

Curriculum Units by  
Fellows of the  
Yale National Initiative  
Guide  
2012

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## *Preface*

In April 2012 the Yale National Initiative to strengthen teaching in public schools® accepted seventy-five public school teachers from seventeen school districts in nine states to participate in seven national seminars held at Yale. The Initiative is a long-term endeavor to influence public policy toward teacher professional development, in part by establishing exemplary Teachers Institutes in high-need school districts in states throughout the country.

Following the approach developed in New Haven and implemented in other cities, Teachers Institutes are educational partnerships between universities and school districts designed to strengthen teaching and learning in a community's public schools. Evaluations have shown that the Institute approach exemplifies the characteristics of the highest-quality teacher professional development, enhances teacher quality in the ways known to improve student achievement, and encourages participants to remain in teaching in their schools.

Overall, two thirds of the teachers, named National Fellows, were participating for the first time. The Fellows came from a school district that is planning a new Teachers Institute for Richmond, VA; from school districts that are exploring the establishment of a new Teachers Institute for Chicago, IL; Diné Nation, AZ; Emeryville, CA; San Jose, CA; San Mateo County, CA; and Tulsa, OK; and from school districts that are partners in existing Teachers Institutes located in Charlotte, NC; New Castle County, DE; New Haven, CT; Philadelphia, PA; and Pittsburgh, PA.

The National Fellows attended an Organizational Session of the seminars held in New Haven on May 4-5. The seminars reconvened during a ten-day Intensive Session from July 9-20 and concluded in mid-August when the Fellows submitted their completed curriculum units. The seven seminars were on "Interdisciplinary Approaches to Consumer Culture," led by Jean-Christophe Agnew, Professor of American Studies and of History; "Storytelling: Fictional Narratives, Imaginary People, and the Reader's Real Life," led by Jill Campbell, Professor of English; "The American Presidency," led by Bryan Garsten, Professor of Political Science; "Narratives of Citizenship and Race since Emancipation," led by Jonathan Holloway, Professor of History, of African American Studies, and of American Studies; "How Drugs Work," led by W. Mark Saltzman, Professor of Chemical and Biomedical Engineering; "Asking Questions in Biology: Discovery versus Knowledge," led by Paul E. Turner, Professor of Ecology and Evolutionary Biology; and "Energy, Environment, and Health," led by John P. Wargo, Professor of Environmental Risk Analysis and Policy.

The twin purposes of the program were to provide public school teachers deeper knowledge of the subjects they teach and first-hand experience with the Teachers Institute approach. Each participating teacher wrote a curriculum unit to teach his or her students what they had learned, to share with teachers in their school district, and to disseminate to other teachers over the Internet. The units contain five elements: content objectives, teaching strategies, sample lessons and classroom activities, lists of resources for teachers and students, and an appendix on the district academic standards the unit implements.

The curriculum units National Fellows wrote are their own; they are presented in seven volumes, one for each seminar.

The Yale-New Haven Teachers Institute©® is a permanently endowed unit of Yale University, which undertook the National Initiative in 2004. The material presented here does not necessarily reflect the views of its funding agencies.

James R. Vivian

New Haven

August 2012

## *I. Interdisciplinary Approaches to Consumer Culture*

### **Introduction**

What is consumer culture? When the Fellows in this seminar convened for our first discussion of the subject, we almost immediately faced the looseness, the elusiveness, of the concept.

Consumer culture seemed to occupy so much of the space around us and so much of the space within us – from our stomachs to our imaginations – that to get outside it, to walk around it and take its measure, so to speak, seemed near-impossible at first. Consumer culture is the medium in which we all live, some said, the air we breathe, the sea in which we all swim, the language we all speak.

By the same token, we also recognized that consumer culture was the language that our students spoke, the air they breathed, the sea in which they swam, and for that very reason, a medium that could prove more than serviceable in the classroom. The sheer familiarity of the idioms, imagery, artifacts, and performances of consumer culture meant that virtually any example, when deployed by an engaged and resourceful teacher, could open up new perspectives and hone critical skills that students could in turn bring to bear on the taken-for-granted – the taken-for-branded – world they inhabit. As the units produced in this seminar demonstrate, the Fellows have risen to this challenge by taking that which was most compelling for them among the works of history, sociology, anthropology, and literature that we read together and then translating it into a variety of original and compelling curricular topics and strategies.

That same resourcefulness shaped our seminar as well, not just our discussions but the reading we shared. For into the mix of political and social history, sociology, ethnography, economic geography, and fiction that I had chosen as our common core, the Fellows introduced authors they believed spoke in different and provocative ways to the question of consumer culture before us. Among the most memorable of these additions was Peter Menzel's *Material World: A Global Family Portrait* (1994), a pictorial and statistical compilation of material life in 30 different countries, each country or lifeworld represented by color photographs of the familial possessions of one of its "average" households.

In a sense Menzel's book could be taken as an update of Edward Steichen's equally memorable photographic exhibition and catalogue, *The Family of Man* (1955): a celebration of human kinship steeped in black-and-white imagery of generations, of rites of passage, of cycles of birth, courtship, work, and death. What makes *Material World* a document of our own post-Cold War, "globalized" epoch is Menzel's thematic focus on household consumption and, in particular on familial belongings. Paging through his

global family album, we mark the material and cultural differences between households, between countries, between continents – differences made all the more stark (and measurable) by Menzel's decision to photograph the different household possessions spread out on the grounds outside a family's dwelling.

As teachers, we can all appreciate what a brilliant classroom tactic Menzel's visual inventories of household possessions are, how effectively his tableaux vivants stage the kind of compare-and-contrast relationships between countries and continents that we would otherwise only see represented in statistical charts or pie-graphs. Seen at a distance, though, Menzel's pictures are as intriguing for their ambiguities as for their promise of photographic precision. Why, after all, is this or that family standing outside their home amongst their belongings? Is it a yard sale? A foreclosure? An American Express ad? Are we looking at pictures of possessions or of dispossessions? The surreal, almost violent incongruity of these photographs – households turned inside out – draws us into the questions of consumer culture, global equity and survival that Menzel wants to think through. And more than that, the images linger in our mind's eye and in doing so keep these questions alive.

That is why, I suspect, *Material World* became an unexpected yet indispensable part of our seminar syllabus, our conversations, and a number of the curriculum units that grew out of those exchanges. Peter Menzel's "family portrait" avoids both the sentimentalism and the glib ironies of globalization-debates by compelling us to see consumer culture afresh, to see the exotic as familiar and the familiar as unexpectedly strange – as momentarily out-of-place, dislodged, decontextualized. Successful teachers look for different ways of doing just that every day, finding topics and tactics that will enable and incite their students to see and to analyze the material and cultural world they inhabit: the air they breathe, the sea they swim in, and the languages they speak.

The curriculum units that follow keep faith – each in its own way – with Menzel's strategy in *The Material World*, whether it is Andrea Kulas's critical exploration of music video genres (Menzel notes that his project, not to mention its title, was in part provoked by Madonna's marketing in 1992) or Jessica Shupik's thematic approach to race, hair-care, and coming-of-age stories; Mary Grace Flowers's primer for second-grade consumers or Laura Turner's historical and rhetorical analysis of the language and science in food-packaging; Amanda Davis-Holloway's 'Seussological' study of the political subtexts and contexts of Theodore Geisel's children's books or Natalia Baldwin's inquiry into the home-front politics of the zoot-suit during WWII; Molly Myer's consumer history and geography of a Chicago neighborhood or Elizabeth Lasure's ethnographic treatment of household possessions (our 'stuff') as the cultural components or ingredients out of which social identity, social relationships, and a socially-minded art are fashioned and refashioned, appropriated and reappropriated. The common theme of these units, then, is one with their common strategy: reorientation. These units have recalibrated my

cultural and historical GPS, and I am sure they will do the same for others – students and teachers alike.

Jean-Christophe Agnew





## Synopses of the Curriculum Units

### 2012.01.01

#### [War on the Home Front: Politics and the Zoot Suit](#), by Natalia Gomez

The zoot suit. It has been associated with masculinity, femininity, juvenile delinquency, affluence, racialization, music, dance, media frenzy, fear-mongering, pride, identity, and a riot. Since its emergence in the 1930s, the origin and intention of the suit has been vague, yet somehow people have been consistently obsessed with it. The suit itself was even banned by the United States government in 1943. One has to ask, "What is the big deal?" Historians have come to see the World War II home front as an important chapter in the Civil Rights Movement and the zoot suit – and the 1943 Zoot Suit Riots – as critical symbolic moments in that struggle. While they were not organized with a singular leader, the Mexican American, African American, and Filipino zooters of the 1940s symbolized everything the institutionalized structure of the 1940s U.S. abhorred: class mobility, racial mixing, and most of all, an assertive presence. After all, who can ignore a group of men in brightly colored, ballooning suits or young women uniquely dressed in short skirts and tight sweaters? Zooters *owned* their identity. The question is, was that their motive? In this unit, students will decide whether the wearing of the zoot suit was, in fact, a political act.

(Developed for U. S. History, grade 11; recommended for U. S. History, High School grade 11)

### 2012.01.02

#### [Splitting Hairs: Comparing Themes in Fiction and Non-Fiction Texts](#), by Jessica Shupik

This curriculum unit is designed to teach students to compare and contrast universal themes in fiction and non-fiction texts by focusing on social rites of passage and the consumer culture of hair. We will begin with a discussion of consumerism among American teenagers with a focus weighted toward black youth given the demographic composition of my classes. In most cultures, social relationships are often built around the grooming and styling of hair, as with mother-daughter bonding. In the first part of the unit, songs, video clips, art, pictures, and newspaper articles will be used to show how a multibillion-dollar industry has shaped hair care and hairstyles in America. All of these materials will aid in introducing the literary concepts of theme and universal theme. The remainder of the unit will focus on analyzing themes in short stories and excerpts related to hair and rites of passage using compare-and-contrast methods. Each student will write a compare-and-contrast essay analyzing the universal themes in F. Scott Fitzgerald's "Bernice Bobs Her Hair" and an excerpt from *The Autobiography of Malcolm X*. This unit is intended for ninth-grade English, but the activities can be adapted for grades 7-12.

(Developed for English I, grade 9; recommended for English I, grade 9; English II, grade 10; English III, grade 11; English IV, grade 12; and English/Language Arts, grades 7-8)

### **2012.01.03**

#### **Seussology: Moral Parables and Consumer Culture, by Amanda Davis-Holloway**

The essential questions for this unit are: What are the themes and social and political hierarchies that are represented in Theodor Geisel's political cartoons? What does Geisel (as Dr Seuss) have to teach us about these themes? How did political cartoons and advertisements exploit prejudices to create fear, in an effort to create and sell products? How did wartime experiences shape children's literature? What are the ties that bind human beings? Seussology amounts to the effort to answer these questions in the lives and work of Theodore Geisel.

Using art activities, community based instruction, blogs, cooperative learning tasks, and closed readings, students will gain a new perspective of Theodore Geisel, and understand the influence he had in encouraging racial tolerance and social consciousness in both parents and children during WWII and the Cold War. Students will use art activities, graphic organizers and cooperative reading groups as described in the unit, to discuss the moral parables in Dr. Seuss' writings and illustrations.

The strategies in this curriculum unit will be integrated with the subjects of personal finance, art, reading, writing and social studies and will be introduced over the first quarter of the school year, starting with the theme of students as engaged consumer citizens. The unit is recommended for Personal Finance, Art, and US/VA History classes.

(Developed for U. S./Virginia History, grade 11; recommended U. S./Virginia History, grade 11, and Personal Finance, grades 9-12)

### **2012.01.04**

#### **Do We Really Need What We Want?: Consumerism and Second Graders, by Mary Grace Flowers**

Children today are immersed in cultures of consumption such that every aspect of their lives is touched by a buy-and-consume modality. This unit will explore the concept of second graders learning that they possess and control purchasing power from both a marketing and parental level. My goal is also to instill in them the skills they need in order to become responsible consumers even if their buying power is restricted by their age or family income. My discussion will center around the importance of knowing your audience when teaching consumerism, tips to stop the siege of marketers preying on young children, tricks marketers use to sell, and the benefits of raising and teaching a savvy consumer.

(Developed for Social Studies, grade 2; recommended for Social Studies, grade 2)

**2012.01.05**

**Teenage Dream: Consuming Subtext, by Andrea Kulas**

Consumer Culture is all around us and it is necessary for students to have the skill to interpret it. The curriculum for Advanced Placement English Literature and Composition asks students to read texts responsibly by focus on the three literary genres of poetry, fiction, and drama. The intent of this unit is not only to have students translate the critical techniques they have learned through the year, but to also take highly technical language and test them against a visual text drawn from consumer/popular culture.

Dreams and aspirations constantly compete with nightmarish fears and anxieties in popular culture as in canonical literature. A media subtext often promotes an emotional war between the negative and positive aspects of culture and our interaction with it. Using the music video as a medium, students will study the visual texts and produce an argument that applies their growing knowledge of rhetorical appeals, rhetorical situations, narrative structures, visual frameworks, by answering a retired Advanced Placement English Literature and Composition question.

(Developed for AP English Literature and Composition, grade 12, and English III, grade 11; recommended for AP English Literature and Composition, grade 12, and English III, grade 11)

**2012.01.06**

**The Stuff We Have: Ethnographies, Material Culture, and Art, by Elizabeth Lasure**

Does the "stuff" of our material culture give shape to our world ñ our ideas, beliefs, values, and norms? Or is it that our ideas, beliefs, values, and norms, are reflected in our Stuff?

This unit is divided into three ethnographic studies the first of which is intended to get students thinking about their own Stuff as it reflects their identity as a consumer, as well the larger conversation about of Stuff as a vehicle for social interaction. The second component - cultural studies - will expand student's perceptions about Stuff in other parts of the world. We will be researching cultural identity as narrated through Stuff in cultures. The third and final component to this unit will examine the works of contemporary artists who use the techniques of appropriation, specifically through found objects -Stuff.

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

political, moral or other social issues? What are issues that our community/school/nations/ world are currently confronting? How might an artist depict one of these current issues in order to promote constructive discussion?

(Developed for Art III Honor, grades 11-12; recommended for Visual Arts, grades 11-12)

### **2012.01.07**

#### **Present, Past, and Future: Using a Consumer Lens to Help Students Envision a Future, by Molly Myers**

How does our understanding of the consumer history and consumer geography of a place inform our beliefs and vision for its future? This local history/geography unit is focused on one neighborhood in Chicago but can be applied, in form, to your city and your neighborhood. In part one, students will examine their preconceptions of the neighborhood while competing in a local speech competition. In part two, students will map various consumer aspects of the neighborhood—housing stock, retail/services, transportation, and schools—and examine primary and secondary sources to be able to tell how and why the neighborhood has changed over time. They will then use this contextual understanding to research and present ideas for working with existing institutions to promote change from within.

(Developed for AP Human Geography, grades 9-12; recommended for Human Geography, grades 9-12; U. S. History, grade 10; and Sociology, grades 11-12)

### **2012.01.08**

#### **Food Choice: How the ingredients on food packaging influence the foods we eat, by Laura Turner**

Food consumption is both a medical and cultural need for all humans. There are many historical and cultural reasons for why we consume the foods we do. Middle School students are entering a time of transition between eating the food their parents provide and making their own food choices. With obesity, diabetes and eating disorders in children increasing at alarming rates, children need to develop a better understanding about food and the choices they have. This curriculum unit includes a series of independent lessons focused on food choice. The unit will explore both the meaning of popular terms on packaging from a scientific perspective as well as how diet trends influence ingredients in food. Additionally, the unit will focus on sugar substitutes. We will learn how sugar is packaged and repackaged as artificial sweeteners and about their negative impact on health. Activities will include: students cooking foods with all-natural ingredients, analyzing food labels, and designing their own inquiry-project based on questions they have about the subject matter presented.

(Developed for Middle School Elective Course Language Arts, Science, and Health, Middle School grades; recommended for Language Arts and Health, Middle School grades)



## ***II. Storytelling: Fictional Narratives, Imaginary People, and the Reader's Real Life***

### **Introduction**

Why do stories recounting events that didn't happen to people who don't exist interest or even compel us? Can the experience of fictional narratives change us? Does reading about the experiences of non-existent people who are different from ourselves help broaden our knowledge of the world, or encourage us to develop sympathy with others? Why do the "memoirs" of real people, whether Holocaust survivors, addicts, victims of childhood abuse, or famously successful people, often incorporate some fictional component, whether acknowledged or unacknowledged? How, as Primo Levi has asked, does that fictional component sometimes help convey the "truthfulness" of the author's extreme experience, while departing from the historical truth? Can both fictional and nonfictional narratives work encourage the reader to internalize stereotypes of certain categories of people (for example, black, female, homosexual, mentally ill, underage) rather than encouraging him or her to think more openly about others' human experiences?

In approaching these general questions, as background for considering the teaching of several fictional and nonfictional narrative forms – novels, short stories, and memoirs – we will consider the standing of fictional narrative in our own culture, as well as recent claims about the potential of narrative to make us more reflective, responsive, ethically imaginative, "cosmopolitan" and broadly sympathetic people. Why is it important that young people experience both the traditional literary genre of "the novel" and other kinds of narrative forms (some of them available in the new media of the internet)? The philosopher Martha Nussbaum argues that the experience of realist fictional narrative is essential to developing young people's capacity for empathy and therefore for responsible citizenship not just of the nation but of our world: "The conclusion that this set of limbs in front of me has emotions and feelings and thoughts of the sort I attribute to myself will not be reached without the training of the imagination that storytelling promotes" ("The Narrative Imagination," in *Cultivating Humanity: A Classical Defense of Reform in Liberal Education*). The journalist Rachel Donadio, on the other hand, argues that fictional narrative has become increasingly marginal in our culture: "Is fiction no longer essential?" she asks. "Fiction may still be an escape of choice – along with television and movies and video games and iPods – but when it comes to illuminating today's world most vividly, nonfiction is winning" (*New York Times Book Review*, 2005).

While reading selectively the provocative claims of such theorists and commentators, we will concentrate on considering the formal features and potential affective and ethical responses of the reader both to works that are patently fictional—*Charlotte's Web*, *Huck Finn*, *Their Eyes Were Watching God*, *Harry Potter and the Prisoner of Azkaban*, and/or *The Kite Runner*—and to works that draw considerable power from their reference to real lives and gripping historical events—such as Richard Wright's *Black Boy* and Dave

Eggers' *What Is the What*, a "novel" that provides the "autobiography" of someone other than the writer himself, one of the real Lost Boys of the Sudan. The syllabus of readings and focus of this seminar will be open to adaptation in accord with the interests of its participants.

Jill Campbell



## Synopses of the Curriculum Units

### **2012.02.01**

#### **Non-Violent Fictional Characters as a Means to Character-Building: Ferdinand the Flower-Friendly Bull and Chrysanthemum the Brave Blooming Mouse, by Justine Ferguson**

The purpose of this unit is to integrate non-violent curriculum into the culture of the school as well as influence the learning "culture" of the students' homes. This first grade unit will highlight extensive research on brain-based learning and the effects of violence on the brain. It will also emphasize the importance of developing a student's social and emotional intelligence. This unit will also assist the teacher to establish an engaging, empowering, and safe learning environment for inquiry, intrapersonal as well as interpersonal discovery.

The teacher will use the books, *The Story of Ferdinand* and *Chrysanthemum* to examine the topics of bullying, non-violence, and friendship. Students will learn life lessons from fictional characters and a real-life leader, such as Dr. Martin Luther King, Jr. (MLK). This unit will help build critical thinking skills through experiential group and solo activities, as well as learning interviewing skills at school and at home. This unit will partially fulfill the belief that state/national standards need to integrate non-violent curriculum – to help the teacher, student, and parent/guardian encourage non-violent behavior for better learning and healthier development.

(Developed for Language Arts, Reading and Writing [Integrate into Mathematics and Science], grade 1; recommended for Language Arts, Reading and Writing [some Mathematics and Science], grade 1 [can be modified for grades 2-3])

### **2012.02.02**

#### **The Storytelling Cycle: Navigating Our Way through the Listening and Sharing of Stories, by Derrick Kimbrough**

Everyone has a story to tell. No matter where we're from geographically, our cultural background, or our status in life. Storytelling is a universal tradition. This tradition allows the sharer to provide the receiver with his or her interpretation of an event. Once that story is shared, the receiver continues the cycle of sharing stories. Within this unit, *The Storytelling Cycle: Navigating Our Way through the Listening and Sharing of Stories*, students will spend time learning the basic characteristics of storytelling. Highlights within the unit include students spending time reviewing and analyzing stories, working with and learning from a certified storyteller, and concluding with the development of their own generational stories created through family interviews.

(Developed for Language Arts, Writing, and Social Studies, grades 4-5; recommended for Language Arts, Writing, and Social Studies, grades 4-6)

### **2012.02.03**

#### **Fact or Fiction: Analyzing why the Author includes Truth in Fiction and the Influence and Effect on the Audience, by Michelle Hilbeck**

Why is the "created" reality of a fictional work more compelling to us as readers than the world we live in? I want my students to investigate and answer by the conclusion of my unit. My students can distinguish between fact and fiction. However, they do not analyze the text and readily accept what the author states to be authentic. They do not question the author's motives and create their own conclusions or make personal connections. In using a science-fiction story "All Summer in a Day" and historical fiction novel *The Watsons Go to Birmingham-1963*, my goal in the unit is to create analytical thinkers who question and create logical conclusions about the author's motives for writing a piece of fiction. I also want them to analyze their reactions and the personal connections they make with the fictional piece. Ultimately with this unit, I want my students to inquire why so many people willingly accept and connect to these fictional worlds; I want the students to identify the 'truth' that is included and why the author uses this element to make the connection more powerful.

(Developed for English/Language Arts, grade 6; recommended for English/Language Arts, grades 6-8)

### **2012.02.04**

#### **Hungry for Knowledge: Using The Hunger Games to teach American Principles of Citizenship, by Chantea Wright**

The act of storytelling has served as a means of communicating family history, providing entertainment, and educating future generations for centuries. The use of civic and political storytelling to illustrate significant American concepts and social norms prevents newly gained knowledge from becoming lost. Through the use of this unit students will be provided with an opportunity to analyze fundamental civic and economic concepts through the use of a contemporary fictional work. Suzanne Collins, author of *The Hunger Games* does a commendable job at exposing the reader to the vulnerability of democratic values through themes of power, citizenship, media influence, and politics. Through the use of graphic organizers, classroom debates, and the creation of their own digital story students will acquire new knowledge and skills that will make them a more informed and active American citizen.

Key terms: *The Hunger Games*, civics and economics, citizenship, United States economy, government

(Developed for Civics and Economics, grade 8; recommended for Civic and Economics, grades 7-8; Government, grades 9-12; English, grades 7-12; and Gifted, grades 6-8)

**2012.02.05**

**The Truth about Lies: Recognizing Lies, Stereotypes, and Prejudice through Memoir Reading and Writing, by Cheree Charmello**

I am a liar.

And so are you.

If you're even a bit perturbed by that statement then I'm well on my way to helping to change the way you think.

We both know that lies hurt. We are also both aware that stereotyping is a form of lying, but we do it. As educators, we most likely impart that lack-of-reality on to our students. How do we stop? Employ socially responsible education, such as the contents of this unit. It makes use of the memoir genre in order to help students to bridge the ravine of imposed stereotypical notions that lead us all to live as liars.

(Developed for Creative Non-Fiction/Humanities, grades 7-8; recommended for Creative Non-Fiction/Humanities, grades 7-8)

**2012.02.06**

**Development of the Latina Voice in The House on Mango Street, by Joseph Mitacek**

This unit explores the book *The House on Mango Street* by Sandra Cisneros. The unit develops as a cultural analysis about challenges that prohibit individuals from achieving their goals. The purpose of the unit is to counter the tragic fate of so many characters in the book that are trapped by the constructs of their environment. The author tells her personal story through the protagonist, Esperanza — the Spanish word for 'hope.' Esperanza grows to see constraints of her own community and seeks to avoid the pitfalls that have befallen others. In the end Esperanza leaves Mango Street, promising to return for those left behind. This mirrors Cisneros' own story of moving from her family to become an accomplished author, but returning by telling her story and to show her endless readers there still is hope.

The unit explores themes such as identity, machismo, the Latina voice, family and storytelling. These themes are supplemented by examining the current cultural climate and identifying barriers within it that could prevent student success. In the unit, after learning about the presented themes, students will identify the challenges that are obstacles to their goals and create a plan to lead them to success.

(Developed for Reading Workshop, grade 9; recommended for Spanish for Heritage Speakers, World Studies, and Reading Workshop, grades 7-10)

**2012.02.07**

**[Reading, Writing, and Recidivism: Healing to Learn through Memoir and Vignette for Adjudicated and/or Traumatized Youth](#), by Krista Waldron**

I work with youth in the juvenile justice system. This unit is intended to address the effects on high school aged students of the tightly braided cause-and-effect relationships among traumatic experience, academic deficiency, and recidivism in the classroom. It should be noted that many contemporary high schools, especially in high-poverty or inner city situations, encounter students similar to mine, who are already involved in the juvenile justice system. All or parts of this unit would be appropriate for any students facing these realities.

Research and personal experience with at-risk students helped to shape this unit, which pairs therapeutic writing practices with more traditional writing and literacy exercises to explore the genre of vignette. The summative product/outcome will be, for each student, a bound copy of his/her vignettes (five-ten) that reflect growth in all stages of the writing process, from brainstorming to final editing, as well as an understanding and appreciation of the genres of vignette and memoir. They will have read and studied multiple examples of vignettes and memoir and learned from the process of emulation and analysis, hereby increasing skills in reading and writing and addressing the risk of recidivism through academic and literacy empowerment.

(Developed for English/Language Arts, grades 9-11; recommended for English/Language Arts and High Risk Youth, grades 9-11)

**2012.02.08**

**[Beloved: A Case Study in Storytelling Analysis](#), by Tiffany DiMatteo**

Teaching critical analysis skills to upper-level high school seniors is a necessity in any literature-based classroom. Having taught *Beloved* by Toni Morrison several times, I approach it in this unit from the specific perspective of storytelling and how it fits into the curriculum of either an AP Literature or IB English A1 classroom. How is the story conveyed from narrator to reader? What is the historical context and significance of a story about a former slave and her family? There are also the stories that the characters tell each other; personal stories of physical and psychological trauma that raise the questions, what stories should be told, and who decides when, how, or why they are told? The goal of this unit is to provide literature teachers with a roadmap to teaching the novel with analytic technique signposts along the way, including oral tradition, flashback, magical realism, and bildungsroman. The novel is also significant for its historical context and how that interfaces with the fictional narrative; this section includes a method

for examining Sethe's "rough choice" alongside a primary historical document. I hope other teachers find this to be a useful unit on literature analysis whether they have taught this novel several times or are approaching it for the first.

(Developed for AP English Literature, grade 12; recommended for IB English 12 and AP English Literature and Composition, grade 12; and English Electives: Women Writers and Writers of Color, grades 11-12)

**2012.02.09**

**[Empathy Through The Eyes of A Creature: A Journey Into Mary Shelley's Frankenstein](#), by Harriet Garcia**

My curriculum unit uses the study of Mary Shelley's *Frankenstein* to explore the power and danger of stereotypes, prejudice, and ostracism in society, specifically in the teen community. While Shelley uses a fictional "creature" as the victim of social judgment and cruelty, there are many examples of the "other" and "different" among the adolescents in our schools. There are a myriad of "different" traits that young people use to prejudge their peers: skin color, birthmarks, and physical disabilities are just a few of the markers of "abnormality" for our young teens. The imperative questions students must consider are: Do I take the time to listen to this person's words, to get to know them, to have a genuine chance at knowing a person? Are my eyes my only measurement of what I will know/assume about a person? Will his or her appearance be valid enough for me to make a judgment of someone? The genre of gothic literature, the elements of Romanticism in literature, the parallels between Mary Shelley and her novel, the use of epistolary narration and first person retrospective point of view, and character development are just a few of the elements we'll cover in this unit.

(Developed for World Literature/English IV, grade 12: recommended for World Literature/English IV, grade 12)

**2012.02.10**

**[Stylistic Voice and Questions of Speaking for the Voiceless in The Poisonwood Bible](#), by Kristen Kurzawski**

This unit, designed for a high school senior English class, will use Barbara Kingsolver's *The Poisonwood Bible* to examine how writers create voice, how voice creates character, and what the writer and the character are trying to convey through their choices in diction, syntax, detail, tone, and sensory language. The students will then examine how these stylistic techniques work together to create the larger meaning of the work as a whole, and how Kingsolver uses stylistic voice to raise larger questions about who is able or permitted to speak for themselves in society. During the unit students will have various opportunities to write analytical pieces, participate in large group discussions, and work with a small group to teach a portion of the novel to the class.

(Developed for AP English Literature and Composition, grade 12; recommended for AP English Literature and Composition, grade 12, and English, grades 11-12)

### *III. The American Presidency*

#### **Introduction**

The office of the presidency is so familiar to Americans that we often forget how innovative it was at the moment it was created. In this seminar we rediscovered how difficult it was for the American founders to decide upon the details of the office. We read the debates at the Constitutional Convention about whether there should be more than one executive, whether re-election should be allowed, who precisely should control war-making powers, and other key aspects of presidential power. We then looked at key moments later in American history, from Andrew Jackson's controversial use of the veto to kill the Bank to debates about war powers in the wake of Vietnam. We found that even as the details of the controversies changed, certain themes arose repeatedly throughout the history of the presidency.

The Fellows demonstrated that the topic of the presidency could be made fresh when viewed from a variety of perspectives. One unit delves into the details of the constitutional convention, while another focuses on the psychological issues surrounding our choice of which candidate to support. Several Fellows looked closely at presidential biographies to try to identify key leadership traits, and to bring out the humble beginnings of some of our presidents. Other Fellows focused on the actions of particular presidents themselves and on the scope of their power: What did presidents do for the sake of women's equality, and why didn't they do more? Another set of Fellows opted for a more comparative approach, placing the American presidency alongside presidencies in Latin America, or alongside the presidency of the Navajo Nation. Finally, several Fellows asked penetrating questions about what presidents actually do, articulating different roles that they play in the polity and asking how much leeway they have to interpret the Constitution for themselves. Taken all together, the units offer a novel set of interpretations and questions about an office that remains the most distinctive part of the American constitutional system.

Bryan Garsten





## Synopses of the Curriculum Units

2012.03.01

### [I think, therefore I do? Conscious and unconscious factors influencing our choice for President of the United States](#), by Audra Bull

The election of the President of the United States is one of the most important decisions an American can make. The Founding Fathers created a deliberative democracy predicated upon the suppression of emotion in lieu of a thoughtful, reflective, and informed populace capable of utilizing reason when voting for President. Utilizing brain-based instruction, this unit addresses the theme of decision-making through the vehicle of the Presidential election. The students will read, discuss and participate in inquiry activities designed to heighten awareness as to how the brain is naturally structured to make decisions, the structure of the student's current decision-making process, and how the students can make better, thoughtful, more informed future decisions. The students will also explore the influences of their social network (i.e. friends, family, church) upon their decisions. Through their investigation the students will engage in an in-depth discussion of the explicit and implicit powers of a President as defined and implied in the United States Constitution. In addition the students will explore conscious and unconscious factors which impact the choice for President.

(Developed for Reading, grade 8; recommended for Reading, grades 6-8, American History, grades 6-12)

2012.03.02

### [George Washington, Benito Juarez, and Simon Bolivar: an in-depth look into why we remember them.](#), by Elisha Burns

This curriculum unit looks at the position of president from its establishment then focuses on three of the most notable presidents in American and Latin American history: George Washington, Simon Bolivar and Benito Juarez. The unit was created for 7<sup>th</sup> grade, however, it is suitable for 6<sup>th</sup> and 8<sup>th</sup> grade. The curriculum unit places an emphasis on Latin American leaders because most California school are seeing an increase in the number of students from this ethnic background. The students buy into the lessons because they enjoy hearing familiar Spanish words and about obstacles that people have faced in history that mirror their own challenges. The connection that students feel between themselves and the historical figures helps them to become intrigued and inquisitive about the topic, which increases the effectiveness of teaching. Throughout this curriculum unit students are inspired to ask questions and discover information an essential component of the new Common Core Standards. Throughout this curriculum unit students will explore the three historical figures and the concept of hierarchy using various teaching strategies such as gradual release, small groups, learning stations,

philosophical chairs and structured writing. Ultimately students will complete a hierarchy diagram and a persuasive essay for learning assessment.

(Developed for Language Arts and World History CORE, grade 7; recommended for Language Arts and World History CORE, grades 6-7, and U. S. History, grade 8)

### **2012.03.03**

#### **The Women's Movement in Presidential Rhetoric, by Stefano Cadoppi**

This unit addresses the topic of gender and political rhetoric. It is divided in two distinct parts. The first one deals with the women's equal rights movement. Major leaders and turning points are presented to explain how the movement was able to overcome cultural and social obstacles. The final part of the paper focuses on the hopes and reasons why the Equal Rights Amendment failed. The section on presidential rhetoric analyzes how five presidents used their executive and political influence relating to women's rights from 1900 to 1972. T. Roosevelt, W. Wilson, Eleanor Roosevelt, L. Johnson, and R. Nixon are important figures who played a prominent role to the shape popular and political perception about the social status of women.

My interest in this topic rests with my conviction that high school students ought to start a dialogue about gender to exchange and discover about each other detached from the world of consumerism and deep rooted stereotypes. Another objective of my unit is bridge the gap and challenge misconceptions about the topic high school textbooks either fail to cover or consider. An honest and serious discussion about gender will inevitably enhance students' of both sexes about their needs and potential well into adulthood.

(Developed for U. S. History, High School Juniors, grade 11; recommended for U. S. History, High School Juniors, grade 11 [U. S. 11.5.2. California Content Standards: Analyze the 19th Amendment and the Changing Role of Women in Society. U.S. 11.2.9 Understand the Effect of Political Programs of the Progressives.])

### **2012.03.04**

#### **What the Founders could not have Known, by Adam Canning**

This unit is designed to teach how the media has changed the original intent of the presidential office. The media has been used in presidential campaigning since the beginning of the office; this unit will look at how the use of media has changed with technology. The framers of the Constitution were wary of the development of political parties and rhetorical presidents. The unit will show the developments of the executive branch by going over the Declaration of Independence and the Articles of Confederation to see why the branch was created the way it was. By going through historical elections such as those of 1828, 1960, and 2008, this unit will show the evolution of the media and how the presidential office has changed in response. It is important for students to learn

how to view the media and formulate their own opinions, especially with the dominance of social media today. However, the ultimate goal of this unit is for the students to become more informed citizens and improve their critical thinking. The audience is an eighth grade civics and economic class, but the unit could be adapted for use with elementary social studies students as well as senior government students.

(Developed for Civics and Economics, grade 8; recommended for Civics, grades 7-8, and U. S. Government, High School grades)

### **2012.03.05**

#### **Could YOU be President?: Explaining and Exploring Presidential Possibility through Autobiography, by Tara Ann Carter**

Historically, African-Americans are one of the least represented voting classes in America. This unit aims to enfranchise and grant tangibility to the lives of black students in urban areas. By illustrating for students the meager means from which several of our nation's leaders have come, they will hopefully feel that they too can become participatory in our country's democracy.

In showing students that all presidents do not come from backgrounds of means, wealth, education, or even positive family lives, students may be more apt to willingly engage in the systems of their government. While a mass of literature seems to exist on this topic, the three autobiographies isolated in this unit (Lincoln, Clinton, and Obama) provide the best breadth for students in a high-needs school as the initial lives of all three place themselves in relative poverty, minimal paternal influence and the ability of each person to motivate and pull oneself up from obscurity. In other words, these are the prototypical "rags-to-riches" narratives. This creates a space of correlation and empathy for urban students to reinforce the exploration that anyone from any circumstance can navigate their way into the office of the presidency.

(Developed for Enrichment Literature, grade 9; recommended for English, Enrichment/Elective Literature, and U. S. History, grades 9-12; and ELA, grades 6-8)

### **2012.03.06**

#### **The First Twenty Years: Whiskey, Aliens... and Shopping!, by Leonardo DeAndrade**

The overall goal of this curriculum unit is to help students access, comprehend and analyze historical information and relate it to our current circumstances. A more specific goal is to help them develop a genuine interest towards America's historical past, its politics and the developing role of the presidency. The unit consists of two parts: A) In *New Nation, New Government*, we start with a short review of the American Revolution and the Articles of Confederation; most of the unit focuses on how the creation of the

Constitution offered Americans a strong, balanced central government in addition to safeguards against the possibility of a tyrannical leader. B) In *Lifeskills and the Presidencies of Washington, Adams and Jefferson*, we study the presidencies of Washington, Adams and Jefferson, and examine if a tyrant government could have risen; we learn how the Constitution, the form of government, and the presidents themselves contributed to keeping democracy in place. The students will also determine how these presidents used Lifeskills in their role as leaders of the nation, especially during the following key events of their administration: the Whiskey Rebellion in 1794, the Alien and Sedition Acts in 1798, and the Louisiana Purchase in 1803.

(Developed for Social Studies/History, grade 5; recommended for Social Studies/History, grade 5, and American History, Middle School grades)

**2012.03.07**

**[Behind the Scenes of the Constitutional Convention](#), by Nicole Fraser**

History is often a topic that makes many students yawn. This unit attempts to overcome the wall of indifference students have built towards history. The main topics of the unit are the Constitutional Convention and the Presidency. Students use the primary sources of the Federalist and Anti-Federalist essays to explore 3 main ideas debated during the Constitutional Convention: Number of Executives and Term Length, Election and Reelection, and Executive Veto. The activities use a variety of resources to examine the founding of our government including text, video, comics, and paintings. The unit includes extensive background information on the Convention, the debates of the executive branch during the Conventions, and summarizes several of the Federalist and Anti-Federalist essays. The students are led through several activities that challenge them to critically think through the ideas of our Constitution. Students are briefly introduced to the background of the Convention. They are then challenged with the task of analyzing the ideas in Article II of the Constitution and various sections from the Federalist and Anti-Federalist essays. The culminating task in this unit is a mock debate in which students must take on the view of either a Federalist or Anti-Federalist while defending their view on the Presidency.

(Developed for Social Studies and Literacy, grade 5; recommended for Social Studies and Literacy, grade 5)

**2012.03.08**

**[The American President and War Powers: Combatting views](#), by Sonia Henze**

Combatting Views of Presidential War Powers may be of interest to High School teachers of gifted or inquisitive students who have some knowledge of American Government. This unit will examine the power of the executive to "make war" with or without a formal declaration. Advanced Placement United States History students can

build skills and review important material while participating in a current debate. By engaging students as historians, they may retain the information longer. Advanced Placement themes from the College Board will be woven into strategies and lessons concerning the American presidency and modern war powers. American Identity (American Exceptionalism), Globalization and War and Diplomacy are the AP US themes pertinent to this topic.

The purpose of this unit is to trace the war powers of the president from the development of the executive branch through the Cold War and into the modern era. This unit will examine primary sources: The Gulf of Tonkin Resolution(1964), The War Powers act (1973), Pacificus #1 & Helvidius #1&II and President Obama's Address on Libya 2011.

(Developed for AP U. S. History, grade 11; recommended for AP U. S. History and American History, grade 11; AP American Government and Politics, grades 11-12; and Civics/Introduction to Government, grade 9)

### **2012.03.09**

**Judges, Presidents, and the People: Who Should Interpret the Constitution?, by Daniel Holder**

In the last twenty years, legal scholars have suggested that the power to interpret the Constitution might not rightly belong to the Supreme Court. Instead, they have argued that it may, in fact, belong to the People! In my unit, I will examine a third voice, that of Presidents, to explore two essential questions: Who should interpret the constitution and whose interpretation matters? In addition to addressing these questions, my unit provides an overview of the historical forces that account for the rise of judicial review. Instead of accepting judicial supremacy as a "fact," the unit challenges students to examine competing views and arguments for why the Supreme Court either should or shouldn't have the authoritative "say" on what the Constitution means.

(Developed for U. S. History, grade 10; recommended for U. S. History, grades 10-11; U. S. Government, grade 11; and Civics, grades 10-11)

### **2012.03.10**

**Naataanii', by Lucille Mitchell-Gagnon**

My Students learn through the Dine' Educational Philosophy, the essence of the Navajo outlook on life. At the core are concepts and values associated with natural operations identified with the four cardinal directions, including the daily cycle of day and night and the annual cycle of the seasons, these are: Thinking, Planning, Living, and Assuring.

For the Dine' to be balanced, they must have equal development in the four values of life. Just as corn needs four things: sunlight, water, air, and soil to grow, a Dine' needs the four values: life, work, human relations, and respect with reverence to grow.

The Dine' Naataanii relates to the American President as they both lead the people. In Dine', "the local Naataanii, or leader, was the head of a deliberative body of leaders consisting of Hastoi, or elders, and Hataali, or medicine men. Two types of Naataanii existed, a peace Naataanii in time of peace and a war Naataanii in time of war. The leaders enforce the economic laws of the tribe as well as enforcing moral and ethical conduct among community members. Like the United States the adult population of a naturalize community chose the Naataanii who was of great moral and ethical character. The War Naataanii needed to know several the logistics of war while the Peace Naataanii needed to know the peaceful harmony way of life and be a loyal person. The Naataanii's had no absolute powers, their effectiveness depended entirely upon the quality of their personal character. (Dine' College)

(Developed for Social Studies, grade 6; recommended for Social Studies, grade 6)

**2012.03.11**

**[What do Presidents really do?](#), by Ellen Shackelford**

This unit is written for a 5<sup>th</sup> grade Social Studies class in Delaware. I'm sure it would be equally appropriate for most other states and could work for 4<sup>th</sup> through 6<sup>th</sup> grades. The unit explores the job of the United States president through classroom simulation. Students should also develop a better understanding of the entire United States' government as it works together with the president. Students will examine the U.S. Constitution as well as laws and actual practices employed by current presidents to determine the extent of the president's job. After gaining a better understanding of the president's job, students will engage in a decision making process to choose a candidate. In addition, students will use writing to reflect their own individual choices and to express their opinion for their chosen presidential candidate. The opinion paper the students write will coincide with the Writing Common Core Standards. The unit can be used particularly in presidential election years, but may be adapted for nonelection years as well. The unit may be used with one classroom or in tandem with 1-3 other classes as well, comprising about 15-20 class periods of 45 minutes.

(Developed for Social Studies, grade 5; recommended for Social Studies, grades 4-6)

#### *IV. Narratives of Citizenship and Race since Emancipation*

##### **Introduction**

What does it mean to be American? Simple keywords and key documents spring to mind most immediately: freedom and independence, the Constitution and the Bill of Rights. Thinking of these words and documents allows us to tell a certain story about a people who came from different and distant shores eventually to form "a perfect union" so that they could enjoy the fruits of their labor. In telling this story, however, we need to recognize that it is just that: a story, and one that is particular to only some people in the United States.

In "Narratives of Citizenship and Race Since Emancipation," eleven teachers came together to think about these same keywords and documents, but in a way that told a different story (or, more accurately, different stories) about this country. The result of our wide-ranging discussions was, I believe, a richer and more inspiring answer to the introductory question: "what does it mean to be American?"

We began our discussion thinking about freedom, recognizing that it is an empty gesture without a careful examination of its deep connection to its very denial. Considering the role of slavery and then emancipation (and how freedom was simultaneously a moment of celebration and a source of deep political, cultural, social, economic, and epidemiological anxiety) in the construction of an American identity set us on a path of discovery. While we were on this journey we thought about the ways in which racial policing (uplift in the late 19th century, the incarceration industry in the late 20th century), migration, art, economic radicalism, civil rights legalism, racial radicalism, popular culture, feminism, transnational identity, public policy, sexuality, and putative post-racial identity all played roles in the formation of the modern narrative of American citizenship.

Because we were always addressing contested topics that speak to the heart of who we claim to be as American citizens, we never had an "easy" conversation. It was a special gift, then, that all of the seminar participants actively engaged in our collective dialogue. They brought the full range of their experiences to the seminar table and, in so doing, made every meeting a profound learning opportunity. The teachers' curriculum units reflect the diversity of their perspectives, pedagogical styles, and the students in their classrooms.

In answering that organizing question – what does it mean to be American? – Sarah Boyd and Jeff Weathers addressed civic responsibility, hoping to inspire in their students a deeper engagement with this country's founding documents while also helping them find their own paths toward embracing the full rights and responsibilities that citizenship

confers. Louise Krasnow and Barbara Prillaman looked at the construction of racial difference as it was delineated in law and social science from emancipation through World War II, pointing out the viciousness and absurdities expressed in the search to find racial difference in order to deny citizens the very rights conferred upon them by their birthright. Matt Kelly and Barsine Bernally took a refreshingly different approach to thinking about citizenship and belonging by exploring Mexican American and Diné citizens' experiences, forcing us to consider what, precisely, is the language of citizenship. Waltrina Kirkland-Mullins and Tauheedah Wren asked their students to take an expansive view of citizenship and birthright by exploring the pathways that various ethnic and national groups pursued in striding toward full citizenship in the United States, pointing out how the students and their families were part of this larger cultural and civic tapestry. In terms of self-reflection, Joy Beatty and Sydney Coffin crafted some of the more contemporary units on citizenship, expecting their students to think about how normative values of family and gender are mediated through popular culture and poetry. Finally, Kasey Kennedy crafted a unit that was both historically informed and presentist, illuminating for her students the contestations over "belonging" and "citizenship" even when one is in one's own neighborhood, at home perhaps, but never fully at home.

Whether you teach third graders or graduating seniors, there is something in this volume for you. While the curriculum units you will find here vary greatly, they all reflect the teachers' desires to help our youngest citizens learn their histories, cultures, and languages – their keywords, if you will – so that they can continue the fight to make this nation a more perfect union.

Jonathan Holloway



## Synopses of the Curriculum Units

### 2012.04.01

#### [An Introduction to African American Participation in Citizenship](#), by Sarah Boyd

This unit will serve as an introduction to an Advance Placement Government and Politics class. The topic of government is not always a subject many of the seniors enrolled in this class are interested in. In an effort to prepare students for their roles as citizens of the United States, this unit will examine the Thirteenth, Fourteenth and Fifteenth Amendments, in an effort to examine the impact the amendments had on the lives African Americans. It will also serve as an introduction to the study of the United States Constitution. Students will also examine the impact of work by African Americans that spoke out on the rights and responsibilities of African Americans as citizens of the US. At the completion of this unit, students will be able to: 1. Identify and understand important facts, concepts, and theories pertaining to U.S. Government and Politics. 2. Understand patterns of the political processes and behavior and their consequences, including the political effects of political structure and procedure and 3. Critically analyze relevant theories and concepts. Students will also apply them correctly in the appropriate context, and develop their own connections to subject matter.

(Developed for AP Government and Politics, grades 12; recommended for AP Government, grade 12; U. S. Government and U. S. History, grade 11; and African American Studies, grades 10-12)

### 2012.04.02

#### [Exchanging Letters - Changing Legacies](#), by Jeffrey Weathers

Exchanging Letters – Changing Legacies is attempt to enact meaningful and needed change through a curriculum unit inspired by the Yale National Initiative's 2012 summer seminar, Narratives of Citizenship and Race Since Emancipation led by Jonathan Holloway. This unit centers on three primary goals: to awaken students to the persistence of racism and inequality in America, to better understand American history and historical texts through the lenses of African-American experiences and to challenge students to write letters, from narratives to expositions, with the intention of developing their voices and helping them know who they are and what it means to be a citizen, in order to become the change they wish to see in their selves, their families and in their communities. Earnest J. Gaines's short story, "The Sky is Gray," and Bob Teague's *Letters to a Black Boy*, as well as James Baldwin's essay, "The Fire Next Time" are the central texts. This unit is designed to create a meaningful bridge from and context for Ray Bradbury's *Fahrenheit 451* and Harper Lee's *To Kill A Mockingbird*, respectively.

(Developed for English III and IV, grade 10; recommended for English and History, grades 10-12)

### **2012.04.03**

#### **[For Colored Folks Only: The Rise and Fall of Jim Crow Laws](#), by Louise Krasnow**

This unit covers a summary of African American history, after the Emancipation Proclamation through 1965. It divides the Jim Crow laws into types: disenfranchisement, segregation, as well as miscegenation. The unit contains a listing of some of the African American leaders starting from 1865 through the Civil Rights Movement ending in 1968.

There are three lessons developed for fifth-grade students using several scaffolding strategies. There is an introduction activity to pique the students' interests and then continues using a small groups technique to introduce the actual Jim Crow laws. My second lesson will use a gradual release strategy to cover the historical events from emancipation through the assassination of Dr. Martin Luther King, Jr. The culminating lesson is a project-based unit whereby students will research, write and present a biography of one of the African American leaders or organizations.

(Developed for Reading and Social Science, grade 5; recommended for Reading/Writing and Social Science, grade 5; and Social Science, grade 8)

### **2012.04.04**

#### **[Our Understanding of the Meaning of Race: A Sociological Critical Lens](#), by Barbara Prillaman**

In this unit, high school students will focus on the guiding questions: *What is the meaning of race for ourselves, others, and our society? What are the causes and consequences of classifying people by race?* Following the Common Core Standards, students will read for meaning and interpret historical documents highlighting the African American experience to better understand the sociological concepts of race, racial attitudes, and racial actions. This unit is collaborative in nature in that students in different schools will work together through the use of Google Docs and Blogs, to focus on developing their technological skills necessary for college or the work place. Additionally, they will participate in Socratic Seminars to critically read and prepare to actively participate in conversations to help them make meaning of the complex content. Lastly, students will conduct their own sociological research by using surveys and interviews to reflect on their school communities.

(Developed for Sociology, grades 11-12; recommended for Sociology/Psychology, High School grades 10-12)

**2012.04.05**

**[From Three Rivers to Arlington: Mexican American Civil Rights to 1954](#), by  
Matthew Kelly**

Keywords: Citizenship, Civil Rights, Deportation, Desegregation, Great Depression, Integration, Mexican Spanish, NAACP, Serviceman, Spanish, Texas, World War II

The proper primary focus for the study of culture in the American Spanish classroom is the culture and history of Spanish speakers in the American context. The Mexican American struggle for civil rights was an integral part of the Civil Rights movement. In this interdisciplinary unit for students of Spanish and of U.S. history, students will learn about points of intersection between the African American and Mexican American experiences of segregation and disenfranchisement. The centerpiece of the unit is an exploration of the struggle of the widow of a decorated Mexican American serviceman to provide an appropriate burial for her husband in segregated East Texas. As background information, students will learn about the Texas border violence of 1915-1919, the mass deportations of Mexican American during the Great Depression, the nature of segregation in Texas and the West and the state of desegregation today, and the collaboration between Mexican American activists and the NAACP in the long court struggle that led to *Brown v. Board of Education*. Students will also learn to recognize key elements differentiating Mexican American spoken Spanish from the "Latin American Standard" Spanish taught in schools.

(Developed for Spanish III and IV, grades 9-12; recommended for Spanish III and IV, grades 9-12)

**2012.04.06**

**[Why do you want my children? A Glimpse into Native American Citizenship](#), by  
Barsine Benally**

Citizenship among **Native Americans** across the entire nation is at an alarming state in **maintaining** and **revitalizing** the **culture** and **language**. The Native American population collapse since colonization (going from an estimated population of 60 million to a mere 800,000 today) is devastating and has scarred the lives of many. The in-depth knowledge of our rich history is lacking in most classrooms across the Navajo Nation. Acknowledging the importance of civil rights, freedom of speech and the empowerment to be self-determined is slowly escalating but is nowhere near enough to save the **endangered** tribes of our nation today. We are at the edge of cultural genocide as we stand near our lost relatives who have already had their identities stripped away. Let us understand the narratives of not only the Dine but a diversity of nationalities and come to one united understanding in **empowering** our youth so that they, too, see historical education as a tool to overcome the silent **oppression** of today. This unit will bring rigor into the classroom from a cultural perspective by establishing questions that provoke

higher order thinking, analytical discussions and verbal analogies that require inductive/deductive reasoning in the area of Dine History through the medium of the Dine Language. The foundation of the lessons is to use k'e (kinship) to understand that we are all equal citizens that uphold responsibilities to contribute back to society for the good of the nation.

(Developed for History, grade 3; recommended for Navajo Nation History/Government, grades 3-8, and K-8 classroom)

#### **2012.04.07**

#### **Diverse Journeys - Americans All!, by Waltrina Kirkland-Mullins**

Over the years, my classroom population has become increasingly reflective of a greater cultural mosaic that includes Asian, African, European, and Spanish-speaking ethnic groups. Despite this reality, few elementary grade level students thoroughly understand how different ethnic and cultural groups came to arrive to America, why America is such a diverse nation today, and what constitutes being labeled an American citizen. *Diverse Journeys – Americans All!* has been written to help students grasp the complex concept of being a United States citizen via birthright or by way of the naturalization process. Through student-generated inquiry, family interviews, research projects, interactive read-aloud, follow-up writing exercises, and a culminating theatrical presentation to be shared with the school community, young researchers will gain a deep understanding of American citizenship. Using select non-fictional and realistic fiction resources, young learners will strengthen reading and reading comprehension skills, synthesizing important info to make text-to-world connections, thus deepening understanding of the subject at hand. Most important, students will come to recognize that irrespective of the journey, diverse groups of people born or naturalized in the U.S. constitute the American mosaic. *Diverse Journeys - Americans All!* encourages students to embrace diversity and the unique contributions made by diverse cultures to American society.

(Developed for Social Studies/Language Arts, grade 3; recommended for Social Studies/Language Arts, grades 2-5)

#### **2012.04.08**

#### **True Citizenship: A Question of Race, by Tauheedah Wren**

Fifth grade historians will learn the importance of being responsible citizens. This unit will focus on comparative studies about citizenship experiences. Students will research the pathways to citizenship in the United States for people from around the world. Students from nine different cultures will investigate their particular cultural journey to true citizenship by reading ethnic books on the subject. They will write expository essays using compare and contrast strategies, seeking to understand the similarities and differences in their journeys.

The class will read a chapter book about the arduous struggles to citizenship for African Americans. After much deliberation, collaboration, and reflection, students will learn that true citizenship has been realized by some ethnic groups, but not for African Americans.

Student will create a *cultural museum* inside a voting-booth structure. The ethnic artifacts, pictures, maps, books, and regalia will be showcased there to help tell the story, positive and negative. They will form a *Brown-Bag Theatre*, where students can perform Reader's Theater, cultural poetry, raps, speeches, and share their essays about their journeys. Both activities will be set up in a public place in their school.

(Developed for History/Social Studies, grade 5; recommended for History/Social Studies, U. S. Constitution, and Citizenship, grade 5)

#### **2012.04.09**

##### **[The Resiliency of the Black Family](#), by Joy Beatty**

By analyzing some episodes of "*Good Times*" and "*Fresh Prince of Bel-Air*," students will understand the history of the black family and analyze its structure. Slavery and racist oppression over the centuries, along with economic changes following industrialization and urbanization, have affected minority groups of America. Daniel Moynihan suggests that due to the lack of government involvement and the already fragmented structure of the black family, blacks and the black family are not equipped to deal with economic instabilities. The components of this curriculum unit will not only focus on the plight of blacks and the black family in America, but they will also highlight the resiliency of blacks and the black family. In order to do this, the unit will closely analyze the resiliency of the black family as it relates to the political and social climates of the 1970s and the 1990s. The curriculum unit will address male/female dynamics, parent/children dynamics, the roles of education and religion, and the idea of economic status. The unit is recommended for U.S. History, World History, and World Geography classes.

Keywords: black family structure, resilience, Moynihan Report, origins of black family, black achievement, female-headed households

(Developed for World Geography, grade 9, and U. S. History, grade 11; recommended for World Geography, grade 9, and U. S. History, grade 11)

#### **2012.04.10**

##### **[Putting Both Fists in the Air: The Addition of Women's Voices to the Black Power Era, 1960s-70s](#), by Sydney Coffin**

How were women's voices essential to demands for justice in the 1960s-70s? Were Black Power and the Black Arts Movement men's movements? What role do poetry and

narratives play in merging the personal with the political during this time period? Here we explore men and women's memoirs from the era and write our own; we analyze key poems and poets from the period and develop inspired poetry; we watch, evaluate, and review 3 films. Finally, students will also use access to cameras to film interviews with people who lived through the period. Throughout the unit, students will also read historical documents about the SNCC, Black Panthers, CORE, League of Revolutionary Black Workers, and other organizations from the same period. All students will participate in a dramatic reading of *for colored girls who have considered suicide when the rainbow is enuf*. In summation, students will explore narratives of the Black Power era in poetry and prose in order to learn how to write their own, emphasizing how to improve our society through citizenship. Key Words: Black Power, Black Arts Movement, Women, Narratives, Poetry, Citizenship

(Developed for Poetry, grades 10-12; recommended for Poetry and African American History, grades 9-12)

#### **2012.04.11**

#### **[The Heart's Migration: Finding, Making, Coming Home](#), by Karen Kennedy**

For generations of African Americans traveling along the winding paths of the diaspora, home was a dream or a vague, distant memory. During slavery, home was not where slaves actually lived; without the rights of citizenship, they were legal castaways. With Emancipation, a simple question became quite complex: where is home? Throughout a high school course in African American literature, students will use the lens of "finding home" to connect with the authors we study.

Students will keep detailed journals reflecting on how the search for home is presented in works of African American literature. Each journal entry will include visuals, including photographs, images from magazines and the Internet, and/or original drawings. Periodically, there will be class discussions to highlight how the idea of home is changing and developing. Additionally, there will be activities including a debate and a class cookbook and banquet. The culminating project will be a laminated photo quality poster combining text and images; each poster will also have an artist's statement and a "Home Bill of Rights." This poster will be something the students can take with them to their "new homes," their college dorm rooms.

(Developed for African American Literature, grades 11-12; recommended for African American and American Literature, grades 11-12; AP Language and Composition, grade 11; and Literature and Composition, grade 12)

## *V. How Drugs Work*

### **Introduction**

Humans eat, drink, and breathe to bring into their bodies the raw materials for growth, and the generation of energy necessary for life and the actions that bring pleasure to life. Most of us also, at one time or another, swallow, inject, or inhale drugs to improve our health or prevent sickness. In taking a drug, we are hoping to activate a specific set of events that lead to healing or avoidance of disease. Unlike the foods that we eat, which are complex mixtures, most drugs are highly purified and chemically defined. Drugs – refined and manufactured and formulated into prescription and over-the-counter medicines, vaccines, supplements, vitamins, alcohol and illicit agents – are created to encourage specific chemical processes in the body.

Our seminar focused on how drugs work. The seminar began with descriptions of the biological basis of drug action, using examples of drugs that are used to treat common conditions such as heart disease, infections, pain, and cancer. This discussion led to a description of the chemical basis of drug specificity: why do drugs affect one condition (or one set of cells in the body) and not all others? Drug specificity is never perfect, so the seminar discussed side-effects, which is the most important limitation in our ability to design drugs. The seminar used mathematics to describe the duration of drug action: what determines the frequency with which drugs must be taken? Finally, the seminar considered a remarkable feature of modern medicine: drug discovery is now accomplished using high-throughput techniques, in which thousands of prospective "drugs" are screened to identify compounds with the right biological and chemical activity. Because of the high frequency of chronic diseases among children – such as asthma, diabetes, allergy, and attention disorders – almost every classroom in the U.S. is impacted by drugs. The seminar focused on biology, chemistry, health, and mathematics, which can be made relevant to students at all levels: accordingly, there were fellows teaching at all grade levels in the seminar group.

Specifically, the seminar covered the following topics:

1. How are drugs administered?
2. How do drugs work?
3. Natural medicines
4. Drugs of addiction

5. New methods for drug discovery (with a visit to Yale's West Campus, Center for Molecular Discovery)
6. Fighting infection
7. Cardiovascular drugs
8. Drugs for treating cancer
9. Non-invasive imaging to examine drug function (with a visit to Yale's PET Imaging Center)

The discussions in the seminar were enhanced by our reading from: *Magic Molecules: How Drugs Work*, Susan Aldridge, Cambridge University Press (1998); and *Biomedical Engineering*, W. Mark Saltzman, Cambridge University Press (2009).

The Fellows prepared curriculum units that covered a breadth of information on drugs and the mechanisms of drug action. The material presented in the units assembled in this volume span an impressive range and are designed for use in classrooms from elementary through high school.

Many of the units focused on material that is appropriate for high school students. Marlene Gutierrez wrote a unit called "Can You Pill It? Demystifying Painkillers" for high school chemistry students. In her unit, Marlene describes the chemistry of over-the-counter pain medications – ibuprofen, aspirin, and acetaminophen. Using the chemistry of pain medicines as an example, she is able to illustrate one way that chemistry impacts the lives of people. Deborah Smithey prepared a unit called "Cardiovascular Medications, Beta-Blockers, and Their Effect on Cells" that describes the role of beta-adrenergic receptor activity in cardiovascular disease, and the role of beta-blockers in promoting health. Vanessa Vitug prepared a unit titled "Antibacterial Gone Viral – Understanding Immune Responses in Bacterial and Viral Infectious Diseases." Vanessa's unit describes the mechanisms for bacterial and viral infections, and the role of antimicrobial products in protecting against these pathogens. Stephen Lewia wrote a unit called "The Down Low on High Blood Pressure," which describes both the biological basis of high blood pressure and the many types of medications that can be used to control blood pressure. While written for high school classrooms, all of these units can be adapted for use in middle school classrooms, as well.

Two units focused on material specifically designed for middle school students. Aimée MacSween prepared a unit called "A, C, E Detective: calculating percentages." Aimée's unit uses real information about vitamins A, C, and E – and how these vitamins work in our bodies – as background material to present the concepts of percentages and graphing



and number sense. John Miklaszewski wrote a unit called "Toxic Effects of Mercury, Alcohol, and Cannabis on Human Cellular Function." John's unit describes the general operation of human cells, and the mechanisms by which they are adversely affected by three different common toxins.

Finally, four of the units are aimed at elementary classrooms. Valerie Schwarz wrote a unit called "Caution! Drug Diffusion Underway: Using inquiry to understand how drugs and the body interact. Her unit, designed for the fourth-grade classroom, describes how drugs move in the body, emphasizing the processes of diffusion that control drug distribution. Valerie's unit is rich in hands on activities to engage young people with these concepts. Tracy Lewis designed a unit for second- and third-grade students called "What's Going On Inside My Body? An Introduction to the Central Nervous System and the Digestive System," which introduces two essential organ systems, and relates the function of each to the molecules that we consume in our meals. Two of these units discuss medicines in the context of the traditional healing in the Diné Nation. Jolene Smith prepared a unit aimed at fifth- and sixth-grade students. The unit – called "Medicine between Two Worlds" – describes herbs, and their methods of preparation, and compares their healing effects to Western medicines. Marilyn Dempsey wrote a unit called "Diné Be' azeé': Diné Traditional Medicine." Marilyn's unit, designed for fifth-through eighth-grade students, also introduces students to traditional methods for healing, but by emphasizing three special sources of medicines: sage brush, juniper, and piñon trees.

W. Mark Saltzman



## Synopses of the Curriculum Units

### 2012.05.01

#### [Diné Be'azee': Diné Traditional Medicine](#), by Marilyn Dempsey

Sage brush, juniper, and pinon are our medicine. Traditional Diné medicine plants have been used by Diné for many generations. Knowledge of these traditional Diné plants is important for indigenous Diné youth to keep alive. Students need to be aware of how Diné language and culture can be, and is a part of science through the knowledge of plants and medicine; thereby gaining insight to a multicultural world. There is also Western medicine and how it works with the human body to fight infection and relieve pain. Further, how Western drugs are made from plants will also give students comparative information on traditional Diné medicine and Western medicine. Students will acquire this knowledge through research and activities using various media.

State standards emphasized in this unit are the scientific processes leading to questioning, investigating, testing, evaluating, and communicating information. This Inquiry Process will be embedded into all areas of the unit of learning about traditional Diné medicines and Western medicine. History and Nature of Science standard, and Science in Personal and Social Perspectives standard will be embedded for students to utilize and apply the scientific process. The Arizona Native Language Standards will also be integrated into the unit.

(Developed for Science, grade 5; recommended for Science, grades 4-5; Science - Middle, grade 6; and Diné Culture Elementary and Middle, grades 5-8)

### 2012.05.02

#### [Can You Pill It? Demystifying Painkillers](#), by Marlene Gutierrez

This unit is designed to enable students taking a college-prep chemistry class to see that chemistry is very much a part of their everyday life. In this unit, students will learn the chemistry of four over-the-counter pain relievers: aspirin, ibuprofen, naproxen and acetaminophen. The first part of the unit describes factors affecting reaction rate, with special emphasis on the role of catalysts. Mechanisms for sensing pain and the biochemical reactions involved in the pain pathway is the focus of the second part. In the third and last part of the unit, students explore how aspirin, ibuprofen, naproxen and acetaminophen work as pain relievers. Strategies such as demonstrations and laboratory investigations, cooperative learning, games and simulations and use of graphic organizers will be used to implement the unit.

(Developed for CP Chemistry, grades 10-12; recommended for CP Chemistry, Honors Chemistry, and Physiology, grades 10-12; and Honors/AP Biology, grades 9-12)

**2012.05.03****[The Down-Low \(DL\) on High Blood Pressure](#), by Stephen Lewia**

This two-week high school Anatomy and Physiology curriculum, designed for 10<sup>th</sup> through 12<sup>th</sup> graders, aims to give students a deep understanding of the anatomy, physiology, and pharmacology of high blood pressure (hypertension). The premise of this unit is to teach students in such detail that they feel as comfortable as a clinician creating a diagnosis. To do this, background information is provided at a level that leaves teachers with in-depth knowledge of the topic. The purpose of this detail is to enable teachers to answer most questions posed by their students. Activities within this unit solidify the underlying goal of students having a clinical understanding of hypertension. These activities, broken down into unit long (called chronic activities) and day long (called acute activities) time frames, teach and challenge students through inquiry-based learning. Students will evaluate vital signs, visually identify and research medications commonly used to treat hypertension, connect discussed topics through the creation of mind webs, and experiment with the physics of blood flow and vascular resistance. Students will complete this unit with a strong understanding of hypertension, and how they can make positive and negative impacts toward their potential of having this future diagnosis.

(Developed for Anatomy and Physiology, grades 10-12; recommended for Anatomy and Physiology, and Biology, High School grades 9-12)

**2012.05.04****[What Is Going On Inside My Body? An Introduction to the Central Nervous System and the Digestive System](#), by Tracy Lewis**

Our bodies serve as amazing creations that hold much mystery for even the most educated among us. When you consider the perspective of a child, it is fascinating to watch them discover how their bodies function. Children are often unaware of the nutrients needed to sustain a healthy and active life, and most do not see the correlation of their playground games, cafeteria lunches, and P.E. time as relevant to their bodies. The unit "What's Going On Inside My Body?" is designed for second and third grade classes. This unit focuses on the structure and function of the central nervous system and the digestive system in the human body. The students also will learn about the foods that are rich in the nutrients that support these amazing systems in our body. The unit is designed to engage very young children in anatomy and physiology through hands on activities, observations and discussion. Providing them with this information will lay the foundation for future learning, empower them to make better food choices and answer the age old question, "Why do I have to eat my vegetables?"

(Developed for Health/P.E., grades 2-3; recommended for General Education and Health/P.E., grades 2-3)

**2012.05.05**

**[A, C, E Detective: Calculating Percentages](#)**, by Aimee MacSween

**A, C, E, Detective: Calculating Percentages** is a curriculum unit written for a 7<sup>th</sup> grade Pre-Algebra class. With some modifications, it could be taught to a sixth grade math class as well. The goal of the unit is to teach math in context. Middle school math students struggle with the idea of a "reasonable answer." Students need to be able to apply meaning to numbers in order to develop a sense of what is reasonable. The unit begins by giving students background knowledge about the body. It looks at the percent of elements that make up the body. Students are given an opportunity to calculate the weight of each element in their bodies. Students learn about drug administration and calculate the surface area and volume of the lungs. The unit gives a substantial amount of background information on vitamins and recommended dosages. Students use this knowledge to calculate servings necessary to meet the recommendations. There are charts that show how the recommendations have changed over the years. Using these charts students will calculate percent increase and decrease. The unit ties in other math skills as well, including order of operations, exponents, and formulas to solve surface area and volume. I believe this unit provides an excellent opportunity for students to see how math is used outside the math classroom!

(Developed for Pre-Algebra, grade 7; recommended for Pre-Algebra, grade 7)

**2012.05.06**

**[Toxic Effects of Mercury, Alcohol, and Cannabis on Human Cellular Function](#)**, by John Miklaszewski

My unit, designed for use in my 8<sup>th</sup> grade science class, focuses on chemistry and biology and how toxins can affect the people who ingest them. I believe that students can better understand chemical and biological concepts if the illustrative examples are more relevant to their experience and environment. There are recreational drugs and pollution risks in our community and our students are interested in affects of illegal drugs, and toxic substances.

The focus of the unit will be on four chemicals—alcohol, marijuana, lead and mercury—that affect the cell and organism in general. In presenting this material, I will begin with a review of living things, including the cell, and discuss how cells process and use chemicals. A culminating activity involves work in collaborative student groups, with each group preparing presentations to explain various impacts of the toxic substances. The unit will include differentiated collaborative groups, small non-fiction lit circles, and hands on activities.

(Developed for General Science, grade 8; recommended for General Science, grades 7-8)

**2012.05.07**

**Caution! Drug Diffusion Underway: Using Inquiry to Understand How Drugs and the Body Interact, by Valerie Schwarz**

This curriculum unit is designed to engage fourth grade students in scientific investigations around the theme, "How Drugs Work." The unit uses hands on activities and experiments to explore how people get medicine inside their body, how the medicine is distributed, metabolized and excreted. Many drugs are assembled into pills that are composed of layers: this layering plays a role in the absorption, distribution and metabolism of the drug. The crux of the unit will be the ongoing investigation to gather data to help students hypothesize and make decisions. In the end, the students are charged with designing a medicine that is coated, so that the coating dissolves in 15 minutes. Along the way the unit will teach principles of diffusion, equilibrium, scientific inquiry, scientific investigation, measurement, and aspects of how the human body works. This unit could be used or adapted for 5<sup>th</sup> -9<sup>th</sup> grade general science and anatomy courses.

(Developed for Science/Mathematics, grade 4; recommended for Science/Mathematics, grades 4-5, and adaptable for General Science/Anatomy, grades 6-9)

**2012.05.08**

**Medicines between Two Worlds, by Jolene Smith**

The field of medicine has progressed quickly within the past hundred years. For example, the advancement of technology has allowed medical researchers to analyze minute cells within the human body to look for reasons of why diseases and sickness happens. Also, new medical drugs are being developed to combat bad bacteria and viruses.

Although the advancement of medical healing has progressed in Western society, there is another side of medicine that has not changed substantially for a thousand years. Diné traditional healing herbal medicines have been utilized for many generations. Traditional medicine practitioners and herbalist have long practiced their arts, combining their art with healing songs and ceremonies to heal the ailing people.

With the discovery of the Americas and the encroachment of native lands, the native people encountered diseases that were foreign to them. Eventually Western medicine had to help the American Indian to combat these foreign diseases and illnesses.

This unit is designed for fifth and sixth graders. The unit will compare Western and Traditional Diné medicines. This will be accomplished by looking at specific healing herbs and comparing them to Western medicine. Activities, guest speakers, the scientific inquiry process, and individual projects to teach students about herbs and western medicine are all present. Instruction will be given to students in whole group, small group, and individual performance tasks. It will cover approximately four weeks for fifty-

five minutes each day. At the end of the unit, students will be able to compare and contrast the differences of herbs, pills, creams, lotions, and liquid medicines. The unit will expand their knowledge of what medicines are available from Mother Earth as natural medicine as well as from the local clinics and hospitals.

(Developed for Science/Health/Diné Culture, grade 5; recommended for Elementary/Science/Health/Diné Culture, grade 5)

#### **2012.05.09**

#### **[Cardiovascular Medications, Beta-Blockers and their Effect on Cells](#), by Deborah Smithey**

This unit is designed for students taking a biological science course. Cardiovascular medications are commonly found in the houses of a number of my students. Many times my students assume the responsibility of administering the medication to their parents and grandparents. I want my students to understand that all drugs entering the body can affect the cell. Lipid soluble molecules readily enter and leave the cell. This unit will identify one substance that will cause a constriction of red blood vessels. Students will examine this molecule and look at the class of drugs called Beta-blockers. Beta-blockers are given to individuals as a form of treating cardiovascular diseases. A large population of African Americans and Hispanics are smokers and suffer from diabetes. Many of these individuals are taking Beta-blocker medications. I want my students to understand how Beta-blockers work inside of the body. I want my students to learn how they can avoid taking these drugs later on in life by avoiding a certain lifestyle.

(Developed for Biology, grades 10-12; recommended for Biology, grades 10-12)

#### **2012.05.10**

#### **[Antibacterial Gone Viral – Understanding Immune Response in Bacterial and Viral Infectious Diseases](#), by Vanessa Vitug**

Antibacterial products have flooded today's market, but few people understand the bacteria and viruses they are killing. Students in Biology and Physiology will learn about microbes through the unit Antibacterial Gone Viral - Understanding Immune Response in Bacterial and Viral Infectious Diseases. Students at MPHS continue to struggle with literacy, thus my unit activities are focused on connecting current CA State Standards for Science and the upcoming Common Core Standards. The trend in education is shifting, and soon students and teachers must adapt and incorporate critical thinking, reading, and writing skills all content areas. My unit teaches students the importance of immune system and basics of bacterial/viral life cycles. Students will engage in activities that will teach them about Influenza, HIV, Tuberculosis, and Influenza, and will inspire them to learn about other bacteria and viruses. Through the course of the unit students will learn about the importance of using antibiotics and antimicrobial products correctly in order to

prevent drug resistance. Biology students will create posters reflecting the harm that overuse can cause and post them throughout our campus. Physiology students will integrate both science and english skills by creating stories that will showcase their understanding of the immune system, bacterial/viral life cycle, and antibiotic/antiviral misuse. In the end, all students will utilize a variety of media to present their stories thus giving them flexibility and creative control.

(Developed for Science/Physiology, grades 11-12; recommended Science/Biology, grades 9-12, and Physiology, grades 11-12)



## *VI. Asking Questions in Biology: Discovery versus Knowledge*

### **Introduction**

Many teachers observe a trend in their classrooms where students are increasingly reluctant to ask questions. Apparently, students fear that asking questions would reveal their limited knowledge, or would cause them to appear less intelligent than their peers. This trend is especially troubling when biology and other sciences are taught in the classroom, because it signals that students are stifling their inherent curiosity about the natural world. This seminar examined why it is important to encourage students to ask questions in the classroom, particularly in biology. It emphasized that asking questions is crucial for making scientific discoveries, which are essentially questions (hypotheses) that are either supported or refuted through direct tests. We learned that, over time, this iterative process of discovery-making translates directly into the collection of facts that we call "scientific knowledge." We discussed why biologists and other scientists generally consider their careers rewarding, even though their discoveries are often overturned, or proven incorrect. In addition, we learned that many famous scientific discoveries occurred through sheer accident, which emphasizes that science is mainly about asking questions and pursuing unknowns, and less about posing ideas that are absolutely correct. We examined the biological underpinnings of question-asking, and learned that our strong curiosity prompts humans to ask questions, whereas our close primate relatives such as chimpanzees do not. We considered how philosophical approaches to asking questions have changed through history, but that certain approaches such as Socrates' Scientific Method have remained influential and persisted over time. We discussed scientific ethics and the public perception of science, to better understand why some scientists act irrationally in the name of career advancement, and how their actions can violate public trust of science and medicine. Throughout the seminar we related discussions of these topics to the fundamental human fear of being perceived as "wrong," and how this creates a reluctance to ask questions in the classroom. Importantly, we worked together to discuss and design curriculum units which may be used to address this problem, especially by convincing students that discovery and knowledge in biology can only occur through willingness to ask questions. The seminar included discussions of reading assignments on asking questions, some hands-on laboratory experiments, and a tour of the collections at the Yale Peabody Museum of Natural History to learn how these holdings are used to test hypotheses in biology research. The seminar was intended for teachers of biology at all grade levels.

The resulting units were diverse, reflecting the varied interests and backgrounds of the Fellows. Benjamin Barnett-Perry develops a unit for special-education students that allows them to intensely examine the strengths and weaknesses of their particular disabilities, and those of their peers, drawing analogies to the unique and diverse traits other species; this unit helps to empower special-education students, so that they become increasingly independent and willing to self-advocate. Emily Dentel's unit looks at the

great variety of reproductive life cycles seen in nature, and brings examples into the classroom to help early elementary school students to pose questions about life cycles, thus prompting them to think like scientists. Rebekah Edwards focuses on evolutionary biology and the ability for organisms to become better adapted to their environments, but uses instruction on insect evolution to emphasize that useful traits often evolve as a compromise, where existing characteristics are modified for new purposes. Jane Gerughty's unit for high school students emphasizes that science can only advance through bold hypothesis-testing, and describes how many famous scientists were very persistent – but also sometimes very lucky – when striving through obstacles to make their most key discoveries. Kathleen Gormley's unit introduces third-graders to scientific insight, where they are prompted to ask questions about biological observations, such as comparing the skeletons of closely and distantly related creatures; these activities stimulate their curiosity but also empower them to think like scientists. Georgia Karns's unit is on the biology of Chesapeake Bay, to teach middle school students about healthy ecosystems and proper stewardship of their local environments; the unit emphasizes inquiry and scientific investigation, along with cooperative learning skills. Megan McLaughlin's unit engages elementary school students to think about the adaptations which allow animals to better thrive in their environments; by posing questions about species similarities and differences the students will gain an understanding of biodiversity and will think critically about why organisms differ in appearance in behavior.

Paul E. Turner

## Synopses of the Curriculum Units

2012.06.01

[Asking Questions about Learning Disabilities: A Gateway to Self-Determination](#), by Benjamin Barnett-Perry

Students with disabilities often have a hard time speaking up for what they need. There are a variety of reasons for this, but as a special education teacher I only have control over a fraction of them. This curriculum is designed to help students investigate both their disabilities as well as the disabilities of their peers; specifically autism spectrum disorders, emotional and behavioral disorders, and specific learning disabilities. Current studies show that students who understand their disabilities become more comfortable with themselves, and in turn become more confident, improve their self-advocacy skills and end up being more successful learners. This self-knowledge is the first step towards becoming a self-determined learner, a goal I feel is achievable for all of my students. Though my students are in high school, this curriculum could be used in a general or special education classroom at any grade level with little to no alteration. By using strategies such as the Question Formulation Technique and association skills, students will explore what it means to have an educational disability and the best way to exploit their strengths in order to overcome their struggles.

(Developed for Tutorial Resource, grades 9-12; recommended for Special Education and could be slightly altered to be of use in Humanities or Science curriculum, grades 6-12 [could be altered to include younger grades])

2012.06.02

[Using Biology to Teach Children to Think Like a Scientist](#), by Emily Dentel

Getting students to ask questions can be a challenge all in itself. This unit utilizes student natural curiosity about life cycles to encourage student's scientific thinking and questioning skills. The flexibility of this unit allows for use in a variety of grades and time schedules. It can be used with Kindergarten to study butterflies or upper elementary grades with a focus on scientific notebooks and the scientific method. I will be utilizing this unit throughout the school year or it could be used for a specific topic in just a few weeks. If you wish to bring an animal into your classroom there are several insects whose life cycles can be observed in a matter of weeks. I understand not all districts will allow animals into the classroom. Many of the websites provided in the resource section have videos and activities that would be sufficient for students to gain knowledge and understanding of various life cycles. The science notebooks can be used with all age groups to link literacy and science. I intend to use the science notebook with all of the science topics we study this year, and not simply for the life cycle lessons outlined here.

(Developed for Science and Reading/Writing [Language Arts], grade 2; recommended for Science and Language Arts, grades K-6)

### **2012.06.03**

#### **Understanding Evolutionary Biology through Physical Adaptations in Insects, by Rebekah Edwards**

The broken mussel shell I picked up and brought to my third grade students sparked an idea that inspired this curriculum unit! This shell contained a life-form I had never seen before. It contained the next generation of house flies, which occupied the space inside the shell where the decaying meat made a meal for the young maggots. The house fly makes an excellent research subject because it is so familiar to everyone. Think for a moment about your own accidental encounter with maggots or other insects. I have yet to meet someone who didn't have a story about maggots because flies are everywhere! In fact insects make up the majority of species on this planet! The larvae in the shell taught me that a fly has a great ability to reproduce and this has helped them survive since the Triassic period, 200 million years ago!

In this unit, students will study in depth two adaptations in flies and dragonflies to learn about how and why adaptations arise. Students will also learn about natural selection by participating in a game that demonstrates that traits which allow organisms to better fit their environment will increase through time. This unit will give students the opportunity to see that the diversity of life on Planet Earth occurred through the evolutionary process of natural selection.

(Developed for Science, grade 2; recommended for Science, grades 2-3)

### **2012.06.04**

#### **No Guts, No Glory, by Jane Gerughty**

Biology is a process. Success in biology requires asking meaningful questions with an inquisitive mind, overcoming various obstacles and pressing on. Students want answers and results to be predictable. They feel comfortable doing cookbook science and being spoon-fed information. The goal is to have students be engaged and motivated to ask their own meaningful questions, design investigations and be comfortable with being uncomfortable. In this unit students will explore how each of the following people engaged in the scientific process to arrive at their conclusions, discoveries, breakthrough or theories: Socrates, Rosalind Franklin, Rachel Carlson, Louis Pasteur, Antony van Leeuwenhoek and Jean Baptiste Lamarck.

After exposure to the work and tribulations of these great minds, 9<sup>th</sup> and 10<sup>th</sup> grade students will be encouraged to be active learners challenged with problem solving and critical thinking. I desire students to develop the confidence to keep plugging away at

problems or questions. By highlighting selected scientists who have made significant contributions to the field of biology, students will understand the process of science. Discoveries have not come quickly or easily. Only through much perseverance have scientists helped us understand the world we live in.

(Developed for Biology, grades 9-10; Physiology, grades 11-12; and Health, grade 9; recommended for Biology, grades 9-12; Health, grade 9; and Physiology, grades 11-12)

**2012.06.05**

**[Inquiring Minds Want to Know...Teaching Vertebrates through Inquiry](#), by Kathleen Gormley**

Do you ever feel like you are doing most of the work in your classroom? What do your students do when you ask them a higher order thinking questions that requires them to formulate a unique answer? Well if your classroom is similar to my classroom, you realize that students are hesitant to use their own thoughts to answer a question. In the unit I have created, students will begin to see themselves as scientists. They will engage in exploring during science, they will design and carry out investigation. Students will be responsible for communicating their observations and then propose explanations for these explorations.

In my third grade classroom, I want to provide students with hands-on activities that stimulate their inquisitiveness. Using Delaware Science Standards and combining them with Common Core State Standards in English/ Language Arts, I have developed a cross curricular unit that enables students to use non-fictions texts, journaling, and science investigations to study vertebrates. Using owl pellets and albatross boluses, they will compare and contrast species. Also, they will investigate the form and function of bones and compare human bones to the bones found inside the owl pellets.

(Developed for Science, Human Body, grade 3; recommended for Science, Biology, and Human Anatomy, grades 2-5)

**2012.06.06**

**[Inquiry in the Middle School Classroom: Students as Watershed Stewards](#), by Georgia Karns**

This curriculum unit is designed to build inquiry skills and teach environmental stewardship in 7<sup>th</sup> grade life science. The unit is intended for the beginning of the school year, and is expected to last about 6 weeks. The unit is focused on the James River, which runs through the city of Richmond, Virginia, and empties into the Chesapeake Bay. Students will learn how their daily choices can affect the health of the James River and thus the Chesapeake Bay. Students will discover the importance of conserving habitat for a diversity of species that are integral to the health of the watershed, and how a healthy

watershed benefits humans. The unit integrates environmental science and ecology, while emphasizing inquiry and scientific investigation along with cooperative learning skills. By scaffolding inquiry, students will be better prepared to conduct independent scientific investigations for the science fair.

(Developed for Life Science, grade 7; recommended for Science, grades 6-7)

**2012.06.07**

**[What Can We Learn About Animals?](#), by Megan McLaughlin**

"The Easter Rabbit lays Easter eggs." "My favorite animals are horses and unicorns". Young children have a natural curiosity about animals. However, they have many misconceptions and confusions about animals. The purpose of this unit is to introduce young children to the five animal classes (mammals, birds, amphibians, fish, reptiles,) and invertebrates, to learn to identify animal adaptations, and to form an idea about how or why that adaptation helps that animal to survive in its environment. They will be introduced to two great naturalists: Carl Linnaeus and Charles Darwin. The three activities in this unit are designed to introduce students to the range of biodiversity in the animal world, to encourage students to make connections between the adaptations that they see and the animal's ability to thrive in its environment, and to encourage students to form hypotheses about animal structures and behaviors. The students will become animal experts, knowing facts, adaptations, and structures of many different animals. They will use the Science Process skills of observe, predict, hypothesize, question, communicate, and investigate as they observe animal adaptations, animal morphology, and animal behavior at the Oakland Zoo.

(Developed for Science and Writing, grade 1; recommended for Science and Writing, grades 1-2)

## ***VII. Energy, Environment, and Health***

### **Introduction**

This seminar will examine the environmental, health, and economic effects of reliance on different forms of energy. We will also examine laws and policies that influence energy demand and their effectiveness in managing environmental and health damages. Topics covered will include green building and energy efficiency, development in the coastal zone, urban sprawl and public transit, vehicle emissions, the future of nuclear, natural gas, coal, wind turbines, emissions trading schemes, and conservation. In all cases we will consider underlying sources of problems, along with opportunities for reducing damages.

Session 1: Energy and the Built Environment

Session 2: Nuclear Power After Fukushima

Session 3: Land Use Regulation in the Coastal Zone

Session 4: Food and Energy

Session 5: Wind Energy: Law and Politics

Session 6: Biofuels and the Enogen Corn Ethanol Debate

Session 7: Natural Gas and Safe Drinking Water

Session 8: Climate Change and Endangered Species

Session 9: Offshore Oil Extraction

Session 10: Transit, Air Quality and Health Effects

Session 11: Urban Growth and Sprawl

John Wargo





## Synopses of the Curriculum Units

**2012.07.01**

### **[Quantifying Solutions to Reduce Our Food's Environmental Impact](#), by Anne Agostinelli**

This unit will be the first of the eighth grade algebra year for students I taught last year in seventh grade pre-algebra. Their understanding of linear algebra will be a solid foundation from which to build their knowledge of functions, statistics, and how data is communicated along with why being critical consumers of data is a vital life skill. To address my students' dissatisfaction with the relevance of math to their lives, I will focus heavily on the problem-solving process and how it can be applied across disciplines to solve problems, and then how math can be used to strengthen those solutions by quantifying impact and communicating clearly with numerical evidence. This unit plays directly into the curiosity of my students about the world we live in, the problems they will inherit, and the challenges they must learn to address. While we will all focus on the large topic of food and the environment, students will break off into more focused interest groups to pinpoint problems that relate directly to their diets and quantify solutions that will be meaningful in their own lives and the lives of their families.

(Developed for Pre-Algebra, grade 8, and High School Algebra I; recommended for Mathematics and Science, grades 6-8)

**2012.07.02**

### **[Solar VS Fossil Fuel Generated Electricity: Can Physics Determine Which is Best For You and Your School?](#), by Brian Barrientez**

This curricular unit focuses on the hazards of fossil fuel generated electricity, the exploration of renewable, solar energy, and can be used in any physics, science, or engineering course requiring the study of basic principles of DC current, voltage, resistance, Ohm's Law, series and parallel circuits. The unit is divided into three sub-units with the first containing a series of lectures and "hands-on" labs designed to help students calculate DC current, voltage, and resistance in series and parallel circuits using batteries, light bulbs, and resistors. Digital multimeters will be provided so that students can physically check calculated measurements against actual measurements, in circuits. Students will be performing the same types of lab investigations in the second sub-unit as in the first, but using photovoltaic cells as the energy source. They will also be required to work in engineering teams to research and design a small solar charging station to charge cell phones or similar devices. The third and final sub-unit will require students to work in small engineering teams again, and apply their new knowledge to solve "real life" type problems which will include the submission of a written report, working project "model," and multimedia presentation to perspective clients.

(Developed for Physics, High School grades 9-12; recommended for General Science and Physical Science, Middle School and High School grades, and and Physics, High School grades)

**2012.07.03**

**[Knowing Your Watershed](#), by Carol Boynton**

Wash away your troubles! This advice sounds possible but where do your troubles really go? If you follow the path of the water, you will find that they end up at a stream or river or even spilling into the ocean. It is easy to think that the water will just take things conveniently away, but we mustn't be fooled - those things are still with us. Sadly, many watersheds do have troubles that have washed into their waterways and created a problem for many including plants, animals, and of course, people. This six-week curriculum unit is designed for students in the sixth grade. It guides the young scientists through the steps to understanding the structure of a watershed, investigating human impact, learning about their own watershed, and the designing and building a model of that watershed. Through inquiry and experimentation the students will discover the dynamic operation of their hometown waterways.

(Developed for Science, grade 6; recommended for Science, grade 6)

**2012.07.04**

**[Energy, Environment and Health Electromagnetic Fields: Are They Buzzing You?](#), by Kristy Hutton**

Students today live in a very fast paced technology driven world, yet they have only a small idea of how things work, where they come from, or how they could possibly affect their health. Students seem to only be interested in the instant gratification of an item and do not think about the source of an item or long term affects this item could have on them. This unit will help students gain knowledge about the electronically driven world around them and how these electronics could impact their health. Students will use research skills, critical thinking skills, and the writing process to draw conclusions based on observations while working in collaborative groups. The unit is broken into three parts and will take approximately six weeks to complete. Students will leave the unit understanding what electromagnetic fields are, how electronic devices impact their everyday lives and future, and students will have a sense of ownership in lessening their energy consumption while improving their lives.

(Developed for Gifted and Talented, grades 6-7; recommended for Social Studies, Middle School grades, and Science, grades 6-8)

**2012.07.05****Math Facts of Natural Gas & Pollution, by Luis Magallanes**

This curriculum unit is focused on the benefits of using natural gas, but without ignoring the problems created by its production. Calculations related to efficiency including cost and usage of natural gas in comparison to the usage of gasoline is as well included. The impact of the use of natural gas in the health of the population is also analyzed.

The lessons can be used for grades 6 to 12, Algebra-1, Algebra-2 and Geometry. Concepts included are volume, percent, solving equations and formulas, linear and quadratic functions.

Students will be able to calculate how much money they can save using natural gas instead of regular gasoline. Another benefit of using natural gas is decrease of pollution, under the name of the Air Quality Index (AQI). Health benefits are also included with data related to air pollution vs. lung disease.

Math lessons including environmental facts and up-to-date scientific background are embedded in this unit. I hope to persuade the audience that conserving our environment is important. How much can mother earth take from careless people who keep using the resources without looking at the consequences? It is true that the use of certain resources is a great commodity for most of us; and a large part of our society is not willing to let it go that easily.

(Developed for Algebra II, grades 9-12; recommended for Algebra I and II, grades 9-12)

**2012.07.06****Risk Analysis of Shale Drilling Mock Trial: Shale we or Shale we not?, by Maria Orton**

Shale We or Shale We Not? is a unit designed to have students look into their own moral fibers. Students are asked to make a stand and defend their opinions on if shale drilling should commence or if the risks are too great to justify the United States using internal energy sources. Students are asked to emulate a character either representing the prosecution or the defense. They not only need to become experts on shale drilling but they also need to create the arguments against their own stance. There are multiple facets effecting if shale drilling should be done or not. Students will decide for themselves if they initially believe shale drilling should be utilized as an energy source for the United States. Students will need to weigh their feelings between economic effects and environmental effects. There are clear differences between the two sides, but the barriers are a true blur. Which side will your class decide is in the best interest of creating energy for the United States?

(Developed for Chemistry, grade 10; recommended for Chemistry, grade 10, and Forensics, grades 11-12)

**2012.07.07**

**Humans: Champions of Justice or Villains of the Ecosystem?, by Jashonai Payne**

I developed a unit based on self-discovery and scientific knowledge, in order to create young problem-solvers and future citizens who will work diligently to undo the damage humans have exacted on our planet. As a fifth grade teacher, I am responsible for teaching ecology during the school year. Over the years, I have developed a personal interest in this particular subject, finding it fascinating to learn about the various environments which exist around the world and the way in which nature has been able to live harmoniously since the beginning of time. In this unit, I discuss the major ecosystems which exist around the world and the way in which living and non-living factors interact. They learn about the various components in each ecosystem such as climate, location, as well as native plants and animals in these areas. I also present my students with various cases that involve environmental issues which threaten these environments and they must decide whether humans are positively or negatively affecting the world around them. In addition, they must also create a viable solution to solve a problem which exists in their immediate area in order to produce a small change which yields a great impact.

(Developed for Life Science/Ecology, grade 5; recommended for Life Science/Ecology [Elementary], grade 5)

**2012.07.08**

**Energy for the Future, Superheroes Need Not Apply, by Debra Semmler**

Is the idea of inexpensive and environmentally safe energy only a dream? My curriculum unit will address the issues surrounding global energy supply. The curriculum unit will explore the physical laws associated with the production of energy alternatives, energy degradation, and energy density. Students will research energy alternatives and the global energy supplies and develop a plan to provide a country with safe, clean energy for the next twenty-five years. The curriculum unit will address objectives from the International Baccalaureate (IB) physics course including revisiting energy topics addressed in the first year of IB Physics, such as forms of energy and the laws of thermodynamic as they relate to creation of work in a cyclical process. Students will learn about and discuss energy degradation. They will construct and analyze energy flow diagrams and identify where the energy is degraded. Students will research and understand the different world energy sources comparing energy density, direct and indirect costs, environmental impact and advantages and disadvantages of each source of energy.

(Developed for IB Physics III, grade 12; recommended for IB Physics III, grade 12)

**2012.07.09**

**[Processed Food for Thought: Exploring Chemical Additives in Processed Foods](#), by Ann Shioji**

Processed foods are increasingly prevalent in our public schools. Whether disguised as baked, light, or fewer calories per package, unhealthy snacks are often a major part of a student's diet. This unit addresses the issues of the chemical additives found in processed foods and scaffolds methods to find healthier alternatives to calorie-dense foods that are low in nutritional value. Diseases linked to obesity such as Type 2 diabetes and cardiovascular disease are on the rise, but these can be prevented with alterations to diet. While processed foods are convenient and appeal to students' tastes, they include several chemical ingredients that are known to cause harmful health effects in humans. The U.S. has institutions in place to regulate the amount of chemicals allowed in our food, but these regulations are less stringent than those of other developed countries, such as Canada and many European nations. This unit encourages students to explore the issues of food processing and marketing, so that they may analyze their own diets more effectively. This will empower students to make well-informed decisions about their nutrition and health, and inspire them to educate others in their community about the benefits of healthier alternatives to processed snacks.

(Developed for Biology/Macromolecules, grades 9-10; recommended for Biology/Macromolecules, grades 9-10)

**2012.07.10**

**[School Redesign with Environmental Health in Mind](#), by Sara Stillman**

As residents of Emeryville, my high school students have an amazing opportunity to participate in the redesign of our school and construction of a new center for community life. With this opportunity I am hoping to teach my students that there is also a great responsibility to design a center that contributes to the environmental health of Emeryville. This unit focuses on four health issues facing urban environments: Obesity & Absence of Physical Activity, Air Pollution and Respiratory Health, Safety and Personal Security, and the Absence of Green/Recreational Space. Students will begin the unit learning about these four issues and begin making connections to their own urban environment. Then students will gather in groups based upon interest in a particular urban health issue, develop an inquiry question related to our city and center for community life, and research possible solutions to their inquiry questions. The third phase of this unit involves a design challenge, where students use the data from their inquiry research to redesign a space within the center for community life. The design challenge will engage students in model making and designing and building large scale structures.

(Developed for 3D Design and Sculpture, and Visual Arts, grades 11-12; recommended for 3D Design and Sculpture, and Visual Arts, grades 9-12)

**2012.07.11**

**[How Green Is Our School? Energy Conservation Challenge 2012](#), by Amy Thwaite**

The primary learning objective of the unit is that students know the energy resources utilized by humans, namely fossil fuels and the alternatives to fossil fuels. The unit also emphasizes the need for energy resource conservation in developing a sustainable energy future. The unit narrative outlines activities aimed at giving students an understanding of the impact of individual choices as well as institutional energy consumption habits. The student activities include a personal energy use audit as well as an investigation of the energy used by defined sectors within the school site. Students are asked to design their own personal energy conservation plans and work in teams to develop proposals for decreasing the school's energy consumption. Background instruction is provided in basic energy concepts in order to support student understanding in this and subsequent units of the course curriculum. The narrative provides suggested background content in the same sequencing as would be appropriate in delivery to the intended student audience.

Variations on the culminating student projects are offered in order to permit students to develop a general or school-site specific energy conservation plan. This unit is designed with respect to instructional flexibility in the course application, grade level, and content delivery. Although the content is designed for a freshman Earth Science course, it is also appropriate for Physical and Environmental Sciences at the middle or high school levels.

(Developed for Earth Science, grade 9; recommended for Physical Science, Earth Science, and Environmental Science, Middle School and High School grades)