



FPS 7th Grade Science Day in the Village of Woods Hole



June 1, 2, 4
9am to 2pm

How do we get fish (haddock in this case) from the ocean to the dinner table and what research is needed to make sure that happens in a sustainable way (so fish are caught now and in the future)?

~90 kids/day
~18 kids/station
45 min/station

Question: How do we sample haddock (to find out how many are out there) and how are haddock fished (to be eaten) making sure we are not catching bycatch (not our target species)?



Question: What do we need to understand about haddock to keep the population healthy? What do they eat, how long do they live, etc.



Question: How many fish are there? Can we predict how many fish will be around in subsequent years?

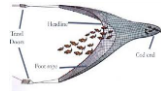
Station A:



Focus: Data collection at sea using a ship

Activities: Survey gear demonstration on the boat/observer training

Station B:



Focus: Sea turtle bycatch and gear modification

Activities: Bycatch and gear modification design activity

Station C:



Focus: Biology of the haddock

Activities: Haddock dissection for otoliths, gonads, and stomach contents. Forage fish and diet microscope work.

Station D:



Focus: Fish age determination and other information from otoliths

Possible activities: Fish aging looking at otoliths

Station E:



Focus: Estimation of haddock population for both current and future years

Possible activities: Tarp and coin population estimation activity or strata sampling activity

Science objectives: Learn about scientific vessels, how they operate and the gear they use (local employment). Learn how gear modification can affect bycatch (technology). Consider conflicts associated with harvesting wild resources (sociology)

Science objectives: Appreciate the importance of fish biology including age determination (biology)

Science objectives: Importance of math and statistics in monitoring marine resources (math)

Field work at sea



Lab work



Computer work



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Station times:

9-9:45, 9:50-10:35, 10:40-11:25, lunch 11:25-12:25,

12:25-1:10, 1:15-2

Station A:
Experts: NOAA Corp and Observer Program
Focus: Data collection at sea using a ship
Activities: Survey gear demonstration on the boat/observer training
Location: Gloria Michelle and Dock or TBD

Station B:
Experts: Sea turtle experts, NOAA and WHOI
Focus: Sea turtle bycatch and gear modification
Activities: Bycatch and gear modification design activity
Location: NOAA dock or TBD

Station C:
Experts: Fish anatomy and diet experts, NOAA and WHOI
Focus: Biology of the haddock
Activities: Haddock dissection for otoliths, gonads, and stomach contents. Forage fish and diet microscope work.
Location: Cutting Room or TBD

Station D:
Experts: Age and Growth, NOAA and WHOI
Focus: Fish age determination and other information from otoliths
Possible activities: Fish aging looking at otoliths
Locations: Cottage or TBD

Station E:
Experts: Population Dynamics Group
Focus: Estimation of haddock population for both current and future years
Possible activities: Tarp and coin population estimation activity or strata sampling activity
Location: Clark and TBD



Lunch: Eat, see a local chef prepare haddock, taste and then explore the aquarium for local, edible species.

MSTE standard: Construct an argument supported by evidence that human activities and technologies can mitigate the impact of increase in human population and per capita consumption of natural resources on the environment. Evaluate design solutions for protecting and ecosystem.

Science objectives: Learn about scientific vessels, how they operate and the gear they use (local employment). Learn how gear modification can affect bycatch (technology). Consider conflicts associated with harvesting wild resources (sociology)

MSTE standards: From Molecules to Organisms: What and how environmental factors may affect the growth of organisms. Ecosystems: Interactions, Energy and Dynamics: Analyze and interpret data to provide evidence for the effects of periods of abundant and scarce resources on the health of organisms and the size of populations in the ecosystem.

Science objectives: Appreciate the importance of fish biology including age determination (biology)

MA Math standards: Use random sampling to draw inferences about a population. Investigate, use and evaluate probability models.

Science objectives: Importance of math and statistics in monitoring marine resources (math)

Field work at sea



Lab work



Computer work

