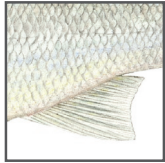


DISTINGUISHING CHARACTERISTICS OF FISH

Distinguishing characteristics combined with information on geographic range, help scientists, anglers and amateur naturalists observe and identify fish. Some fish characteristics that can be easily compared include structure and location of dorsal fin(s), mouth position and shape of snout, tail shape, and presence or absence of unusual traits such as barbels (whiskers). Other traits used to identify fish include structure and location of pectoral fins, pelvic fins and anal fin, body depth, standard length, and scale counts.



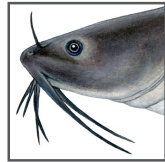
Anal fin



Adipose fin

Adipose fin: Small, fleshy fin located between the dorsal fin and caudal fin. Unlike other fins, the adipose fin does not have rays or spines. Its purpose is unclear.

Anal fin: Fin located on a fish's underside behind pelvic fins.



Barbels: These "whiskers" near the mouth are used by bottom-feeding fish to sense food.



Rounded

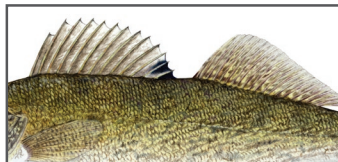


Forked, symmetrical

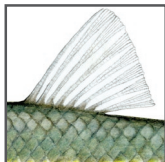


Asymmetrical

Caudal fin: The caudal fin (tail fin) is used for propulsion. It varies in shape and this affects a fish's speed and buoyancy. Fish with forked caudal fins, such as lake trout, are generally fast swimmers. Fish with rounder caudal fins, such as round goby, are slower.



Split dorsal fin



Single dorsal fin

Dorsal fin: Large fin on a fish's back that varies in shape, size and position. Some fish have single, soft-rayed dorsal fins. Others, like sunfish and bass, have split dorsal fins that are part spiny and part soft. The dorsal fin stabilizes fish against rolling and assists with maneuverability.



Pectoral fin (p1), Pelvic fin (p2)

Pectoral fin: Side fins mainly used for direction or "steering," and sometimes for slow swimming.

Pelvic fin: Paired fins located on the belly or under pectoral fins.



Terminal



Ventral



Superior

Mouth: The size and position of the mouth indicates what a fish eats. A ventral, or downward-oriented mouth, indicates a fish that feeds on insects and snails along the lake or stream bottom.* A forward or upward-directed mouth indicates a fish that feeds within the water column.

*Lampreys are an exception. Some lampreys are parasites and feed on other fish.

FISH FAMILY CARDS

Unit 3, Lesson 1



Illustration: E. Damstra



Illustration: E. Damstra

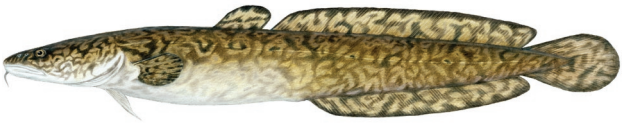


Illustration: E. Damstra



Illustration: E. Damstra



Illustration: E. Damstra



Illustration: E. Damstra



Illustration: E. Damstra

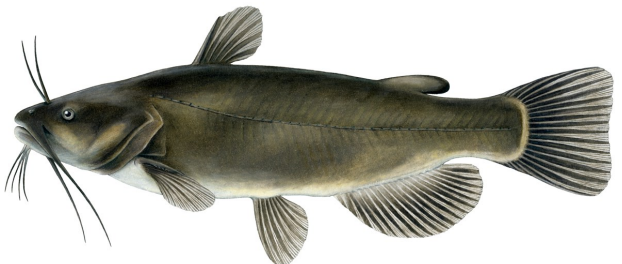


Illustration: E. Damstra

FISH FAMILY CARDS

Unit 3, Lesson 1



Illustration: E. Damstra



Illustration: E. Damstra

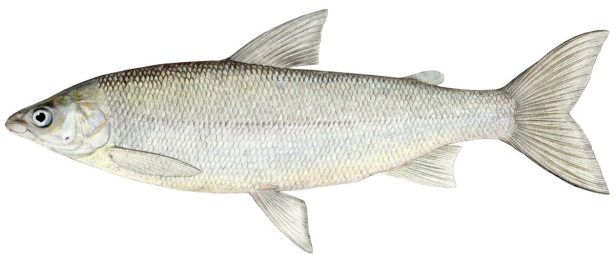


Illustration: E. Damstra



Photo: Ted Lawrence

Illustration: E. Damstra

FISH FAMILY ID CARD GUIDE FOR TEACHERS



Chinook salmon



Round goby



Burbot



Pike



Lake sturgeon



Walleye



Smallmouth bass



Black bullhead



Yellow perch



Longnose Sucker



Sea lamprey



Lake whitefish

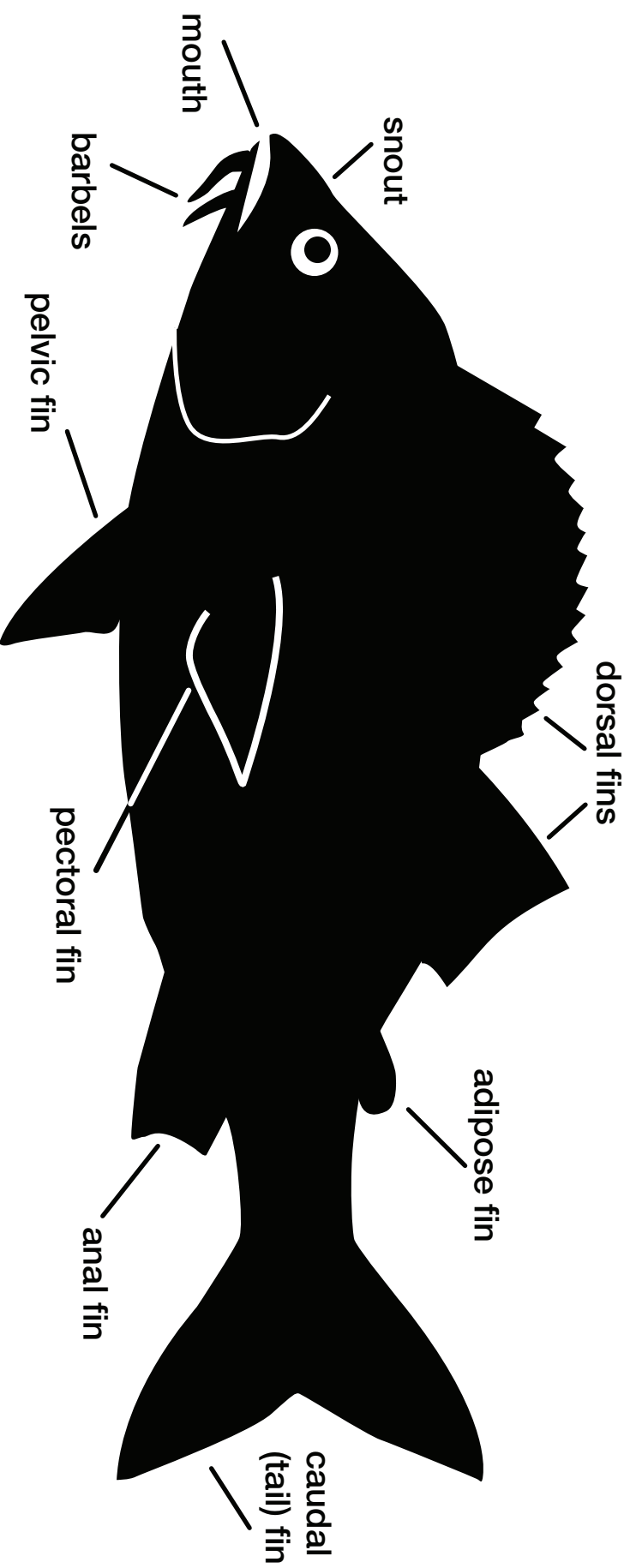
Illustrations: E. Damstra

Note: Fish size not to scale

GENERIC FISH GRAPHIC: CHARACTERISTICS OF FISH

Unit 3, Lesson 1

This graphic is a composite illustration that shows a variety of distinguishing characteristics. Scientists use these and many other characteristics to correctly classify and identify fish.



Salmon and Trout Family, Salmonidae



Illustration: E. Damstra

Chinook salmon

Oncorhynchus tshawytscha

- Native to Pacific Ocean from southern California to Alaska.
- Introduced to Great Lakes in 1967.
- Habitat: Deep open waters of the Great Lakes. Spawns in tributaries in autumn.

Perch Family, Percidae

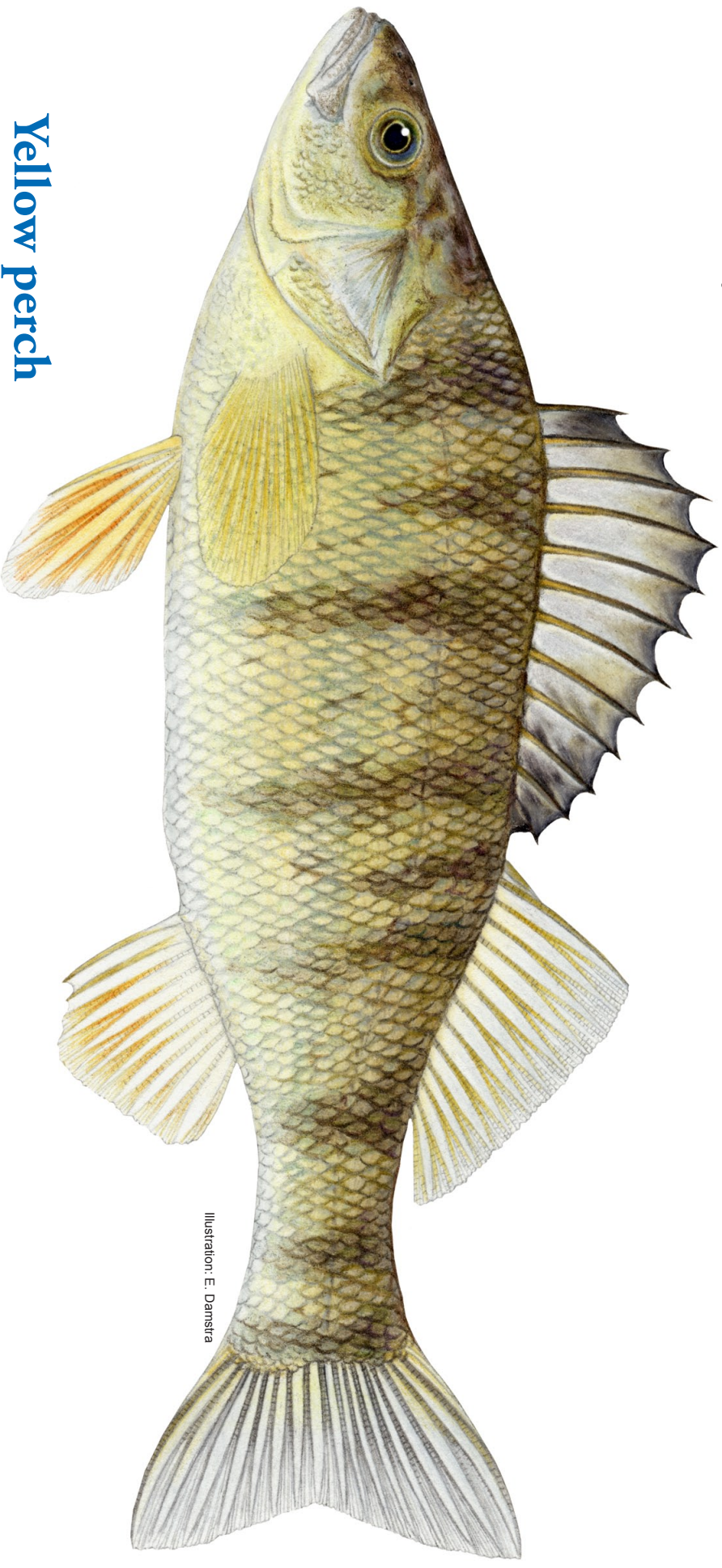


Illustration: E. Damstra

Yellow perch

Perca flavescens

- Important food and sport fish throughout southern part of Great Lakes region.
- Split dorsal fin. Body has distinct vertical bands.
- Habitat: Variety of locations; quiet ponds, streams with little current; large and small lakes including the Great Lakes.

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

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Lamprey Family, *Petromyzontidae*



Illustration: E. Damstra

Sea Lamprey

Petromyzon marinus

- Primitive, parasitic fish native to the Atlantic Ocean.
- Eel-like body shape. Round mouth. Mottled coloring.
- Habitat: Large population in northern Lake Huron and St. Marys River. Larval stage spent in silty stream bottoms.



Photo: Ted Lawrence

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

Whitefish Subfamily, Coregoninae



Illustration: E. Damstra

Lake whitefish

Coregonus clupeaformis

- Most valuable commercially caught fish in Great Lakes.
- Long, deep-bodied fish related to salmon and trout.
- Habitat: Deep, open waters of the Great Lakes; cold, deep inland lakes.

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

Sturgeon Family, Acipenseridae



Illustration: E. Damstra

Lake sturgeon

Acipenser fulvescens

- Primitive, long-lived fish native to Great Lakes.
- Asymmetric, shark-like tail.
- Habitat: Nearshore waters at depths of 15 to 30 feet.

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

Perch Family, Percidae



Illustration: E. Danstra

Walleye

Sander vitreus

- Popular sport fish in the Great Lakes.
- Slender body with pointed snout. Split dorsal fin.
- Habitat: Moderately fertile lakes with primarily sandy basins.

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

Sunfish and Bass Family, Centrarchidae



Illustrator: E. Damstra

Smallmouth bass

Micropterus dolomieu

- Popular sport fish in Canadian and U.S. waters.
- Narrow, oval-shaped body. Split dorsal fin with short fin spines in front.
- Habitat: Clear, gravel-bottom runs in flowing rivers; shallow rocky areas of lakes.

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

North American Catfish Family, Ictaluridae



Illustration: E. Damstra

Black bullhead

Ameiurus melas

- Scaleless, bottom-dwelling fish.
- Long barbels (whiskers) around mouth.
- Habitat: Deep pools in small to large rivers; lakes.

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

Goby Family, Gobiidae



Illustration: E. Danstra

Round goby

Neogobius melanostomus

- Invasive, bottom-dwelling fish.
- Mottled coloring with frog-like raised eyes.
- Habitat: Nearshore areas of the Great Lakes and tributaries.

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

Pike Family, Esocidae



Illustration: E. Damstra

Northern pike

Esox lucius

- Fast-swimming predator that feeds on other fish and animals.
- Long, slender body with duck-billed snout.
- Habitat: Cool to moderately warm, weedy lakes, ponds and sluggish rivers.

Sucker Family, Catostomidae



Illustration: E. Damstra

Eastern Longnose Sucker

Catostomus catostomus

- One of many bottom-dwelling species in the sucker family.
- Ventral mouth used to locate food in bottom sediment.
- Habitat: Deep, cold lakes. Spawns in streams and rivers.

FISH SPECIES & HABITAT CARDS - TEACHER MASTER

Unit 3, Lesson 1

Freshwater Cod, Gadidae



Illustration: E. Damstra

Burbot

Lota lota

- Native top predator in deep waters of the Great Lakes.
- Two dorsal fins; first is small, second is long.
- Habitat: Medium to large streams and cold, deep lakes.

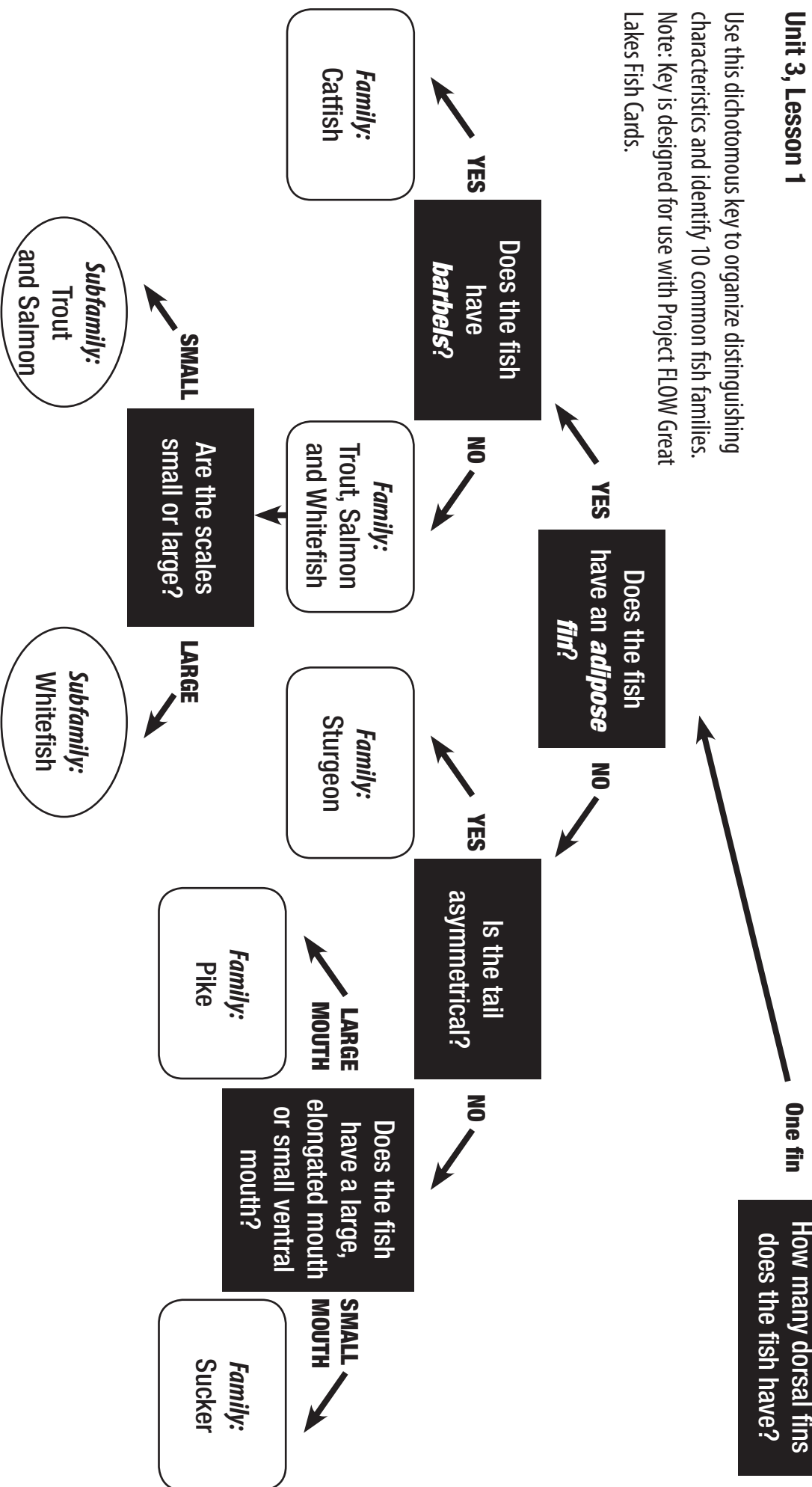
Dichotomous key:

Great Lakes Fish Families

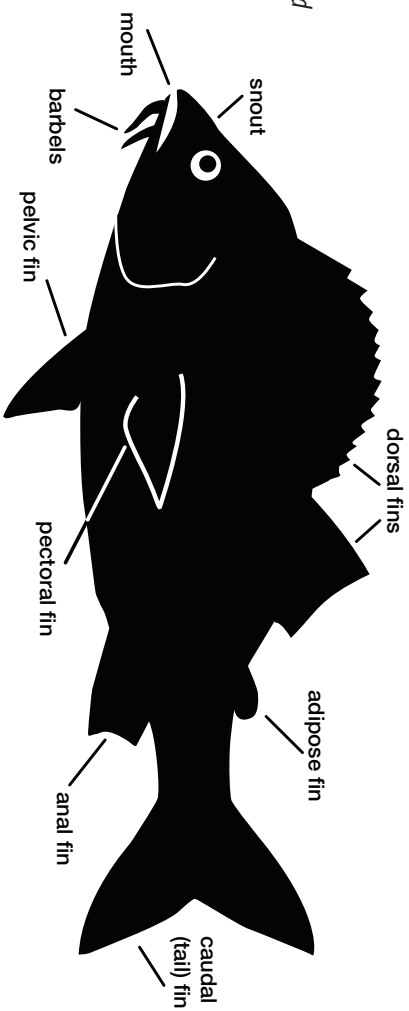
Unit 3, Lesson 1

Use this dichotomous key to organize distinguishing characteristics and identify 10 common fish families.

Note: Key is designed for use with Project FLOW Great Lakes Fish Cards.



This graphic is a composite illustration that shows a variety of distinguishing characteristics. Scientists use these and many other characteristics to correctly classify and identify fish.



Two fins

