



Chapter 7 Design Tools

Design Tool 7.1: Student STEM Letter

Directions for teachers: Give a copy of this letter to each student prior to beginning the STEM project to introduce, or reintroduce, them to STEM. Suggest they share this letter with their parents as well.

Dear Student,

Good news! You're about to start a STEM adventure! Our class will soon begin an exciting new STEM project.

What do you already know about STEM? STEM is about asking questions, investigating, finding answers, and creating solutions. Have you ever wondered how a bridge can support heavy trucks without falling? Or, how you and your friends can create a robot to help solve a problem? Or maybe you wonder if you can make something to help a person with an artificial arm open a door. Well, STEM can help you find answers to questions like that!

Just look around at all the problems that need to be solved. You may notice erosion on your school campus washing away the topsoil. You may see trash that could be recycled and used to make something useful. Maybe the school band needs some sort of instrument to make a special kind of sound for a musical selection.

Or maybe you could design a safer infant seat; a faster roller coaster, a locker caddy, disposable lunchroom trays, or a solar-powered device. You might even design a container to keep lunches hot or cold. Believe it or not, these are all STEM challenges that students just like you tackled.

STEM is an acronym for **Science, Technology, Engineering, and Mathematics**. You will combine science and math to come up with possible solutions. You'll use technology like computers and new gadgets to help solve the problems. You'll use engineering to design cool things, like robots or roller coasters. And you'll learn to think like engineers do when they are making new things.

And the best part? You can have a lot of fun with STEM! You'll be doing experiments, teamwork, and creating things to improve others' lives. Plus, practicing STEM skills can open up fantastic opportunities for your future, no matter what career you choose.

So, buckle up! You're going to take on a real-life problem and see where your curiosity takes you. Who knows? Maybe one day you'll be making discoveries and inventions that change the world!