



Chapter 4 Design Tools

Design Tool 4.1: Model STEM Students

Directions for teachers: Consider each of these things STEM students need to learn and be able to do. When you get to know your current students, use this tool to help you decide where they are now as they get started with STEM projects. That can help you determine some areas of focus for the project.

What STEM students learn to do	Where are your current students?
Identify and tackle some real-world issues, problems, and challenges.	
Use the engineering design process as a way to approach and solve problems.	
Combine and apply important grade-level science and math content to solve problems.	
Dig into hands-on activities and make decisions without relying on the teacher.	
Actively participate in designing imaginative and innovative solutions for problems.	
Regard their STEM class as a safe place where they are free to imagine, be creative, take chances, make mistakes, and try again.	
Develop a strong sense of ethics and social conscience.	
Work together successfully in small teams.	
Learn and practice life and leadership skills.	
Develop a mindset of persistence, continual learning, and improving.	
Develop technology competencies and literacy.	