



Partnership Projects



**Make learning come alive with a
Boatbuilding Partnership!**

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Engaging student in the boatbuilding process with Urban Boatbuilders is a proven strategy for youth to learn, practice, and apply academic concepts in a challenging and innovative hands-on environment that effectively complements classroom learning. Projects build the 21st Century, Social Emotional, and Leadership Skills of youth as attainable goals that ultimately lead to a finished boat and immense pride.



Through the boatbuilding process, students put STEM skills to work as they follow building plans, use specialized tools and materials, and solve problems. Whether applying techniques of angle and length measurements or understanding the chemical properties that make a boat waterproof and durable, students have the chance to learn and develop a variety of skills in a firsthand, experiential way. Projects are individualized to challenge students of middle or high school age no matter their academic level and developmental stage. Boatbuilding is an unconventional yet unique way of engaging students who have not found success in a more traditional classroom settings.



Urban Boatbuilders brings the tools, materials, and an instructor to your site. You provide the students, space (wood shop not required) and staff support. As lumber is transformed into a finished boat throughout the duration of the course, students also undergo significant technical, social and emotional development and develop 21st century skills. The culmination of the course is a boat launch, where students get to put their newly built boat in the water for its first paddle. After the boat is complete, it's yours to keep.

For more information, please contact us at 651-644-9225 or info@urbanboatbuilders.org. We look forward to working with you to craft a program that builds your students and fits your needs and schedule.

“This hands on learning allows my students to feel successful. They are successful, but they don't necessarily understand that just by looking at the results of a math quiz. They have to feel it, and when they put their hands on the work, that allows them to interact with understanding their own growth.”

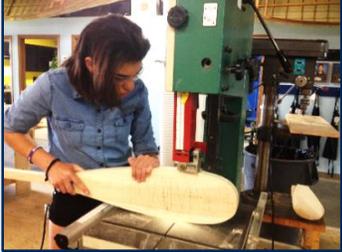
—Kent Miller, Parkway Middle School

Skill Development

Urban Boatbuilders projects create a unique and powerful opportunity for students to develop academic, 21st Century, and technical skills. We will partner with you to deliver a program tailored to effectively meet your needs and the needs of your students while engaging them through fun and interactive hands-on learning. Below are samples of skills that have been taught through our projects.

Academic Skills	21 st Century and Social/Emotional Skills	Technical Skills
<ul style="list-style-type: none"> • Science – Application of force and motion through the use of tools such as hammers and clamps • Science - Transforming energy by using steam heat to break down the cellulose of wood to facilitate the extreme bending of wood • Science – Understanding the processes that produced the structure of wood grain and how best to work with that structure for cutting, shaping and building • Math – Understanding and using fractions, mixed numbers, and improper fractions in the context of measuring and building • Math – Applying properties of complex angles when creating joints in the structure of the boat • Engineering – Understanding the elements of boat design that enable maneuverability and stability • Social Studies – Understanding of how diverse cultures including native communities have contributed to design and technology, and history through watercraft 	<ul style="list-style-type: none"> • Teamwork – Working together on tasks that require multiple people for success such as steam bending • Problem Solving – Assessing a task and determining an approach that will lead to the desired outcome such as how to layout and cut accurate complex angles • Communication – Clearly sharing with other members of the team how their work is progressing and how it relates to the work of others • Social Awareness – Realizing that each team member has unique strengths and capacity which contribute to the success of the team and project • Planning for success – Applying new and existing knowledge, skills, and strategies to successfully complete a project on time • Personal Mindset – Developing skills required to persevere and achieve individual and group goals even when mistakes or obstacles occur • Leadership – Learning and practicing effective communication, assessment, and execution skills that result in mobilizing a group to accomplish a goal 	<ul style="list-style-type: none"> • Measuring, marking and cutting to within 1/16th of an inch • Identifying wood species • Steam bending a variety of boat components • Accurately drilling holes and driving fasteners • Applying traditional lashing techniques to join pieces of wood • Utilizing edge tools such as block planes, spoke shaves, and cabinet scrapers. • Sewing watertight seams in synthetic materials • Mixing and applying polyurethanes and epoxies • Drawing accurate layout lines to facilitate • Cutting complex angles • Riveting • Carving wood • Cutting wood safely and accurately using hand saws and band saws (if determined to be appropriate)

Partnership Projects

		Instruction Time	Length	Weight	Program Cost	Includes
Wilderness Traveler Canoe		70 hours	17' 5"	40 lbs.	\$5,250	Boat and 2 paddles
Urban Traveler Canoe		60 hours	15'	32 lbs.	\$5,000	Boat and 2 paddles
Stand Up Paddle Board		55 hours	13'	27 lbs.	\$5,000	Paddle board and 1 paddle
Loon Kayak		50 hours	13'	25 lbs.	\$4,750	Kayak and 1 kayak paddle
Paddle Making Class		20 hours	48" or 54"	5 lbs.	\$1,500 (Based on 10 students)	1 paddle per student

Wilderness Traveler

A classic two person canoe, this is a great project to maximize student engagement and development. Students are divided into crews that are responsible for different aspects of the canoe construction. While one crew of students steam-bends ribs, another crew prepares the longitudinal stringers with a “radi-plane”. Yet another crew stays busy laminating ash steams. This divide and conquer approach is a rewarding way to learn hands-on the importance and value of teamwork and communication. This boat is the most technically challenging boat that we build with youth and is best suited for high school projects or middle school students with previous building experience.



Urban Traveler

This one or two person canoe was inspired by its predecessor the Wilderness Traveler. The Urban Traveler lends itself to an easier more compact build while offering a dynamic hands on learning experience to a wider range of students. As a result it is well suited for middle and high school students alike.



Loon Kayak

This Skin-on-frame recreational kayak is sleek and lightweight. It is able to accommodate all levels of paddlers and through the building students learn hands-on what makes a boat stable, durable, and easy to handle throughout the application of their STEM skills. For example, at what depth should the hull sit in the water to maximize stability across the girth? Take the course to found out! Students use plans to cut out the frame, assemble the kayak, put the skin on, and sew the combing (cockpit entrance) as one of the final steps.



Stand Up Paddle Board

Students immediately connect with the stand up paddle board's novelty and popularity on the water. This project provides the same technical learning experience while lending itself to its' own unique brand of water fun. This boat facilitates the experience of traditional skin on frame boat building colliding with the novelty of a modern water craft. In this build students will assemble the SUP frames, carefully cut and lash all of the SUP components, and enclose the board in a unique boat skin. Finishing touches include attaching the deck board, rub rails, and skeg! Get your student connected to their local bodies of water through the hands on process of building this playful and stable craft!



Paddle Making

Paddle making is a great option for lower intensity projects that allow students to develop a variety of woodworking skills in a relatively short amount of time. Participants customize their own paddle design using a variety of industrial and hand-powered tools, and also can put an artistic twist on their work using wood burners and carvers.



“Urban Boatbuilders gives the students autonomy – room to think, grow, problem solve, and to figure it out themselves, and to support them when they can’t figure it out. You watch how the students succeed in that environment and how they’re not succeeding in a classroom where they are constantly directed to sit down and be quiet, not use their hands, not to stand up and not to move, and their behaviors just go through the ceiling. It’s not a good fit, but the model that Urban Boatbuilders presents is extraordinary.”

- Mike Shypulski, Boys Totem Town