

Appendix G: Arizona STEM Network – Introductory Model

A Timeline for STEM Program Development

The **Introductory Model** describes a traditional school experience 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.

Model Description

- Implementation in addition to the traditional school curriculum during the school-day
- Implementation in isolated content areas
- Opportunities are provided for student participation in problem-solving and project-based instruction
- 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
- Includes multiple points of contact with the families of STEM participants, and at least one family integration activity.

Roadmap | How to Guide | Timeline

One to six months prior to implementation:

- Meet with site/district Administrator to discuss STEM unit integration into the existing school/district curriculum
- Develop program mission, vision and goals
- Identify highly qualified teacher leaders in one or more subject areas, at one grade level, at a single site, or in a district-wide grade band that will be offering the STEM unit.
- Identify specific STEM program content/objectives/activities to be offered (i.e. a two-three week STEM unit in a 4th grade classroom, a district-wide STEM recycling contest for 5th grade)
- Plan an extensive professional development program for all teachers and support personnel that includes content and pedagogy in project-based instruction and STEM implementation
- Establish budget* and STEM unit time line
- Establish a supportive system of assessments and program evaluation- can include rubrics for student scoring, surveys, and efficacy studies
- Plan for one field trip/business connection (can include having a guest speaker(s). Include requests for transportation to and from, if necessary
- Plan for one family engagement event

One month prior to unit integration:

- Identify where program will be offered (single school location, or district wide in one grade level)
- Confirm objectives and outcomes
- Confirm participants/students/ grade level
- Depending on number of participants, determine if additional support staff will be necessary, and secure support staff
- Order all materials and supplies for projected participant numbers.
- Confirm dates/ agendas for field trip and family connection events including transportation if necessary.

One week prior to unit integration:

- Confirm unit/lesson plans and end of program assessments and evaluation.
- Prepare location (traditional classroom, science lab, outdoor area) logistics, materials, and supplies (delivery and storage)
- Confirm objectives and program agenda. Confirm duration of planned instructional time and activities.
- Confirm transportation logistics if you are including a field trip
- If using any technology in the program, make sure connections are establish and presentation materials are working (computers, projectors, Skype, simulations, etc.)
- Prepare and stage learning areas, labs and activity centers, including technology Include strategies for parent/community outreach involvement