



STEM Maker Lab®

ENHANCE

YOUR

MAKER

SPACE



*OUR NEW **STEM MAKER LAB**® PUSHES THE LIMITS OF INNOVATION AND PUTS CREATIVITY AT THE FOREFRONT.*

Encourage young entrepreneurs to dive into learning by introducing your students to an environment that builds **perseverance, creativity, curiosity, problem-solving, expression and communication** through hands-on experiences.



HANDS-ON LEARNING IS ESSENTIAL FOR CREATIVE MINDS TO EVOLVE.

In *STEM Maker Lab*, future innovators will discover the power of prototyping as they bring their ideas into reality. Students will go from idea generator to maker to game-changing innovator!



WHAT IS STEM MAKER LAB?

A program where children can take risks, build their tolerance for ambiguity and ultimately explore who they are as a maker, inventor and innovator.

Participants will realize that having a **curious spirit**, which embraces experimentation and problem solving, is as important as the tools and equipment used to build innovative prototypes!

15 hours of programming. Endless Implementation Options.

Every activity helps participants discover what it means to be an inventor by applying creativity, innovation, design engineering, design thinking and innovative prototyping.

The curriculum is also built to show students the value of Intellectual Property and the importance of being an entrepreneur as they develop inventions, create marketing materials and present to mock investors!

HOW DOES IT WORK?

Below is the activity sequence that each session follows.

STEM Maker Lab provides 15 hours of programming for 100 students. The programming is broken out into five sessions, with six 30-minute activities per session.

Each session follows the same activity sequence and structure, but what differs is what invention prototype the team is challenged to build in the Create Activity.



ACTIVITY 1 INSPIRATION

In activity one, participants are inspired by stories from **National Inventors Hall of Fame Inductees** who discovered how the natural world around them can inspire solutions to problems.



*National Inventors Hall of Fame Inductee **Chuck Hull**,
Inventor of 3D Printing*

Teams are introduced to a challenge and discover the **power of brainstorming**.



ACTIVITY 2 CREATE



STEM Maker Lab uses a **Create, Test and Recreate** learning approach that challenges children to use materials to build solution prototypes, test and modify their designs, and then recreate and evaluate their solutions.

In activity two, teams bring their invention ideas to life by building prototypes, experimenting with different materials, testing their design, evaluating what worked and what did not, and modifying their model based on the information gathered.



ACTIVITY 3 INTELLECTUAL PROPERTY

This activity is designed to educate students about the value of Intellectual Property—which includes **utility and design patents, copyrights, registration marks** and **trademarks**.



In activity three, participants take their idea to the next level by thinking through product names, brands and logos. This process helps children better understand the importance of **Intellectual Property marks**, and protecting an idea.



In activity four, children explore the topic of “making,” as well as the **technology and inventors** behind many of the inventions in a maker space.



They are challenged to take their prototypes to the next level by using tech tools such as **3D printers, electret microphones and computer software programs** to further refine their product design and utility.

The philosophy behind activity five is rooted in the concept that inventors need to understand the marketplace and the process of **bringing an invention to market**.



Students learn about the process of bringing an invention to market by exploring different marketing challenges: creating a pitch, making package designs, identifying potential buyers and designing marketing materials on a budget.

Entrepreneurship encompasses **invention, innovation, economics, business and marketing principles**. In activity six, participants will learn and understand that the best-selling products have teams who work on the design, function, marketing, logistics and selling of the product.



Students will then apply all they've discovered from the entire session by **completing a business plan outline and pitching their product**.

WHY OUR STEM MAKER LAB?

STEM Maker Lab, a licensed program developed by the National Inventors Hall of Fame® (NIHF), is made up of a robust and flexible curriculum designed to **enhance the maker space experience and empower students** to problem-solve realistic challenges, design prototypes of their ideas and bring their inventions to life using the latest tech tools.

Brought to you by the makers of Camp Invention®, NIHF's PreK to adulthood education programs promote innovation, STEM concepts, Intellectual Property Literacy™, entrepreneurship and 21st century skills.

With **flexible implementation* and curriculum**, we provide your students with building materials and tools to bring their ideas to fruition for **basic to advanced STEM Maker Space set-ups**. We also provide multiple challenges designed for different grade levels, giving you several ways to implement this curriculum with your students:

1. **INTEGRATE INTO AN EXISTING STEM LAB**
2. **INTEGRATE INTO CLASSROOM CURRICULUM**
3. **RUN AS AN AFTER-SCHOOL PROGRAM**

**More implementation options available if the above do not work for you and/or your learning environment.*

CREATE AN **INNOVATION LAB** FOR YOUR STUDENTS!



*"Kids and people learn by **experiencing things**, not by studying things and repeating what they study. Providing an environment where children can actually learn the material, the matter, how it **comes together**, how it **works** and so on, in a climate of play, in a climate of having fun together, that's an **unbelievable thing.**"*

*Federico Faggin, National Inventors Hall of Fame Inductee,
Co-inventor of the Microprocessor*



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