

Stations of STEM®

The Stations of STEM® — a TechTerra trademarked concept — refers to a system for understanding and organizing learning centers for the purpose of exploring the world of STEM and STEAM. Learning centers are used to personalize learning experiences and provide independent exploration for students. The learning centers offer benefits to teachers and students.

BENEFITS OF LEARNING CENTERS

Learning centers cater to students with **different learning styles and abilities**. With **hands-on activities**, learning centers **foster curiosity**, intrinsic motivation, and allow students to **develop autonomy** as they manage their learning time. With centers, teachers can provide individual attention in small groups while the rest of the class is highly engaged in hands-on exploration.

TECHTERRA'S APPROACH

Recognizing that well-structured centers contribute to a positive and productive classroom environment, TechTerra adopted this format for **hands-on integrated STEM learning**.

Each lesson and activity features a unique Station of STEM. These serve as a bridge to connect essential understandings of STEM concepts with engaging STEM tools.

FUTURE GROWTH

STEM learning stations will continue to grow and adapt to the constantly shifting landscape of emerging technologies. The newest stations could include Artificial Intelligence and Machine Learning, Conservation Science and Sustainability, and even Cybersecurity.

COMPONENTS OF STATIONS OF STEM®

Stations encompass **fundamental components of STEM learning while integrating core subjects**. The result is a rich and multi-dimensional learning experience where students engage diverse skills, from mathematical and literacy competencies to written expression and visual-spatial reasoning.

STEM ACTIVATE™

Our line of STEM Activate™ Activity Cards provide **standards-aligned affordable curriculum** allowing you to utilize your own STEM tools within the Stations of STEM. The activities include a **hands-on approach** to exploring core content areas. Students actively engage with challenging concepts, ask questions, and deepen their understanding through critical thinking.

Connected Learning



Integrates hands-on activities with digital technology for an engaging, multi-faceted learning experience. Students interact with tangible objects while exploring corresponding digital content.

Recommended Tools: Osmo, Marbotic, Makey Makey



Circuitry



Develops foundational knowledge of electronic components, circuit fundamentals, and problem-solving skills through practical experience with electricity concepts.

Recommended Tools: Snap Circuits, Paper Circuits, Circuit Maze



Digital Storytelling



Empowers students to harness creativity and 21st-century skills to bring narratives to life through dynamic digital formats with engaging animations and storyboards.

Recommended Tools: Zu3D, Cloud Stop Motion, Sparkables Design Process Inspiration Cards, Storyboard That



Coding



Provides interactive games and challenges to build a strong foundation in programming and problem solving with screen and screen-free options catering to various learning styles.

Recommended Tools: ScratchJr, Scratch, Scottie Go!, Python, Code Master, KaiBot



Engineering Design



Transforms complex engineering concepts into hands-on activities, allowing students to explore design principles and prototyping. Inspires creativity and guides students through problem-solving and invention.

Recommended Tools: Makey Makey, Sparkables Design Process Inspiration Cards, Flexistix



Augmented Reality

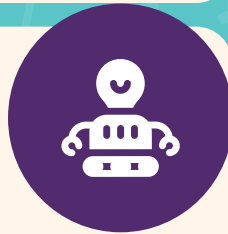


Unlocks a new dimension of learning, allowing students to directly observe scientific principles and phenomena beyond traditional methods. Utilizes student devices and immersive resources to create engaging learning experiences.

Recommended Tools: Curiscope Virtuali-Tee, Octagon Studio 4D+ Augmented Reality Flashcards, Merge Cube



Robotics



Offers versatile robotics experiences with screen-based and screen-free options for building, programming, and operating robots. Caters to both tactile learners and those interested in virtual coding challenges through a comprehensive introduction to robotics.

Recommended Tools: Cubetto, Matatalab, Makeblock mBot, Qobo, Botzees, Kai's Clan, Makeblock Ranger, Kaibot, Makeblock Ultimate 2.0



Drones & Flight



Bridges traditional and modern aviation, encouraging exploration of flight principles through hands-on experiences and cutting-edge technology. Collaborative drone and flight activities in a safe, indoor environment foster 21st-century skills and a deeper understanding of flight dynamics.

Recommended Tools: CoDrone EDU, PowerUP 2.0

