Curricular Emphasis Narrative

Arizona Academy of Science and Technology is a K through 8 Charter School located in central Phoenix and serves a diverse community of students. The Academy is a Title I school with a poverty rate over 70% and a student population of 45% Hispanic, 28% African-American, 22% Caucasian, and 5% Native American. The Academy is dedicated to building a school community in a small, safe, and nurturing environment which provides an excellent education. Students are treated as individuals with unique educational needs. Classes are maintained at no more than 20 students to allow teachers to individualize the instruction.

The mission of Arizona Academy of Science and Technology is to provide instruction to Arizona students, grades K through 8, who wish to enter into a rigorous curriculum with a special emphasis on science, math, and technology. The academic program is designed to present a coherent and sequential knowledge base from grade to grade. The curriculum allows for the building of essential skills and strong foundational knowledge each year. The learning environment fosters curiosity and exploration, goal setting and task completion, love of learning and academic excellence, and positive attitudes and self-esteem.

Arizona Academy of Science and Technology is committed to helping the students meet or exceed the Arizona State Standards in all core curriculum areas. Students are expected to engage in a curriculum which stresses critical thinking and creative problem solving.

The primary grade Language Arts program develops students into effective communicators through a variety of reading, writing, listening and speaking activities. Students will be introduced to the fundamentals of language arts and the reading process, phonemic awareness, phonics, fluency, vocabulary, composition, and will continue to build reading, writing, and vocabulary skills through the phonics program. They will learn to fluently decode words, begin to use comprehension strategies while reading, and will read fluently at grade level. Throughout the writing process of prewriting, drafting, revising, editing, and publishing students will reflect on their own writing skills, set goals, and evaluate progress. Comprehension strategies and elements of literature will be explored through historical, expository, functional, and persuasive texts. As students progress through the upper elementary grades they will reinforce varied sentence and paragraph structure using the 6-traits of writing, build comprehension skills of logic, drawing on conclusions, identify literature genre, and continue to read fluently at grade level.

The middle school language arts curriculum is divided into reading and writing content areas. The goals in language arts is to develop strategic readers who can comprehend, interpret, and evaluate a wide range of texts, and to develop writers who can effectively use written language for a variety of purposes and a variety of audiences. Students will keep

journals, utilize peer assessments of their writing, and apply new vocabulary towards their writing.

Primary grade mathematics will engage students in number theory, problem solving concepts, reasoning, and collection of data, patterns, geometry, measurements, and basic computational skills. Upper elementary students build upon foundational skills to explore fractions, probability, data analysis, algebraic expression, and higher-order thinking and problem solving skills.

The math curriculum for middle school is a three year sequence beginning in grade six with a review of basic math concepts and the introduction of pre-algebra concepts. The sequence continues in seventh and eighth grade with pre-algebra and introduction to algebra.

Social Studies topics for the primary grades include American and World History, Government, Geography, and Economics. Topics covered will include exploration, discovery, cultures, important Presidents and symbols, early civilizations, European colonization, and cultures of Asia. Upper elementary grades will study Arizona History, civilizations of South and Central America, Native Americans, and Civil War to early 20th Century.

Middle school Social Studies contents include American History, World History, Government, Geography and Economics. Beginning in sixth grade the students will explore topics in world cultures through history, exploration and colonization, the Industrial revolution, historical foundations of democracy and the Enlightenment, and important events in world history. Students will learn to conduct research analyzing multiple sources to create reports on people, places, and events in history.

The science curriculum from kindergarten through eighth grade will be an inquiry based hands-on learning model of instruction. Concepts will cover aspects of Life Science, Physical Science, Earth and Space Science. Students are naturally curious about nature and the world around them. To sustain their curiosity students will be actively engaged in learning to view the world scientifically through hands-on experience and observation. Students will be encouraged to ask questions about nature and to seek the answers through activities i.e. collecting, counting, measuring, organizing and discussing. Each year a school-wide project, focused on science, will be integrated across the curriculum and span all grade levels.

The Academy's fundamental educational philosophy is based on the concept that every child can learn and succeed. Learning is a life-long process of growth beginning in the elementary years. Teachers are expected to motivate their students with energy and affection for the subject matter and students are expected to work hard to acquire the knowledge and skills necessary to prepare them for life as productive adults and responsible citizens.

To achieve this goal, the Arizona Academy of Science maintains small class sizes, never more than twenty students, and incorporates a variety of instructional methods. Through differentiated instruction teachers are able to address the individual learning needs of each student. This method offers flexibility to adapt and customize methods, activities, and products of individual students and the whole class when needed. Teachers also use direct as well as indirect instructional methods i.e. small group discussions and activities, depending on the lesson and activity being taught. The school wide science project each year offers students the opportunity for cooperative learning as the middle school students mentor the elementary students. These methods of instruction are particularly important for the disadvantaged student population the Academy serves. Individualized instruction, cooperative learning, student mentoring and peer learning options assure these students are not left behind academically and socially.

The Academy uses both formative and summative assessment to monitor academic achievement. All students are assessed for reading and math in the first weeks of school to gather baseline data. Students determined to be at-risk are provided remediation through pullout and after school tutoring. Students are assessed again midyear and at the end of the year to monitor progress. Teachers use a combination of formative and summative assessments in the course of

teaching the curriculum. Students in grades K through 2 are evaluated at the end of each quarter using a checklist showing progress on skills and concepts covered. This qualitative measure is used at this primary level and quantitative measures are not. Mastery in basic skills and concepts aligned with state standards is required for promotion to the next grade.

Students in grades 3 through 8 students receive a letter grade of A, B, C or F for the quarter. A letter C (70%) represents the lowest grade acceptable to pass a subject. Students failing one or more subjects are put on academic probation and offered tutoring and remediation in order for them to succeed. Failure to pass reading, math or science for the year will result in the student being retained. The student will have the opportunity to remedy the failure through summer school.