



Science, Technology, Engineering, Arts, and Math (S.T.E.A.M.) Academies for the 2018-19 school year

Pendergast School District is excited to continue the STEAM academies for the 2018-19 school year and expand programs to additional grade levels and schools. The various academies are currently at 11 schools in the Pendergast District. A highlight of all academies is a focused, academic-based field trip and a professional speaker, every semester for all students to learn from and interact with. The academies also work with state of the art technology for each student and a rigorous, standards-based curriculum where students can explore future careers to enhance their college and career readiness experience.

School(s)	Academy	Grade/s	Description of New Academy
Amberlea and Rio Vista	Pendergast Arts Academy at Amberlea	3 and 5	In the Fine Arts Academy, students work with an award-winning theater producer in acting, developing public speaking, and performance skills. Students develop and refine artistic work for presentation. Highlights from this academy include community performances. This academy is aligned to Arizona Theater Arts Standards.
	Pendergast Arts Academy at Rio Vista	5-8	
Copper King	Environmental Engineering	7 & 8	The academy has progressed from simple Water Investigations to Environmental Engineering. It focuses on developing 21st Century skills through STEM literacy. Students engage in project based learning challenges focused on sustainability, environmental engineering, and stewardship. As examples, students test water conditions in various watersheds in Arizona, research and propose water policy, and practice advocacy. The lessons are correlated to the Common Core State Standards, the AZ Science Standards, and the STEM Education Coalition objectives. Partners: Zero Mass Water.
Desert Horizon	Dual Language	K- 3	The Dual Language Program in the Pendergast School District is an enriched project based education program that uses two languages, Spanish and English, for the purpose of instruction beginning in Kindergarten. Students in the Dual Language programs: <ul style="list-style-type: none"> - Develop high levels of listening, oral, reading, and writing proficiency in both Spanish and English. - Achieve academic excellence in all subject areas as they learn Reading, Listening, Speaking, and Writing) in both languages.

			<ul style="list-style-type: none"> - Develop positive cultural understandings and appreciate the traditions and values of various cultures in our society and around the world.
Desert Horizon	AVID	3-8	<p>The Desert Horizon AVID (Advancement Via Individual Determination) Academy is focused on ensuring students are college ready and teaches skills and behaviors for academic success and additionally:</p> <ul style="list-style-type: none"> - Provides intensive support with tutorials and strong student/teacher relationships - Creates a positive peer group for students - Develops a sense of hope for personal achievement gained through hard work and determination
Desert Mirage	STEAM Exploration and Investigations Academy	3	<p>Students receive background instruction in the design process as it applies to various situations which support the upcoming academies in Medical Sciences, Building Design, Earth and Science Exploration. Writing and Literature is a major connection. For example, students take various versions of fables and investigate the materials used by main characters in the stories. They replicate and improve designs. Students use the Defined STEM curricular tools to work in the AZ Science Standards.</p>
Desert Mirage	Energy, Conservation and Efficiency Academy	4	<p>This academy is focused on developing 21st Century skills through STEM literacy. Students learn how energy is used for transportation, cooking, heating and cooling. They study how manufacturing, lighting, entertainment and other recreation affect the environment. Most importantly, the learn how to help make choices that are energy efficient, to positively impact the future. The lessons are correlated to the Arizona State Standards and students use the Defined STEM curricular tools.</p>
Desert Mirage	Leadership, Athletics & Arts Academy	5	<p>This academy integrates leadership, athletics, and the arts. Students are challenged to become champions on the field and court, and leaders in life. They learn the science behind the Arts (as an example, in a Culinary Arts study). Students generate business plans related to the sciences they are studying. They combine hard work with a cooperative spirit to find success in athletics, leadership and academic learning. The lessons are correlated to the AZ Science Standards, and the STEM Education Coalition objectives. Students use the Defined STEM curricular tools.</p>

Desert Mirage	Orcutt Winslow Architecture, Planning & Construction Academy	6	<p>Students learn how to apply green concepts to the fields of architecture and construction. They explore dimensioning, measuring, and architectural sustainability and apply what they have learned to design housing units using Google Sketch Up. Students engage in a hands-on building project when they work in collaborative groups to build a small structures. They utilize a business plan to drive their designs (example, measuring students' bodies for the ideal backpack: sewn from scratch). The lessons are correlated to the Common Core State Standards, the AZ Science Standards, and the STEM Education Coalition objectives. Students use the Defined STEM curricular tools to work in the AZ adopted science standards.</p> <p style="text-align: center;">Sponsored by: Orcutt Winslow</p>
Desert Mirage	Innovation, Design & Entrepreneurship Academy	7	<p>Students continue the innovation from the Architecture and Design Academy, and become more adept at entrepreneurship. For instance, they compete in a mock bid to design an ideal commercial center in Dubai. Students study the parameters of the natural environment and innovate suggested structures that serve the community financial and recreational needs. Repeatedly during the year, they are asked to create innovative designs using Science, Technology, Engineering and Math to "build and run a business." Students use the Defined STEM curricular tools to work with the AZ adopted science standards.</p>
Desert Mirage	Health, Medical & Forensic Sciences Academy	8	<p>The Health, Medical & Forensic Sciences Academy is focused on developing 21st Century skills through STEM literacy. Students play the role of real-life medical detectives as they analyze genetic testing results to diagnose disease and study DNA evidence found at a "crime scene." They solve medical mysteries through hands-on projects and labs, investigate how to measure and interpret vital signs, and learn how the systems of the human body work together to maintain health. Students review Design and Modeling, working through the design process to a complete 3D printed models. For example, they analyze a client's needs and build a prosthetic device. The lessons are correlated to the Common Core State Standards, the AZ Science Standards, and the STEM Education Coalition objectives. Students work with medical residents from Midwestern University. Students use the Defined STEM curricular tools in this program.</p> <p style="text-align: center;">Learning Partner: Midwestern University</p>

Garden Lakes	GCON Design & Build	7-8	The academy develops 21st Century skills through problem solving. Students engage in project based challenges focused on the design and build process. Students use computer software to create and test models, and compete in design challenges such as Future Cities. They also create prototypes of their virtual models using 3D printers and traditional modeling materials. Lessons are correlated to the Common Core State Standards. Sponsored by: GCON Construction
Pendergast	Ethnic Studies Academy	5	Students study various cultures in this academy. They learn about culture, heritage, history, events and important celebrations. Students produce works of art, study weather events that have impacted groups, and learn about dignity and respect. Students use Defined STEM curricular tools in this academy.
Pendergast	Sustainable Design	7-8	The Sustainable Design Academy will support students in becoming college and career ready by engaging in Design and Modeling. Students tackle community environmental challenges. For example, they design and build a tiny house using sustainable design materials. They also do deep analysis of factors impacting the environment. Students have launched secured web pages advocating for their sustainable designs. They embed videography and state of the art technology into the web pages. This academy is aligned to the AZ State Science Standards, and focuses on Cross Cutting Concepts in Science. The academy uses Defined STEM curricular tools.
Sonoran Sky	Agriculture Ecosystems	3-4	Students plant gardens and study the impact of their decisions on the environment. For example, they learn to make their own paper in this academy. They analyze how their own actions can help conserve energy and resources. This academy is committed to students becoming deeply literate in math and literature to support future understandings of how ecosystems work together. The academy uses Defined STEM curricular tools.
Villa de Paz	Computer Science	K - 8	The Computer Science Academy is expanding to grades K-8. It helps students develop 21st Century skills through engaging programming challenges. As an example, students created a digital application which could be played jointly by students who are blind and sighted, promoting interdependence. Students learn responsible digital citizenship. They learn beginning, through intermediate, coding. They also engage in the

			design/thinking process and apply coding to solve community challenges. With access to 3D printers and Raspberry Pi computers, students are able to create working prototypes of their design solutions. The lessons are correlated to the Common Core State Standards, and leverage the open source resource at www.code.org
Sunset Ridge	Dual Language	K-3	<p>The Dual Language Program in the Pendergast School District is an enriched project based education program that uses two languages, Spanish and English, for the purpose of instruction beginning in Kindergarten. Students in the Dual Language programs:</p> <ul style="list-style-type: none"> - Develop high levels of listening, oral, reading, and writing proficiency in both Spanish and English. - Achieve academic excellence in all subject areas as they learn Reading, Listening, Speaking, and Writing) in both languages. - Develop positive cultural understandings and appreciate the traditions and values of various cultures in our society and around the world.
Sonoran Sky	Dual Language	K-2	<p>The Dual Language Program in the Pendergast School District is an enriched project based education program that uses two languages, Spanish and English, for the purpose of instruction beginning in Kindergarten. Students in the Dual Language programs:</p> <ul style="list-style-type: none"> - Develop high levels of listening, oral, reading, and writing proficiency in both Spanish and English. - Achieve academic excellence in all subject areas as they learn Reading, Listening, Speaking, and Writing) in both languages. - Develop positive cultural understandings and appreciate the traditions and values of various cultures in our society and around the world.
Westwind and Amberlea	Leadership Academy	8	In this academy, students identify their passions about their community. They work as a team to determine the best forum to effect change in their communities. The goal of the academy is to inspire students to leverage real- life experiences for empowerment. This academy is built around the book entitled <u>Let them Speak, How Student Voice Can Transform your School</u> by respected author Rebecca Coda.
All School Sites	Accelerated Math Academy	7-8	The Accelerated Math Academy provides qualified students, at all school sites, the opportunity to take Algebra 1 and Geometry, while still enrolled in their elementary school. This Academy accelerates math learning and provides extensions to increase college readiness. The Pendergast District has partnered with

			ASU Digital Prep to offer this unique opportunity to all of our students.
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<p>District Robotics Team, open to all 6-8 grade students enrolled in PESD. For further information on STEAM programs, contact Cindy Wiste, Assistant Director of Math, Science and STEAM at cwiste@pesd92.org or 623-772-2296.</p>
