

Birch Fish Field Trip 2009

Morphology, Function, and Natural History

Name: _____

Instruction: First make a brisk walk and briefly view all the tank exhibits before starting your exercise below. Select two fish specimens, observe their features, movements, and record the findings below.

Goals:

- 1: To have a clear and solid understanding of adaptation, habitat, and diversity
- 2: To be able to identify the adaptations and relate to their survival and way of life
- 3: To develop observational skills

Provide the scientific and common names of the fish:

1) _____ A B C D E F G

2) _____ A B C D E F G

A. Mouth Shape-related to the type of feeding and diet of the fish

- 1) long, skinny bill (tweezer-like) - poking into crevices
- 2) large mouth - swallowing/tearing large prey
- 3) beak-like mouth - for grazing algae growing on hard surfaces
- 4) downward-orientated mouth - useful to suck food up from bottom
- 5) Upward oriented mouth – useful to suck food up from above
- 6) Other

B. Body Forms-directly related to the lifestyle of the fish

- 1) Fusiform - helps to lower frictional resistance, fast swimmers
- 2) Laterally compressed - tall, thin shape helps to enter vertical crevices
- 3) Broad and flat - adapted to lying on or below surface of sand
- 4) Elongated (eel-like) - facilitates maneuvering in crevasses
- 5) Other - describes

C. Caudal fin - provides the main thrust used in swimming

- 1) Rounded caudal fin - slow swimming, effective acceleration
- 2) Truncated caudal fin (triangular shape) - turning quickly
- 3) Lunate caudal fin (moon-shaped) - high propulsive and continuous swimming

- 4) Forked caudal fin - produces less drag and is efficient for rapid swimming
- 5) Tapered caudal fin – borrowing or suited for crevices
- 6) Asymmetrical – as in sharks
- 7) Other

D. Dorsal and Anal fins - thrust or balance

- 1) undulations
- 2) no undulations

E. Pectoral fins – help to keep balance and can help provide lift

- 1) flapping
- 2) non-flapping

F. Habitat - the area or natural environment

- 1) Coral Reef - the fish that are found living in and around the coral reef
- 2) Rocky Reef – as in temperate zone
- 3) Deep Sea - the portion of the ocean in which there is not light at all
- 4) Pelagic - refers to the free swimming fish
- 5) Epi-benthic – hover off the bottom
- 6) Sandy-Bottom - are specifically adapted (i.e.. camouflage) to the habitat
- 7) Other

G. Defense Strategies

- 1) Cryptic Coloration - colored to match background/surroundings
- 2) Countershading - dorsally darkened and ventrally whitened
- 3) Disruptive Coloration - colors and patterns that break up the outline of a fish
- 4) Thickened Scales - protective covering
- 5) Spines-for defense and protection from predators, may be venomous
- 6) Schooling- swimming in groups may have a greater chance to survive