MarineLab
Marine Resources Development Foundation
Marine Science education in the Florida Keys

REEF Fish Survey Program

The fish identification program is a part of MarineLab's core curriculum. This advanced version gives students the opportunity to participate in citizen science. As with our basic Fish ID program, students will learn the best field marks to use to identify a fish, behavioral characteristics of fish families, and how to identify fish species that we commonly see on Key Largo's reefs. For this particular program, students will learn the "roving diver" technique employed by REEF survey volunteers. Once in the water, the students will be equipped with underwater slates and REEF fish survey sheets in order to record all fish they can identify and count. Students can take his/her data sheet home, register at reef.org and enter his/her data.

Grade Level: 7th grade or above

Timing: Class is 1 hour. Field trip is 3 hours (can be shortened, if necessary). Optional quiz (see "Extensions" below) is additional time.

Concepts covered:

- Identification of fish by field marks
- Basic external anatomy of a fish
- Associating behaviors and habitats with body shapes
- Distinguishing shape and behavior of common fish families
- Identifying characteristics and adaptations of specific families and/or species
- Value of fish surveys to the scientific community and marine conservation efforts
- REEF survey protocol
- Identification of fish families and species commonly found on the reefs of the Florida Keys
- Background on REEF (Reef Environmental Education Foundation) and the volunteer fish monitoring program

Vocabulary: field mark, caudal fin, dorsal, ventral, operculum, lateral line, anal fin, square/lunate/forked caudal fins, carnivore/omnivore/herbivore, ambush predator, opportunistic feeder, hydrodynamic, territoriality, mimicry, sexual dimorphism, fish survey, roving diver, abundance

Extensions: MarineLab is a REEF station and can certify students as Level 2 REEF surveyors. Students have to pass a fish ID quiz while they are at MarineLab and register as a REEF member at www.reef.org.

Resources: www.reef.org, http://www.fishid.com/, http://www.fishbase.org/search.php

Standards Supported:

Next Generation Sunshine State Standards

SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

SC.7.L.17.1: Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

SC.912.L.17.6: Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.

SC.912.L.17.8: Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

Ocean Literacy Principles

Principle 5. The ocean supports a great diversity of life and ecosystems.

d. Ocean biology provides many unique examples of life cycles, adaptations and important relationships among organisms (symbiosis, predator-prey dynamics, and energy transfer) that do not occur on land.

e. The ocean provides a vast living space with diverse and unique ecosystems from the surface through the water column and down to, and below, the seafloor. Most of the living space on Earth is in the ocean.