

Curriculum Units by  
Fellows of the  
Yale-New Haven Teachers Institute  
Guide  
2013



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## *Preface*

In March 2013, forty-three teachers from twenty-one New Haven Public Schools became Fellows of the Yale-New Haven Teachers Institute® to deepen their knowledge of the subjects they teach and to develop new curricular material for school courses. Founded in 1978, the Institute is a partnership of Yale University and the New Haven Public Schools, designed to strengthen teaching and improve learning of the humanities and the sciences in our community's schools. Through the Institute, Yale faculty members and Public Schools teachers join in a collegial relationship. The Institute is also an interschool and interdisciplinary forum for teachers to work together.

The Teachers Institute has repeatedly received recognition as a pioneering model of university-school collaboration that integrates curriculum development with intellectual renewal for teachers. Between 1998 and 2003 it conducted a National Demonstration Project that showed the approach the Institute had taken for twenty years in New Haven could be tailored to establish similar university-school partnerships under different circumstances in other cities. Based on the success of that Project, in 2004 the Institute announced the Yale National Initiative to strengthen teaching in public schools®, a long-term endeavor to influence public policy on teacher professional development, in part by establishing exemplary Teachers Institutes following the approach developed in New Haven and implemented in states around the country. Evaluations have shown that the Institute approach exemplifies the characteristics of high-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.

Teachers had primary responsibility for identifying the subjects on which the Institute would offer seminars in 2013. Between October and December 2012, teachers who served as Institute Representatives canvassed their colleagues in each New Haven public school to determine the subjects they wanted the Institute to address. The Institute then circulated descriptions of seminars that encompassed most teachers' interests. In applying to the Institute, teachers described unit topics on which they proposed to work and the relationship of those topics both to Institute seminars and to courses they teach. Their principals verified that their unit topics were consistent with district academic standards and significant for school curricula and plans, and that they would be assigned courses in which to teach their units during the following school year.

Through this process four seminars were organized, corresponding to the principal themes of that emerged during the canvassing. The seminars were:

- “Literature and Information,” led by Jessica Brantley, Associate Professor of English;
- “Immigration and Migration and the Making of a Modern American City,” led by Mary Ting Yi Lui, Professor of History and of American Studies;
- “Environment, Energy, Building,” led by D. Michelle Addington, Gerald Hines Professor of Sustainable Architectural Design; and
- “Asking Questions in Biology: Discovery versus Knowledge,” led by Paul E. Turner, Professor of Ecology and Evolutionary Biology.

Between March and July, Fellows participated in seminar meetings, studied the seminar subject and their unit topics, and attended a series of talks by Yale faculty members.

The curriculum units Fellows wrote are their own; they are presented in four volumes, one for each seminar. The units, which were written in stages over time, contain five elements: content objectives, teaching strategies, examples of classroom activities, lists of resources for teachers and students, and an appendix on the academic standards the unit implements. They are intended primarily for use by Institute Fellows and their colleagues who teach in New Haven. They are disseminated on Web sites at [yale.edu/ynhti](http://yale.edu/ynhti) and [teachers.yale.edu](http://teachers.yale.edu). We encourage teachers who use the units to submit comments at [teachers.yale.edu](http://teachers.yale.edu).

This *Guide* to the 2013 units contains introductions by the Yale faculty members who led the seminars, followed by synopses written by the authors of the individual units. The Fellows indicate the courses and grade levels for which they developed their units and other places in the school curriculum where the units may be applicable. Copies of the units are deposited in all New Haven schools and are online at [yale.edu/ynhti](http://yale.edu/ynhti). A list of the 208 volumes of units the Institute has published between 1978 and 2013 appears in the back of this *Guide*. *Guides* to the units written each year, a topical *Index* of all 1893 units written between 1978 and 2013, and reference lists showing the relation of numerous units to school curricula and academic standards are also online.

The Yale-New Haven Teachers Institute is a permanently endowed academic unit of Yale University. The New Haven Public Schools, Yale's partner in the Institute, has supported the program annually since its inception.

James R. Vivian

New Haven  
August 2013

## ***I. Literature and Information***

### **Introduction**

On Nov. 25, 2012, Sara Mosle published a column in *The New York Times* that posed an important question: “What Should Children Read?” Her answer: more good nonfiction.

Mosle was responding to the debate surrounding the Common Core State Standards now adopted by most states to guide K-12 curricula. Among many other changes, these standards emphasize nonfiction (“reading for information”) over more traditional kinds of literary texts (poems, plays, prose fiction). But reading is a complicated art. One reads to find the answers to questions, to entertain oneself, to communicate ideas, to move emotions – neither varieties of reading matter nor the kinds of skills required to read are divisible into neat categories. In order to clarify (or perhaps complicate) the relation between “literature” and “information,” this seminar explored many kinds of texts and a variety of ways of approaching them.

Specifically, we explored the relationship between fiction and nonfiction, and between literary writing and other kinds. This opened many large theoretical questions, such as how should we define “literature”? What are the purposes of reading? We considered whether some kinds of texts offer transparent containers for information, and how students can learn to be appreciative and critical readers of all kinds of writing. How can nonfiction be literary (or at least well-written)? What kinds of “information” do we get from reading fiction? We thought hard about subjectivity and objectivity, the value of the self, and the problems and opportunities introduced by personal perspective.

We pursued these large questions by reading many different kinds of writing around a number of common subjects that were chosen to provoke reflection. Taking Mosle’s cue, we read a wide variety of accomplished non-fiction, on topics ranging from science (Michael Pollan on food, Stephen Jay Gould on evolution) to social science (Anne Fadiman on cultures of medicine, Douglas Rae on the post-industrial American city) to history (Doris Kearns Goodwin on Lincoln, Diane McWhorter on Birmingham in the Civil Rights era). We also read a diverse selection of fiction, from poems (Christina Rossetti’s “Goblin Market,” speeches from Shakespeare) to short stories (Jhumpa Lahiri, “Interpreter of Maladies”) to satire (Jonathan Swift’s “A Modest Proposal”). Most often, we paired a literary text with an informational one: Is one background reading for the other? We also took a special interest in the kinds of literature and information that are staged in performance, which we explored through documentary film (Spike Lee, *4 Little Girls*) and historical fiction (Steven Spielberg, *Lincoln* and *Amistad*). Throughout the seminar, the relation between history and literature proved especially close, and yet especially vexed. Reading a number of theoretical assessments of the practice of “historicism” as a literary critical method allowed us to pose new questions: In what ways are historical texts themselves “mere” fictions? How can we understand literary texts to open “true” histories?

As we explored the most abstract and heady versions of these questions, we kept in mind the practical considerations that would shape pedagogical practice. An important component of the seminar was our consideration of the relation between students’ reading and their own writing. Often an analytical paper is the response to reading literary fiction. But it is also useful to

imagine the reverse: creative writing as a response to informational reading. We also explored the usefulness of more direct models – reading poetry to write poetry; reading prose nonfiction in order to write it.

The curriculum units that emerged from the seminar balance strategic thinking about the pedagogical value of fiction and nonfiction with concrete plans for using both kinds of writing in the K-12 classroom.

Some units capitalized on the potential of this subject for the youngest students. Breanna Evans, “World Zoo: Parent-Child Interaction,” proposes the interaction of fiction with fact as a way to bring families into their kindergarteners’ educations from the first. Learning about different family structures in the animal kingdom – from seahorse daddies to elephant foster parents – allows children to make associations between these families and their own. Christine Elmore, “Blame It on Little Red Riding Hood,” explores the powers of fact and fiction through a consideration of wolves. Even first-graders know that wolves are “big” and “bad.” Looking at the development of this trope in fairy tales, and measuring its longevity against facts about wolves in the wild, expose students to the ways in which fiction can influence our view of reality. Mary Elmore, “Being the Change,” brings history and fiction together to teach her students about two inspirational champions of nonviolence: Martin Luther King, Jr., and Mohandas K. Gandhi. Intersecting with both Black History Month and International Day, this unit helps students to imagine how they might embody their own dreams.

For students in the middle years, Joan Marie Meehan, “Real People, Real Lives: Biographies of Presidents,” also uses biography to inspire an interest in history and a hope for the future. Presidential lives offer narratives with which students can identify, especially when they are paired with historical fiction set in the period. Similarly, Medea Lamberti-Sanchez, “Stop the Presses: The Newsies Strike out against Child Labor,” introduces students to the history of turn-of-the-century labor relations and policy questions about children in the workplace through song and dance and film. William Wagoner, “Game of Heroes: Exploring Myth through Interactive (Non) Fiction,” uses Joseph Campbell’s paradigms to examine the nature of myth, both historical and fictional. Myth lies between history and fiction, and yet also above either one: How is Perseus like Martin Luther King, Jr.? To answer this question, and others like it, students create their own interactive game in which a hero confronts a set of adventures. To explain the body’s most mysterious organ, Christina Ferraro, “The Brain Manual,” introduces facts about brain physiology and brain functioning, exemplified by a story about a young boy whose brain has (as she says) “differences.” The combination of literature and information in this unit can empower students to use their brains more effectively.

The possibilities for combining literature with information on the high school level are numerous. Molly Seely – in “The First World War: How, When and Why?” – plans a heavily historical and contextual reading of *All Quiet on the Western Front*. In this unit, students extend their understanding of the novel by studying the political history surrounding it, as well as pieces of propaganda such as radio spots or recruitment posters. Marialuisa Sapienza, “The Difficult Task I Face: Adulthood,” also provides students with rich historical and cultural context for a novel, *Under the Feet of Jesus*, by Helena Viramontes. The novel centers on the coming of age of a teenage girl in a family of migrant workers in California in the 1960s, and offers



opportunities not only for literary analysis, but also for new historical understanding and self-examination. Kelly DeLuca, “Making Meaning: The Search for Identity through Family History,” addresses the genre of memoir. Like myth, memoir is a complicated category of narrative: artful history that is nonetheless careful not to cross the line into fiction. Finally, Elizabeth Johnson – “Composition, Computers, and the Common Core” – goes to the heart of one of the new standards, developing a unit that will teach students not only how to read, but also how to write, effective nonfiction.

Jessica Brantley

## Curriculum Units

### 13.01.01

#### **Making Meaning: The Search for Identity through Family History, by Kelly DeLuca**

When YOU are the author, what do you have to say? What message would you convey to your readers that will guide them to greater understanding? In every adult's life there are images, events and people that shape them towards the person they are to become. Some of these chapters are fondly remembered and relayed, and others are things that we wish we could forget but cannot. The ability to write reflectively about our past is an important step toward owning our identity. We empower ourselves through this reflective process because we ultimately learn that we have a message to convey to our readers. Our voice and our story are important. This unit uses a foundation of memoir as a starting point to allow students to investigate what contributes to a person's identity and how this journey to adulthood has been expressed through the genre of memoir. Students read *The Color of Water* and other excerpts, analyze the psychological and sociological processes of searching for identity, and research their own roots through a family history project to answer the question: In what ways does our past affect our future and help to shape our identity?

(Developed for AP Language and Composition, grade 11; recommended for English 3, grade 11, English 4, grade 12, and AP Language and Composition, grades 11-12)

### 13.01.02

#### **Blame It on Little Red Riding Hood, by Christine A. Elmore**

How did the wolf get such a bad rap? In this unit we will be exploring the very rich topic of wolves, from the endangered gray and red wolves and their role in fragile ecosystems, to the unvarying image of the wolf found in traditional fairy tales. To gain a more in-depth perspective on the portrayal of the wolf over time, I have included two excellent texts in my research: *Picturing the Wolf in Children's Literature* (2012) by Debra Mitts-Smith and *Wolf* (2012) by Garry Marvin. These recent publications suggest that this topic remains a timely issue of high interest to many.

Reading literature and informational texts requires different skills, and so my unit will include a variety of book response activities in which students can explore the different features and structure encountered in each text type. This curriculum unit will be interdisciplinary in scope, incorporating reading, history, science, writing and art.

My unit will be divided into four sections:

Section 1: How did wolves get such a bad rap?

Section 2: From fiction...

Section 3: ...to fact

Section 4: Being an activist

(Developed for Reading/Language Arts, grade 1; recommended for Reading/Language Arts, grades 1-8)

### **13.01.03**

#### **Being the Change, by Mary Elmore**

In order for change to come, one has to be intrinsically motivated to create that change within oneself. Mohandas Gandhi and Martin Luther King Jr. lived out their message of change to the world; through their examples, the ideal of non-violence – as a means to advance equality – became a reality. Related literature and informational text will provide my students with the opportunity to “Be the Change” that *they* want to see in the world. I invite you to embrace this initiative through my curriculum unit, as it is interdisciplinary in scope, incorporating history, creative writing, oral language and reading.

The curriculum unit opens with an introduction to the Civil Rights Movement and life work of Dr. MLK Jr. and transitions into a focus on his peaceful protest against segregation. Next, Mohandas Gandhi’s life and Satyagraha movement during the time of India’s Independence Movement is explored so that the unit can culminate with students creating their own messages of change to the world, inspired by these peaceful heroes.

(Developed for Literacy and Social Studies, grade 3; recommended for Literacy and Social Studies, grades 3-5)

### **13.01.04**

#### **World Zoo: Parent-Child Interaction, by Breanna J. Evans**

Kindergarteners have very limited life experiences and many of them have not been exposed to animals from around the world. As a result, when children encounter these animals on standard assessments, they do not know any background information and this hinders them from reading and using context clues. This unit will use both fiction and non-fiction informational texts to teach kindergarteners about the life cycle, habitat and family dynamics of the wolf, elephant, seahorse, and penguin. In addition, students will be learning alongside their parents in an attempt to promote parental engagement in the classroom through read-alouds, class trips to the zoo and family craft days. Both my students and their parents will be able to witness how these animals interact with their babies and the child rearing process in different animal classes.

(Developed for Literacy Block/Social Studies, Kindergarten; recommended for Literacy Block, grades Kindergarten-1)

### **13.01.05**

#### **The Brain Manual, by Christina Ferraro**

Teaching metacognition is a hard thing to do, and yet, it is the heart of all we do as teachers. This unit will introduce students to the organ that makes us who we are. Using a mix of fiction and nonfiction students will gain an understanding of their brain’s inner workings, and examine some of the emotions it inspires, in order to gain confidence in their cognitive abilities. It takes an

immense amount of courage for a child to risk making a mistake in front of their peers. Teaching students about their own learning process, their strengths as well as their needs, will allow students to feel less unique in their reasoning skills and more able to discern which habits of the mind are beneficial in learning and in life. This unit uses a variety of texts to help students understand how the brain develops and why specific comprehension strategies work. Students will be responsible for answering the question: *In what way does this information impact how I learn, and how can I use it to my advantage?*

Emily Dickinson wrote, “The Brain is wider than the Sky.” Teaching students about their brains will help them see this.

(Developed for Language Arts, grade 5; recommended for Language Arts, grades 5-8)

### **13.01.06**

#### **Composition, Computers, and the Common Core: A Twenty-First Century Research Paper, by Elizabeth A. Johnson**

Today’s students are writing all the time. They’re texting, tweeting, and updating their statuses. They’re also writing paragraphs, essays, and presentations in their English classes. The Common Core State Standards have changed writing expectations, though. With a shift toward argumentative writing and nonfiction texts, English teachers are facing a new assignment: The Research Paper. This unit gives teachers the tools and theory to teach a research paper to high-school students. Importantly, this unit integrates technology, a necessary and helpful part of teaching in the twenty-first century. Blogs, online organizers, and more are included to help even the most novice technology user teach a research paper. It is a daunting task for both educators and students, but with planning, computers, and some creativity, every student can write and present authentic research of which he or she can be proud.

(Developed for English 1A and 1B, grade 9; recommended for English, grades 9-12)

### **13.01.07**

#### **Stop the Presses: The Newsies Strike out against Child Labor, by Medea E. Lamberti-Sanchez**

This will be a month-long, reading and writing unit designed for middle-school students, grades five through eight, but may be adapted to fit high-school curriculum for students in grades nine through twelve. In this unit, the students will discuss, research, read, and write about the topic of child labor in America at the turn of the twentieth century, using a variety of multi-media resources that will include the performing arts (music, visual arts, theatre) as well as literature and information pieces that will help build upon prior knowledge. This unit will appeal to students who are auditory, visual, kinesthetic, and linguistic learners. The culminating unit will feature a theatrical performance whereby every student is an “expert” on a person from the newsboy strike of 1899. Students will use the performing arts to showcase their knowledge about the topic of child labor through their performance piece in a “pretend” talk show platform. Read more, if you are excited to make real-life connections to characters, access new knowledge, and write about issues that relate directly to your lives.

(Developed for Language Arts and Social Studies, grades 5-6; recommended for Language Arts and Social Studies, grades 5-8)

### **13.01.08**

#### **Real People, Real Lives: Biographies of Presidents, by Joan Marie Meehan**

“How do I get my students interested in nonfiction?” More teachers are asking this question, as the Common Core State Standards emphasize nonfiction and reading for information. In this unit, students will be introduced to the genre of biography through studies of U.S. presidents. Students will combine reading, research, writing, and oral skills in a project in which they will present to their class about a president and learn from their peers about the other presidents. Students will then connect nonfiction with historical fiction when they are grouped together to embark on a book study of historical novels set in the time when the president they researched lived. This unit is designed to get students excited about reading nonfiction by introducing historical figures and helping students make connections with these individuals from history.

(Developed for Reading, Writing, and Social Studies, grade 4; Recommended for Reading, Writing, and Social Studies, grades 2-5)

### **13.01.09**

#### **The Difficult Task I Face: Adulthood, by Marialuisa Sapienza**

On a warm, partially cloudy, and breezy day, Estrella and her extended family arrive at the barn. Peaches, oranges, avocado trees, biting sun, and two teenage boys who are picking fruits in the surrounding fields become Estrella’s new reality. A little doll with whom she shares her thoughts, her frustrations, and her disappointments is still her best friend. Estrella, the protagonist of *Under the Feet of Jesus* by Helena Maria Viramontes, is a young teenager who is growing up and fights all the way to womanhood. She experiences rejections and prejudice for being the daughter of a migrant mother who cannot afford expensive clothes or health care when it is needed.

My unit goal is to enhance my students’ skills to infer, close-read, analyze, discuss, synthesize, evaluate, and connect text-to-text. With this goal in mind, my students will read a variety of texts – one novel, *Under the feet of Jesus*, excerpts from *Johnny Got His Gun* by Dalton Trumbo, *Go Tell It On The Mountain* by James Baldwin, poems, lyrics, articles from *The New York Times* and *The Los Angeles Times*, visual texts, and video clips. Students will research other sources connected to the unit themes, and will be engaged in a variety of writing: argumentative, explanatory, and narrative.

(Developed for AP English Literature, grades 11-12, and Sophomore English, grade 10; recommended for AP English Literature and Composition, grades 11-12, and Sophomore English, grade 10)

### **13.01.10**

#### **The First World War: How, When and Why? by Molly Seely**

The First World War was an immense time of turmoil throughout the entire world and created a great deal of social and political changes that still affect us today. Many of the issues at the forefront of life during the First World War remain prominent issues today: class warfare, democracy versus other forms of government, the rights of women and minorities and the concept of patriotism.

Few pieces of literature illustrate the points I intend to make better than Erich Maria Remarque's seminal classic *All Quiet on the Western Front*. *All Quiet on the Western Front* follows a teenage boy, just out of high school, as he enlists to fight in the war and comes to question the reasons behind the war and his own motivations for entering the war. By pairing *All Quiet on the Western Front* with contemporary poetry, artwork (such as political cartoons, bond and recruitment posters, and traditional artwork), speeches (for and against the war, from different perspectives, including different countries and organizations) and articles (contemporary and modern), I will give my students a well rounded, broad *and* deep understanding of important facets of the war.

(Developed for English Language Arts, grade 10; recommended for English Language Arts, High School grades)

### **13.01.11**

#### **Game of Heroes; Exploring Myth through Interactive (Non) Fiction, by William C. Wagoner**

This unit will compare and contrast the literature and nonfiction of heroes, both of mythology and history. It will first explore the link between myth and reality: What is the difference between myth and religion? How are such texts, which share so much in common, to be interpreted- as true, as false, or as metaphor? Using Joseph Campbell's theory of the monomyth as the primary reading strategy, the rich literature of any mythology can be analyzed side by side with a wide variety of non-fiction texts, which are emphasized so heavily in the Common Core. How does Theseus' adventure parallel that of Martin Luther King Jr.? In what ways is Gandhi akin to Hercules? The unit will culminate in a student-created, heroic adventure computer game using the text-based Inform programming engine. In this final assessment students will design, write, program, play, and put to the test their knowledge of myth, real life heroes, and the reality of a world full of metaphor and adventure.

(Developed for English Language Arts, grade 7; recommended for English and Social Studies, grades 6-8)

## ***II. Immigration and Migration and the Making of a Modern American City***

### **Introduction**

Cities, whether small or large, comprise an indelible part of the American landscape. This seminar provided eleven New Haven teachers the opportunity to study the complicated processes of U.S. urban formation through the histories of nineteenth- and twentieth-century immigration and migration patterns. To anchor our examination both geographically and chronologically, the seminar focused on three key U.S. cities – New York City, Chicago, and Los Angeles – to provide different examples of migration, settlement, and urban/metropolitan formation across time and space. The seminar also aimed to introduce teachers to a range of primary sources that would enrich the histories of migration and urban formation: photography, films, newspaper articles, cartoons, and maps.

The seminar began by examining the phenomenal growth of antebellum New York City as a result of Western European immigration streams and regional rural to urban migration that included the harrowing escapes of fugitive slaves such as Harriet Jacobs in search of freedom. We paid particular attention to the Five Points neighborhood in Lower Manhattan as a racially and ethnically diverse neighborhood that would change following the violent expulsion of African Americans following the 1863 Draft Riots. This first week set the discussion framework for the following weeks by challenging us to see the ways in which the histories of different migrant groups constantly overlapped, intersected, and diverged in the city. The following weeks focused on understanding how diverse groups of European immigrants and African American migrants encountered the growing metropolis from engaging in public spaces such as Central Park, popular cultural amusements such as Coney Island, or established religious institutions such as the Catholic church to forge their own identities and communities as ethnic Americans. We also studied the responses of social reformers to deal with the rising numbers of migrants and wide range of social, political, and economic concerns.

Following our study of New York City, we moved to Chicago to examine more closely the First Great Migration of African Americans from the South from the 1890s to the end of the First World War that occurred at the same time of large scale Eastern European immigration and settlement to that city. Looking at the business practices of Chicago employers and real estate agents helped make clear the ways in which European immigrants and African American migrants experienced the City of Big Shoulders differently. As the former found opportunities for socioeconomic mobility in the city's industries over time, the latter experienced racial discrimination and violence as evidenced by the 1919 Chicago Riot. Moving to early-twentieth-century Los Angeles brought into focus Asian and Latino migration histories. Our study of the twentieth-century formation of the Los Angeles metropolitan area also made clear the ways in which this city developed differently from the older U.S. cities we had studied. The automobile and, more importantly, the freeway systems that enabled car travel created exclusive suburbs throughout Greater Los Angeles that practiced new forms of class- and race-based exclusion and segregation. The seminar concluded by looking at urban decline and redevelopment following World War II even as immigration re-opened with the 1965 Immigration Act and created new demands on cities.

The seminar emphasized the importance of understanding how the migration histories of the groups of people studied varied greatly as a result of policies, laws, and social and cultural practices. We spent time looking at the ways in which historic understandings of racial difference codified in laws and concretized in daily practices created structures of exclusion that shaped the migration histories of African Americans, Asians, and Latinos differently from European immigrants. For example, nineteenth- and early-twentieth-century Asian exclusion laws greatly limited the migration of Asians to the U.S. The 1924 Immigration and Naturalization Act similarly created national origins quotas that greatly restricted European immigration. As a result, employers sought out African American, Latino, and Filipino workers to satisfy their labor needs. Restrictive covenants placed on property deeds across the U.S., however, limited the possibilities for housing and mobility for non-white groups. By examining these histories of exclusion in the context of cities such as Los Angeles, the Fellows began to see the ways in which the experiences of African Americans, Latinos, and Asian Americans intersected across ethnic and racial lines. In addition, we examined the community formations of different groups of immigrants and migrants and saw the ways in which these communities could also be fractured along lines of class and gender.

The eleven curriculum units that grew out of the seminar reflect the hard work of middle-school and high-school teachers from a diverse range of subjects (Spanish, French, history, English, visual art, and music). Each Fellow included new materials encountered in the seminar and explored ways to help his/her students connect to this largely unfamiliar history. Many made use of local New Haven history to introduce the themes explored in the seminar. The Fellows have also wrestled with satisfying the relevant Common Core standards and curricular guidelines for their grades and disciplines and have come away with some fantastic curriculum units. These units cover a wide range of topics: music making and consumption as linked to histories of migration; visual representations of Irish immigration and the Potato Famine; family history and neighborhood history as migration history; the poetry of migration; the intersecting histories of African American and Latino culture; French Canadian immigration; popular American literature and migration, and reading American urban landscapes to understand the layering of migration and urban histories. We hope that these units will help diversify, deepen, and broaden the ways students will engage with U.S. urban history and immigration and migration history.

Mary Ting Yi Lui



## Curriculum Units

### 13.02.01

#### **Blacks and Latinos: A Linked Journey, by Jean Capacetti**

Learning a foreign language for any student will always prove to be a challenging task, more so if a student has no desire to learn that language. The demographics at the Hyde School of Health Sciences and Sports Medicine play an important role in the motivations of most students. In this unit I will attempt to bridge the gap in cultural understanding and acceptance between young African American students and Latinos. I will do this by presenting two case studies on the migration of African Americans and Latinos to New York through the lens of baseball and Hip-Hop music. The students will research the lives and careers of Jackie Robinson and Roberto Clemente as well as look at the history of the rise of Hip-Hop and explore what role Puerto Ricans had in the 1970s in Hip-Hop. Through this research students will create historical and cultural links with which they can identify. My hope is that once this unit is completed in the classroom more non-Latino students will see the importance and benefit of learning a new language and will be more engaged in language lessons.

(Developed for Spanish 1, grades 9-12, Spanish 2 and Medical Spanish Terminology, grades 10-12; recommended for Spanish and U. S. History, grades 9-12)

### 13.02.02

#### **Voilà Ma Famille: A French-Language Unit on Family and French-Canadian Immigration Cycles to the United States, by Crecia Cipriano**

*But Miss (or Madame as the case may be)... Why do we even have to learn French? France is so far away and nobody speaks French here. What's the point?* Outside of all the standard language teacher responses, there is also the fact that in Connecticut we are so relatively close to a rich French-speaking culture in Québec province, Canada. As we seek to open up possibilities to our young barely-teenaged students, it is imperative that we help them develop a sense of the larger world around them, and how that world is and has been shaped by others over time. It is my hope that this unit will do that in some small way, as we explore the linguistic skills of talking about family within the context of French-Canadian immigration to the United States.

Students will look back in history, starting with a very basic understanding of the period of exploration occurring in the 1500-1600s, moving through the settlement of New France in the 1700s and the Acadian Expulsion in 1755, then to the early twentieth century immigration to the United States, New England in particular. Linguistically, students will revisit aspects of how to introduce oneself in order to then talk about others, making the switch from first to third person language. In order to help students develop a sense of time and change over time, as well as to solidify their working application of forming large numbers, all information and activities will be placed within the context of a particular year or span of years. So students will speak as explorers and immigrants, declaring their roles in space and time.

(Developed for French 1A, grade 7; recommended for French, Middle School, grade 7)

### **13.02.03**

#### **Irish Immigration and the Power of the Visual Image, by Mary-Doris Devlin**

Irish immigration will be used as a starting point to learn about immigration (1850s to early 1900s) through the lens of the visual image. This unit will focus on how artists used the visual image to influence popular opinion of the Irish immigrants and other immigrant groups. Students will develop a better understanding of why the Irish left Ireland, and about how the Irish were often viewed as being less than human, not only by the British, but also here in America. The unit will also cover what life was like, in terms of living and working conditions as well as education levels, when they reached America. This will give students a better understanding of why the political cartoons and other visual images would have been so effective in their ability to convey political opinions and cultural/social biases in the form of visual information. This unit will culminate in students designing their own memorial to commemorate Irish immigrants. The unit will combine visual arts, history and technology. Electronic drawing tablets will be used for creating visual images.

(Developed for Photoshop, grades 11-12; recommended for Visual Arts, Drawing, Photoshop, and Sculpture, grades 11-12)

### **13.02.04**

#### **A Modern American Family: Creating a Historical Record in the Middle-School Social Studies Classroom, by Tara L. Ehler**

This unit will ask 8<sup>th</sup>-grade students to write the story of an American family through “primary” documents. That is, to create newspaper articles, journal entries, photographs, drawings and letters in order to tell the story of a modern family in New York. This collection will have to touch upon three themes of American history: conflict, class, and migration. For each of their five artifacts, students will have to write a “secondary” document that explains the context of the item.

(Recommended for U.S. History, grades 8-12)

### **13.02.05**

#### **Growing Up in Urban America, by LaShante A. James**

In this unit, students will analyze literary texts, photographs and films that document the adolescent immigrant/migrant experiences during the early nineteenth to late twentieth century and the change of the immigrant experience over time. By the end of the unit, students should be able to analyze historical text, examine the immigrant/migrant experience, develop meaningful connections as an adolescent growing up in urban America, and finally, document how the urban experience has shifted over time. Readings and supplemental material are organized based on historical events. With the material broken down into time periods, students will be able to form connections beyond race or ethnic groups, because it is important for them to see that there were shared experiences that were economic as well. The experience of the immigrant/migrant should be the focus, as well as how those experiences were shaped by the time period and presented comparative or contrasting experiences. As the unit progresses, students will independently

journal their own urban experience. This will culminate into a final project documenting their personal experience. Ultimately, students will be able to determine how environment impacts one's life in a way that crosses racial and ethnic barriers.

(Developed for English II, grade 10, and English IV, grade 12; recommended for English II, grade 10; English III, grade 11; and English IV, grade 12)

### **13.02.06**

#### **Exploring Bloodlines through Immigration and Migration, by Pamela Monk Kelley**

The purpose of this curriculum unit is to engage students in a classroom “outside school walls,” as well as to invite them to explore their bloodlines to ignite a family-centered dialogue about origins and pride. The scope of this unit concerns immigration and migration of Latinos and African Americans. Members of these groups share histories of migration and struggle; students will learn how histories of race, ethnicity and class dramatically shaped the possibilities for migrants upon their arrival in northern cities. This unit will help to empower students whose family histories may indeed be complicated, but worth exploring. Students will create a documentary which includes placing the students on a journey back to their homelands, before immigration/migration into American cities. This is a historical and educational experience that will engage students with many connections to United States history. Students will virtually travel in the same footsteps as their ancestors by uncovering the story behind their migrating from the South (or other homelands), aligning with benchmarks, and bringing life to the history books.

(Developed for U. S. History II, grade 11; recommended for U. S. History/The Great Migration, grades 10-11)

### **13.02.07**

#### **Cityscapes and the American Identity, by Melissa Dailey McCormack**

This unit, born out of the immigration and migration seminar and the guiding questions in my American Studies course, will combine real-world actions with historical research. The guiding questions are: What role do cityscapes play in forming our individual and communal identities? What is our role in shaping and reshaping the ever-changing urban landscape? Nineteenth and 20<sup>th</sup> century New York is the main area of study, but also serves as a comparison for understanding New Haven. In New York, it is evident that the changing value systems of the various classes and ethnicities are revealed through the landscape. Starting with the Five Points and moving through periods of urban renewal to future visions of the city, we will explore the progression and interconnection of landscapes, values, and people. Some poetry, *Maggie: A Girl of the Streets*, along with the films *West Side Story* and *I Am Legend*, can help to hone students' close reading skills and help them evaluate landscapes' role in forming cultural identities and personal identities as well as exposing power dynamics. This will all work toward the students' final project that focuses on a part of the New Haven cityscape or a film that tackles the cityscape.

(Developed for English 3 and American Studies, grade 11; recommended for English 3 and American Studies, grade 11)

### **13.02.08**

#### **Understanding Immigrant and Migrant Fiction, by Matthew S. Monahan**

This unit is primarily intended for the eleven-twelve ELA (English Language Arts) band. The duration is six to eight weeks. Students completing this unit will use *Drown* by Junot Diaz as an anchor text in their exploration of immigrant and migrant fiction. In addition to reading, discussing, and writing about such themes as assimilation, acculturation, and coming of age in the immigrant and migrant contexts, small groups of students work cooperatively to find and create artifacts using a variety of primary and secondary sources to establish an interactive timeline.

Through the continued development of their timelines, students establish how immigration laws and policies, as well as patterns of immigration, have changed over time. Timeline exercises relate to the fiction pieces they are reading in the unit both explicitly and implicitly.

Upon completion of this six-to-eight-week unit, honors contract students will produce a published piece of writing (i.e. a piece that has been put through the five-step writing process) between six and nine pages in length; students without honors contracts will publish two, three-to-four -page papers. Regardless of the scope of student work, the writing will present an argument and will incorporate both narrative and informational/expository techniques.

(Developed for English, grade 12; recommended for English, grades 11-12)

### **13.02.09**

#### **Did Things Get Better? Poetry from the Cultural Perspective of American Movement, by Robert M. Schwartz**

Culture is born of background and upbringing combined with experience. Poetry is an expressive representation of culture. Taking these things into consideration, this unit will center on poetry from the perspective of the people who write it. Following a physical and an electronic map of the United States (highlighting the routes of immigration and migration taken by specific ethnic groups during specific periods in U.S. history, and stylized with photographs and snippets of verse), students will learn the art they are experiencing was inspired by struggle and triumph, change and adaptation, experience and blossoming culture. Through profiles and poetry, students will spotlight experiences of prominent poets, including African Americans in Manhattan and Chicago, Arab-Americans, Chinese immigrants in San Francisco, and more. Students' focus will be to thematically and stylistically connect the poetry with the experience that inspired it, so they may synthesize that art, literature, and poetry are reflections of life.

Students will also contemplate whether all this movement (immigration and migration) accomplished the original goal of those who migrated, which was to improve their station in life. They will ask about the experience of the migrants, did things get better? Their product will be an original book of poems, including original renditions of the styles they learn, and reflections

on historical experiences, including how they connect to current day, as well as an essay describing whether they think the movement improved the station and lifestyle of the migrants, using evidence from the poetry they study.

(Developed for Language Arts/Poetry, grade 8; recommended for Language Arts/Poetry, grade 8, and English 1/Poetry, grade 9)

### **13.02.10**

#### **New Haven History: Block by Block, by Jesus Tirado**

“Why are there so many buildings here?” one student asked me as we walked by the New Haven Green. This was an interesting question, one that reminded me that with all the hours we spend discussing American history, New Haven seems to be relatively forgotten or ignored. While the anecdote could be taken in several ways, it is an opportunity to bring history alive in our classrooms. The limitations of the classroom often mean that students miss out on learning their own local history. The goal of this project is simple, even if the execution might seem a little daunting. In order to understand their city and their neighborhoods better, this project aims to teach our students how to become oral historians and write the histories of their blocks. Students will learn how to conduct interviews, read maps, both current and historical, and how to compile their data to tell a story about their block. In short, students will, through learning skills and doing work, become the historians of their block. In principle, if done well, this project can be added to throughout the years as students build their own history of New Haven and find the parallels that shape the national trends and stories in their textbooks.

(Developed for U. S. History 2, grade 11; recommended for U.S. History 2 and Civics, grades 11-12)

### **13.02.11**

#### **How Music Moved: The Genesis of Genres in Urban Centers, by Nathan Trier**

My curriculum unit examines how music has served as a catalyst for interactions between social groups, ranging from creative exploration and new styles of music to conflict and violence. The unit will address the Great Migration from the southern United States to the northern Midwest, the “Zoot Suit” phenomenon among Mexican-Americans (and Filipinos and Japanese immigrants) in California, and role of Puerto Rican musicians in representing American music abroad and also in creating hip-hop in New York City. For each genre, students will learn about the migration and immigration patterns that served as catalysts for each new genre’s emergence, focusing on (but not limited to) work and housing. Students will also learn about the class- and race-related issues regarding the music’s acceptance by “mainstream” culture.

(Developed for Music in America, Jazz Band, and Concert Band, grades 9-12; recommended for Jazz Band, grades 9-12)

### **III. “Sustainability: Means or Ends?”**

#### **Introduction**

We typically think of sustainability as resulting from a societal adherence to an established list of protocols and procedures. If our actions are derived from this list, then surely the results will contribute to a more sustainable planet. As such, we have assigned moral value to those actions: those whose intentions are deemed as sustainable, regardless of the actual long term results, are good or right, whereas all other actions, including those that are normative, are bad or wrong. Photovoltaics represent sustainability and therefore must indeed be sustainable. If conventional engineered materials are detrimental, then materials that nominally evoke the natural must be beneficial. Walls constructed from straw bales are good, facades sheathed in titanium are bad. Technologies such as nuclear power that don’t consume fossil fuels in their operation are good regardless of all other consequences. Check-off lists don’t allow for ambiguity or contingency.

Our failure to curb the ever increasing rise in energy use or to stem the impact of energy on climate change is often attributed to a societal failure in collectively implementing the agreed upon list of sustainable actions. In 2000, the U.S. consumed forty-five percent more energy than it did in 1970, and it is expected to consume ninety-three percent more by 2020. This measured and projected data corresponds to time periods in which numerous initiatives for conserving energy have been put in place. Good intentions have not produced effective results.

Rather than looking at the accepted rules and solutions that are currently associated with sustainability, this seminar stepped back to redefine the problems by asking deeper questions. What are the fundamental behaviors and laws, and how do we causally develop approaches based on an understanding of the relevant variables and properties? How do different systems interact? What domains must we consider? The units developed during this seminar are representative of these deeper, more complex questions.

D. Michelle Addington

## **Curriculum Units**

### **13.03.01**

#### **Light, Vision, Art, by Carol Boynton**

Science and art are ideal subjects for young students. Their innate curiosity encourages them to ask questions, look for answers, try new methods and look at things in a new way. The strategy of inquiry comes very naturally to them as they begin to navigate the physical world and learn what it has to tell them.

In this six-week curriculum unit, science students in second grade will experiment with light and how we, as humans, see objects and color. Through a variety of hands-on activities and experiments, the students will learn the fundamentals of the physics of light, the biology of vision, and art as an intersection of the two.

There are three main concepts that students explore throughout this unit: to understand that seeing (or vision) is a process that requires light; to learn how the basic vision process works; and to understand how artists (like themselves) use light and vision in conjunction with each other to create their work. There are three main areas of focus. The students will experiment with reflection, refraction, and diffusion; they will create a basic model of the exterior and interior of the human eye; and they will work with the interaction of light and vision to create and analyze art.

(Developed for Science, grade 2; recommended for Science, grades 1-3)

### **13.03.02**

#### **Robotic Construction Using Sustainable Energy and Design, by Jonathan Cap**

This unit explores the field of robotics, the construction of robots, and how to create robots that are more sustainable. Being sustainable has to do with the amount of energy an object or robot uses, how much material an object or robot is made up of, and the type of materials the object or robot is constructed out of. Sustainability begins when an object is first created, or in this case, how a robot is designed. Students will be given the opportunity to experiment with various designs to test power and efficiency while trying to create a sustainable product. Before something becomes a tangible product, it is an idea. Students will need to think about the design of their robot prior to construction in order to make sure it is sustainable. Students will be given the opportunity to brainstorm their ideas in class alone and with a partner by using graphic organizers to help develop their ideas prior to beginning constructions, which will allow them ample time to think about energy, efficiency, and sustainability.

(Developed for Robotics, grades 9-12; recommended for Robotics, grades 9-12)

### **13.03.03**

#### **Green Construction, by Larissa Giordano**

This interdisciplinary unit will combine science curricula on energy sources and the environment with social studies curricula outlining communities and their societal place. The unit is intended to show students the need to sustain natural resources in an effort to build a community that not only shrinks its footprint but preserves the environment to fit the needs of the future. Students will therefore be better prepared to take more responsibility in their decisions, in their learning and in their job as a thoughtful member of a community. Students will be able to evaluate the environmental issues involved in community planning and make changes to existing communities as they design their own sustainable community.

This unit will better instruct students through interdisciplinary connections, about the effect of their own ecological footprint and best practices to reduce it. They will understand how human activity and industrialization add to environmental pollution which then affects the enclosed habitats. They will recognize and understand the need for sustainability in a world of consumption. Students will know what it means to be “green” as they learn about energy sources and their place in the powering of a community. Students will also have a clearer understanding about urbanization, the three different types of communities and their members.

(Developed for Science, Social Studies, and Language Arts, grade 2; recommended for Science, Social Studies, and Language Arts, Elementary grades 2-6)

### **13.03.04**

#### **The Cost of Our Futures: Oil Markets and Government Intervention, by William Lawrence McKinney**

In this unit, students will examine the effects of subsidies toward fossil fuels, particularly those to petroleum. Students will learn how subsidies incentivize production and consumption of products and that while the role of government intervention in the economy is to move production toward social efficiency, the government often overlooks marginal costs to society in order to provide increased marginal benefits. That is, tangible benefits to society, like increased production, which can partly be measured by an increase in gross domestic product (GDP), often outweigh intangible costs to society like global warming and future negative environmental impacts. Students will debate the extent to which the government should intervene. Should the government prioritize innovation and promote alternative renewable energy sources or should it focus on growing the economy in whatever way is most efficient?

(Developed for AP Microeconomics, grade 11; recommended for AP Microeconomics, grades 11-12)

### **13.03.05**

#### **Designing a Micro-Apartment, by William O’Shea**

The population of the world is growing exponentially. The United States Census Bureau projects the population of the United States to increase more than 25% over the next 37 years. The City



of New Haven, like the City of New York, is likely to experience substantial population expansion. Will these two great American cities benefit from this growth or experience it as a burden? How will we house the future urban dwellers of America? What benefits are to be gained from this migration to the city?

Students at New Haven Academy are looking at one possibility. In a new course, “The Design Process,” students are designing and constructing models of Micro-Apartments to address the anticipated densification of New Haven. Are there energy benefits to be realized?

In this unit, students will develop the skills necessary to meet a Micro-Apartment design challenge much like the challenge Michael Bloomberg, mayor of New York City, proposed in 2012; to design a very small apartment that can house one or two people that conserves space and harnesses the benefits of increased urban density living.

(Developed for Introduction to Design STEM course, grades 11-12; recommended for STEM coursework, grades 9-12)

### **13.03.06**

#### **Save Our Sea Creatures One Plastic Bottle At a Time, by Nicole Valente**

Since my students are always willing to lend a helping hand, I want to teach them about the importance of recycling and the effects recycling has on marine life. My unit will give students knowledge of what is happening in the ocean and how recycling affects the sea creatures. Through the lessons students will gain understanding of what is plastic, the functions and uses of plastics, how to sort plastic with the recycling codes and their meaning, what happens to plastic when it isn’t recycled and the effects on sea creatures, different types of sea creatures and how they ingest the plastic particles in the garbage patch. After the lessons are completed, the students will then do an expository writing piece through illustrations and writing about two facts they learned from the unit.

(Developed for Writing, Mathematics, and Science, grade Kindergarten; recommended for Writing, grade Kindergarten; Math, grade 1; and Science, grade 2)

#### ***IV. 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, active-learning exercises, 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 especially intended for teachers of biology, but at all grade levels.

The resulting units were diverse, reflecting the varied interests and backgrounds of the Fellows. Terry Bella developed a unit on enzymes targeted for high-school students, which uses question-generating activities to emphasize that knowledge of enzyme function is crucial for human applications, such as bioremediation. Laura Carroll-Koch’s unit takes students on a journey to understand the biodiversity of Long Island Sound, and to question how organisms have adapted to the many habitats of the Sound and how they function together in this rich ecosystem. Lindsey Flanick focuses on the amazing scientific discoveries achieved through using HeLa cells, ranging from polio vaccines to cancer therapy, and the ethical controversies that come from harnessing these cells originally isolated from Henrietta Lacks, an unfortunate victim of cervical cancer. Shaunquetta Johnson’s unit emphasizes student exploration of everyday body

function, bravely using flatulence as a focus for asking questions on how our bodies work, even when we are embarrassed by their sounds and smells! Waltrina Kirkland-Mullins' unit uses fiction and nonfiction readings on insects and their adaptive traits, to motivate elementary students to ask questions on why organisms differ; the activities in this unit stimulate youngsters to harness their innate curiosity and to empower them to think like scientists. Similarly, Laura Namnoum's unit is designed for young learners, emphasizing question-asking about plant life cycles, with a goal to using this acquired knowledge to hypothesize how and why animal life cycles differ according to their specific environments. Victoria Raucci's unit engages students to compare and contrast differences between human eyes and dog eyes, with the goal of better understanding these familiar organisms while creating a "judgment-free" classroom environment where students are allowed to openly question how traits work. Kathleen Rooney's unit looks at classroom instruction in mathematics and statistics in the age of easy Internet accessibility to facts, emphasizing that it is still vital to ask questions in the classroom, even in subjects where students perceive there can only be one correct answer. Larissa Spreng's unit looks at Long Island Sound, with the understanding that students are often unfamiliar with natural areas located in their own backyards, and uses field trips to encourage students to better appreciate and ask questions about their natural surroundings.

Paul E. Turner

## Curriculum Units

### 13.04.01

#### **Asking Questions about Enzymes, by Terry M. Bella**

This is a unit that covers the Connecticut high school science content requirements concerning enzymes. In order to generate increased student interest and involvement with the content, this unit guides the instructor through a method of teaching enzymes through question-generating activities and current uses for enzymes in bioremediation. Students naturally have questions about enzymes, and this unit harnesses that intrinsic energy, resulting in a highly engaged class.

(Developed for AP Biology, grades 10-12; recommended for Biology, all levels, grade 10)

### 13.04.02

#### **Just Ask! Exploring Marine Life of Long Island Sound, by Laura Carroll-Koch**

Life, thriving, struggling, competing, adapting, and evolving. This unit is designed to take fourth-grade students on a journey of discovery promoting observation, nurturing wonder, and cultivating curiosity as students learn to use their own questions to lead investigations of marine ecosystems. An exploration of marine life in the Long Island Sound will reveal the intricate, interdependent relationships between marine creatures and their environment. This study will enable students to construct a reservoir of knowledge from which their questioning will evolve, driving and inspiring a thirst for understanding. Students will learn how to think about a subject; reflecting on research and drawing upon new insights to develop their questions. As students dive into the subject, they will discover connections among the marine life of this ecosystem as they create a visual display of collective learning on a classroom wall mural.

(Developed for Science, Reading, and Writing, grade 4; Recommended for Science, Reading, and Writing, grades 3-5)

### 13.04.03

#### **Cell Biology: From HeLa Cells to the Polio Vaccine, by Lindsey Flanick**

This is a unit designed for high school biology students. It utilizes Rebecca Skloot's *The Immortal Life of Henrietta Lacks* and the groundbreaking discovery of HeLa cells to teach students about cell biology, pathogens and infectious diseases. The story of Henrietta Lacks and significance of HeLa cells provide a case study to engage students in the material and to teach them about the importance of asking questions in scientific discovery. HeLa cells are the oldest and most commonly used immortal cell line in scientific research. When cervical cancer cells were taken from Henrietta Lacks in 1951, doctors, researchers and scientists had no idea of the impact they would have on cell biology and health. HeLa cells have been used to develop vaccines, in cancer and AIDS research and in numerous genetic studies.

Students will use the discovery of HeLa cells and their use in research to study cell biology topics such as cell growth, cell division, viruses and vaccine development. This unit addresses both inquiry and content standards for New Haven Public Schools and focuses on identifying and developing scientific questions that can be answered through scientific investigation.

(Developed for Principles of Biomedical Science, Biology, grades 9-10; recommended for Biology, grade 10)

#### **13.04.04**

##### **Just Let It Go! by Shaunquetta N. Johnson**

Who? What? When Where? Why? How? These are the basic questions students learn to ask to deepen their comprehension of any given subject. Students are very curious about how their bodies work, noises their bodies make, and how to be healthy. My goal is to utilize and transfer the basic questions into science, helping students become more curious about how and why things work. I want students to contemplate the parts and functions of their body and how their choices to treat their body affect their health.

The main objective of this unit is to motivate students to ask questions in science, particularly biology. The unit is intended to address asking questions as a strategy to increase knowledge. Students will gain confidence by asking questions and researching a touchy topic, flatulence. Students will learn that even the most embarrassing or funny occurrence deserves educated discourse. This unit is designed for elementary students with the flexibility to extend to all grade levels.

(Developed for Science, grade 3; recommended for Elementary Science, grades 3-5)

#### **13.04.05**

##### **Fiction, Non-Fiction and Query to Engage Young Learners, by Waltrina Kirkland-Mullins**

Our goal as educators in the 21st century is to empower students to become critical thinkers. Despite ongoing efforts to enhance pedagogical practices through the use of Common Core standards, we continue to find ourselves caught prepping students for state-and-district-mandated exams, leaving limited room for creative, engaging classroom instruction across disciplines to help achieve our desired objective. As a result, many students lose out on being encouraged or inspired to use their metacognitive know-how to its fullest capacity. How do we counter this trend? Collaborative, inquiry-based learning undergirded by topics of interest to young learners serve as an empowering solution. My curriculum unit embraces this approach. Targeted at students in third grade, the unit serves as a collaborative inquiry adventure, taking an up-close look at predacious insects and more. Through small and whole-group brainstorming sessions, hands-on investigation, field trips, related reading, and research activities, students will work as a collaborative community directing their course of instruction. Together, they will develop, explore, discover, and enthusiastically embrace fascinating information regarding select arthropods. Fully immersed in the student-focused learning experience, “blossoming entomologists” will make text-to-world connections, embracing themselves as valued, empowered members of a welcoming learning community.

(Developed for Language Arts and Social Development, grades 2-5; recommended for Science, Language Arts, and Social Development, grade 3)

### **13.04.06**

#### **Inquiring about Organisms, by Laura J. Namnoum**

This unit is designed to build primary students' confidence and ability to ask questions while focusing on living organisms' life cycles. The unit is intended for students in grades kindergarten through second. Students will learn about organisms using an inquiry-based method to foster their natural sense of wonder. Students will learn that living things go through stages as part of a life cycle. First, students will focus only on plants' life cycles, including needs for survival. The teacher will model questioning by asking questions and prompting inquiry discussions. Students will ask questions and make hypotheses as well. They will conclude the unit by using their knowledge about plants' life cycles to study another organism's life cycle. This will allow students to compare and contrast life cycles and will generate questions and hypotheses about other organisms, based on what they already observed with plants. As a result of this unit, students will have the skills to ask questions in all areas of life and seek answers independently.

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

### **13.04.07**

#### **How Man's Best Friend Sheds Light on Light: An Inquiry-Based Approach to Understanding Light and Color, by Victoria A. Raucci**

The fifth-grade science curriculum demands that students learn about light and color. How can we fully engage the students and make them responsible for their own learning? Get them to ask questions! In this unit, students will compare and contrast the structure of a human eye to a canine eye, explore how the different types of eyes perceive light, and examine the properties of light. As students work through the scientific process to understand each concept, they will raise themselves to new awareness and a deeper understanding as they continually question their findings in a safe, judgment-free environment.

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

### **13.04.08**

#### **Looking for Answers, Asking Questions with Data, by Kathleen Rooney**

Students need practice in becoming active problem solvers in mathematics. Too often they believe that there is one correct way to look at a problem and so they distrust their ability to make sense of a problem. They are often reluctant to follow a path of inquiry, ask questions, or propose solutions. Biology and general science as well as math and statistics are important subjects for students. Helping students to succeed in these subjects has much to do with their comfort in asking questions and crafting problem-solving methods that will lead them to productive answers.

This unit will examine theories of why and how people inquire, and how as teachers we can cultivate the asking of questions. I will talk about the way that questions can turn into plans to find answers. I will look at this process in the math classroom. I will also examine the way that asking questions and seeking answers has changed for students who have constant access to

looking up information. I will relate this to the way that asking questions through data has changed in the era of online data collection. This unit will also outline strategies to use in the classroom to create a culture of asking questions to help students be persistent problem solvers.

(Developed for Statistics for Health and Business, grade 12, and AP Statistics for grades 11-12; recommended for Statistics, grades 10-12)

### **13.04.09**

#### **The Scientific Method Goes Swimming in the Long Island Sound, by Larissa Spreng**

New Haven is a unique city filled with rich history, diverse people, and varying landscapes. One of its top attractions for many coastal lovers is its location along an estuary, the Long Island Sound. However, over the past two years I have discovered by probing my students with questions about the Long Island Sound, that they know little about this rich natural resource.

By beginning the seventh- or eighth-grade school year with this unit, students can quickly review and elevate their inquiry skills, while applying biological content. This unit also focuses on creating a sense of community and understanding about the local area around New Haven, as the Long Island Sound is right in our backyard.

This unit encourages students to ask questions about the Long Island Sound through the help of a classroom field trip that gives students a chance to explore and inquire about their local community. This curriculum unit can also serve as a springboard for the New Haven Science Fair. Through participation in this event, students can practice proposing questions, evaluating their thinking, and defending their conclusions, as did famous biologists that came before them!

(Developed for General Science, grades 7-8; recommended for General Science, Middle School grades 6-8)

**Curriculum Units by Fellows of the  
Yale-New Haven Teachers Institute  
1978-2013**

**2013**

Volume I	Literature and Information
Volume II	Immigration and Migration and the Making of a Modern American City
Volume III	Sustainability: Means or Ends?
Volume IV	Asking Questions in Biology: Discovery versus Knowledge

**2012**

Volume I	Understanding History and Society through Visual Art, 1776 to 1914
Volume II	The Art of Biography
Volume III	Anatomy, Health, and Disease: From the Skeletal System to Cardiovascular Fitness
Volume IV	Engineering in the K-12 Classroom: Math and Science Education for the 21st-Century Workforce

**2011**

Volume I	Writing with Words and Images
Volume II	What History Teaches
Volume III	The Sound of Words: An Introduction to Poetry
Volume IV	Energy, Environment, and Health

**2010**

Volume I	Interdisciplinary Approaches to Consumer Culture
Volume II	The Art of Reading People: Character, Expression, Interpretation
Volume III	Geomicrobiology: How Microbes Shape Our Planet
Volume IV	Renewable Energy

**2009**

Volume I	Writing, Knowing, Seeing
Volume II	The Modern World in Literature and the Arts
Volume III	Science and Engineering in the Kitchen
Volume IV	How We Learn about the Brain
Volume V	Evolutionary Medicine

**2008**

Volume I	Controlling War by Law
Volume II	Storytelling: Fictional Narratives, Imaginary People, and the Reader's Real Life
Volume III	Pride of Place: New Haven Material and Visual Culture
Volume IV	Representations of Democracy in Literature, History and Film
Volume V	Forces of Nature: Using Earth and Planetary Science for Teaching Physical Science
Volume VI	Depicting and Analyzing Data: Enriching Science and Math Curricula through Graphical Displays and Mapping



## Curriculum Units by Fellows (continued)

### 2007

Volume I	American Voices: Listening to Fiction, Poetry, and Prose
Volume II	Voyages in World History before 1500
Volume III	The Physics, Astronomy and Mathematics of the Solar System
Volume IV	The Science of Natural Disasters
Volume V	Health and the Human Machine

### 2006

Volume I	Photographing America: A Cultural History, 1840-1970
Volume II	Latino Cultures and Communities
Volume III	Postwar America: 1945-1963
Volume IV	Math in the Beauty and Realization of Architecture
Volume V	Engineering in Modern Medicine
Volume VI	Anatomy and Art: How We See and Understand

### 2005

Volume I	Stories around the World in Film and Literature
Volume II	The Challenge of Intersecting Identities in American Society: Race/Ethnicity, Gender and Nation
Volume III	History in the American Landscape: Place, Memory, Poetry
Volume IV	The Sun and Its Effects on Earth
Volume V	Ecology and Biodiversity Conservation

### 2004

Volume I	The Supreme Court in American Political History
Volume II	Children's Literature in the Classroom
Volume III	Representations of American Culture, 1760-1960: Art and Literature
Volume IV	Energy, Engines, and the Environment
Volume V	The Craft of Word Problems

### 2003

Volume I	Geography through Film and Literature
Volume II	Everyday Life in Early America
Volume III	Teaching Poetry in the Primary and Secondary Schools
Volume IV	Physics in Everyday Life
Volume V	Water in the 21st Century

### 2002

Volume I	Survival Stories
Volume II	Exploring the Middle East: Hands-On Approaches
Volume III	War and Peace in the Twentieth Century and Beyond
Volume IV	The Craft of Writing
Volume V	Food, Environmental Quality and Health
Volume VI	Biology and History of Ethnic Violence and Sexual Oppression

## Curriculum Units by Fellows (continued)

### 2001

Volume I	Medicine, Ethics and Law
Volume II	Art as Evidence: The Interpretation of Objects
Volume III	Reading and Writing Poetry
Volume IV	Race and Ethnicity in Contemporary American Art and Literature
Volume V	Bridges: Human Links and Innovations
Volume VI	Intelligence: Theories and Developmental Origins

### 2000

Volume I	Women Writers in Latin America
Volume II	Crime and Punishment
Volume III	Constitutional and Statutory Privacy Protections in the 21 <sup>st</sup> Century
Volume IV	Ethnicity and Dissent in American Literature and Art
Volume V	Sound and Sensibility: Acoustics in Architecture, Music, and the Environment
Volume VI	The Chemistry of Photosynthesis
Volume VII	Bioethics

### 1999

Volume I	Women's Voices in Fiction
Volume II	Art and Identity in Mexico, from the Olmec to Modern Times
Volume III	Immigration and American Life
Volume IV	Detective Fiction: Its Use as Literature and as History
Volume V	How Do You Know? The Experimental Basis of Chemical Knowledge
Volume VI	Human-Environment Relations: International Perspectives from History, Science, Politics, and Ethics
Volume VII	Electronics in the 20th Century: Nature, Technology, People, Companies, and the Marketplace

### 1998

Volume I	The Use and Abuse of History in Film and Video
Volume II	Cultures and Their Myths
Volume III	Art and Artifacts: The Cultural Meaning of Objects
Volume IV	American Political Thought
Volume V	Reading Across the Cultures
Volume VI	Selected Topics in Contemporary Astronomy and Space Science
Volume VII	The Population Explosion

### 1997

Volume I	Twentieth Century Latin American Writing
Volume II	American Children's Literature
Volume III	American Maid: Growing Up Female in Life and Literature
Volume IV	Student Diversity and Its Contribution to Their Learning
Volume V	The Blues Impulse
Volume VI	Global Change, Humans and the Coastal Ocean
Volume VII	Environmental Quality in the 21st Century

## Curriculum Units by Fellows (continued)

### 1996

Volume I	Multiculturalism and the Law
Volume II	Environmental and Occupational Health: What We Know; How We Know; What We Can Do
Volume III	Race and Representation in American Cinema
Volume IV	Remaking America: Contemporary U.S. Immigration
Volume V	Genetics in the 21st Century: Destiny, Chance or Choice
Volume VI	Selected Topics in Astronomy and Space Studies

### 1995

Volume I	Gender, Race, and Milieu in Detective Fiction
Volume II	Film and Literature
Volume III	The Constitution and Criminal Justice
Volume IV	Coming of Age in Ethnic America
Volume V	The Geological Environment of Connecticut

### 1994

Volume I	Family Law, Family Lives: New View of Parents, Children and the State
Volume II	Poetry in the Classroom: Incentive and Dramatization
Volume III	Understanding the Ancient Americas: Foundation, Flourishing, and Survival
Volume IV	Racism and Nativism in American Political Culture
Volume V	The Atmosphere and the Ocean

### 1993

Volume I	The Symbolic Language of Architecture and Public Monuments
Volume II	Folktales
Volume III	Twentieth-Century Multicultural Theater
Volume IV	The Minority Artist in America
Volume V	Environmental Science

### 1992

Volume I	The Constitution, Courts and Public Schools
Volume II	Writing and Re-writings of the Discovery and Conquest of America
Volume III	Reading and Writing the City
Volume IV	The National Experience: American Art and Culture
Volume V	Ecosystems: Tools for Science and Math Teachers

## Curriculum Units by Fellows (continued)

### 1991

Volume I	Regions and Regionalism in the United States: Studies in the History and Cultures of the South, The Northeast and the American Southwest
Volume II	The Family in Art and Material Culture
Volume III	Afro-American Autobiography
Volume IV	Recent American Poetry: Expanding the Canon
Volume V	Adolescence/Adolescents' Health
Volume VI	Global Change

### 1990

Volume I	The Autobiographical Mode in Latin American Literature
Volume II	Contemporary American Drama: Scripts and Performance
Volume III	The U.S. National Parks Movement
Volume IV	American Family Portraits (Section I)
Volume V	American Family Portraits (Section II)
Volume VI	Genetics
Volume VII	What Makes Airplanes Fly? History, Science and Applications of Aerodynamics

### 1989

Volume I	American Communities, 1880-1980
Volume II	Poetry
Volume III	Family Ties in Latin American Fiction
Volume IV	Detective Fiction: Its Use as Literature and History
Volume V	America as Myth
Volume VI	Crystals in Science, Math, and Technology
Volume VII	Electricity

### 1988

Volume I	The Constitution in Public Schools
Volume II	Immigrants and American Identity
Volume III	Autobiography in America
Volume IV	Responding to American Words and Images
Volume V	Hormones and Reproduction
Volume VI	An Introduction to Aerodynamics

### 1987

Volume I	The Modern Short Story in Latin America
Volume II	Epic, Romance and the American Dream
Volume III	Writing About American Culture
Volume IV	The Writing of History: History as Literature
Volume V	Human Nature, Biology, and Social Structure: A Critical Look at What Science Can Tell Us About Society
Volume VI	Science, Technology, and Society

## Curriculum Units by Fellows (continued)

### 1986

Volume I	The Family in Literature
Volume II	Writings and Re-Writings of the Discovery and Conquest of America
Volume III	Topics in Western Civilization: Ideals of Community and the Development of Urban Life, 1250-1700
Volume IV	The Process of Writing
Volume V	The Measurement of Adolescents, II
Volume VI	Fossil Fuels: Occurrence; Production; Use; Impacts on Air Quality

### 1985

Volume I	Poetry
Volume II	American Musical Theater
Volume III	Twentieth Century American Fiction, Biography, and Autobiography
Volume IV	History as Fiction in Central and South America
Volume V	Odysseys: Nineteenth and Twentieth-Century African-American History Through Personal Narrative
Volume VI	Time Machines: Artifacts and Culture
Volume VII	Skeletal Materials-Biomineralization
Volume VIII	The Measurement of Adolescents

### 1984

Volume I	Elements of Architecture, Part II
Volume II	Greek Civilization
Volume III	Hispanic Minorities in the United States
Volume IV	The Oral Tradition
Volume V	American Adolescents in the Public Eye
Volume VI	Geology and the Industrial History of Connecticut

### 1983

Volume I	Elements of Architecture
Volume II	Greek and Roman Mythology
Volume III	Reading the Twentieth Century Short Story
Volume IV	America in the Sixties: Culture and Counter-Culture
Volume V	Drama
Volume VI	Cross-Cultural Variation in Children and Families
Volume VII	Medical Imaging

### 1982

Volume I	Society and the Detective Novel
Volume II	Autobiography
Volume III	The Constitution in American History
Volume IV	An Unstable World: The West in Decline?
Volume V	Society and Literature in Latin America
Volume VI	The Changing American Family: Historical and Comparative Perspectives
Volume VII	Human Fetal Development

## **Curriculum Units by Fellows (continued)**

### **1981**

Volume I	The “City” in American Literature and Culture
Volume II	An Interdisciplinary Approach to British Studies
Volume III	Human Sexuality and Human Society
Volume IV	Writing Across the Curriculum
Volume V	The Human Environment: Energy
Volume VI	Computing

### **1980**

Volume I	Adolescence and Narrative: Strategies for Teaching Fiction
Volume II	Art, Artifacts, and Material Culture
Volume III	Drama
Volume IV	Language and Writing
Volume V	Man and the Environment
Volume VI	The Present as History
Volume VII	Problem Solving

### **1979**

Volume I	The Stranger and Modern Fiction: A Portrait in Black and White
Volume II	Themes in Twentieth Century American Culture
Volume III	Remarkable City: Industrial New Haven and the Nation, 1800-1900
Volume IV	Language and Writing
Volume V	Strategies for Teaching Literature
Volume VI	Natural History and Biology

### **1978**

Volume I	Language and Writing
Volume II	20th Century Afro-American Culture
Volume III	20th Century American History and Literature
Volume IV	Colonial American History and Material Culture