

# Marine Science and Technology - Unit 1 Tech - Protocols and Boating

## Unit Focus

In this unit, students will learn how to safely use a variety of hand and power tools in a shop-based environment to build a Field Trip Tool and start on their fishing rod or landing net project to get familiar with shop tools and practices for later use in their Interdisciplinary project. Students will take a short safety exam to ensure that they can work in a safe and respectful manner. The goal of each student is to learn how to reflect and persevere along each step of a procedure list when building their field trip tool. Students will also learn Boating Safety. As a result of the content in this unit along with successful completion of the state of Connecticut (CPWO) assessment, students will be eligible to obtain a Certificate of Personal Watercraft Operation (CPWO) through the CT Sportsman Database. This is required to operate a powerboat or vessels over 19 1/2 feet on all state waterways.

## Stage 1: Desired Results - Key Understandings

Standard(s)	Transfer	
<p><b>Connecticut Goals and Standards</b>  <i>Technology Education (CTE)</i></p> <ul style="list-style-type: none"> <li>Explain and demonstrate the proper use of personal protective equipment (PPE). <i>TE.ET.B.5</i></li> <li>Describe and demonstrate the proper use of engineering laboratory equipment. <i>TE.ET.B.6</i></li> <li>Demonstrate and explain knowledge of workplace safety procedures. <i>TE.WT.A.2</i></li> <li>Demonstrate and explain knowledge of proper use and storage of basic hand tools. <i>TE.WT.A.5</i></li> <li>Describe the abrasive grit numbering grading system. <i>TE.WT.F.26</i></li> </ul> <p><i>Transportation Technology: 12</i></p> <ul style="list-style-type: none"> <li>Explain how governmental regulations impact transportation. <i>TRAN.01.05</i></li> <li>Define and properly use common transportation technology terminology (e.g. combustion, pathways, velocity, vehicle, mode, payload, and terminal). <i>TRAN.02.01</i></li> </ul> <p><b>Student Growth and Development 21st Century Capacities Matrix</b>  <i>Collaboration/Communication</i></p> <ul style="list-style-type: none"> <li>Product Creation: Students will be able to effectively use a medium to communicate important information (findings, ideas, feelings,</li> </ul>	<p><b>T1</b> Explore and hone techniques, skills, methods, and processes to create and innovate  <b>T2</b> Develop a product/solution that adheres to key parameters (e.g., cost, timeline, restrictions, available resources and audience).  <b>T3</b> Leverage connection(s) in other subject areas (including STEM) to make sense of a given problem, product, or solution.</p>	
	<b>Meaning</b>	
	<b>Understanding(s)</b>	<b>Essential Question(s)</b>
	<p><b>U1</b> The tools/equipment that I am using and the way I am using them impact the quality of the result, the safety of the learning environment and the longevity of the equipment.  <b>U2</b> Tools and equipment have specific functions and methods for usage.  <b>U3</b> The way people operate their boat is directly related to safety on the water.  <b>U4</b> Reading and following a procedure list allows the builder to evaluate their progress along each step in determining their level of precision.</p>	<p><b>Q1</b> How do my behaviors and actions affect the safety of myself and others?  <b>Q2</b> How do I operate this tool to get the desired result?  <b>Q3</b> How do I operate my boat safely?  <b>Q4</b> What type of technique/s should be used for this project?  <b>Q5</b> How do I utilize a procedure list to help me evaluate my progress?</p>
	<b>Acquisition of Knowledge and Skill</b>	
	<b>Knowledge</b>	<b>Skill(s)</b>
	<p><b>K1</b> Operation and purpose of various hand and power tools in the wood shop: Compound Miter Saw, Radial Arm Saw, Hand drill, Drill press, Table Saw, Belt Sander, Spindle</p>	<p><b>S1</b> Demonstrate safe operation of various tools in the wood shop  <b>S2</b> Execute precise work using a procedure list to create a</p>

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<p>issues, etc.) for a given purpose. <i>MM.3.2</i></p> <p><i>Self-Direction</i></p> <ul style="list-style-type: none"> <li>Perseverance: Students will be able to identify problem(s) and use appropriate strategies to continue toward a desired goal. <i>MM.4.2</i></li> </ul>	<p>Sander, chisels, hammer, squares, clamps, files, rasps, reams &amp; scrapers.</p> <p><b>K2</b> Boating nomenclature, propulsion systems and hull types, basic navigation and "Rules of the Road", federal and state boating laws and types of boating emergencies. As listed in the State Workbook.</p>	<p>product.</p> <p><b>S3</b> Evaluate the quality of work before moving on to the next step.</p> <p><b>S4</b> Apply navigational skills and knowledge of boating laws to operating a boat safely.</p>
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