

NOT ALL STEM IS EQUAL

Introducing the 3 Stages of STEM

Our mission is to redefine STEM education by introducing a nuanced approach that differentiates between various activities under the STEM umbrella. We recognize the diverse nature of STEM endeavors, from quick, hands-on projects like building a spaghetti tower to more complex and time-intensive tasks such as programming robots to navigate mazes. To bring clarity and guidance to educators and administrators, we propose a three-stage framework for STEM education, facilitating a structured progression in curriculum implementation and program development.



STAGE 1 STEM

Icebreakers & Team Activities

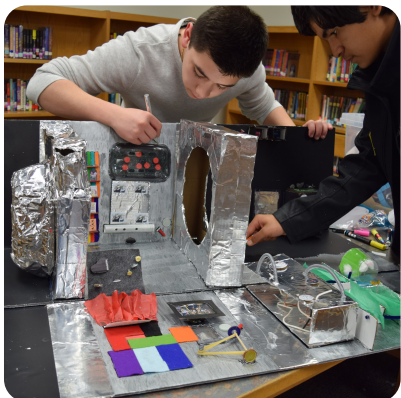
From building the tallest tower of index cards to flying a paper airplane, stage one STEM challenges are the most basic activities. These challenges do not have an obvious connection to math and science concepts and at first may seem like superficial activities. However, they are important primary activities that serve to build a foundation of skills in problem solving, teamwork, communication, and grit.



STAGE 2 STEM

Engineering Design Challenges

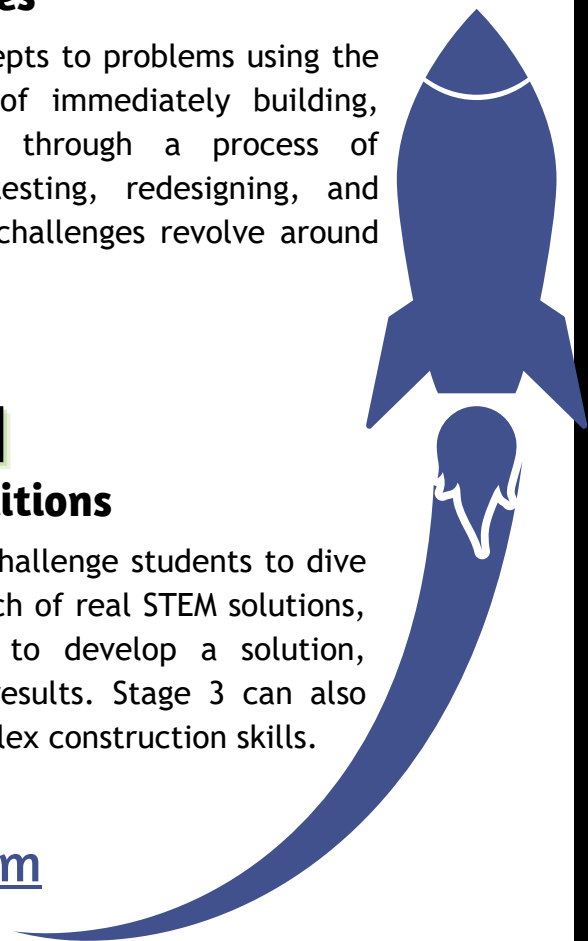
Students apply math and science concepts to problems using the engineering design process. Instead of immediately building, students are systematically guided through a process of brainstorming, designing, building, testing, redesigning, and sharing their solutions. Stage 2 STEM challenges revolve around the engineering design process.



STAGE 3 STEM

Long Term Projects & Competitions

Stage 3 includes longer projects that challenge students to dive deeply into a problem, conduct research of real STEM solutions, rigorously apply the design process to develop a solution, collaborate as a team, and present results. Stage 3 can also introduce programming and more complex construction skills.



VIVIFY YOUR CLASSROOM!

Stage 1 STEM

STEM
Creativity Tools
Boost Brainstorming Power with 5 Activities.



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Amazing Architects
Task Cards
Perfect for STEM Family Nights!



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Building Bricks STEM
STEM Careers
30 challenge cards

Mechanical engineers design and build machines that help us solve problems of everyday life. They use their knowledge of science, math, and engineering to create new machines, parts to power our homes, and a whole lot more.



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Astronaut Training
Stage 1 STEM
18 Space-themed activities to develop the 4Cs of STEM!



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Stage 2 STEM

Toy Factory
Design Challenge
Science of Simple Machines



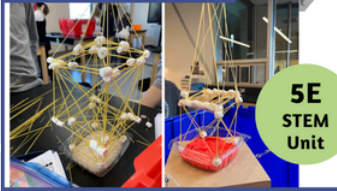
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Space Capsule
Heat Shield Challenge
5E STEM Unit
MS-PS3-3: Minimize Heat Transfer



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Earthquake
STEM Challenge
5E STEM Unit
NGSS Aligned: MS-ESS3-2 & MS-ETS1-1



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Space Lander
STEM Challenge
Engineering Design Challenge
Mission to Moon
Mission to Mars



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Stage 3 STEM

STEM Garden
Design Challenge
Project Guide
Design a school garden & build a 3D model using the engineering design process.



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Eco-House
STEM Project Guide
Sustainable Engineering + 5E Model



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The NEXT National Park
5E STEM Challenge
Research, Planning, & Design Project
Redwood National Park Report



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Mars Colony
STEM Project Guide
BUNDLE



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ALL-INCLUSIVE STEM CURRICULUM


Grab a semester-long STEM unit for all 3 stages of STEM!

Mission to Mars
STEM Curriculum
10 STEM Activities + Instructional Videos
Mission to Mars



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Alphabet STEM BUNDLE
STEM Challenges
for A through Z



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STEM Explorers
STEM Challenges
Bundle
STEM challenges driven by inventions and concepts from around the world



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