Assessment

Assessment is the main force that determines what and how teachers teach and how students learn. It is a central component that informs planning and teaching science lessons. The RMSLA science lesson assessment program is aligned with District of Columbia state and district science learning standards. These learning standards inform teacher lesson planning and the instructional objectives constructed by the teacher. The instructional objectives make the learning standards operational and are linked to assessment by stating specifically what students should know and be able to do at the end of the lesson. Assessment can be before a lesson begins, embedded in instruction or can be administered at the end of the lesson.

There is a critical link between assessment, teaching, learning, and state standards whether in the classroom, school-wide, or citywide. The core content that students are taught in the classroom is provided by the state standards. Assessment is an ongoing process that guides instruction and monitors student progress to include an understanding of science content and process skills and the use of higher level thinking skills. Pre-assessment, formative, and summative assessments provide for student, peer, and teacher evaluation. These types of assessments enable teachers to modify their instruction to support improved learning at each grade level or course for all students.

Course Descriptions

The Renaissance Mathematics Science Leadership Academy's (RMSLA) science program consists of a multi-year, coherent curriculum that gives students the opportunity to learn science in a continuous, interconnected and cumulative way throughout their four year stay at the school. The course schedule adheres to research findings that believe learning is cumulative over time, so curricular offerings should be cumulative over time (National Research Council, Designing Mathematics or Science Curriculum Programs, 1999)

Biology I **Grade Level -9** **Carnegie Unit, One** **Prerequisite, None**

Biology I engages students in the study of living things and is designed to enhance the student's comprehension and appreciation of life. The student studies and understands concepts related to the biochemical nature of life, its forms and processes by applying the appropriate science process skills (observing, inferring, measuring, using numbers, hypothesizing, experimenting, interpreting data,, etc.) and laboratory techniques. Instruction focuses on an integrated, inquiry-based approach, linking science content learned with other subjects and every day experiences. The key concepts studied include biochemistry, cell structure and function, genetics, genes and DNA, evolution and diversity, plants, the mammalian body and ecosystems. Interactive instructional technology is used to enhance and support learning including computers, internet sites, software, probeware, telecommunications, digital photography, virtual laboratory experiences. Students are required to complete an individual or group experimental project on a topic of interest.

Chemistry I **Grade Level – 9-10** **Carnegie Unit, One** **Prerequisite: Algebra I**

Chemistry I provides students with the acquisition of the content knowledge and language of chemistry as well as the process skills needed to investigate the composition, structure, and properties of matter and the changes it undergoes. Instruction focuses on an integrated, inquiry-based approach, linking chemistry content learned with other subjects and everyday experiences. Students apply mathematical skills to observe, make measurements, and interpret data. Emphasis is

placed on the completion of laboratory investigations with properly written reports analyzing the relationships between matter and energy and problem solving through interpreting the periodic table, applications of gas laws, moles, stoichiometry, preparation and properties of solutions, analyzing unknowns. Students are required to complete an individual or group experimental project on a topic of interest. Interactive instructional technology is used to enhance and support learning including computers, internet sites, software, probeware, telecommunications, digital photography, virtual laboratory exercises, etc.

Quarter/Marking Period	Standards/Indicators	Instructional Strategies	Instructional Materials	Formative/Summative Assessme
Scientific Inquiry (Note: Scientific Inquiry is not taught as a separate standard but is included in the standards and performance indicators across the curriculum in life science, physical science and Earth and space science. Scientific inquiry is a way for students to develop conceptual understanding and content knowledge and apply these understandings and knowledge through the use of scientific skills and methodology.) *Advisory 1* **Biochemistry** **Cell Structure and Function**	**B.1 Scientific inquiry is a way to explore the natural world by asking questions and pursuing answers through investigations and experimentation using scientific skills such as observing, measuring, replicating experiments, manipulating equipment and materials, collecting, analyzing, and reporting data.** **Indicators:** The student will be able to: 1. Know the elements of scientific methodology (identification of a problem, hypothesis formulation and prediction, performance of experimental tests, analysis of data, falsification, developing conclusions, reporting results) and be able to use a sequence of those elements to solve a problem or test a hypothesis. Also, understand the limitations of any single scientific method (sequence of elements) in solving problems. 2. Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories. apply to the solution of problems. 3. Use hypotheses to choose what data to pay attention to and what additional data to seek, and to guide the interpretation of the data. 4. Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.) 5. Formulate and revise explanations using logic and evidence. 6. Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations. 7. Recognize and deal with the implications of statistical variability in experiments, and explain the need for controls in experiments. **B.2. Living things are made of atoms bonded together to form molecules, some of the most important of which are large and contain carbon (i.e., "organic" compounds).** **Indicators** The student will be able to: 1. Describe basic atomic structure using simplified Bohr diagrams to understand the basis of chemical bonding in covalent and ionic bonds. 2. Describe the structure and unique properties of water and its importance to living things. 3. Explain the central role of carbon in the chemistry of living things because of its ability to combine in many ways with itself and other elements. 4. Know that living things are made of molecules largely consisting of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur. 5. Know that living things have many different kinds of molecules, including small ones such as water; midsize ones such as sugars, amino acids, and nucleotides; and large ones such as starches, proteins, and DNA. 6. Observe and explain the role of enzymatic catalysis in biochemical processes. 7. Explain the hierarchical organization of living things from least complex to most complex (subatomic, atomic, molecular, cellular, tissue, organs, organ system, organism, population, community, ecosystem, and biosphere). **B.3. All living things are composed of cells. All the fundamental life processes of a cell are either chemical reactions or molecular interactions.** **Indicators:** The student will be able to:	**Inquiry-based Instruction** Scientific inquiry refers to the diverse ways in which scientists study the natural world and propose explanations based on the evidence derived from their work (National Research Council, 1996, p.23). Project 2061 of the American Association for the Advancement of Science (AAAS, 1990) states that teaching science should be consistent with the nature of scientific inquiry. Teachers can achieve this in the classroom by having students learn the important concepts of natural phenomena as they incorporate into lesson activities the ways and means that are used by scientists to arrive at various understandings. **Problem Solving** Important scientific concepts are embedded in engaging problems. Students develop understanding and inquiry skills as they explore life-related problems, individually, in a group, or with the class. **Practice With Concepts and Process Skills** In-class and field inquiry-based activities and homework give students practice in developing A deeper understanding of important concepts and related skills. **Social Constructivism** Instruction supports student- centered investigations of natural phenomena through student-student and student teacher dialogue and interactions. **Procedural and Declarative Knowledge** When using end-of-lesson assessments determine the kind of knowledge being assessed. In the last minutes of the class , there is enough time to briefly check students' understanding of science facts and knowledge – their declarative knowledge. Or plan time at the end of the lesson to assess their procedural knowledge – understandings that require them to use their declarative knowledge to answer questions or solve problems. **Multiple Representations** Curriculum materials will frequently provide and ask for knowledge representation using graphs, charts, patterns, and written explanations. **Cooperative Learning** The dynamics of group work can stimulate and sustain inquiry in many classroom situations better than individual work. Not only can group work enhance student problem-solving, but it can improve concept development (Lumpe, 1995) Students find significant meaning in science courses when their knowledge is constructed during productive, small, cooperative group activities. **Lecture** Interesting, relevant, carefully organized information presented in an articulate manner. Lectures must be based on the attention span, background knowledge, and interests of the students (Chiappetta and Koballa, Jr, , 2006) **Discussion** Discussions allow students to express their views and ideas and promote student involvement in the lesson. Discussions can take place in small groups, with the entire class or in student pairs. In order for group discussions to be productive, students must clearly understand the assignment, stay focused, and on task.	*Texas Instruments Online Resources* The contents of this Web site provide helpful tools for using the TI calculator. *Related Web Links* *Computer Assisted Instruction* *Field Trips* *Career Days* *Textbooks (including itext)* *Laboratory Manual* *Instructional Technology:* *Smart boards and view screens* *Community Partners and University Programs* *Course Syllabus* *Prepared laboratory kits* *Laboratory equipment and supplies* *Protective Student Apparel* *Internet Access* *National Science Education Standards* *Benchmarks for Science Literacy* *Chemical Hygiene Plan* *NSTA SciLinks* Support for topics in the textbooks, *The Biology Place* Bio-coach (for students needing additional assistance), Laboratory research (for high achieving students) and a glossary for student use. *Science News on Line* - Follow links to a wide selection o f articles from all science disciplines that were originally published in Science magazine *Computers and Electronic Technologies* Careful analysis of software and multimedia programs and internet sites to ensure usefulness and alignment to the class activity. There is almost no limit to the ways in which computers and electronic technologies can be used in the science classroom. They can be used as a presentation tool, an individualized learning center, or to facilitate group interaction and problem-solving (Dockerman, 1998). *Sensors connected to either a calculator or hand-held computer* Used for students to collect, display, and analyze data from the laboratory or field *INTEL Mathematics, Science and Technology*	(Examples) **Use the laboratory procedure described below answer question 1 and 2.** *A group of scientists wishes to see if using a new, environmentally friendly pesticide is effective in preventing insect damage to soybeans. Three diff soybean plots were planted. The first plot contain soybeans treated with the traditional pesticide. T second plot is treated with the new environmenta friendly pesticide. The third plot is left treated.* 1. Which plot is the control group? a. The first plot with traditiona pesticide. b. The second plot with the nev pesticide c. The third plot with no pestic d. There is no control group 2. What could be concluded if the plo treated with the new pesticide has d similar to the control plot? a. The experiment is a failure. b. The new pesticide may not b effective c. The control plot was problen d. The new pesticide should be **Answer the following questions on your answe sheet.** 1. List the characteristics you would c to see if a pine tree is a living thing. an example that shows how the tree exhibits each characteristic. 2. Why do most experiments have a c Describe an experiment that does n a control. 3. Evaluate the impact that scientific research has on Society. **Laboratory:** the Scientific Method **Completion of a project that will be judged by panel of scientists, teachers, or students.** **Design and conduct an individual or group res and experimental science project** of personal in to be evaluated and entered in the school wide sci fair during second semester. **Assessment: Organic Molecules** **Make a chart** comparing polysaccharides, lipids, proteins, and nucleic acids. List these four types biomolecules in the first column. In the second c list the subunits that make up each substance. In third column, describe the functions of each of th organic compounds in living organisms. In the la column, provide some examples of each from the discussions.

	1. Compare and contrast the general anatomy and constituents of prokaryotic and eukaryotic cells and their distinguishing features: Prokaryotic cells do not have a nucleus, and eukaryotic cells do. Know that prokaryotic organisms are classified in the Eubacteria and Archaebacteria Kingdoms and that organisms in the other four kingdoms have eukaryotic cells. 2. Understand the function of cellular organelles and how the organelles work together in cellular activities (e.g., enzyme secretion from the pancreas). 3. Describe the organelles that plant and animal cells have in common (e.g., ribosomes, golgi bodies, endoplasmic reticulum) and some that differ (e.g., only plant cells have chloroplasts and cell walls). 4. Demonstrate and explain that cell membranes act as highly selective permeable barriers to penetration of substances by diffusion or active transport. 5. Describe that the work of the cell is carried out by structures made up of many different types of large (macro) molecules that it assembles, such as proteins, carbohydrates, lipids, and nucleic acids. 6. Explain the processes of photosynthesis and cellular respiration. 7. Describe how cellular respiration is important for the production of adenosine triphosphate (ATP. 8. Differentiate between the functions of mitosis and meiosis.	**Demonstration** Demonstration can be a high interest way for the teacher or a student to illustrate a concept through hands-on means. This strategy is useful when a full laboratory exercise may not be practical or safe, or is too expensive to conduct in the classroom. **Laboratory Work** Laboratory activities should be used frequently as they allow students to have first hand experiences with natural phenomena. Laboratory work can be planned using a deductive activity (to confirm concepts, principles, and laws discussed during class), or an inductive activity (an opportunity to develop concepts, principles, and laws through firsthand experiences before being discussed in the classroom) or by focusing on a problem to be solved. **Modification of Lesson Activities** Altering or modifying lesson plans and activities to accommodate students enables all students the opportunity to learn. Diversity is a major factor in classrooms and reflection on students' language skills, classroom behavior, physical and mental learning challenges help inform the selection of content and delivery of instruction. **Reading** Helps students develop ideas and understand concepts from printed materials. Directed reading activities, pre-reading activities to determine what students know, during reading activities that focus on key words and passages, and after-reading activities that summarize what has been learned. **Cooperative Group Work** Working together in groups helps students work together and share ideas in an organized, sequential manner where group members have identified roles and guidelines to carry out the individual assigned tasks. **Simulations and Games** Computer simulations and games allow students to visualize real world events that cannot be observed in the classroom or laboratory and is an effective way to present important concepts. **Use of Computers** Students can research topics, visit science related web sites including science museums, complete virtual laboratory activities, participate in real time science experiments. Or research projects, or find scientific data to analyze and study. **Recitation** In this strategy students respond to questions asked by the teacher to demonstrate knowledge of subject matter. This is a good strategy for keeping students engaged in the less and for incorporating formative assessment in the lesson.	***International Science Fair* (DC Regional and International Fairs) Materials** Students engage in research and experimental projects for entry in the school-wide science fair, the DC Regional Citywide Science Fair and the INTEL International Science and Engineering Fair. **Student activity sheets and laboratory materials** for constructing models of atoms and molecules, found in living things, such as water, sugars, amino acids, starches, proteins and DNA. **Materials for teacher demonstration:** Making Models of Molecules **Science kits** from biological Supply companies **A wide variety of science printed and electronic classroom reference materials** including books, magazines, CD's, DVD's with players/Projectors **Classroom posters and instructional materials** Related to Procaryotic and Eukaryotic cell structure and function **Classroom guest speakers** from local universities, businesses, governmental agencies, research labs, local and national scientific organizations **Information and materials** related to local and national student science competitions including school-wide and citywide science fairs. **Information, materials, other resources** related to careers in science. a.Career paths b.Courses in high school c.Courses in college d.Description of the career e.Where to find further information. **Student Handouts:** Laboratory and worksheets: Chemical Composition of Cells **Laboratory:** Organic Molecules **Web-based Activities:** The Biology Place The Chemistry Place	**Modified Assessment: Organic Molecules** Use flash cards containing the names of monome one side and the corresponding polymer on the ot side. First, show students the polymer name, for example, protein, and then have students respon the appropriate monomer name (amino acid), and versa. **Extended Assessment: Organic Molecules** Read the article *the Action of Enzymes* then write summary and critique of the article using the atta rubric. Include in your summary (based on what read in the article) what might be the result if one particular enzyme malfunctioned or was not pres **Laboratory with Written Report:** *Metric Measurement and Microscopy* **Laboratory with written report:** *Chemical Composition of Cells* **Computer Lab with written report:** *Structure Function in Plant and Animal Cells with written*
Advisory II **Genetics** **Genes and DNA**	**B.4. Genes are a set of instructions encoded in the DNA sequence of each organism that specify the sequence of amino acids in proteins characteristic of that organism.** **Indicators :** The student will be able to: 1. Explain structure and function in the DNA molecule. 2. Explain how hereditary information is passed from parents to offspring in the form of "genes," which are long stretches of DNA consisting of sequences of nucleotides. 3. Explain that in eukaryotes, the genes are contained in chromosomes, which are bodies made up of DNA and various proteins. 4. Explain how inserting, deleting, or substituting short stretches of DNA alters a gene. Discuss how changes (mutations) in the DNA sequence in or near a specific gene may (or may not) affect the sequence of amino acids in the encoded protein or the expression of the gene. 5. Explain the mechanisms of genetic mutations and chromosomal recombinations, and when and how they are passed on to offspring. 6, Explain how specialization of cells is usually due to different patterns of gene expression rather than differences in the genes. 7.Describe Mendel's laws of segregation and independent assortment. 8. Use a Punnett Square to determine possibilities for genotype and phenotype combinations.			**Computer self-check aligned with textbook.** **Multiple choice assessment items.** **Example:** **Which of the following describes DNA replicat eukaryotic cells?** A. A copy of the DNA is made in the nucleus. B. A molecule of RNA is produced from the DN C. Each strand of DNA is combined with a strand RNA. D. Each strand of DNA is separated into a new chromosome. **Label the Drawings :** Label the numbered organ on the prokaryotic cell and the Eukaryotic cell th describe the function of each organelle. Differentiate between prokaryotic and Eukaryotic **End of Advisory Exam** with multiple choice and structured response items Complete and submit a typed research report rela genes and DNA. Use rubric for completing the p and make an oral presentation to the class. **Completion of research and experimental proj**
Advisory III **Evolution and Biodiversity** **Plants**	**B. 5 Evolution and biodiversity are the result of genetic changes that occur in constantly changing environments.** **Indicators:** The student will be able to: 1. Investigate and explain how molecular evidence reinforces and confirms the fossil, anatomical, behavioral, and embryological evidence for evolution, and provides additional detail about the sequence in which various lines of descent branched off from one another. 2. Explain how a large diversity of species increases the chance that at least some living things will survive in the face of large or even catastrophic changes in the environment. 3. Research and explain how natural selection provides a mechanism for evolution and leads to organisms that are optimally suited for survival in particular environments. 4. Explain that biological diversity, episodic speciation, and mass			

	extinction are depicted in the fossil record, comparative anatomy, and other evidence. 5. Describe how life on Earth is thought to have begun as one or a few simple one-celled organisms about 3.5 billion years ago, and that during the first 2 billion years, only single-cell microorganisms existed. Know that, once cells with nuclei developed about a billion years ago, increasingly complex multicellular organisms could evolve. 6. Explain that prior to the theory first offered by Charles Darwin and Alfred Wallace, the universal belief was that all known species had been created de novo at about the same time and had remained unchanged. 7. Research and explain that Darwin argued that only biologically inherited characteristics could be passed on to offspring, and that some of these characteristics would be different from the average and advantageous in surviving and reproducing; over generations, accumulation of these inherited advantages would lead to a new species. 8. Explain Gregor Mendel's identification of what we now call "genes," how they are sorted in reproduction, and how this led to an understanding of the mechanism of heredity. 9. Explain how biological evolution is also supported by the discovery that the genetic code found in DNA is the same for almost all organisms. **B.6. Plants are essential to animal life on Earth.** **Indicators** The student will be able to: 1. Describe the structure and function of roots, leaves, flowers, and stems of plants. 2. Identify the roles of plants in the ecosystem. 4. Explain the process of photosynthesis and during the process of photosynthesis, plants release oxygen into the air. 5. Describe that plants have broad patterns of behavior that have evolved to ensure reproductive success, including co-evolution with animals that distribute a plant's pollen and seeds.		Biology Jeopardy **Class debate:** Should You Order a Scan of Your DNA?: Selling Genetic Readings Directly to Consumers **Virtual Laboratory:** Genes – How They Pass Hereditary Material from Parent to Offspring Field trip to a local biotechnology laboratory Chromosome simulation Biokit (Carolina Biol) **Project sheets** and directions with rubric on Evolution **Laboratory materials**: Evidence of Evolution Class activities and Laboratory: Seed Plants BioCoach Web-based activities related to plant structures and growth, photosynthesis Web-based activities related to the mammalian body with special emphasis on the human body.	completed and mounted on display board. **End of Advisory Exam** with multiple choice and structured response items. Laboratory with written report: Evolution **Indicate the correct answer on the answer sheet.** *When Jeffrey goes jogging, his heart rate increas pump blood faster and supply his muscles with m oxygen. Which of the following helps to maintain homeostasis in response to this increase in heart* *A. an increase in digestion* *B. an increase in respiration* *C. a decrease in perspiration* *D. a decrease in bone growth* **Written Reports/Oral Reports** **Student Presentations** **Quizzes** **Pre and Post tests** **Performance Assessments**
Advisory IV **The Mammalian Body Ecosystems**	**B.7. As a result of the coordinated structures and functions of organ systems, the internal environment of the mammalian body remains relatively stable (homeostatic), despite changes in the outside environment.** **Indicators:** The student will be able to: 1. Explain the major systems of the mammalian body (digestive, respiratory, reproductive, circulatory, excretory, nervous, endocrine, integumentary, immune, skeletal, and muscular) and how they interact with each other. 2. Analyze the complementary activity of major body systems. 3. Explain how the nervous system mediates communication between different parts of the body and the environment. 4. Describe that the nervous and endocrine systems maintain overall regulation of optimal conditions within the body by chemical communication. 5. Investigate and cite specific examples of how the mammalian immune system is designed to protect against microscopic organisms and foreign (or non-self) substances from outside the body and against some aberrant (e.g., cancer) cells that arise within. **B.8. Explain how stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept.** **Indicators** The student will be able to: 1. Illustrate and describe the cycles of biotic and abiotic factors (matter, nutrients, energy) in an ecosystem. 2. Explore and explain how changes in population size have an		Classroom guests and field experiences with the Chesapeake Bay Foundation and the Anacostia Watershed Society. Environmental curriculum materials from Bridging the Watershed, Environmental curriculum materials from Blacks of the Chesapeake	**Prepare and present a "Town Hall" panel disc to the Mayor and City Council** or other DC Government managers related to an environmenta problem in D.C. with recommendations for solvi problem. Observation of student participation in on-the-riv environmental education studies of the Anacostia Potomac Rivers with the Chesapeake Bay Found and the Anacostia watershed Society. Observation of student participation in national p environmental studies conducted by national park rangers. Observation of student participation in classroom field studies *The Chesapeake Through Ebony Eye* unit of study developed by Blacks of the Chesape

	impact on the ecological balance of a community and how to analyze the effects. 43 Describe how the physical or chemical environment may influence the rate, extent, and nature of the way organisms develop within ecosystems. 6. Explain that ecosystems tend to have cyclic fluctuations around a state of rough equilibrium, and change results from shifts in climate, natural causes, human activity, or when a new species or non- native species appears. 7. Explain how layers of energy-rich organic material, mostly of plant origin, have been gradually turned into great coal beds and oil pools by the pressure of the overlying Earth and its internal heat. 8. Using ecological studies, explain distinct relationships and differences between urban environments and other environmental systems. 9. Investigate and describe how point and non-point source pollution can affect the health of a bay's watershed and wetlands. 10. Assess the method for monitoring and safeguarding water quality, including local waterways such as the Anacostia and Potomac rivers, and explain why macroinvertebrates can be early warning signs of decreasing water quality.		Classroom and field experiences with DC WASA, the DC Office of the Environment, Watershed Protection Division **Biochemistry Cell Structure and Function**	Foundation, Inc. Chapter and unit tests related to fossils. *End of Advisory Exam* *End of course exam*

Quarter/Marking Period	Standards/Indicators	Instructional Strategies	Instructional Materials	Formative/Summative Assessments
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Know the elements of scientific methodology (identification of a problem, hypothesis formulation and prediction, performance of experimental tests, analysis of data, falsification, developing conclusions, reporting results) and be able to use a sequence of those elements to solve a problem or test a hypothesis. Also, understand the limitations of any single scientific method (sequence of elements) in solving problems. 2. Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories. apply to the solution of problems. 3. Use hypotheses to choose what data to pay attention to and what additional data to seek, and to guide the interpretation of the data. 4. Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.) 5. Formulate and revise explanations using logic and evidence. 6. Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations. 7. Recognize and deal with the implications of statistical variability in experiments, and explain the need for controls in experiments. **C.2. Physical and chemical properties can be used to classify and describe matter.** **Indicators:** The student will be able to: 1. Investigate and classify properties of matter, including density, melting point, boiling point, and solubility. 2. Determine the definitions of and use properties such as mass, volume, temperature, density, melting point, boiling point, conductivity, solubility, and color to differentiate between types of matter. 3. Know the concept of a mole in terms of number of particles, mass, and the volume of an ideal gas at specified conditions of temperature and pressure. 4. Distinguish between the three familiar states of matter (solid, liquid, and gas) in terms of energy, particle motion, and phase transitions, and describe what a plasma is. 5. Infer and explain that physical properties of substances, such as melting points, boiling points, and solubility, are due to the strength of their various types of bonds (interatomic, intermolecular, or ionic). 6. Write equations that describe chemical changes and reactions. 7. Classify substances as metal or nonmetal, ionic or molecular, acid or	**Inquiry-based Instruction** Scientific inquiry refers to the diverse ways in which scientists study the natural world and propose explanations based on the evidence derived from their work (National Research Council, 1996, p.23). Project 2061 of the American Association for the Advancement of Science (AAAS, 1990) states that teaching science should be consistent with the nature of scientific inquiry. Teachers can achieve this in the classroom by having students learn the important concepts of natural phenomena as they incorporate into lesson activities the ways and means that are used by scientists to arrive at various understandings. **Problem Solving** Important scientific concepts are embedded in engaging problems. Students develop understanding and inquiry skills as they explore life-related problems, individually, in a group, or with the class. **Multiple Representations** Curriculum materials will frequently provide and ask for knowledge representation using graphs, charts, patterns, and written explanations. **Cooperative Learning** The dynamics of group work can stimulate and sustain inquiry in many classroom situations better than individual work. Not only can group work enhance student problem-solving, but it can improve concept development (Lumpe, 1995) Students find significant meaning in science courses when their knowledge is constructed during productive, small, cooperative group activities. **Lecture** Interesting, relevant, carefully organized information presented in an articulate manner. Lectures must be based on the attention span, background knowledge, and interests of the students (Chiappetta and Koballa, Jr, , 2006). The lecture may include use of teaching aids such as electronic projecting devices, CDs, chalkboard or whiteboard, etc. **Discussions**	*Texas Instruments Online Resources* The contents of this Web site provide helpful tools for using the TI calculator. ***Related Web Links*** ***Computer Assisted Instruction*** ***Field Trips*** ***Career Days*** ***Textbooks (including itext)*** ***Laboratory Manual*** ***Insatructional Technology:*** ***Smartboards, view screens*** ***Community Partners and University Programs*** ***Course Syllabus*** ***Prepared laboratory kits*** ***Laboratory equipment and supplies*** ***Protective Student Apparel*** ***Internet Access*** ***National Science Education Standards*** ***Benchmarks for Science Literacy*** ***Chemical Hygiene Plan*** ***NSTA SciLinks*** ***Support for topics in the textbooks*** ***The Chemistry Place*** Chemistry -coach (for students needing additional assistance), Laboratory research (for high achieving students) and a glossary for student use. ***Science News on Line*** - Follow links to a wide selection o f articles from all science disciplines that were originally published in Science magazine ***Computers and Electronic Technologies*** Careful analysis of software and multimedia programs and internet sites to ensure usefulness and alignment to the class activity. There is almost no limit to the ways in which computers and electronic technologies can be used in the science classroom. They can be used as a presentation tool, an individualized learning center, or to facilitate group interaction and problem-solving (Dockerman, 1998). ***Sensors connected to either a calculator or hand-held computer*** Used for students to collect, display, and analyze data from the laboratory or field	(Examples) Assessment is an extension of the learning process, as well as an opportunity to check what students know and can do. For this reason, assessment will be multidimensional, giving students many ways to demonstrate how they are making sense of the content. Assessment will be designed to collect data concerning these three dimensions of student learning and will be both summative and formative in nature. Students' **Content knowledge and skills, Content disposition, and Work habits** will be assessed. **Design and conduct an individual or group research and experimental science project** of personal interest to be evaluated and entered in the school wide science fair during second semester. **Write short answers for the following :** 1. A. Define property. B. How are properties used in classifying materials? 2. Compare the properties of metals, nonmetals, metalloids, and noble gases. 3. An unknown element is shiny and is found to be a good conductor of electricity. What other properties would you predict the element to have? 4. Suppose different parts of a sample material have different compositions. What can you conclude about the material? 5. Use the graphing calculator to plot the following data. Time (min) Temp. (°C) 1 28.3

	base, and organic or inorganic, using formulas and laboratory investigations. **C.3. Acids, bases, and salts are three classes of compounds that form ions in water solutions.** **Indicators:** The student will be able to: 1. Explain that strong acids (and bases) fully dissociate and that weak acids (and bases) partially dissociate. 2. Define pH as the negative of the logarithm of the hydrogen (hydronium) ion concentration, and calculate pH from concentration data. 3. Illustrate and explain the pH scale to characterize acid and base solutions: Neutral solutions have pH 7, acids are less than 7, and bases are greater than 7. 4. Describe the observable properties of acids, bases, and salt solutions. 5. Explain the Arrhenius theory of acids and bases: An acid donates hydrogen ions (hydronium) and a base donates hydroxide ions to a water solution. 6. Explain the Brønsted-Lowry theory of acids and bases: An acid is a hydrogen ion (proton) donor, and a base is a hydrogen ion (proton) acceptor. 7. Explain how buffers work **C.4. An atom is a discrete unit. The atomic model can help us to understand the interaction of elements and compounds observed on a macroscopic scale.** **Indicators:** The student will be able to: 1. Detail the development of atomic theory from the ancient Greeks to the present (Democritus, Dalton, Rutherford, Bohr, quantum theory). 2. Explain Dalton's atomic theory in terms of the laws of conservation of matter, definite composition, and multiple proportions. 3. Demonstrate and explain how chemical properties depend almost entirely on the configuration of the outer electron shell, which in turn depends on the proton number. 4. Explain the historical importance of the Bohr model of the atom. 5. Construct a diagram and describe the number and arrangement of subatomic particles within an atom or ion. 6. Describe that spectral lines are the result of transitions of electrons between energy levels. 7. Describe that spectral lines correspond to photons with a frequency related to the energy spacing between levels by using Planck's formula (E = hv) in calculations. **C.5. Periodicity of physical and chemical properties relates to atomic structure and led to the development of the periodic table** **Indicators:** The student will be able to: 1. Relate the position of an element in the periodic table and its reactivity with other elements to its quantum electron configuration. 2. Use the periodic table to compare trends in periodic properties, such as ionization energy, electronegativity, electron affinity, and relative size of atoms and ions. 3. Use an element's location in the periodic table to determine its number of valence electrons, and predict what stable ion or ions an element is likely to form in reacting with other specified elements.	Discussions allow students to express their views and ideas and promote student involvement in the lesson. Discussions can take place in small groups, with the entire class or in student pairs. In order for group discussions to be productive, students must clearly understand the assignment, stay focused, and on task. **Demonstration** Demonstration can be a high interest way for the teacher or a student to illustrate a concept through hands-on means. This strategy is useful when a full laboratory exercise may not be practical or safe, or is too expensive to conduct in the classroom. **Laboratory Work** Laboratory activities should be used frequently as they allow students to have first hand experiences with natural phenomena. Laboratory work can be planned using a deductive activity (to confirm concepts, principles, and laws discussed before or during class). **Modification of Lesson Activities** Altering or modifying lesson plans and activities to accommodate students enables all students the opportunity to learn. Diversity is a major factor in classrooms and reflection on students' language skills, classroom behavior, physical and mental learning challenges help inform the selection of content and delivery of instruction. **Reading** Helps students develop ideas and understand concepts from printed materials. Directed reading activities, pre-reading activities to determine what students know, during reading activities that focus on key words and passages, and after-reading activities that summarize what has been learned. **Cooperative Group Work** Working together in groups helps students work together and share ideas in an organized, sequential manner where group members have identified roles and guidelines to carry out the individual assigned tasks. **Simulations and Games** Computer simulations and games allow students to visualize real world events that cannot be observed in the classroom or	***INTEL Mathematics, Science and Technology International Science Fair* (DC Regional and International Fairs)** **Materials** Students engage in research and experimental projects for entry in the school-wide science fair, the DC Regional Citywide Science Fair and the INTEL International Science and Engineering Fair. **Student activity sheets and laboratory materials** for studying Acids and Bases **Materials for teacher demonstration:** Making Models of Molecules **Science kits** **A wide variety of science printed classroom reference materials** including books, magazines, CD's, DVD's with players/Projectors **Classroom posters and instructional materials** Related to Physical and Chemical properties of Matter **Web based activities:** The Chemistry Place Laboratory activities ActivitiesTutoring Activities **Classroom guest speakers** from local universities, businesses, governmental agencies, research labs, local and national scientific organizations **Information and materials** related to local and national student science competitions including school-wide and citywide science fairs. **Information, materials, other resources** related to careers in science. a. Career paths b. Courses in high school c. Courses in college d. Description of the career e. Where to find further information. Wall mounted Periodic Table	3 32.2 5 36.5 8 40.1 10 42.7 13 45.8 **Complete the following synthesis reaction** by writing both the word and chemical equation Potassium + chlorine → ____ **Balance the following:** $C_2H_6 + O_2$ $CO_2 + H_2O$ **Students conduct a titration experiment** involving an acid and a base (vinegar and ammonia) using phenolphthalein as an indicator, and they relate it to a human condition, such as heartburn, which is associated with acid indigestion and sour stomach that requires the intake of an antacid for relief. **Answer the following:** Explain what is meant by the pH of a solution? **Write the equation** for determining pH. **Explain and illustrate** what is meant by the logarithm of a number. **Construct a table** consisting of some elements and compounds and align them to their respective atomic masses, molecular masses, and Avogadro's number. Explain how the mole concept is similar to the concept of a dozen. **Explain the following reactions** as redox or nonredox (C.8.2): 2HCl+Al→H2 +AlCl3 HCl + AgNO3 → HNO3 + AgCl **Laboratory with written report:** Physical and Chemical Properties of Matter **Write your answer on the answer sheet** 1. Define property. 2. How are properties useful in classifying materials. **For each of the following, identify** the block, period, group, group name, (where appropriate), element name, element type (metal, nonmetal, or

Advisory II **Atomic Structure and Nuclear Chemistry**	**C.6. Nuclear processes are those in which an atomic nucleus changes; they include radioactive decay of naturally occurring and man-made isotopes and nuclear fission and fusion processes.** **Indicators:** The student will be able to: 1. Explain how protons and neutrons in the nucleus are held together by strong nuclear forces that just balance the electromagnetic repulsion between the protons in a stable nucleus. 2. Describe that the energy release per gram of material is roughly six orders of magnitude larger in nuclear fusion or fission reactions than in chemical reactions. Know that a small decrease in mass produces a large amount of energy in nuclear reactions as well as in chemical reactions, but the mass change in chemical reactions is negligibly small. 3. Know that many naturally occurring isotopes of elements are radioactive, as are isotopes formed in nuclear reactions. 4. Describe the process of radioactive decay as the spontaneous breakdown of certain unstable (radioactive) elements into new elements (radioactive or not) through the spontaneous emission by the nucleus of alpha or beta particles, or gamma radiation. 5. Predict and explain that the alpha, beta, and gamma radiation produced in radioactive decay produce different amounts and kinds of damage in matter and have different ranges of penetration. 6. Explain that the half-life of a radioactive element is the time it takes for the radioactive element to lose one-half its radioactivity, and calculate the amount of radioactive substance remaining after an integral number of half-lives have passed. **C.7. The enormous variety of physical, chemical, and biological properties of matter depends upon the ability of atoms to form bonds. This ability results from the electrostatic forces between electrons and protons and between atoms and molecules.** **Indicators** The student will be able to: 1. Explain how Arrhenius' discovery of the nature of ionic solutions contributed to the understanding of a broad class of chemical reactions. 2. Predict and explain how atoms combine to form molecules by sharing electrons to form covalent or metallic bonds, or by transferring electrons to form ionic bonds. 3. Recognize names and chemical formulas for simple molecular compounds (such as N2O3), ionic compounds, including those with polyatomic ions, simple organic compounds, and acids, including oxyacids (such as HClO4). 4. Demonstrate and explain that chemical bonds between identical or similar atoms in molecules such as H2, O2, CH4, NH3, C2H4, N2, H2O and many large biological molecules tend to be covalent. 5. Explain that in solids, particles can only vibrate around fixed positions, but in liquids, they can slide randomly past one another, and in gases, they are free to move between collisions with one another. 6. Draw Lewis dot structures for atoms, molecules, and polyatomic ions. 7. Predict the geometry and polarity of simple molecules, and explain how these influence the intermolecular attraction between molecules. 8. Name and write chemical formulas for simple ionic and molecular compounds.. 9. Predict the formulas of ionic compounds based on the charges on the ions.	laboratory and is an effective way to present important concepts. **Use of Computers** Students can research topics, visit science related web sites including science museums, complete virtual laboratory activities, participate in real time science experiments. Or research projects, or find scientific data to analyze and study. **Recitation** In this strategy students respond to questions asked by the teacher to demonstrate knowledge of subject matter. This is a good strategy for keeping students engaged in the lesson and for incorporating formative assessment in the lesson.		metalloid), and relative reactivity (high or low). $[He]2s^22p^5$ $[Ar]3d^{10}4s^1$ $[Kr]5s_1$ Research the industrial uses for strong acids, such as HCl, HBr, HI, HNO3, HClO4, HClO3, and H2SO4 (C.3.1). **Laboratory with written report**: Students conduct a titration experiment involving an acid and a base (vinegar and ammonia) using phenolphthalein as an indicator, and they relate it to a human condition, such as heartburn, which is associated with acid indigestion and sour stomach that requires the intake of an antacid for relief . **Write short answers** for the following: 1. Distinguish between nuclear fission and nuclear fusion. 2. Explain how fusion is one of our energy sources. 3. Describe the reaction that produces the sun's energy. 4. Explain and illustrate how after 4797 years, how much of an original 0.250 g of radium-226 remains. Its half life is 1599 years. **Write nuclear equations** to explain a radioactive decay (an equation that shows the reaction's components): for example: a. Write a nuclear equation to describe the alpha decay of an isotope of radium, element number 88. b. Write a nuclear equation for the alpha decay of plutonium 242 Students research the effects of different types of radiation on the human body (e.g., effect of atomic bombings in WWII, nuclear waste sites, or use of radioactive drugs in medicine) Illustrate the Lewis dot structures for carbohydrates, fats, and proteins Students investigate different electrolytes in the human body and the

	equilibrium (concentration, pressure, volume, temperature). 3. Explain why rates of reaction are dependent on the frequency of collisions, energy of collisions, and orientation of colliding molecules. 4. Observe and describe the role of activation energy and catalysts in a chemical reaction 5. Use LeChâtelier's principle to predict the effect of changes in concentration, temperature, volume, and pressure on a system at equilibrium. 6. Write the equilibrium expression for a given reaction and calculate the equilibrium constant for the reaction from given concentration data.			
Advisory IV **Solutions** **Chemical Reactions** **Chemical Bonding**	**C.11. Solutions are mixtures of two or more substances that are homogeneous on the molecular level.** **Indicators:** The student will be able to: 1. Define solute and solvent. 2. Predict and describe how the temperature, concentration, pressure and surface area of solids affect the dissolving process. 3. Explain that, for a closed system at constant temperature and pressure, a solid in contact with its saturated solution may reach dynamic equilibrium when the rate of solid dissolving equals the rate of solid precipitating. 4. Calculate the concentration units of solutions such as molarity, percent by mass or volume, parts per million (ppm), or parts per billion (ppb). 5. Determine the concentration of a solution in terms of molarity and molality. 6. Calculate the theoretical freezing-point depression and boiling-point elevation of an ideal solution as a function of solute concentration. 7. Prepare a specified volume of a solution of given molarity. 8. Use titration data to calculate the concentration of an unknown solution **C.12. Energy is exchanged or transformed in all chemical reactions and physical changes of matter.** **Indicators:** The student will be able to 1. Describe the concepts of temperature and heat flow in terms of the motion and energy of molecules (or atoms). 2. Determine and explain that chemical processes release (exothermic) or absorb (endothermic) thermal energy. 3. Explain how energy is released when a material condenses or freezes and is absorbed when a material evaporates or melts. 4. Solve problems involving heat flow and temperature changes, using given values of specific heat and latent heat of phase change. 5. Use Hess's law to determine the heat of a reaction and to calculate enthalpy change in a reaction. **C.13. The bonding characteristics of carbon lead to the possibility of many different molecules of many sizes, shapes, and chemical properties. This provides the biochemical basis of life.** **Indicators:** The student will be able to: 1. Explain how the bonding characteristics of carbon lead to a large variety of structures ranging from simple hydrocarbons to complex polymers and biological molecules.			

	2. Describe how large molecules (polymers) such as proteins, nucleic acids, and starches are formed by repetitive combinations of simple subunits (monomers). 3. Explain that amino acids are the building blocks of proteins. 4. Convert between chemical formulas, structural formulas, and names of simple common organic compounds (hydrocarbons, proteins, fats, carbohydrates).			

Renaissance Math, Science, and Leadership Academy
Public Charter High School
English/Language Arts

Mission
The mission of the English program is to offer a rigorous, standard-based instructional program that specializes in preparing ALL students for high school and post secondary success.

Vision
All students will have access to high quality, engaging English/language arts instruction providing vital content for essential critical thinking skills and processes that enhance life-long learning and problem-solving techniques in a complex technological society. The English/language arts program is designed to allow students the opportunity to develop effective communication and literacy skills through rigorous units of instruction while establishing accommodations for a range of academic abilities including gifted and talented as well as special needs students. Teachers will provide instructional activities that (1) spark student interest; (2) are content focused but also relevant to the changing world; and (3) allow for transferability of knowledge. Students are actively engaged in a meaningful and balanced literacy program of reading, writing, speaking and listening skills while developing an appreciation of literature through broad reading experiences to include various literary (fiction/non-fiction/informational/media) texts.

Goals
Students enrolled in English courses will:

- Develop the required knowledge and skills through interactive learning
- Develop a repertoire of learning strategies that can be applied to increasingly diverse contexts
- Develop effective oral and written communication skills
- Develop an appreciation for literature through the reading of varied classic and contemporary literary genres
- Develop analytical skills in the interpretation of informational and media texts
- Apply appropriate language structures and language conventions
- Apply appropriate strategies for conducting research to include analyzing and synthesizing of required data and written resources
- Integrate varied modes of technology to enhance learning

IRA/NCTE Standards for the English Language Arts

The International Reading Association and the National Council for the Teachers of English, in a joint effort, outlined twelve (12) standards that support English/language arts. "The vision guiding these principles state that all students must have the opportunities and resources to develop the language skills needed to pursue life's goals and to participate fully as informed, productive members of society". (NCTE, 2010). These research-based principles are embedded in the RMSLA's English/Language Arts program as a framework for curriculum development in the teaching and learning process.

1. Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

2. Students read a wide range of literature from many periods in many genres to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience.

3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

4. Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

5. Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

6. Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and non-print texts.

7. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.

8. Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

9. Students develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.

10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.

11. Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.

12. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

Instructional Approach

The teaching of English for the 21st century requires courses that expand the students' writing, literary analysis, and literary appreciation ability. To be successful members of our society students will need a wide repertoire of communication strategies and skills. Although the communication skills of reading, writing, and speaking form the core of language and literacy, new modes of communication and technologies have integrated the process for which those basic skills are transformed. In addition to the traditional courses, English/language arts teachers now need an integrated approach to prepare students for this technological-driven and diverse world with problem solving, collaboration, and analysis – as well as skills with word processing, hypertext, LCD's, Web cams. digital streaming podcasts, smartboards, and social networking software—central to individual and community success (Kist, 2005).

An effective instructional English curriculum teaches the strategies necessary for acquiring academic knowledge, achieving common academic standards, and attaining independence in learning. The framework for the instructional program is consistent with the learning standards developed by the District of Columbia Public Schools. The learning standards specify what students should know and be able to do at the end of each grade level.

The learning strands for high school students include language development, informational text, literary text, research, writing, media, and English language conventions with an emphasis on informational text comprehension and post-secondary/workplace reading and writing skills. The four-year program will provide a series of sequential and integrated English/language arts instructional activities to include informal and formal assessments in determining student growth.

RMSLA students will be engaged in meaningful, relevant, and high-order instructional activities that will prepare them for postsecondary studies as well as the pursuit for life-long goals and personal enrichment. The instructional program will include project-based learning and cross-curricular thematic instruction.

Project-based learning (PBL) is a model that organizes learning around projects. However, projects are complex; based on challenging questions; student-centered; culminate in 'realistic' products or presentations; and teacher facilitated. Authentic PBL involves cooperative learning, reflection, and incorporation of adult skills (Drehl, Grobe, Lopez, & Cabral, 1999).

Research identifies five (5) criteria for effective PBL activities:

- PBL projects are central, not peripheral to the curriculum
- Projects involve students in a constructive investigation
- Projects are student-driven to some significant degree requiring more student responsibility than traditional instruction and traditional projects
- Projects are realistic; not school-like producing a feeling of authenticity to students (Thomas, 2000)

Teachers who use cross-curricular themes create active readers and writers by engaging students in authentic tasks that emerge naturally from interesting and worthwhile topics and ideas. Cross –curricular thematic instruction enables students to:

- Acquire, communicate, and investigate worthwhile knowledge in depth
- Integrate and enrich the language processes of reading, writing, listening, speaking, and thinking
- Practice reading different kinds of materials for varied purposes
- Use prior knowledge of the world and past experiences with language and text to create relationships among various sources of information
- Make choices, interact, collaborate, and cooperate
- Apply what they learn in meaningful and 'real world' contexts
- Informally assess their understanding and application of what they are learning
- Participate and learn, regardless of ability, level of language development, or background; and
- Learn effectively in self-contained, multi-age, or departmental classrooms. (Vogt, 1997)

The integrative teaching and learning approaches with project-based and cross-curricular thematic instructional programs allow all students the opportunity to succeed. Instructional support is more easily available for students who may have struggled through effective teacher modeling, demonstrations, and scaffolding.

The implementation of the PBL model and the use of cross-curricular themes will allow RMSLA students an opportunity (1) to develop higher-level cognitive skills while learning via problem-solving contexts; (2) to incorporate real-life challenges in authentic learning; and (3) to make a connection between instructional activities and conceptual knowledge.

The assessment of English/language arts skills and processes must be comprehensive, authentic, and performance-based. Multiple assessment methods are needed to evaluate a student's knowledge base and the application of communication and literary skills. Indicators of success include improvement in class work, test scores, attendance, quarterly grades, college entrance exams, and participation.

Reliable formative and summative assessments allow teachers to make informed decisions that are responsive to students' needs. Assessments are aligned with learning goals; vary in type and format; use criteria scoring tools (i.e. rubrics); and provide informative feedback for teachers and students.

Strand Six	Media	9.M.1; 9.M.2; 9.M.3; 9.M.4.	Compare/contrast media genres; apply/adapt the principles of written composition in media presentations
Strand Seven	English Language Conventions	9.EL.1; 9.EL.2; 9.EL.3; 9.EL.4; 9.EL.5; 9.EL.6	Recognize and use clauses; verbals; verb tenses; and functional sentence structure

http://www.k12.dc.us/standards

10th Grade English (Year 2)

English 2 continues to build on the major principles taught in English 1. Students focus on expanding their formal and informal forms of written expression by working through each step of the writing process from pre-writing to final drafts. Students will continue to learn about grammar and expand their vocabulary. Students continue to focus on increasing their reading comprehension through an analysis of various literary genres (fiction/nonfiction). Students will continue to review the influence of the media in informational text and learn more about correct research techniques.

10th Grade English

	STRAND	STANDARDS	SKILLS
Strand One	Language Development	10.LD-D.1; 10.LD-Q.2; 10.LD-Q.3; 10.LD-Q.4; 10.LD-Q.5; 10.LD-Q.6; 10.LD-Q.7; 10.LD-Q.8; 10.LD-Q.9; 10.LD-Q.10;	Participate in self-directed teams for discussion; oral presentations; vocabulary and concept development (use of literal/figurative language; word usage denotative/connotative word meanings;
Strand Two	Informational Text	10.IT-E.1; 10.IT-E.2; 10.IT-E.3; 10.IT-E.4; 10.IT-E.5; 10.IT-DP.6; 10.IT-DP.7; 10.IT-A.8; 10.IT-A.9; 10.IT-A.10	Expository text; document and procedural text; argument and persuasive text
Strand Three	Literary Text	10.LT-C.1; 10.LT-G.2; 10.LT-T.3; 10.LT-F.4; 10.LT-F.5; 10.LT-LNF.6; 10.LT-LNF.6; 10.LT-LNF.7; 10.LT-P.B.; 10.LT-D.9; 10.LT-S.10; 10.LT-S.11; 10.LT-TN.12; 10,Lt-TN.13	Connecting literary genres with historical settings and themes; elements of fiction (i.e. foreshadowing, irony); literary non-fiction; analysis of dramatic texts including style, language, and character; traditional and classical literature

Strand Four	Research	10.R.1	Formulate research questions and apply steps for obtaining and collecting information
Strand Five	Writing	10.W-I.1; 10.W-I.2; 10.W-E.3; 10.W-E.4; 10.W-E.5; 10.W-R.6	Imaginative writing; expository writing (persuasive essays, research reports); revision
Strand Six	Media	10.M.1; 10.M.2; 10.M.3; 10.M.4	Media strategies to inform; persuade, or entertain; identify the aesthetic effects; create media presentations
Strand Seven	English Language Conventions	10.EL.1; 10.EL.2; 10.EL.3; 10.EL.4; 10.EL.5	Sentence structure analysis; correct punctuation and spelling usage; appropriate manuscript requirements

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11th Grade English (Year 3)

In English 3, students continue to work on their formal and informal forms of written expression. Students are expected to successfully complete literary analyses of various forms of literature. Students are also expected to successfully complete a research paper and oral presentations integrating various forms of technology.

11th Grade English

	STRAND	STANDARDS	SKILLS
Strand One	Language Development	11.LD-D.1; 11,LD-Q.2; 11.LD-Q.3; 11.LD-Q.4; 11.LD-O.5; 11.LD-O.6; 11.LD-V.7; 11.LD-V.8; 11.LD-V.9	Analyzing types of arguments using focused group discussions; creating rubrics; deliver formal presentations; apply knowledge of linguistic roots, common literary allusions and conceits; use of general and specialized dictionaries
Strand Two	Informational Text	11.IT-E.1; 11.IT-E.2; 11.IT-E.3; 11.IT-E.4; 11.IT-E.5; 11.IT-E.6; 11.IT-DP.7; 11.IT-DP.8; 11.IT-A.9; 11.IT-A.10; 11.IT-A.11; 11.IT-A.12	Expository text (interpret minor/subtly stated details; making relevant inferences); analyzing document structures, technical research, and procedural texts; recognizing common fallacies in argument and persuasive text
Strand Three	Literary Text	11.LT-C.1; 11.LT-G.2;	Relating literary works/authors

		11.LT-T.3; 11.LT-F.4; 11.LT-F.5; 11.LT-LNF.6; 11.LT-LNF.7; 11.LT-P.8; 11.LT-D.9; 11.LT-S.10; 11.LT-TN.12	and seminal ideas; compare/contrast of literary works; analysis of satire work, biographies, speeches, and U.S. documents, poetry, and dramatic; interpret figurative language; knowledge of 18th/19th century works of American literature
Strand Four	Research	11.R.1	Presenting research using the standards in the Writing strand and incorporating two or more forms of media
Strand Five	Writing	11.W-I.1; 11.W-E.2; 11.W-E.3; 11.W-E.4; 11.W-R.5	Imaginative writing (poems using a range of forms and techniques; compose interpretations of literary or expository readings; writing essays of analysis and historical investigation reports; ; revise writing to improve style, word choice, and sentence variety
Strand Six	Media	11.M.1; 11.M.2; 11.M.3; 11.M.4	Analyze the effects of media on elections, techniques used in media messages; create coherent media presentations
Strand Seven	English Language Conventions	11.EL.1; 11.EL.2; 11.EL.3	Demonstrate control of grammar, paragraph and sentence structure; reflect appropriate manuscript requirements in writing

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12th Grade English (Year 4)

English 4 culminates the student's secondary school English/language arts experience. The focus is on World Literature. Students are expected by the end of this year to be able to comprehend and analyze various forms of literature including essays, nonfiction, fiction, and poetry. A strong focus will also include formal written expression through essays and literary analyses. Additionally, students are expected to complete an extended research paper, numerous oral presentations, and integrate the use of technology.

12th Grade English

	STRAND	STANDARDS	SKILLS
Strand One	Language Development	12.LD-D.1; 12,LD-Q.2; 12.LD-Q.3; 12.LD-Q.4; 12.LD-O.5; 12.LD-O.6; 12.LD-O.7; 12.LD-V.8; 12.LD-V.9	Evaluate discussions and participate in a formal/informal meeting on a TV news discussion program; recognize elements of classical speech; analyze four basic types of persuasive speeches; trace etymology of significant terms used in core content
Strand Two	Informational Text	12.IT-E.1; 12.IT-E.2; 12.IT-E.3; 12.IT-E.4; 12.IT-E.5; 12.IT-DP.6; 12.IT-DP.7; 12.IT-A.8; 12.IT-A.9; 12.IT-A.10; 12.IT-A.11; 12.IT-A.12	Analyze cause/effect relationships, organizational patterns, hierarchic structures; evaluate effectiveness of logic; persuasive sources for adherence to ethics
Strand Three	Literary Text	12.LT-C.1; 12.LT-G.2; 12.LT-T.3; 12.LT-T.4; 1.12 LT-F.5; 12.LT-F.6; 12.LT-F.7; 12.LT-LNF.8; 12.LT-LNF.9; 12.LT-P.10; 12.LT-P.11; 12.LT-D.12; 12.LT-D.13; 12.LT-S.14; 12.LT-TN.15; 12.LT-TN.16	Relate literary works with historical/political eras; analyze sub genres; evaluate literary elements and techniques in classical essays/historical speeches; analyze effectiveness and effect of diction and imagery; read and interpret world literature drawn from pre-20th century authors
Strand Four	Research	12.R.1	Present research essay using appropriate techniques for gathering data, organizing information, use of technology and appropriate bibliographic format
Strand Five	Writing	12.W-I.1; 12.W-E.2; 12.W-E.3; 12.W-E.4; 12.W-R.5	Writing short stories and interpretations of literary or expository reading; construct arguments; write an extended research essay; revise writing to improve style, word choice, and sentence variety
Strand Six	Media	12.M.1; 12.M.2; 12.M.3	Evaluate aural, visual, and written images and other special effects used in media; create coherent

			multimedia presentations
Strand Seven	English Language Conventions	12.EL.1; 12.EL.2; 12.EL.3	Demonstrate control of grammar, paragraph and sentence structure; reflect appropriate manuscript requirements in writing.

http://www.k12.dc.us/standards

Advanced Placement (AP) English Courses

RMSLA students will participate in Advanced Placement English courses as a required component of the school's English/Language Arts curriculum. Courses include AP English Language and Composition and AP English Literature. According to the College Board the AP English Language and Composition course is designed "to help students become skilled readers of prose written in a variety of rhetorical contexts and to become skilled writers who compose for a variety of purposes". The goals of an AP English Language and Composition course include:

- To provide students with the opportunities to write effectively in their college courses
- To read complex texts with understanding
- To write complex essays placing an emphasis on content, purpose, and audience
- To become acquainted with a wide variety of prose styles from many disciplines and historical periods
- To gain an understanding of the connections between writing and interpretive skill in reading
- To compose a researched argument paper that includes reading primary and secondary resources carefully; synthesizing materials from sources; and citing sources using conventions recommended by the professional organizations

Most composition courses emphasize the expository, analytical, and argumentative writing skills that form the basis of academic and professional communications.

The Advanced Placement English Literature and Composition course is designed "to engage students in the careful reading and critical analysis of imaginative literature"r. The course should include intensive study of representative works from various genres and periods, concentrating on works of recognized merit. In addition to reading, writing is an integral part of the course. Student writing will include response and reaction papers; analysis and interpretation of literary works; and attention to developing organizing ideas in a clear, coherent, and persuasive language; and a wide range of vocabulary and sentence structures.

http:// www.collegeboard.com/student/testing/ap/subjects/html

RMSLA students will engage in Advanced Placement courses as a prerequisite to the college experience. As a part of the high school English/Language Arts program, these courses promote an integral approach to the strands of oral/written language and other media/technology while allowing students to learn to read and write with increasingly complexity.

Course Descriptions

High school English focuses on basic literacy, the proper use oral and written communication, and the development of an appreciation for various types of literature. The English curriculum plan outlines a sequential plan of study designed to build on previously learned skills while increasing the complexity and requirements for students. RMSLA's English program will incorporate state and national standards in an effort to help students grow in their English language abilities.

9th Grade English (Year One)

The goal for English Language Arts 9 is to build a solid foundation of knowledge, skills, and strategies to include the basics of the writing process; vocabulary development; literary style; research; and public speaking. Students review the basics of the writing process including constructing thesis statements and writing essays. The study of grammar rules and vocabulary is required as a basis for improved communication skills (oral/written). In terms of literature, students will examine author's style, theme, and plot. Additionally, students learn about and practice research and public speaking skills.

RMSLA students are engaged in a comprehensive program of study inclusive of the instructional modes as prescribed by the state standards. In addition units of study will be designed around topical areas of project based learning models and cross-curricular themes. This concept provides an integrative approach that is reality-based, research-focused, student-driven, and leads to both informal and formal assessment.

9th Grade English

	STRAND	STANDARDS	SKILLS
Strand One	Language Development	9 LD-D.1, 9.LD-Q.2, 9.LD-Q.3, 9.LD-Q.4; 9.LD-Q.5, 9.LD-O.6; 9.LD-V.7, 9.LD-V.8; 9.LD-V.9	Implement techniques to improve productivity of group discussions, word choice, oral presentations, vocabulary development (word meaning and usage)
Strand Two	Informational Text	9.IT-E.1; 9.IT-E.2; 9.IT-E.3; 9.IT-E.4; 9.IT-E.5; 9.IT-E.6; 9.IT-DP.7; 9.IT-A.8; 9.IT-A.9	Expository text; document text; and argument and persuasive text
Strand Three	Literary Text	9.LT-C.1; 9.LT-G.2; 9.LT-T.3; 9.LT-F.4.; 9.LT-F.5.; 9.LT-LNF.6; 9.LT-P.7; 9.LT-D.8; 9.LT-D.9; 9.LT-S.10; 9.LT-S.11; 9.LT-TN.12; 9.LT-TN.13	Literary connections; genres; theme; fiction; literary nonfiction; poetry, drama; style and language; traditional narrative and classical literature
Strand Four	Research	9.R.1.	Formulate open-ended research questions using a variety of sources
Strand Five	Writing	9.W-I.1; 9.W-E.2; 9.W-E.3; 9.W-E.4; 9.W-E.5	Imaginative writing; expository writing; content-based research; revisions

RMSLA students will be introduced to a range of literary works reflecting various genres and eras. Literature units will be integrated with Project Based Learning and cross-curricular modes of instruction. Teachers will select literary works that challenge students and have gained national recognition (awards lists, i.e. Caldecott Medal Winners; Coretta Scott King Awards; Newbery Medal Books). Literary works include, but not limited to the following: traditional and classical literature; the Bible as literature; historical documents of literary and philosophical significance; important writers of the 18th, 19th, and 20th centuries; immigrant experiences; British and European literature (poetry, drama, essays, fiction, and contemporary American literature (fiction, poetry, essay, non-fiction, drama).
The main purpose of English/language arts is to produce mastery of a hierarchy of skills relative to the development of oral/written communication skills; enhancing comprehensive and analytical skills; and understanding literature and other informational texts. The instructional plan in English Language Arts for RMSLA students will target multiple learning styles through varied strategies: visual, auditory, kinesthetic, tactile, interpersonal, social, and linguistic. With the implementation of Project-Based Learning and cross-curricular thematic models, teachers will plan instructional units with 'the end in mind' and students will engage in instructional activities that provide meaning and relevance to learning while preparing them for postsecondary success.

References

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Excellence in Environmental Education: Guidelines for Learning (K–12)

North American Association
for Environmental Education

The North American Association for Environmental Education

The North American Association for Environmental Education (NAAEE) is a network of professionals, students, and volunteers working in the field of environmental education throughout North America and in over 55 countries around the world.

NAAEE combines the perspectives of the environmental and educational communities, taking a cooperative, non-confrontational, scientifically balanced approach to promoting life-long learning about environmental issues.

NAAEE members think about how people become literate concerning environmental issues and believe education must go beyond consciousness-raising about these issues. It must prepare people to think together about the difficult decisions they have to make concerning environmental stewardship, and to work together to improve, and try to solve, environmental problems.

NAAEE recognizes the need for a coherent body of information about environmental issues. Its members also recognize that information and analysis are only part of an effective education program. To be truly effective, this body of knowledge must be integrated into all aspects of the curriculum and into all types of educating institutions for the widest array of audiences.

In order to provide support for environmental education and its practitioners, NAAEE offers a variety of professional products, events, and services. These include the NAAEE Annual Conference, printed and electronic publications, Internet-based resources, and representation among leading organizations within the educational and environmental communities.

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Summary of the *Excellence in Environmental Education: Guidelines for Learning (K-12)*

Strand 1 - Questioning, Analysis and Interpretation Skills

- Questioning
- Designing Investigations
- Collecting information
- Evaluating accuracy and reliability
- Organizing information
- Working with models and simulations
- Drawing conclusions and developing explanations

Strand 2 - Knowledge of Environmental Processes and Systems

2.1 The earth as a physical system

- Processes that shape the earth
- Changes in matter
- Energy

2.2 The living environment

- Organisms, populations, and communities
- Heredity and evolution
- Systems and connections
- Flow of matter and energy

2.3 Humans and their societies

- Individuals and groups
- Culture
- Political and economic systems
- Global connections
- Change and conflict

2.4 Environment and society

- Human/environment interactions
- Places
- Resources
- Technology
- Environmental Issues

Summary of the *Excellence in Environmental Education: Guidelines for Learning (K-12)*

Strand 3 - Skills for Understanding and Addressing Environmental Issues

3.1 Skills for analyzing and investigating environmental issues

- Identifying and investigating issues
- Sorting out the consequences of issues
- Identifying and evaluating alternative solutions and courses of action
- Working with flexibility, creativity, and openness

3.2 Decision-making and citizenship skills

- Forming and evaluating personal views
- Evaluating the need for citizen action
- Planning and taking action
- Evaluating the results of actions

Strand 4 - Personal and Civic Responsibility

- Understanding societal values and principles
- Recognizing citizen' rights and responsibilities
- Recognizing efficacy
- Accepting personal responsibility

INTRODUCTION

Excellence in Environmental Education—Guidelines for Learning (K–12) provides students, parents, educators, home schoolers, administrators, policy makers, and the public a set of common, voluntary guidelines for environmental education. The guidelines support state and local environmental education efforts by:

- setting expectations for performance and achievement in fourth, eighth, and twelfth grades;
- suggesting a framework for effective and comprehensive environmental education programs and curricula;
- demonstrating how environmental education can be used to meet standards set by the traditional disciplines and to give students opportunities to synthesize knowledge and experience across disciplines;
- defining the aims of environmental education.

These guidelines set a standard for high quality environmental education across the country, based on what an environmentally literate person should know and be able to do. They draw on the best thinking in the field to outline the core ingredients for environmental education.

Environmental Education: A Vision for the Future

Excellence in Environmental Education—Guidelines for Learning (K–12) is grounded in a widely shared understanding of effective environmental education. For many educators, that understanding begins with two founding documents of the field: the Belgrade Charter (UNESCO-UNEP, 1976) and the Tbilisi Declaration (UNESCO, 1978).

The Belgrade Charter was adopted by a United Nations conference and provides a widely accepted goal statement for environmental education:

> The goal of environmental education is to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.

A few years later, the world's first intergovernmental conference on environmental education adopted the Tbilisi Declaration. This declaration built on the Belgrade Charter and established three broad goals for environmental education. These goals provide the foundation for much of what has been done in the field since 1978:

- To foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas
- To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment

- To create new patterns of behavior of individuals, groups and society as a whole towards the environment

As the field has evolved, these principles have been researched, critiqued, revisited, and expanded. They still stand as a strong foundation for a shared view of the core concepts and skills that environmentally literate citizens need. Since 1978, bodies such as the Brundtland Commission (Brundtland, 1987), the United Nations Conference on Environment and Development in Rio (UNCED, 1992), the Thessaloniki Declaration (UNESCO, 1997) and the World Summit on Sustainable Development in Johannesburg (United Nations, 2002) have influenced the work of many educators, highlighting the importance of viewing the environment within the context of human influences. This perspective has expanded the emphasis of environmental education, focusing more attention on social equity, economics, culture, and political structure.

Environmental education is rooted in the belief that humans can live compatibly with nature and act equitably toward each other. Another fundamental belief is that people can make informed decisions that consider future generations. Environmental education aims for a democratic society in which effective, environmentally literate citizens participate with creativity and responsibility.

Essential Underpinnings of Environmental Education

Environmental education builds from a core of key principles that inform its approach to education. Some of these important underpinnings are:

Systems: Systems help make sense of a large and complex world. A system is made up of parts. Each part can be understood separately. The whole, however, is understood only by understanding the relationships and interactions among the parts. The human body can be understood as a system; so can galaxies. Organizations, individual cells, communities of animals and plants, and families can all be understood as systems. And systems can be nested within other systems.

Interdependence: Human well being is inextricably bound with environmental quality. Humans are a part of the natural order. We and the systems we create—our societies, political systems, economies, religions,

Environmentally literate students possess the knowledge, intellectual skills, attitudes, experiences and motivation to make and act upon responsible environmental decisions. Environmentally literate students understand environmental processes and systems, including human systems. They are able to analyze global, social, cultural, political, economic and environmental relationships, and weigh various sides of environmental issues to make responsible decisions as individuals, as members of their communities, and as citizens of the world. (Adapted from Maryland Partnership for Children in Nature, April 2009)

The Need for Environmental Literacy

The ultimate goal of environmental education is the development of an environmentally literate citizenry. Environmental literacy is not, however, a goal that is reached easily. We are asking individuals to go beyond the fact by fact, piece by piece examination of our environment and begin to understand and think in terms of systems bound together. We are asking individuals to develop a sophisticated set of skills that allow them to solve novel environmental problems and determine the best set of actions. We are asking individuals to become thoughtful, skillful, and active citizens in a democracy.

We need an environmentally literate citizenry that is not only capable of taking individual action, but of making well-informed public policy decisions collectively. Increasingly, individuals are asked to make choices on complex issues that affect their own lives, the lives of their families, their communities, and the world beyond their shores. Choices are made every time people enter a store, turn on a water faucet, plant a butterfly garden, or set the thermostat in their homes. Each time citizens vote, they make environmental decisions. When public policy is made, these decisions not only impact the economy and jobs, but the environment. Environmental literacy is predicated on the belief that if we educate our citizens so they are capable of making quality decisions, they will do so when the time comes.

Environmental literacy is a vital goal for our society. Environmental education must play an integral role throughout our educational system – at the national level, at the state level, and in each and every classroom.

cultures, technologies—impact the total environment. Since we are a part of nature rather than outside it, we are challenged to recognize the ramifications of our interdependence.

The importance of where one lives: Beginning close to home, learners forge connections with, explore, and understand their immediate surroundings. The sensitivity, knowledge, and skills needed for this local connection provides a base for moving out into larger systems, broader issues, and an expanding understanding of causes, connections, and consequences.

Integration and infusion: Disciplines from the natural sciences to the social sciences to the humanities are connected through the medium of the environment and environmental issues. Environmental education offers opportunities for integration and works best when infused across the curriculum, rather than being treated as a separate discipline or subject area.

Roots in the real world: Learners develop knowledge and skills through direct experience with the environment, environmental issues, and society. Investigation, analysis, and problem solving are essential activities and are most effective when relevant to the real world.

Lifelong learning: Critical and creative thinking, decision making, and communication, as well as collaborative learning, are emphasized. These

skills are essential for active and meaningful learning, both in school and over a lifetime.

Teaching from the Guidelines

Excellence in Environmental Education—Guidelines for Learning (K–12) is primarily focused on learner achievement. The instructional strategies necessary for implementing environmental education are taken up in more detail in three other documents in this series, *Environmental Education Materials: Guidelines for Excellence* (2009), *Guidelines for the Preparation and Professional Development of Environmental Educators* (2004), and *Nonformal Environmental Education Programs: Guidelines for Excellence* (2009). Guidelines for the development and implementation of early childhood education programs will be published in 2010.

Learning and instruction are closely linked, however, so these environmental education guidelines for learning include examples that offer specific ideas for implementation in instructional settings. These examples are based on several general principles that help guide environmental education instruction:

The **learner is an active participant**. If learning is to become a natural, valued part of life beyond school, **instruction should be guided by the learner's interests and treated as a process of building knowledge and skills.** Using the guidelines and knowledge of individual learners and different classes, instructors can make environmental education relevant to specific learners at particular developmental levels.

Instruction provides opportunities for learners to enhance their capacity for **independent thinking and effective, responsible action**. Engaging in individual and group work helps learners develop these capacities independently and in collaborative situations that anticipate the ways in which problem solving happens in the community, on the job, and in the family. A **strong emphasis on developing communication skills** means that learners will be able to both demonstrate and apply their knowledge.

Because environmental issues can prompt deep feelings and strong opinions, educators must take a **balanced approach to instruction**. Educators incorporate differing perspectives and points of view

The Importance of Thinking Skills

Environmentally literate citizens are constantly challenged to use and improve their critical and creative thinking skills. Creative thinking is defined as thinking which results in connections or possibilities previously unrecognized or unknown to the learner. Critical thinking requires an analysis or consideration based on careful examination of information or evidence. Critical thinking relies on thoughtful questioning and logical thinking skills such as inductive and deductive reasoning. They use systems thinking as they make judgments and solve real world problems.

even-handedly and respectfully, and present information fairly and accurately.

Environmental literacy depends on a personal commitment to apply skills and knowledge to help ensure environmental quality and quality of life. For most learners, **personal commitment begins with an awareness of what immediately surrounds them.** Instructors foster learners' innate curiosity and enthusiasm, providing them with **early and continuing opportunities to explore their environment.** "Taking the show on the road"—or at least out of the classroom—is an important instructional strategy for engaging students in direct discovery of the world around them.

How the Guidelines are Organized

Excellence in Environmental Education—Guidelines for Learning (K–12) offers a vision of environmental education that makes sense within the formal education system and promotes progress toward sustaining a healthy environment and quality of life. Guidelines are suggested for each of three grade levels—fourth, eighth, and twelfth. Each guideline focuses on one element of environmental literacy, describing a level of skill or knowledge appropriate to the grade level under which it appears. Sample performance measures illustrate how mastery of each guideline might be demonstrated.

The guidelines are organized into four strands, each of which represents a broad aspect of environmental education and its goal of environmental literacy. The strands are:

Strand 1: Questioning, Analysis and Interpretation Skills

Environmental literacy depends on learners' ability to ask questions, speculate, and hypothesize about the world around them, seek information, and develop answers to their questions. Learners must be familiar with inquiry, master fundamental skills for gathering and organizing information, and interpret and synthesize information to develop and communicate explanations.

Strand 2: Knowledge of Environmental Processes and Systems

An important component of environmental literacy is understanding the processes and systems that comprise the environment, including human social systems and influences. That understanding is based on knowledge synthesized from across traditional disciplines. The guidelines in this section are grouped in four sub-categories:

- 2.1—The Earth as a physical system
- 2.2—The living environment
- 2.3—Humans and their societies
- 2.4—Environment and society

Strand 3: Skills for Understanding and Addressing Environmental Issues

Skills and knowledge are refined and applied in the context of environmental issues. These environmental issues are real-life dramas where differing viewpoints about environmental problems and their potential solutions are played out. Environmental literacy includes the abilities to define, learn about, evaluate, and act on environmental issues. In this section, the guidelines are grouped in two sub-categories:

- 3.1—Skills for analyzing and investigating environmental issues
- 3.2—Decision-making and citizenship skills

Strand 4: Personal and Civic Responsibility

Environmentally literate citizens are willing and able to act on their own conclusions about what should be done to ensure environmental quality. As learners develop and apply concept based learning and skills for inquiry, analysis, and action, they also understand that what they do individually and in groups can make a difference.

Taken together, these strands create a vision of environmental literacy. The sequence of the strands—and the individual guidelines themselves—may suggest that some skills or knowledge serve as a foundation for others. But the process of becoming environmentally literate is not linear, and the sequence of the guidelines is more a function of bringing an order and logic to this document than a reflection of a hierarchy of skills and knowledge.

Communication and expression are skills that are obviously critical to environmental literacy. Examples of how learners might communicate their understanding and express ideas and conclusions are scattered throughout this document. These are only a representation of the modes of artistic and linguistic expression that are both fundamental to, and fostered by, environmental education. The richness of the relationship between environmental education and the language and fine arts is not fully reflected by the few references made to their disciplinary standards. Learners should use many forms of communication in their pursuit of environmental literacy, ranging from oral and written communication to theater, and from dance and music to the visual arts.

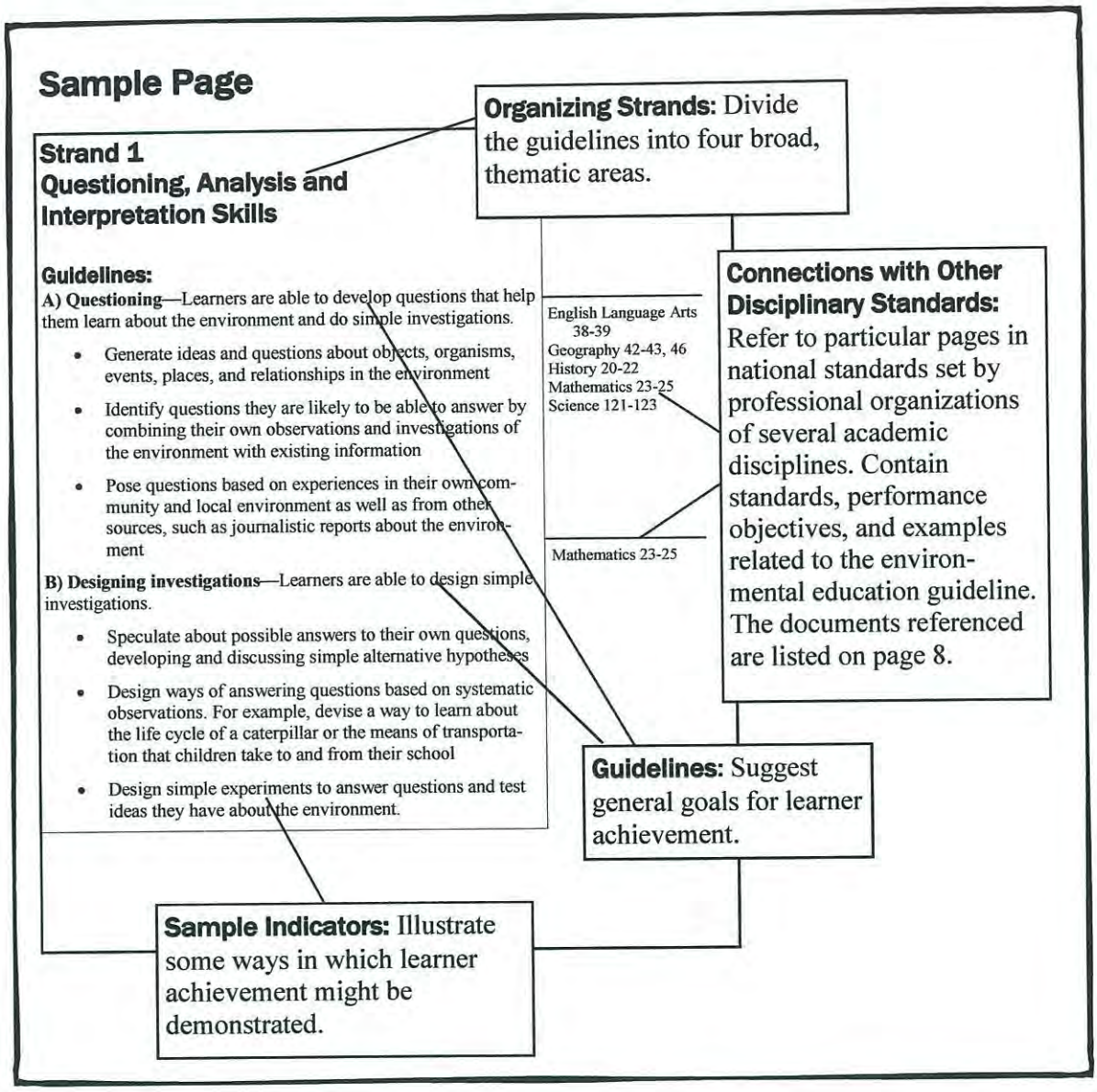
The *Guidelines* at a Glance

Excellence in Environmental Education—Guidelines for Learning (K–12) sets appropriate expectations for learner performance and achievement at the end of fourth and eighth grades and by high school graduation. The diagram on page 7 will help the user understand how this *Guidelines* document is constructed, and what kinds of information it offers.

Sample classroom techniques for meeting the guidelines are included throughout the publication. These summaries also indicate correlations to specific guidelines and suggest additional performance measures.

Also included in this *Guidelines* document are:

- *introductory materials* that place the guidelines in context, outlining a comprehensive vision of environmental education;
- an easy reference chart summarizing the strands and guidelines (see Appendix A);
- *background for the Development of the Learner Guidelines Framework,* an appendix that relates key developments in the field of environmental education to the framework around which the guidelines are structured (see Appendix B).



Connections with Other Disciplinary Standards

These are the national standards documents referenced and the short titles used to represent them.

Short Title	Standards Document Referenced
Arts	*National Standards for Arts Education: What Every Young American Should Know and Be Able to Do in the Arts*. Reston, VA: Music Educators National Conference, 1994.
Civics and Government	*National Standards for Civics and Government.* Calabasas, CA: Center for Civic Education, 1994.
Economics	*Voluntary National Content Standards in Economics.* New York: National Council on Economics Education, 1997.
English Language Arts	*Standards for the English Language Arts.* Urbana, IL: National Council of Teachers of English, 1996.
Geography	*Geography for Life: National Geography Standards*. Washington, DC: National Geographic Research and Exploration, 1994.
History	*National Standards for History*. Los Angeles, CA: National Center for History in the Schools, 1996.
Mathematics	*Principles and Standards for School Mathematics.* Reston, VA: National Council of Teachers of Mathematics, 2000.
Science	*National Science Education Standards.* Washington, DC: National Academy Press, 1996.
Science Benchmarks	Project 2061, American Association for the Advancement of Science. *Benchmarks for Science Literacy*, 2009 (available online at http://www.project2061.org/publications/bsl/online/index.php) .
Social Studies	*Expectations of Excellence: Curriculum Standards for Social Studies*. Washington, DC: National Council for the Social Studies, 1994.

Environmental Education Supports 21st Century Skills

The Partnership for 21st Century Skills brings together the business community, education leaders, and policy makers to define a powerful vision for 21st century education and to ensure that students emerge from our schools with the skills needed to be effective citizens, workers, and leaders in the 21st century. The Partnership's framework for education describes the skills, knowledge and expertise students should master to succeed in work and life in the 21st century:

Core Subjects and 21st Century Themes: Mastery of core academic subjects is the base upon which all 21st century learning occurs. Core subjects include English, reading or language arts; world languages; arts; mathematics; economics; science; geography; history; government; and civics. Schools must support students in developing deep mastery of core academic subjects while also integrating 21st century interdisciplinary themes into these academic subject areas. These themes include:

- Global Awareness
- Financial, Economic, Business and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy
- Environmental Literacy

Learning and Innovation Skills: Learning and innovation skills are what separate students who are prepared for increasingly complex life and work environments in the 21st century and those who are not. They include:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

Information, Media and Technology Skills: People in the 21st century live in a technology and media-driven environment, marked by access to an abundance of information, rapid changes in technology tools and the ability to collaborate and make individual contributions on an unprecedented scale. To be effective in the 21st century, citizens and workers must be able to exhibit a range of functional and critical thinking skills, such as:

- Information Literacy
- Media Literacy
- ICT (Information, Communications and Technology) Literacy

Used with permission from the Partnership for 21st Century Skills
http://www.21stcenturyskills.org

Excellence in Environmental Education—Guidelines for Learning 9th-12th Grade Self Assessment Tool

PLEASE NOTE: For more detailed information about the guidelines briefly listed below, see pages 50-70 of *Excellence in Environmental Education—Guidelines for Learning (K–12)* produced by the North American Association for Environmental Education.

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 9th-12th grade Learners with learning experiences so that by the time they finish 12th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
Strand 1—Questioning, Analysis and Interpretation Skills			
A. Develop, modify, clarify, and explain questions that guide environmental investigations of various types, and identify factors that influence the questions they pose.			
B. Design investigations to answer particular questions about the environment—even developing approaches for investigating unfamiliar types of problems and phenomena.			
C. Locate and collect reliable information for environmental investigations of many types. Know how to use sophisticated technology to collect information, including computer programs designed to address, gather, store, and display data.			
D. Apply basic logic and reasoning skills to evaluate completeness and reliability in a variety of information sources.			
E. Organize and display information in ways appropriate to different types of environmental investigations and purposes.			
F. Create, use, and evaluate models to understand environmental phenomena.			
G. Use evidence and logic in developing proposed explanations that address their initial questions and hypotheses.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 9th-12th grade Learners with learning experiences so that by the time they finish 12th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
Strand 2—Knowledge of Environmental Processes and Systems **2.1—The Earth as a Physical System**			
A. Understand the major physical processes that shape the Earth; relate these processes, especially large-scale and long-term ones, to characteristics of the Earth's surface.			
B. Apply their understanding of chemical reactions to round out their explanations of environmental characteristics and everyday phenomena.			
C. Apply their knowledge of energy and matter to understand phenomena in the world around them.			
2.2—The Living Environment			
A. Understand basic population dynamics and the importance of diversity in living systems.			
B. Understand the basic ideas and genetic mechanisms behind biological evolution.			
C. Understand the living environment to be comprised of interrelated, dynamic systems.			
D. Account for environmental characteristics based on their knowledge of how matter and energy interact in living systems.			
2.3—Humans and Their Societies			
A. Understand the influence of individual and group actions on the environment and comprehend how groups can work to promote and balance interests.			
B. Understand cultural perspectives and dynamics and apply their understandings to particular contexts.			
C. Understand how different political and economic systems account for, manage, and affect natural resources and environmental quality.			
D. Analyze global social, cultural, political, economic, and environmental linkages.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 9th-12th grade Learners with learning experiences so that by the time they finish 12th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
E. Understand the functioning of public processes for promoting and managing change and conflict, and analyze their effects on the environment.			
2.4—Environment and Society			
A. Understand that humans are able to alter the physical environment to meet their needs and that there are limits to the ability of the environment to absorb impacts or meet human needs.			
B. Understand "place" as humans endowing a particular part of the Earth with meaning through their interactions with that environment.			
C. Understand that the importance and use of resources change over time and vary under different economic and technological systems.			
D. Examine the social and environmental impacts of various technologies and technological systems.			
E. Converse, write about, and evaluate environmental issues at scales that range from local to national to global; understand that these scales and issues are often linked.			
Strand 3—Analyzing, Investigating, and Addressing Environmental Issues **3.1—Skills for Analyzing and Investigating Environmental Issues**			
A. Apply their research and analytical skills to investigate environmental issues ranging from local issues to those that are regional or global in scope.			
B. Evaluate the consequences of specific environmental changes, conditions, and issues for human and ecological systems.			
C. Identify and propose action strategies that are likely to be effective in particular situations and for particular purposes.			
D. Engage each other in peer review conducted in the spirit of open inquiry, knowing that environmental issues investigations can bring to the surface deeply held views.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 9th-12th grade Learners with learning experiences so that by the time they finish 12th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
3.2—Decision-Making and Citizenship Skills			
A. Communicate, evaluate, and justify their own views on environmental issues and alternative ways to address them.			
B. Decide whether action is needed in particular situations, and whether they should be involved.			
C. Plan for action based on their research and analysis of an environmental issue. If appropriate, take actions that are within the scope of their rights and consistent with their abilities and responsibilities as citizens.			
D. Evaluate the effects of their own actions and actions taken by other individuals and groups.			
Strand 4—Personal and Civic Responsibility			
A. Analyze the influence of shared and conflicting societal values.			
B. Understand the importance of exercising the rights and responsibilities of citizenship.			
C. Possess a realistic self-confidence in their effectiveness as citizens.			
D. Understand that their actions can have broad consequences and accept responsibility for recognizing those effects and changing their actions when necessary.			

CCDC
COMMUNITY COLLEGE
OF THE DISTRICT OF COLUMBIA

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Tel. 202.274.5800

Mr. Brian Jones
Board Director
District of Columbia Public
Charter School Board
3333 14th Street, NW
Suite 210
Washington, DC 20010
January 11, 2011

Dear Mr. Jones:

As Dean for Workforce Development and Lifelong Learning at the Community College of the District of Columbia (CCDC), I am pleased to write in support of the charter application for Renaissance Math, Science, and Leadership Academy (RMSLA). I firmly believe that the RMSLA school plan will serve to create a strong school with which the CCDC will look forward to working. As a program that serves over 5,100 hundred District of Columbia college students, we know the value of strong schools and programs. We at the CCDC are committed to helping schools such as RMSLA prepare students to succeed in the classroom, in their personal lives, and in the community.

CCDC, as a part of the University of the District of Columbia's family of post-secondary institutions, is an academic institution that offers a positive developmental experience to college students from historically underserved communities by fostering strong academic curriculums and trusting mentor relationships between our students and faculty. Similar to the rigorous learner-centered model of RMSLA, CCDC provides opportunities that help students become more self-confident, motivated, and active members of their community. It is for this very reason that we desire to develop a relationship with RMSLA. In addition the CCDC workforce development program and parent center at PR Harris Elementary School, which is located five minutes away from the RMSLA proposed site, will foster a partnership that will allow RMSLA and the CCDC to further assist with the professional and educational development of the RMSLA parents.

We greatly look forward to working with the founding group of RMSLA. We believe that the school will help advance our shared cause of bringing quality education and programming to the students and families of the District of Columbia. I encourage you to grant a charter for Renaissance Math, Science, and Leadership Academy.

Sincerely,

[redacted]

Ms. Connie Spinner

COUNCIL OF THE DISTRICT OF COLUMBIA
THE JOHN A. WILSON BUILDING
1350 PENNSYLVANIA AVENUE, N.W., SUITE 102
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COUNCILMEMBER MARION BARRY
Chairman, Committee on Aging and Community Affairs
Former Mayor
Councilmember, Ward 8
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Committee Member
Economic Development
Housing and Workforce Development
Health
Human Services
Judiciary

January 11, 2011

Mr. Brian Jones, Director
District of Columbia Public Charter School Board
333- l4th Street, N.W., Suite 210
Washington, D.C. 20010

Dear Mr. Jones:

I am pleased to support the Renaissance Math, Science, and Leadership Academy's (RMSLA) charter application. As Councilmember for Ward 8, I have worked diligently in the efforts to develop the local community. As such, I am acutely aware of the lack of quality college preparatory schools available to most of the large youth population of the DC Metropolitan area; particularly in Ward 8. The concurrent need for extensive youth leadership development within the District of Columbia has in the past and is currently a major roadblock in the development not only of young people themselves but also of the community. For these an d other reasons relating to freedom of choice, diversity and competition I support the charter application of Renaissance Math, Science, and Leadership Academy.

I have worked with a number of charter schools, and I have worked closely with Bishop Glen A. Staples and the Temple of Praise on many projects in the District. I am confident that Bishop Staples, the Temple of Praise, and RMSLA has developed a school and curriculum that will bring much needed additions to the educational offerings in the District of Columbia, particularly the Washington Highlands, Bellevue Community. I look forward to working with them to help improve public education for all high school students.

Sincerely,

[redacted]

Marion Barry
Councilmember, Ward 8

HOWARD UNIVERSITY

Howard University Middle School of Mathematics and Science

$(MS)^2$

January 24, 2011

District of Columbia
Public Charter School Board
3333 14th Street, NW, Suite 210
Washington, DC 20010

To Whom It May Concern:

The Howard University Public Charter Middle School of Mathematics and Science is a high performing middle school devoted to providing students with an outstanding 21st century education, as well as the required platform needed for their ultimate success in life. To this end, we understand that their time with us must be followed up with the appropriate high school experience to ensure that the high level track that was begun here is maintained throughout their academic career track. This is why we dedicated such a significant amount of our resources into placing our 8th graders into the best high school programs.

Therefore, we are happy to hear of the planned creation of Renaissance Math, Science, and Leadership Academy (RMSLA). While we may be located in Ward 1, we receive students from all over D.C., with Wards 8 and 7 sending us our second and third largest student representation. It is important to us to have quality post feeder math and science schools in every community, and unfortunately, Southeast is currently significantly underserved. We believe that having a high quality math and science high school, such as the proposed intent of RMSLA, located in the heart of Anacostia, is critical.

For years, the Temple of Praise Church has dedicated itself to improving the communities that it serves, and the quality of life of the people who live in those communities. Creating a high performing charter school seems like a natural extension of the work that they have already demonstrated a strong track record for.

Sincerely,

[redacted]

Sue P. White
Head of School

COUNCIL OF THE DISTRICT OF COLUMBIA
OFFICE OF COUNCILMEMBER MICHAEL A. BROWN
Chairman, Committee on Housing and Workforce Development

January 21, 2011

Mr. Brian Jones
Board Director
DC Public Charter School Board
3333 14th Street, NW Suite 210
Washington, DC 20010

Dear Mr. Jones:

It is my pleasure to write this letter in support of Temple of Praise's application to establish the Renaissance Math, Science, and Leadership Academy (RMSLA) in Ward 8 that would provide students and families in the community a safe, structured and conducive environment for learning. Children educated in this environment will be nurtured and taught by knowledgeable and caring adults who are committed to their educational development and growth. This school will serve primarily students and families from Ward 7 and Ward 8 which have the highest dropout rates among high school students in the District.

As a Councilmember At-Large for the District of Columbia, my Council colleagues and I recognize the importance of education for our economically disadvantaged youths and for the communities where they live. We also recognize the challenges and obstacles they currently face in the current educational environment. The RMSLA program will offer students and their families an educational alternative that will foster self-respect, self-discipline, and a joy of learning.

I support the mission of the Renaissance Math, Science, and Leadership Academy; and therefore, wholeheartedly support this application to establish this public charter school in Ward 8.

Sincerely,

[redacted]

1350 Pennsylvania Avenue, NW ~ Washington, DC 20004 ~ Suite 406
(202) 724.8105 -office; (202) 724.8071-fax; www.dccouncil.us

SNR DENTON

SNR Denton US LLP
1301 K Street, NW
Suite 600, East Tower
Washington, DC 20005-3364 USA

Kevin P. Chavous
Partner
kevin.chavous@snrdenton.com
[redacted]
snrdenton.com

January 11, 2011

Mr. Brian Jones
Board Director
District of Columbia Public
Charter School Board
3333 14th Street, NW, Suite 210
Washington, DC 20010

Dear Mr. Jones:

I am pleased to support the Renaissance Math, Science, and Leadership Academy's charter application. As a former member of the Council of the District of Columbia and Chair of the Council Committee on Education, Libraries and Recreation, I believe that "Each and every American citizen is entitled to have equal access to a high quality education, and I am dedicated to ensuring that our nation reaches this goal."

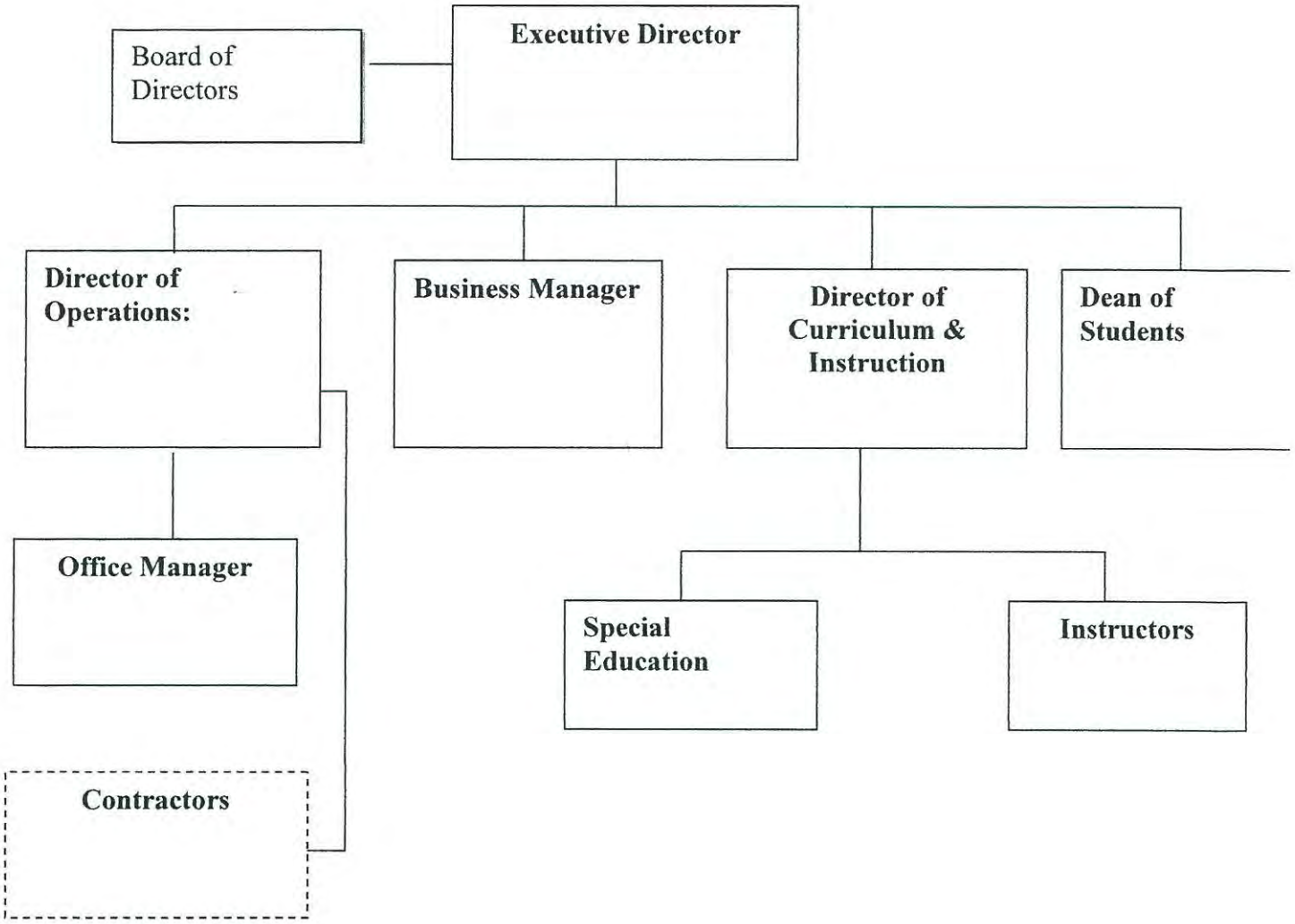
I have worked diligently to help lead the charter school movement into the Washington DC area. I am excited about the opportunities RSMLA will bring into the District of Columbia's disadvantaged communities. RSMLA'S rigorous learner-centered curriculum and dedication to empowering the future generation of leaders emulates the goals I continue to work towards. For these and other reasons relating to community development, academic achievement, and leadership, I support the charter application of Renaissance Math, Science, and Leadership Academy. I look forward to supporting them in their efforts to help improve public education for all high school students.

Sincerely,

[redacted]

Kevin P. Chavous
Partner

RMSLA ORGANIZATIONAL CHART (YRS 1, 2)



Schedules by Grade Level

9th Grade Schedule		Semester 1 – A Day	Semester 1 – B day
PERIOD ONE	8:15-9:15	Algebra 1	Algebra 1
PERIOD TWO	9:2010:20	English/Language Arts 1	English/Language Arts 1
PERIOD THREE	10:25-11:25	Physical Education	Music
LUNCH/ADVISORY	11:30-12:15	30 min. Lunch/15 min. Advisory-Homeroom	30 min. Lunch/15 min. Advisory-Homeroom
PERIOD FOUR	12:20-1:20	Biology	Lab Skills /Computer Science
PERIOD FIVE	1:25-2:25	DC History	Elective or Study Skills
PERIOD SIX	2:30-3:30	World Language	Leadership Seminar/Study Hall
Advisory-Homeroom/ Extended Day	3:35 -4:35		
Tutoring	4:40-5:00	Mondays, Tuesdays, and Wednesdays	
9th Grade Schedule		Semester 2 – A Day	Semester 2 – B day
PERIOD ONE	8:15-9:15	Algebra 1	Algebra 1
PERIOD TWO	9:2010:20	English/Language Arts 1	English/Language Arts 1
PERIOD THREE	10:25-11:25	Physical Education	Art
LUNCH/ADVISORY	11:30-12:15	30 min. Lunch/15 min. Advisory-Homeroom	30 min. Lunch/15 min. Advisory-Homeroom
PERIOD FOUR	12:20-1:20	Biology	Lab Skills /Computer Science
PERIOD FIVE	1:25-2:25	Civics	Elective or Study Skills
PERIOD SIX	2:30-3:30	World Language	Leadership Seminar/Study Hall
Advisory-Homeroom/ Extended Day	3:35 -4.35		
Tutoring	4:40-5:00	Mondays, Tuesdays, and Wednesdays	

10th Grade Schedule		Semester 1 – A Day	Semester 1 – B day
PERIOD ONE	8:15-9:15	Geometry	Geometry
PERIOD TWO	9:2010:20	English/Language Arts 2	English/Language Arts 2
PERIOD THREE	10:25-11:25	Physical Education	Music
LUNCH/ADVISORY	11:30-12:15	30 min. Lunch/15 min. Advisory-Homeroom	30 min. Lunch/15 min. Advisory-Homeroom
PERIOD FOUR	12:20-1:20	Chemistry	Lab Skills/Computer Science
PERIOD FIVE	1:25-2:25	World Geography	Elective
PERIOD SIX	2:30-3:30	World Language	Leadership Seminar/Study Hall
Advisory-Homeroom/ Extended Day	3:35 -4:35		
Tutoring	4:40-5:00	Mondays, Tuesdays, and Wednesdays	

10th Grade Schedule		Semester 2 – A Day	Semester 2 – B day
PERIOD ONE	8:15-9:15	Geometry	Geometry
PERIOD TWO	9:2010:20	English/Language Arts 2	English/Language Arts2
PERIOD THREE	10:25-11:25	Physical Education	Art
LUNCH/ADVISORY	11:30-12:15	30 min. Lunch/15 min. Advisory-Homeroom	30 min. Lunch/15 min. Advisory-Homeroom
PERIOD FOUR	12:20-1:20	Chemistry	Lab Skills/Computer Science
PERIOD FIVE	1:25-2:25	World History	Elective
PERIOD SIX	2:30-3:30	World Language	Leadership Seminar/Study Hall
Advisory-Homeroom/ Extended Day	3:35 -4:35		
Tutoring	4:40-5:00	Mondays, Tuesdays, and Wednesdays	

11th Grade Schedule		Semester 1 – A Day	Semester 1 – B day
PERIOD ONE	8:15-9:15	Algebra 2	Algebra 2
PERIOD TWO	9:2010:20	English/Language Arts 3	English/Language Arts 3
PERIOD THREE	10:25-11:25	Physical Education	Elective
LUNCH/ADVISORY	11:30-12:15	30 min. Lunch/15 min. Advisory-Homeroom	30 min. Lunch/15 min. Advisory-Homeroom
PERIOD FOUR	12:20-1:20	Physics	Lab Skills/Computer Science
PERIOD FIVE	1:25-2:25	US History	Elective
PERIOD SIX	2:30-3:30	World Language	Leadership Seminar
Advisory-Homeroom/ Extended Day	3:35 -4:35		
Tutoring	4:40-5:00	Mondays, Tuesdays, and Wednesdays	
11th Grade Schedule		Semester 2 – A Day	Semester 2 – B day
PERIOD ONE	8:15-9:15	Algebra 2	Algebra 2
PERIOD TWO	9:2010:20	English/Language Arts 3	English/Language Arts 3
PERIOD THREE	10:25-11:25	Physical Education	Elective
LUNCH/ADVISORY	11:30-12:15	30 min. Lunch/15 min. Advisory-Homeroom	30 min. Lunch/15 min. Advisory-Homeroom
PERIOD FOUR	12:20-1:20	Physics	Lab Skills/Computer Science
PERIOD FIVE	1:25-2:25	US Geography	Elective
PERIOD SIX	2:30-3:30	World Language	Leadership Seminar/Pre-Internship
Advisory-Homeroom/ Extended Day	3:35 -4:45		
Tutoring	4:40-5:00	Mondays, Tuesdays, and Wednesdays	

12th Grade Schedule		Semester 1 – A Day	Semester 1 – B day
PERIOD ONE	8:15-9:15	Pre-Calculus	Pre-Calculus
PERIOD TWO	9:2010:20	English/Language Arts 4	English/Language Arts 4
PERIOD THREE	10:25-11:25	Physical Education	Music Elective
LUNCH/ADVISORY	11:30-12:15	30 min. Lunch/15 min. Advisory-Homeroom	30 min. Lunch/15 min. Advisory-Homeroom
PERIOD FOUR	12:20-1:20	AP Class	AP Class
PERIOD FIVE	1:25-2:25	US Government	Foreign Language
PERIOD SIX	2:30-3:30	Elective	Leadership Seminar/Internship
Advisory-Homeroom/ Extended Day	3:35 -4:35		
Tutoring	4:40-5:00	Mondays, Tuesdays, and Wednesdays	

12th Grade Schedule		Semester 2 – A Day	Semester 2 – B day
PERIOD ONE	8:15-9:15	Pre-Calculus	Pre-Calculus
PERIOD TWO	9:2010:20	English/Language Arts 4	English/Language Arts 4
PERIOD THREE	10:25-11:25	Physical Education	Art Elective
LUNCH/ADVISORY	11:30-12:15	30 min. Lunch/15 min. Advisory-Homeroom	30 min. Lunch/15 min. Advisory-Homeroom
PERIOD FOUR	12:20-1:20	AP Class	AP Class
PERIOD FIVE	1:25-2:25	Economics/Personal Finance	World Language
PERIOD SIX	2:30-3:30	Elective	Leadership Seminar/Internship
Advisory-Homeroom/ Extended Day	3:35 -4:35		
Tutoring	4:40-5:00	Mondays, Tuesdays, and Wednesdays	

1	Pre-opening Expenses	
2	Two-Year Operating Budget	
	Budget Projectons	
	Administrative Fee	Included in each budget spreadsheet
3	Estimated Five -Year Budget Projections	
4	Capital Budget	
5	Cash Flow Projections	Year ONE

Monthly Cash Flow Projection

DESCRIPTION RMSLA YR 1	Month 1 July	Month 2 August	Month 3 Sept	Month 4 Oct	Month 5 Nov	Month 6 Dec	Month 7 Jan	Month 8 Feb	Month 9 March
1. Cash on Hand (start of month)	$ 400,000.00	$460,585	$345,831	$88,592	$775,442	$511,953	$249,714	$680,314	$718,075
2. Cash receipts									
Per Pupil Charter Payments	$ 539,604.00	$ -	$ -	$ 539,604.00	$ -	$ -	$ 539,604.00	$ -	$ -
Facilities Allowance	$ 140,000.00	$ -	$ -	$ 140,000.00	$ -	$ -	$ 140,000.00	$ -	$ -
Special Ed. Funds	$ 29,028.48	$ -	$ -	$ 29,028.48	$ -	$ -	$ 29,028.48	$ -	$ -
Federal Entitlements	$ 39,000.00	$ -	$ -	$ 39,000.00	$ -	$ -	$ 39,000.00	$ -	$ -
Other Government Funding/Grants	$ 32,391.67	$ 32,391.67	$ 32,391.67	$ 32,391.67	$ 32,391.67	$ 32,391.67	$ 32,391.67	$ 32,391.67	$ 32,391.67
Grants and Donations	$ -			$ 200,000.00				$ 300,000.00	
Activities Fees									
Other Income	$ -	$ -	$ 5,940.00	$ 5,940.00	$ 5,940.00	$ 5,940.00	$ 5,940.00	$ 5,940.00	$ 5,940.00
3. Total Receipts	$ 780,024.15	$ 32,391.67	$ 38,331.67	$ 985,964.15	$ 38,331.67	$ 38,331.67	$ 785,964.15	$ 338,331.67	$ 38,331.67
4. Total Cash Available	##########	$492,977	$384,163	$1,074,556	$813,774	$550,284	$1,035,678	$1,018,645	$756,406
5. Expenses									
Personnel Salaries and Benefits									
Principal/Executive Salary	$ 7,916.67	$ 7,916.67	$ 7,916.67	$ 7,916.67	$ 7,916.67	$ 7,916.67	$ 7,916.67	$ 7,916.67	$ 7,916.67
Teachers Salaries	$ -	$ -	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 91,000.00
Teacher Aides/Assistance Salaries	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Education Professionals Salaries	$ 26,666.67	$ 26,666.67	$ 26,666.67	$ 26,666.67	$ 26,666.67	$ 26,666.67	$ 26,666.67	$ 26,666.67	$ 26,666.67
Business Manager	$ 8,750.00	$ 8,750.00	$ 8,750.00	$ 8,750.00	$ 8,750.00	$ 8,750.00	$ 8,750.00	$ 8,750.00	$ 8,750.00
Clerical Salaries	$ 7,083.33	$ 7,083.33	$ 7,083.33	$ 7,083.33	$ 7,083.33	$ 7,083.33	$ 7,083.33	$ 7,083.33	$ 7,083.33
Custodial Salaries	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00
Other Staff Salaries		$ -	$ 6,500.00	$ 6,500.00	$ 6,500.00	$ 6,500.00	$ 6,500.00	$ 6,500.00	$ 6,500.00
Employee Benefits	$ 13,229.17	$ 13,229.17	$ 37,604.17	$ 37,604.17	$ 37,604.17	$ 37,604.17	$ 37,604.17	$ 37,604.17	$ 37,604.17
Contracted Staff	$ -	$ -	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00
Staff Development Costs	$ -	$ 6,250.00	$ -	$ -	$ 6,250.00	$ -	$ 6,250.00	$ -	$ -
Direct Student Costs									
Textbooks	$ 75,000.00	$ -	$ -	$ -	$ -	$ -	$ 25,000.00	$ -	$ -
Student Supplies and Materials	$ 30,000.00	$ -	$ -	$ -	$ -	$ -	$ 10,000.00	$ -	$ -
Library and Media Center Materials	$ 35,000.00	$ -	$ -	$ -	$ -	$ -	$ 15,000.00	$ -	$ -
Computers and Materials	$ 150,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Instructional Equipment	$ 75,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Monthly Cash Flow Projection

Classroom Furnishings and Supplies	$ 150,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Student Assessment Materials	$ 10,000.00	$ -	$ -	$ -	$ -	$ 5,000.00	$ -	$ 5,000.00	$ -	
Contracted Instructional/Student Services	$ -	$ -	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	
Miscellaneous Student Costs	$ -	$ -	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	

DESCRIPTION	Month 1 July	Month 2 August	Month 3 Sept	Month 4 Oct	Month 5 Nov	Month 6 Dec	Month 7 Jan	Month 8 Feb	Month 9 March
Office Expenses									
Office Supplies and Materials	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00
Office Furnishings and Equip	$ 5,833.33	$ 5,833.33	$ 5,833.33	$ 5,833.33	$ 5,833.33	$ 5,833.33	$ 5,833.33	$ 5,833.33	$ 5,833.33
Office Equipment Rental and Maintenance	$ 3,083.33	$ 3,083.33	$ 3,083.33	$ 3,083.33	$ 3,083.33	$ 3,083.33	$ 3,083.33	$ 3,083.33	$ 3,083.33
Telephone/Telecommunications	$ 6,666.67	$ 6,666.67	$ 6,666.67	$ 6,666.67	$ 6,666.67	$ 6,666.67	$ 6,666.67	$ 6,666.67	$ 6,666.67
Legal, Accounting and Payroll Services	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00
Printing and Copying	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Postage and Shipping	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33
Other	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33
Occupancy Expenses									
Rent	$ 18,750.00	$ 18,750.00	$ 18,750.00	$ 18,750.00	$ 18,750.00	$ 18,750.00	$ 18,750.00	$ 18,750.00	$ 18,750.00
Mortgage Interest Payments	$ -	0	0	0	0		0	0	0
Maintenance and Repairs	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33
Utilities	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00
Janitorial Supplies	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 1,666.67
Equipment Rental and Maintenance	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33	$ 833.33
Contracted Building Services	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00
General Expenses									
Insurance	$ 50,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest Expense	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00
Transportation	$ -	$ -	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00
Food Service	$ -	$ -	$ 19,800.00	$ 19,800.00	$ 19,800.00	$ 19,800.00	$ 19,800.00	$ 19,800.00	$ 19,800.00
Administration Fee	$ 3,543.16	$ -	$ -	$ 3,543.16	$ -	**$ -**	$ 3,543.16	$ -	$ -
Other General Expense	$ 1,250.00	$ 1,250.00	$ 1,250.00	$ 1,250.00	$ 1,250.00	$ 1,250.00	$ 1,250.00	$ 1,250.00	$ 1,250.00
6. Total Expenses	$ 719,439.00	$147,146	$295,571	$299,114	$301,821	$300,571	$355,364	$300,571	$295,571
7. Fund Balance (end of month)	$ 460,585.15	$345,831	$88,592	$775,442	$511,953	$249,714	$680,314	$718,075	$460,835

Monthly Cash Flow Projection

Month 10 April	Month 11 May	Month 12 June	Total
$460,835	$941,436	$684,196	
$ 539,604.00	$ -	$ -	$ 2,158,416
$ 140,000.00	$ -	$ -	$ 560,000
$ 29,028.48	$ -	$ -	$ 116,114
$ 39,000.00	$ -	$ -	$ 156,000
$ 32,391.67	$ 32,391.67	$ 32,391.67	$ 388,700
			$ 500,000
$ 5,940.00	$ 5,940.00	$ 5,940.00	
$ 785,964.15	$ 38,331.67	$ 38,331.67	$ 3,938,630
$1,246,800	$979,767	$722,528	$ 10,255,602
$ 7,916.67	$ 7,916.67	$ 7,916.67	$ 95,000
$ 91,000.00	$ 91,000.00	$ 91,000.00	$ 910,000
$ -	$ -	$ -	$ -
$ 26,666.67	$ 26,666.67	$ 26,666.67	$ 320,000
$ 8,750.00	$ 8,750.00	$ 8,750.00	$ 105,000
$ 7,083.33	$ 7,083.33	$ 7,083.33	$ 85,000
$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 30,000
$ 6,500.00	$ 6,500.00	$ 6,500.00	$ 65,000
$ 37,604.17	$ 37,604.17	$ 37,604.17	$ 402,500
$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 50,000
$ 6,250.00	$ -	$ -	$ 25,000
			$ -
$ -	$ -	$ -	$ 100,000
$ -	$ -	$ -	$ 40,000
$ -	$ -	$ -	$ 50,000
$ -	$ -	$ -	$ 150,000
$ -	$ -	$ -	$ 75,000

Monthly Cash Flow Projection

$ -	$ -	$ -	
			$ 150,000
$ -	$ -	$ -	$ 20,000
$ 5,000.00	$ 5,000.00	$ 5,000.00	
			$ 50,000
$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 20,000
Month 10 April	**Month 11 May**	**Month 12 June**	**Total**
$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 30,000
$ 5,833.33	$ 5,833.33	$ 5,833.33	$ 70,000
$ 3,083.33	$ 3,083.33	$ 3,083.33	
			$ 37,000
$ 6,666.67	$ 6,666.67	$ 6,666.67	
			$ 80,000
$ 5,000.00	$ 5,000.00	$ 5,000.00	
			$ 60,000
$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 20,000
$ 833.33	$ 833.33	$ 833.33	$ 10,000
$ 833.33	$ 833.33	$ 833.33	$ 10,000
			$ -
$ 18,750.00	$ 18,750.00	$ 18,750.00	$ 225,000
0	0	0	$ -
$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 40,000
$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 60,000
$ 1,666.67	$ 1,666.67	$ 1,666.67	$ 20,000
$ 833.33	$ 833.33	$ 833.33	
			$ 10,000
$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 180,000
			$ -
$ -	$ -	$ -	$ 50,000
$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 30,000
$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 10,000
$ 19,800.00	$ 19,800.00	$ 19,800.00	$ 198,000
$ 3,543.16	$ -	$ -	$ 14,173
$ 1,250.00	$ 1,250.00	$ 1,250.00	$ 15,000
$305,364	$295,571	$295,571	$ 3,911,673
$941,436	$684,196	$426,957	$ 6,343,930

Line Item	Category	Description: Revenue
1	Per Pupil Charter Payments	Per pupil allotment (current level of $10,377 grown at 2% annually) for 200 students plus Level I SPED allocation for 12% of student enrollment
2	Per Pupil Facilities Allowance	Per pupil facilities allotment kept flat at current level for 200 students
3	Federal Entitlements	a- Title I NCLB funds based on 200 students based on a 65% school poverty rate; Title II, & V for staff development, parent involvement, and innovative programs.
		c- IDEA – Part B: Individuals with Disability Education Act funds
4	Other Government Funding/Grants	Title V-B for charter school development for year 1 schools = $260,000, plus NSLP reimbursement based on a 65% school poverty rate
5		
6	Private Grants and Donations	Annual Fundraising and Grants awarded (detailed in Fundraising narrative)
7	Activity Fees	N/A
8	Loans	n/a (covered in pre-opening budget)
9	Other Income (please describe in footnote)	Paid student lunch revenue from an estimated 30% of the student population
10		N/A
11	EMO Management Fee (= line 73, col. G)	one half percent of annual budget
12		
13		
14	**TOTAL REVENUES**	
	EXPENSES	***Personnel Salaries and Benefits***
15	Executive Director Salary	1Senior administrators: Executive Director @ $95,000 per yr
16	Teachers Salaries (14)	14 FT teachers @ $65,000 average: Math, Science, English, history, Foreign Language, art, music, physcial education
17	Teacher Aides/Assistance Salaries (0)	n/a
18	Other Education Professionals Salaries (4)	1 SPED Coordinator ensure IEP compliance, Director of Operations, Director of Curriculum and Academic Instruction, Dean of Students @$80,000 average; salary negotiated on position, qualifications
19	Business/Operations Salaries	1 Business Manager, 1 administrative assistant
20	Clerical Salaries (2)	1 Office manager/administrator, and 1 School secretary
21	Custodial Salaries	1 head custodian
22	Other Staff Salaries	1 security and 2 school aides
23	Employee Benefits	25% of total salaries
24	Contracted Staff	Educational consultants for substitutes, etc.
25	Staff Development Costs	Sessions to develop instructional teams, school culture, organizational team, assessment competencies to ensure educational and operational outcomes
26		
27	**Subtotal: Personnel Costs**	
28		
29		***Direct Student Costs***
30	Textbooks	200 students@$500 for books and resources for all subjects
31	Student Supplies and Materials	Misc student supplies and materials such as paper, pencils, chart papers, staples, calculators, lab materials, etc. (200 students @$200)

32	Library and Media Center Materials	Supplementing, replacements and repairs for Books, bookshelves, tables chairs, technology and media equipment
33	Computers and Materials	25 staff/faculty desktop computers, 20 computer lab desktop computers, 100 laptop computers, 10 mobile carts
34	Other Instructional Equipment	10 interactive smartboards, LCD projectors, lab equipment, A/V, etc.
35	Classroom Furnishings and Supplies	Bookshelves, tables, chairs, teacher desk , chairs, lockers, etc
36	Student Assessment Materials	DC CAS and PSAT materials
37	Contracted Student Services	Special Ed/Nurses/ and special services
38	Miscellaneous Student Costs	200 students @$100 – field trips, student honors/celebrations, etc
39		
40	**Subtotal: Direct Student Costs**	
41		
42		***Occupancy Expenses***
43	Rent	Monthly facility payments to owner/landlord (ref agreement w/ Temple of Praise)
44	Mortgage Principal Payments	N/A
45	Mortgage Interest Payments	N/A
46	Building Maintenance and Repairs	Special maintenance of floors, repairs to walls, interior & exterior areas as needed, and warranties for major mechanical systems
47	Renovation/Leasehold Improvements	n/a (covered in pre-opening budget)
48	Utilities	Electric, water, sewage, gas utility bills; and internet
49	Janitorial Supplies	
50	Equipment Rental and Maintenance	Occasional rental of building equipment to manage facility (heavy duty scrubbers, lifts, etc.)
51	Contracted Building Services	Security Surveillance Service: cameras, videotape, building detectors, personnel, and contracted IT support/maintenance services
		Night cleaning services
		Plumbing, pest control, electrical, & HVAC services
52		Technology services
53	**Subtotal: Occupancy Expenses**	

54		
55		***Office Expenses***
56	Office Supplies and Materials	Consumable items: paper, filing, mailings; computer & printing supplies
57	Office Furnishings and Equipment	Furniture & fixtures for staff work stations & offices, conference & meeting areas to establish school operations.
58	Office Equipment Rental and Maintenance	Lease copiers, bell systems,
59	Telephone/Telecommunications	land lines and cell phones
60	Legal, Accounting and Payroll Services	payroll expense, legal services and related costs, audit prep & CPA services for 990 & school-related certified filings; background checks
61	Printing and Copying	Advertising costs for student enrollment and staff recruitment
62	Postage and Shipping	
63	Other	Signage for exterior and interior building directories
64		
65	**Subtotal: Office Expenses**	
66		
67		***General Expenses***
68	Insurance	General liability, workman's comp; facility & boiler, Board of Directors, student coverage
69	Interest Expense	Annual interest on 20 year $500,000 small business loan
70	Transportation	Student transportation for field trips
71	Food Service	200 students @$5.50 (two meals per day) *180 days
72	Administration Fee (to PCSB)	½% of 1% of the total local funding
73	EMO Management Fee	N/A
74	Other General Expense	Miscellaneous general expenses
75		
76	**Subtotal: General Expenses**	
77		
78	**TOTAL EXPENSES**	
79		
80		**EXCESS (OR DEFICIENCY)**
81	Excess (or deficit) retained by school	The Year one budget is designed to fund the maximum program development, while beginning to establish a much needed operating reserve
82	Excess (or deficit) retained by EMO	N/A
		ASSUMPTIONS

Two-Year Operating Budget Worksheet: Year ONE

	DESCRIPTION	BUDGETED AMOUNTS			
		Column A	Column B	Column C	Column D
	REVENUES	501(c)3 School Applicant	Education Management Organization	Total Revenues by Funding Source	Expenditures as a Percent of Total Public Funding
1	Per Pupil Charter Payments	2,158,416		2,158,416	
2	Per Pupil Facilities Allowance	560,000		560,000	
	Level 1	116,114		116,114	
3	Federal Entitlements	156,000		156,000	
4	Other Government Funding/Grants	388,700		388,700	
5	**Total Public Funding**	3,379,230		3,379,230	
6	Private Grants and Donations	500,000		500,000	
7	Activity Fees	0		0	
8	Loans	0		0	
9	Other Income (please describe in footnote)	59,400		59,400	
10	**Total Non-Public Funding**	559,400		559,400	
11	EMO Management Fee (= line 73, col. G)	0		0	
12					
13					
14	**TOTAL REVENUES**	$3,938,630		$3,938,630	
	EXPENSES	501(c)3 School Applicant	Education Management Organization	Combined Total	Expenditures as a Percent of Total Public Funding
	Personnel Salaries and Benefits				
15	Executive Director Salary (1)	95,000		95,000	2.81%
16	Teachers Salaries (14)	910,000		910,000	26.93%
17	Teacher Aides/Assistance Salaries (0)	0		0	0.00%
18	Other Education Professionals Salaries (4)	320,000		320,000	
19	Business/Operations Salaries (2FT)	105,000		105,000	3.11%
20	Clerical Salaries (3 FT)	85,000		85,000	2.52%
21	Custodial Salaries (1 FT)	30,000		30,000	0.89%
22	Other Staff Salaries (3 FT)	65,000		65,000	1.92%
23	Employee Benefits	402,500		402,500	11.91%
24	Contracted Staff	50,000		50,000	1.48%
25	Staff Development Costs	25,000		25,000	0.74%
26					
27	**Subtotal: Personnel Costs**	2,087,500		2,087,500	61.77%
28					
29	***Direct Student Costs***				
30	Textbooks	100,000		100,000	2.96%
31	Student Supplies and Materials	40,000		40,000	1.18%
32	Library and Media Center Materials	50,000		50,000	1.48%
33	Computers and Materials	150,000		150,000	4.44%
34	Other Instructional Equipment	75,000		75,000	2.22%
35	Classroom Furnishings and Supplies	150,000		150,000	4.44%
36	Student Assessment Materials	20,000		20,000	0.59%
37	Contracted Student Services	50,000		50,000	1.48%
38	Miscellaneous Student Costs	20,000		20,000	0.59%
39					
40	**Subtotal: Direct Student Costs**	$655,000		$655,000	19.38%
41					
42	***Occupancy Expenses***				
43	Rent	225,000		225,000	6.66%
44	Mortgage Principal Payments	0		0	
45	Mortgage Interest Payments	0		0	
46	Building Maintenance and Repairs	40,000		40,000	1.18%
47	Renovation/Leasehold Improvements	0		0	
48	Utilities	60,000		60,000	1.78%
49	Janitorial Supplies	20,000		20,000	0.59%
50	Equipment Rental and Maintenance	10,000		10,000	0.30%

Two-Year Operating Budget Worksheet: Year ONE

51	Contracted Building Services	180,000		180,000	5.33%
52					
53	**Subtotal: Occupancy Expenses**	$535,000		$535,000	15.83%
54					
55	***Office Expenses***				
56	Office Supplies and Materials	30,000		30,000	0.89%
57	Office Furnishings and Equipment	70,000		70,000	2.07%
58	Office Equipment Rental and Maintenance	37,000		37,000	1.09%
59	Telephone/Telecommunications	80,000		80,000	2.37%
60	Legal, Accounting and Payroll Services	60,000		60,000	1.78%
61	Printing and Copying	20,000		20,000	0.59%
62	Postage and Shipping	10,000		10,000	0.30%
63	Other	10,000		10,000	0.30%
64					
65	**Subtotal: Office Expenses**	$317,000		$317,000	9.38%
66					
67	***General Expenses***				
68	Insurance	50,000		50,000	1.48%
69	Interest Expense	30,000		30,000	
70	Transportation	10,000		10,000	0.30%
71	Food Service	198,000		198,000	5.86%
72	Administration Fee (to PCSB)	14,173		14,173	0.42%
73	EMO Management Fee	0		0	
74	Other General Expense	15,000		15,000	0.44%
75					
76	**Subtotal: General Expenses**	$317,173		$317,173	9.39%
77					
78	**TOTAL EXPENSES**	$3,911,673		$3,911,673	99.90%
79					
80	**EXCESS (OR DEFICIENCY)**				
81	Excess (or deficit) retained by schoc	$26,957			
82	Excess (or deficit) retained by EMC				

ASSUMPTIONS

Student Enrollment	200

NOTES:

Two-Year Operating Budget Worksheet: Year ONE

	DESCRIPTION	BUDGETED AMOUNTS			
		Column A	Column B	Column C	Column D
	REVENUES	501(c)3 School Applicant	Education Management Organization	Total Revenues by Funding Source	Expenditures as a Percent of Total Public Funding
1	Per Pupil Charter Payments	3,458,070		3,458,070	
2	Per Pupil Facilities Allowance	840,000		840,000	
	Level 1	177,520		177,520	
3	Federal Entitlements	234,000		234,000	
4	Other Government Funding/Grants	470,600		470,600	
5	**Total Public Funding**	5,180,190		5,180,190	
6	Private Grants and Donations	500,000		500,000	
7	Activity Fees	0		0	
8	Loans	0		0	
9	Other Income (please describe in footnote)	97,200		97,200	
10	**Total Non-Public Funding**	597,200		597,200	
11	EMO Management Fee (= line 73, col. G)	0		0	
12					
13					
14	**TOTAL REVENUES**	$5,777,390		$5,777,390	
	EXPENSES	501(c)3 School Applicant	Education Management Organization	Combined Total	Expenditures as a Percent of Total Public Funding
	Personnel Salaries and Benefits				
15	Executive Director Salary (1)	99,750		99,750	1.93%
16	Teachers Salaries (24)	1,705,500		1,705,500	32.92%
17	Teacher Aides/Assistance Salaries (0)	0		0	0.00%
18	Other Education Professionals Salaries (6)	496,000		496,000	
19	Business/Operations Salaries (2FT)	110,250		110,250	2.13%
20	Clerical Salaries (3 FT)	124,250		124,250	2.40%
21	Custodial Salaries (1 FT)	31,500		31,500	0.61%
22	Other Staff Salaries (4 FT)	88,250		88,250	1.70%
23	Employee Benefits	663,875		663,875	12.82%
24	Contracted Staff	80,000		80,000	1.54%
25	Staff Development Costs	40,000		40,000	0.77%
26					
27	**Subtotal: Personnel Costs**	3,439,375		3,439,375	66.39%
28					
29	***Direct Student Costs***				
30	Textbooks	70,000		70,000	1.35%
31	Student Supplies and Materials	24,000		24,000	0.46%
32	Library and Media Center Materials	50,000		50,000	0.97%
33	Computers and Materials	250,000		250,000	4.83%
34	Other Instructional Equipment	100,000		100,000	1.93%
35	Classroom Furnishings and Supplies	75,000		75,000	1.45%
36	Student Assessment Materials	30,000		30,000	0.58%
37	Contracted Student Services	75,000		75,000	1.45%
38	Miscellaneous Student Costs	60,000		60,000	1.16%
39					
40	**Subtotal: Direct Student Costs**	$734,000		$734,000	14.17%
41					
42	***Occupancy Expenses***				
43	Rent	225,000		225,000	4.34%
44	Mortgage Principal Payments	0		0	
45	Mortgage Interest Payments	0		0	
46	Building Maintenance and Repairs	50,000		50,000	0.97%
47	Renovation/Leasehold Improvements	0		0	
48	Utilities	70,000		70,000	1.35%
49	Janitorial Supplies	30,000		30,000	0.58%
50	Equipment Rental and Maintenance	15,000		15,000	0.29%

Two-Year Operating Budget Worksheet: Year ONE

51	Contracted Building Services	200,000		200,000	3.86%
52					
53	**Subtotal: Occupancy Expenses**	$590,000		$590,000	11.39%
54					
55	***Office Expenses***				
56	Office Supplies and Materials	40,000		40,000	0.77%
57	Office Furnishings and Equipment	80,000		80,000	1.54%
58	Office Equipment Rental and Maintenance	45,000		45,000	0.87%
59	Telephone/Telecommunications	100,000		100,000	1.93%
60	Legal, Accounting and Payroll Services	75,000		75,000	1.45%
61	Printing and Copying	30,000		30,000	0.58%
62	Postage and Shipping	15,000		15,000	0.29%
63	Other	10,000		10,000	0.19%
64					
65	**Subtotal: Office Expenses**	$395,000		$395,000	7.63%
66					
67	***General Expenses***				
68	Insurance	75,000		75,000	1.45%
69	Interest Expense	30,000		30,000	
70	Transportation	20,000		20,000	0.39%
71	Food Service	324,000		324,000	6.25%
72	Administration Fee (to PCSB)	22,378		22,378	0.43%
73	EMO Management Fee	0		0	
74	Other General Expense	20,000		20,000	0.39%
75					
76	**Subtotal: General Expenses**	$491,378		$491,378	9.49%
77					
78	**TOTAL EXPENSES**	$5,649,753		$5,649,753	99.90%
79					
80	**EXCESS (OR DEFICIENCY)**				
81	Excess (or deficit) retained by schoc	$127,637			
82	Excess (or deficit) retained by EMC				

ASSUMPTIONS		
	Student Enrollment	300

NOTES:

Line Item	Category	Description: Revenue
1	Per Pupil Charter Payments	Per pupil allotment for 300 students plus summer allocation for 100 students
2	Per Pupil Facilities Allowance	Per pupil facilities allotment for 300 students
3	Federal Entitlements	a- Title I NCLB funds based on 300 students with a 65% school poverty rate; Title II, & V for staff development, parent involvement, safety, and innovative programs.
		c- IDEA – Part B: Individuals with Disability Education Act funds
4	Other Government Funding/Grants	Title V-B for charter school development for year 1 schools = $260,000.
5		
6	Private Grants and Donations	Annual Fundraising and Grants awarded (detailed in Fundraising narrative)
7	Activity Fees	N/A
8	Loans	N/A
9	Other Income (please describe in footnote)	Paid school lunch from 30% of the population
10		N/A
11	EMO Management Fee (= line 73, col. G)	N/A
12		
13		
14	**TOTAL REVENUES**	
	EXPENSES	***Personnel Salaries and Benefits***
15	Executive Salary (1)	1Senior administrators: Executive Director @ 5%
16	Teachers Salaries (20)	24 FT (includes 2 PT) teachers. 14 returning teachers @ 5% increase. 10 new teachers @ $65,000 average salary
17	Teacher Aides/Assistance Salaries (0)	n/a
18	Other Education Professionals Salaries	4 returning senior administrators @ 5% increase, and 2 new administrators (college counselors and instructional coach) @ $80,000
19	Business/Operations Salaries 2)	1 Business Manager, 1 administrative assistant @ 5% increase
20	Clerical Salaries (3)	2 returning front office staff @ 5% increase and a student records/attendance coord.
21	Custodial Salaries (1 + 1 +.5)	1 head custodian and pt assistant
22	Other Staff Salaries	security and school aides @ 5% increase
23	Employee Benefits	25% of total salaries
24	Contracted Staff	Educational consultants - Substitutes, special services
25	Staff Development Costs	Sessions to develop instructional teams, school culture, organizational team, assessment competencies to ensure educational and operational outcomes
26		
27	**Subtotal: Personnel Costs**	
28		
29		***Direct Student Costs***
30	Textbooks	100 new students@$500 for books and resources for all subjects and 20% replacement costs

31	Student Supplies and Materials	Misc student supplies and materials such as paper, pencils, chart papers, staples, etc
32	Library and Media Center Materials	Supplementing, replacements and repairs for Books, bookshelves, tables chairs, technology and media equipment
33	Computers and Materials	20 desktop computers for second computer lab, 200 laptop computers, 5mobile carts, 10 staff desktop computers
34	Other Instructional Equipment	11 interactive smartboards, LCD projectors, lab equipment, A/V, etc.
35	Classroom Furnishings and Supplies	Bookshelves, tables, chairs, teacher desk , chairs, lockers, etc
36	Student Assessment Materials	DC CAS and PSAT materials
37	Contracted Student Services	Special Ed/Nurses/ and special services
38	Miscellaneous Student Costs	300 students @$100 – field trips, science lab supplies, etc
39		
40	**Subtotal: Direct Student Costs**	
41		
42		***Occupancy Expenses***
43	Rent	Monthly facility payments to owner/landlord
44	Mortgage Principal Payments	N/A
45	Mortgage Interest Payments	N/A
46	Building Maintenance and Repairs	Special maintenance of floors, repairs to walls, interior & exterior areas as needed.
47	Renovation/Leasehold Improvements	Refurbish common areas for specialty use (i.e., activity rooms, special labs, SMART classrooms, etc.) not previously built-to-suit
48	Utilities	Electric, water, sewage, gas utility bills; and internet
49	Janitorial Supplies	
50	Equipment Rental and Maintenance	Occasional rental of building equipment to manage facility (heavy duty scrubbers, lifts, etc.)
51	Contracted Building Services	Security Surveliance Service: cameras, videotape, building detectors, personnel
		Night cleaning services
		Plumbing, pest control, electrical, & HVAC services
52		Technology services
53	**Subtotal: Occupancy Expenses**	

55		***Office Expenses***
56	Office Supplies and Materials	Consumable items: paper, filing, mailings; computer & printing supplies
57	Office Furnishings and Equipment	Furniture & fixtures for staff work stations & offices, conference & meeting areas to establish school operations.
58	Office Equipment Rental and Maintenance	Lease copiers, bell systems,
59	Telephone/Telecommunications	
60	Legal, Accounting and Payroll Services	payroll expense, legal services and related costs, audit prep & CPA services for 990 & school-related certified filings; background checks
61	Printing and Copying	Advertising costs for student enrollment and staff recruitment
62	Postage and Shipping	
63	Other	Signage for exterior and interior building directories
64		
65	**Subtotal: Office Expenses**	
66		
67		***General Expenses***
68	Insurance	General liability, workman's comp; facility & boiler, Board of Directors, student coverage
69	Interest Expense	
70	Transportation	Student transportation for field trips
71	Food Service	200 students @$5 (two meals per day) *180 days
72	Administration Fee (to PCSB)	½% of the total budget
73	EMO Management Fee	N/A
74	Other General Expense	
76	**Subtotal: General Expenses**	
77		
78	**TOTAL EXPENSES**	
80		**EXCESS (OR DEFICIENCY)**
81	Excess (or deficit) retained by school	The Year Two budget is designed to fund the maximum program development, while expanding more aggresively on the established operating reserve
82	Excess (or deficit) retained by EMO	N/A
		ASSUMPTIONS

Five-Year Estimated Budget Worksheet

DESCRIPTION	Year 1	Year 2	Year 3	Year 4	Year 5
REVENUES					
Per Pupil Charter Payments	2,158,416	3,458,070	4,805,316	4,901,422	4,999,451
Per Pupil Facilities Allowance	560,000	840,000	1,120,000	1,200,000	1,200,000
Level 1	116,114	177,520	241,160	245,983	250,903
Federal Entitlements	156,000	234,000	312,000	318,240	324,605
Other Government Funds, Grants	388,700	470,600	580,800	592,416	604,264
Income from Grants and Donations	500,000	500,000	750,000	1,000,000	1,000,000
Activity Fees	0				
Other Income	59,400	97,200	200,000	220,000	253,000
TOTAL REVENUES	$3,938,630	$5,777,390	$8,009,276	$8,478,061	$8,632,222
EXPENSES					
Personnel Salaries and Benefits	2,087,500	3,439,375	4,643,156	4,875,314	5,119,080
Direct Student Costs	655,000	734,000	1,027,600	1,078,980	1,132,929
Occupancy	535,000	590,000	826,000	867,300	910,665
Office Expenses	317,000	395,000	553,000	580,650	609,683
General Expenses	317,173	491,378	687,929	722,326	758,442
TOTAL EXPENSES	$3,911,673	$5,649,753	$7,737,685	$8,124,570	$8,530,798

NOTES

Students	200 students	300 students	400 students	00 students	400 students
Staff costs	baseline	personnel increase 72%	personnel increase 35%	personel increase 5%	personel increase 5%
Students costs	baseline	students increase 12%	student increase 40%	student increase 5%	student increase 5%
Occupany cots	baseline	Occup increase 10%	Occup increase 40%	Occup increase 5%	Occup increase 5%
Gen. Office costs	baseline	Gen off increase 24%	Gen off increase 40%	Gen off increase 5%	Gen off increase 5%

The Two and Five Year Budget Projections with 10% non-formula revenue

We acknowledge that the school is starting with 50% of the target enrollment (400). The costs for basic operations and we anticipate obtaining additional funds to be fully operational. A fair amount of research has already been conducted to identify and pursue sources (see listing in Business Plan), and securing funds begins in the plannning and operational years. Additionally, we will also secure a line of credit from a local bank to assist with coverage expenses if necessary. Finally, the budget expenditures will be aligned with the committed receiveables we secure.