

Transcript of Structure and Function

Structure and Function

Fish Morphology

All body shapes relate to their function

Each structure on a fish serves a specific purpose- to function a certain way

Does how something is built matter?

8 Main Body Shapes

Body Shapes (Fish Morphology)

There is a large variety of shapes and forms in fish morphology- not all species fit exactly into one category.

Morphology is a pattern seeking way to categorize fish by their structure and common functions- it is

NOT an exact science or practice.

Fusiform Structure

Fusiform comes from the Latin *fūs* (us) for spindle.

Fusiform means a form that is tapered at both ends like a spindle.

Examples:

Great White Shark

Tuna

Swordfish

Most of these shapes look similar to an American football

Fusiform Functions:

Fast speed

Efficient Cruising

Maximum Thrust

Long Distance Swims

Fusiform shapes function for streamlined speed and optimal cruising through the water. Designed for open ocean- long distance migrating.

Fast swimming body type

Structure shape forces them to swim using their tail movement by contracting their body muscles- not using their fins to propel themselves.

Compressiform Structure

Compressiform Shapes are tall and slim, or compressed from side to side

From Latin *premere*, *pressus* meaning pressure

and Latin *cum* (from older form *quom*)with, together

Front view looks tall and skinny

Side view looks tall and wide

Examples:

Angelfish

Bannerfish

Sunfish (Mola Mola)

Compressiform Functions:

Quick accelerations

Sharp turns

Live in narrow places

Slim design allows fish to live and swim between plants or reef structures and other narrow spaces that provide shelter or protection

Allows for quick bursts of speed and excellent maneuverability (flexible motions) to change directions sharply.
Most use tail, not fins for thrust to swim. (sunfish uses fins)

Depressiform Structure

Depressiform shaped fish are flat from top to bottom, or wide and slim.
From Latin pressus meaning pressure and Latin dē meaning down, away
Most often have both eyes on the same side of their body (top side)
Live on the bottom of the ocean

Examples:

Rays
Flounder
Halibut
Skates

Depressiform Function

Functions:

Contours the seafloor
Protection from predators
Swim with fins
Depressiform shapes allow the animal to live flat on the sea floor to aid in camouflage and protection from predators
They swim using their fins flapping much like bird's wings.

The Elongated Body Shapes

Difference:

Width & shape of body
Anguilli - Latin anguis 'snake'
Ex: Moray Eels
Fili- Latin filum 'thread'
Ex: Sandlance
Taeni- Greek ταινία (tainia) 'ribbon'
Ex: Oarfish (pic top left)
Sagitti- Latin sagitta 'arrow'
Ex: Barracuda (pic bottom left)

Globiform Structure

Globiform shapes are a mixture of many shaped bodies.
Comes from the Latin globus - sphere
Most round overall shape of any fish structure

Examples:

Porcupinefish
Frogfish

Globiform Function

Globiform creatures are rounded to make it harder for predators to feed on them.
Round shape and small, rounded fins make for slow swimming capabilities
Primarily use their fins to swim
Rely on camouflage and size for protection