit and perhaps a kind of teachers' impulse that drove her to do this even after habitual criticism from many of her pupils. But Amelia never did complain once about Ms. Delancy's repetitive nagging of positions; she loved her teacher and in a way she had become a second mother to her: caring for her needs, encouraging her and giving her strict goals.

Amelia met her ballet instruction many years prior when she first entered the small studio looking to join the road to becoming a ballerina with many other young girls. Ms. Delancy noticed a talent in Amelia and immediately took her under her careful guidance, determined to turn her into the perfection of a young ballerina she had fallen short of. Ms. Delancy meant well with each nagging impulse; she simply wanted the best for each of her pupils. It was not a secret in the small town that Ms. Delancy was at one time on her way to becoming one of the most prized ballerinas in France until a knee injury cut her career short. It also was not surprising that she pushed her girls to the utmost and kept the competition at the highest.

Today Amelia had been working on her routine at the studio for an uncommonly eight hours. As the eldest of five children she had many duties at home to complete and as a young girl she tried hard to keep up with some of her basic studies.

After 50 plié s and then another 50 grand plié s Amelia was feeling a bit weak, but once again she reminded herself of her motivation and passion and continued on to complete her routine one last time that



Dancers in the Wings, 1880
Original painting by Edgar Degas, 1834-1917
Bite by Victoria Valentine

night. Amelia was never one to disappoint another; her mother had high hopes for her moving forward in ballet and her instructor rejoiced in her talent. Most of all Amelia wanted this for herself, she had a deep burning passion for dance and realized that this might be her only way to escape future poverty and create a life of her own.

She was breathing a bit heavier than normal, grabbing her torso's sides she let her head fall and slowly began to regain control of her breath. In a few minutes she rolled her shoulders back and walked over to her instructor who was helping a little girl maintain second position with curly brown hair and a clean pink dress. "Ms. Delancy, I have finished my practice for today. I am going home now, good-night." Ms. Delancy did not look up at Amelia, maintaining her concentration with the little girl. "Yes, that's fine Amelia. I assume I will be seeing you tomorrow; I will open the studio at eight in the morning."

Amelia lived but a mile from the studio and enjoyed a peaceful walk to and from each day. By the time she left today the sun was close to setting, and left a beautiful sky for her to enjoy. The sun hid behind the shops on Madison Avenue, producing a brilliant shadow on the ground. The sky lit colors of pink, orange, purple and yellow as if they were a field of poppies bursting into life. It was the beginning of summer and the air was a bit chilly but nevertheless warm. She still wore her plain leotard and tights, but over her shoulders was a thin deep purple cloak and on her feet were matching shoes with a slight heel. This was one of her favorite times of the day, when she could guiltlessly relax and enjoy the world created around her. During this time she was able to realize the privileges in her life and enjoy each of them.

Her home sat behind a short fence lined with blossoming rose bushes. A mixture of grass and dirt covered the lawn and a gray hued stone path led the way to the thick wood door. Amelia placed one hand on the knob and slowly pushed the door open, letting her relaxation sweep from beneath her.

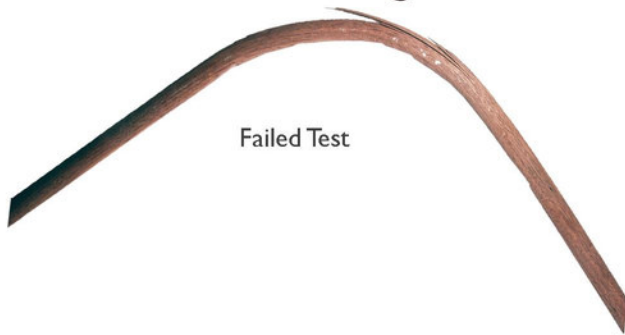
(Wall card each student made for their painting)

Physics teacher,

Andrew Gloag, and I were talking in May about our project for the fall. We both liked the idea of making 1900's Bistro Chairs. The artistry and the physics of the chairs would be a great project.



Bistro Chair



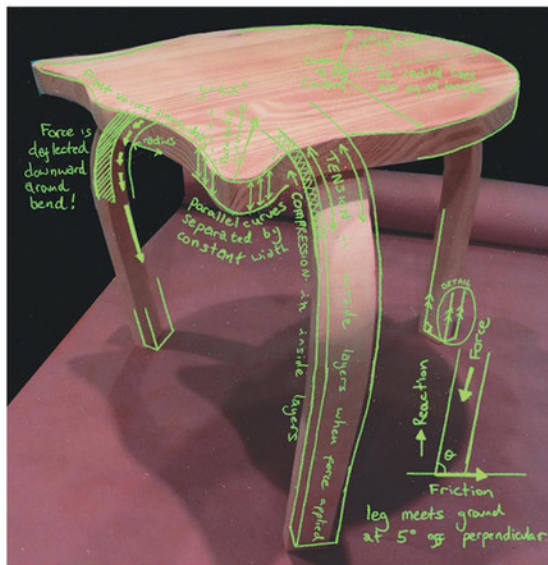
Failed Test



I bought equipment to make a wood steamer, and our experiments were met with flames, exploding wood, and split rods. I was ready to pack it in and do something else. However, Andrew insisted that I try making the bentwood with laminates.



Laminate Chair



We then used the chair's image to explain the physics taking place; we called it the "Math View."



We decided that the students would make a bentwood chair, a book about making the bentwood chair, and a lamp to read by. I did the project myself first.

GET BENT ART+PHYSICS

QUESTIONS FOR THE IKEA FIELD TRIP

How high is the front of most chairs?
 How high is the back of most chairs?
 What angle are the backs of chairs?
 What is the most comfortable chair? Why?
 What are the measurements?
 What materials are used in the chairs that you like?
 How thick is the wood or the metal that makes up this chair? Fabric? Cushions?
 What's the coolest design for the least amount of money?
 What influences do you see from the Bauhaus?
 What is surprisingly modern?
 What is surprisingly traditional?
 Is there anything that seems old-fashioned?
 What has a surprising use of materials?
 What would you buy and say it was your Chair and Lamp, how much does it cost to buy this chair and lamp?



Kettner Street. Make a right and stop at several stores, galleries, and workshops. I have listed all of these; please be careful, don't walk backward into anything; if you see more than five fellow students inside, wait till they leave, we don't want to overwhelm these people they are not used to students.

1) Boomerang 2475 Kettner, they sell antique mid-century furniture, the store is small, don't overcrowd it! Everything is expensive.

L) LOOK at Architectural Salvage 2401 Kettner, really cool old stuff it might give you ideas, be careful. There is a lot of breakable things in there.

2) Coalesce 2360 India, a furniture design shop, Joseph Bedford is the artist there. If you see he is working, don't bother him, but look inside and check out an excellent shop. Please be respectful of his time, tools, and business.

3) Klassik 989 Kettner, Mid-century Furniture, really cool, strange stuff. But it has a lot of cool things that will inspire you.

4) Mixture 2210 Kettner, This is an upscale furniture store, don't sit on the furniture. It's not Jerome's. But this place is super cool.

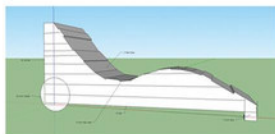
L) LUNCH Grab and Go Subs, 2102 India, or Mona Lisa's across the street

After going on the field trips to Ikea and the Kettner Street design district, the students needed to make a page (A5 all the books would be the same size) that explained the chair they were riffing on, their plan in SketchUp, a 1:3 proof model and a design plan for the chair they would build. This page took about a month; the whole time, they understood that there needed to be a chair, a lamp, and a book formatted in A5. Doing the project myself first set the bar and did not limit the students in what they could do.



THE LAZY MANTNACE LOUNGE CHAIR
by Jeff Robin

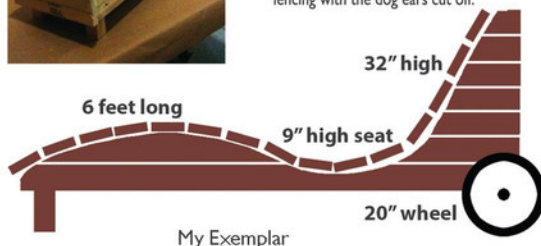
I got the idea for my chair from this ikea chair:
 KARLSKRONA
 Chaise lounge
 \$169.00



This is my Google Sketch Up model.



Here is the proof model built at one-half scale. I used 1" by 3/4" material instead of redwood 2x4s. The idea is to have an all weather lounge for the grass, weather and sprinkler proof. I learned that I need to scribe one curve against the other side so that both sides are congruent and I may need to lighten up the design because it may be too heavy with solid 2x4 material. I think I will use cedar fencing with the dog ears cut off.



THE ENTERPRISER by Austin and Chris

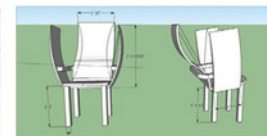
The chair we decided to base our idea off of was called the lobster shell chair. We wanted to take the small spikes and extend them further upward to give a more throne-like feel. We also liked the idea of a curved back and decided to apply it to our chair.



This is our proof model made to 1/2 scale. We used plywood for the arms and legs, and laminant for the rest. To bend the laminant sheets we used 2x4 wood to make a mold and glued the sheets together. From our proof model we learned how to make the molds and how to clamp efficiently. We also discovered that some of our measurements needed to be changed, such as widening our arm width from 2 inches to 3 inches.



Our paper model shows our initial inclination to build a chair based mostly on the design. After building our paper model we realized that our base needed to be more function oriented and changed to a more traditional style.

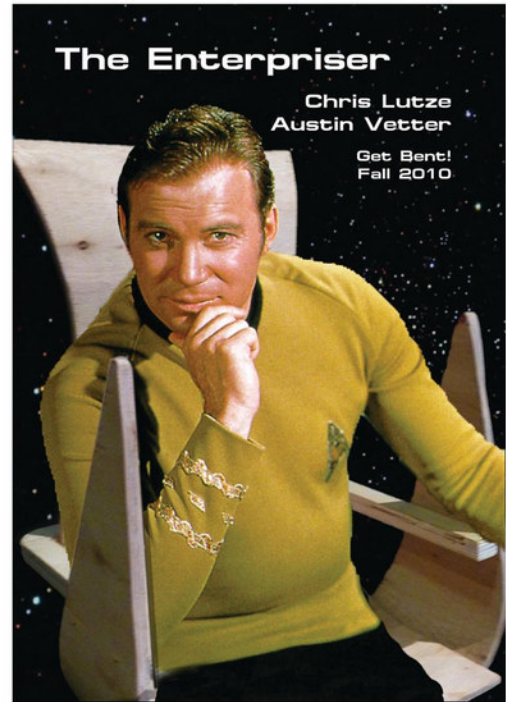


Our google sketchup model shows about what our chair will look like. Due to limitations in sketchup, we cannot make it exact, but it is close. The two blocks going up to the sides will be triangles, like in the paper model.

This proof model of a bentwood desk is one of my favorites. My student got my son out of kindergarten to model it. He was so excited to help the big kids, and by bringing this to the elementary school helped share the project with a larger community.



Physics and math poster students produced for their book.



Promotional Poster with humor, Photoshop skills, and Star Trek all rolled into one. Posters were placed around the school to build excitement about the project.

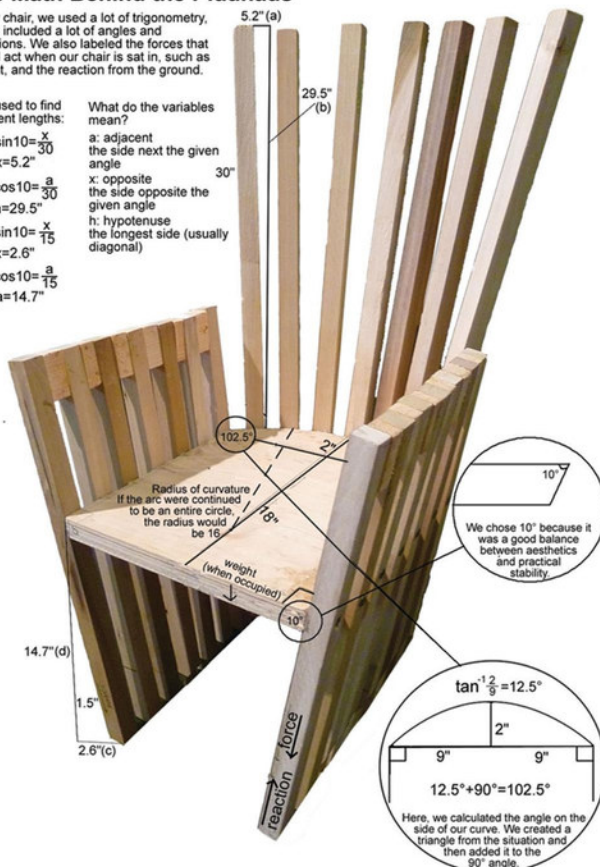
Shellby Hefner and Coli Barth The Math Behind the Pfauhaus

In our chair, we used a lot of trigonometry, which included a lot of angles and equations. We also labeled the forces that would act when our chair is sat in, such as weight, and the reaction from the ground.

Trig used to find different lengths:

- (a) $\sin 10^\circ = \frac{x}{30}$
 $x = 5.2"$
- (b) $\cos 10^\circ = \frac{a}{30}$
 $a = 29.5"$
- (c) $\sin 10^\circ = \frac{x}{15}$
 $x = 2.6"$
- (d) $\cos 10^\circ = \frac{a}{15}$
 $a = 14.7"$

What do the variables mean?
a: adjacent
the side next to the given angle
x: opposite
the side opposite the given angle
h: hypotenuse
the longest side (usually diagonal)



The students worked the whole semester creating proof models, promotional posters, physics posters, and building their chairs and lamps. They had to hand in their documents in A5 for their books and the class book on the opposite page. This project was hectic and it took a monumental effort to build 25 chairs in a regular classroom. The students were stressed and challenged. We finished the work and the books several weeks ahead of time. That way we could prepare the room to look like a furniture showroom and invite people to see their work. We had Kindergarten, sixth grade, other seniors, SDSU furniture students, and designers visit and talked to the students about the work they had done.

The head of the University of Chicago's physics department stopped by and said, "Every student did not learn the same thing; how can this be successful?" My students defended the project by explaining what they learned by doing, and then one student asked if he ever gives grades less than A's. He said, "all the time." And the student said, "I guess you don't teach your students the same thing either." I had never been prouder.



GET BENT A SENIOR PROJECT

HIGH TECH HIGH
ART AND PHYSICS
GLOAG - ROBIN



This project was the start

of the truly integrated PBL work we set out to do at our schools. The first semester was tricky because of the open-ended menagerie of projects we let the students undertake. Some projects were left unfinished, some finished at the last possible moment, and some are still up today as icons of great PBL. What I learned from our experiences the first semester made the second semester's projects more complete, educational, and beautiful.

"DO THE PROJECT YOURSELF FIRST" The first semester I tried on my own to make an exemplar about gear ratios. My partners did not help me, and my engineering and physics skills were not up to the task. We were asking the students to be better and more successful than we were. I believe it is malpractice if the teacher doesn't do what they ask their students to do.

Well before the second semester, I insisted we have a limitation on project sizes. **PARAMETERS** were set for creating artistic physics and engineering models in 20"x20" window boxes. My fellow teachers helped me with physics and engineering this time. I never led a project with students again without doing the project myself first.

I eventually realized that a better rule would have been: Make your teaching partner do the project too, or their ill-preparedness will ruin your life.

PLAN AND LET GO. We made calendars, exemplars of work, and documents the students would have to do to finish the project. They did not need to be the same as ours, but they needed to accomplish similar milestones.

This planning allowed the students time to **FINISH EARLY** and **TO HAVE TIME TO** reflect on and **DEFINE WHAT** they had **LEARNED**.

As I went to a traditional but still excellent education school at Point Loma Nazarene College, I learned that students need time after the assignment or project to write, discuss, or even be tested on what they have learned; it is what makes learning complete. I often had to push this sensible idea on my fellow teachers, which freaked them out because I was thought of as an iconoclast when it came to education. If you read and see the structures of this project, you will see it in all of my students' work thereafter.

We (David Berggren, Engineer, Andrew Gloag, Physics Ph.D., and Jeff Robin, MFA) took a trip to San Francisco's Exploratorium to see how they display their physics and mathematics exhibits. The research continued at the de Young Museum in San Francisco. We felt that it was essential to see how art is curated as well. We realized that we wanted to show physics concepts as art and explain the physics that exists within art.

Following our trip, we looked at David Macaulay's *The Way Things Work* for inspiration and approached the students with our plan to show physics artfully.



Our administrator sent the 3 of us to SF for inspiration, which was essential and generous.



I brought the team to the De Young after seeing what a mess the Exploratorium was. Engineers are not always thinking about the way things look.

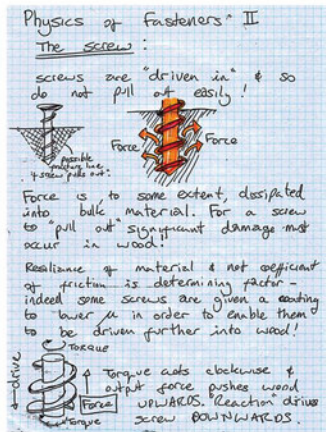
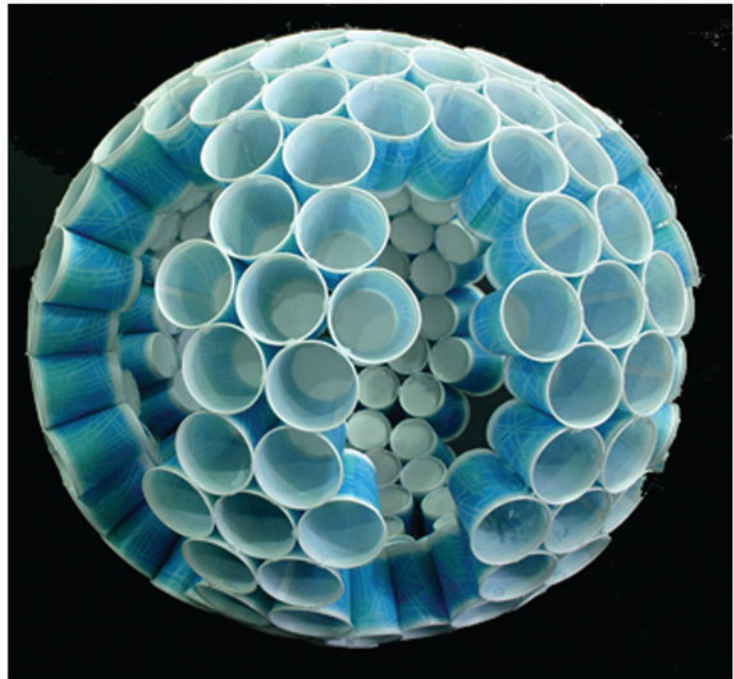


Years later, at a conference, I met David Macaulay and told him about the project. He was not impressed. (Me, David and AI)

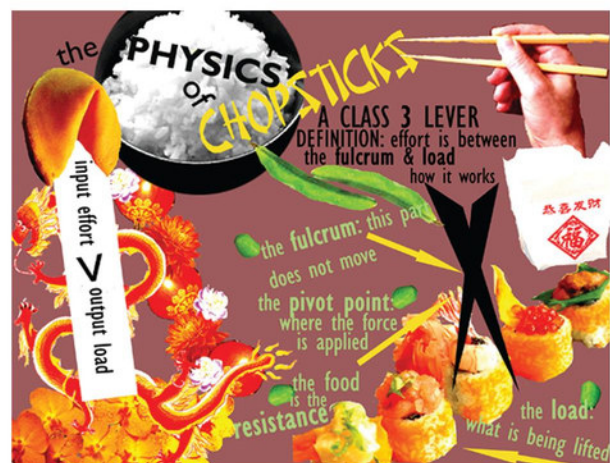
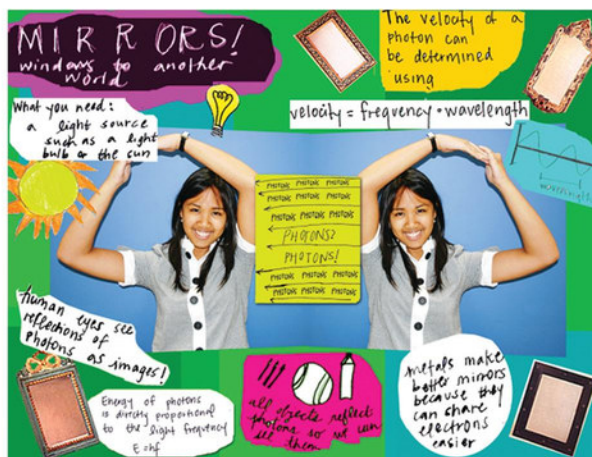
ANALOG FLASH FOR WINDOWS ART+ENGINEERING+PHYSICS



Over the summer, I came up with a sculpture about gears and ratios. I built this project to see where the pitfalls lay. The proof model did not work, so we used it as an example of what not to do, which was not a great idea. Only a charlatan says you learn from your mistakes. You learn by fixing your mistakes.



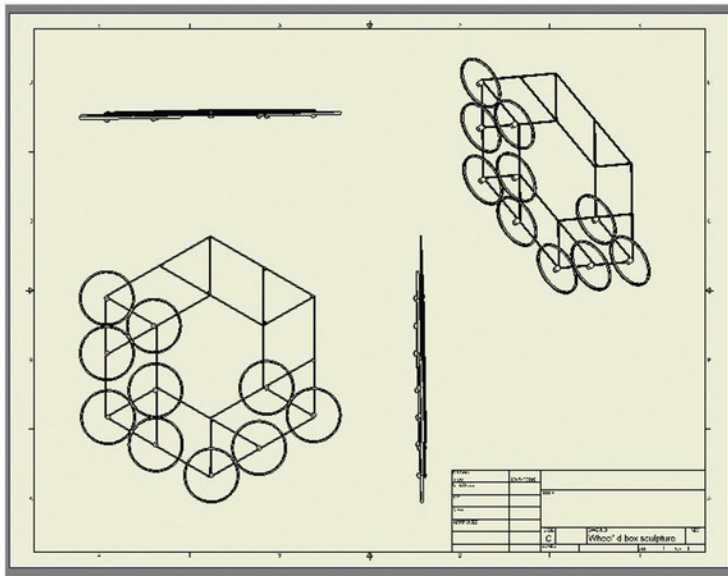
For the first mini-project, we had the students make a poster of "The Way Things Work," a la Macaulay in my art class. They could use anything in the physical world. The students made posters explaining how rockets work, the physics of a field goal kicker, how scissors work, polaroid pictures, and my two favorites are shown here, how a mirror works, and the physics of chopsticks. Then in their physics class, they made sculptures. Using tensegrity and cantilever construction concepts, they made art in physics and creatively explained physics in art class.



The students took a field trip to the Reuben H. Fleet Science center. At the center, students had the opportunity to look at various physics displays and to view ideas to eventually create their own. The students received their assignment: to create an interactive display focusing on the physics behind art or the art behind physics. In addition to the exhibition, students had to develop a project proposal, plan view, collage view, proof model, detailed drawings, a promotional poster, and compile a physics explanation.

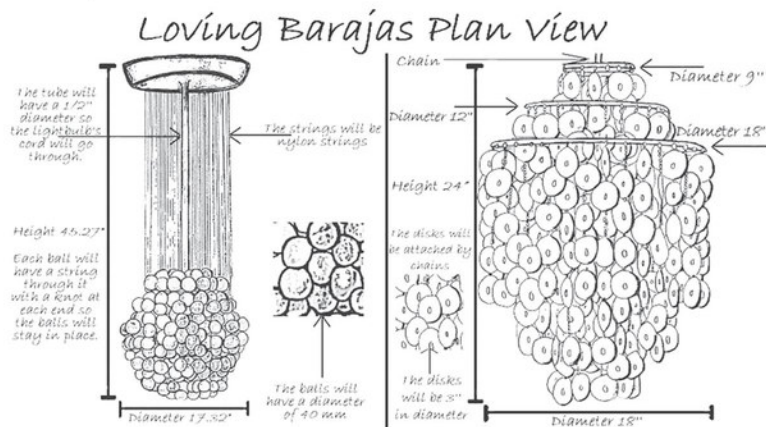
Project Proposal

The proposal had to explain what the project is all about. And present the teaching goals they were going to cover. After all, it is school, and we wanted others to learn something from these projects. Students compiled a materials list to help them see how complicated their work was going to be. Finally, students created a project timeline.



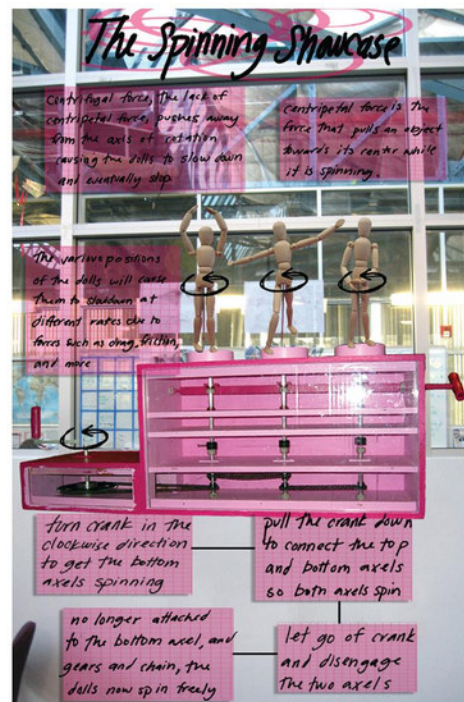
CAD and Plan View

Students then used CAD in engineering class to create detailed drawings of their completed work. Students had to create a vision of their completed project, including physics and engineering concepts.



Collage View

Next, students were asked to imagine what their completed project would look like and put it on paper. Collage View was an art and building assignment. Many students thought design and engineering was the most critical part of this project. I needed to show them that if the work did not look good, the audience would not receive it well. Much of the time, art was in the back seat. I was okay with that as long as the work looked good.

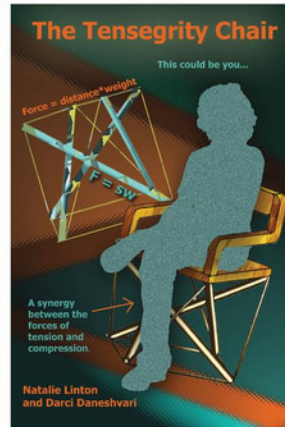




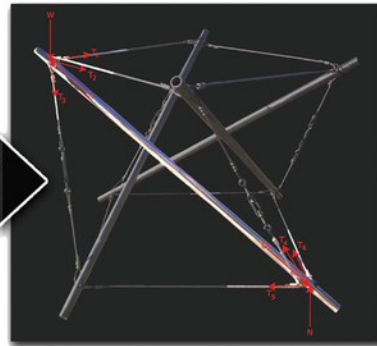
Proof Model
Students then had to create a working, smaller-scale version of their project.



Promotional Poster
Students also had to create a poster advertising their project to entice students and parents to come see what their project was all about.



TENSEGRITY



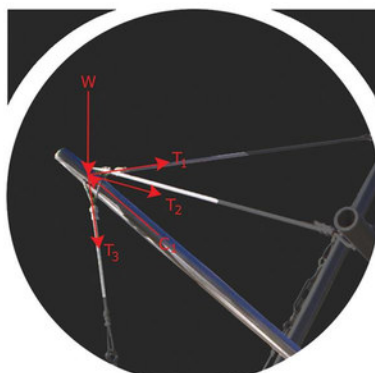
The lower portion of this chair is formed using the principles of tensegrity. "A tensegrity system is established when a set of discontinuous compressive components interacts with a set of continuous tensile components to define a stable volume in space."

The term "tensegrity" is a contraction of "tension" and "structural integrity," and was coined by Buckminster Fuller, who became famous for his work with tensegrity. Nevertheless, the x-shaped formation of tensegrity was originally discovered by Fuller's one-time student, Kenneth Snelson. Tensegrity maximizes the use of the less voluminous tensile members (string, rope, cable, etc.) while minimizing the material-heavy compression members (thick metal, wood, plastic, etc.), making the construction of tensegrity structures highly economical, and the structures themselves very resilient.



Finished Chair

TENSION AND COMPRESSION



$$\vec{W} + \vec{T}_1 + \vec{T}_2 + \vec{T}_3 + \vec{C}_1 = 0$$

Vectors are quantities possessing both magnitude and direction, represented by an arrow the direction of which indicates the direction of the quantity and the length of which is proportional to the magnitude. In a tensegrity structure, all the vectors are arranged so that they cancel each other out to create a sum total of zero-static equilibrium. The magnitude and direction of the C (compression) arrows combat the force applied by the W (weight), T (tension), and N (normal force) arrows, vs.

In tensegrity structures, the members are either always in tension or always in compression. Tension is a force that pulls on an object. If the force of tension is greater than the resistant inward force of the object, then the object will stretch. Compression is also a force. Where tension pulls, compression pushes. If the force of compression is greater than the resistant outward force of the object, then the object will be compressed. In tensegrity, the tension members are trying to pull n-v-o points together, while the compression members try to keep the two points apart. The force exerted through tension and compression reaches a sum total of zero-static equilibrium. This is what enables the structure to maintain its form.

\vec{W} = weight
 \vec{T}_1 = tension one
 \vec{T}_2 = tension two
 \vec{T}_3 = tension three
 \vec{C}_1 = compression one

$$\vec{N} + \vec{T}_4 + \vec{T}_5 + \vec{T}_6 + \vec{C}_2 = 0$$

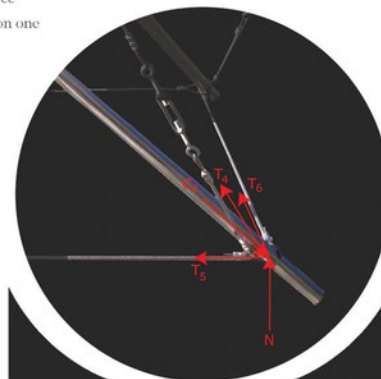
$$|\vec{T}_1| = |\vec{T}_2|$$

$$|\vec{T}_3| = |\vec{T}_4|$$

$$|\vec{T}_5| = |\vec{T}_6|$$

$$\vec{C}_1 = -\vec{C}_2$$

\vec{C}_2 = compression two
 \vec{N} = normal force
 \vec{T}_4 = tension four
 \vec{T}_5 = tension five
 \vec{T}_6 = tension six



Physics Explanation

After completing the project, each team was asked to create a physics explanation of their project. This step is where we realized that we needed to backfill the math and physics concepts. Sometimes in PBL, you have to look back and have students explain what they did. The point of PBL is that the students have a context for their learning. What better way for them to understand physics than to explain their work.

Finished Products

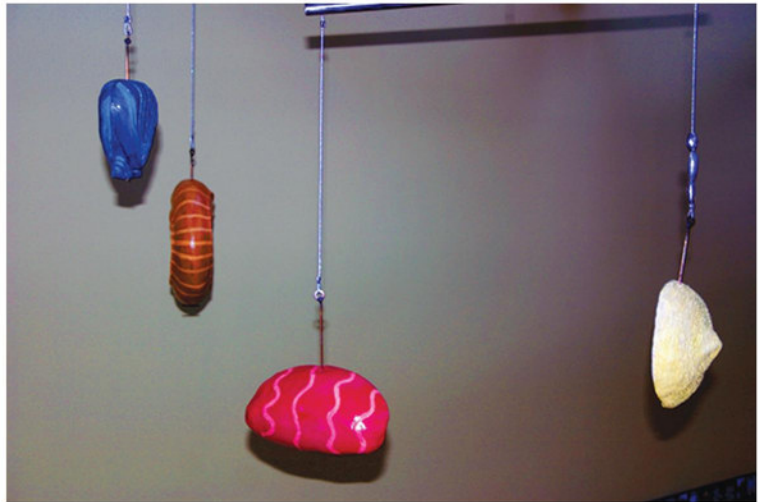
The finished products were displayed around High Tech High. Some are still up today and serve as icons of High Tech High's early days. The last minute nature of the exhibition is one factor that led us to change this project in future iterations. Curating these varied projects was quite tricky as well.



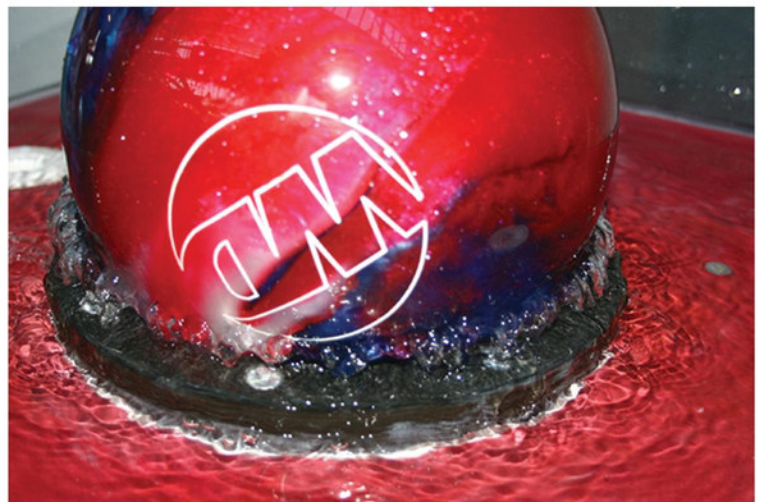
Tensegrity Chair



Suspension Footbridge



Ceramic Mobile (While hanging this mobile, a weld broke, and the steel bar hit me in the head and when I woke up hanging from the lift, I saw the window boxes and thought that would be a safer place for art next semester.)



Floating Ball

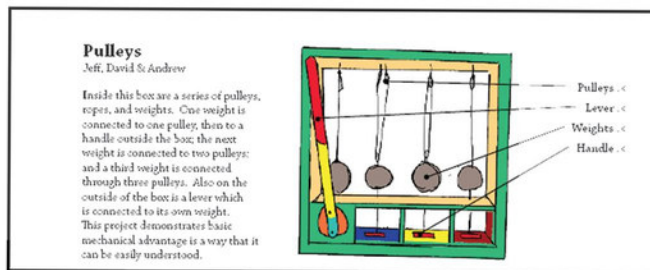


Ballet Physics Spin



The Bicycle Wheel kinetic sculpture is still working great at High Tech High.

ART+ENGINEERING+PHYSICS ANALOG FLASH FOR WINDOWS PART 2



At the end of the first semester, we needed to set parameters on the scope of the projects. Mostly because of the cost and the size of the work the students made in the first semester, it was huge. Also, curating the work was difficult and dangerous.

We wanted all the students to know about each other's work, but they had to work until the bitter end and did not get a chance to learn from each other.

We decided to use the school's interior window boxes as a constraint and for display. The 20 x 20 x 5-inch windows were perfect for: Analog Flash for Windows. Analog: because most of the projects are mechanical. Flash: references the program for interactivity. For Windows: not for PC but the actual windows at High Tech High.

We also built a timeline that the students had to follow, two weeks of development, seven weeks of building, three weeks of study (each other's work), and a final exam. We also had weekly check-ins with points attached, so the students knew we were serious about their progress.

Andrew Gloag, David Bergren, and I made this box to illustrate mechanical advantage. We used this to set the bar and work exemplar to show the students and us what it takes to do this project.

Timelines and Check-ins

We used an online calendar and weekly check-ins to make sure that no one was falling behind. We were very controlling because we wanted all of the groups finished by the deadline.

We had the students make books about all the projects, including their own. They needed to have an image and explanation of the physics and math that went into each box. They had three weeks to put the book together, and some students created incredible work.

The students all had to take this test with the math and physics represented in their projects. They were allowed to use the books they made for help, and the test was one-fourth of their final grade.

pullies

Jeff Robin, Andrew Gloag, and David Bergren

We can apply a force in one place and arrange for that force to be "multiplied", resulting in a much larger force being applied to an object. To lift, you apply force.

Simple pulley (single):
Force applied to rope = F
Force applied to mass = F
Mechanical Advantage = 1

Double pulley (double):
Force applied to mass = $F \times 2$
Mechanical Advantage = 2

Triple pulley (triple):
Force applied to mass = $F \times 3$
Mechanical Advantage = 3

Work done on a lever depends on T and d .
Without a "lever length" or $W \times T$ data and $W \times T$ data



This is our "Exemplar" and two examples of student pages of our box. Each came from their books. (Below is the test the students wrote for the whole class to take.

Jeff, David and Andrew

Physics Final

Spring 2007

7. Figure 3 shows a crank handle which is driving a belt via a toothed gear. What is the mechanical advantage (M.A.) of the crank-gear arrangement?
 - a. M.A. = 6.67
 - b. M.A. = 1.20
 - c. M.A. = 0.15
 - d. M.A. is impossible to calculate without knowing the number of teeth on the gear.

8. What is the angular velocity that the crank must turn at if the belt is to have a linear velocity of $v = 15 \text{ cm/s}$?
 - a. $\omega = 0.125 \text{ radians per second}$
 - b. $\omega = 1.25 \text{ radians per second}$
 - c. $\omega = 12.5 \text{ radians per second}$
 - d. $\omega = 125 \text{ radians per second}$

15. Figure 4 shows a string wrapped around a one inch diameter pole, to which a handle is attached. A 15 Newton Force is applied 8 inches from the center of the pole. What is the tension in the string?

- a. $T = 15 \text{ N}$
- b. $T = 120 \text{ N}$
- c. $T = 240 \text{ N}$
- d. $T = 480 \text{ N}$

16. The string is plucked off-center. The fundamental frequency is found to be 280 Hz. If the Force applied to the handle is doubled, what is the new frequency of vibration?

- a. $f = 140 \text{ Hz}$
- b. $f = 396 \text{ Hz}$
- c. $f = 485 \text{ Hz}$
- d. $f = 560 \text{ Hz}$

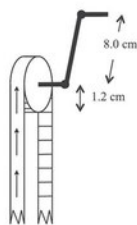


Figure 3

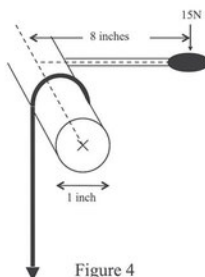
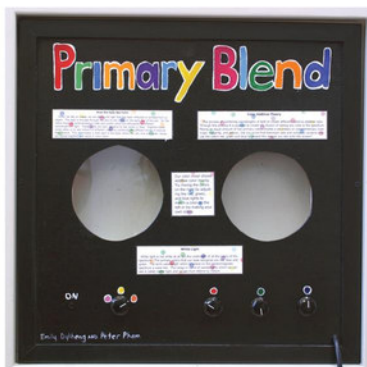
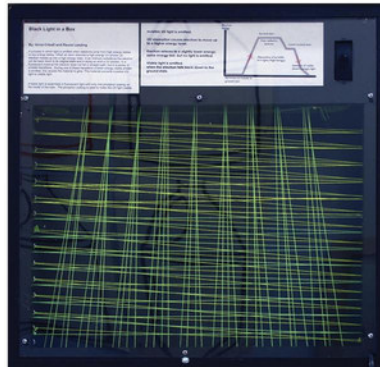
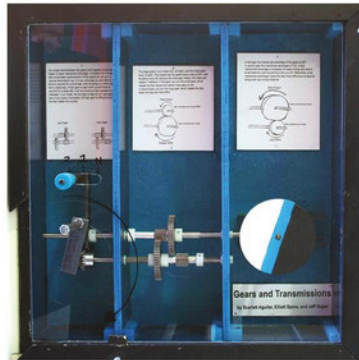


Figure 4

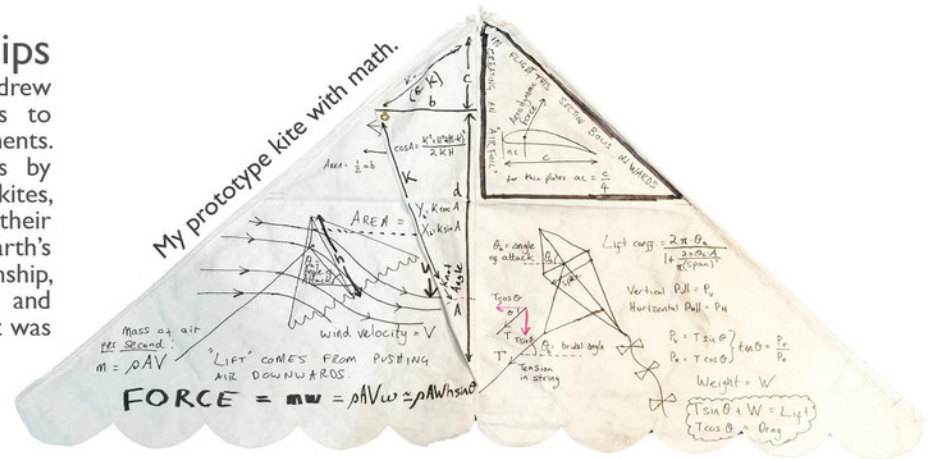
Analog Flash for Windows

HIGH TECH HIGH SENIOR PROJECT SPRING 2007



After many partnerships

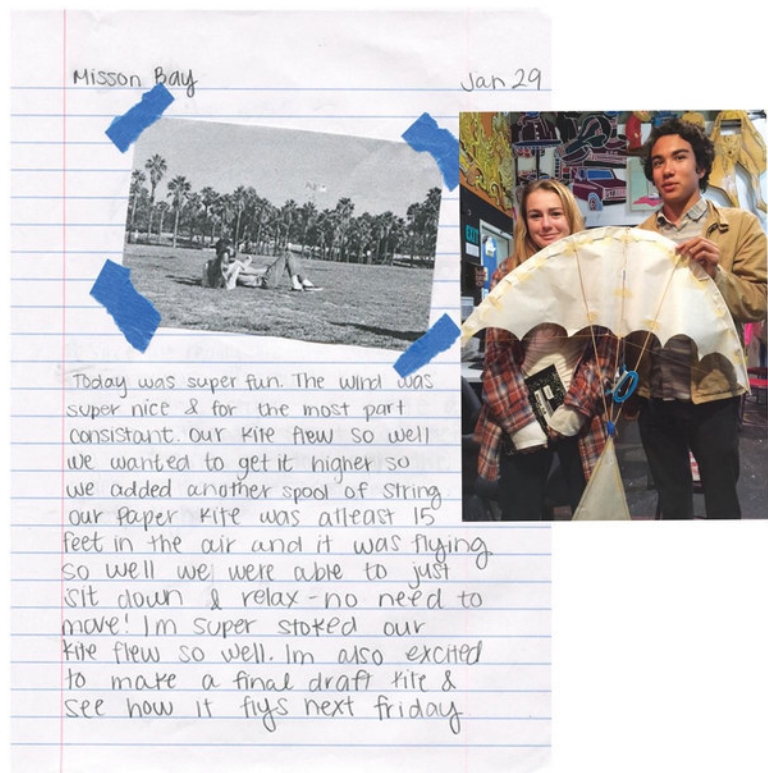
visualizing physics and math, Andrew Gloag and I wanted the students to document their physics experiments. Students would understand physics by attempting to fight gravity using kites, balloons, and other flying objects of their creation. Trying to challenge Earth's gravitational pull with craftsmanship, experimentation, observation, and documentation was what this project was all about.



We made kites, balloons, and flying objects. I had a friend when we were in middle school, Adam, now Doctor Adam, and he had us building and making 6-foot hot air balloons, kites of all kinds, and remote control planes that he never let me fly. I can see now it is tough to control, and they can fly away.

Unlike Adam, I let my young children at the time fly the remote control planes I made, and they would fly them out of sight and ask me, "When will they come back?" I know we had a privileged upbringing to buy all of these materials and create flying machines that might never come back.

Many people donated lots of cash to do this project. I bought my students anything they wanted; the students made 20-foot hot air balloons, a human-sized paraglider with sewing machines, and remote controlled planes. I sent Adam my website so he could see what he had inspired 30 years later, crickets.



KITES (first 4 weeks)

Each team of two students got a kite from the dollar store and a black-and-white composition notebook. They were tasked with documenting how to get their kite to fly. They went to a field near campus and flew their kites. The students wrote about the need to run, coordinate, find the wind, adjust the strings, and learn to fly.

They took their journals into physics class and created a poster explaining what they learned. Then they brought it to art class for fine art help.

The students added onto and modified their kites with more dollar kites and other supplies, crafting a "Frankenkite." This step allowed them to experiment while they were learning in their physics class about the lift equation and the optimum angle of attack to generate the maximum lift. In art class they were also learning how to sew, design, and build—everything recorded in their composition books, with beautiful notes.

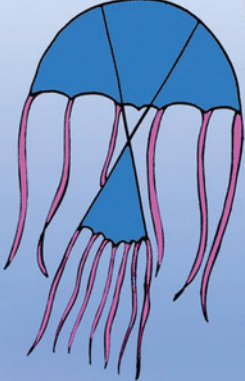
Each team then created their own original kite from ripstop nylon and carbon fiber rods and made a poster that explained their creation. One group made a six-foot-high triangular kite from Starbucks straws and crepe paper.

The original kites were tested and refined. Each team presented to the class and the community. San Diego has a kite-flying park where serious kite builders make and fly kites; the students fit right in.

A FIGHT WITH GRAVITY ART+PHYSICS


NATALYA AND CROCKETT'S
BIRD ON FIRE

OUR KITE UTILIZES DESIGN COMPONENTS FROM A STANDARD GLIDER KITE AND ONE OF DA VINCI'S FAMOUS FLYING MACHINES. ITS LARGE SURFACE AREA TO WEIGHT RATIO ALLOWS OUR KITE TO FLY EFFORTLESSLY IN EVEN THE CALMEST OF WINDS.



DA VINCI FLYING MACHINE

MODELED AFTER A BIRD'S SKELETON, WE INCORPORATED DA VINCI'S FLYING MACHINE'S STRUCTURE INTO OUR OWN DESIGN FOR A UNIQUE AESTHETIC COMPONENT.




STANDARD GLIDER

KNOWN FOR ITS EXTENDED TAIL AND LARGE WINGSPAN, THE STANDARD GLIDER KITE HAS MAXIMUM SURFACE AREA WITH MINIMAL WEIGHT.

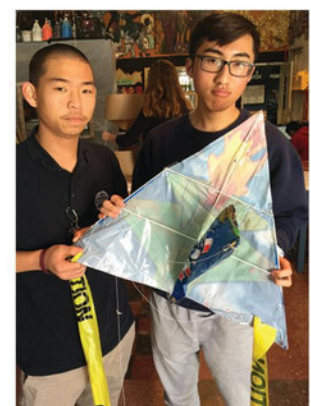
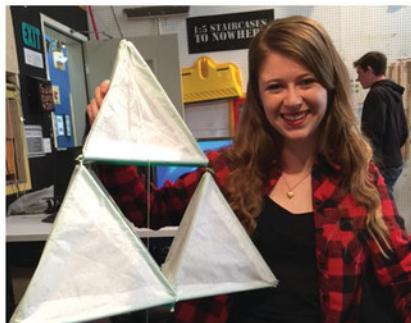
CALCULATIONS

SURFACE AREA $\rightarrow .4206 \text{ M}^2$ WEIGHT $\rightarrow .058 \text{ Kg}$

MINIMUM WIND SPEED $\rightarrow 4.153 \text{ MPH}$




"Bird of Fire" was a collaboration between two seniors that were already accepted into college. I gave them enough space so that they could create and be themselves. On the opposite page, you can see their journal and prototype. On this page is their math poster and finished kite.



Pictured Left to Right: two students working out the math, Pyramid Kite prototype, boy sewing, and Frankenkite disaster



Students launched their lanterns I bought on the internet. We had a permit, and we were at the San Diego Model Rocket launch site. I still got in trouble with the school's safety compliance officer. She had spoken to a student that told of a perilous event. She had not been there. The email started with: "I have got you now, Robin!" Check with everyone before letting students light matches.



BALLOONS (next five weeks)

At 7:30 am, the whole class went to the Fiesta Island model rocket launch site, and with 50 Chinese lanterns purchased on Amazon for \$1.50 each, they filled the sky. This introductory activity on a cold morning re-energized the group, as all at once the students lit the wax heat source and held their balloons till they all floated away. They continued to write in their journals about what it took to launch the balloons and what they would make next.

In teams, they created hot air balloons from tissue paper in different sizes and shapes, designed for beauty, humor, and lift. They documented and refined these balloons in class with the help of the teacher and each other. They were always negotiating with the laws of physics and the capability of their craftsmanship. Each day a barbecue was lit, the balloons tested, and hotdogs and hamburgers served. A semi-final exhibition for the crepe paper balloons documented what worked and what did not.

The final balloons were made of nylon and other materials that the students tested. The balloon exhibition was colorful and exciting; however, many balloons were never seen again.

Fly A Balloon With Us!

Our soda-can shaped balloon was inspired by our art teacher's love of Diet Coke.



The balloon was carefully constructed out of tissue paper. The "Diet Coke" logo was traced using a light projector.




Our Balloon:

The minimum temperature increase is the minimum temperature inside our balloon needed for lift.

Min. Temp.
Increase: 88 °C
Volume: 20.58 L
Weight: 53 grams
Density: 17.6 g/L





CHEETO CHASE

Becca, Greta, Jonathan

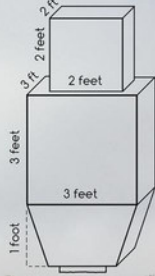
The large volume and geometrically sound design of the Cheeto allow for a smooth and graceful ascent.

MASS: 139 grams

VOLUME: 1,076.04 litres

TEMPERATURE:
95.304 °F - the air inside the balloon must be this much hotter than the outside temperature for flight.

Despite our tireless chase, the Cheeto ended up on a nearby rooftop, never to fly again.





FOLDING-WING GLIDER LAUNCHER

ZACHARY ALLBRITTON
HAVEN KING



MADE OF LIGHTWEIGHT BALSA WOOD, THE FOLDING-WING GLIDER IS AN AIRCRAFT THAT IS CAPABLE OF BEING LAUNCHED FROM A CATAPULT INTO THE AIR. WHEN THE APEX OF THE LAUNCH IS REACHED, IT'S FOLDED BACK WINGS SNAP INTO POSITION AND THE CRAFT GLIDES DOWN TO EARTH. IT DOES NOT USE AEROFOIL TECHNOLOGY, AND RELIES ON THE SURFACE AREA AND ANGLE OF THE WINGS FOR GLIDE CAPABILITY. THE CATAPULT USES THE ELASTIC ENERGY OF RUBBER BANDS TO FLING THE CRAFT 10-50 FEET UPWARDS, AND CAN BE ADJUSTED FOR A DESIRED LAUNCH ANGLE.

RACE SPACE 4

OUR HOVER CRAFT IS DESIGNED TO MAXIMIZE LIFT, SO THAT IT CAN EFFICIENTLY CARRY OUR DESIRED WEIGHT. LIFT AND PROPULSION ARE THE TWO MAIN FORCES THAT ACT ON A HINER CRAFT AND WE GET OURS FROM THE POWER OF A SMALL LEAF BLOWER; ALLOWING IT TO NOT ONLY HOVER IN THE AIR BUT ALSO GLIDE ON MOST SURFACES.



TOP



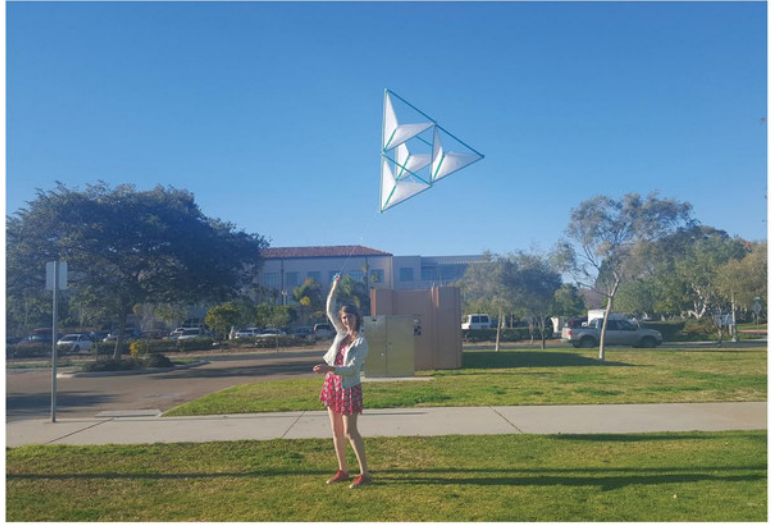
BOTTOM



FLYING OBJECTS (final four weeks)

In teams, students made a flying object from what they had learned in physics and art classes, using wind, heated air, and/or gases. Some students used motors and slingshots. They created a poster explaining their flying object. There was a strict requirement that objects would need to fly for 100 yards to be considered successful.





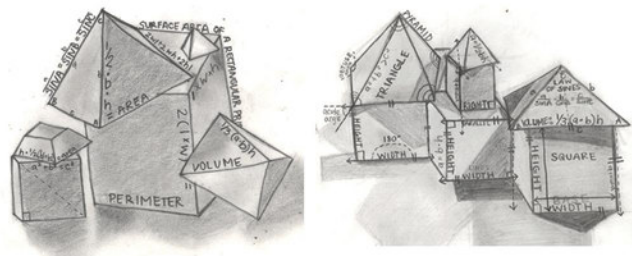
Each step and activity built intuitive knowledge about gravity. The students' documented their observations, created, tested, and expressed what they learned. The structure allowed for differentiation, as each student created their own products, within parameters. The project met the students at their level, letting them use their own vernacular to explain what they noted and connected to their creations. Later they learned the physics language and equations to explain what they had learned intuitively through flying or failing to fly their objects. Some students who were not strong in math and physics happened to be the best sewers and were able to teach the physics wiz kids, and vice versa. It was a genuinely democratic project because everyone had to fight the same gravity.

Calculicious was a

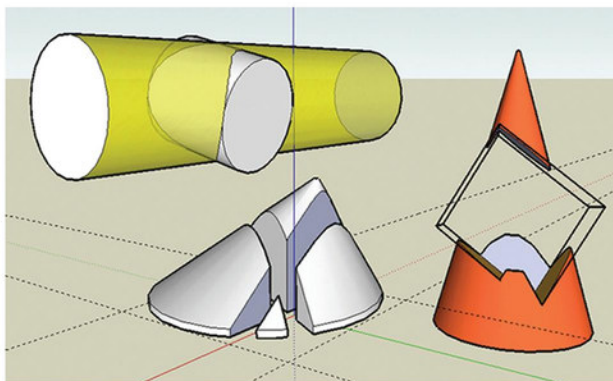
cross-curricular project where seniors were engaged in using calculus to make and describe art. The summer before, Andrew Gloag, the physics teacher, said that he wanted the students to move back and forth from class to class doing the same work. I thought that the art would make calculus more accessible to everyone—"sticky, even delicious." Andrew is from the UK, and he channeled his inner Austin Powers and said, "Calculicious, Baby."

Students first made paper shapes and drew them. They shaded the drawings and tried different drawing techniques in art class. Then they went to physics and filled in the math and/or calculus on the drawings. This first mini-project would show the students that math and calculus exist in real life and their art.

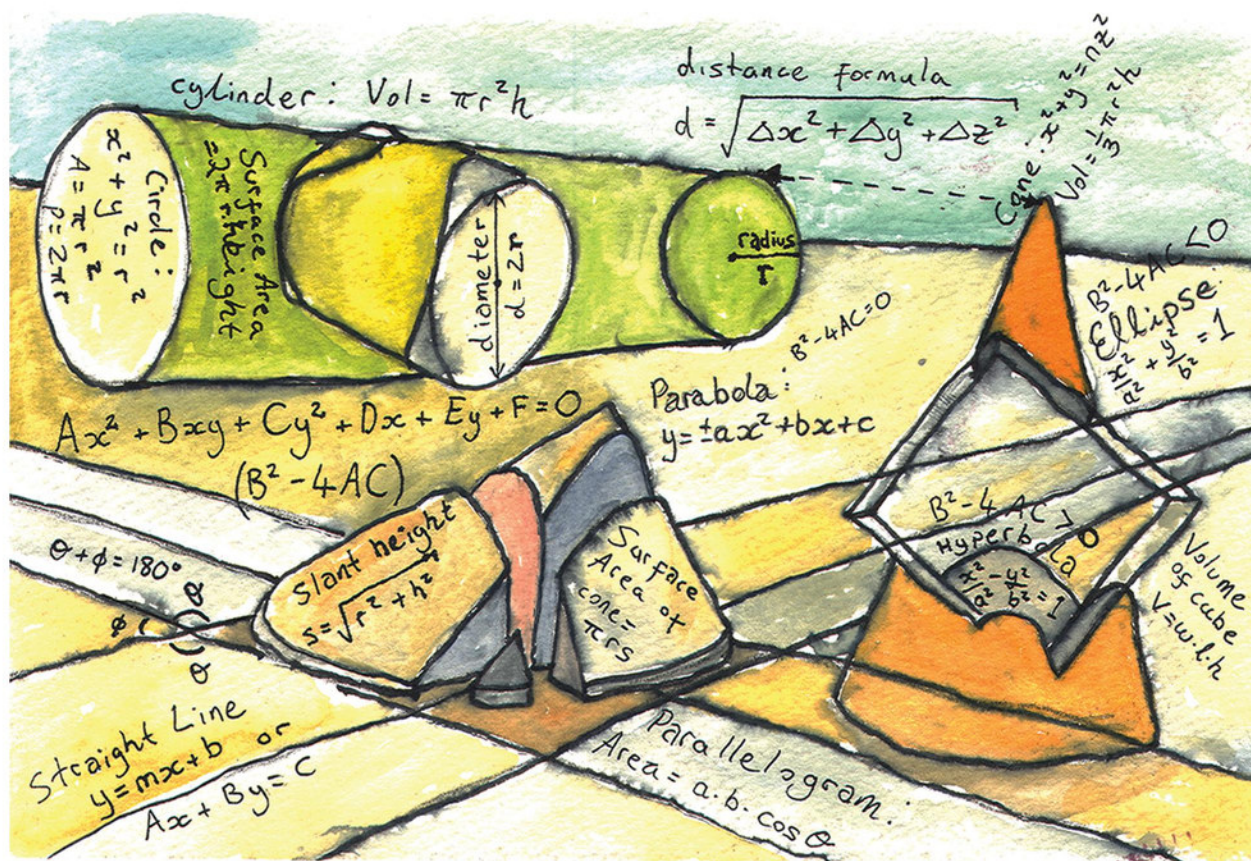
In math, students learned how they could use calculus to describe geometric shapes. In art class, they learned to use SketchUp, a CAD program that lets the user make shapes and intersect them to create an area under a curve, conic sections, and more. The students then made watercolors using this technique of digital designs and calculus formulas. The juxtaposition of shapes, formulas, and



First mini-project with shapes

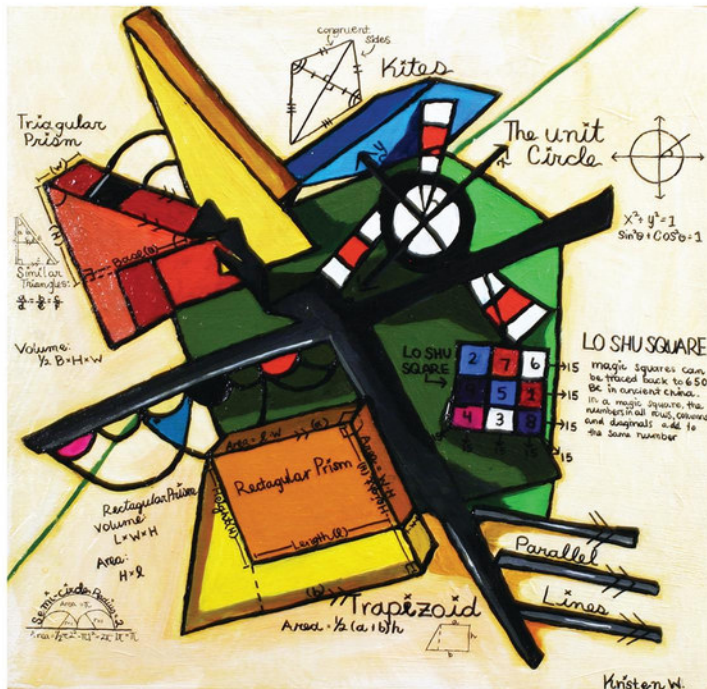


SketchUp conic sections maquette



Watercolors from SketchUp

CALCULICIOUS_{ART+MATH}



Kristin Winfrey, "Kandinsky's Math"

The next step was to have the students make larger acrylic paintings that described specific math and calculus concepts that the students were interested in. The students did not have to use the SketchUp images; they could also use a famous artist as a template to describe calculus functions, such as Basquiat, Dali, or Kandinsky. They created their maquettes and used acrylic paint on canvas to illustrate their visions.

As the semester went on, the students made sculptures and used calculus to describe these as well. They welded steel, sewed stuffed animals made of conic sections, and made parabola lounge chairs. Throughout the project, students used an online forum for critique. At least three students commented on all the work, who made suggestions, gave praise, and offered constructive criticism. The writing from the online forum became the text in the book of the students' work entitled Calculicious.

Calculicious > Forum > Acrylics > Ana's Painting

Acrylic Painting- Anna Vargas

The Marquardt Decagon Mask is a facial map based on the Golden Ratio [1.618 (Phi) to 1]. It's used to determine human attractiveness based on the placement and proportion of facial characteristics. Initially, the mask alone was the sole point of my acrylic painting design. However after a meeting with Jeff and some edits, the direct application of the mask to a human face seemed to be a better exercise of the mathematical concept itself. After finding a nice portrait of a profoundly handsome actor named Marty Feldman, I decided to apply the mask to his face in my painting. Outlining and painting small spaces carefully proved to be difficult but important because those fine details composed parts of Marty's face as a whole. I had to remain very aware of lines and borders to keep the face legible. Next, I created the actual Decagon Mask with red yarn to show both consistencies and inconsistencies.

The Golden Section Line is a line sectioned by the Golden Ratio (Phi to 1). This line is the foundation of the Decagon Mask. Its continued duplication and Golden Sectioning comprises the matrix the Golden Decagon Mask is derived from.

By Kristen

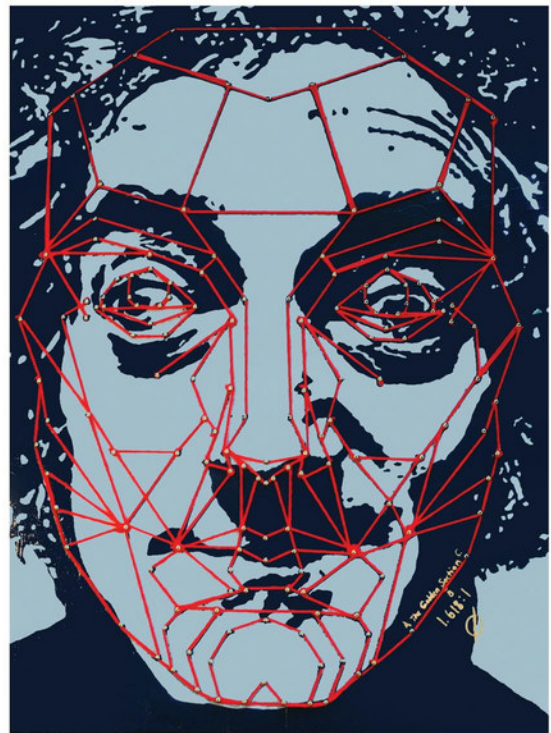
I agree that Marty Feldman is profoundly attractive. I don't think you do him justice... I offer the same advice that you offered me: What did you struggle on? I know the math gave you a hard time, and I think you should explain that in your paragraph. Everything seems effortless, and I think that people might like it more if they hear about your struggles.

By David

You did a good job on explaining the math behind your painting because it is indeed a very complicated topic to understand. At a first glance I would not be able to tell what you were doing by having put the mask on the piece, but it all makes sense now that you explained it. I would like to hear more about the composition of your actual piece. If you struggled on anything or if you have any regrets on anything you did. Overall good job!

By Louis

Your painting was really different from the majority of peoples' in that you drew a distinct person as opposed to shapes, and, you used string to display your math as opposed to painting it on. You might want to explain how you made these decisions. Just out of my own curiosity and to show contrast, you could mention someone whose face does fit the decagon mask?



Left: Comments from online student forum
Above: Ana Vargas, "Marty Feldman and the Golden Ratio"





The students critiqued each other in the online forum and met regularly with both teachers. Student groups from lower grades came to visit the class, and all the Calculicious students had to present what they had done and what they were working on next. These presentations were an excellent opportunity for many students that were never the ones to volunteer to go to the board and explain their math. They got the chance to explain their art and math. We wanted to make calculus delicious to everyone, not just the high flyers. We wanted to show students, teachers, and the community that if you can beautifully explain your math, it shows you know your math well. Students got the opportunity to make art and use the math or calculus they could understand; they were not trying to keep up with someone else. They focused on what they were good at and brought that into the project. One example was Kristin's acrylic painting. She had always struggled in math and felt that she could not go on to college because she "couldn't do the math." She was the first to finish her Kandinskyesque acrylic painting and was so proud that she was finally ahead of the pack. She then helped the calculus masters finish their paintings and gave them some useful tips on brushwork.

Calculusious was displayed at High Tech High and lives online in web and book form. The work was exhibited at the San Diego International Airport and is currently displayed at the Harvard Graduate School of Education.



I had the whole

tenth grade coming to my classroom for art every day. One hundred twenty students sounds like an average load; however, we were tight for space at High Tech High. I could not do the large format work I usually did with 50 twelfth graders. I thought if all students could make a painting of their own in the style of a particular artist, that might fit my budget and my studio limitations. I took a crack at making a Francis Bacon-style painting. He was a mid-century English artist who was a bit of a tortured soul. The students loved his story, his persona, and his grotesquely beautiful work.

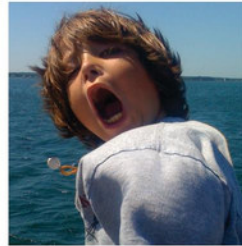


Chalk drawing a student made of Bacon for exhibition



My version of a Bacon painting

I did the project myself first. I realized that a Bacon painting usually had a melty figure, on a pedestal, in a three-dimensional environment, with halos or boxes around the subject. I made an example of each state; then, I would make the following example to show the students what I did.



My son



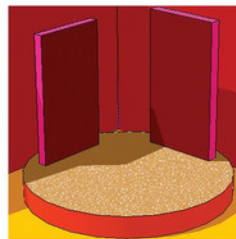
Masked



Melty



Pedestal



Digital Environment



Painted Environment



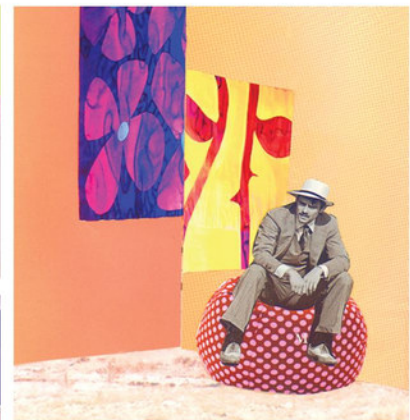
with Pedestal



Melty Figure

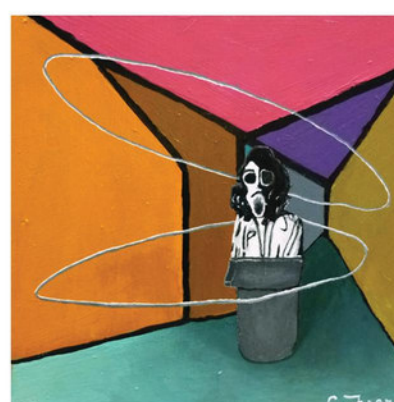
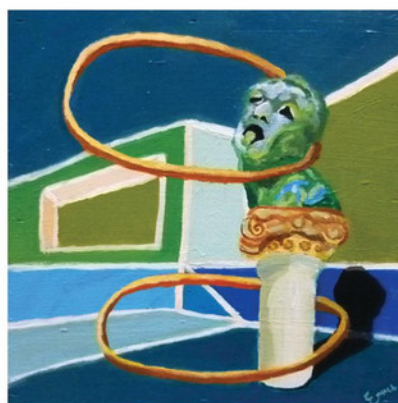


My finished Bacon painting



The students first used collage to understand the composition they would be making—the same components as the painting using magazines.

BACON PAINTINGS ART



At the moving

paintings exhibit at the San Diego Museum of Art, Blair Hatch (Multimedia/Biology teacher) and I saw the animated pictures of William Kentridge. We wanted to make paintings that moved with our students. It was hard to collaborate because we both gave art credit for our classes. Blair would give biology credit for the project and I would give art.

Since I was already a volunteer at the San Diego Blood Bank, we came up with a bio-physiology-multimedia-painting project. Students worked in groups to research and define an aspect of blood physiology, blood banking, or blood-related diseases. They made paintings explaining these ideas and then animated their stories. The students then made kiosks with old laptops inserted in them to play the animations. The kiosks were hand-painted and cut out of wood, much like Kentridge's work.

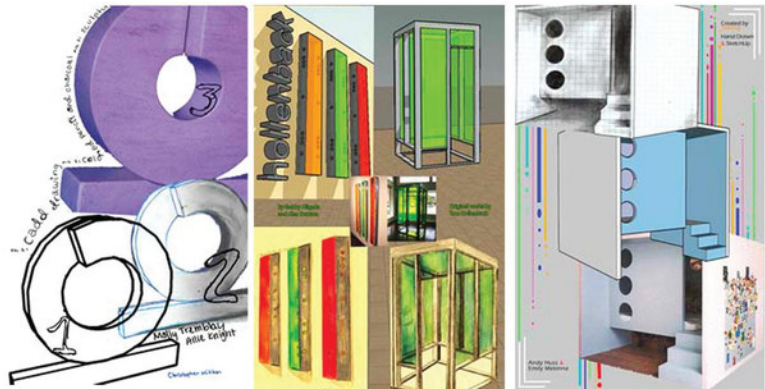
In bio-physiology, the students studied blood and the process of oxygenation, blood diseases, and the history of blood banks. The San Diego Blood Bank arranged to have doctors, blood donors, hospital administrators, county public safety officers, and phlebotomists come and speak to the students three times a week for the first four weeks of the semester. These specialists became mentors for the students and helped them accurately tell a story about blood physiology.

In art class, students learned to illustrate a visual story about blood by doing artwork. They learned techniques using digital tools to enhance their drawing ability. All students learned to draw using these techniques, enabled by Photoshop and critique. They learned how artists like Christo, Kahlo, Hausman, Bochner, Steinberg, and Gauguin used images and writing in their artwork.

In teams of two, students picked a minimalist sculpture and made a poster explaining it. The students utilized their new drawing, Photoshop, and SketchUp skills and an understanding of how visuals and text have been mixed in the past. This served as a practice or mini-project to prepare for a poster about their blood topic.



My father, Dr. Howard Robin M.D., a pathologist, and president of the San Diego Blood Bank at the time, came to speak and work with the students to choose their topics. Along with other health care professionals, he helped the students see the real-world connections in this project.



Mini-project: Minimalist sculpture posters with words. This mini-project was designed to let the students practice adding text to images—an essential skill. If you look at any meme, you will see horrible text-image compositions. I want the students to create art, not trash.



The images they created for their posters were starting points for the images they would use later to make their animated movies using Adobe After Effects. These topics ranged widely, and included hemophilia, mobile blood banks, heart attacks, strokes, Rh factor in pregnant women, leukemia, blood thinners, HIV/AIDS, bloodletting, blood transfusions, blood in film, and sickle cell anemia. Students had to create three to four animations covering various aspects of their story, which included composing music, writing scripts, and narrating the movie.

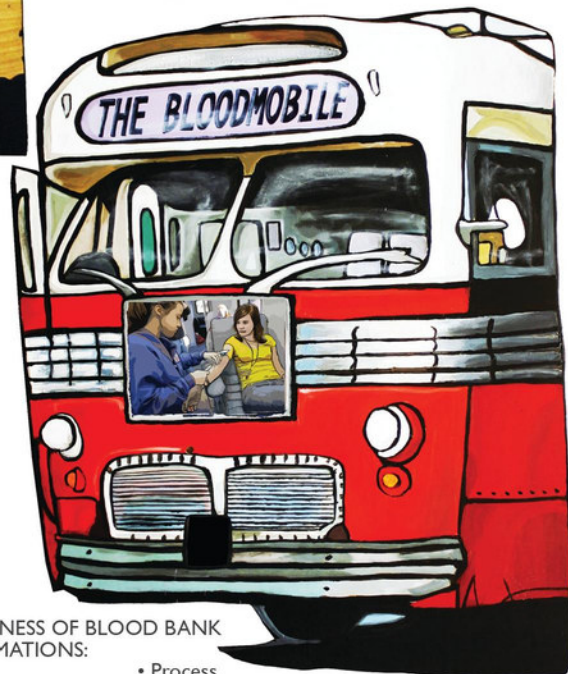
Using retired laptops (no longer in use by the school), the students loaded up their blood explanations and stories, inserting the laptops into their hand-cut and painted kiosks that helped tell the story of their subject.

BLOOD BANK

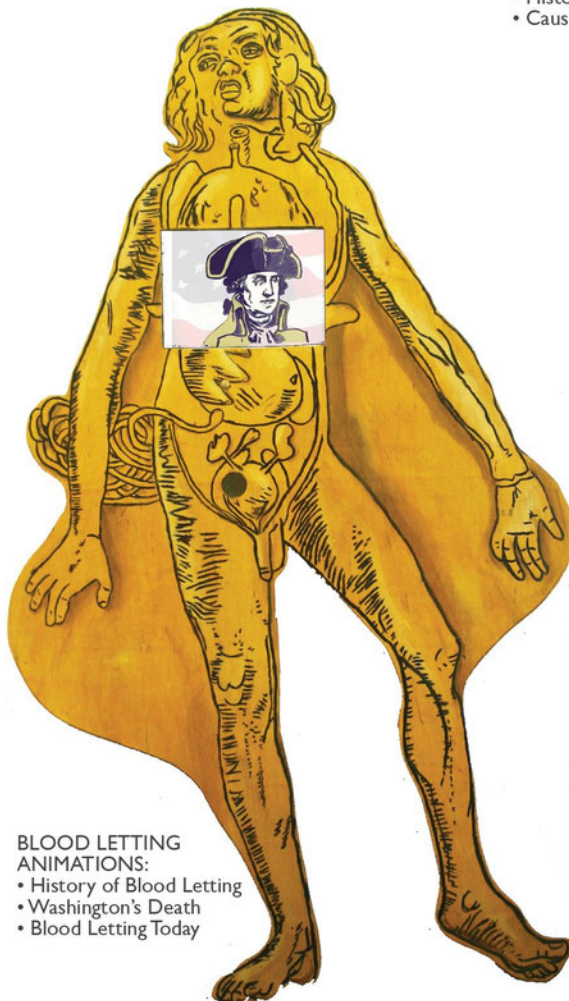
ART+PHYSIOLOGY



HEMOPHILIA ANIMATIONS: •What Is Hemophilia?
• History
• Causes



BUSINESS OF BLOOD BANK ANIMATIONS:
• Process
• Impact
• Importance



BLOOD LETTING ANIMATIONS:
• History of Blood Letting
• Washington's Death
• Blood Letting Today



BLOOD LETTING POSTER



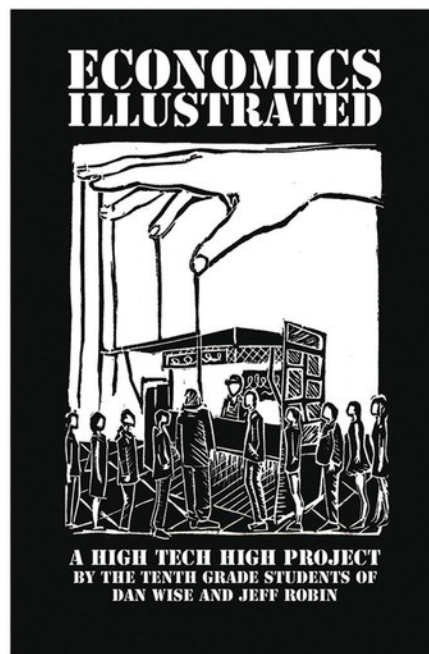
BUSINESS OF BLOOD BANKING POSTER

“To see the world through the lens of economics” is what Dan Wise wanted his students to investigate. In looking for accessible books that could help them understand economic concepts, he realized there weren’t many. So, with my help, we decided to make our own.

The result was *Economics Illustrated*, a book in which students explained and illustrated an economic concept of their choosing and wrote an article that applied the concept to an issue they cared about. One student who was into sports, for example, chose the concept of collusion and applied it to salary caps in professional sports. Another student chose supply and demand, and applied the concept in an article about the housing market crash of 2008.

Dan chose a series of economic terms or concepts that students could choose to focus on, such as the invisible hand, elasticity, market externalities, free riding, opportunity cost, and public goods. Once they decided on their concept, they needed to define it clearly, develop several real-world examples, and choose one issue to apply it to and research its impact.

The book’s illustrations took the form of block prints, which for most students was a new technique and proved accessible to many. “I can’t paint, I’m not artistic,” said one student, “but I was able to create really cool images by carving out blocks.” Students learned the technique with a series of mini-projects in art class, leading up to their final series of prints that illustrated their economic concept. I demonstrated how to use carving tools and block printing techniques and then they found the artist in themselves. The students made prints every day in my art class while creating their articles and explanations of the economics concepts in humanities class. They bounced between classes, proposing ideas and images to explain their economic concepts. The students had to decide what image would help illustrate their meaning the most effectively. Dan was the editor, I was the art director, and the students were the creative force expressing themselves within the parameters of a real-life economics project. The students learned what it was like to be an economist, journalist, and artist.



Book cover

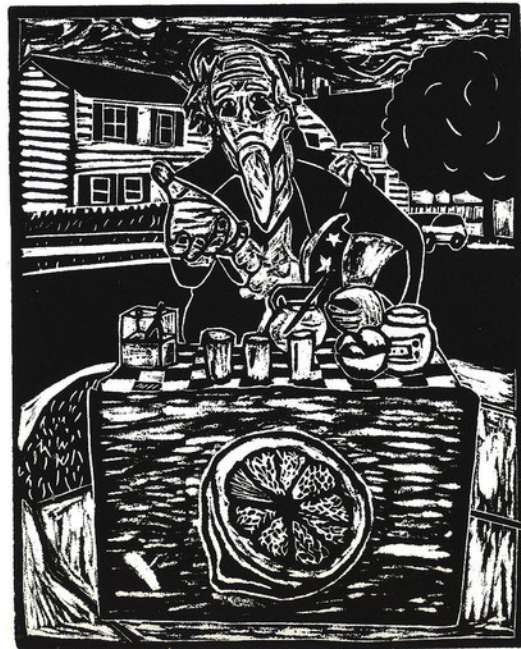
ECONOMICS ILLUSTRATED ART+HUMANITIES

Theory of Comparative Advantage



When someone is relatively more efficient at producing something, he or she has the comparative advantage. Production according to comparative advantage enables specialization and more efficient overall production.

Why Buying American Doesn't Work



Buying American made products would likely help with the immediate recession by creating more jobs. But, in the long-term, it will damage our economy badly.

The Invisible Hand

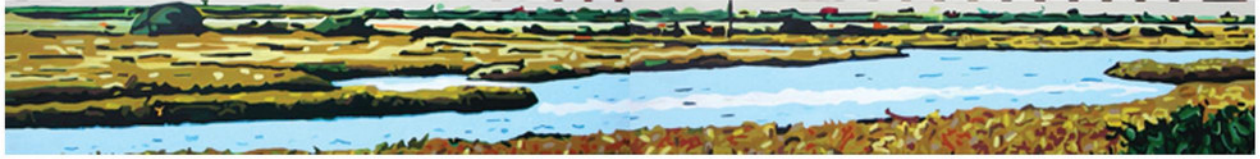


Definition: The invisible hand is a metaphor that describes how individuals acting in their own self interest unintentionally benefit society by producing and purchasing the goods and services that are wanted and needed.

Greed Advances Technology?



Story: The invisible hand does not apply to all matters in society, but in the case of incentives for producers and consumers, it works magnificently.



Del Mar Med Project

We were running low on funds and I was still getting my head around not having a budget for supplies.

My friend was setting up his medical practice and he needed a large painting for his waiting room. My students went to Del Mar and took pictures in the lagoon, and created maquettes for his approval.

He chose the top one, and the students made a 16 foot by 2-foot painting. We got \$2000 dollars for the art program.

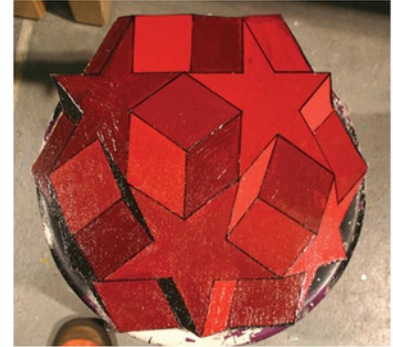
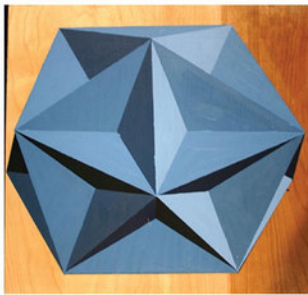
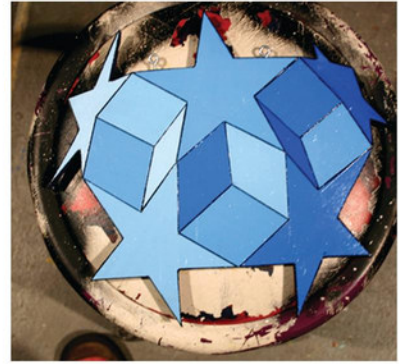


The Evolution Mural

This project never happened. The building owners were worried that making a painting about the evolution of whales would be too political. Excellent designs and the students had fun doing the research and maquettes.



PROJECTS BETWEEN FILM AND MEGAPIXELS



Geo-Shapes

Geo-Shapes was a project Andrew Gloag came to me with because he had students that wanted to paint. I helped them create tessellations, and transfer their drawings to wood and paint. We tried to do their project again with a whole class, but it never happened.



Tlaloc- Dios de la lluvia. Su nombre significa literalmente, tierra. El comparte un lugar con el dios azteca de la guerra, Huitzilopochtli. Muy importante para la civilizacion agricola.

9 de Diciembre - 28 de Diciembre

Tlaloc was the god of rain, however his name means Earth. He shared a place at the top of the pyramid of the sun with the Aztec god of was Huitzilopochtli. He was an important part of Aztec agricultura civilization.



Rod- God of Math/Dios de los Matemáticos



Ben Daley- God of HTH Athletes
Dios de los Athetes



Jeff Robin- God of Crazy/Dios de los Locos

Codex Borbonicus 2000

The Codex Borbonicus project was an Advanced Spanish and Art project the first year High Tech High opened. Groups of students took on different sections of the Codex and created writings that would explain these Aztec drawings, using texts and translations from the Codex Borbonicus and books from the San Diego Museum of Man. Remember it was 2000; there was no Google or Wikipedia. They made diagrams that explained the Codex and new art incorporating the teachers at High Tech High.



This show was in 2004. My friends Jeremy and Josh owned the gallery. Jeremy became an art teacher at HTHI and Josh continued to support both of our projects.



The Cashisking gallery was the site of my student's 2005 art show. I would love to share large images of the work; we only had 2.0 megapixels at the time. The students all made art in the style of a famous artist. Some of their work was dead on, and some were just a nod to their master's work. We had art, food, drinks, and music. I wanted the community to see what the real art scene was like in San Diego. Going to openings did not seem that out of reach to me, plus they are free. Parents, students, and some teachers had never been to an art show in a real gallery.

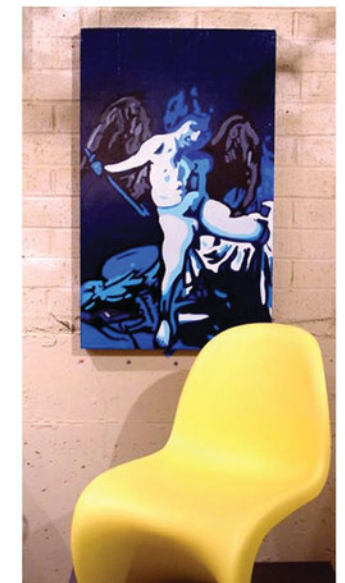
I shared my art snobbery with the HTH community, and everyone had a good time.



ART SHOWS ART



Digital Baroque was the first art project we did at High Tech High. The students manipulated a baroque painting in Photoshop and then painted the image with acrylic paint. There were 55 paintings, and it was an explosion of color. I would love to share large images of the work; we only had 2.0 megapixels at the time. After this show, the bar was set for all the art and exhibitions at High Tech High. The Davan furniture gallery in La Jolla, CA, hosted the event. I had 11th graders believing they could be an artist just like when they were in kindergarten.



This show was in 2003 my agent Alma set it up for us. She was always helping my students with spaces and support.



WHERE BOOK TREES GROW^{ART+CULTURE}



Inspired Furniture was a collaboration between Humanities & Engineering classes where students looked to nature's remarkable ability to design as a guide for their work. During this project, they critically examined humans' relationships – societal, economic, personal & otherwise – with nature and employed the engineering process to construct a piece of DIY Furniture. Each of these pieces was inspired by and constructed around observations of nature's most functional & attractive design approaches.

Then, my Art Class installed one of the pieces in the hallway at High Tech High. They built both a desk and wainscoting around the project, where students can study and read. The mural above the work depicts the natural habitat where Book Trees Grow, a great example of how projects exist in the outside world.



I felt that it was my responsibility to have students decorate the school. It helped the school look like an exciting place to be, even while reading. It helped students understand what finished work needs to be, and it helped set the bar on the kind of work we display.

Why Trips?

My wife's cousin in Mexico City went to CIDE the best economics university in Mexico on a full-ride scholarship and then got into the London School of Economics for her Ph.D. Her father said to her, "It's not part of your reality. You can't go." She got a scholarship and went anyway. Going to London was not part of her father's reality. Holding people back because you are scared is not good.

My grandfather's third wife and I went to the Barnes Foundation Museum in Philadelphia together. She had grown up not 200 yards from the museum and had never been. As we walked through the museum looking at Renoir, Matisse, Degas, and Gauguin, she said she had never been to Europe. I was surprised because she was rich. She had always planned to go, but her husband died, and she did not know anyone who went to Europe to look at art. I said, "That is why I started going to Europe. A friend of mine went by himself and learned a lot about art and life." By my friend going, it made me understand that travel was a possibility and I could do it too.

The first two-week spring break in my 12 years of teaching was the first year of High Tech High in 2001. My wife, nine-month-old son, and I flew to Paris. There was a French teacher with her students on their way to Paris too. I said, "I should take my students to Paris." She said, "No, you can't, you don't teach French, and you are at a public school where the students can't afford \$2500 for one week." First, I can do what I want. I am an art teacher. And second, if I planned the trip without a travel company taking a cut and had scholarships for students that could not afford the trip, it could be done.

I took students to Europe and went on trips to see art because it is an experience, without parents, to see art and enjoy culture with an art tour guide. And I hoped that they would go on trips themselves, and hundreds of them have. I also know that not everyone could afford to go every year or maybe even once, but they knew it was part of their reality, and it was a possibility that they could avail themselves. Hundreds of graduates have told me that it became a priority for them to go to new places after graduation because of HTH trips.

In May of 2021 as I was writing this book, my former student Dwane Bugg died after a two year battle with colon cancer. He was from the first High Tech High class, my advisee, and a participant in the first trip to Paris. His mother hugged me at the funeral and said his apartment is full of art books and paintings and while he was in hospice he talked about his trip to Paris with his teachers and his friends, as being one of his best experiences. The trips stopped because some teachers and administrators felt that it was not equitable, maybe, but they were valuable.



Colosseum, Rome



Versailles, Paris



Dwane, the group and I stop for lunch somewhere in Paris



Brett Peterson talking to a student about Monet at the l'Orangerie, Paris



Students at Monte Alban, Oaxaca, Mexico



Venice, Italy

50% of the students that went were students who qualified for free and reduced lunch.

Many paid less than \$500 for one week.

The opportunity these students had to be without their parents before going to college was priceless.

The students chose to go with different teachers on different trips: India, Dominican Republic, Thailand, UK, Spain, France, Holland, Japan, China and more. And the list goes on.

I went with students to: Paris (4 times), Amsterdam (1), Rome (3), San Francisco (4), New York (1), Los Angeles (8), Venice (1), Florence (1), and Oaxaca (1).

In Paris we went to the Louvre, Musee d'Orsay, Pompidou, Rodin Museum, l'Orangerie, Petit Palais, Cluny, Picasso-Paris, Carnavalet, Les Invalides, War Museum, Gustave-Moreau, Versailles, Arc de Triomphe, lots of galleries, and the Eiffel tower on their own.

In Rome, we went to Borghese, Capitoline, Vatican, Modern, MAXXI, Dora Pamphili, Forum, Contemporary, Etruscan, Pantheon, and to see in churches the work of Caravaggio, Michelangelo, Bernini and the baths of Caracalla and Trajan.

In San Francisco, we hiked to the top of Angeles Island, to the top of the headlands across the golden gate bridge, to the Fisher collection where the man himself gave us a private tour. We went to the de Young, Legion of Honor, SFMOMA, Museum of Asian Art, Jewish Museum, Science Museum, Exploratorium, African Diaspora Museum, and out on the town for gallery openings in 20 contemporary galleries where the students were welcomed in and treated like a soon to be patrons.

In New York, we went to the MOMA, MET, Guggenheim, Whitney, New Museum, Cloisters, Morgan Library, Frick, Jewish Museum, Cooper Hewitt, Neue Galerie, and all the galleries in Chelsea.

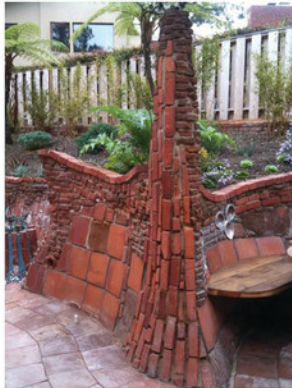
We went to LA galleries in Hollywood and Culver City, LACMA, Broad, Getty Villa, Getty, Contemporary, Hammer, Huntington Library, and the Norton Simon Museum.

In Venice: Doge's Palace, Correr, Guggenheim, San Rocco and on a boat I rented.

Florence: Uffizi, Accademia, Bargello, Pitti Palace, Palazzo Vecchio, Santa Croce, San Marco, and 100 chapels.

Oaxaca: Santo Domingo, MACO, Textil, Pinorees Oaxaquenos, Tamayo, Fotographic, and the ruins at Monte Alban and Mitla. We saw pre-Colombian, colonial, modern and contemporary art all in one trip.

COMBINED TWO IMAGES ART MINI-LESSON



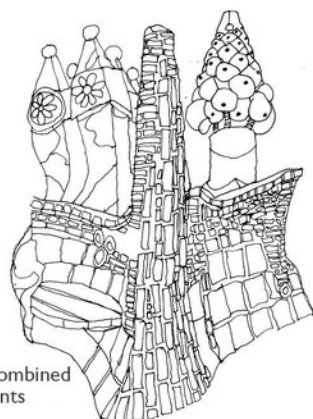
James Hubbell Home
Del Mar, CA



Antoni Gaudí Building
Barcelona, CAT



Collage in Photoshop

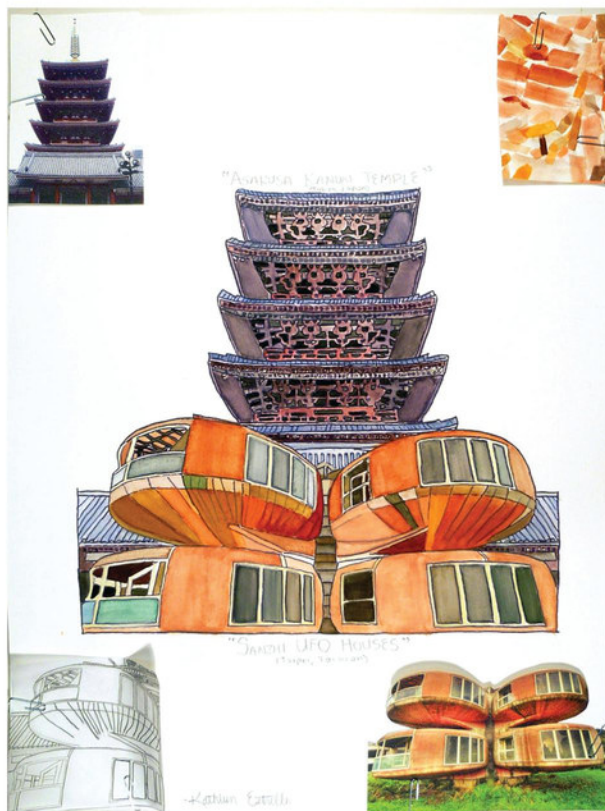
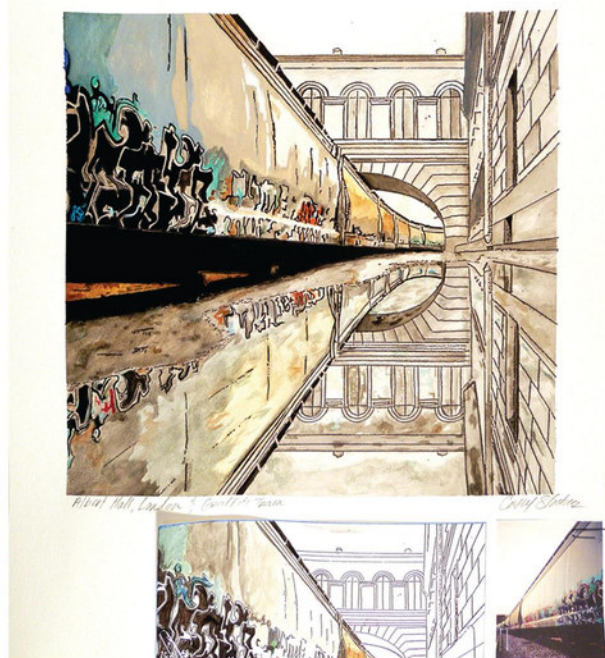


Tracing of combined
elements



My Exemplar
Hubble-Gaudi

This mini-lesson was to teach the students a process to combine images together to tell a physics concept. I did the Phys Newton project first and realized that the students would need to use images from the internet and combine them to come up with their composition. Since there was a period of them choosing and learning about their Newtonian State Standard they would be illustrating, I thought they could make an art piece that utilized the study of architecture. My friend has a Hubble house, and Gaudi influenced Hubble. I thought I would make my exemplar about these two related architects. The students then used my process to make these lovely watercolors of two kinds of architecture connected with the original images, tracings, and paint swatches.



This was a project

born from anger and an "Oh Yeah!?" attitude. The semester before, Andrew Gloag (Ph.D. in physics, Oxford College, UK) and I had our students do the Get Bent project making bentwood chairs, lamps, and books about what it took to make these math and physics heavy objects. The exhibition was grand, and everyone was so proud. Except for a visitor from the physics department from the University of Chicago, he said that "there is no way to teach physics using project based learning and not using the standards." He believed that every student needed to learn the same thing. Of course, that is a stupid and insecure thing to say, and I told him so. So to prove the point, the next semester, we had the students illustrate the Newtonian Physics Standards and then show how they exist in our everyday world.

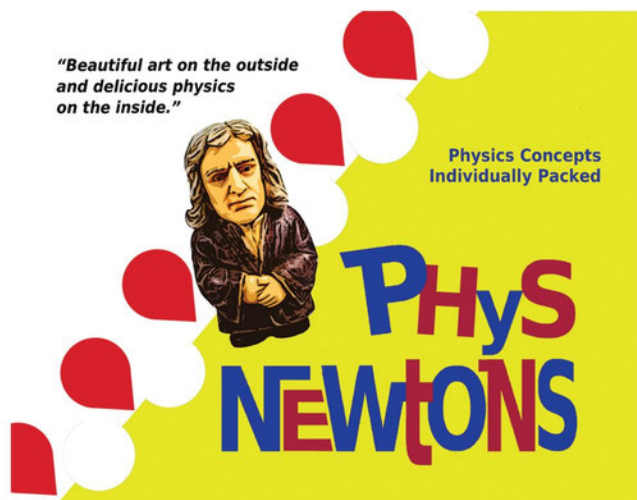
In art class, the students learned to combine source images and watercolor images to tell a story. In physics, students went over the Newtonian State physics standards, and then chose the one they thought they would like to illustrate. They did a deep dive into one standard. In doing so, they had to learn about other concepts, and by the end of the semester, they had learned a great deal of physics and knew how to explain it using visuals and real-world examples. I made an exemplar with Dr. Gloag (he lets me call him Andrew), showing kinetic energy, potential energy, and chemical energy. These illustrations and on the opposite is the illustration we made to show the students.



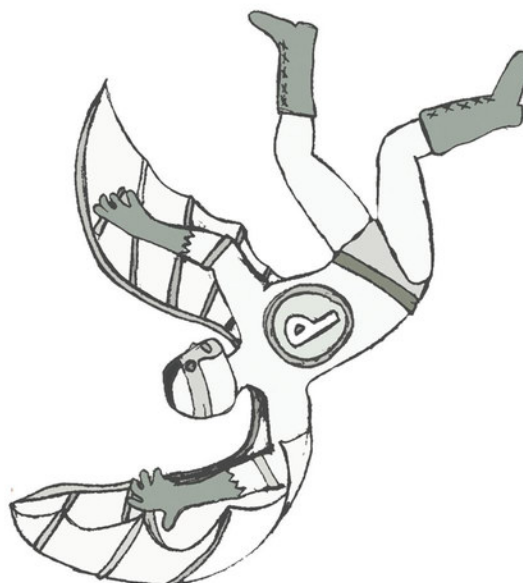
Here is an example of how I showed the students I created "Potential Energy Man." I found an image on the internet of a man with wings on. I traced him and then added a superhero-style outfit to suit my needs.



This is Kinetic Energy Man falling from his perch, exemplifying what kinetic energy is. I did not know what potential, kinetic, or chemical energy was, and I had never had to explain it till I made this exemplar. We learned the process of making these illustrations and learning physics by doing the project ourselves first. Andrew has a P.h.D. I have an MFA, but no amount of alphabet soup would have been equal to doing the project and showing our exemplar to the students. They did not copy us. We set the floor.



This book's cover contained 28 Newtonian state physics standards illustrated and a test to go with the diagrams. We lifted the Fig Newton package design and added an odd little figure of Isaac Newton to have fun with it. We made over \$10,000 selling this book.



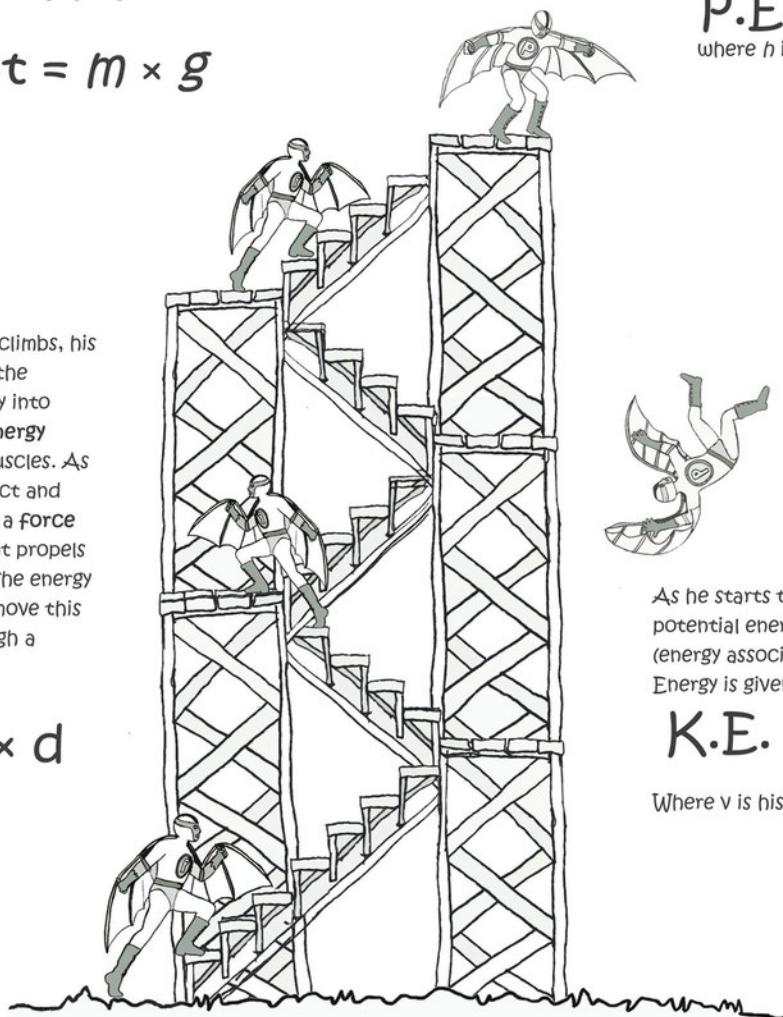
PHYSNEWTON_{ART+PHYSICS}

Energy Man will continue to climb so long as the force he exerts upwards is greater than his **weight**. His weight is determined by his mass (m), and the strength of gravity (g). It is given by:

$$\text{Weight} = m \times g$$

As energy man climbs, his body converts the chemical energy into **Mechanical Energy** through the muscles. As muscles contract and relax he exerts a force on the step that propels him upwards. The energy (E) it takes to move this force (F) through a distance (d) is:

$$E = F \times d$$



Standing still at the top of the tower, Energy Man reaches his maximum **Potential Energy**, which is given by the formula:

$$P.E. = m \times g \times h$$

where h is his height above the ground.

As he starts to fall Energy Man loses his potential energy but gains **Kinetic Energy** (energy associated with motion). Kinetic Energy is given by:

$$K.E. = \frac{1}{2} \times m \times v^2$$

Where v is his velocity in meters per second.

Chemical Energy is stored in the chemical bonds between atoms in food. Your body releases this energy through "respiration" - a controlled process similar to burning the food in oxygen.

$$1 \text{ food Calorie} = 4,184 \text{ Joules}$$

At the moment when Energy man hits the ground all his potential energy has been converted to Kinetic Energy. This is due to the **Conservation of Energy Law**. We can calculate his impact velocity as follows:

$$\begin{aligned} \text{Final K.E.} &= \text{Initial P.E.} \\ \frac{1}{2} m \times v^2 &= m \times g \times h \\ v &= \sqrt{2 \times g \times h} \end{aligned}$$

This is mine and Andrew's exemplar, showing Chemical, Potential and Kinetic Energy Man. A parent said that all three looked the same. I did not know how to answer without being condescending. His son explained it to him in a lovely way.

An object is in a state of "Static Equilibrium" when all the forces acting on it are balanced and the object is at rest, although all of the forces are not necessarily equal to each other.

The forces are balanced because the rightward forces are balanced by the leftward forces and the upward forces are balanced by the downward forces. This results in the forces adding up to 0.

The forces acting on the clown are all balanced because their centers of mass and points of contact align. This means there is no moment which causes an object to be unbalanced.

The unicycle, elephant, bowling pin, and Earth are all forces acting on the clown causing it to be in a state of static equilibrium. Since these forces are all balanced, they cancel out to create a net force of 0.

STATIC EQUILIBRIUM



STANDARD 1K Students know how to solve two-dimensional problems involving balanced forces (statics). *Lola Dimm-Kempenaers*

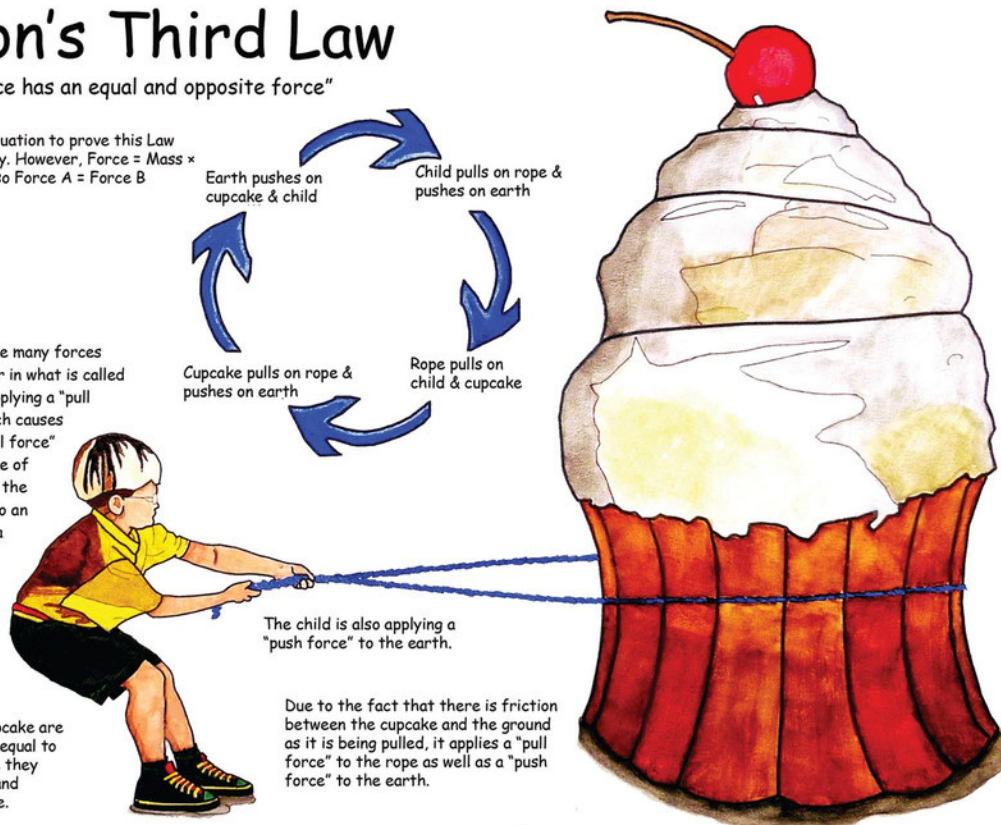
Newton's Third Law

"every force has an equal and opposite force"

There is no equation to prove this Law mathematically. However, $\text{Force} = \text{Mass} \times \text{Acceleration}$ so $\text{Force A} = \text{Force B}$

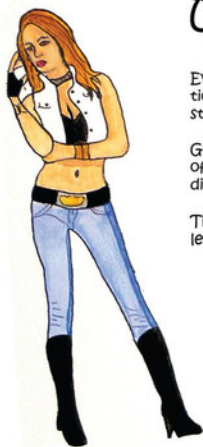
In some cases there are many forces acting upon one another in what is called a system. The boy is applying a "pull force" to the rope which causes the rope to apply a "pull force" back to the boy because of the tension created by the rope being connected to an object (Cupcake) with a larger mass.

The boy and his big cupcake are "push forces" that are equal to each other. Therefore they cancel each other out and nobody moves anywhere.



STANDARD 1D Students know that when one object exerts a force on a second object, the second object always exerts a force of equal magnitude and in the opposite direction (Newton's third law). *Allie Richardson*

Universal Gravitation



Every object in the universe attracts every other object with a gravitational force. Gravitational Force is directly dependent upon the mass of both objects. The bigger the objects, the stronger the force.

Gravitational Force also obeys the inverse square law. This means that if two objects (center of mass) are further away from each other they attract each other less. In fact, doubling the distance reduces the force by 4.

These examples relate to this law because the fat couple below with a higher mass and less distance between them is more attracted to each other than the skinny couple with



Using the equation below, we can find the force of attraction between both couples.
The fat couple is:

$$F_{grav} = G \frac{115 \cdot 110}{1^2} = 11,500G$$



And the skinny couple is:

$$F_{grav} = G \frac{60 \cdot 50}{5^2} = 120G$$

This law can be explained by the equation: $F_{grav} = G \frac{m_1 \cdot m_2}{r^2}$

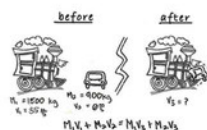
G represents the universal gravitation constant which is $6.673 \times 10^{-11} \text{ m}^3\text{kg}^{-1}\text{s}^{-2}$

M1 represents the mass of object 1 in kg, m2 represents the mass of object 2 in kg, d represents the difference separating the objects center in meters.

STANDARD 1E Students know the relationship between the universal law of gravitation and the effect of gravity on an object at the surface of Earth. *Cherish Burtson*

Conservation of Momentum and Energy

A train racing down the tracks hits a car. What happens to the train's kinetic energy? What happens to the train's momentum? The train's energy transforms, becoming Mechanical, Thermal and Kinetic energy, where the overall quantity of energy is conserved. The train's momentum partially transfers to the car at impact, and is conserved. See the



Momentum can be thought of as "quantity of motion" that an object has: a moving car has some quantity of motion, but a parked car has none. Momentum is found by multiplying an object's mass times its speed. There is no special unit, so the units are $\text{kg} \times \text{m/s}$. Momentum = mass (kg) \times speed (m/sec). When a moving object collides with another object (moving or not) there is a transfer of momentum. The transfer is such that the total momentum before and after the collision remains equal.

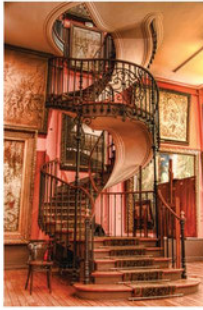
The change of Kinetic energy (ΔK) of an object when moving from point a to point b via a path(s) under the influence of a force $F(s)$ is defined by the work done by this force.



Momentum and energy are both conserved quantities, meaning that they can be neither created nor destroyed. To change an object's momentum a force acts over a time. Force acting through a distance changes energy. Another difference is that momentum is a vector and energy is a scalar.

STANDARD 2G Students know how to solve problems involving elastic and inelastic collisions in one dimension by using the principles of conservation of momentum and energy. *Casey Stocker*

ART+PHYSICS STAIRCASE TO NOWHERE



In March of 2005, I took my class to the Gustave Moreau museum in Paris and saw this staircase.

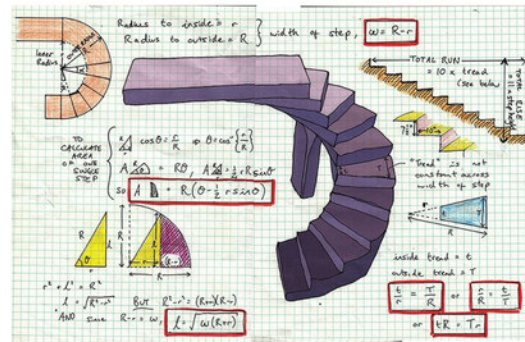


In January 2007, I took my students to NYC and went to the Cooper-Hewitt Museum where they saw Made To Scale • Staircase Masterpieces.



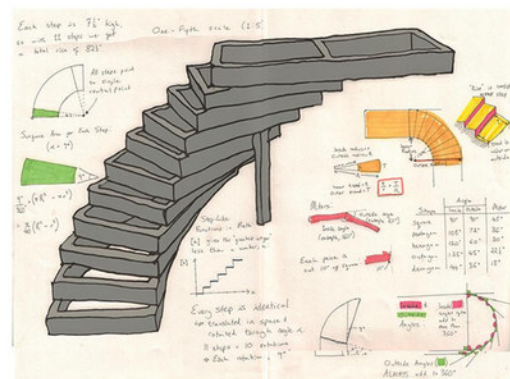
In summer 2015 Andrew and I planned the project, where we quickly found out that students should start with play, when Jack, Andrew's 4 year old, made a staircase.

First Learning Goals: Individually play and create a 1:10 scale staircase. Use the math you know to create a Math Explanation Poster.



I made a 1:10 scale model as proof of concept and the first exemplar. We then created a math poster to explain the staircase we built. The students were to use the math they already knew so that everyone had an entry point into the project.

Second Learning Goal: We would have the students in teams of two design and create a 1:5 model staircase highlighting math learned from this semester.



I used Sketchup to design a 1:5 scale staircase. This exemplar used a similar rotating shape so that the math poster could be trigonometrically centered.

We created a Math Explanation Poster. Andrew would teach the math and physics concepts to the students and helped them find the right concept to use for their 1:5 model.

Holy Staircase!



BY EMILIA HENRIKSEN AND VICTORIA DELARUE

HOW WE ESTIMATED THE FLOOR AREA

EACH STEP IS 16" THERE ARE 4 STEPS

100 NUMBER TOTAL LENGTH 16" 400 1600

WE WERE INITIALLY DRAWN TO THIS STAIRWAY BECAUSE OF THE AESTHETIC OF THE ARCHWAY ABOVE IT AND THE TALL MURAL.

THE STEPS READ A LARGE 2000 AND A DIGNITY BASE, WHICH IS UNUSUAL TO SEE IN A LIBRARY STAIRWAY.

TOTAL HEIGHT OF STAIRCASE: 20 INCHES
ESTIMATED FLOOR AREA: 16,400 SQUARE INCHES

16" 400 1600

100 NUMBER TOTAL LENGTH 16" 400 1600

WE WERE INITIALLY DRAWN TO THIS STAIRWAY BECAUSE OF THE AESTHETIC OF THE ARCHWAY ABOVE IT AND THE TALL MURAL.

THE STEPS READ A LARGE 2000 AND A DIGNITY BASE, WHICH IS UNUSUAL TO SEE IN A LIBRARY STAIRWAY.

RATIO OF RISE TO RUN: 1:13

THE AVERAGE HEIGHT FOR A FLIGHT OF STAIRS IS 7.5 INCHES TALL. THE STAIRWAY WE SELECTED WOULD NEED TO BE 16 INCHES TALL TO QUALIFY AS A STAIRWAY.

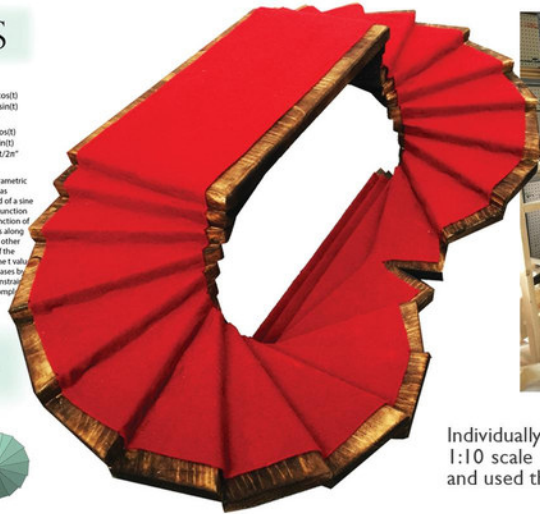
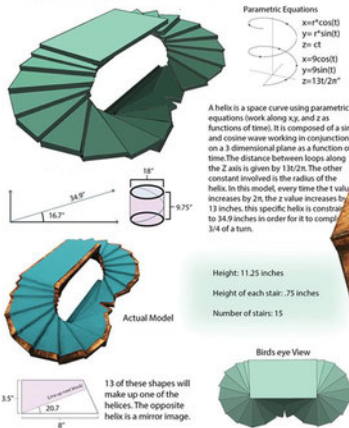


Project Launch: Define A Staircase

The first day of class the students arrived and were handed a yardstick. In pairs, they went out and measured real staircases. They weren't tipped off as to what the project would entail. All they were told was "go out with your partner and document a staircase."

DOUBLE HELICES

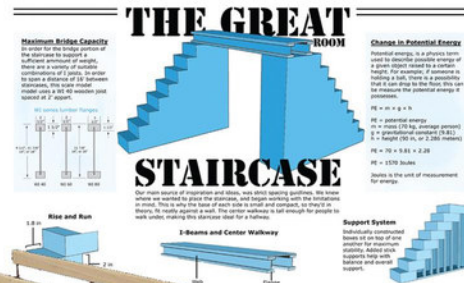
Deryk Goerke and Sophie Williams



Individually, students played, created and explained a 1:10 scale staircase. They learned to use power tools and used the math that they already knew authentically.



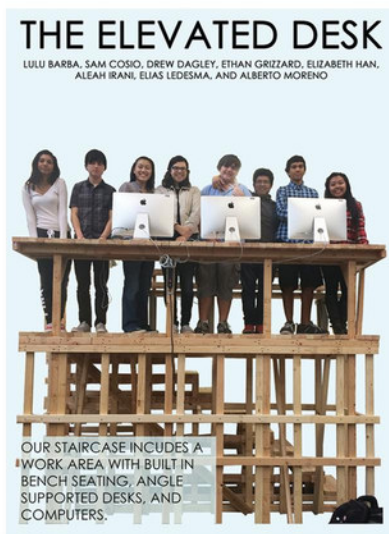
Students designed, created, and explained 1:5 scale staircases in teams of two while learning new math concepts and working together.



Third Learning Goal: In teams of 10, collaboratively design and build a Staircase to Nowhere around the school to add to the community using math and physics.



A team of 10 students designed and built a Bridge to Nowhere across the High Tech High commons. They had to research how to make glulam joists spanning 25 feet. The students had to work with the fire department and HTH engineering staff to secure this project. This Bridge to Nowhere has added to the community and is still going strong.



The Elevated Desk was not always a good space for work. It became several work desks, and kids like to play.

The Rebels Among Us

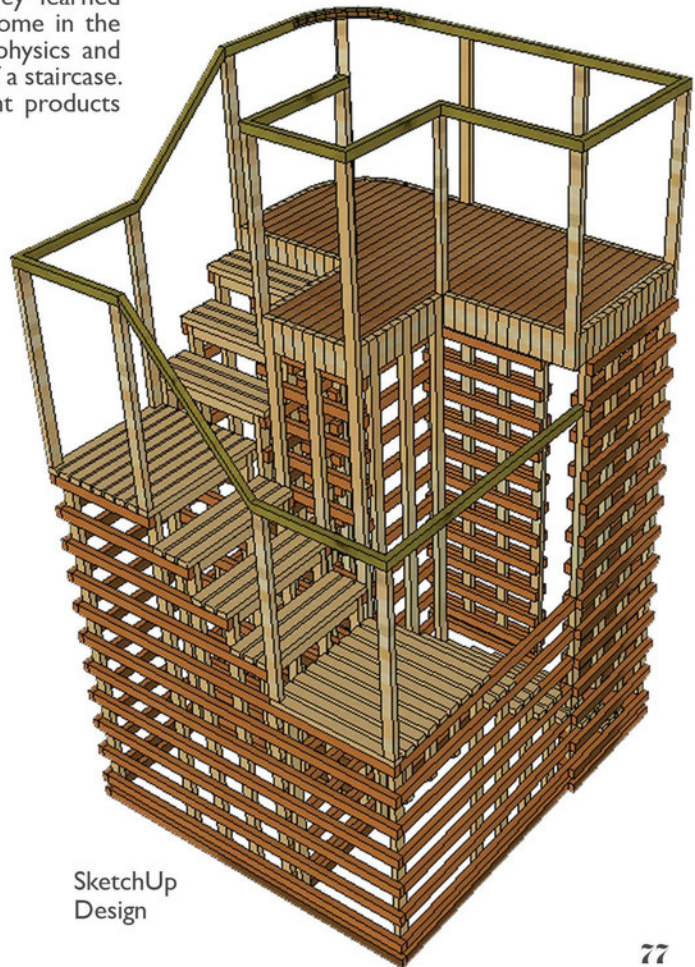


"The rebels among us." Three young women realized that they could use the math, design, and woodworking they learned during the semester to create a Geodesic Hang Dome in the commons of High Tech High. They used math and physics and added to the community by making a dome instead of a staircase. The open-ended learning goals allowed for different products with the same learning outcomes.



The Stack by the Door

The Loft in the Art Room



SketchUp
Design

The Vortex was an idea

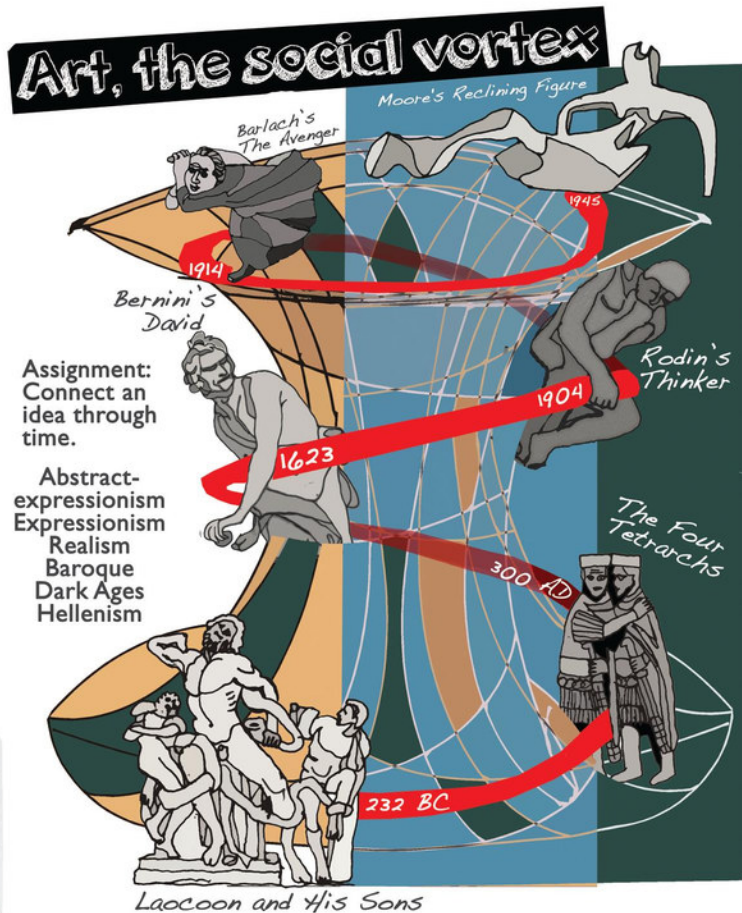
I had about art. Throughout time themes come back and then go away only to return.

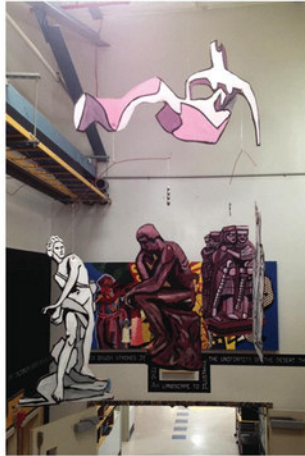
Each team of students investigated a theme in the canon of western art history. They visited the Getty Center and the Getty Villa to see art from the Archaic Greek period to Post-Impressionism. The students also visited the San Diego Museum of Art to see modern art and the San Diego Museum of Contemporary art to see contemporary and post-modern work. They focused on themes, style, mediums, or formal artistic elements throughout time, place, and cultures. The students then specified their Vortex of art that connected pieces throughout history.

They all made two wall cards for a timeline (Like at the Tate Modern in London). This timeline was like an expanded art history book. The idea was that they would find connections by walking the timeline.



TATE Modern timeline book

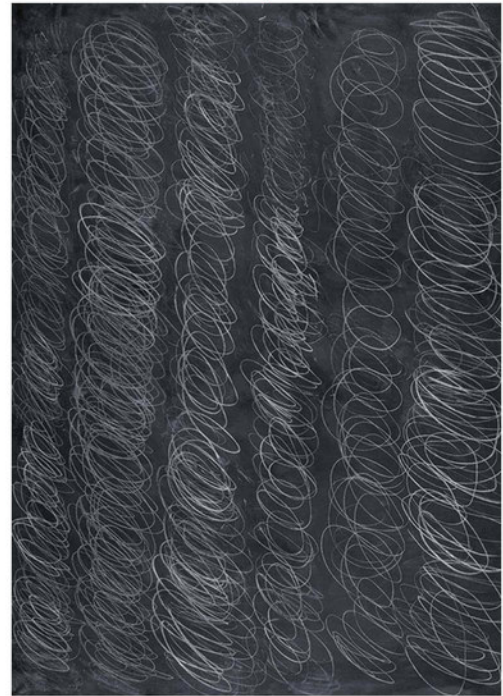




Art, the Social VORTEX ART+HISTORY

Cold Stream by Cy Twombly **Period:** Abstract Expressionism (1966)
Reason: Twombly wanted to manifest physically the beauty of music
Method: Chalk and black board **Subject:** The beat of a song

After this extensive research into art Vortex, they then made mobiles of themes in art history. It was insane. The school was topped with floating imagery of art history. I never got a great picture of this. You kind of had to be there.



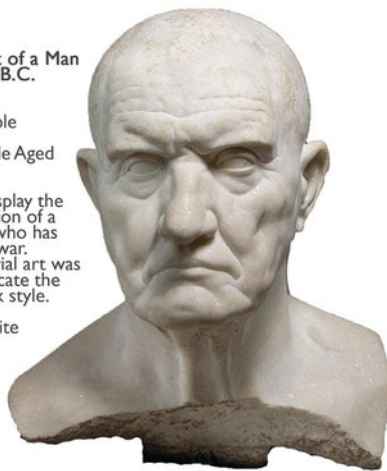
Portrait Bust of a Man
1st Century B.C.

Method: Marble

Subject: Middle Aged Man

Reason: To display the harsh expression of a Roman man who has experienced war. Roman Imperial art was ment to replicate the classical greek style.

Sebastian White



These are three examples of the cards on the wall. All the cards had, Title, Period, Artist, Method of creation, Subject, and Reason for creation. (MSR)



These are two examples of student work: Power and Authority and Exaggerated Human Form. Each team researched and scoured the internet to find models for their Themes in Art History explanations and Mobiles. I am truly sorry I did not photograph the mobiles. They were well painted and beautifully crazy.

Power and Authority

All of these pieces were created in different time periods, styles, and mediums they all have a common theme: Power and Authority of Man. These God-like beings of enormous size, with classical perfection and perfect physique, elevate these mortals into extraordinary figures to be worshiped and remembered.



Jaques-Louis David "Napoleon Crossing the Alps"

Method: Oil on Canvas.

Subject: This piece shows the crossing of the Saint Bernard Pass Napoleon Bonaparte and his army made in 1800 on their journey to Italy.

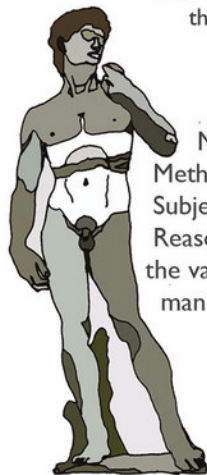
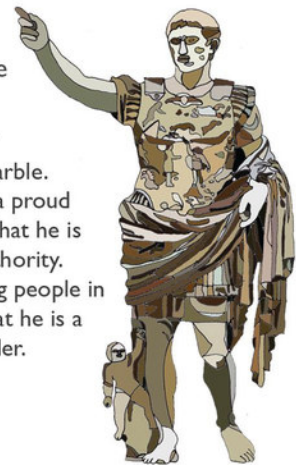
Reason: This neoclassical painting was created to exaggerate Napoleon's power as the leader of the military. Obviously he never led the charge to battle, however the spirit of the great emperor as a classical soldier is the take away theme.

"Augustus of Prima Porta"

Method: Marble.

Subject: Augustus Caesar is depicted as a powerful, military leader and a proud supporter of the Roman religion. His outreaching right arm implies that he is addressing his troops and shows his authority.

Reason: This sculpture was created using the ideology of Classical Greek, showing people in their most perfect form. It also acted as a piece of political status, showing that he is a qualified leader.



Michelangelo's "David"

Method: Marble.

Subject: This statue represents the powerful Biblical hero David.

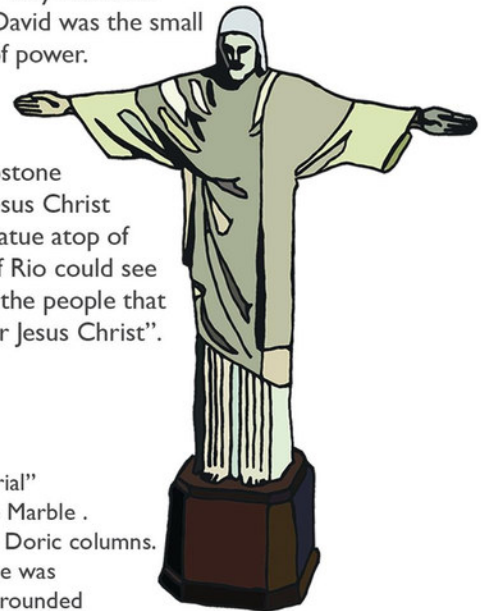
Reason: He is captured in the style of the Renaissance, where they reflected the values of perfection from the Classical Greek art period. David was the small man who took down the giant, he was created as a symbol of power.

Paul Landowski "Christ the Redeemer"

Method: Reinforced Concrete and Soapstone

Subject: Statue of Jesus Christ

Reason: The idea was to create a large statue atop of the 2,300 foot Mount Corcovado so that all of Rio could see the oversized religious monument. All of the people that live in Rio are essentially living "under Jesus Christ".



Daniel Chester French "Lincoln Memorial"

Method: Georgia White and Tennessee Marble .

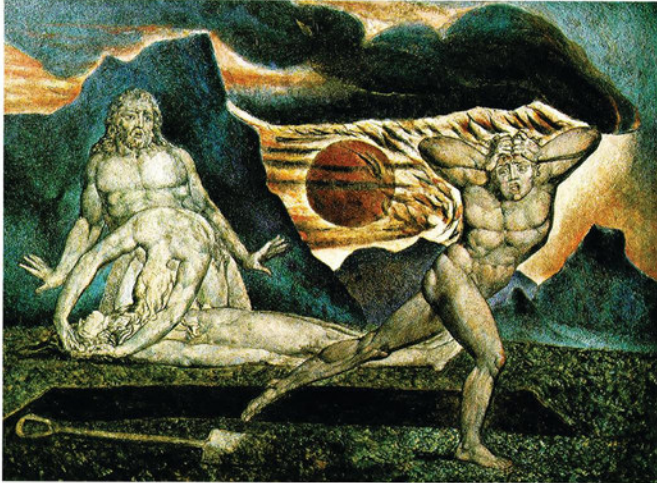
Subject: Abraham Lincoln resting on Doric columns.

Reason: To honor Abraham Lincoln, he was portrayed in Classical Greek style surrounded by a Greek Temple that emphasize the idea that he was an American God.

Nikola and Tiano

Sofia Taylor and Tyler

Exaggeration of Human Form: has been a fixture in art for thousands of years for many different reasons. Some artists exaggerate height or size in order to portray their subject as very powerful, others accentuate the curves of female subjects to make their subject look more beautiful. Still others will intensify the emotions of their subjects' faces in order to affect the emotions of the viewer.



The Body of Abel Found by Adam and Eve by William Blake:
 Subject: Adam and Eve finding their dead son, Abel.
 Method: Oil on canvas.
 Reason: William Blake painted these subjects in a Neo-Classical style, overly muscular and passionate, in order to portray Hellenistic passion and human perfection. In Hellenistic passion is an exaggeration of human form.



Two Nudes by Picasso:
 Subject: Two naked women.
 Method: Oil on canvas.
 Reason: Picasso distorted these women to portray the distorted view of the women in his life. Exaggerated features and expression in order to "seduce" the viewer.

Three Graces by Rubens:
 Subject: Three graces in the forest.
 Method: Oil on canvas.
 Reason: Rubens painted his subjects more overweight than they were, because in his life time being slightly overweight was more attractive than being thin.



Naked Man, Back View by Lucian Freud:
 Subject: A portrait of an overweight man.
 Method: Oil on canvas.
 Reason: Freud painted his subject over-realistically using shading and including every wrinkle and fold in order to show the grotesque nature of the human body.



Turkish Bath by Ingres:
 Subject: Naked women in a harem.
 Method: Oil on canvas.
 Reason: Ingres exaggerated the curves of the women in order to make their beauty more pronounced and obvious.





THE GARDEN OF EARTHLY DELIGHT_{ART}



This project was an endersession project. Endersession is the last six weeks of high school for students to do what they want to do. Some go on internships, travel, and others work with teachers, making their mark on the school. These five students did that. At first, they wanted to make a circus-themed diorama. I said, "oh, like Calder," and showed them his work. They were sad that it had already been done. I then showed them a book of Hieronymus Bosch's painting *The Garden of Earthly Delight* 1504. They loved it.

They painted the background above a doorway at High Tech High. They individually made cutout paintings of vignettes from Bosch's painting. The figure with the woman with the flowers growing out of her bottom caused a stir to be sure. I told people that they could climb up and take it down if they did not like it. Twelve years later, it is still up. If the art class doesn't make art that causes trouble, they are not doing their job.



At the height

of the Gulf war, tensions in San Diego were high between military-minded people and people that did not believe Saddam had attacked us on 9/11, or that Iraq had weapons of mass destruction. I let my students do what they wanted. Some kids supported the troops, some an endless war; and some students were against Bush and the destruction around the world.

That said, I took the brunt of angry parents complaining that HTH needs to limit liberal speech. "The artwork is too liberal," these people said. They would lose their mind now; I think they were the ones that marched on the Capital on January 6, 2021.

I did not want to get beat up. If the art was about formalist art concepts, who would complain? I chose Dadaism, Abstract Expressionism, and Minimalism to "Kill Allegory." Ironically Dadaism was designed to end war forever. The Dadaist Manifesto suggests that if there is no art and art is about nothing, we will never have another war. Oh well, that was 1920.

What is Dada

Dadaism was born out of social outrage surrounding World War I. The artist or Dadaists felt that art was the intellectual byproduct of civilization, and if the world was making this horrible war, then the art of these terrible cultures should be eradicated. Dadaism was created to end art, end painting, end writing, and end music. Very Nihilistic!

There were many forms of Dadaism; collage, chance operations, using found objects, and various others. Their main goal was to create nothing; obviously, they failed. However, Dadaism inspired movements like Surrealism, Abstract Expressionism, and Pop art.

A great Dadaist said, "It's not dada that is nonsense – but the essence of our age that is nonsense" in 1915; this could be today as well.



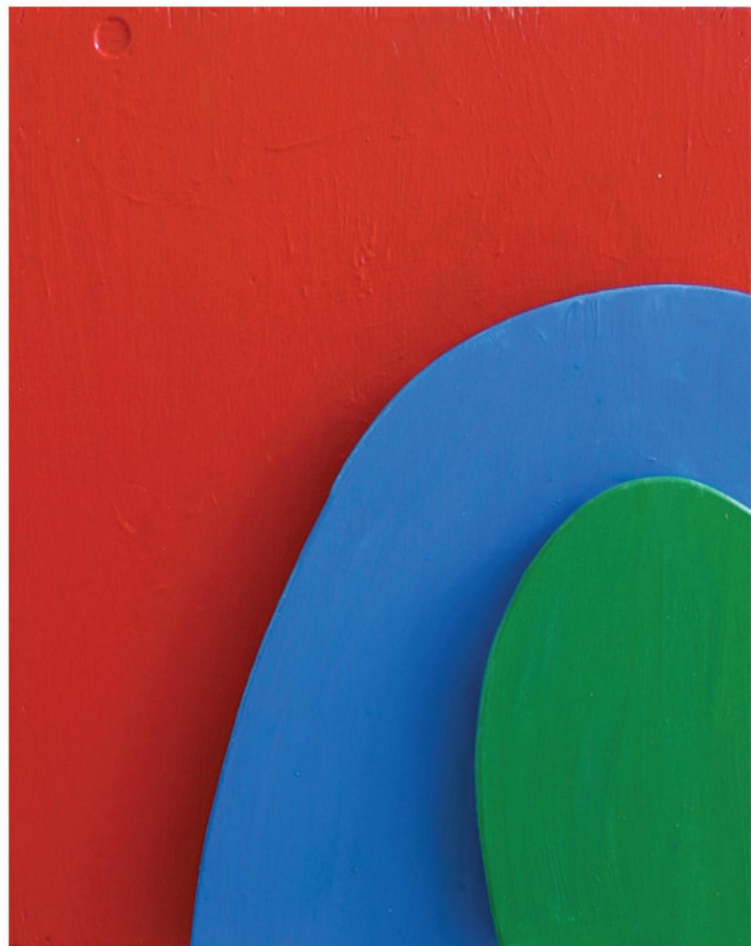
DADA



ABSTRACT EXPRESSIONISM



DADA



DADA

DEATH OF ALLEGORY ART

Abstract Expressionism

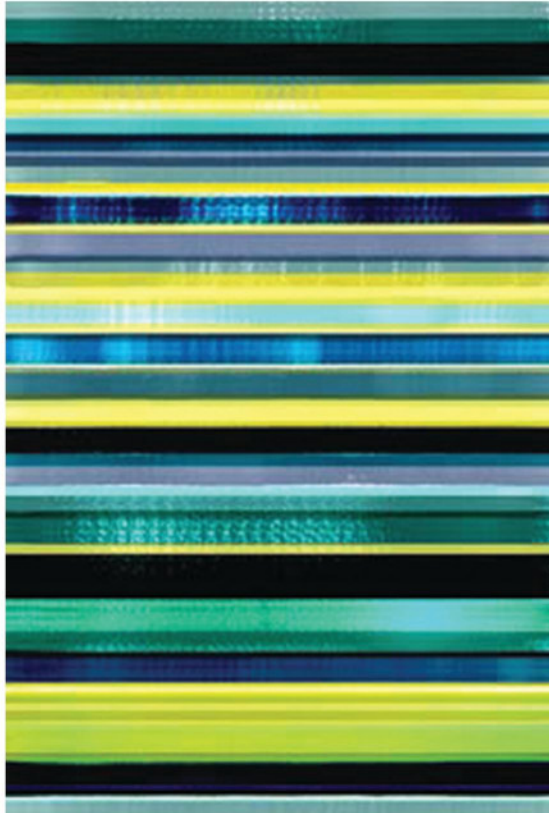
Abstract Expressionism was a painting movement that looked like an accident. People have always said: "my little brother could do that," "it looks like a big mess" or "you call this art?" about the art of this movement. Abstract Expressionism is almost pure art in that it is only concerned with the elements of visual expression such as balance, color, composition, contrast and rhythm.



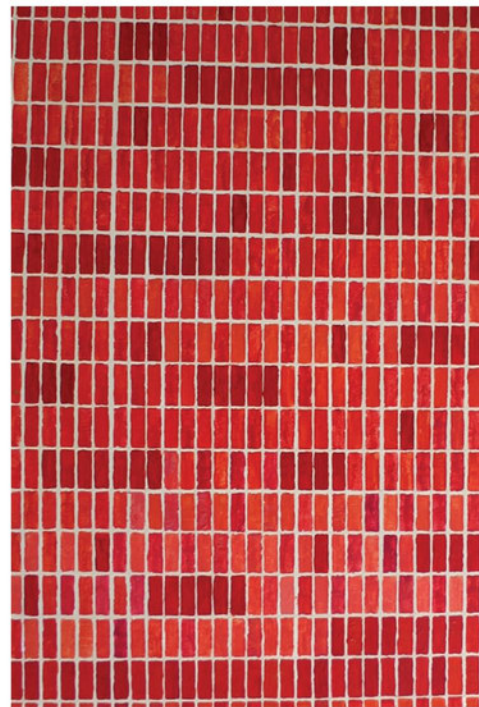
ABSTRACT EXPRESSIONISM



ABSTRACT EXPRESSIONISM



MINIMALISM



MINIMALISM



MINIMALISM

Minimalism

Minimalist art is about artistic elements: balance, value, color and repetition to name a few.

If you can relate on any level to this art then you understand Minimalism.

Add La Jolla Village News to your online social network

Follow @LJvillagenews on www.twitter.com or "like" us at www.facebook.com/ljvillagenews for news, updates, events and more. Chime in and let us know what you're thinking!

La Jolla LIVING



High Tech High students created a laser cutout of themselves carrying a 12-foot box, which they transported by foot from Point Loma to La Jolla as part of a project on conceptual performance art. Photo courtesy of Jeff Robin

By KENDRA HARTMANN | VILLAGE NEWS

Driver's traveling between Point Loma and La Jolla on Oct. 9 may have encountered a group of high school-age students carrying what looked to be a very oversized cardboard box. They were, in fact, hauling a box measuring 12 feet long and 5 feet wide, but they were not merely laboring in the interest of transport. What the group was in fact doing was creating art.

It all started when Jeff Robin, art teacher at High Tech High in Point Loma, came across "the largest box I'd ever seen" (a whiteboard had been delivered to the school in said box earlier that day).

"I had been asked by Bird Rock Coffee Roasters if I could provide some art for the walls, and I started thinking, 'Maybe we could paint that box,'" he said.

Robin started discussing the idea with his students, and they began to brainstorm ideas for the design.

"The problem was how were we going to get that box over to the Coffee Roasters?" he said. "We didn't have a truck big enough."

At the suggestion of one of Robin's students, Ines Diot, the group began to explore the idea of walking the box all the way from the school to the coffee shop, which, as they soon discovered using Google Maps, was exactly

7.7 miles.

Hoping to acquaint his students with conceptual performance art through more than a dry textbook definition, Robin decided to help them create a work of art through the experience of walking to the art's final destination. And so 47 students took turns hoisting up the immense box, and for three hours, documented by a camera affixed to a tripod on a platform-bedecked bicycle ("Which was sketchy," Robin said), made their way up the coast.

Robin, who has escorted students to several countries through art-related field trips, surprised himself with his anxiety over walking the streets of his hometown.

"When we were still only at NTC, I was thinking, 'Will this work?' I was kind of freaking out," he said. "I've taken kids all over the world, but this made me very nervous."

Three hours later, the group arrived at the coffee shop, where owner Chuck Patton was waiting with pizza. Students and teacher were tired, but content.

"I think the kids all felt proud. I think they felt like they were a part of something," Robin said. "They were skeptical at first, but then they understood that the box wasn't the art. The box and the pictures of us are remnants of the art that was us walking together. That's a memory they'll have forever."

Later the same evening, the group returned to affix a selection of photos taken of the walk, in sequence from Point Loma to La Jolla, to the front of the box — along with a map showing the students' route — and it was hung on the coffee shop's wall. The photos serve, Robin said, to draw in and engage the viewer in the creative endeavor.

"People can look at the map and photos and say, 'Hey, I know that place,' or, 'I've been there,'" he said.

The purpose of the experience served to show the students exactly how art is created, rather than merely showing them a picture of it, said Robin, who practices the education technique of project-based learning.



"It's bizarre to me that some people don't get project-based learning," he said. "Basically, these kids just did exactly what a real conceptual artist would do, and I have no doubt that every kid now knows what conceptual art is, and there's no need to give them a test or anything. It's real-world learning, and doing the real thing is what gives you passion."

Having the chance to display their work, Robin said, also connects the students to the community and lends credibility to the project.

"They all felt like they were part of a community, and now there's this connection with the exhibit," he said. "You need authenticity in art, and exhibiting gives it that. The connection is the exhibition."

As for the physical aspect of their cross-city sojourn, 10 of the students made the entire 7.7-mile journey, while the rest participated in sections. Robin walked the entire way with his class, and as a result, he said, "I've been sore all week."

The display of the "7.7 Mile Box" project will be on display at Bird Rock Coffee Roasters, located at 5627 La Jolla Blvd., through the end of October. For more information, visit www.jeff-robin.com.

GET SCHOoled IN ART

Students from High Tech High art teacher Jeff Robin's class will participate in the Third Thursday event at the Museum of Contemporary Art San Diego's La Jolla location today, Oct. 18.

From 5 to 6:30 p.m., students will present works of art on display in the museum's "Behold, America!" exhibit, which features art from three San Diego museums.

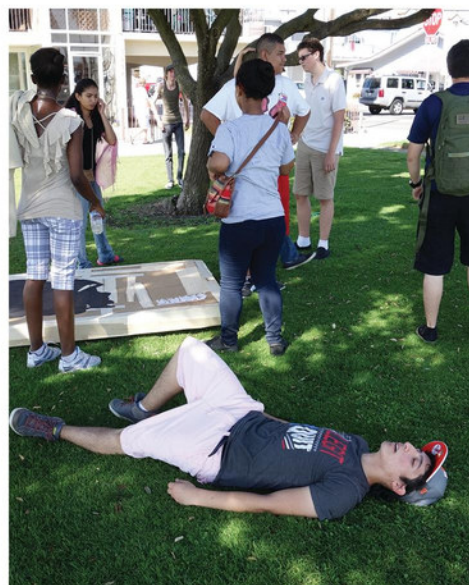
Each student studied and wrote an essay about one work in the exhibit, and they will discuss their findings and the art with visitors.

MCASD La Jolla is located at 700 Prospect St. Admission for all Third Thursday events is free. For more information, visit www.mcasd.org.

We found a rather

large (12' x 5' x 6') cardboard box. We practiced carrying this box, painted an image of the students carrying it on the box itself, and researched the path to a gallery 7.7 miles away. We gathered water bottles, sunscreen, and walking shoes, and 47 students, two teachers, and a large box made the 7.7 mile trek in three hours. We photographed the students on the way, and when we arrived at the gallery, we applied the images of the students to the box. This happening really brought the students together as a team and gave them a kinesthetic understanding of conceptual art.

I did not understand the importance of this 7.7 mile walk until after the exhibition. The students were a team at the exhibition. They helped each other; they cared about each other's presentations, and they clapped when they practiced. This is part of the reason this was my best exhibition with students ever.



The newspaper article was part of the art. The students thought that was just crazy. I was so happy to share my 1970's "anything is art" sensibilities with them. It wasn't a protest; it wasn't for money or fame. It was for art.

Below, students from Jeff Robin's High Tech High art class carry a 12-foot box as part of the "7.7 Mile Box" project through La Jolla on their way to Bird Rock Coffee Roasters. **Above right**, the students pose at the foot of Law Street as they take a break from their 7.7-mile journey. They returned to the coffee shop later that evening to paste photos of their journey to the front of the box.

Photos courtesy of Jeff Robin



7.7Mile Box ART



This project was

developed and made during a two-week intersession class. The students were with me all day. On the first day, we traveled to the Cantor Center for the Arts at Stanford University, where they had an extensive tour of the galleries and the university. While at lunch, the students were asked, "Is there anything here that inspires you to do something back at High Tech High?" One student pointed to Rodin's "The Gates of Hell" that they were eating their lunch beneath and said, "Let's build that at HTH." Everyone agreed. The curator of the gallery got us a copy of the latest translation of Dante's *Inferno*, and we ripped it up so that everyone had a piece to read. On the flight back, the students read, traded, and came up with the images and stories for their figures on High Tech High's "Gates of Hell." The next morning space was chosen, and the students went to work, creating



The students bonded together on the field trip to the museum and created a permanent work of art that relates to history, literature, and fine art. They used their work and their critique to create a relief sculpture that represented a literary and artistic tradition at school.

Students had a choice in the images they referenced. They could use *Inferno: A New Translation* by Dante Alighieri (Author), Mary Jo Bang (Translator), or *The Seven Deadly Sins* by Davis Myer (Graphic Novel) to reference their ideas for the Gates of Hell. The students helped each other design and paint. A limited palette was decided on by the group to give an appearance of symmetry and congruence. This palette also made it easier for the new painters to the group.

In this collaborative art project at the end of every day, the work was displayed together. The class gave critique to all participants. They were all responsible for the consistent quality of work. The visual reality of the work drove the direction and quality itself.

GATES OF HELL ART

The Gates of Hell Intercession 2016
Jeffrey Robin's Class 15'x 9'

- | | |
|--------------------------------------|---|
| 1 <i>Three Shades</i>
Madeline Ho | 3 <i>Heads of the Dammed</i>
Liz Egler |
| 2 <i>The Thinker</i>
Iago | 4 <i>Heads of the Dammed</i>
Molly Blume |



The Gates of Hell,
Modeled 1880-1917
Auguste Rodin 20' x 13'

	Alaysja Clark Greed She's waving money?	Abigail Tull Pride Too confident	Iago Judging Casting Aspersions	Priscilla Ortiz Greed Committed crimes	Maliyah Prince Evil Hiding true self	Byron Martinez Pride He conspired with foreign powers.	Liz Egler Sloth laziness	
	Bri Sanchez Wrath The mermaid wrath of the ocean					Torrey Haselbeck Wrath The wrath of a woman scorned		
	Richie Ngo Lust Portrait of Orpheus and Eurydice.	3	2	4			Devonna Myers Pride Confident in her looks.	
	Raina Shapiro Envy He murdered someone						Molly Blume Desire Innocence taken away	
	Mark Chapman Too Happy That couple is too happy						Jaded Delgado Hubris He was a liar	
	Angelica Venegas Avarice He's greedy with his money.						Monique Mendez The Innocent Their innocence	
	Justin Salazar Greed An evil Emperor						Zelma Downes Wrath Psychopath is killing someone	
	Madeline Ho Gluttony Frat boy						Blake Dujowich Greed He Takes He Lies	
<p>Robin</p>							<p>Rodin</p>	

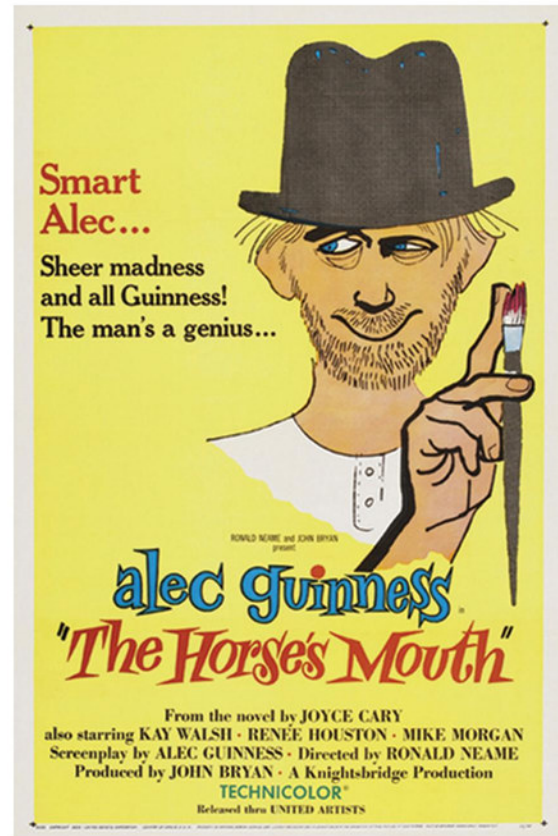
Southwest Doorway High Tech High

I wanted to paint

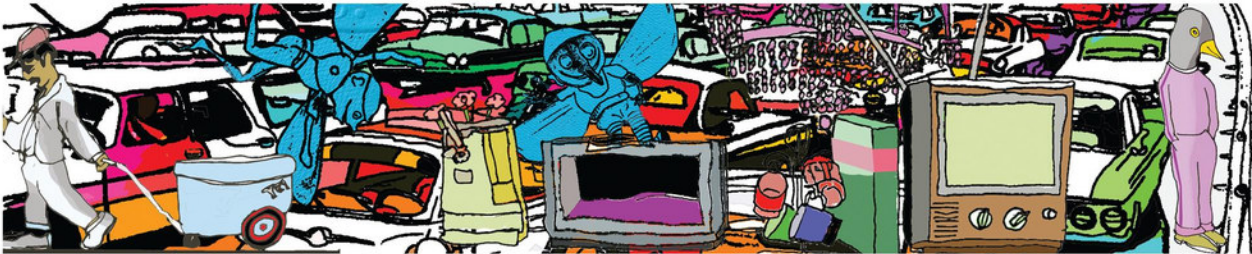
a mural with my students for intersession. The mural would go over the conference room at High Tech High, and there would be 26 participants. Everyone needed to be included in the design and the painting, I did not want to disrupt the school with scaffolding, and I did not want the work to look like it was done in a high school.

I had made this painting by combining several drawings, pictures, and Photoshop, which is how the students came up with this mural. In teams of two, they made their maquettes (plans in French) and then voted on the best two maquettes. Then the four students mixed their maquettes to create a composition.

One of my favorite movies from the late 1960s was "The Horse's Mouth" with Alec Guinness, the original Obi Wan Kenobi. He is a painter that gets people to paint part of a grand mural to raise money.



Above is the movie poster of "The Horse's Mouth." In this movie, the art was made by Bratby, a "Kitchen Sink" British painter. My grad school teacher said, "you paint like him." To the left is a "still" from the film that shows how individuals painted parts of the mural. Below is my maquette of a mixture of drawings and digital images. Further below is my painting, a triptych because of the length.



INTERSESSION MURAL ART



This was how we would paint the mural in 26 squares that could be taken down and then replaced at the end of the day. In the mornings, we would talk about what each student needs to do on their mural pieces. This process was accidentally the best critique I have ever been a part of. The students had the plan for the mural and would hash out what needed changing on their own.



This is the maquette that the four students put together from two different plans.



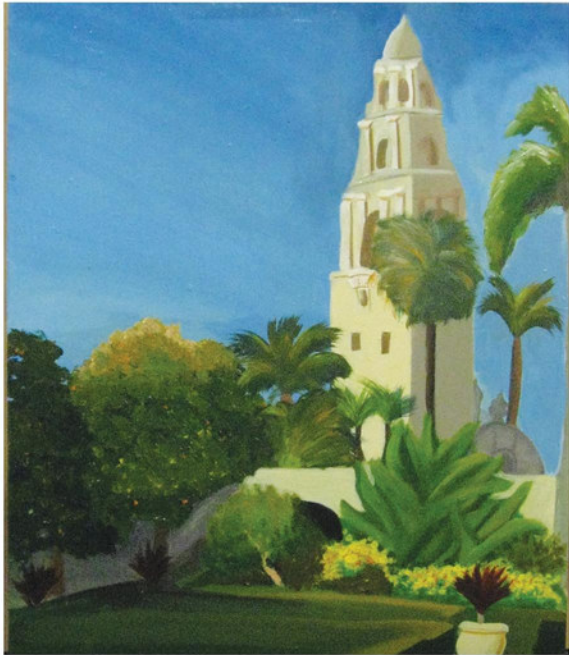
Parts of the mural panels were cut to fit with the fire alarms and ceiling supports.



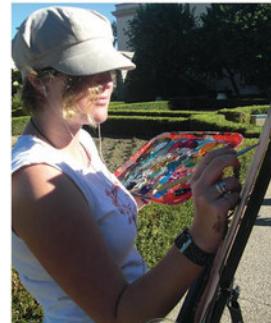
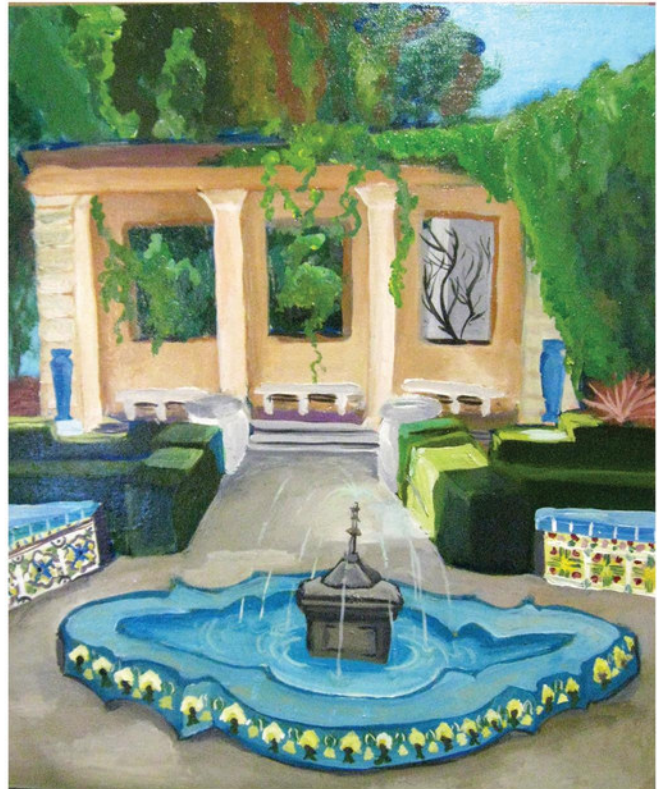




PLEIN AIR ART



This project was a two-week intersession project that I had to plan well. I knew from my own experience Plein Air painting that you have to have a lot of materials. I had the engineering class make me a cart that could fit in my Honda Element that could hold all we needed and could roll. I wish I took a picture of it, but at the time, it was the bane of my existence after a while. I had to lend it to others, and they would not return all the pieces, which would upset the following borrowers; eventually, I never asked for it back. We practiced first with a limited palette. In the first session, we used Cerulean Blue, Medium Orange, and white. Then we went to Magenta, Yellow and White. These exercises put limits on the girls (25 girls only signed up), so when they had a full palette, they would not go crazy. We spent two weeks painting outside, and in retrospect, it was great fun. At the time, I felt like I had 25 daughters that I had to support and help work through the most challenging kind of painting, Plein Air.



I was looking to

have the students play with color, complementary colors, contrast, and values in a repetitive composition. I felt that the content was getting in the student's way of learning to paint. But I knew if we had no content, that would be a mess too, lots of paint without a finished work.

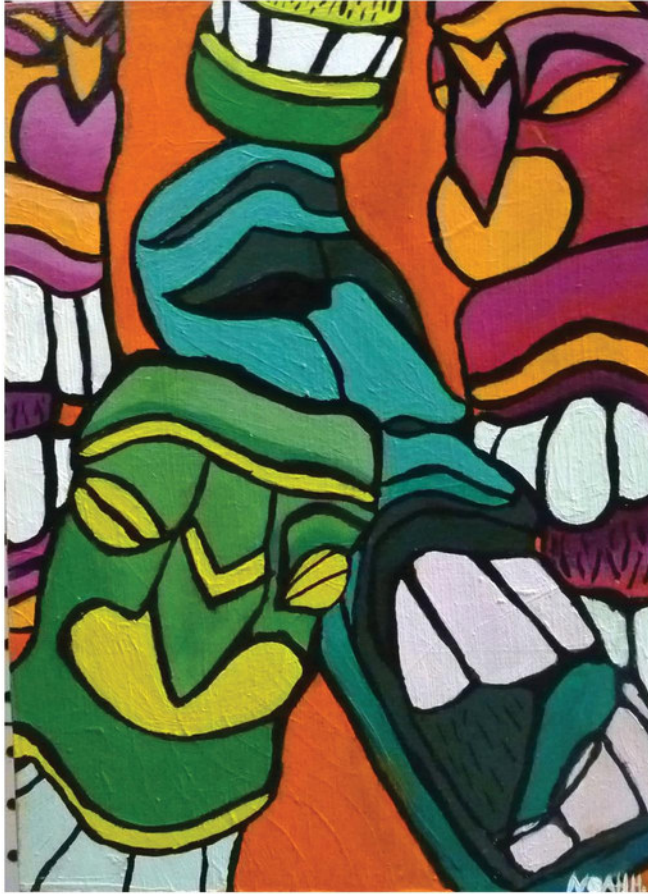
I DID THE PROJECT MYSELF FIRST, using one-gallon milk jugs for a subject in a composition. I drew a milk jug from different angles and then created a design in Photoshop. I then used the color picker to assign colors and values to the image. I then painted my exemplar in front of them. They were finishing up another assignment and were green with jealousy watching me paint my painting. This project was a hit right before Christmas break.



My Exemplar 5'x4'



OBJECT PAINTING ART

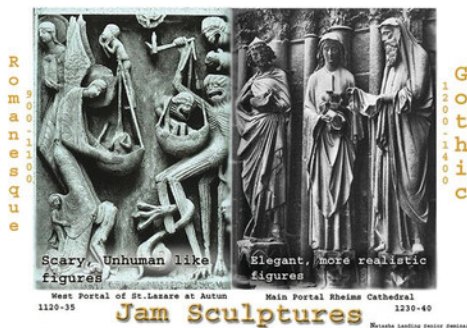


This project illustrates

the shift in style, change of taste, progression or regression of different societies' artistic endeavors. We studied art history and then the students researched, wrote and made art to describe a shift in the history of art. Sometimes the shift described was linear and direct like: Classical to Hellenistic. Other times students connected Dada to Pop Art or Rococo to Art Nouveau; these examples were not necessarily shifts but more of a connections through time.



Each student researched art they liked or thought was interesting. They then looked at what influenced that art and then what that art had influenced. Then they created a poster to illustrate a SHIFT in art style, medium, the reason for creating or change in the process. These posters then led to paintings. Some students used computer graphics for their posters. Others used watercolors.



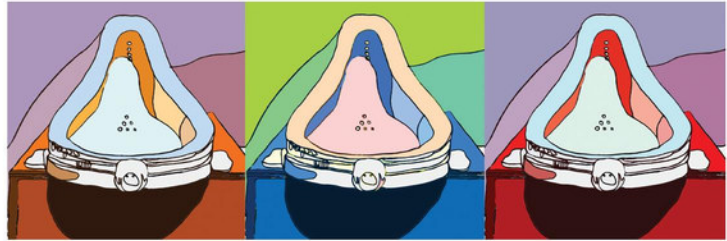
Abigail Faelnar

Abstract Expressionism to Minimalism

This painting demonstrates the shift between abstract expressionism and minimalism because it combines the essential ideas of each style. For instance, the color choices and the loose edges of the lines represent the spontaneity of abstract expressionism. Additionally, the stripes are nonrepresentational; the lack of subjective meaning characterized the art of the 1940s movement. However, this painting also conveys a sense of minimalism because it repeats a single geometric form, or a rectangular shape. Minimalism, which followed abstract expressionism in the late 1950s, was defined by repetition and the use of the minimum number of elements.



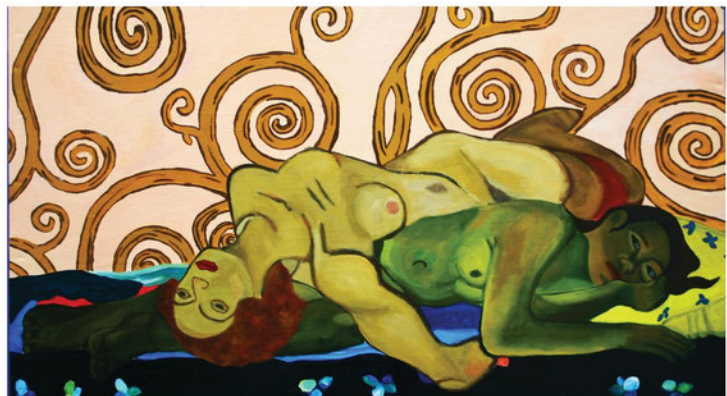
THE SHIFT ART



Shift from Dada to Pop art - Duchamp to Warhol



We painted a mural about shifts in Roman Architecture. This mural is decorative, historical, and thematic. I wanted to add a rigorous component to this class. It was great for some and was horrible for others. A mother said to me, "I told my son to take art because it was easy; now I find out it is hard." I felt bad. I wanted the students to all be happy; most were.



Kim Truong
Romanticism to Secessionism
This piece shows the combination of the art shifts of Romanticism and Secessionism. Both art periods emphasize drama and emotion, but in different ways: Romanticism used epic scenes and story-telling to show heroism, struggle, and despair, while Secessionism displayed emotion through human expression and intimacy. This piece was created with a Romantic background and Gustav Klimt's *Portrait of Mada Primavesi*. Klimt was one of the most famous Secessionist artists and was the founder of Vienna Secessionism in 1897. The woman in the painting is more dramatized in this piece to go along with the Romantic background. The bright, boldly colorful Secessionist piece shows juxtaposition with the epic, deeply-hued background.

Lauren Reynolds
This piece of art is showing the shift of Post-Impressionism art to Art-Nouveau. The Tahitian women on the bottom, was painted by Paul Gauguin in 1897, called *Nevermore*. Egon Schiele's painting, *Love and Death*, was part of the Art-Nouveau period. The pattern in the background was painted also during Art-Nouveau, by Gustav Klimt. Post-Impressionism started in France where painters were trying to break away from the discipline and order of Impressionism. From 1880 to 1920 the Post-Impressionist continued using vivid colors, thick application of paint, distinctive brushstrokes and real life subject matter. Art Nouveau was an international style which developed in the 1880s and 1890s based on decoration and beauty. During this period many old customs, habits, and artistic styles sat alongside new, combining a range of contradictory images and ideas. Artists started to forget about realism, much like rococo, and adding their own imagination to the art.



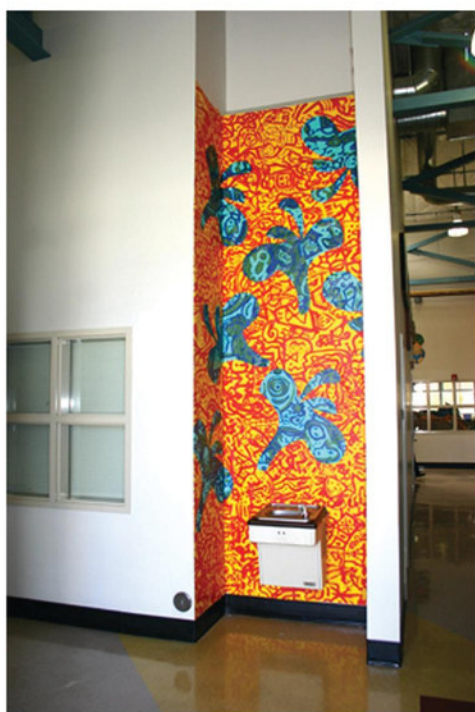
ART Red + Yellow

The chance operations of John Cage inspired this project. He was a professor of mine and a force in my life, as far as he got me to believe, "Beautiful accidents happen all the time."

I wanted to get students working right away. I had each class paint yellow, red (on paper attached to the wall), and then the next class yellow and red till the work was balanced and rhythmic. They were given instructions not to destroy images, instead embellish what was painted before them. Symbols were discouraged, and balance (color; line, shape, and texture) was enforced by rotating each group of students every five minutes.

Then when the work was balanced, we applied it to the wall, cutting shapes out of the paper to emphasize the positive and negative spaces.

Then we realized that the work needed something else when we made the blue and green paintings and cut them into shapes that went on the red and yellow. This project illustrated contrast, form, shape, balance, and more. The most important idea to come away from this project is: if you make anything, it is still better than studying standards.

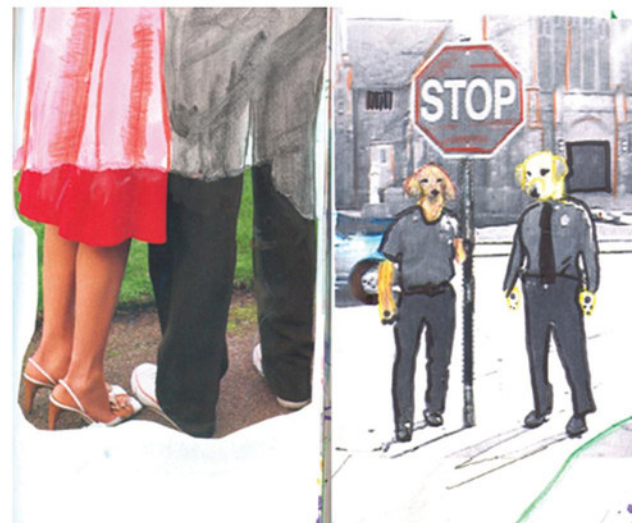


FRIDA KAHLO JOURNAL ART



Frida Kahlo's Journal

My mother got me the Frida Kahlo journal for my birthday. Every day Kahlo drew in her journal beautiful pictures, collages, lists, even poems. At the beginning of High Tech High, we often changed the schedule, and this time I was left with three 55 minute classes every other day. That was 200 students 2-3 times a week. I had to develop a project that could keep the students interested, put art up around the school and not go crazy. I showed them the Kahlo journal and bought everyone the same hardback journal. Every day they would come in and drink tea, coffee, or mate' and work in their journals while listening to my jazz collection. Every once in a while, I would take a journal and scan an image. Then I would print it 30"x22" and slip it into a frame on the wall. Taking the small and private and making it big and loud on the school's walls was exciting. The students loved this. And so did the community. Peter Yarrow (of Peter, Paul, and Mary) was at school one day and loved one of the prints, and I just gave it to him. We were singing "Puff the Magic Dragon" together, so I was obliged.



I took students

to New York, and we saw the Picasso's Influence on American Painters exhibition at the Whitney Museum. I thought that was a great project idea. The students practiced Analytical and Synthetic cubism and then made paintings using these methods of abstraction .



I bought the book from the exhibition to guide us. The students were not surprised that Picasso influenced Stewart Davis or George O'Keeffe because they were from the next generation of painters. They were shocked that Lichtenstein and Warhol were so influenced as well since they were POP artists. The students then figured out so was Picasso.



This was my student Lawrence's maquette for his painting. At the time Michael Jackson was still a good guy and a great musician.

How to make Analytical Cubism



Find an image



Add texture - create composition



Cut up and put back together



Photoshop Abstract Images

How to make Synthetic Cubism



Chose an image



Trace the image using geometric shapes



Assign colors and shades in Photoshop



My Analytical exemplar-painting

PABLO PICASSO'S INFLUENCE ON HIGH TECH HIGH ARTISTS



My teaching partner

needed a break from me and my grandiose projects. She just had a baby and asked if she could teach a little bit of literature. I said, "sure," and thought about what I wanted to do for the semester if I could teach art alone, not integrated with any other discipline. I was fascinated by recurring themes in visual arts. I tried to get a neurologist to come in and tell the class why humans keep going back to the same themes. The two that I spoke to told me, "there was no evidence for my supposition that man only has a few recurring themes because of physiology." So I did the next best thing. I made an Exemplar to prove my theory, less nature, more nurture.

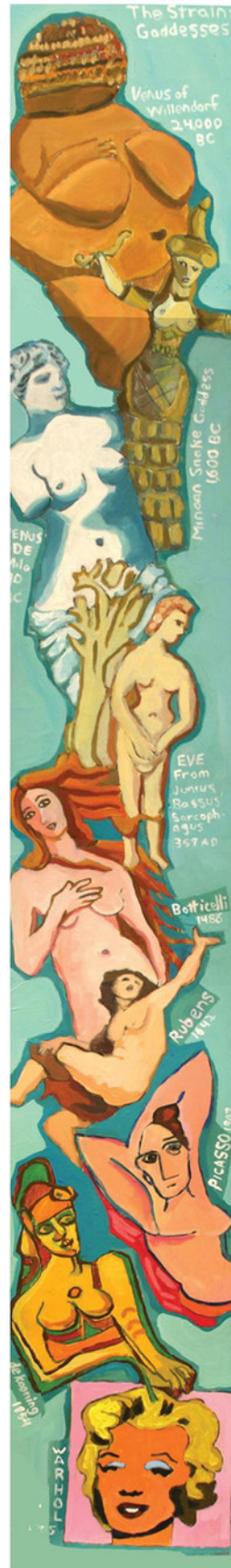
Students took their new knowledge of art history and created a work of art or some mechanism to describe the strains of influence in art. They chose painting, sculpture, crafts, and architecture. They focused on: theme, subject, formal elements of art.



Domes: US Capitol, Sydney Opera House, Florence Cathedral, Pantheon, Rome, Hagia Sophia, Istanbul



Abstract Female Figure



My exemplar: The female as Goddess.

Venus of Willendorf 24,000-22,000 BCE

This is one of the oldest sculptures of a human figure, used as a fertility goddess. An archaeologist discovered it in Austria in the year 1908.

Minoan Snake Goddess 1600 BCE

This figurine was discovered in 1903 on the island of Crete. It was a Minoan divinity associated closely with the snake cult.

Venus de Milo 130-90 BCE

It is an ancient Greek statue and one of the most famous works of ancient Greek sculpture. The figure depicts Aphrodite, the ancient Greek goddess of love and beauty.

Eve from Junius Bassus Sarcophagus 359 CE

This is a fourth-century sarcophagus that depicted bible stories. The Romans at the time looked at Eve as the first goddess.

Botticelli 1486 CE

This Early Renaissance painting depicts The Birth of Venus, the goddess of love; it was unusual to have a secular theme in this period and place.

Rubens 1642

He was a 17th century Flemish and European painter. He is well known for his altarpieces, portraits, landscapes, and history paintings of large godlike humans.

Picasso 1907

Picasso painted "Les Femmes d'Alger" (O.J. version O). This was the first cubist painting of prostitutes ... as modern goddesses.

de Kooning 1954 CE

de Kooning was an abstract expressionist. He was also labeled as an action painter who often experimented with various types of art. Most of his paintings were named "Woman." These were his expressionistic goddesses.

Warhol 1965

Warhol was a 20th-century pop artist known for his popular culture-inspired images. No modern woman is as iconic, "The Modern Goddess" as Marilyn Monroe.

THE STRAIN IN ART_{ART}



Creating images with dots: Greek, Pointillism, Fauvism, and Pop



Surrealism from Bosch to Dali



Reclining Venus, I bought this from Janette for \$400, and it is always in my son's bathroom.

Series of Four was

a Senior Project. When we first started High Tech High, we tried many different class configurations and project-based learning experiences. In 2005, students took Math, English, and Science or Art in the mornings. And in the afternoon was senior project time. It is what we did at the American School in Mexico City. The students got to go deep in the afternoons to prepare them for college study. Series of Four was simple; students had to make four pieces of art that went together.

Series are a thing in art. Gallery owners and dealers want to know that new work is coming and what it will look like. Art is a business, and surprises are seldom suitable for making money.

I told the students about MSR:

Method – the way art is made.

Subject – the subject of the art.

Reason – the reason for creating the art.

I came up with MSR on an airplane, trying to figure out what my students need to know for the AP Art History test years before. I needed a mnemonic device I would not forget. My wife's initials are MSR; it was perfect.

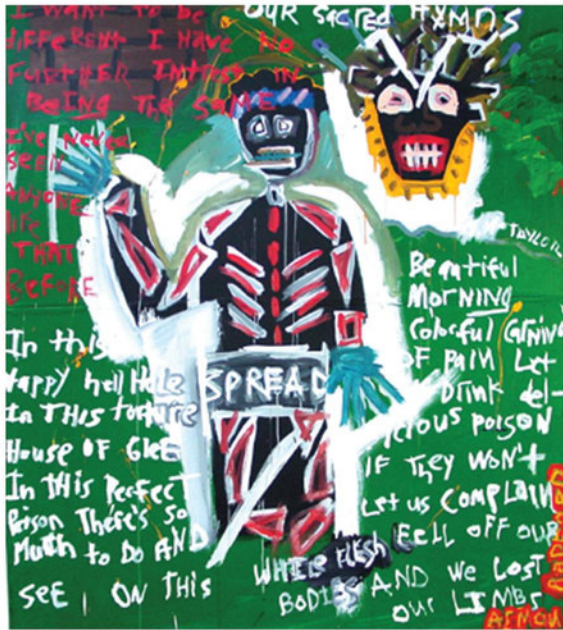
Here are some of the Series of Four.



Below: Maria made paintings from snapshots of her youth in the Philippines

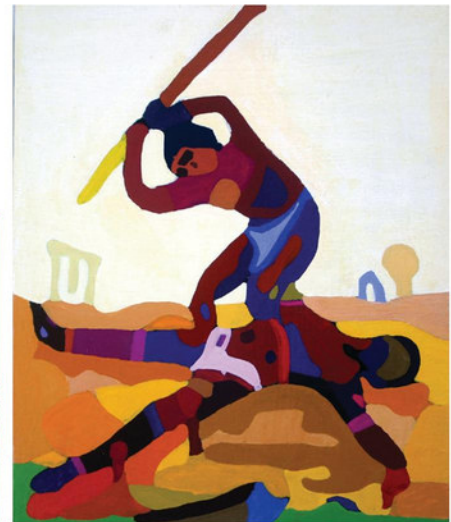


SERIES OF FOUR ART



Above: Jojo's guys that lived in his head.

Opposite and Left: Armond channeled Basquiat; did he rip him off? Maybe, but Jean-Michel was all about that too. I loved his work; the blue one is in my living room.



Right: Amber made colorful paintings of the African American experience. Slavery, Snoop Dog, Jim Crow, and Police Brutality.



Realism is

the birth of modernism. Most people think realism is any painting that looks realistic, like a photograph. In art history, realism refers to a specific period and painters that represented "real life" in all its potential ugliness. Realism was the birth of modernism, it was actually born after photography. This freed realists to paint what they wanted to paint. In Courbet's case, he represented everyday life, which made people angry. They could not understand why someone would want to paint a banal funeral in Orleans. Manet took his realism further. He painted everyday life and added antiquity. He called a painting of a nude prostitute "Olympia." He then painted two men eating a picnic with Greek nudes to make it valuable to the art critics of the day in a sarcastic way.

I wanted my students to make paintings like Manet. They took a famous picture and added a "Realist" element. These were funny and beautiful paintings.



Priscilla and friends with a new nineteenth-century girl



My exemplar, Manet's "Olympia" in my classroom



REALISM ART



Clockwise Top: Van Gogh's Room with the artist's boyfriend in a trucker's hat, Van Gogh in front of a San Diego Chinese restaurant, Artist in sweatsuit in fear of St. George, and My Buddy Jesus Movie "Dogma" in a Magritte background



The Idea of Motive and Motif

came from Erle Loran's Book Cezanne's Compositions. I went to a lecture in 1991 about Motive and Motif, where motive is the theme and motif is the subject. Think of Cezanne's motive as muted colors, broken brushstrokes, and visible lines. His motifs were geometric abstraction of landscapes, still lifes, and portraits. We went to the San Diego Museum of Art to discover artists that we may or may not have heard of. Each student took a painting and found the artist's motive for creating the work and the motifs that inspired them. The students would then do their work using their artist's motive and motif.

We had three deliverables with multiple components that were more suggestions. The students had the choice of investigating any artist or writer.

Assignment 1: Students will make Motive and Motif posters for the artist that they have researched. Students must riff on posters from the 19th century. (so not to be too stylish)

Assignment 2: Students will make a painting that uses the motive and motif of an artist they find along with an explanation of whose motive and motif you used to make your painting.

Assignment 3: At the same time, students will read three books from an author of their choosing in English class. Then using quotes from all three books, write a 5-6 page paper that finds the author's motive and motif that connects the three books.



Sanchez Cortan Painting SDMA



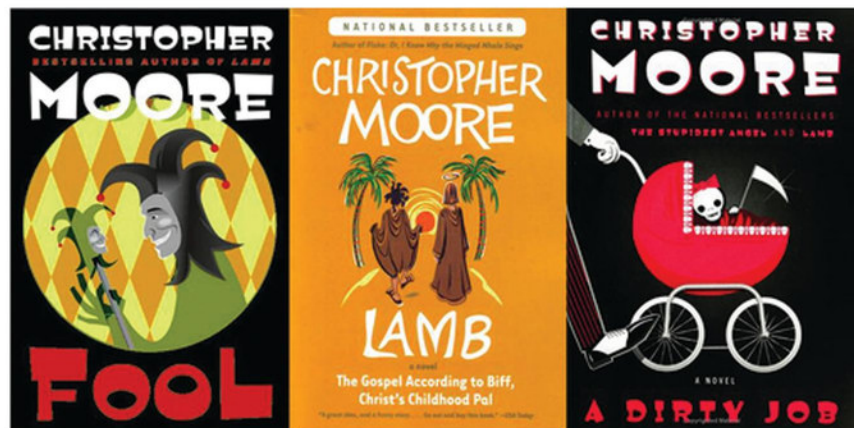
My Interpretation

I used my vernaculare as Sanchez Cortan did.
The pig head was from a picture I took in an Oaxacan mercado.



Sanchez Cortan Prado Museum

Here are the three books I read and my paper. I thought it was essential to do the writing myself, see if it was a worthwhile assignment, see the mistakes that could be avoided, and show the students that I thought it was important. I loved reading three Christopher Moore books. I should have taken better notes on where the quotes were that I would have used. I had to re-read most of the three books. The students were impressed that even the art teacher wrote the English assignment.



MOTIVE AND MOTIF ART+ENGLISH



Salvador Dalí painted what he saw in his own mind, and believed that your subconscious was more artistic than your conscious mind. Dalí's art varies significantly in style and media, but he is most well known for his surrealist paintings. Dalí called his method of painting the "paranoiac – critical method" of accessing the subconscious for greater artistic creativity. His paintings are mostly done with oils paints but he used very small paintbrushes that allowed his paintings to be very smooth and not have very many brush strokes.

Dalí's paintings show dream like images of realistic things. He painted melting clocks in his famous painting *The Persistence of Memory*. The melting clock symbolizes Einstein's idea that time is relative and not fixed. Another Motif of Dalí's is the elephants, which were inspired by Gian Lorenzo Bernini's statue base in Rome of an elephant with an obelisk on his back. These elephants have extremely long limbs and look like something straight out of a dream. Other motifs of his are, his wife Gala, ants, butterflies, and skulls this created the dream-like illusion. Dalí's paintings often can tell you about what was going on at that point in his life. A lot of his paintings incorporated his wife Gala in them. He also painted about current politics specifically World War II and after the war Dalí gained an interest in science and religion.

Quinn B

De Chirico's motive was to express a dreamlike resemblance of the clutter in his mind and sub conscience. The shapes and objects in his paintings may not mean anything to the viewer, but to him they recreated the things he sees often and thinks about most.

The motifs in De Chirico's painting were often shapes and resemblances of objects he sees. For example he would often include sentimental things, for example trains. He did this because his father was a train engineer and his town growing up was split in half by a railroad track so therefore trains meant a lot to him. In his paintings he would use subtle surrealism to make the perspective of objects, rooms and building just a little bit off so that it recreates a dreamlike memory.



Shea S



Stuart Davis brought a vivid portrayal of New York through his paintings. He shows almost pop-art features within his paintings. Davis was influenced by American jazz nightclubs he continuously visited in New York City. By painting iconic images of American life, Davis was one of the rare painters of the 1900's that successfully transformed cubism into something more American.

MOTIF Bold primary colors, in contrast with distinct black lines. Davis includes a few identifiable buildings among abstract shapes and objects. Bits and pieces are all he gives the viewer.

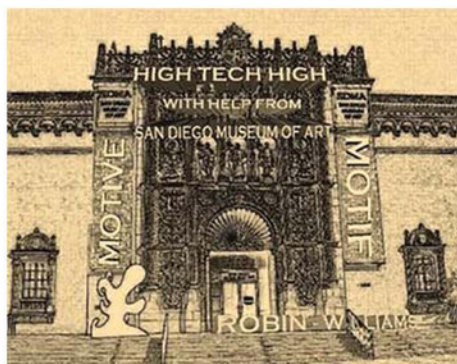
Talen M



Diego Rivera had a variety of styles throughout his life. At one point during the mid 1910's he was devoted to cubism, but he changed styles, saying that cubism was too intellectual and not concerned enough with fluidity of lines.

In his cubist work there are muted colors, shadows made of multiple colors and distorted objects. He was not Picasso painting in the Analytical or Synthetic style, his cubism was within his paint strokes.

Allen T



Book Cover of student work

In English class,

the students read *Siddhartha* by Herman Hesse, my favorite book. In art class, the students chose a new time and setting to retell the story of the Buddha in their own words. They made design maquettes, researching people, clothing, hairstyles, and fashions of their time and place. They created story boards to tell their new story visually.

The students then wrote their New Path of the Buddha story using their storyboards for inspiration and details.

This is my exemplar of a production design maquette, the kind that is made for a film. I met with some motion picture designers, and they shared their maquettes with me. It was the professionals' idea to have the students use drawings and photos collaged together.

My exemplar was to create my storyboard of "Sidney Allen's" path to enlightenment. The story of a posh girl from 1970's London going on a spiritual journey to enlightenment. I then had my teaching partner, Kelly, the English teacher, write the 25-page story. This was not what she was used to, but she realized that it was essential to show the students that we thought that the project was necessary.

There was also an additional component to make an art piece to go with the story. Kelly and I made a digital audio presentation of our story that some students with great British accents recorded for us.



Production Design Maquette A time and a place



This is just the first of two pages of my Storyboard.

ART+ENGLISH

1850s NEVADA
 JACKI COMBS AND JACK DAVIS

PAISLEY FLAID

PRIEST SALOON GIRL

BEER BEEF STEW

POTATO CORNBREAD

CARSON RIVER

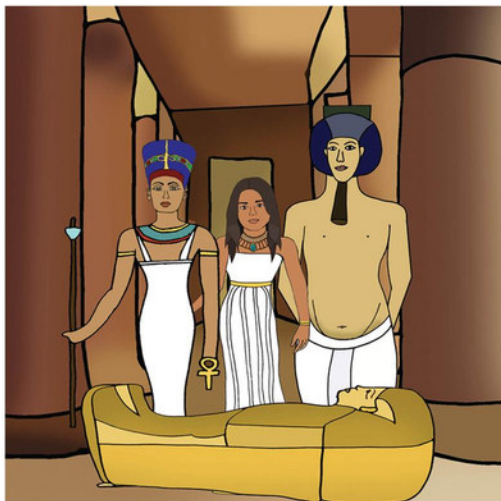
THE RANCH



Left:
"1850's Western"
Using the
iconography of
Bonanza, Little Joe
becomes
enlightened.



Left:
"Japan 2356"
A futuristic
journey of
enlightenment.



A cartoon illustration of a brown horse with a white mane, looking forward with large blue eyes. The background is a bright yellow sunburst.

Left:
“War Horse 1917” A horse finds enlightenment.

Inspired by Callot's

"The Miseries Of War", Goya's "The Disasters of War", and Birk's "The Depravities of War", my students investigated global conflicts and illustrated how war is, in fact, a failure.

Students researched conflicts, studied what both sides tried to accomplish, and exposed the aftermath.

All students made prints for their illustrations like Callot, Goya, and Birk. The connection that the students had with this genre of work was powerful and sublime. They understood their relationship with these artists and what they tried to expose about war. Parents, community, and even my teaching partners were lost in my "inside art and history" project design. I thought it was accessible, but the historical rigor and the expression of a relationship to the history was too much.

This project was one of those instances that I had an abstract concept, and my process was good enough to get the students to do their work, but it was primarily for my benefit.



Goya's "The Disasters of War" (c1810)

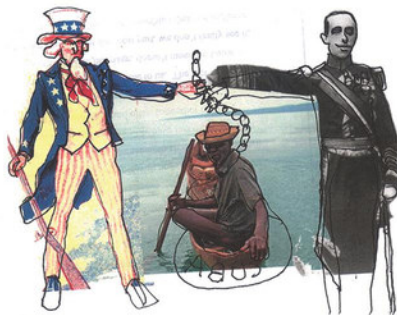


Callot's "The Miseries Of War" (c1632)



Birk's "The Depravities of War" (c2007)

My Exemplar: Spanish American War



My collage of Uncle Sam representing American Imperialism and the Monroe Doctrine, The Spanish King Alfonso XIII both holding a rope around the neck of a poor Cuban fisherman.



I used transfer paper and then cut out the negative space using carving tools.



Using watercolors, I painted the American Flag and the Spanish Flag. It is a great medium that is forgiving and easy to do.

I choose to make my exemplar about the Spanish-American war. I used images from the internet, transferred the composition to a block, and printed it with black ink. I later added watercolor to the print. I also read two different books about the conflict, one from the American perspective and the other from a modern Cuban author who explained that Cuba went from one Conquistador to Imperialist Puppets.

I presented my prints and what I had learned about the Spanish-American War, and at the time, W Bush was president, and the USA's relationship with Cuba was still lacking. The students were engaged while participating with me in my exploration, and it set the floor for theirs. They all understood they had to do better than me.

THE FAILURES OF WAR

ART+HUMANITIES

Horrors of the Tutsi Genocide in Rwanda By: Adrianna Frazier

Rwanda has been slowly recovering since its horrific genocide in 1994. The Tutsi people in Rwanda were targeted for brutal murder in the genocide that started on April 6, 1994 and lasted for around 100 days into mid-July. The genocide was initiated by the death of the Hutu president, Juvénal Habyarimana, on the day the genocide began. Members of Hutu controlled government were outraged by his death and blamed all Batutsis. The Bahutu-occupied government ordered the assassination of all Batutsis over radio broadcasts. Tutsi people had been oppressed by the Hutu government for over 30 years before the genocide. The genocide in 1994 left over 50,000 women widowed, hundreds of thousands of women experienced psychological trauma because of rape and slavery, and the HIV virus had been spread to thousands. In addition, around 250,00 to 500,000 women were raped and brutalized during the genocide. Over a million people were murdered for either being Batutsi or being associated with Batutsis. The toll of destruction was catastrophic.



Only as One

After the 1994 genocide in Rwanda many Hutu men and women were jailed for murder or some kind of involvement in the planning of the genocide. Directly after the genocide there were around 120,000 Hutu prisoners inside Rwandan prisons and there were still more prisoners to come. The jails of Rwanda were terribly unsanitary and overcrowded, brutal conditions. Many people died in these prisons awaiting their trials and may have even been innocent. Even in 2001 there were 125,000 people still in jail awaiting trial. Many people in jail were brutalized because of their beliefs on the genocide. After the genocide some Rwandans still generalized against Hutu and Tutsi tribes. Just because a person may be Bahutu it was thought by some that he automatically hated all Batutsis. Just because a person may be Batutsi it was thought by some that he automatically condemned all Bahutus because of the genocide. The Hutu people were often thought of only as one, as one group, as one ideal. Most of the time, they were not thought of as individuals with separate opinions and separate lives. By Tutsi extremists they were thought of only as one that should be barred, oppressed, and singled out.

Warrior

This boy is a child soldier for the Rwandan Patriotic Front, a guerrilla organization, made up of Tutsi people. The Rwandan Patriotic Front was created as a result of rapidly growing tensions between the Tutsi and Hutu tribes. The group was started in 1986 by Tutsi refugees in Uganda who fled from Rwanda after the mass killings between 1959 and 1962. Approximately 100,000 Tutsi residents fled to neighboring countries and about 15,000 Batutsis were murdered. Tutsi people began to be removed of their powers, wealth, and land under the regime of Juvénal Habyarimana.

In 1990 the Rwandan Patriotic Front launched an invasion in northeastern Rwanda. This act of violence attracted global attention and a raging war between Tutsi and Hutu tribes started.

The ex-president of Rwanda, Juvénal Habyarimana was from the Hutu tribe. His death on April 6, 1994 was a trigger for genocide among the residents of Rwanda.



Failures of the Shanghai Massacre By Shea Sjoberg

The Shanghai Massacre was the first of many violent acts between the Kuomintang Nationalists and Communists. Before the massacre, the two parties were allied against warlords in Northern China. Chiang Kai-Shek, the leader of the Nationalists, ordered the massacre on April 12th, 1927. He felt that the Communist wing of the Kuomintang was gaining too much power and threatening his authority.

This later led to many conflicts in China including many insurrections like the Nanchang Uprising, and the brutal, 10 year conflict of the Chinese Civil War. Initially, the Shanghai Massacre was a success for the Nationalists as they took over many provinces such as Shanghai and Nanjing. Although this Nationalist victory lasted for ten years, Mao Zedong eventually led the Communists in their rise back to power.

Hard Times

1927. In these hard times at war young Chinese boys are being put through unthinkable acts of violence. They are being taught to enjoy killing and taught to feel honored to be killed. All that they learn in their lives is killing. As they grow up they know how when they become men they will be put into the battlefield. Many events occurred in retaliation to the Shanghai Massacre including the Chinese Civil War which lasted for ten years. Young Chinese boys grew up during those painful years only seeing the war and bloodshed. They grew up looking up to the soldiers and learning that killing is what was necessary.



Chiang Kai-Shek's Reputation

Immediately after the Shanghai Massacre, Chiang Kai-shek's position in China changed drastically. Because he had taken the time to plan and execute the massacre, his expedition to kill China's warlords was suspended, and the warlords gained strength. He had taken out Wu Peifu and Sun Chuanfang but Zhang Zoulin the most notorious of the warlords was still in power in Manchuria. After the massacre Chiang was the weaker offender as his social position in China had dropped dramatically. There were many protests against Chiang being in power and the citizens in general were unhappy with his choices. But eventually Chiang regained influence and finished his original expedition by defeating Zhang Zoulin.

Opinion Collision

The Chinese Nationalist and Communist Parties have always had their differences of opinion, but it wasn't until they actually tried to work together on the Northern Expedition to eradicate China's warlords in 1926, that fights broke out between them. The Shanghai Massacre on April 12th, 1927, was the first act of violence between the two parties. On that tragic day, when Chiang Kai-Shek ordered the purge of the Communists in Shanghai, he didn't realize the series of battles he had just started. Directly after the massacre there were many protests and uprisings, injuring many people. And for the next 20 years, China had a civil war between the two parties. In total, 2 million people died during the Chinese Civil War. If Chiang Kai-shek knew the trauma that the Shanghai Massacre would cause, would he still have ordered it all those years ago?



Chinese Civil War

"In previous statements, the Chinese government has said that it would cancel visits of top military leaders and retaliate against American companies engaged in weapons sales to Taiwan. In recent weeks, Chinese officials and editorials in the state-controlled media have been fulminating over the United States' \$6.4 billion arms package for Taiwan, which would include Black Hawk helicopters, communications equipment and 114 Patriot missiles. Earlier this month a group of high-ranking military officers urged China to dump some of its holdings in United States Treasuries."

-New York Times Writer, Andrew Jacobs, February 25, 2010.

Khmer Rouge: A Cambodian Genocide By: Paloma Fernandez

The Cambodian Genocide, or the Khmer Rouge, was a genocide in Cambodia that followed the end of Cambodia as a monarchy under Prince Lon Nol, and a long conflict between the U.S. and Vietnam. The Khmer Rouge were a group of totalitarian communists who wanted agricultural reform and thought Cambodia shouldn't be a monarchy. The Khmer Rouge regime ruled Cambodia from 1975 to 1979. Under command of Pol Pot, the revolutionaries tried to improve and build the country's economy, agriculture, and government from scratch. They closed down schools and businesses, imprisoned millions of civilians, and forced people to work in communal rice fields. In addition, they accused over 2 million of somehow being affiliated with the Vietnamese (they were very anti-Vietnamese), and were killed and tortured. Even after the regime was over-ruled and the troops were over stopped thanks to the Vietnamese military intervention in 1978, the scarring after effects were still present.

There were thousands of orphans, many who were homeless; families were torn apart without jobs and food. Over 30% of the children were orphaned. The effects spread further than just Cambodia. In the early 1980's, the United States allowed over 40,000 refugees to come to America to begin a new life. These refugees were mainly those who were wealthy in Cambodia, or people who knew wealthy people. The problem with this was that these Cambodians did not have a solid knowledge of the English language, and were very poor, as it was hard to find a job. Many of the younger kids were without parents and scarred from their experience during the genocide. These factors changed many people's lives forever.

Displaced

It is 1979. We have found our way to Phnom Penh. You could say we are lost. In a sense we have nowhere to go. We travel together as one searching and looking for anything we can find. I need a job to support my brothers. I need to find a home. I am the leader and they follow. It is hard to decide where to go now. Most are gone in the wind and I am left in the dust. I am confident things will get better. We need to keep moving because I know no one will come to our rescue. We move on, and continue through the wilderness that is now Cambodia. People don't care about us. We are children, and they don't want to take care of us. They see us as another mouth to feed. It makes you think what people can really turn into when they are left to die. We are lucky to be hiding; the other children might get food and a house, but the Khmer are turning them into soldiers. They kill their families, the people of their country; I do not want that for the younger ones. It is not right. It makes me cry when I see my friends and family leave because their houses have been destroyed. I just move on; I have to; I have to keep this caravan alive. The Khmer forced us to work in the field, that was my job, but now I am lost, lost without a future or hope.



The Protest Phnom Penh, 1979.

The Vietnamese have invaded my country. They are not in favor of the Khmer and will do whatever it takes to get them out of power. I was speaking my mind for the Republic of Kampuchea. Is it wrong that I support my country? To them it is. I believe in the reform. Maybe I am not in favor of so many deaths, but I shouldn't be judged for having this flag. They pull me away from it by the scalp. Pull me from what symbolizes a new start for my country. They call me blind, but I can see just fine. They say that I cannot see what it is doing to Cambodia, to the mothers and fathers, sons and daughters, but I know all they really want is power; why else would they be here? They kill, too! I have worked in the fields for years, I have no home, nothing to rest upon but this flag, the flag of my government, and I cannot even support it now. I don't want it to be a monarchy again. I am finally getting used to the way things are. Pol Pot created the idea for a new way of life, but it seems like my country can't handle new ideas.



Cambodian Kids to Asian Boyz

"These 16-year-olds grew up under Pol Pot. That is significant. We term that era a holocaust...life and death take on a whole different perspective"

-Margie DeMonchy, Social worker

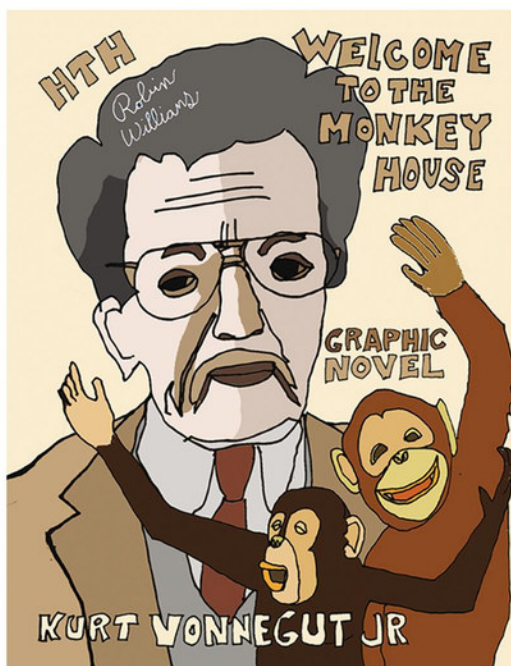
1994, Long Beach, California. It has been 15 years since he has moved from Cambodia to America, but he could not have a harder time getting used to his surroundings. His father was killed by the Khmer, he was beaten and forced to work, stripped of his possessions; he grew up with this torture and thinks it's acceptable. An eye for an eye, that's what the Khmer regime showed him. His mind will forever be scarred, and he passes it on to everyone he harasses, steals from, and kills. He will never be the same since they came into his life.

The most obvious project

an art and English teacher could do with students is make a graphic novel—this project combined reading, interpretation, dramaturgy, art, graphic design, and Photoshop skills. We chose *Welcome to the Monkey House* because there are 25 short stories in mid-20th century America. Themes like the cold war, JFK, space travel, veterans, and political correctness are explored in these stories. Kurt Vonnegut is also my go-to author for students that don't like to read. The stories are funny, sarcastic, not overly moralistic, and preachy like most novels students are made to read in High School. And I love his work.

The first thing I did was choose the most prosaic story in the book for my exemplar (not to take a good one from a student). The idea was to edit down the story to essential text, then create images to go with that text. I first went over the text and decided what text would remain with the images, what text would be replaced with pictures, and what would be on another page. This activity is just like what a movie director or a dramaturgist would do. I then researched the vernacular, like locations, fashion, and specific objects for my images. I then compiled my book with text and pictures and had it printed to show my students.

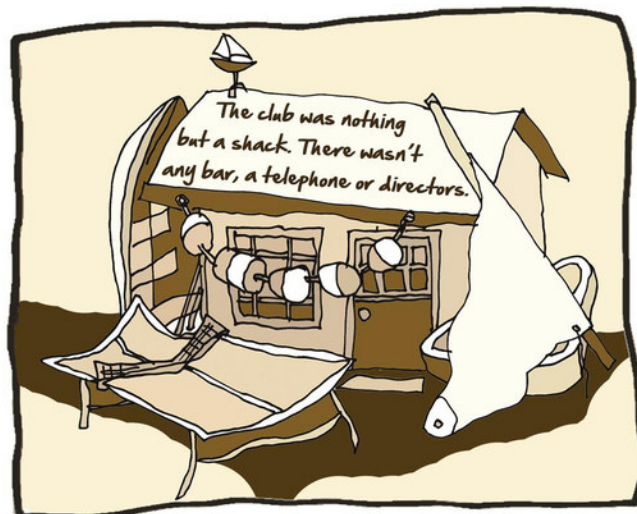
I chose the collection of stories, the size of the book and that was it. They could choose their style and their story in *Welcome to the Monkey House*. Some students even made videos instead of graphic novels. I felt they had to do the same work in a graphic novel and a video, so I let them choose the medium.



Cover of my Exemplar

He wanted a martini, wondered if a nonmember could get service at the bar. He was appalled to discover that the club was nothing but a shack fourteen feet wide and thirty feet long, a touch of the Ozarks in Massachusetts. It contained an hilariously warped ping-pong table, a wire lost-and-found basket with sandy, fragrant contents, and an upright piano that had been under a leak in the roof for years. There wasn't any bar, any telephone, any electricity. There weren't any members there, either. To cap it all, there wasn't a drop of water in the harbor great as fourteen feet, was utterly out. And the so-called yachts, antique wooden Rhodes 18's, Beetlecats, and a couple of Boston Whalers, were resting on the bluish-brown glurp of the emptied harbor's floor. Clouds of gulls and terns were yelling about all that glurp, and about all the good things in it they were finding to eat.

My text: The Pink Text is on another page, Green Text is on this page, and a picture replaces the Red Text.



To cap it all, here wasn't a drop of water in the harbor.

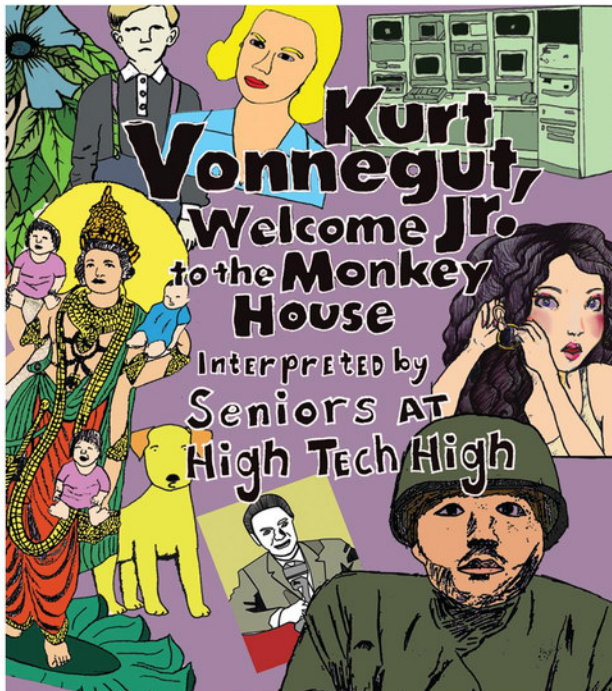


A page from my Graphic Novel

WELCOME TO THE MONKEY HOUSE

GRAPHIC NOVEL PROJECT

ART+ENGLISH



Cover of High Tech High's Graphic Novel
"Welcome to the Monkey House"

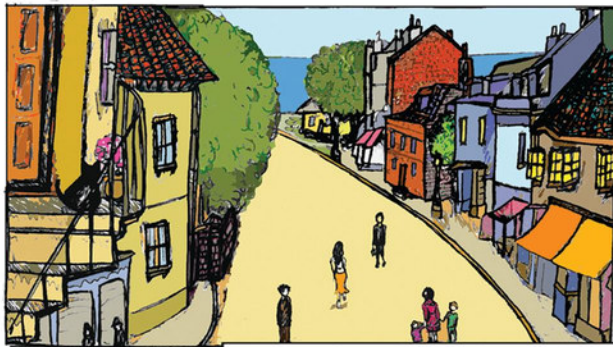


When I was asked by the seniors at High Tech High to write the introduction to their comic book interpretation of my book *Welcome to The Monkey House*, a collection of short stories from the mid twentieth century I said, "I have been dead for five years." However these persistent and somewhat rude teenagers convinced me. I received an advanced copy of their work and was pleasantly surprised. The work was varied and complex. It was as if there were 40 dramaturgists preparing elaborate graphic plans for plays I had written 60 years ago when I was alive.

These young people must have had a difficult time relating to the now nostalgic short stories I had written relating to the Cold War, Sexual Revolution and a view of the future that to them is the past. It sounds like one of my own science fiction dystopian stories. I have to give their teachers credit, especially their English teacher, Kelly Williams. Good Luck with your new baby. And to their art teacher, Jeff Robin I only have to say, "How do you sleep at night."

Posthumously Yours,
Kurt Vonnegut Jr.

The introduction that the students wrote. At Least 20 people thought Vonnegut wrote this.



At noon, she would begin her stately, undulating, tinkling walk-down the outside stairway, past the liquor store, the real-estate office, and the diner to the crowded drugstore.



There, she would get the newspaper.



Alexei continues to think that I am, a superstitious fool who still believes in ghosts and ghouls for having such fears.



But how can I not have such fears when my nightmares might eventually become reality?



Before Stepan died, he and his beautiful wife, Alesina, visited us. Mr. Ashland, if you had him as a son, you would surely have been proud of his character and kindness alone.



Stepan listened to my concerns and was willing to accept the risks in exploring space. I then asked him why does he want to pursue a seemingly suicide mission.

This project came from my

teaching partner in the Spring of 2014 for the Fall semester. She wanted to do a project using the stories of refugees to create animations. I thought, "Hasn't that been done?" I did not know the human tragedy about to occur worldwide with people being displaced from war, climate change, and disease.

I set out to do the project myself first. I focused on an immigrant I knew my whole life, my great grandfather. He died in 1989, but I had just found out more about his life and it sounded like he had suffered from his experience being wounded and captured during World War I. He also lost most of his family in the Holocaust and emigrated to an unfamiliar country. I started to see this Immigrant story more like a refugee story. I did research and wrote the script. Then I illustrated using watercolors and Photoshopped images to tell the story. I loved that I could Google map where my Great Grandfather, "Pop" was imprisoned in Siberia. He was on the other side in the Austrian-Hungarian army. That was a trip, literally and figuratively. I showed this animation to my students and they saw the possibilities.

I came up with two mini-lessons that the students could do before making their animation to learn skills while creating something necessary. The first was a "6-word Essay" about getting them ready for the college essay in my partner's class. They illustrated and wrote it in my class.

The second was the "Bob Dylan Timing Video," where they put images to a Bob Dylan song. I thought this would help them understand timing; when the image appears, the audio references the visuals. It sounds simple; however, it is more complicated than you would think. We used Dylan songs because they would all look and sound good together; the songs are very descriptive, and I love Bob. I think his music is essential, and the students never really knew his work.

While I was doing these mini-lessons, my teaching partner was going to have the students research immigrant or refugee stories and hopefully interview them too. She did not. She had them reading a book and taking quizzes on the book. I made two mistakes here. I did not succeed in getting my teaching partner to do the project herself. She had no idea how much time it would take to interview the people and write the stories. I also did not check with the students to see how it was going in my partner teacher's class. I asked her, and she said, "fine." The project was completed on time. I had to take over, and my partner teacher ended up quitting. As I write this, I feel bad I was not more supportive of her. At the time, I was furious. She acted like she was the master teacher, and I was just a silly art teacher. I realized that was her inexperience and my inability to handle tough conversations.

I can safely say the students and the teachers learned a lot about working together, immigration, refugees, animation, voiceovers, watercolors, and Bob Dylan.

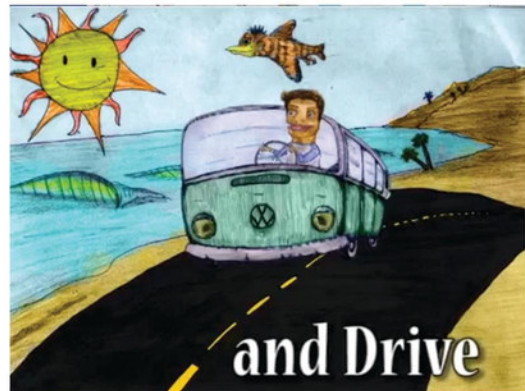


My exemplar "Pop" in Tijuana, Mexico 1984

I AM STILL
FIGURING
IT OUT



Two student's 6-word essays



Still from the "Mighty Quinn" Dylan song video



Still from the "Masters of War" Dylan song video

IMMIGRANT REFUGEE

ART+ENGLISH



"The Story of Abdom" A story of immigration from war-torn Eritrea to the United States



A still from "Francois, A Refugee Story" a young man's story of leaving the Democratic Republic of the Congo to San Diego

ART+ENGLISH MASTERS TO MASTERS

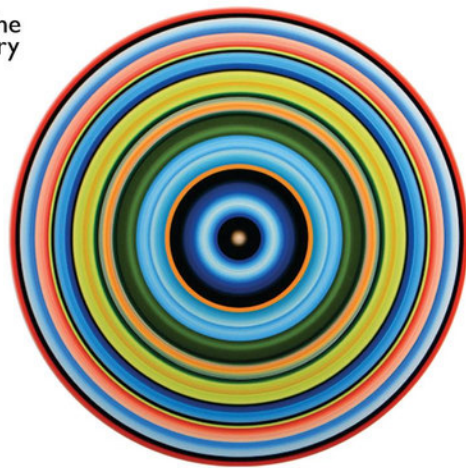
I went to the LA Louver Gallery in Venice Beach and saw an inspirational show. David Hockney, Tom Wudl, Rebecca Campbell, and other Contemporary Masters were showing work that was inspired by Old Masters' paintings or sculptures. I had my students choose a painting anywhere from Greek Vase Painting in 500 B.C. to Manet in 1870. Their choice determined the theme and composition. They then chose a Modern or Contemporary painter from Monet (1885) to the present, and this choice determined the style of their painting.

In English class, the students researched their chosen artists and then went through the writing process to create a piece of fiction where the two artists met and interacted. Although the artists were from different periods, the students had to use their research and creativity to create an engaging plot that exemplified the actions and desires of each artist.

I made an exemplar that used Rubens' Rape of the Daughters of Leucippus as the classical master, theme, and composition, and Gauguin the modern master's style of painting. Showing this painting to the students set the floor. I got push back from a parent who said their child should get to paint anything they want. I told them they absolutely could and would need to justify their painting by looking at the history of worldwide art and explaining the content and painting style. They said okay.

Exemplar from the
LA Louver Gallery

Don Suggs
used the
colors
from one
of the most
famous
paintings in
the world
by Bosch.



Don Suggs
Earthly Delights Iris, 2011
oil on canvas
diameter: 45 in.



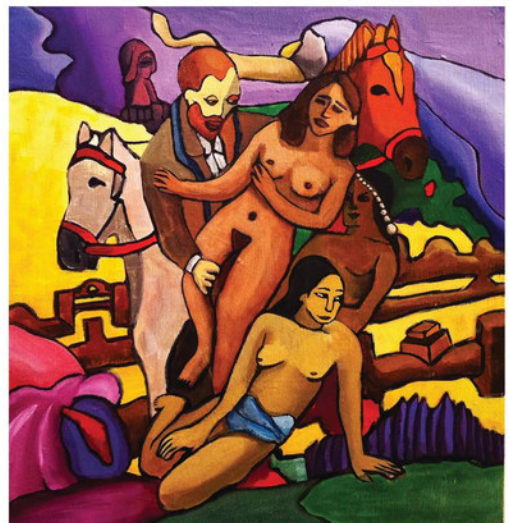
Hieronymus Bosch (Dutch, 1474-1516)
The Garden of Earthly Delights (detail)



Rubens "Rape of the Daughters of Leucippus"



Gauguin Tahiti painting



My Exemplar



Gustav Klimt



Camille's Painting



Botticelli's La Primavera

Catalogue Cover



Austin Donnell
Celebrate Freedom! ~¡Cinco De Mayo!, 2012
 acrylic on wood
 dimensions: 24 x 32 in.

My painting references the subject and composition of Edward Manet's painting, *The Execution of Maximilian*, and is in the painting style of Roy Lichtenstein. Manet was known for realistic paintings with impressionistic values, for his detailed life-like figures, and for adding abnormal coloring. Light oily shades gave his art a unique feel, but all of the subjects in his art were precise. Like Manet, Lichtenstein made sure his subjects were clear but created an extreme color pallet for his canvas. Lichtenstein was labeled as a Pop Artist famous for his use of dots and lines as shading and texturing. Lichtenstein also was famous for his intense shading and bright colors.

-Austin Donnell

Edouard Manet (French, 1832-1883)
The Execution of Maximilian
 c. 1867
 oil on canvas
 193 x 284 cm (Original)
 The Meuseum of Modern Art, Room 43



Carolyn Keating
Transformation of Venus, 2012
 acrylic on wood
 dimensions: 32 x 24 in.

My painting references the subject and composition of Tiziano Vecelli's painting, *Venus of Urbino*, and is painted in the style of Paul Cézanne. Vecelli, also known as Titian, was considered a High Renaissance painter known for his vivid color and loose brushwork in portraits, landscape backgrounds, and mythological and religious subjects. Dramatic color and the individual characteristics of his subjects make his subjects realistic, nearly surreal. Unlike Titian, Cézanne painted in a more synthetic, Post-Impressionist style. Cézanne simplified the detail of his subjects and utilized quick brushstrokes that made his paintings appear as a patchwork of vivid and unexpected color.

-Carolyn Keating

Titian (Italian, 1488-1576)
Venus of Urbino
 c. 1538
 oil on canvas
 119 x 165 cm
 Uffizi, Florence

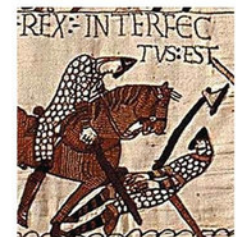


Morgan Torpey
La Muerte del Rey Haroldo, 2012
 acrylic on wood
 dimensions: 32 x 24 in.

My painting reflects the subject and composition of *The Bayeux Tapestry* in the painting style of Pablo Picasso's *Guernica*. *The Bayeux Tapestry* is a work that glorified the act of war by using simple but powerful imagery. *The Bayeux Tapestry* shows the Battle of Hastings and the acts of William the Conqueror. The tapestry is stitched onto cloth rather than painted like Picasso's work. Picasso's style was very different from that of *The Bayeux Tapestry*. He was a Cubism painter, which means that he utilizes a style that breaks up objects and then reforms them in an abstract form. Unlike the subject matter of *The Bayeux Tapestry*, Picasso's work was strongly anti-war. The painting, *Guernica*, showed the horror of the bombing of *Guernica*.

-Morgan Torpey

Unknown (English)
The Bayeux Tapestry
 c. 1070
 wool yarn on woven linen
 224.3 x 1.6 ft.
 Normandy





Radical Romantic of Frank Erotic Charm
By Camille Gomez

Dizzily, as if drunk, Gustav lifted his throbbing head off an unbearably chilly ground but found himself unable to open his eyes, which were thickly glued shut by sleep. Where am I? What is this? He tried to ask, but his throat was parched dry and voiceless and resulted in an inaudible croak. His fingers brushed fleetingly over the wall that his body was awkwardly crammed up against only to find it covered in thick streaks of some sort of goopy paste. "Please don't touch that," hissed a pinched voice nearby. "It is not yet dry." Against the silent, stolid air, he could make out the scratching and smearing sounds of skilled fingers on the wall. Laboriously, as if every muscle in his face was repelling against him, he cracked open an eye, aware of the crust that had formed. From the gloom of a sporadically flickering fluorescent light, he made out the form of a hunched man calmly and meticulously smudging the wall with his bloody and food covered fingers. He was painting the face of a noblewoman with loosely curling hair at the nape of her neck, serene, mournful eyes, and a melancholic turn of the lips. "Simonetta," the man murmured with love at the carefully crafted portrait. At the man's calming tone, Gustav fell dizzily back to sleep, not waking to face his morbid reality until a short eternity had passed. Several days later, he awoke to find the gaunt figure in the same pose as before. "You don't recognize me, do you?" the man mused as if almost to himself. "Ah! These disgusting rags," the man lamented woefully, "have taken my identity!" The man threw himself against the grimy stone wall in mock agony. "Don't be startled once you've learned in whose presence you are in. Best take a deep breath but... I am the Alessandro di Mariano Filipepi, or in other words, Sandro Botticelli." Botticelli waited for a reaction that never came. "Surely you've heard of me," he prompted. "I'm a painter commissioned by the government." Gustav, coming from humble origins, found Botticelli's lack of modesty annoying and so changed the subject back to the more important matter at hand. "Then there are two artists in a holding cell. But why?" "We are to be publicly drowned for—" "Drowned?!" Gustav gasped in horror. "Yes, the new hanging," he continued unperturbed. "For unlawful art that violates the new decree." Gustav bleakly recalled the headlines in newspapers about the new dictator's radical changes, the ridiculously strict list of new laws mailed to his own house, and the insistent pounding on his door the night before and the struggle that ensued. His predicament became horribly clear.

"How can you be so calm about this?" he whispered to the other artist in terror. With a secretive smile, Botticelli told him in hushed tones how the love of his life, an already married noblewoman, had sent word of her plan to bail him out with her huge sums of money. Simonetta had taken over his heat and paintings becoming a reoccurring figure in several masterpieces (now dubbed improper and illegal for their religious and mythical content). But time was growing short. Approaching footsteps clomped ominously down the hallway. "My Simonetta will come for me," Botticelli whispered as the thick-necked guards hauled them roughly to their execution. The arrogance and prideful charm on his face was replaced with a deeply furrowed brow of doubt. "She will," he assured himself, and Gustav almost believed him. The two men were led through a gloomy hallway of flickering lights that blinded the eyes with brightness before submerging the narrow way in utter blackness. Into a rickety elevator of corrugated steel they were pushed; the silence and menacing stature of the guards swallowed up all voice in their throats. I am to be drowned, Gustav repeated to himself over and over again, but the fact was no less terrible the more he thought it. A bitter taste arose from the back of his throat. All he had wanted to do was create art; loving, longing, lustful art, not for the critics, nor the romantics, but for himself. He was a plain, uninteresting man, with no more talent for self-expression than a fish for flight. But such a gruff and unattractive man had been gifted with the talent to create beauty, and now that too was forbidden. The elevator creaked slowly along the track rising up and up for agonizingly long minutes until finally a sudden change in the air could be sensed. They had arrived at ground level to see the sun for one last time. The public drowning was to take place in a large tank elevated for the audience to have a clear view of the silent, thrashing deaths. Instead of with stars, his vision swam with the gold metallic shapes and designs he had used to decorate the portraits of the very people who had decided his grisly fate. The two artists stood side by side on podiums. The thunderous accusations of heresy and treason passed in a nauseous blur. There was still no sign of Botticelli's savior as both were led to separate tanks. The crowd boomed and screamed against this barbaric turn of events but was hushed into silence as each man was plunged into the water and a heavy lid sealed above them.

LA JOLLA LIGHT

Enlightening La Jolla Since 1913 Vol. 100, Issue 17 • April 26, 2012 Online Daily at www.lajollalight.com

PAGE A16 APRIL 26, 2012 LA JOLLA LIGHT www.lajollalight.com

Café in Bird Rock hosts engaging student art

High Tech English teacher Kelly Williams and art teacher Jeff Rabenstein created an art show celebrating the students' "words to life." In addition, students had to research both artists and write a narrative about what would happen if they met and interacted. This dialogue had to be written in the voice of the artist to gain insight into their personalities. Williams said the project worked well because the research gave the students an art and writing a deeper relationship. Rabenstein observed that the artists from the gallery period painted what they saw, while the later period artists painted what they felt. — To learn more about the project, visit www.lajollalight.com. www.lajollalight.com 2012 on Master in Motion

High Tech English teacher Kelly Williams and art teacher Jeff Rabenstein created an art show celebrating the students' "words to life." In addition, students had to research both artists and write a narrative about what would happen if they met and interacted. This dialogue had to be written in the voice of the artist to gain insight into their personalities. Williams said the project worked well because the research gave the students an art and writing a deeper relationship. Rabenstein observed that the artists from the gallery period painted what they saw, while the later period artists painted what they felt. — To learn more about the project, visit www.lajollalight.com. www.lajollalight.com 2012 on Master in Motion

High Tech English teacher Kelly Williams and art teacher Jeff Rabenstein created an art show celebrating the students' "words to life." In addition, students had to research both artists and write a narrative about what would happen if they met and interacted. This dialogue had to be written in the voice of the artist to gain insight into their personalities. Williams said the project worked well because the research gave the students an art and writing a deeper relationship. Rabenstein observed that the artists from the gallery period painted what they saw, while the later period artists painted what they felt. — To learn more about the project, visit www.lajollalight.com. www.lajollalight.com 2012 on Master in Motion



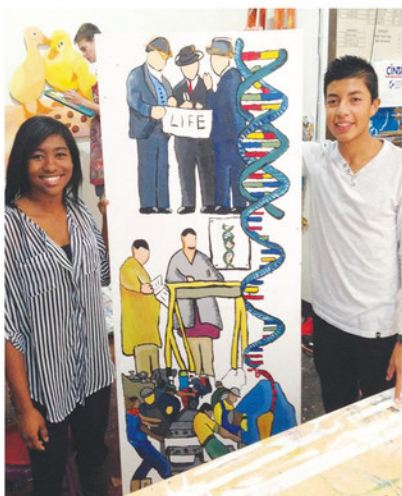
retired pathologist father that I was collaborating with a biology teacher; he got excited (as only a scientist would). He was a lab advisor for a new company called DermTech that had developed a new test for Melanoma, and most importantly, they had no art on the walls.

With the assistance of the DermTech molecular biology team, our students began to study the diagnosis, testing, prevention, and treatment of Melanoma. They transformed that knowledge into paintings that tell the story of growth, diagnosis, and treatment of cancer.

As they learned content and chose their area to illustrate with their biology teacher and pathologist, I learned to paint and use visual metaphors to explain DNA translation and transcription.



My exemplar painting, *Ultra Violet Ray*, illustrates how ultraviolet rays affect individuals with lighter skin and that their DNA becomes mutated. DermTech tests for that mutation to see if there is evidence of Melanoma. This was hanging outside of my classroom door before the semester started. The students knew this was their exemplar.



DERMTECH ART+BIOLOGY

We first did a mini-project to learn to paint. All the students chose a cast-iron toy from the past. Painting a three-dimensional object would help them learn to model and shade their paintings. As Charles Eames said, "It's about play, not making the perfect little copy of the real thing." All the toys together would make a great series of work that would look good together, and there was not a great need for research.

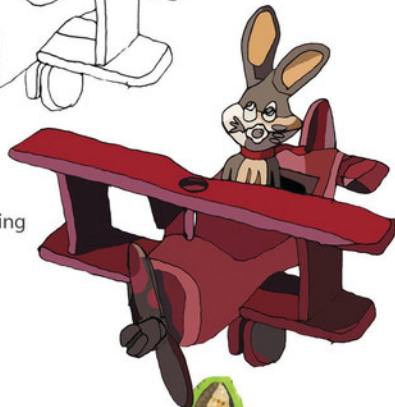
The original cast iron toy



Outline and color in Photoshop



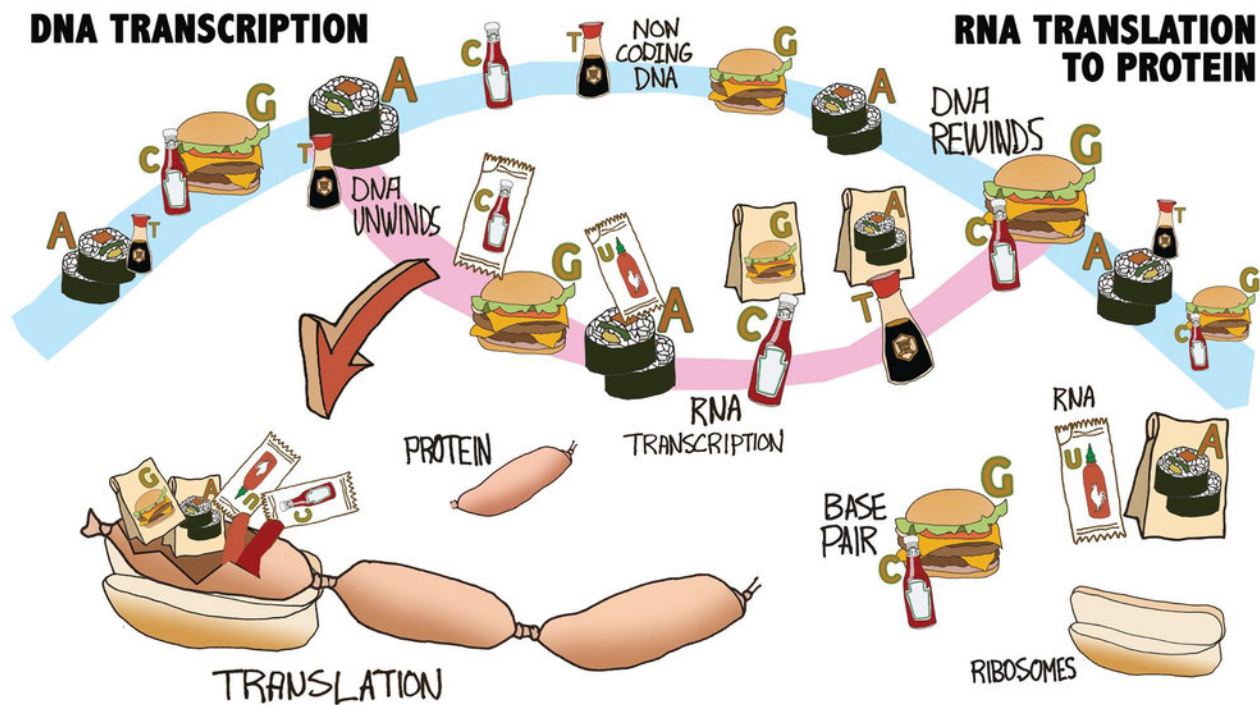
Finished recoloring Maquette



Final Painting (Exemplare)

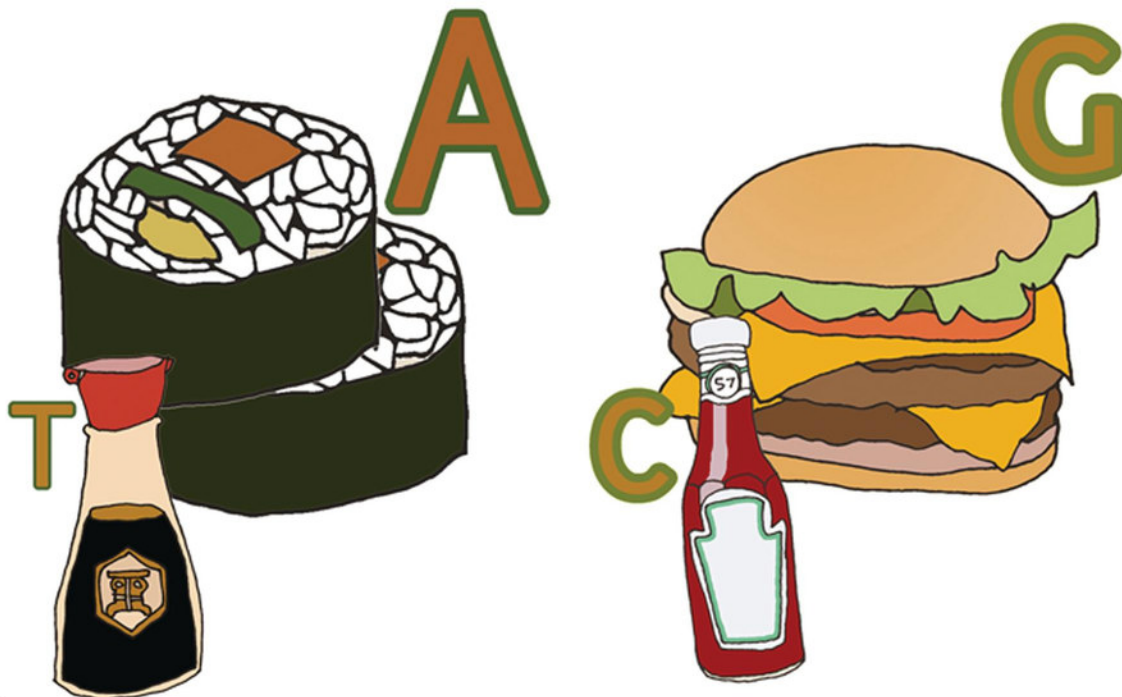


The students cast iron toy paintings, where they taught themselves to paint with a bit of help from me.



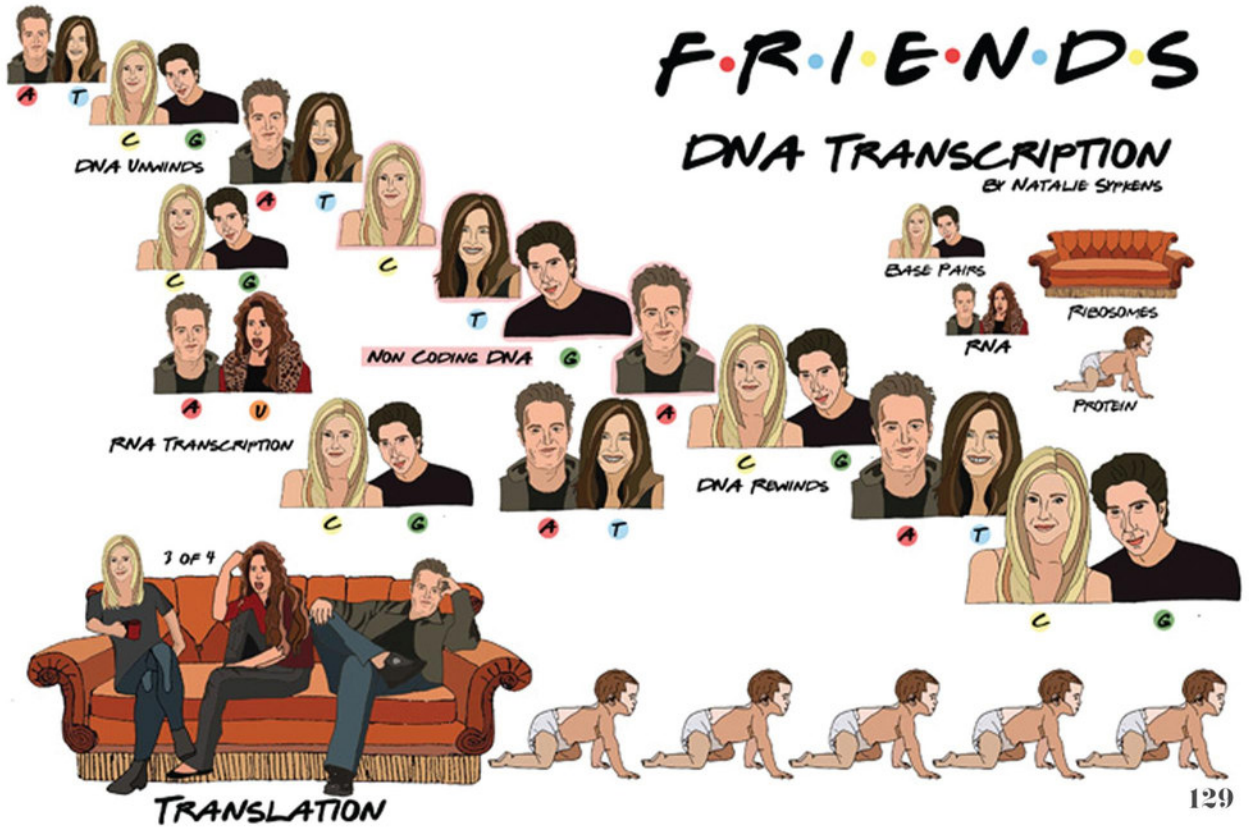
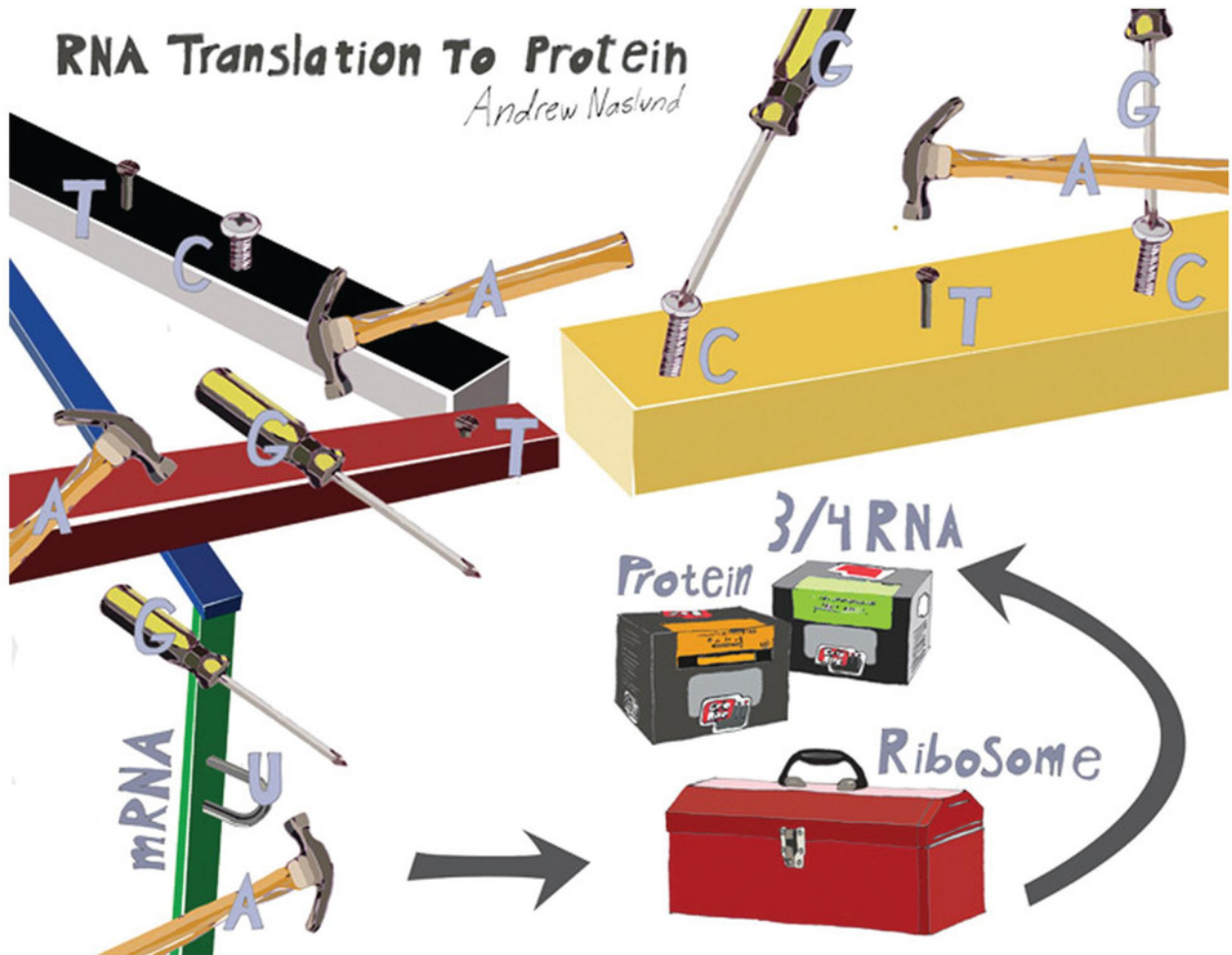
Mini Project II DNA-RNA Transcription and Translation

I made this chart to show the students how to illustrate a complex concept. Using recognizable images and relationships tells the story of DNA to RNA to Protein transcription and translation. I used Burgers (G), Ketchup (C), and Sushi (A) Soy Sauce (T) to represent DNA. I then added Sriracha (U) to take the place of (T) when making base pairs. The Hot dog buns are ribosomes, and the sausages are the proteins. The exemplar was then animated and had a voice-over from the lab manager at DermTech. The students were excited and challenged by this assignment, and they never forgot how DNA transmits and transcribes because they could use this concept.



RNA Translation To Protein

Andrew Naslund



Exhibition night at
DermTech, La Jolla CA



The Vehicles to Cancer Treatments



La Fiesta de Organelles (after Diego Rivera)



United Colors of Dermis



がんを表現した作品制作を指導するロビン・ジョンソン（奥）（10月、米カリフォルニア州サンディエゴのハイテク高校で）＝石井正博撮影

がんを表現した作品制作を指導するロビン・ジョンソン（奥）（10月、米カリフォルニア州サンディエゴのハイテク高校で）＝石井正博撮影

セツ工科大など有力大に

大型のキャンバスに描かれた人体図。その中をアリの巣が描き加えていく。生徒たちは描き加えていく。米カリフォルニア州サンディエゴの公立高校「ハイテク・ハイスクール」の美術と生物を融合した授業。指導するシェリー・ロビンソン教諭45が「アリは、が

変わるか
633制

地域に合わせ柔軟制度

人細胞の増殖を表す。生徒たちはがんについて学んだ上で、その仕組みを芸術的に表現している」と話す。日本の中3から高3にあたる9～12年生約570人が学ぶ同校は2000年、地域のIT企業などが出資して設立された。科学に重点を置き、数学と物理、社会と英語など、科目を横断した授業が中心で、教科書

も使わない。年間約3000人が視察に訪れる。「ネット上で情報が入手できる時代には、知識の量より、社会にかかわる課題をグループで考え、解決する能力が問われる。企業もそうした人材を求める」と同校最高経営責任者（CEO）のラリー・ローゼンストックさん（65）は話す。

チャーター・スクール 教員や親、地域団体、企業などが、州や学区の認可（チャーター）を受けて設置する公立学校。独自の理念に基づいた教育ができる。ミネソタ州で設置され、全米に広がった。2010年時点で、約5300校で約180万人が学ぶ。



Infestation (after MC Esher) This painting shows how cancer can spread throughout the body when it is left untreated. My student is here with her mother, who just went through cancer treatment. Top Left is an article in a Tokyo newspaper about this project.



MOHS SURGERY

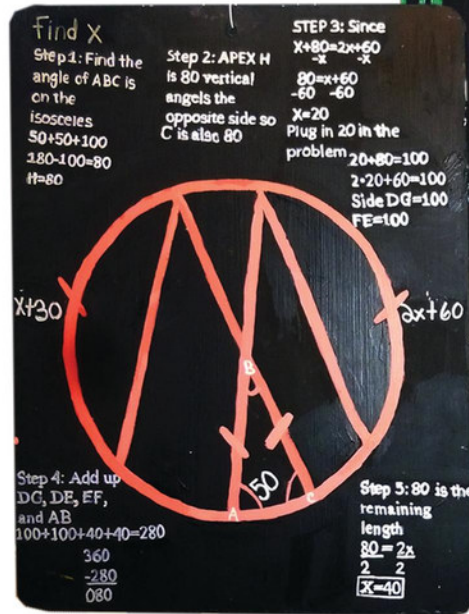
MOHS surgery is when a doctor peels off layers of cancer until there are no cancerous cells left. Dr. Eaton, a MOHS surgeon, helped the students with their project.

SANGAKU ART+MATH

Sangaku, or San Gaku (算額), are Japanese geometrical puzzles on wooden tablets created during the Edo period (1603 – 1867) in Japan by all social classes. The finished puzzles were hung in Buddhist temples and Shinto shrines as offerings. Around nine hundred still exist in Japan today. Math teacher Daisy Sharrock came to me with this idea.

Physically it was a lot of work; buying and moving masonite panels, cutting, rounding the corners, drilling the holes, and gessoing each side was the lion's share of the work. I set up a team of sophomore students in both of our classes to get ready to paint. In Daisy's class, they applied their knowledge of Euclidean geometry and mathematics. I pushed them into using images from the past so as not to have 30 Spongebobs. They used new geometric tools to create their artistic geometry puzzles.

I digitally simplified their images so that they could make a painting from a photograph. We then hung them around the school from the rafters.



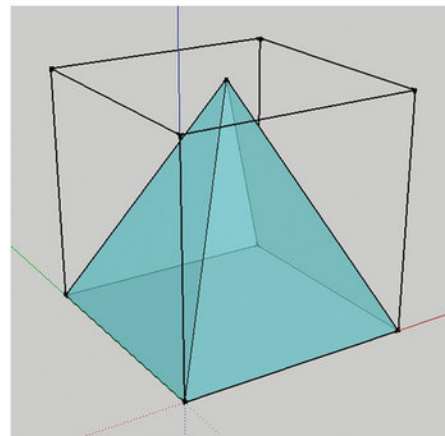
Above is two sides of the same Sangaku. Image and shape on one side and the question on the other side. Below are the Sangaku hanging at High Tech High.



X-Y-Z PLOTTING FOR REAL ART + MATH

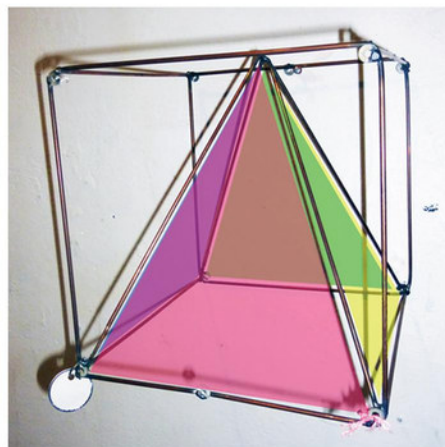


Adam and his student, yes, I had 15-year-olds teach each other to weld.



Google SketchUp Plan

The same semester I was working with students on Sangaku, I had other students working on a history project. As soon as the students were finishing, I asked their math teacher if they wanted to do a project. It was a hard no. I asked her, "what is something that they are struggling with?" She said, "plotting X-Y-Z coordinates." I asked the students how could we make plotting fun? Adam, the boy in the pictures, said, "we want to learn to weld." I taught all the students to make a cube with 1/8" filler rod, and then they could design in Google SketchUp a shape in this I-I-I Cube, weld the form in the Cube, and graph the coordinates. Everyone learned to weld and graph except their math teacher.



Finished Cube with plexiglass details

FAILURES &



The Commander, Mobile Art Gallery: I bought it for \$400. We were stripping it down and painting it, but the Board of HTH told us to get rid of it. I was relieved.



Classic Self-Help Book: The idea was to read a Classic book, find the moral of the story and make a self-help book out of the novel. The students would also make a paper mache book like Jean Lowe. (Look her up. She is excellent.) My teaching partner got moved in the middle of the semester and that was a mess.

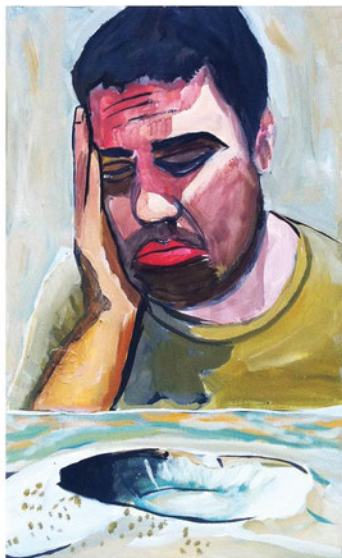


Book Vending Machine: We made a cool facade; however, the books were too heavy to sell out of a machine. They would get stuck or break from the fall.

ART FOR TEACHERS



Art For Teachers: This was a mini assignment to show teachers how to make great visuals with their students by doing it first. No one finished.



iCure8: This was my exemplar, but I still do not know what the project was supposed to be. It was so convoluted.



Cigarette Art Machine: Kind of worked but lots of complaints.

RATIONALIZATIONS



Measure Twice Assignment: Design a shape with a hole and a bent side. Build it and calculate the % of how off you were—Design, Geometry, Constructions, Algebra, and Statistics. No Math teacher would touch this.



Animation Workbook

jeffrobin.com



Animation Workbook: This book was made to go with my animations. There are stills in the book that are from the animations and questions to answer. It would have been a great way to learn the theory of teaching without reading a dense text or listening to long lectures.

After looking at and possibly reading this catalog of work, I hope it shows I listen to my students, reflected on my practice, and endeavored to improve my technique. I was not the teacher that taught the same lesson for thirty years. I thought it was important to keep trying to improve my practice. After all of the work and reflection, I realized my most significant revelation was to do the project yourself first.

I also realized as an artist, I am not used to my work disappearing. My paintings are on walls in libraries, hotels, restaurants, and people's houses. Some of the artwork I had my students do is still up at High Tech High, in students' houses, and with people who bought student work. I have a website with all of my students' work at jeffrobin.com, but that is an electrical glitch away from disappearing. I made books of individual projects that are singularly collecting dust on people's shelves. This catalog, the ultimate reflection project of my work, is my attempt not to forget the students' work and how much I dug going overboard with high school art.

What do I want?

I want kids to have fun in school.

I want everyone to make a little more and talk a little less.

I want to share this book with educators. Not to tell them what to do specifically, but to show that if you do something you are interested in and then show your students, your classroom will be more empathetic, authentic, and fun.

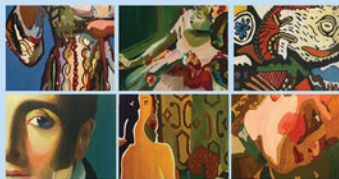
I want people to remember how hard we all worked to make great art in a high school setting.

I want people to see and read this book and wish that they or their kids could be in a class like that. I miss going to work every day and making great art with great kids. I also miss being young enough to do that kind of work every day.

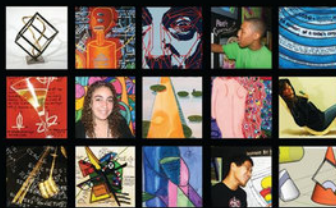
The tools to teach like an artist are within you and on Youtube. Make something, show your students and have them make something too.



A Bite Of The Norton-Simon
A High Tech High Project



Colleen Oboyle and Jeff Robin



Calculicious

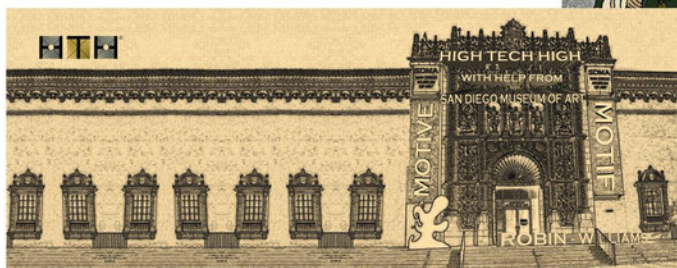
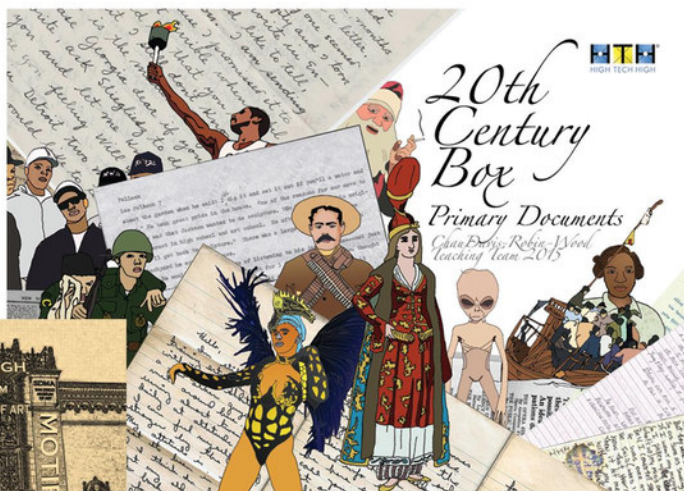
A High Tech High Project 2009

The New Path of the Buddha

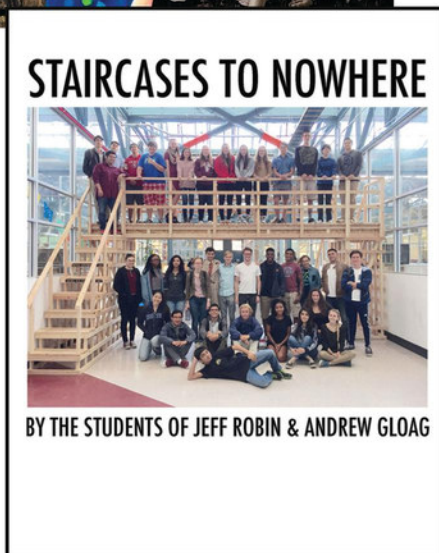
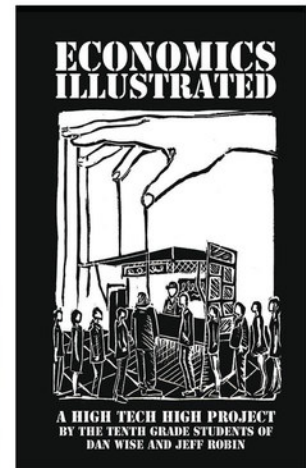
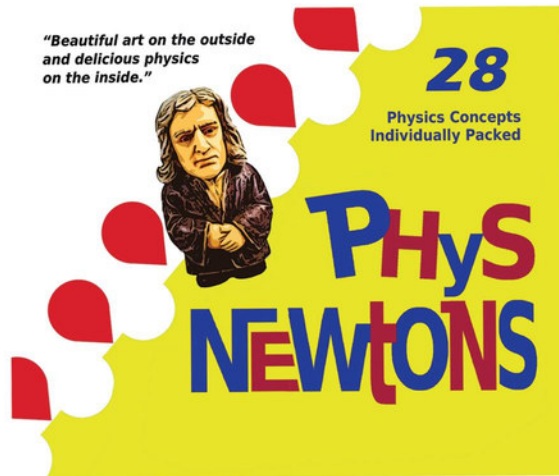
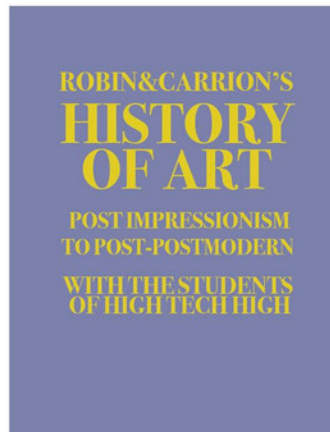
Robin-Williams Team 2013
HighTechHigh
The Stories

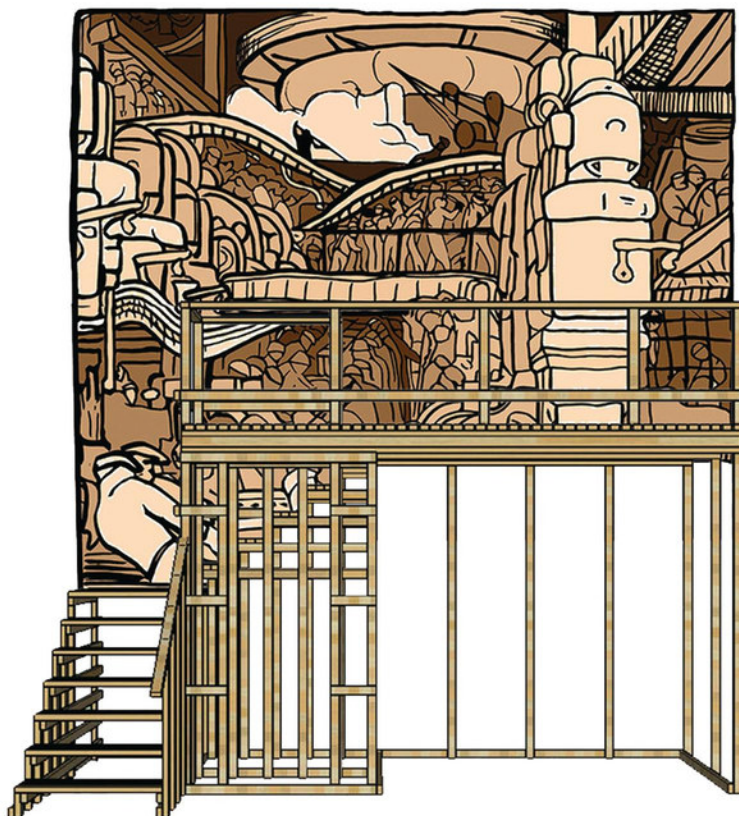
The New Path of the Buddha

Robin-Williams Team 2013
HighTechHigh
Maquettes + Storyboard
Catalog



CLASS BOOKS 2004-2017





Please Check out my website:
jeffrobin.com
and email me at
jefecarlosrobin@gmail.com



Jeff-making

Jeff Robin was a founding teacher of High Tech High. He is an artist and has worked as an art teacher for 30 years, the last 17 at High Tech High.

He is a father of two, Pablo and Felipe and a husband of one, Maribel.

17 YEARS OF
INTEGRATED
PROJECT BASED LEARNING
AT HIGH TECH HIGH
WITH STUDENTS
TEACHING PARTNERS
AND DOING THE
PROJECT MYSELF
FIRST