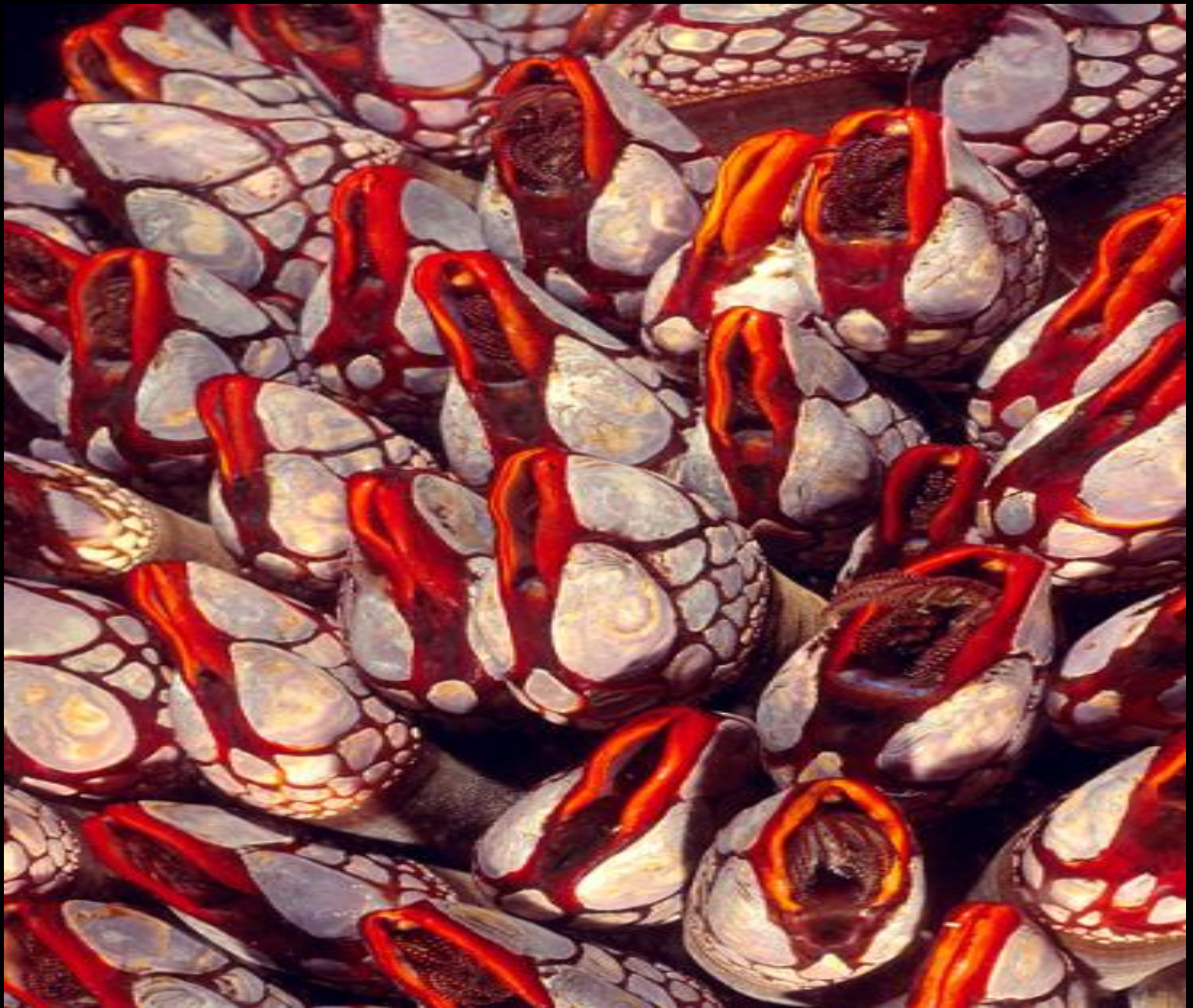




60
MINUTES

Marine Edition

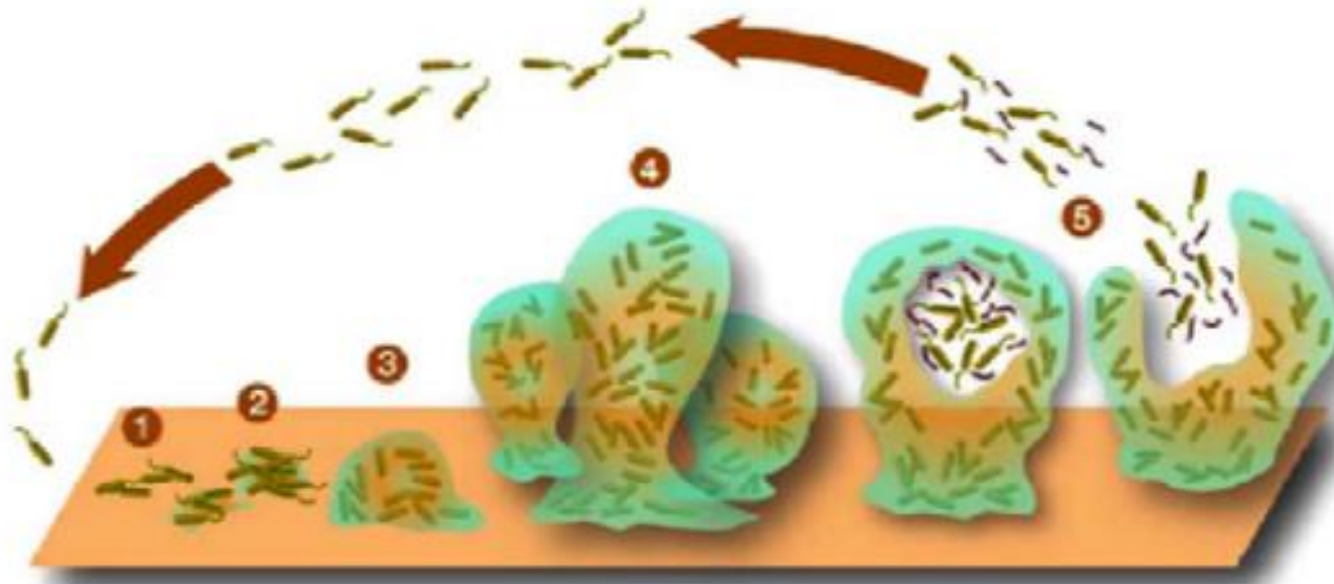








The Growth Cycle



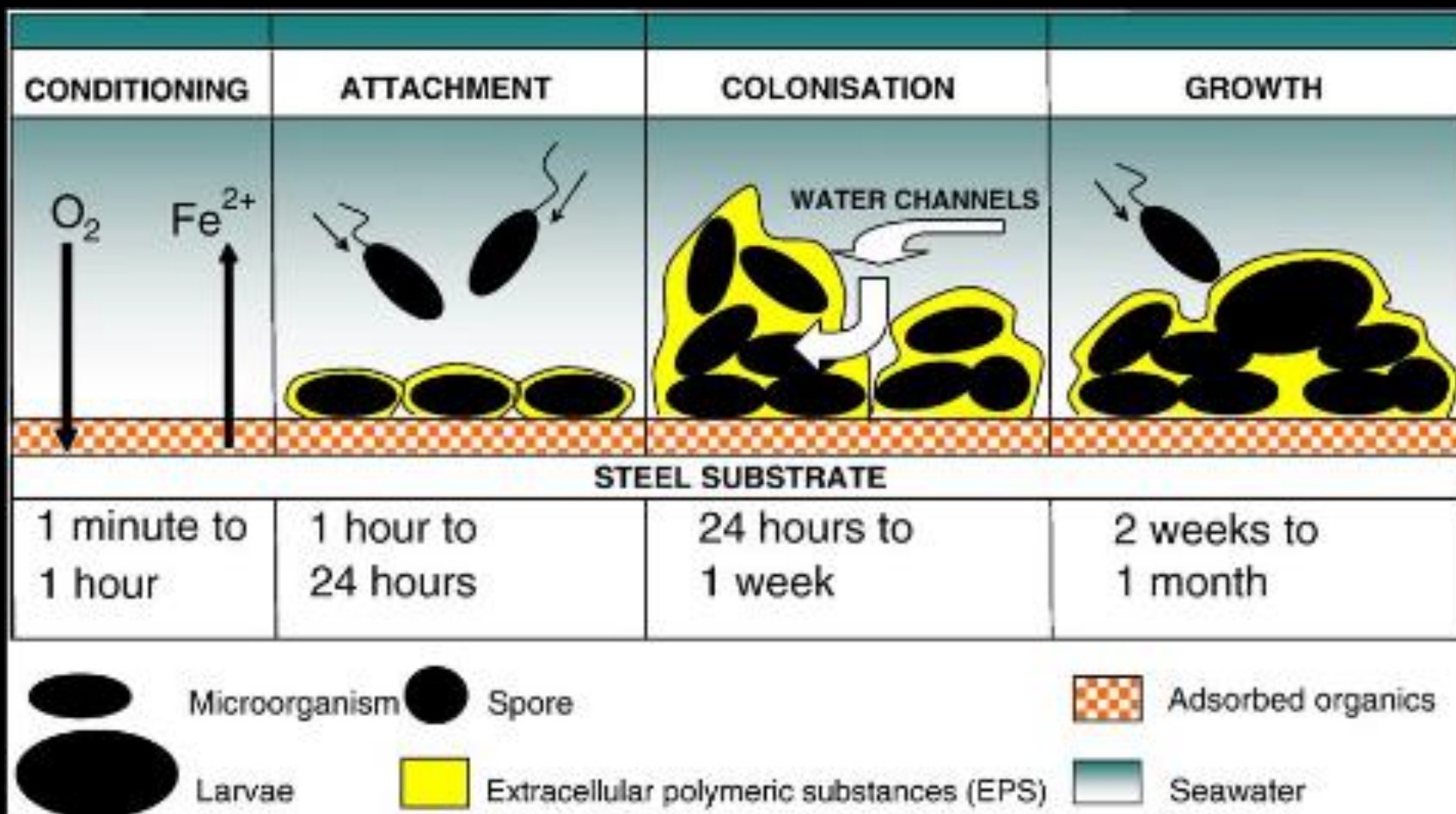
Phase 1: Initial Attachment

**Phase 2: Permanent Attachment
Phase**

Phase 3: Primary Maturation Phase

Phase 4: Secondary Maturation

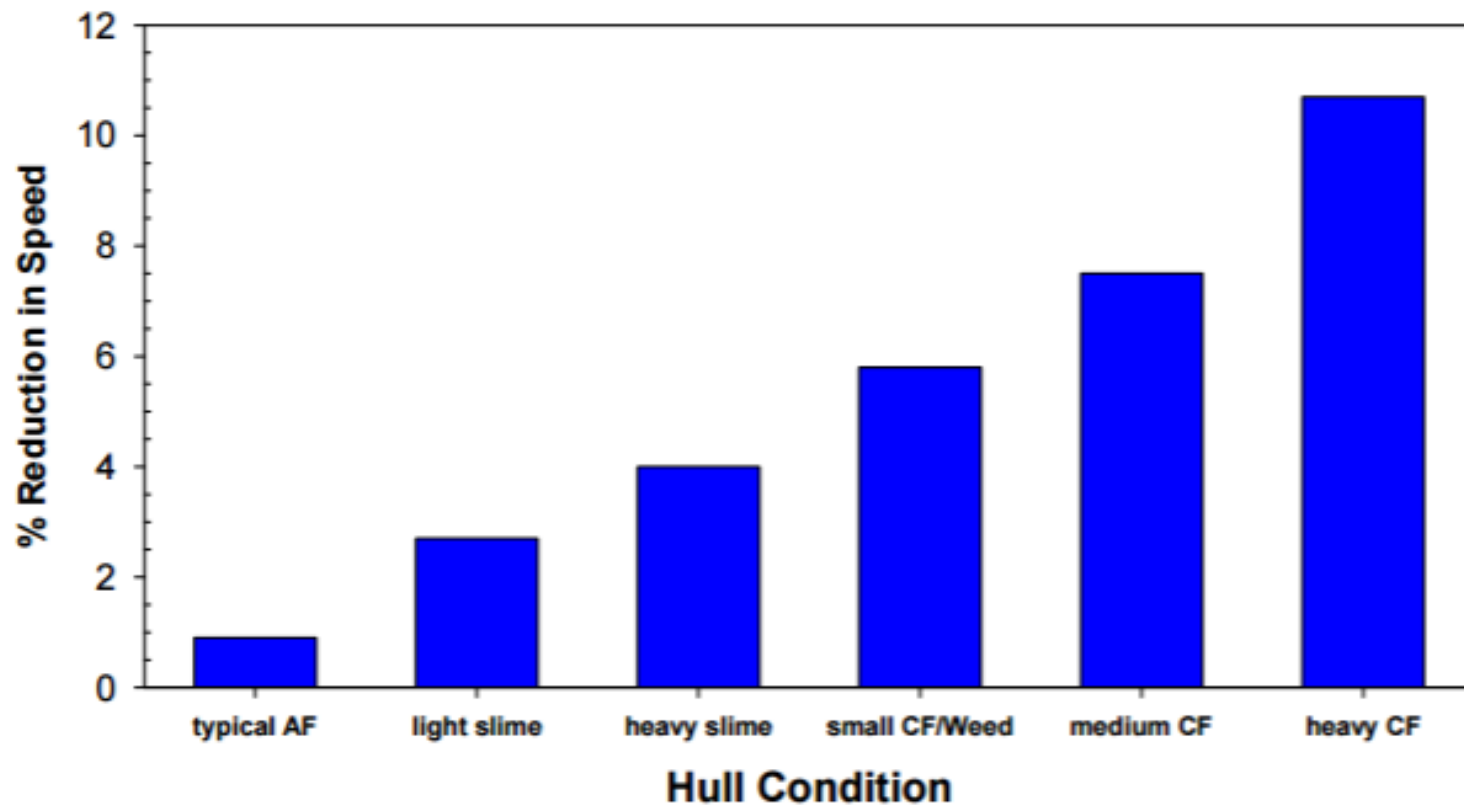
Phase 5: Dispersion

















FloatWays.com

With such a big array of choices for antifouling boat bottom paint, the task of selecting the right one can be daunting. Read on to learn which one is right for your boat!

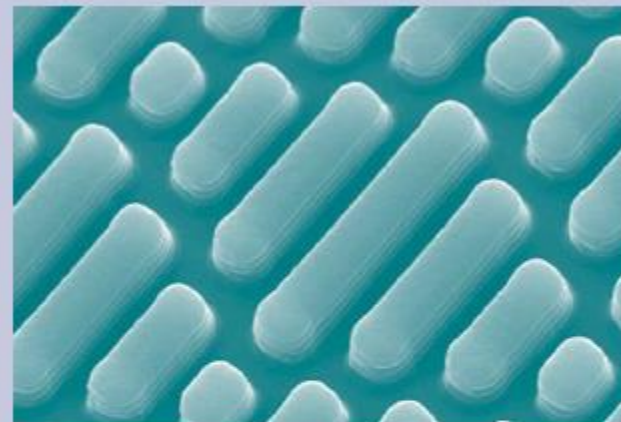


Sharks Provide Inspiration For Ship Coatings

University of Florida engineers have developed an environmentally friendly coating for hulls of oceangoing ships based on an unlikely source of inspiration: the shark.

UF materials engineers tapped elements of sharks' unique scales to design the new coating, which prevents the growth of a notoriously aggressive marine algae and may also impede barnacles, according to preliminary tests.

If more extensive testing and development bear out the results, the shark-inspired coating — composed of tiny scale-like elements that can actually flex in and out to impede growth — could replace conventional antifouling coatings



UF materials engineers have tapped elements of sharks' unique scales to design the new coating, which prevents the growth of a notoriously aggressive marine algae and may also impede barnacles, according to preliminary tests. The coating is composed of tiny scale-like elements that can actually flex in and out to impede growth — could replace conventional antifouling coatings

merged. That contrasts with, for example, some other large-bodied marine species such as whales, which attract marine growth.

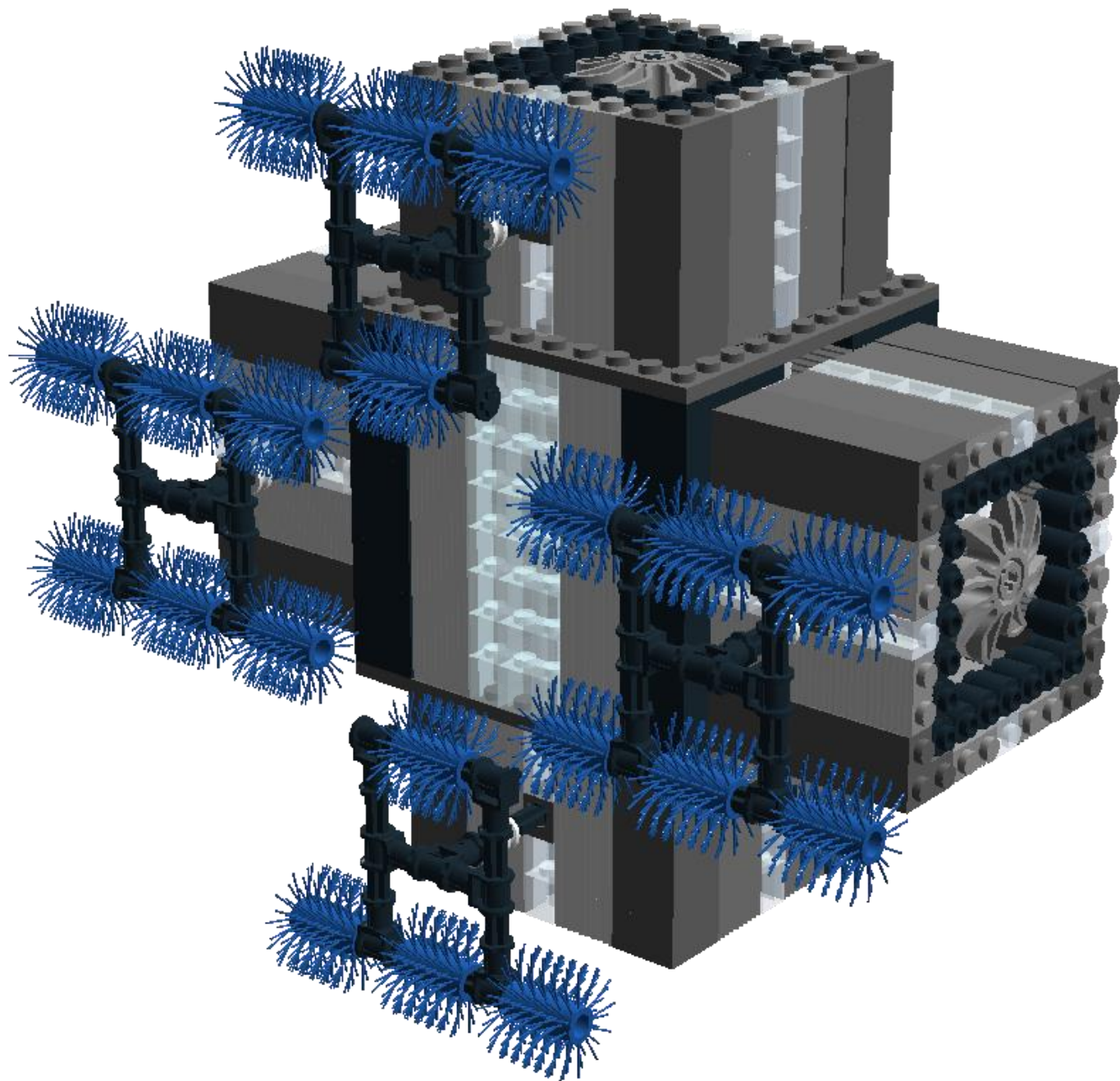
Sharks have placoid scales, which consist of a rectangular base embedded in the skin with tiny spines or bristles

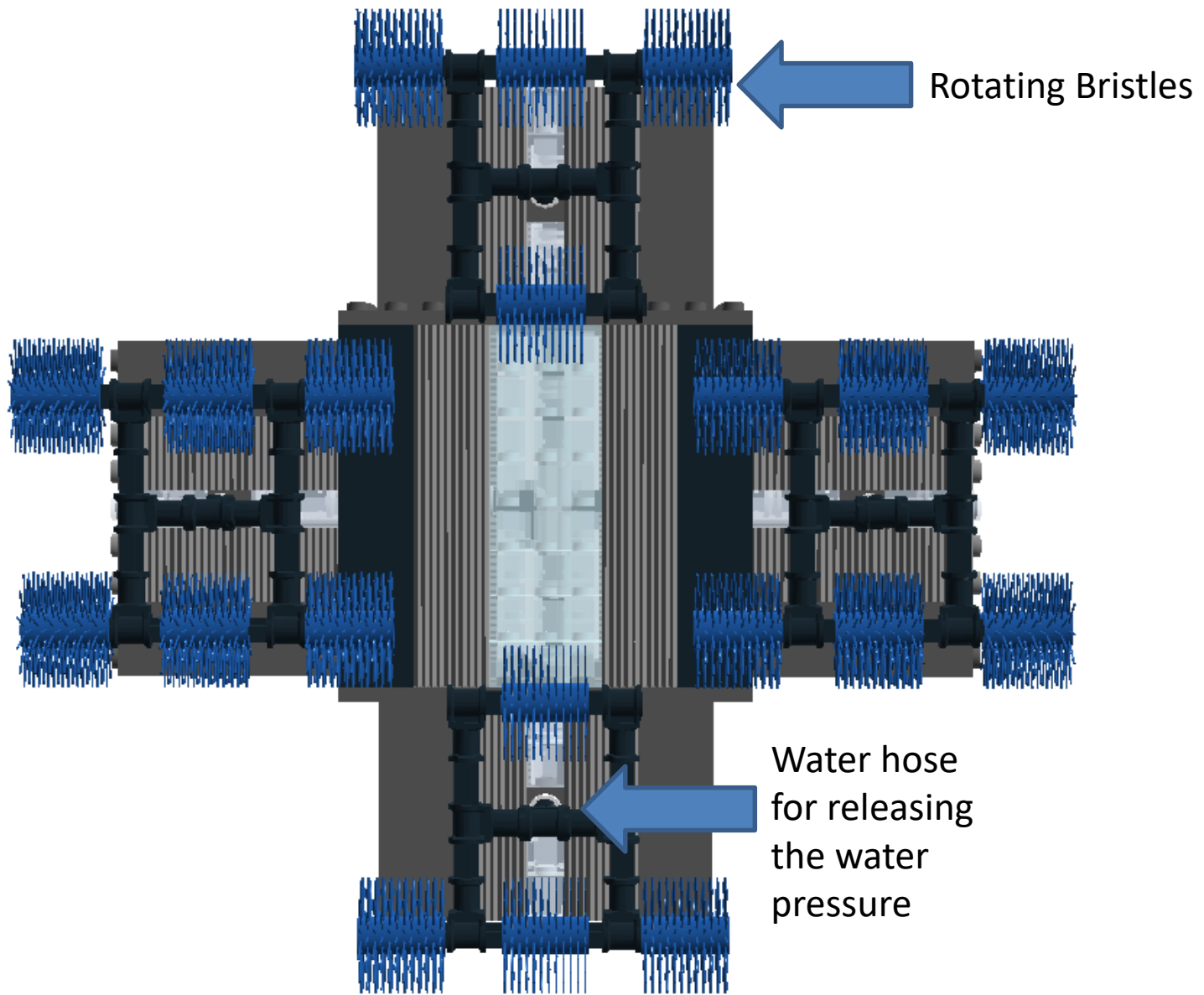
research “is both unique approach and exciting efficacy” in deterring the

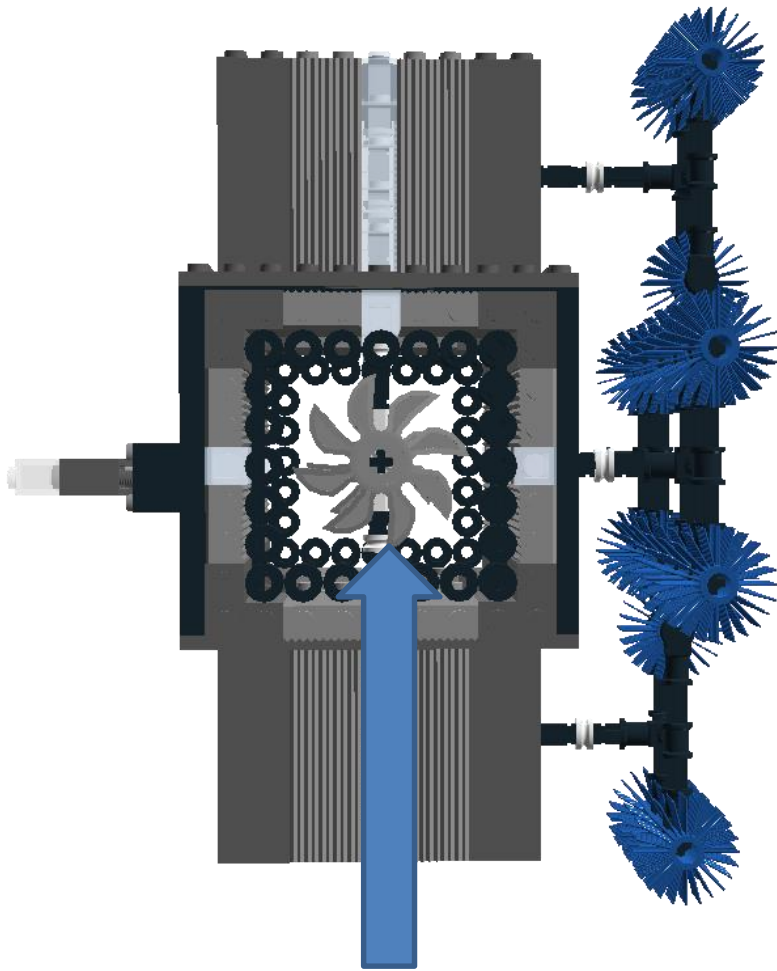
“The big hurdles that we need to develop textures, patterns on the surface that will prevent the settlement of a wide variety



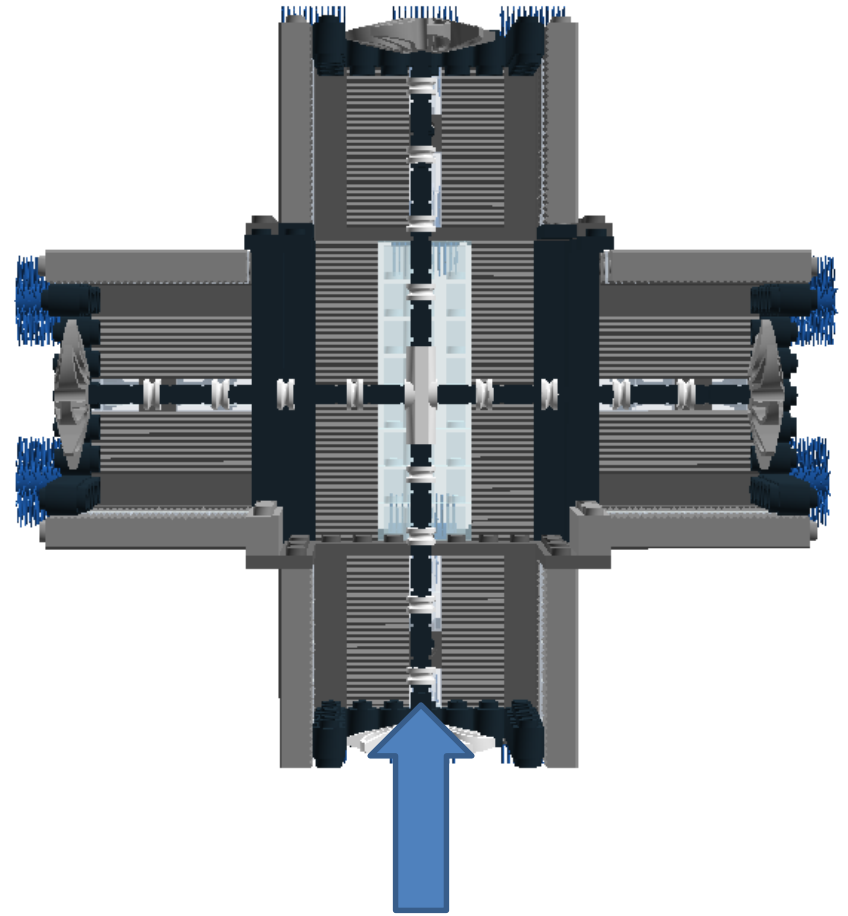
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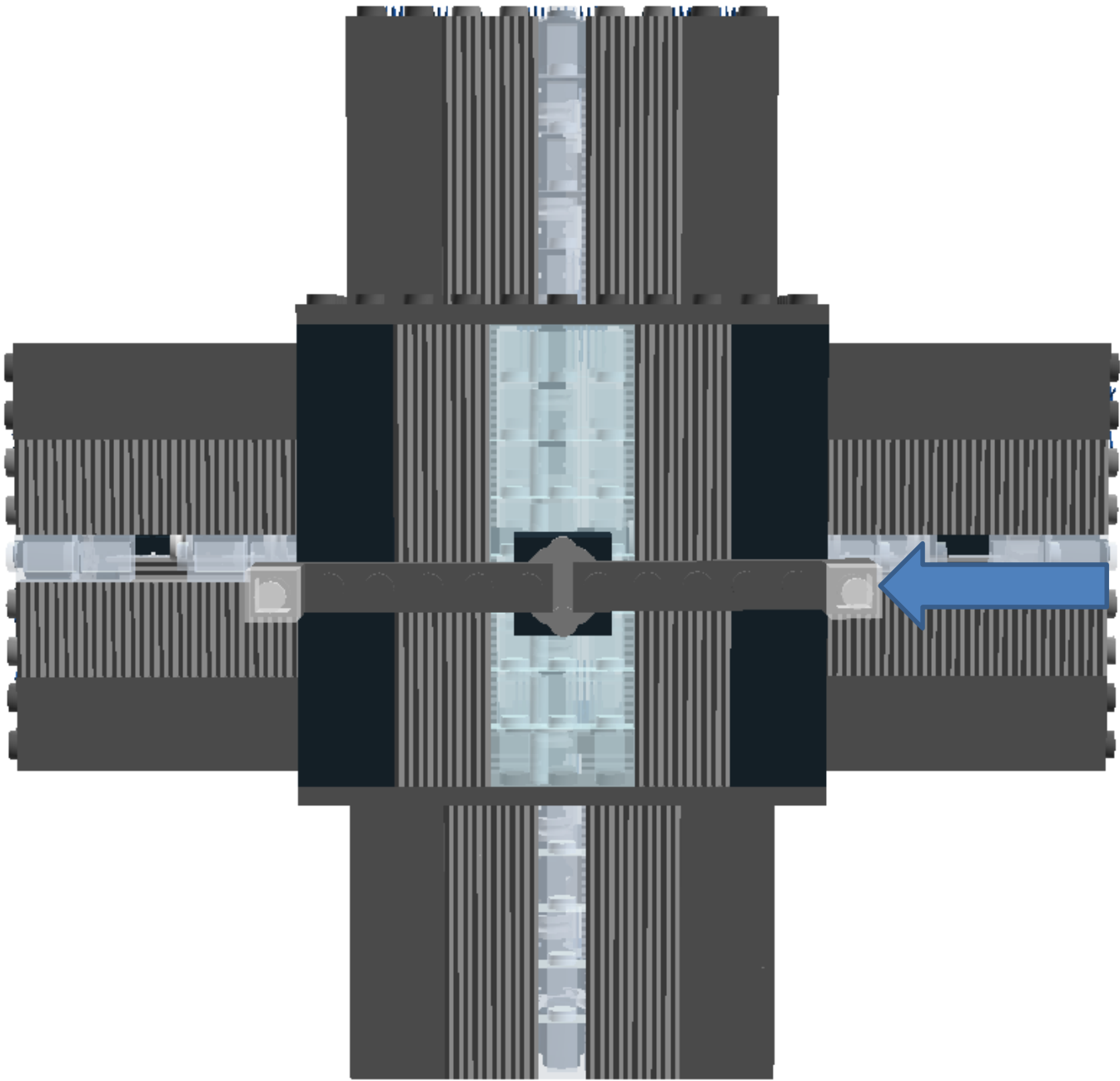




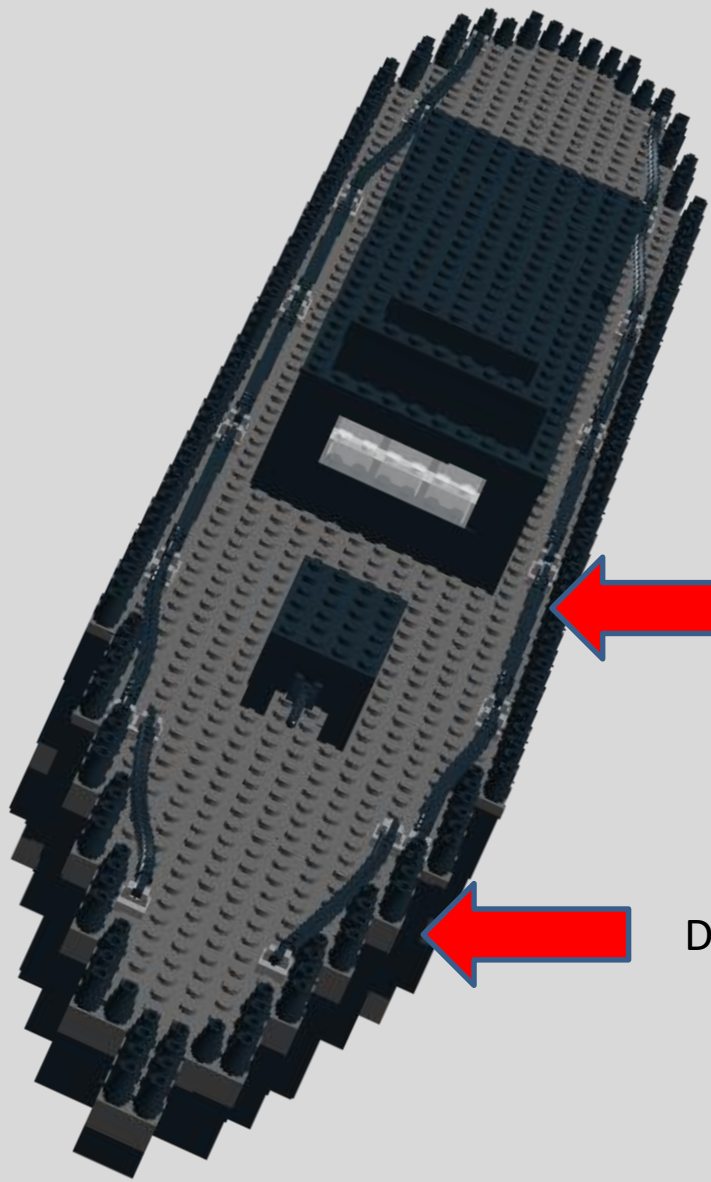
Movement systems



Axle for rotating the propellers



9 megapixel (4k)
360° camera



Pipes

Docks for each drone

Shipfitter



- **Make foundation for new pumps , fabricate metal & structural parts, clear existing items on ship out of way to install new equipment**
- **Need eye for detail, math background, physically fit, read blueprints**
- **Danger of falling from heights or fire ignition from welding operations**
- **Requires high school diploma**

Welder



- Weld foundation of pump in shop and transfer it to the ship -then weld to deck
- Assist other trades like pipefitters and shipfitters by welding brackets and other attachments to secure installation to deck and bulkheads
- Need to know how temperatures affect bonding of different metals, choose proper welding materials
- Different types of welding processes require welder to work in a variety of positions
- Requires a high school diploma and additional training

Ship Rigger



- Carry items over 50 pounds onto ships (like pipes and pumps) needed for installation. Monitor operations, coordination and equipment selection.
- Must be safety conscious – always the danger of damages or injury
- Can be difficult because of heavy work and noisy/ dirty environment
- Requires a high school diploma

Pipefitter



- Help the machinists bolt pumps down that the riggers placed on deck Run and secure pipe from pumps, through decks and bulkheads to the weather deck
- Use a variety of tools.
- Sometimes they work in extreme temperatures and in congested or noisy areas
- Requires high school diploma and additional training/degree

Electrician



- Run wire from a nearby power source to pump and test to make sure works
- Install wiring through decks and bulkheads and patch holes to make watertight
- Requires training and licensing beyond high school diploma
- Must read blue prints and be safety conscious - electricity is dangerous to work with.
- Requires a high school diploma, additional training and license

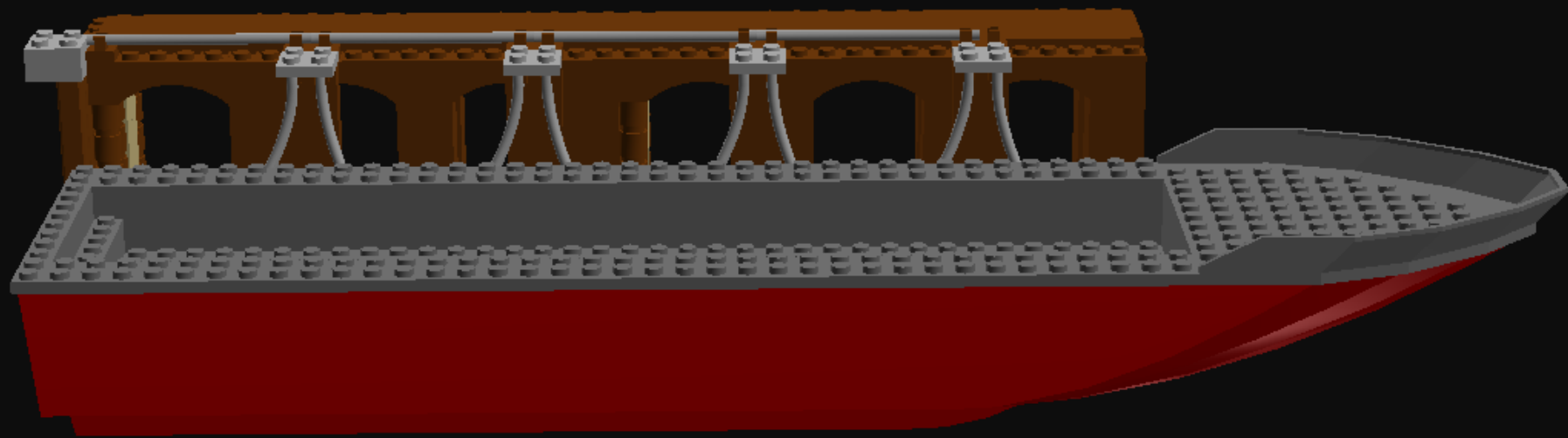
Marine Painter

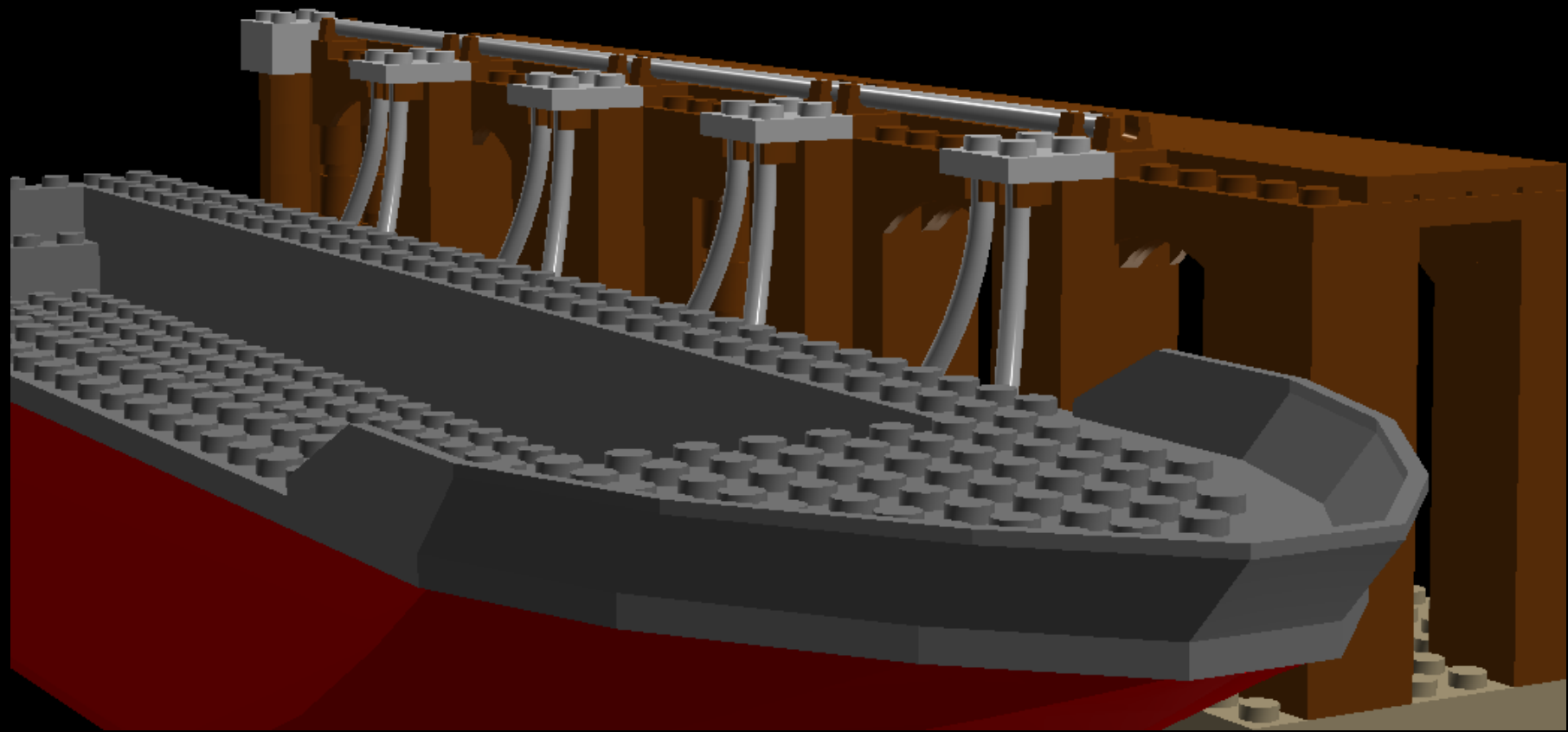


- Sandblast and paint the foundations and piping before it leaves the shop. Touch up the paint after installation is complete on the ship.
- Must consider temperature and humidity and how affects paint and maneuver around obstacles when painting
- Requires a high school diploma

Job	Salary
Ship fitter	\$19.07
Welder	\$19.82
Riggers	\$20.18
Pipefitter	\$19.49
Electrician	\$20.95
Painter	\$19.45







**60 Minutes Marine Edition is
brought to you by.....**

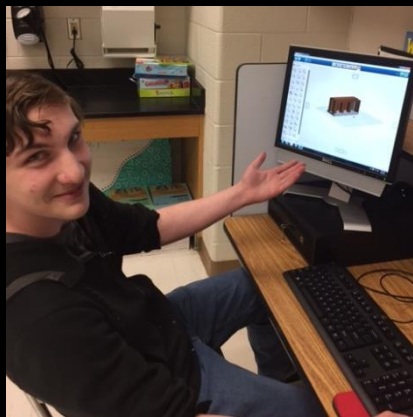


Técnico Corporation
Marine & Industrial Contractors

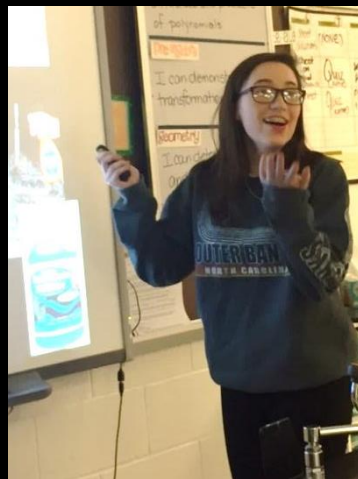
*Supporting Fleet Readiness
for Naval, Commercial and
Offshore Marine Clients
Worldwide*

The FINAL Word

The producers of 60 Minutes- MARINE EDITION would like to thank VSRA for sponsoring an event that gives students at the middle school level a chance to enhance their :



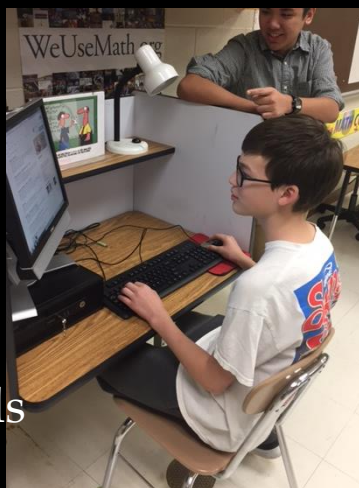
Isaiah Nolan –
Design Skills



Kayla Snyder-
Public Speaking
Skills



Tyler Miller –
Collaboration
Skills



Joseph
Beauchamp-
Research Skills



“Markosoft”
Alarcon-
Creative Skills