The STEM Immersion Matrix for Schools and Districts

A Collaboration of Arizona STEM Network Led by SFAz and Maricopa County Education Service Agency

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	Introductory Model	Partial Immersion Model	Full Immersion Model
The Exploratory Model describes a regular school experience, with STEM-related EXTRA CURRICULAR opportunities offered to students in addition to the regular school day. These experiences may include, but are not limited to: after school clubs, summer programs, science fairs, robotics clubs and video production clubs..	The Introductory Model describes a regular school day, with STEM-related experiences offered in addition to the current curriculum. These experiences may include, but are not limited to: integrated STEM units delivered once the state testing is complete, supplementary stand-alone learning units offered through industry or non-profit partnerships, etc.	The Partial Immersion Model describes a non-traditional school day where STEM-related experiences are integrated into the curriculum. These experiences may include, but are not limited to: teaching to a school-wide STEM theme, teaching year-long integrated Problem/Project-Based Learning Units, teaching dual-enrollment programs, teaching in a "school within a school" model, etc..	The Full Immersion Model describes a non-traditional school where STEM-related experiences determine the school's curriculum. Full Immersion schools look more like 21st Century workplace environments rather than 20th century K-12 school environments. Problem-based learning drives the curriculum and instruction. Students constantly collaborate to solve authentic problems, propose solutions and contribute ideas to the larger community.
A 1.Exploratory Model Descriptors: • School or district has defined STEM as a priority • STEM programs are traditionally ***"stand alone"*** • Programs are conducted ***outside*** the regularly scheduled school-day • Programs are assigned to staff as additional duties • Programs are optional • Includes a ***basic level*** of family engagement and outreach programs (i.e.; math and science family nights) • Students explore various facets of STEM from project-based investigations to possible career pathways • Initial collaboration with one or more business partners, mentors, and/or STEM advocates	*A 2. Introductory Model Descriptors:* • Implementation in addition Provides an opportunity for student participation in problem/project-base instruction with an end result of teaching through product development • Implementation in addition to the regular school curriculum ***during the school-day*** • Includes *multiple points of contact with the families of STEM participants and at least one family integration activity.* • Results in teaching through product development (school/parent presentations, science fairs, evening STEM nights, etc.) • Initial collaboration with one or more business partners, mentors, and/or STEM advocates	*A 3. Partial Immersion Model Descriptors:* • Integration of Problem/Project-Based Learning into the regular curriculum • Opportunities are provided for student participation in problem-solving and project-based instruction with *integrated content across STEM subjects* • Interdisciplinary instruction • Some inter-grade level planning • Emphasis on product development • Includes multiple points of contact with families of STEM participants and a minimum of three family integration activities • Several collaborations with business and industry partners in the geographical area, along with mentors and STEM advocates	*A 4. Full Immersion Model Descriptors:* • Whole school approach to teaching STEM education through a global mission and vision • Participation by all schools staff, classroom and special area teachers • STEM lessons are planned and aligned by all grade levels and special area classes to be integrated, moving into increased complexity and rigor, and constructive in nature • Several collaborations with business and industry partners in the geographical area, along with mentors and STEM advocates • Collaborations and partnerships with Higher Education

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Leading			
Leading within the Exploratory Model involves supporting teachers in the creation of ***extra-curricular, after-school*** STEM-related experiences (programs) for students that ***choose*** to participate. Leaders must embrace a mindset that includes; leading by example, creating an environment of high expectations, taking responsibility for sparking a passion for learning, be excited to prepare students both academically and socially for their future careers, and creates and communicates a "shared vision" of purpose and process.	Leading within the Introductory Model involves supporting teachers in the planning and implementing of STEM-related experiences that are in addition to the regular curriculum and taught to students during the school day. Leaders arrange schedules so that teachers may plan units as a grade-level or content-area team. Leaders must embrace a mindset that includes; leading by example, creating an environment of high expectations, taking responsibility for sparking a passion for learning, be excited to prepare students both academically and socially for their future careers, and creates and communicates a "shared vision" of purpose and process. Support structures for teachers including common planning time within the school day to support data-driven collaboration, and professional learning(ex. Grade level team)	Leading within the Partial Immersion Model involves setting the expectation that all staff plan and implement STEM-related experiences that are **integrated into the regular curriculum**. Leaders arrange schedules and set the expectation that teachers plan integrated yearlong units as a ***grade-level or content-area team***. Leaders set the expectation that teachers ***take on more*** of a facilitator role in guiding student learning through inquiry. Leaders must embrace a mindset that includes: leading by example, creating an environment of high expectations, taking responsibility for sparking a passion for learning, enthusiastically preparing students both academically and socially for their future careers, and creating and communicating a "shared vision" of purpose and process.	Leading within the Full Immersion Model involves setting the expectation that all staff plan and implement STEM-related experiences that ***are the main curriculum***. Leaders arrange the schedule and set the expectation that all teachers plan integrated year-long units as a ***collaborative school team.*** Leaders set the expectation that teachers ***act as facilitators*** in guiding student learning through inquiry. Leaders must embrace a mindset that includes: leading by example, creating an environment of high expectations, taking responsibility for sparking a passion for learning, be excited to prepare students both academically and socially for their future careers, and creates and communicates a "shared vision" of purpose and process.
B 1. Administrative Leadership provides: • Decide program purpose/content • Support structures for students • Select target audience • Resource allocation (materials/supplies) • Program location/work space • Professional development plan • Implementation timelines/calendars	*B 2. Administrative Leadership provides:* • Solo to collaborative, or shared decision making • Professional development plan • Program location/work space • Resource allocation(materials/supplies) • Implementation timelines/calendars • Communication strategies	*B 3. Administrative Leadership provides:* • Support structures for teachers including common planning time within the school day to support data-driven, cross curricular collaboration and professional learning (various grade levels/school within a school model, for example) • Support structures for students including a nongraded advisory	*B 4. Administrative Leadership provides:* • Support structures for teachers including common planning time within the school day to support data-driven, cross curricular collaboration and professional learning (for example, various grade levels/school within a school model) • Support structures for students including a nongraded advisory

• Communication strategies • Budget development/oversight • Evaluation protocols • Advocacy and marketing for program • Strategies for sustainability	• Advocacy and marketing for program. • Decide program purpose/content • Select target audience • Support structures for students • Budget development/oversight • Evaluation protocols • Strategies for sustainability • Outreach to business and industry	program that focuses on setting and monitoring student goals and personalizing the student experience • Establishment a leadership team that establishes mission, vision, scope of project • Establishment of a leadership cadre • Collaborative, or shared decision making • Facilitation support with classified staff • Professional development plan • Program location/work space • Resource allocation (materials/supplies) • Implementation timelines/calendars • Program evaluation • Budget development/oversight • Evaluation protocols • Establishment of end of course/program goals • Communication strategies • Advocacy and marketing for program • Strategies for sustainability • Outreach to business and industry	program that focuses on setting and monitoring student goals and personalizing the student experience • Develops a ***shared mission and vision*** and program purpose/content • Establishment of a leadership cadre for ***collaborative decision making*** with defined roles and responsibilities matched to program goals • Establishes program review and evaluation that ***measures attainment*** of program goals and ***includes metrics*** such as student achievement, perceptual data, attendance, and demographics • Collaboration with parents/families • Selection of grade level participation • Establishment of end of course/program goals • Establishment of an ***advisory committee for ongoing monitoring*** of mission, vision, scope of project that includes representatives from school, district, school board, community, higher education institutions, STEM industry

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TEACHING			
Teaching within the Exploratory Model involves sponsoring or leading ***extra-curricular, after-school*** STEM-related experiences (programs) for students that ***choose*** to participate.	Teaching within the Introductory Model involves planning and implementing STEM-related experiences that are in addition to the regular curriculum and taught to selected students (i.e. grade level band) ***during the school day.*** Teachers may plan units as a grade-level or content-area team.	Teaching within the Partial Immersion Model involves planning and implementing STEM-related experiences that are ***integrated into the regular curriculum.*** Teachers plan integrated yearlong units as a grade-level or content-area team. The teacher takes on ***more of a facilitator role*** in guiding student learning through inquiry.	Teaching within the Full Immersion Model involves planning and implementing STEM-related experiences that ***are the curriculum.*** Teachers plan integrated year-long units as a school team. The teacher ***acts as a facilitator*** in guiding student learning through inquiry.
C 1. The teacher: • Takes the lead role in planning and facilitating the club or after school program • Provides direct instruction while leading students through investigations • Connects business/industry skills to classroom instruction • Provides authentic, real world experiences with technology integration • Fosters collaboration, communication and social skills within the learning environment • Commits to on-going professional development in STEM content and pedagogy • ***Provides connections*** to outreach/service learning projects for students • Embeds a variety of technology in the instructional process	*C 2. The teacher:* • Provides direct instruction while leading students through investigations • Connects business/industry skills to classroom instruction • Provides authentic, real world problems ***within STEM content*** • Provides an opportunity for students to participate in guided inquiry and problem-solving • Selects cross-curricular STEM content • ***Provides service learning projects*** for students • Embeds a variety of technology in the instructional process, including presentation tools, i.e. PowerPoints, smart boards, multi-media, prezi, etc. • Involvement in professional learning communities with other instructors at their grade level in their school, or across their district	*C 3. The teacher:* • ***Encourages*** student participation in identification of problem/project • Provides ***limited direct instruction*** while facilitating students moving through STEM investigations • Provides an opportunity for students to participate in guided inquiry and problem-solving • Assists in selection of cross-curricular content that is ***embedded*** into the traditional curriculum • ***Provides instruction*** with the outcome of product development • Involvement in professional learning communities with other instructors at their grade level and additional grade levels in their school. • Provides authentic, real world problems within STEM content • Connects business/industry skills to classroom instruction	*C 4. The teacher:* • Facilitates student participation in identification of problem/project • Provides a ***facilitative role*** while students move through STEM investigations • Provides an opportunity for students to participate in ***open-ended*** inquiry and problem-solving • Assists in selection of ***rigorous*** cross-curricular STEM content ***as the focus*** of the school curriculum • ***Facilitates instruction*** with the outcome of product development • Involvement in professional learning communities with other instructors at their grade level and additional grade levels, in their school. • Provides authentic, real world problems within STEM content • Connects business/industry skills to classroom instruction • Provides opportunities for students to conduct research in

		• Provides opportunities and protocols for students to research and participate in outreach/service learning projects • Embeds a variety of technology in the instructional process, including using technology as a ***facilitation*** of student learning in investigations and problem-solving, i.e. data analysis, research, creation of multi-media	STEM-based content with links to university/college labs • Embeds a variety of technology in the instructional process, including using technology as a facilitation of student learning in a ***transformative instructional manner***, i.e. using technology tools such as spectrometers, PCR machines, digital microscopes, robots, etc.

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LEARNING			
Learning within the Exploratory Model involves engaging in a provided question or problem through an ***extra-curricular or after-school STEM-related experience that may or may not be related to the school curriculum.*** The learning is collaborative and engaging but may not be relevant or applied.	Learning within the Introductory Model involves engaging in a provided question or problem through STEM-related experiences that are in addition to the regular curriculum and ***taught to all students during the school day.*** The learning is collaborative and engaging and may be relevant and applied in a local context.	Learning within the Partial Immersion Model involves engaging in selected or negotiated questions or problems through STEM-related experiences that are ***integrated into the regular curriculum.*** Learning is collaborative, engaging, and is relevant and applied, making use of connections to local issues and/or industry.	Learning within the Full Immersion Model involves engaging in a student posed or negotiated question or problem through STEM-related experiences that ***are the curriculum***. Learning is collaborative, engaging, and is relevant and applied, with connections to local issues and/or industry.
D 1. The student: • Engages in STEM content in an "out of the traditional classroom" experience, i.e. after school club, summer program • Engages in problem-based, teacher directed ***investigations*** that may result in solution or product creation • Collaborates in predetermined groups • Engages in relevant and authentic learning experiences that may be connected at least in part to local context • Engages in critical thinking, problem solving, and in depth learning while exploring STEM topics/projects/careers • Uses a variety of technology in the investigative process including virtual, computer-based, mobile, and data collection devices • May engage in opportunities to conduct research in STEM based content with links to	*D 2. The student:* • Engages in ***integrated STEM content*** as an addition to the school curriculum • Engages in problem-based, teacher directed ***guided inquiry*** that may result in solution or product creation • Collaborates with peers in groups determined by teacher • Engages in relevant and authentic learning experiences that may be connected at least in part to local context • Engages in critical thinking, problem solving, and in depth learning while exploring STEM topics/projects/careers • Uses a variety of technology in the investigative process including virtual, computer-based, mobile, and data collection devices • May engage in opportunities to conduct research in STEM based content with links to university/college labs	*D 3. The student:* • Engages in integrated STEM content ***as part of*** the school curriculum • Experiences the STEM content from cross-curricular, inter-disciplinary to trans-disciplinary • Engages in problem-based, ***student and teacher directed guided inquiry*** that results in solution creation or product development • Collaborates with peers in ***groups determined by teacher*** and/or project and intended outcomes • Engages in relevant and authentic learning experiences that are connected at least in part to local context • Engages in critical thinking, problem solving, and in depth learning while exploring STEM topics/projects/careers • Learns in the context of real-world connections with	*D 4. The student:* • Engages in interdisciplinary STEM content *as the focus* of the school curriculum • Engages in problem-based, ***student directed open inquiry*** that results in solution creation or product development • Collaborates with peers in ***groups determined by project*** and intended outcomes • Participates in collaborative groups that foster innovation and risk in solutions creation and product/project development • Engages in relevant and authentic learning experiences that are driven at least in part by local context • Engages in critical thinking, problem solving, and in depth learning while exploring STEM topics/projects/careers • Learns in the context of real-world connections with business/industry with

university/college labs • Receives opportunities to inspire and inform under-represented and struggling students about careers in STEM fields • May engage in real-world connections with business/industry • May have an opportunity to participate in service learning projects • Participates in a level of self-evaluation	• Multiple in and out of school opportunities to inspire and inform under-represented and struggling students about careers in STEM fields • Participates in multiple points of contact with the families of the STEM participants, and at least three family integration activities • Learns in the context of real-world connections with business/industry • Participates in outreach/service learning projects within the school or community • May participate in a level of self-evaluation	business/industry with possible opportunities to contribute to the knowledge base • Engages in opportunities to conduct research in STEM based content with links to university/college labs and possible opportunities to contribute to knowledge base • Uses a variety of technologies in the investigative process including: virtual, computer-based, mobile and data collection devices, web-based lessons, computer applications, researching and reporting • Participates in outreach/service learning projects within the school or community • Participates in multiple points of contact with the families of the STEM participants and at least three family integration activities • Multiple in and out of school opportunities to inspire and inform under-represented and struggling students about careers in STEM fields • Participates in a level of self-evaluation.	opportunity to contribute to the knowledge base • Engages in opportunities to conduct research in STEM based content with links to university/college labs and opportunities to contribute to knowledge base • Uses a variety of technology in the investigative process including: virtual, computer-based, mobile and data collection devices, web-based lessons, computer applications; also researching, and reporting, communicating and collaborating in ways not possible without the technology • Participates in opportunities to establish protocols for research and participation in outreach/service learning projects • Participates in multiple points of contact with the families of the STEM participants, and at least three family integration activities • Multiple in and out of school opportunities to inspire and inform under-represented and struggling students about careers in STEM fields • Participates in a level of self-evaluation used for goal setting

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EVALUATING			
Evaluating within the Exploratory Model involves ***informal feedback on program success*** that may include measures of self-efficacy, attitudes, interest, and motivation to pursue additional STEM related classes/experiences.	Evaluating within the Introductory Model involves ***formal feedback on program success***, which includes student assessment data as well as measures of self-efficacy, attitudes, interest and motivation to pursue additional STEM related classes/experiences.	Evaluating within the Partial Immersion Model involves program review that includes ***qualitative and quantitative data.*** Measures should include student achievement data as well as measures of self-efficacy, attitudes, interest and motivation to pursue additional STEM related classes/experiences.	Evaluating within the Full Immersion Model involves comprehensive program review that *includes* ***multiple measures both quantitative and qualitative in nature.*** This would include data related to student achievement, classroom observations, attendance and surveys at the student, teacher, administrator, parent and community levels. Data is used to gauge achievement of program goals and inform design and implementation decisions.
E 1. *The Evaluative Process includes*: • Teach- assess-adjust, then re-teach-assess-adjust • Include informal and formal feedback (i.e. participant and parent feedback surveys) • Provide professional development for teachers in the evaluative process and interpreting data • All teachers and students are immersed in a student-centered environment that supports the use of multiple indicators of success, such as performance, project-based and portfolio assessments • Survey data used to inform program decisions • Pre- and post-student assessment surveys in interest, content and attitudes • Peer observation and dialogue included in quality assessment • Invite industry experts/mentors	E 2. *The Evaluative Process includes*: • Alignment of program to internationally benchmarked Common Standards • Participant and parent feedback surveys • Provide professional development for teachers in the evaluative process and interpreting data • All teachers and students are immersed in a student-centered environment that supports the use of multiple indicators of success, such as performance, project-based and portfolio assessments • Survey data used to inform program decisions • Pre and post student assessment surveys in interest, content, and attitudes • Peer observation and dialogue included in quality assessment • Invite industry experts/mentors to	E 3. *The Evaluative Process includes*: • Alignment of program to internationally benchmarked Common Standards • Development of curriculum supports such as scope and sequence and pacing guide for a vertically and horizontally aligned curriculum centered on the Common Core Mathematic and Next Generation Science Standards, 21st Century skills and STEM integration • Pre and post student assessment surveys in interest, content, and attitudes • Participant and parent feedback surveys • Peer observation and dialogue included in quality assessment • Survey data used to inform program decisions • Research-based authentic and	E 4. *The Evaluative Process includes:* • Alignment of program to internationally benchmarked Common Standards • Development of curriculum supports such as scope and sequence and pacing guide for a vertically and horizontally aligned curriculum centered on the Common Core Mathematic and Next Generation Science Standards, 21st Century skills and STEM integration • Pre and post student assessment surveys in interest, content and attitudes • Participant and parent feedback surveys • Peer observation and dialogue included in quality assessment • Survey data used to inform program decisions • Research-based authentic and

to evaluate program • Peer observation and dialogue included in quality assessment • Survey data used to inform program decisions	evaluate program • Research-based authentic and integrated assessments • Performance assessments that allow students to demonstrate their understanding of STEM content and 21st Century skills	integrated assessments • Goal setting and monitoring driven by data • Development of an assessment and intervention plan to address gaps in student achievement and areas for extension • Development and implementation of student self-assessment • Invite industry experts/mentors to evaluate program (Advisory Board) • Provide professional development for teachers in the evaluative process and interpreting data • Performance assessments that allow students to demonstrate their understandings of STEM content and 21st Century skills • High Schools: Develops a plan for student success on the post-secondary level • Plan for analysis of evaluation data and collaboration with leadership team to use the data to inform program decisions • All teachers and students are immersed in a student-centered environment that supports the use of multiple indicators of success, such as performance, project-based and portfolio assessments	integrated assessments • Plan for analysis of evaluation data and collaboration with leadership team ***and advisory team to use the data to inform program decisions*** • Goal setting and monitoring driven by data, ***development of individualized learning plans that include student input*** • Development of an assessment and intervention plan to address gaps in student achievement and areas for extension • Development and implementation of student self-assessment • Invite industry experts/mentors to evaluate program (Advisory Board) • Provide professional development for teachers in the evaluative process and interpreting data • Performance assessments that allow students to demonstrate their understandings of STEM content and 21st Century skills • High Schools: Develops a plan for student success on the post-secondary level • Systematic collection of feedback related to outreach activities • Development of a process for program review that includes attendance, demographics and student achievement • On-going evaluations of authentic student learning and skill development related to industry expectations

			• Best /effective practice is employed for engagement, alignment and rigor for instructional improvement • Demonstrate competencies in state assessments (AIMS, PARCC) and college and career readiness (ACT, SAT, TIMSS, PISA, PIAAC)

Exploratory Model	Introductory Model	Partial Immersion Model	Full Immersion Model
BUDGETING			
Budgeting in the Exploratory Model involves identifying costs related to personnel, facilities, equipment and supplies.	Budgeting in the Introductory Model involves identifying costs related to personnel, facilities, equipment and supplies	Budgeting in the Partial Immersion Model involves identifying costs related to personnel, facilities, equipment and supplies. Special consideration may be necessary for professional development, travel and program marketing.	Budgeting in the Full Immersion Model involves identifying costs related to personnel, facilities, equipment and supplies. Special consideration may be necessary for professional development, travel and program marketing.
F 1. Budget considerations include: • Lead facilitator • Support staff • Materials and supplies (dependent on labs and planned activities) • Location space (if necessary) • Determine if participants will be charged a registration fee, apply for grants, donations or outside funding • Travel costs (if necessary) • Discretionary funds and other resources are allocated to advance implementation of all the STEM strategies outlined in the program plan • Specific budgets for packaged programs are also available from Community Education Centers, outside vendors as well as a variety of grant programs • Research and apply for a variety of local, state, and national grants • Research and inquire about business community funding and partnerships	*F 2. Budget considerations include:* • Lead facilitator ***at each site*** • Support staff • Materials and supplies (dependent on labs and planned activities) • Location space (if necessary) • Determine if participants will be charged a registration fee, apply for grants, donations, or outside funding • Travel costs (if necessary) • Discretionary funds and other resources are allocated to advance implementation of all the STEM strategies outlined in the program plan • Specific budgets for packaged programs are also available from Community Education Centers, outside vendors as well as a variety of grant programs • Research and apply for a variety of local, state, and national grants • Research and inquire about business community funding and partnerships	*F 3. Budget considerations include:* • Personnel (all teachers salaries and benefits) • Support staff (salaries and benefits) • Materials and supplies (dependent on labs and planned activities) • Custodial services • Location space (if necessary) including architectural and plan review and permit fees • Construction costs (if necessary) • Design a strategic plan to apply and manage grants, donations or outside funding • Discretionary funds and other resources are allocated to advance implementation of all the STEM strategies outlined in the program plan • Travel costs (if necessary) for researching programs and marketing/ recruiting. • Specific budgets for canned programs are also available from Community Education Centers, outside vendors as well as a variety of grant programs • Research and applying for a variety of local, state, and national	*F 4. Budget considerations include:* • School/program administrator (including benefits) • School/program curriculum specialist (including benefits) • Personnel (all teachers salaries and benefits) • Support staff (salaries and benefits) • Materials and supplies (dependent on labs and planned activities) • Custodial services • Location space (if necessary) including architectural and plan review and permit fees • Construction costs (if necessary) • Design a strategic plan to apply and manage grants, donations or outside funding • Discretionary funds and other resources are allocated to advance implementation of all the STEM strategies outlined in the program plan • Travel costs (if necessary) for researching programs and marketing/ recruiting. • Specific budgets for canned programs are also available from

		grants • Research and inquire about business community funding and partnerships	Community Education Centers, outside vendors as well as a variety of grant programs • Research and applying for a variety of local, state, and national grants • Research and inquire about business community funding and partnerships

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SUSTAINING			
Sustaining at the Exploratory Level involves program development with an initial "start up" focus. By creating ongoing program evaluation and gathering reliable data, the goal is to ***build the initial program to the more comprehensive levels.***	Sustaining at the Introductory Level involves program development with a long-term focus, ongoing program evaluation, consistent policies, reliable data and community interest and support.	Sustaining at the Partial Immersion Level involves *program development with a long-term focus*, ongoing program evaluation, consistent policies, reliable data and community interest and support.	Sustaining at the Full Immersion Level involves ***program development with a long-term focus***, ongoing program evaluation, consistent policies, reliable data and community interest and support.
G 1. The Sustaining process: • Establishes leadership and support through development of common goals and mission • Establishes collaborative team to provide feedback based on assessments and evaluations • Establishes plan for materials replenishment • Builds capacity • Collects feedback and refine program implementation from students, teachers and parents • Establishes a ***two year fiscally responsible budget plan to assure sustainability of school/program*** • Establishes connections to businesses and industry representatives with emphasis on work place competencies • Provides project/product development protocols to assess student success in the STEM program • Develops grant writing initiatives with business, industries and university partners to fund, expand, or supplement the program	*G 2. The Sustaining process:* • Ensures that strategic plan and annual action plan addresses investment in professional development for personnel • Establishes leadership and support through development of common goals and mission • Establishes collaborative team to provide feedback based on assessments and evaluations • Establishes plan for materials replenishment • Builds capacity • Collects feedback and refine program implementation from students, teachers and parents • Establishes a ***two year fiscally responsible budget plan to assure sustainability of school/program*** • Establishes connections to businesses and industry representatives with emphasis on work place competencies • Provides project/product development protocols to assess student success in the STEM program • Develops grant writing initiatives with business, industries and	*G 3. The Sustaining process:* • Establishes leadership and support through common goals and mission • Establishes collaborative team to provide feedback based on assessments and evaluations • Ensures that strategic plan and annual action plan addresses investment in professional development for personnel • Establishes plan for materials replenishment • Builds capacity • Collects feedback and refines program implementation from students, teachers and parents • Establishes a *three to five year* fiscally responsible budget plan to assure sustainability of school/program • Establishes sustained connections to businesses and industry representatives with emphasis on student mentor/internships, career counseling and workplace competency skills. • Provides project/product development protocols to assess student success in the STEM	*G 4. The Sustaining process:* • Establishes leadership and support through common goals and mission • Establishes collaborative team to provide feedback based on assessments and evaluations • Ensures that strategic plan and annual action plan addresses investment in professional development for personnel • Establishes plan for materials replenishment • Builds capacity • Collects feedback and refines program implementation from students, teachers and parents • Establishes a ***five to seven year fiscally responsible budget plan to assure sustainability of school/program*** • Establishes sustained connections to businesses and industry representatives with emphasis on student mentor/internships, career counseling and work place competency skills. • Provides project/product development protocols to assess student success in the STEM

• Assists in the development of a K-12 STEM pipeline with an end in mind to determine who the students are and where they will be going. • Strives to be "future focused"	university partners to fund, expand, or supplement the program • Assists in the development of a K-12 STEM pipeline with an end in mind to determine whom the students are and where they will be going. • Works with Arizona STEM Network, Higher Education and others to validate effectiveness of school's innovative curriculum, instruction and assessment as evidenced by student achievement and readiness for college, career and STEM industry	program, shadowing and internships • Develops grant writing initiatives with universities, Arizona STEM Network, industry, etc. • Assists in the development of a K-12 STEM pipeline with an end in mind to determine who the students are and where they will be going. • Works with Arizona STEM Network, Higher Education and others to validate effectiveness of schools' innovative curriculum, instruction and assessment as evidenced by student achievement and readiness for college, career and STEM industry.	program, shadowing and internships • Develops grant writing initiatives with universities, Arizona STEM Network, industry, etc. • Assists in the development of a K-12 STEM pipeline with an end in mind to determine whom the students are and where they will be going. • Works with Arizona STEM Network, Higher Education and others to validate effectiveness of schools' innovative curriculum, instruction and assessment as evidenced by student achievement and readiness for college, career and STEM industry.