Unit 3: Module 5 - Nautical Science (5)

Content Area: **Social Studies**
Course(s):
Time Period: **June**
Length: **5 blocks**
Status: **Published**

Enduring Understandings

Demonstrate an understanding of Physical Science

Essential Questions

What are the two main topics in the field of physical science?
What are the six steps in the scientific method approach?
What is the differences in a theory and a law
Why do objects float?

Content

18 Motion, Force, and Aerodynamics NS2-M3C18S1 – Motion, Force, and Aerodynamics
19 Buoyancy NS2-M3C19S1 – Buoyancy

23 Sound and Sonar NS2-M3C23S1 – The Essence of Sound
NS2-M3C23S2 – The Doppler Shift

Skills

- State the two main topics in the field of physical science
- The six steps in the scientific method approach
- State the differences in a theory and a law
- Newton’s three laws of motion
- Bernoulli’s theorem
- How Mach numbers are derived

- Archimedes Law
- How objects float
- How a submarine floats and submerges
- Stability in a ship and its importance
- The effects that density and temperature have on sound
- How the ear detects sound
- The Doppler shift
- The characteristics of sound in seawater
- Sonar and its characteristics

Resources

http://www.njrotc.navy.mil/curriculum.html

Naval Science II Maritime History, Leadership, and Nautical Sciences for the NJROTC 3rd Edition

Standards

Reading: Informational Text
RI.9-10.1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly…

Writing
W.9-10.2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately…
W.9-10.7. Conduct short as well as more sustained research projects to answer a question or solve a problem…
W.9-10.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

Speaking & Listening
SL.9-10.1. Initiate and participate effectively in a range of collaborative discussions…
SL.9-10.2. Integrate multiple sources of information presented in diverse media or formats …
SL.9-10.6. Adapt speech to a variety of contexts and tasks…

Language
L.9-10.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
L.9-10.4. Determine or clarify the meaning of unknown and multiple-meaning words and…
L.9-10.6. Acquire and use accurately general academic and domain-specific words and phrases…

Next Generation Science Standards (NGSS)
HS.Forces and Interactions
HS-PS2-1. Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
HS.Waves and Electromagnetic Radiation
HS-PS4-1. Use mathematical representations to support a claim regarding relationships