South Carolina STEM/STEAM Implementation Continuum

Glossary

1. **Evidence** – Documentation that reflects the level of implementation for each of the key elements; depending on the description set forth in a key element examples might include implementation plan, dates of meetings and other collaborative efforts, sign-in sheets for professional develop, supporting statements from partners, lesson plans, pictures, etc.

2. **Leadership Team –** A group comprised of students, teachers, administrators, community college staff (where available), college or university staff (where available), teaching artists (appropriate to STEAM), community arts leadership (appropriate to STEAM), museum or arts education directors, business persons (at least one person for each career pathway, if pathways are a focus), community leaders, and parents. Each component of STEM or STEAM, as appropriate, should be represented on the leadership team. The group is charged with buy-in, development, implementation, and forward momentum of the STEM/STEAM plan.

3. **Partnership -** Working collaboratively with other organizations, companies, or individuals towards a common goal

4. **Arts Organizations –** Agencies and organizations that focus on the arts or arts education. For example, state and local arts councils, museums and galleries, symphonies, theatres, dance studios, professional arts education associations, and arts oriented clubs.

5. **Program Plan –** A school- or district-level set of actions/agreements that have been thought out and documented as a way to systematically achieve implementation of a STEM or STEAM program. The set of actions/agreements may be included as detailed sections in a School Improvement Plan or a 3-5 Year Plan. The plan should include mission and vision statements, goals and objectives, timeline of activities, evaluation and responsible persons.

6. **Specialized Courses –** Courses which are beyond the traditional courses of study. Examples of such non-traditional courses may include, but are not limited to, courses such as introduction to bio-medical engineering, astronomy, genetics, courses related to environmental issues, Glaze Chemistry, World Music, Technical Theatre

7. **Collaborative Work Area –** For STEM/STEAM purposes, such area is more than a computer lab. It is an area with sufficient space and tables that students may be able to complete STEM/STEAM-related projects, and where learning resources/materials are housed with sufficient space so as to encourage face-to-face collaboration between and among students, teachers and community partners. For arts class space recommendations educators can use the Opportunity to Learn Standards located at the Arts in Basic Curriculum web site http://www2.winthrop.edu/abc/.

8. **Infusion –** The study of content and its practical applications via in-depth and embedded connections among the STEM/STEAM disciplines. The content of the different disciplines

mutually support and enhance each other through constant planning and collaboration. A STEM/STEAM infused school disseminates and permeates STEM/STEAM content into the traditions and experiences that are at the core of every program within the school. When infusion is implemented effectively instruction and learning is seamless.

9. **Habits of Mind –** Approaches to learning that focus on traits, thought process, etc. that are exemplified in learning practices such as those set forth in the engineering process and the mathematical practices. Studio habits of mind include Observe, Reflect, Envision, Stretch and Explore, Express, Develop Craft, Understand Community, Engage and Persist. For details on the (a) engineering process see Appendix A, (b) mathematical practices see Appendix B and studio habits see Appendix C.

10. **Authentic Assessment –** A type of formative or summative assessment in which students are asked to engage in real-world activities or projects that demonstrate the application of essential content knowledge, process skills, and critical thinking.

11. **Technology Tools** – Applications that allow students to work digitally and electronically. For example, spreadsheet applications in biology, robotics in programming, design software in engineering, calculators in mathematics, Computer-Aided Design (CAD), 3-D printers, digital/media arts, dance, music, technical arts applications, just to name a few.

12. **International Society for Technology in Education** (**ISTE)** – ISTE is a not-for-profit organization that provides educational technology standards, resources and professional developed opportunities for educators. https://www.iste.org/

13. **Work-Based Learning Experience –** An active, work-based learning experience may include competitions, service-learning, apprenticeships, internships, artists, industrial designers, architects, or other opportunities to engage with STEM/STEAM career-related individuals; durations of experiences could vary from one day to one year.

14. **Network of Schools –** A group/community of educational institutions outside of the home educational institutional.

15. **Professional Learning** – Is the acquisition of best practices, skills, and knowledge through a variety of methods such as workshops, training sessions, literature reviews, etc.

16. **Integrated Content –** Contextual connections between or among the STEM/STEAM disciplines.

    Types of Integration: (Excerpts from Wiggins, 2001)

    - Teaching-tool integration: One discipline serves the other by providing a vehicle through which knowledge can be efficiently learned and remembered.
    - Thematic integration: A theme is chosen and then knowledge and skills that support this theme from different disciplines are sought.
    - Topical integration: Specific topic from one discipline is determined where connective and interactive relationships among disciplines are explored.

17. **Applied Learning Experiences –** For example, study trips, fellowships, externships, etc.; durations of experiences could vary from 1 day to 1 year.

18. **STEM/STEAM Culture –** An atmosphere, mindset or mode of operation that bases all educational endeavors on the processes, practices and habits of mind that support the integration/infusion of STEM/STEAM disciplines.

19. **Underrepresented Groups –** In South Carolina and nationally groups of students underrepresented in stages of education and workforce include female students, students of color, and students from low socio-economic backgrounds.

20. **Stakeholders –** Individuals or groups invested in the work of the STEM/STEAM programs. These may include the STEM/STEAM leadership team, local business partners, and other STEM/STEAM related industry professionals.

21. **Arts –** The arts are defined as dance, media arts, music, theatre, and visual arts. The study of these disciplines is supported through the implementation of the 2010 South Carolina Academic Standards for the Visual and Performing Arts.