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THE SCHOOL DISTRICT OF MANATEE COUNTY FEATURES A STUDENT AND A CAREER & TECHNICAL EDUCATION TEACHER

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SCHOOL
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**Boat Building Technology—
More Than Building a Boat**

Some say that boat building has always been a boom or bust industry. Manatee Technical Institute teacher David Stinnette says, "It's so much more than that. The industry is always moving forward. Technology is always changing."

David draws on years of experience in the boating and commercial construction industries to teach the latest in boat building technology. Sponsored by a new grant from Florida State University, MTI's students are learning a two-pronged approach that includes both the basics of boat building and the latest, eco-friendly methods of *composite construction*, a type of fiberglass construction less harmful to the ozone and better for the environment.

How is boat building so much more than building a boat? This composite construction technology parlays into several other industries such as the aviation, automotive, aerospace, and construction fields. David proudly teaches the next generation the skills and knowledge needed to become master craftsman regardless of the transportation career they choose. He also helps students learn the personal skills required to become excellent employees.



Regional Careers: Here are examples of related occupations and current wages in the Suncoast Workforce Region.

Occupational Title	Entry Level	Experienced
Minimum wage	\$ 6.79	--
Fiberglass Fabricators	\$10.61	\$15.59
Motorboat Mechanics	\$14.23	\$20.18
Wholesale		
Transportation Occupations	\$10.00	\$19.24
Transportation and Distribution Managers	\$30.51	\$47.44
Marine Environmental Scientists	\$18.28	\$37.78
Environmental Engineers	\$34.47	\$50.77

Source: <http://fred.labormarketinfo.com> FL Labor Market Statistics, Occupational Employment Statistics & Wages Program

Career Pathway: Students desiring a career in any of these areas can find related educational programs at these schools*:

Manatee Technical Institute
Manatee Community College
University of South Florida

*Other Manatee schools may offer similar programs. Listed schools are related to today's issue.

WEB
Wise

Check out the following websites:

www.floridaboatbuildingschool.com
www.marinetech.org/marineworkforce/technology.php
<http://science.howstuffworks.com/question254.htm>
www.skillsusa.org

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**Marine Careers—
"Oceans of Possibilities"**

What comes to mind when you hear the words "marine technology careers?" Perhaps a lone boat appears in your thoughts, drifting through an ocean of possibilities. But let's go a little deeper into the definition of this field—one that actually employs over a million people across the globe.

Marine technology is the industry that applies scientific and engineering knowledge to utilize and better understand the marine environment. This line of work can be broken down into six major branches: *resource extraction, military, transportation, research/exploration, human environment, and multi-purpose activities.*

Resource extraction deals with everything the ocean has to offer for our use. From it we obtain food, drugs, minerals, water, energy, and plants; every career dealing with these extractions and their processing methods are considered a part of marine technology. *Military and governments* employ marine technicians in the realm of national defense, maintaining equipment such as satellites and submarine vessels as well as monitoring their coasts and sea surfaces. The U.S. Coast Guard is a prime example. The *transportation industry* is responsible for designing and building boats and other marine craft, shipping goods, and all port operations.

The branches of marine technology often overlap; for example, *research and exploration* of the ocean, which includes surveying and diving, would be difficult without watercraft builders. Our *human environment* is connected to the ocean's influence, especially areas concerning marine weather forecasts, pollution, currents, efficient shipping routes, floods, and even recreation. The *multi-purpose activities* branch of marine technology, a rather miscellaneous group, includes career areas in undersea communications systems and their installation, navigation and radar, and data management and analysis.

Marine technology is a huge field, and technicians are in high demand in some areas. Manatee Technical Institute's Boat Building class focuses on one area of marine technology, and the advanced processes of *Composite Construction Technology* and *Vacuum Assisted Resin Transfer Molding* taught here will transfer to other transportation industries as well.



KIDZ
Biz & Buzz



Pursuing A Vision

Zach Geeraerts is a hardworking guy. He's finishing his senior year at Bayshore High School and pursuing his vision of building boats at the same time. Zach is making his dreams come true, partly powered by his dual enrollment in high school and Manatee Technical Institute (MTI).

Zach spent a lot of time on the water growing up and dreamed of building his own fishing boat. *Lofting it*, or creating a blueprint for it, became his passion. Enrolling in MTI's boat building class was his plan to make it happen. Zach spent many years thinking about and investigating what makes the perfect boat and is now implementing all of his ideas. In his designs, he considers water depth, chop, fuel, and seating capacity. He incorporates lines, angles, design principles, and precision into the plans.

Zach says, "Building your own boat is a passion. It's a long process that requires patience. Each task needs to be completed. It's my freedom."

"Learning the fundamentals of boat building and fabrication lets me branch out into anything!" he added. After a hard day's work, what's his favorite part of the day?

"Cooling off and chilling out!"

Explore
IT

The Unsinkable Egg (Or, Why Boats Float)

You need: 1 egg, 1 large glass of hot tap water, salt (lots), and a spoon.

First, fill a large glass with hot tap water, leaving about two inches at the top. Gently ease a fresh egg into the water. It sinks to the bottom. Next, start stirring salt into the water. Watch as the egg floats to the top.

Why? The egg sinks at first because it has a greater density than water. The egg floats in the salt water because it has more buoyancy in the salt water than in fresh water. Buoyancy is determined by the density of the water. Fresh water is not very dense, but salt adds density to the water. The heavier density of the salt water causes the egg to float. This is why it's easier to swim in the ocean than in a lake: your body is more buoyant in the higher-density salt water.

Displacement of water is what allows boats to float on water. The idea of buoyancy was summed up by Archimedes, a Greek mathematician, in what is known as *Archimedes Principle*. This principle states that a body immersed in a fluid is buoyed up by a force equal to the weight of the displaced fluid.



InquiziKidz page is published every Wednesday in Bradenton Herald. Provided by Newspaper in Education, Christine Fritch (941) 748-0411 ext. 5464, cfritch@bradenton.com Julie Beacham-Hooie, Page Editor.