APPENDIX E

Curriculum Design Principles

In an effort to provide a more elaborate picture of teaching and learning in the Paramount Bard Academy, the pages that follow provide a brief overview of some of the guiding principles, ideas, and resources that shape instruction in the four core academic subject areas.

APPENDIX E – Curriculum Design Principles

E1. History-Social Science

***History as Laboratory: Using Inquiry in the Secondary Social Studies Classroom*.**

National surveys in secondary schools routinely reveal that history and social studies courses remain students' least liked core subject area. Indeed, well into adulthood, surveyed Americans recall classroom experiences characterized by dry, disjointed, biased, and incomplete history instruction that leave considerable gaps in content knowledge (Hess, 2008; Applebee & Langer, 1997). Remarkably, these negative attitudes about history in the schools are voiced at a time of unprecedented popular interest in the American past. Museum visitations are soaring, film dramas on historical topics draw record audiences, the History Channel and other TV documentary programming are thriving, genealogical research is a multi-million dollar hobby-industry, and historical narratives and biographies routinely achieve best seller status (Rosenzweig & Thelen, 1998). What explains this persistent gap between student experiences and the dynamic, exciting world of history? And how can we as educators narrow this gap and invite adolescents into a rich exploration of our past?

This proposed curriculum is built around a few foundational approaches to teaching and learning about the past (Bain, Shemilt, Wineburg, Barton & Levstik, 2004):

1. Students acquire, retain, and use historical facts when they engage in inquiry, investigation, and discovery.
2. Obtaining extensive content knowledge about the past and learning how to think historically go hand in hand. When we construct our own disciplined, structured accounts of the past, we are better able to acquire, organize, and remember vast amounts of information.
3. The study of history necessarily begins by exploring what is most *familiar* to students—their present-day beliefs about human behavior and social change.
4. The study of history asks students to visit the *unfamiliar* or "strange" environments of a past that we can never fully understand.
5. Historical thinking skills provide students with the humility and empathy needed to see how human diversity ensures a wide variety of interpretations of the past.
6. This range of possible historical interpretations does not mean that all accounts of the past are equal. Students who "think historically" learn how to identify "better histories"—accounts that pay close attention to evidence while making carefully warranted, measured, and descriptive claims about the past.

When students adopt their own questions about the past and are given a supportive environment to explore these questions, the study of history becomes the dynamic, exciting, engaging place that has long energized and sustained professional historians.

Reinvigorating history instruction through inquiry to better stimulate and energize students can make a difference in our communities. A critical understanding of the past can give students a sense of belonging as well as the space to act courageously as democratic citizens. Learning specific subject matter knowledge about the past, such as the content outlined in the California History and Social Science Standards, can provide an important foundation for students who will soon participate in a larger democratic conversation about who we are as citizens and who we still need to become.

Responsible citizenship also requires the ability to engage in some of the very same thinking skills used by historians. Students need to be able to recognize bias and interpretation, weigh competing accounts and evidence, discern human motivations, contemplate cause and effect, and understand how social contexts influence individual choices. Without these skills the student is susceptible to propaganda, manipulation, and poor interpretations of the past and present that lack any strong evidentiary basis. Again, historical thinking skills are fundamental to intelligent participation in a modern democracy. Learning to think historically and contemplate the unique differences between disciplinary approaches to text is especially difficult work. The instruction at the Academy is aided by significant and necessary support from on-site MAT faculty and graduate students. This unique collaborative environment offers classroom teachers a reflective laboratory to continually refine content knowledge and pedagogy while closely observing growth in student thinking.

E2. Reading/Language Arts

Disciplinary principles for English language arts instruction.

In U.S. secondary schools, the English curriculum typically consists of a list of standard literary works to be read, literary elements to be covered, and writing skills to be acquired (Applebee 1974). Literature study in this model is weak, rarely asking students to do more than recount plot, name themes or identify metaphors, and the list of standard texts has changed very little in over a century (Applebee 1990, Blau 2003). Students have little or no choice in what they read and write about, and literacy is treated as remedial work, rather than an integral part of the literature curriculum (Bomer 1995).

At Paramount Bard Academy, English class fully integrates literary study and literacy acquisition across the grade levels. Courses seek to engage students with the enduring questions of great literature while honoring student interests and addressing the language skills and thinking strategies that students will need to become productive citizens. To this end, curriculum and instruction in English Language Arts at Paramount Bard Academy is guided by three essential disciplinary principles:

1. We read literature in order to imagine possible worlds, to enter into the perspectives of others, and to address life's essential questions and problems (Bruner 1986, Nussbaum 1995, Edmundson 2004)

2. Literary writing (poetry, fiction, drama, creative nonfiction) is an art. Studying literature necessarily involves close attention to form and language. At the same time, literature is the product of particular times, places, and people, and should be studied in historical context. For this reason, English and history curricula at Paramount Bard emphasize points of convergence and tension between the disciplines. (Greenblatt and Gunn 1992, Eagleton 2007)
3. While Paramount Bard Academy understands literacy to be a cross-disciplinary concern, the English class is the primary site for improving student writing and fostering a love of reading. For this reason, throughout the year, students will carry out independent reading and writing in a workshop setting. Shared texts for literature study will provide common topics and address particular skills/strategies that will then be applied to independently chosen texts. Students will write about their reading and research, and they will also write creatively. (Bomer 1995, Atwell 1998, Blau 2003)

E3. Mathematics

Mathematical literacy – a way of thinking about the world.

In a world that is highly dependent on science and technology, educators have increasingly concerned themselves with the state of mathematics instruction, recognizing the central role of mathematics in the fields of science and engineering and its general importance in everyday life. In the United States, growing concern for student learning in mathematics has emerged from international comparisons of student achievement based on standardized tests (PISA, www.**pisa**.oecd.org and TIMSS, www.nces.ed.gov/timss). These tests demonstrate different levels of mathematical competency and understanding that raise questions about the quality of mathematics teaching in the United States, especially in the area of problem solving skills. (Stigler and Hiebert, *The Teaching Gap)*

Mathematics instruction at the Paramount Bard Academy is shaped by an idea of mathematical literacy, which has been defined by the Organization for Economic Co-operation and Development as:

The capacity to identify, to understand, and to engage in mathematics and to make well-founded judgments about the role that mathematics plays, as needed for an individual's current and future life, occupational life, social life with peers and relatives, and life as a constructive, concerned and reflective citizen. (OECD 2000)

Developing this capacity in school means engaging in forms of study that not only allow students to develop procedural competencies that define the basic 'content' of different topics in mathematics but also require students to engage in the forms of reasoning that allow them to grapple successfully with novel situations, moving beyond the resolution of more typical textbook practice problems. As the CDE standards clearly recognize, "Mathematical reasoning and conceptual understanding are not separate from content; they are intrinsic to the mathematical discipline students master at more advanced levels." *(CDE Mathematics Content Standards, Introduction to Grades Eight Through Twelve)*

Instructional design in mathematics will emphasize the development of content knowledge, conceptual understanding, and reasoning skills through applied practice, sustained inquiry shaped by problem-based forms of learning, and a community of discourse that allows students to engage in the development of their mathematical thinking through interactions that reflect the work of building knowledge in the field.

Teacher planning will be guided and shaped by a number of sources, including the California State Standards, but with particular attention to the guidelines provided by the National Council of Teachers of Mathematics. See, especially:

1. National Council of Teachers of Mathematics. (2000*) Principles and Standards for School Mathematics.* Reston, VA: NCTM.
2. National Council of Teachers of Mathematics. (1991*) Professional Standards for Teaching Mathematics.* Reston, VA: NCTM

E4. Science

Scientific literacy – a method for understanding the world.

In approaching the issue of science learning, or developing scientifically literate students, the Paramount Bard Academy follows the lead of the American Association for the Advancement of Science in their publication *Science for All Americans*:

"Science for All Americans is based on the belief that the scientifically literate person is one who is aware that science, mathematics, and technology are interdependent human enterprises with strengths and limitations; understands key concepts and principles of science; is familiar with the natural world and recognizes both its diversity and unity; and uses scientific knowledge and scientific ways of thinking for individual and social purposes. " (Ruhterford, J.F. and Ahlgren, A. 1990. *Science for All Americans*. New York: Oxford University Press.)

The California Department of Education content standards and curriculum frameworks for science will provide the primary guidelines for the Paramount Bard Academy's science program. This core structure will be elaborated by other resources, including but not limited to materials and curricula available from the Cornell Science Inquiry Partnerships (http://csip.cornell.edu/) the Exploratorium's Institute for Inquiry (http://www.exploratorium.edu/ifi/), the Lawrence Hall of Science GEMS program (http://www.lhsgems.org/), National Science Teachers Association (http://www.nsta.org/), and the American Academy for the Advancement of Sciences (http://www.aaas.org/programs/education/).

The Paramount Bard Academy will enact principles of curriculum design and instructional methods that ensure students not only become scientifically literate but also possess levels of understanding and demonstrated achievement in the sciences that will adequately prepare them to meet college requirements and enter into programs of study at the postsecondary level, leading to careers in the sciences, if they so choose. Simply stated, this means science should be taught as practice, as a way of constructing knowledge based on principles and methods that have developed over time and continue to develop in the present. It is not only the basic structure of the scientific method that should shape student learning but also an awareness of the current technologies and experimental approaches that continually redefine the methods of scientific inquiry as new discoveries expand the basis for what is understood and how scientists have come to understand it.

Science learning has been the focus of decades of research in classrooms at all levels; it has been an emphasis in critical investigations in cognitive development. The results of this research must be incorporated into the thinking of teachers as they plan for and facilitate classroom-learning experiences for their students. To this end, sustained professional development that attends to issues in science learning will be provided by Paramount Bard Academy and be part of the job expectations for science teachers in the charter school. Helping students uncover common misconceptions, ensuring that content is covered in the context of research-based learning, employing current literature in the field as an integral part of the scientific texts that students read, and providing students with experiences in real world problems through contact with working scientists are some of the ways that science will be taught as a different way of thinking about and understanding the world. We need to be sure that students come to see science as a way of knowing that is unique, challenging, and subject to change rather than as a set of ideas represented as proven 'facts' organized in the pages of a classroom textbook.

Perhaps the best way to understand the Paramount Bard Academy approach to teaching science is to recognize that there is a body of knowledge to be studied and a process to be understood that must be learned in ways that allow students to develop knowledge and ways of thinking suggested by this paragraph from *Science for All Americans:*

"Over the core of human history, people have developed many interconnected and validated ideas about the physical, biological, psychological, and social worlds. Those ideas have enabled successive generations to achieve an increasingly comprehensive and reliable understanding of the human species and its environment. The means used to develop these ideas are particular ways of observing, thinking, experimenting, and validating. These ways represent a fundamental aspect of science and reflect how science tends to differ from other modes of knowing."