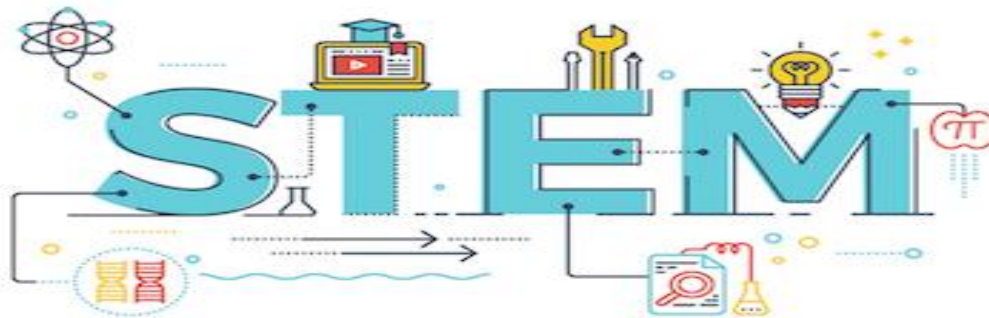# Building a STEAM Program

2019-2020

STEM Programs have a defined identity and purpose.

STEM programs know who they are and what their focus is. To help your program establish an identity and a student goal.

STEM Programs have strong STEM curriculum

A few keys questions about the curriculum:

- Is the STEM curriculum rigorous,

- integrated, and applied?

- Do kids get to use modern technology to help them engineer solutions for problems?

- Is it engineering-centric?

Some research recommends that teachers design STEM curriculum for their own students and community

STEM Programs use STEM instructional practices.

STEM classes use a project-based learning approach to immerse kids in collaborative engineering experiences. Students have a lot of input in designing solutions for authentic problems. They work in teams and use engineering design process thinking.

STEM Programs focus on building students' interpersonal skills.

STEM programs purposely help students develop character traits, attitudes, communication skills, and social skills they need for the 21st Century workplace. Student innovation, collaboration and leadership skills are nurtured.

When you're setting up a STEM program, remember that teachers may need to work together to plan and learn how to help students build these skills over time.

STEM schools provide opportunities for *all* kids.

All kinds of kids learn more in science classes with a well-designed, project-focused curriculum. That translates into STEM classwork as a prime way of improving learning for these students. As you set up STEM programs, be sure that all kids have access and opportunity to experience STEM.

STEM schools have a community focus

Good STEM programs are infused with community partnerships and support.

As a STEM program planner, meet with local industries and arrange to immerse students in learning experiences beyond the four walls of their school. The community can become their campus. In addition, parents and the community can be involved with STEM projects at the school.

STEM schools provide STEM extra-curriculars.

 STEM Program students need opportunities to show off their new skills and knowledge through STEM-based competitions and fairs.

Offer engineering clubs – especially for girls and disadvantaged students, robotics clubs, tech teams, chess clubs, and other groups where kids can interact outside the classroom and continue their STEM experiences. When planning a STEM program, make this an all-encompassing experience for students, from arrival through after-school time.

STEM schools have knowledgeable faculty.

Certainly a well-prepared and knowledgeable teaching force is the key

To make this work, teachers need time, nurturing, and opportunities for continual learning just as students do.

In your program, build in plenty of time for on-going, in-house teacher professional learning, collaboration, and interaction with STEM professionals.