Sustainability? Production, consumption and waste in the modern world.

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Introduction

"Three things that are difficult to imagine…the world and everything in it, how things go together, and that things end."

From a distance the work appears abstract, the colorful spots, reminiscent of the drippings of Jackson Pollock. When you approach the work, details become noticeable: logos give away the former content of the empty cans and cardboard boxes and at the same time expose the power of the global markets that allow Pepsi and Coke bottles to await their decomposition at garbage dumps all over the world. The large format and the almost endless variety of details pull the viewer deep into the picture. In his piece, *Untitled XIII (Mexico)*, Andreas Gursky captures the Technicolor landscape of an immense garbage dump outside Mexico City. The garbage covers nearly every part of the photograph. Like an archaeologist we can examine the surface of the photograph to discover current information on the civilization that left this footprint on the surface of the earth.

The artist Yao Lu creates a similar illusion of a natural and beautifully designed landscape. In his series *New Landscapes*, mountains of garbage are shrouded in pale green mesh and mist (carefully placed with the aid of Photoshop) to create images with the look and feel of traditional Chinese ink wash paintings. Small pagodas, houses, and trees are also digitally added to produce these incredibly intricate landscapes. In an artist statement, Lu states, "I want the world to be able to make a benign transformation. People must protect the environment. This work implies that the world should become more and more harmonious."[i]

Artists have the unique ability to manipulate materials, scale, and proportion in the works they create. In doing so, they also have the ability to manipulate perception. Both Gursky and Lu have imbedded burdensome themes in their work, themes that expose us all to our world of production, consumption, and waste; a subject that none of us can deny or claim exception to. As I thought about the work of these two artists, my students, and the topic of sustainability, I realized how similar the art experience is to the themes being presented by Lu and Gursky; production and consumption are two analogies that I found ironically important and relevant in the development of this unit.

Rational

My students don't really know a world without the three R's. Reduce, Reuse, and Recycle. They know Al Gore not as the forty-fifth Vice President of the United States under Bill Clinton, but as the 2007 Nobel Peace Prize recipient for his work on climate change (and more specifically for the Academy Award-winning documentary, *An Inconvenient Truth*)[ii]. They are the result of a generation who discovered and then generated viable solutions to, the problem of waste. " In 1973, not a single curbside recycling program existed in the United States. Today, there are more than 8,000 in operation throughout the country. The United States now recycles one third of its municipal waste…compared to just 6 percent in 1960".[iii]A generation before that, Rachel Carson introduced environmental concerns to the American public with her book *Silent Spring*.

My students are very savvy consumers. They are aware of the purchasing power and the detailed marketing strategies created for their demographic.But what my art students don't have, and are less likely to recognize, is an ability to manipulate this topic on both a small and large scale, in a way that can create a specific social, political, or personal message; and recognize that these ideas can be communicated through their art.That my students know themselves as consumers in a world of excess is an important step in introducing a unit of study that will require them to think critically about our world and the effects of the production, consumption, and waste that they are a part of. Under the broader theme of art as social commentary, this unit will attempt to explore some of the following key questions: Do artists have a role in reflecting and commenting on the society in which they live? Should artists provoke divergent points of view about such political, moral or other social issues? What are the pressing issues that our community/school/ nations/ world are currently confronting? What tools might an artist use to best depict one of these current issues in order to promote a constructive discussion?

In my studio art classes, specific critical thinking skills such as analysis, point of view, conceptualization, and synthesizing are consistently addressed throughout the development of a work or series of works. To be strong critical thinkers, it is important for my students to be well rounded, inclusive, and reflective in their view of themselves and the world they inhabit. The work in this unit will ask my students to look at scientific data, literature, and a video lectures series to understand the links between consumer culture and environmental problems. We will trace cause and effect chains as we explore personal consumption, models for change (locally and nationally), and global action that has attempted to address industry standards. At the end of this unit we will read and talk about ideas for simple living and sustainable consumption. I will introduce a final concept called our 'cultural footprint'.

The conceptof the 'cultural footprint'is inspired by the 'ecological footprint' that is used to measure the impact of human action on natural resources. Importing this idea into a cultural context emphasizes the importance of culture for sustainable human

development. The Centre MauritsCoppieters (CMC), a European political foundation explains, " a community's or regions cultural capacities …to create, produce, reproduce, transmit its own linguistic or cultural meanings…" [iv] The study begins with an analysis of what we understand as our ecological footprint, from there analogies between biodiversity and cultural diversity remind us that in many situations, the protection of natural resources cannot be separated from the protection of cultural resources. What they call "biocultural diversity', is the total sum of the world's differences, not matter what their origin…includes at all levels, cultural diversity…ranging from individual ideas to entire cultures".[v]

Curriculum standards

This unit directly address the National Content Standard for Advanced art students to reflect upon and assess the characteristics, relevance, and merits of their work and the work of others. Here, students correlate their understanding of works they study with their own ability to communicate meaning, ideas, attitudes, views, and intention in the work they create.Simply put, I want my students to create works that express personal voice – a standard in studio art classes where students use informed and critical decision making to develop their work.

This unit is designed for my Advanced and Proficient Art students (art III and IV). The collaborative nature of most of the research and activities relies on smaller class size. These students generally are taking more than one art or design course at a time, which allows for a much broader scope of materials, resources, and depth of knowledge of techniques.

To ask students to consider the contextual relevance of the work they create is often like asking them why they come to school. Why are they doing it? It's a state requirement if you are sixteen or seventeen. But what is the purpose? Why do this? Without a deeper understanding of key concepts at the beginning of any unit, students will inevitably just being 'making art' or copying the design ideas from others. Students wait to be told what to do, they accept what they are told, and are willing to generate an 'answer to the problem' without really exploring or understanding the question. Here is an art project; here are some relatively significant examples/solutions to the problem, now make art. But what is art? This question, at any level of teaching studio art, opens the doors to some great discussions, for about three minutes - enough time for someone to contradict another's opinion and then for everyone to realize they don't really have a solid answer to the question (more on the critique process to follow). But there are always more questions. More than just making connections, art students must use critical thinking skills in understanding the information provided and synthesize that information into an art piece that conveys a message. Understanding contextual relevance in the art we make and consume helps us see the value in the conversations that art can entice us into and helps us broaden our view of our world and ourselves.

I teach upper level studio art courses with an emphasis on personal voice, technical consistency and innovation, and with a rigorous sense of self-reliance and discipline. At this point in their art studies, students have a good foundation of different techniques and materials and are ready to manipulate them based on their own interpretations and beliefs. It is however, a different story when it comes to talking about their own work and the work of their peers.

In all studio art classes, the critique is one area where works are directly challenged. I use the term directly because in both the literal sense and in the more abstract or theoretical sense, we confront works made by others (and ourselves) as they are in the process of being created and when they are complete. In this format we are able to discover much about technical matters of materials, composition, and technique; and how to be very deliberate in our own manipulation of these materials.

It is always a challenge to get students to talk about art. In my long experience as a studio art teacher, I've never encountered a critique day that did not feel like it went on for weeks. "I like it…they did a nice job" followed by my now standard response, "*what* do you like"? Long pauses follow. It is a difficult process to get student to shape their ideas in a way that is reflective of their content knowledge as well as to formulate in words the personal decisions that helped create the work. For this unit there will be an appendix of guided critiques questions specifically related to global consumer culture and its impact on different ecosystems.

In reference to one of the overarching ideas of this unit- global consumer culture and its impact on different ecosystems: classroom discussions may begin with reference to some of the questions I introduced at the beginning of unit.Do artists have a role in reflecting and commenting on the society in which they live? How might an artist depict contemporary issues in order to promote constructive discussion? The answer to some of these rhetorical questions can be found in the work of contemporary artists that I will show students throughout this unit. These questions can be revisited at each stage of the critique process. The ongoing assessment of student work happens at different stages of completion. This continual and reflective practice helps students by giving them context, perspective, and an opportunity to practice talking about their ideas and techniques.

Common core

As Common Core Standards are beginning to be introduced in our district, it is especially important for each teacher to consider the new correlations unit plans have to these Standards. Below is my attempt to do just that.

Meaningful appreciation and study of works of art begins with close observation. The Core Standards in Literacy similarly describe reading as the product of sustained observation and attention to detail. No one looks at a great work of art once; likewise, any great piece of writing deserves careful consideration and reconsideration. The arts can train students to look and look again; to listen and listen until one really hears. CS Lewis, writes this about looking at a painting or reading a book carefully: "We must look, and go

on looking, until we have seen exactly what is there…the first demand any work of art makes on us is surrender. Look. Listen. Receive. Get yourself out of the way."

Much of this unit relies on student's response to artist work. Students will be both studying works of art through careful observation, they will be asked to read for evidence. The Core Standards in Literacy requiresthat analysis include the ability to cite that evidence as the basis of understanding. Of course, we draw on sources of evidence outside of a text and a work of art, but the standards insist that students come to grips with evidence from the specific work of art or text they encounter.Part of what this kind of close attention includes is noticing and analyzing the choices artists make—choices such as what is the object of a painting, to how it is treated, to color, to light to all the choices that accumulate to make a work of art. Good readers examine the choices writers make—their choice of specific words and broader choices—of how to order events and develop characters—of what to say—all these choices are examined by a careful reader.

Background

Included in this section of the unit are the main studio art projects that frame the unit. Within the activities section of the unit, I will include a number of warm-up and brainstorming sessions that will help student begin to think critically about these main art projects.

The causes and ramifications of climate change have very quickly been imbedded into my daily life. I can't go shopping or out to eat without thinking about my carbon and cultural impact on the world. I've always shopped locally and supported independent proprietors – but is that even enough? I buy organic, 'certified' friendly cleaning and hygiene products – most all of which come in plastic, not glass containers. It can be maddening! This madness got me thinking about similar fears and frustrations as an artist or as an art student. There is a blank canvas…make art that is both personal and meaningful. The overload of possibilities can stop you dead in your tracks!

This unit will be taught following a unit of study on consumer culture. (I am currently teaching this unit and was really struggling with a specific theme when suddenly I realized how inextricably linked the two are.)Events are happening everyday that we are only beginning to understand what the effects will be on our lives, on our culture, and daily life. Global change is here. An important aspect of this change is the dramatic increase in the consumption of goods manufactured, designed, and sold.

Personal Consumption –mapping our consumption.

The average American consumes more than his or her weight in products each day, fuelling a global culture of excess that is emerging as the biggest threat to the planet. Erik Assadourian, the project director for World Watch Institute, said: "Until we recognize that our environmental problems, from climate change to deforestation to species loss, are driven by unsustainable habits, we will not be able to solve the ecological crises that threaten to wash over civilization."[vi]At present rates of change, the rapid increase in

consumption of all kinds also threatens the stability and diversity of the natural environment in many ways. The impacts range from the direct consumption of particular plants, animals, and natural resources that damage or eliminate stocks, to very indirect impacts which must be traced through numerous economic, social, and physical channels. As I mentioned earlier, we will be looking at just such cause and effect chains. In many places the greatest threat might just be the threat to the continued existence of local traditions, local cultures, and local economic autonomy.

The consumer culture is no longer a mostly American habit but is spreading across the planet. Over the last 50 years, excess has been adopted as a symbol of success in developing countries from Brazil to India to China, the report said. In 2010, China overtook the US as the world's top car market.[vii] It is already the biggest producer of greenhouse gas emissions.

Our personal consumption and its impact on the world can be measured by our carbon footprint. A carbon footprint is measured by the amount of greenhouse gas emissions from the fuel that an individual burns directly, such as heating a home or driving a car. Indirect greenhouse gasses are measured from the production of goods and services that that same individual uses. Why does this matter?These gasses contribute to global warming which has irreversible effects on our plant. The larger picture here comes from our ecological footprint; this measures the human demand on the Earth's ecosystems. Simply put, how many planets would we need if everyone lived like you? "If everyone lived the lifestyle of the average American we would need five planets"[viii]

An individual's carbon footprint is impossible to pin down with accuracy. How can we understand the impact of our banana purchase compared with the impact of all other things we might buy unless we have some way of taking into account farming, production, transportation, storage, and all the processes that feed into those stages. Is this impossibly complex?

Economist PietraRivoliwrote a book called *The Travels of a T-Shirt in the Global Economy*. Here she explores the politics and the human element behind the globalization debate by tracking the life story of her six-dollar T-shirt. The book focuses on the markets involved in the life of the T shirt starting with the Texas cotton fields, its infusion of life in a Chinese factory (negotiated in Washington, D. C.); sold in a Walgreen's drugstore in Fort Lauderdale and eventually making its way to a used clothing market in Africa. Throughout the book, Rivoli'sfocus holds true to her background as an economist. For the purpose of this unit, students will read a portion of this book and apply it the practice of calculating a carbon footprint.

I believe my students would find this a very personal, practical, and relevant study. In a random poll in my class, over seventy percent of the students wearing T-shirts were wearing one a 'Made in China' label. Calculating the amount of carbon emitted in the growing, harvesting, production and transportation of the T-shirt is a profoundly complex. Cotton production alone has many variables; was it grown in an area that has plenty of water, did it need a lot of fertilizer and pesticide? Were these organic or manufactured? How far did it have to travel from the field to the mill and how was it

moved? What sort of energy was used to spin the cotton and produce the t-shirt? This is just the beginning of the trail.

How much packaging was used to pack the t-shirt? Was it plastic or paper? How did it travel from factory to shop, how many miles, and how much fossil fuel was used in that transport? Once purchased, how did it then get transferred (wrapped and shipped again as a Christmas present perhaps)? And finally, how often is this t-shirt washed and how is it washed – hot/cold, eco-detergent? Do you iron t-shirts? These and other questions like it are what I anticipate my students to generate once we have identified the specific categories (from the previous paragraph) that determine the actual carbon footprint of a product.

As I began thinking about this idea for the carbon footprint of a T-shirt I was instantly struck by the very first step – production. Cotton production is a complex and controversial production process. The four top producers of cotton in the world are China, the United States, India, and Pakistan. In both these developing and industrialized countries, incidents of farmworkers being exposed to (through poor safety measures, old application equipment, or general mismanagement) the hazardous pesticides used in the growing of cotton are well documented; leading to harmful effects on their health, the wildlife, and the environment.

> Conventionally growing cotton uses more insecticides than any other single crop and epitomizes the worst effects of chemically dependent agriculture. Each year cotton producers around the world use…more than ten percent of the world's pesticides and nearly twenty-five percent of the world's insecticides. Cotton growers typically use many of the most hazardous pesticides on the market including aldicarb, phorate, methamidophos and endosulfan. Cotton pesticides are often broad spectrum organophosphates--pesticides originally developed as toxic nerve agents during World War II--and carbamate pesticide.[ix]

My non-science mind began to do a quick Google search of the first two pesticides listed in the Panna (Pesticide Action Network) article sited above. The effects reach human health, wildlife, and the environment with significant impact. From the Environmental Protection Agency, October 2010 - Aldicarb–"EPA and Bayer CropScience, the manufacturer, have reached an agreement to end use of the pesticide aldicarb in the United States. A new risk assessment conducted by the EPA based on recently submitted toxicity data indicates that aldicarb no longer meets our rigorous food safety standards and may pose unacceptable dietary risks, especially to infants and young children."[x] Also from the EPA in Feburary 2001, Phorate is highly toxic to birds, fish, and bees.

Wildlife is an important part of a healthy rural environment. Managing pesticide use is now more than ever before an important part of our understanding, conserving, and sustaining all parts of a biologically diverse Earth. Groups like the Center for Biological Diversity are working to eliminate the use of pesticides on the planet through public

policy acts. Laws such as the Endangered Species Act are just such a vehicle to enact real change. Wildlife can show us the early effects of pesticides contaminating our waterways and lands.

Organic alternatives to the production of cotton yielded some very interesting results in a study from India.

> In the year 2004 organic cotton yielded generally at par with conventional cotton. In the case of organic cotton grown on fields that came out of a short term fallow, yields were higherthan yields of conventional cotton. Profitability of organic cotton was significantly higher than conventional cotton. The main contributing factor to higher profitability was the reduced expenditure on pest management.[xi]

The depth of research available on the environmental impact of the growing of cotton is obviously another unit and field of study. Though part of our task in this unit is to understand the depth and complexity of the carbon footprint of a T-shirt. I believe it would benefit my students greatly to take a close look at the growing, harvesting, and production and transportation stages using a simple research study like the one I have just modeled in the above section. Correlation studieslike this will arm them with information;information they can apply in thinking more critically and broadly about the role of the artist in communicating ideas, experiences, and solutions to relevant world issues.

The essential question for this section of the unit is what to do with all this information? As a culminating project for this section of the unit, students will use the information (diagrams, graphs, statistics, and text) they gather from one of the four stages of calculating the carbon footprint of a T-shirt and create a work of art in which they effectively communicate the information and respond to the ideas of art as Social Commentary that I wrote about earlier.

Students will look at works of conceptual art by artists like Joseph Beuys and his 7000 Oaks project begun in 1982[xii], to the work of Heather Ackroyd and Dan Harvey, whose work (in a series called Beuys Acorns,extend the life of the Beuy Oak trees) reflects like ideas about our popular culture and its our impact on the environment. The saplings and the trees have been exhibited at the Manchester's Centre for the Urban Built Environment (CUBE) and in 2009/10 at London's Royal Academy of Arts *Earth: Art of a changing world* exhibition. There is a very expansive list of artists on the website for this exhibition, all whose work may be suitable for students in researching 'what to do with all this information'. This research begins with some of the same questions I introduced earlier in this unit. Do artists have a role in reflecting and commenting on the society in which they live? Should artists provoke divergent points of view about such political, moral or other social issues? What are the pressing issues that our community/school/ nations/ world are currently confronting? What tools might an artist use to best depict one of these current issues in order to promote a constructive discussion?

Since 2003, Ackroyd and Harvey have worked with Cape Farewell. The Cape Farewell project was begun in 2001 to instigate a cultural response to climate change. It is a great resource for this unit and others like it.

> "Working internationally, we bring artists, scientists and communicators together to stimulate the production of art founded in scientific research. Using creativity to innovate, we engage artists for their ability to evolve and amplify a creative language, communicating on a human scale the urgency of the global climate challenge."[xiii]

Models for Change: what can we do?

Some of each person's Ecological footprint is dependent upon the choices they make in their own life, how much they drive, recycle, and purchase new products and some of it is their per person share of their societies infrastructure. The first part can be influenced directly. The second part is equally critical to living within the means of one planet, but must be influenced through actions such as political engagement, green technology and innovation, and other work toward large-scale social change. Companies like Patagonia and Tom's are successfully leading that change.

I can't help but bring in the topic of plastics to this unit. It's everywhere! My initial thoughts on this unit went to the consumption and waste of this product-but I was afraid of it becoming trite and cliché. The consumer market does not give us many options for environmentally conscientious consumers wanting to limit or avoid altogether, purchasing this product. There is not much out there that does not make use of plastics in its entirety or in some small way –even down to that thin strip of plastic that attaches the price tag onto that T-shirt you want to buy. One-way or another, the market has embedded an unsustainable environmental dilemma.

Almost one million pounds of stuff goes through recycling centers everyday. In 2006, our (America's) per capita trash disposal rate was 4.6 pounds per person, per day. The carbon footprint for trash removal must be significant given those statistics! The 'stuff' we purchase that ends up in most of the landfills and recycling centers is made of plastic and metal. Those pesky plastic bags from the supermarket, the plastic ring that seals or locks the water bottle, and even that thin little strip that holds the price tag onto the T-shirt; not all of these make it to the landfill and recycling centers.

The Great Pacific Garbage Patch contains about 3 million pieces of plastic per square mile and is over a mile deep.[xiv] Plastic in the oceans is gathered together by ocean currents known as gyres. Individual pieces are on average smaller than a pea, making it impossible to clean up and easy for fish to eat. Our stuff also finds its way to developing countries for cheap recycling. For as low as one dollar a day, people pick through our stuff and claim what they can –mostly metal. 'Burn houses' exist in many of these countries, where in order to get to the metal, they burn the waste which includes burning through tons of plastics. This may be quick and low cost, but not to human health or the environment. Burning polystyrene polymers such as foam cups, containers (yogurt, egg, and deli containers), release styrene. Styrene gas can easily be absorbed into the lungs

and skin. This can increase the risk of heart disease, aggravate respiratory ailments such as asthma and emphysema, and cause rashes, nausea or headaches, damages in the nervous system, kidney or liver, in the reproductive and development system.[xv]
SO clearly, these 'burn houses' are not a sustainable solution to the plastics problem.

Plastic is made from oil – a resource whose demands are resulting in more remote and deeper wells. The environmental and economic implications of this are far reaching. Only five percent of plastics are recovered and recycled,[xvi]the rest are incinerated or in landfills and ocean gyres. Unlike metal that is easier to identify and separate by its densities and physical properties (like color), plastic has overlapping densities and can be any shape and color.

What model for change exists in the world then? This portion of the unit will introduce my students to Mike Biddle. He's into garbage. Twenty years ago he and some colleague's began to do research with mining labs around the world to 'break the code' and find a solution to what he calls the "last frontier of recycling". [xvii]They looked first at how plastic were made – oil and petrochemicals broken down and recombined. They began to think about the sustainability from an economic and environmental standpoint and used a mining approach to extract plastic and as he says, "closing the loop with products"[xviii]. Consumers become 'users' of resources in one form until they can be transformed into another use in place or time.

His company begins the process of recycling plastics with the metal recyclers who shred all materials into very small bits. The metal is extracted and they then recover the waste or shredder residue that is mainly a mixture of various types of plastic. The next 'multi-step separation process' is "very sophisticated and complex" – but is where the machine will grind down the plastic to a very small size and in a highly automated process, sort by type and grade. At this point 'optical sorting' moves the plastic to those with similar colors where they are blended, extruded through dye holes and made into spaghetti-like strands. Cut into small pellets, this is the very same material you would get from the oil.

In another TEDtalk I use with my students called: We are Makers, with magazine publisher Dale Dougherty; he continues this innovative spirit. I will share both of these talks with my students in this portion of the unit. The practical application would be for students to create a sculpture from found objects. An installation artist Aurora Robson has been making art out of junk for twenty years. Diverting up to 20,000 plastic bottles from the landfill with each installation, the Canadian-born artist turns what most people take for granted into awe-inspiring, impossibly delicate works of art that both attract and repulse at the same time. Another artist whose work is fashioned with cast-off objects that create alluring, conceptually rich installations is Jean Shin. She describes her work this way: "The focus shifts constantly in my installations between individual and group identity, the single unit and the larger whole, the intimate and the excessive. My elaborate work-process mirrors these dualities, as objects of mass production and consumerism are transformed through intense handmade labor."[xix]

In the spirit of Mike Bittle, one of the criteria for the group work is that it be utilitarian. Our school has a courtyard that gets a fair amount of use. The seating that was designed by the architects of the building is unfortunately made of steel and is in direct sunlight most of the daylight hours. The design challenge I will put forth to my students is to research functional, recycled furniture designs. They will submit a plan that includes proposals on the collection of materials, design and construction, along with the installation of their outdoor seating design.

Global Action: Little fish in a big pond.

Artists and organizations that collaborate with each other and work for large-scale change have become prolific on the Internet. Global awareness campaigns like the Make a Forest project and the Inside Out Project encourage collaboration and creativity on timely, relevant topics and have helped make real change in policy and the social consciousness. This portion of the unit introduces students to the topic of consumption as it relates to sustainability. Students will be challenged to create a collaborative project that increases awareness on the topic as well as a product that will be created by including all members of our school community.

Jason Clay was born on a farm in a small town. His university track led him to study anthropology and international agriculture to "give back to small farmers". He has been working with the World Wildlife Fund along with being an advocate for human rights and global environmental sustainability issues.He has challenged companies to engage in offering more sustainable products to consumers. His essential question and driving force for his research is the basic equation - Population x Consumption must equal some kind of relationship to the planet. Currently we are using 1.3 planets. As of 1990, we have exceeded our limit – an unsustainable future to say the least. He contends while population growth is a vital component to the equations, consumption is a larger issue, "There's very good evidence that the average cat in Europe has a larger environmental footprint in its lifetime than the average African."[xx]

To sustain our current model, with population rates increasing – we have to get productivity and efficiency up, and consumption down. Make more – use less. Use less, consume less. All of these ideas, Jason Clay says are part of the equation. His goal for collusion with companies across the globe will create global standards for producing and using raw materials, particularly in terms of carbon and water. He has convened industry roundtables of retailers, buyers and producers, and environmentalists to reduce the key impacts on producing products like soy, cotton, sugarcane, and salmon. Looking at the effects of this collaborative approach, those involved companies are publically committing to maximizing efficiencies in their supply chain producers.

The Make a Forest collaborative arts project is an initiative that connect art and design to society and encourage critical and creative thinking.

> "Trees have been a source of inspiration for many artists over a long period…contemporaryartists, designers and the public from all over the

> world create artificial trees that function as a manifest for maintainingthe earth's treasures…imagine an artificial forest as diverse as our natural forests and follow it growing on this website:leaf-by-leaf, tree-by-tree… Together we will make a forest that unites, stimulates and enforces the thinking on this important matter."[xxi]

Their belief in art and design holding a communicative power that gets people moving, which in time can create cultural change is the model that will be introduced to students as they plan their own school-wide project. With every 'tree' made for the Make a Forest project, there were lectures and town-hall style meetings to help bring the conversation about ways of sustainable forest management, locally and globally. The student-generated project for this portion of the unit will include some kind of creative vehicle (a lecture series, a series of infomercials or ads on the school-wide announcement, a student generated website or YouTube videos) that informs the conversation around the project.

Cultural Footprint

The conceptof a 'cultural footprint' is inspired by the creation of an 'ecological footprint'. Introducing this idea into a cultural context emphasizes the importance of culture for sustainable human development.The use of the word 'culture' for the purpose of this unit is identified as the beliefs, values, behavior, and material objects that constitute a people's way of life. The culmination of this unit will ask students to consider the parallels of the 'cultural footprint' and the 'ecological footprint' in contemporary American culture. Since we will have already identified the carbon footprint of the 'made in China' T-shirt, an important follow up would be to consider the cumulative and broad implications of these ideas. When and/or how did consumerism in America change our cultural and consequently, our ecological footprint? The 'travels of t-shirt'is a very long story to say the least!

When companies were smaller and local, there were pressures put upon them to be good local citizens. They invested in the towns where they were present and operated as key actors in creating a culturally viable system. It was normal for a company to help out with a local school event because education made sense for the company because it meant better employees. As companies get bigger and bigger (and "globalized"), there is less pressure to be invested in the culture.

American cities and towns today are defined by the commercial enterprises that call them home. The neighborhood corner store, family market, and local pharmacy were once the cultural glue to American culture. The first Wal-Mart store opened in 1962 in Rogers, Arkansas. Since then,Wal-Mart has redefined the U.S.'s retail industry and subsequently reshaped its physical landscape. Consumer demand requires bigger stores that could only be built on the outskirts of small towns or in the suburbs of large cities. Wal-Mart wasn't alone in promoting suburban sprawl, but it is a symbol of the big-box stores that have come to dominate the American landscape. The creation of these super stores has resulted in a dramatic increase in the ecological footprint for everyone that shop there.Gone are the days where our neighborhood store is owned by our neighbor!

Big cities have actively opposed Wal-Mart, both because it was seen as a threat to "mom-and-pop" businesses and because labor unions opposed its anti-union business practices. Wal-Mart's relentless drive for efficiency has bankrupted companies, put downward pressure on wages and upset a retail culture that some believe was less efficient but more personal and aesthetically pleasing.

Yet, with all the seemingly negative impact on culture and the environment, in 2005, Wal-MartCompany set the goal of being 100% reliant on renewable energy. Since then, they have lowered the carbon footprint of its stores by more than ten percent and of their trucking fleet by several times that amount.[xxii]Demands on these suppliers to reduce packaging, has saved hundreds of millions in shipping and materials costs and comparable numbers of trees, and an ongoing effort to shrink all product packages by 5% and make what's left more recyclable will save the company an estimated $3.4 billion. (The most familiar example: A Wal-Mart demand to manufacturers to shrink laundry detergent bottles saved, over three years, 400 million gallons of water, 95 million pounds of plastic, 125 million pounds of cardboard and half a million gallons of diesel fuel because of the reduced shipping weight and bulk.) This is great news for a greener consumer market. But at what cost? What is lost when a single store supplies small towns with the products they need (and want)?

As with their T-shirt research, students will research the cultural and ecological footprint of companies like Wal-Mart. Their research will require them to consider some of the same questions introduced earlier in this unit. Do artists have a role in reflecting and commenting on the society in which they live? Should artists provoke divergent points of view about such political, moral or other social issues? What are the pressing issues that our community/school/ nations/ world are currently confronting? What tools might an artist use to best depict one of these current issues in order to promote a constructive discussion? They will be creating a work of art in response to both the research on the footprint of companies like Wal-Mart as well as their independent ideas about the role of an artist in our culture.

Activities/ Strategies

"*Most of all, our culture expresses our vision of the future: what it is we want to pass to future generations."*
-Jan Hawkes, *Why Should I Care*[xxiii]

Carbon footprint collaborative installation project.

Our personal consumption and its impact on the world can be measured by our carbon footprint. Students introductory task in this unit will be to calculate their own carbon

footprint. Understanding the contributing factors (transportation, consumption, home energy use, waste, etc…) in how this is calculated will be the subject matter for the visual arts collaborative installation.

I envision this as an installation that will begin in a central location, in the case of my school, the lobby has traditionally been a 'gallery' space for the visual arts department. Here is where students will present their research and where the installation begins. Moving off in three directions from the lobby, the hallways will be sprinkled with laminated 24" cutouts in the shape of a human foot. On each 'footprint' will be the students' visual representation of one or more of the contributing factors that helped in calculating that individual's carbon footprint number (the actual number will become part of the art in some way).

The 'path' that these footprints create does not necessarily have an end – rather an endless path that brings awareness to the issue. The 'end' will be the following art projects and other installations that will continue to raise questions, inform, and raise the aesthetic of social commentary in the arts within my school.

T-shirt design project.

After being introduced to the ideas of consumption as it relates to our individual carbon footprint (the T-shirt study), students will create another installation based on the works of some of the artist introduced earlier in the unit. Artists like Joseph Beuys and his 7000 Oaks project. Our research will be more highly focused on the concept of installation art. This is art that is three-dimensional and site-specific, it is art that transforms the perception of a space.

Using actual 'made in China' T-shirts, student will be asked to design a proposal that incorporates their understanding of what installation art is as well as communicating their understanding of the carbon footprint number (and how that number was calculated). As in the Footprint collaborative project, the number and contributing factors to the carbon footprint of the T-shirts are the foundation for the installation. Each student will present his or her proposal and everyone, using the same grading rubric, will score the various ideas. The winning proposal will be completed and installed by the entire class.

Recycled Project Ideas to consider:

Work must address the essential question – how does the material and technique foster the greater narrative in the work?

- Create a two-dimensional wall hanging using layers of cardboard/paper pieces…relief sculpture with a flat back and items glued on top to add depth/thickness
- Create a wearable piece of jewelry made from unusual pieces of recycled materials
- Create a three-dimensional sculpture of an animal, person, figure, insect, plane, train, etc.

- Create a painting of a landscape on a surface made from Styrofoam or cardboard
- Create an artwork out of soda cans by cutting them apart and using the metal pieces
- Create a purse out of recycled Wal-Mart bags or anything!
- Create a piece of functional furniture
- Create a wearable piece of clothing or accessory

Endnotes

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[i]http://www.prixpictet.com/2009/statement/533
[ii]http://www.climatecrisis.net/index.php
[iii]http://www.nrdc.org/cities/recycling/fover.asp
[iv]http://www.cmc-foundation.eu/image_files/CMC%20activities/CMC_1557_book_culturefootprint.pdf
[v] ibid, 13-14
[vi]http://www.guardian.co.uk/environment/2010/jan/12/climate-change-greed-environment-threat
[vii] ibid
[viii] http://footprintnetwork.org
[ix]http://www.panna.org/resources/cotton
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[xi]http://www.bugwood.org/arthropod2005/vol1/6c.pdf
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[xiii]http://www.capefarewell.com/home.html
[xiv]http://odewire.com/48770/plastic-fantastic-2.html
[xv]http://www.wecf.eu/cms/download/2004-2005/homeburning_plastics.pdf
[xvi] ibid
[xvii]http://www.ted.com/talks/mike_biddle.html
[xviii] ibid
[xix]http://www.jeanshin.com/artist_statement.htm
[xx]http://www.ted.com/talks/jason_clay_how_big_brands_can_save_biodiversity.html
[xxi] http://www.makeaforest.org
[xxii]http://articles.latimes.com/2011/may/31/opinion/la-oe-humes-walmart-20110531
[xxiii] ibid

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