

June 1, 2, 4  
9am to 2pm



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

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 times:

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

