

## Fish Identification Memory Game

Grade Level(s): 2<sup>nd</sup> and up  
Time: 20-30 minutes  
Group Size: one class

### NYS Learning Standards Core Curriculum MST

#### Standard 4: Living Environment

Students will: understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

- *Key Idea 1:* Living things are both similar to and different from each other and nonliving things.
- *Key Idea 4:* The continuity of life is sustained through reproduction and development.
- *Key Idea 7:* Human decisions and activities have had a profound impact on the physical and living environment.

### Summary

Students will be introduced to the New York State Fishing Regulations (Freshwater or Saltwater depending on the site of study), how these regulations are enforced, and why we have these regulations in place. Students will play a memory card game to become familiar with local fish species and the regulations on these species.

### Materials

- Deck(s) of fish memory cards
- Fish models/pictures
- Current Freshwater Fishing Regulations
- *Freshwater Fish ID Memory Game Answer Sheet*

### Vocabulary

- **Anal Fin-** last bottom fin on a fish; located near the anal opening; used in balance and steering
- **Caudal/Tail Fin-** fin on end of fish; used to propel the fish
- **Creel Census-** collection of data on the number of fish caught & released, and or kept, by anglers
- **Daily Limit-** number of fish one is allowed to keep in a day; each fish species is different
- **Dorsal Fin-** top or backside fin on a fish; used for balance and protection
- **Electrofishing-** common sampling method which uses electricity to stun fish in order to collect them for measurements
- **External Anatomy-** the outside body parts
- **Gills-** organ a fish uses to obtain oxygen from the water
- **Lateral Line-** organ a fish uses to “feel” low vibrations; tiny microscopic pores
- **Minimum Size Limit-** the smallest acceptable size at which a fish can be kept; each species is different
- **Nares-** organ a fish uses to smell; similar to nostrils
- **Open Season-** the time of year an angler can fish for a certain species of fish

*Vocabulary continued on next page*

## Vocabulary continued

- **Pectoral Fin**-chest fins on a fish; used for balance
- **Pelvic Fin**- aka ventral fin, bottom or belly fins on a fish; used in balance and steering
- **Scales**- protective cover on a fish; similar to skin
- **Size Limit**- specific size fish must be to keep; each fish is different
- **Slime Layer**- covers scales; layer protects from bacteria, parasites, etc.

## Background

It is important to be able to identify fish for many reasons: to follow the rules and regulations, for protection against sharp teeth or protruding spines, for the safety of the fish, and for consumption or eating purposes. It is also important to be aware of the regulations to preserve quality fishing and in the event that you encounter an Environmental Conservation Police Officer.

### NYSDEC Role

The NYSDEC's Bureau of Fisheries' mission is to conserve and enhance New York State's abundant and diverse populations of freshwater fishes while providing the public with quality recreational angling opportunities. To conserve and protect our local fisheries, Regional Fisheries Managers use information collected through various sources including:

- Fishery surveys utilizing **electrofishing**, nets, angling
- Vegetation surveys
- Toxic Substance Monitoring Program
- Invasive species monitoring
- The Angler Diary Program
- The **Creel Census** Program (Angler Surveys)
- Local fishing clubs and anglers

Once scientists reach a conclusion about a fish population, they can take management actions if needed. Actions are taken to improve the status of the population. Actions may include a change in the fishing regulations, specifically the **size limit**, **bag limit**, or **open season**. For example, if after a survey is conducted it is found that the largemouth bass population is low in number and size of fish, then the size limit might be increased or the bag limit might be decreased. When making management decisions, scientists view and cross check all aspects of the data with other data. In many cases, fisheries management involves the management of human behavior in order to achieve a specific goal for a fish population or community.

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## External Anatomy

It is important to know how to handle fish for your own safety, and for the safety of the fish. Anglers should be careful when handling fish with teeth and/or spines located on the body (usually on the dorsal fin or near the anal fin).

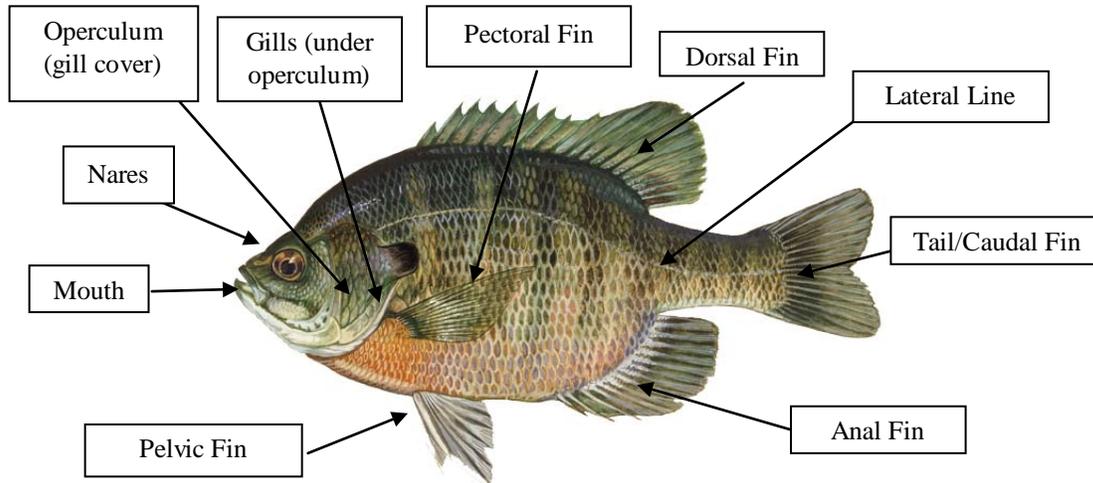


Illustration by Duane Raver

## Freshwater Fishing Rules

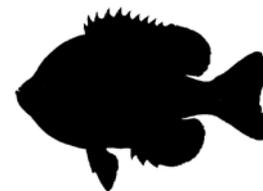
The five main components of the freshwater fishing rules and regulations include license, species ID, **size limit**, **open season**, and **daily limit**.

### *License*

NYS requires freshwater anglers, age 16 years and older, to have a fishing license. A fishing license can be purchased at various locations, such as bait and tackle shops, sporting good stores, on-line at <http://www.dec.ny.gov/permits/6101.html>, and by phone at 1-86-NY-DECALS (1-866-933-2257). When purchasing a fishing license, you will receive a current NYS Regulations Guide. Become familiar with it. The general regulations are listed in the front of the book. However, there are special regulations for each region. Be sure to familiarize yourself with your local regulations as well.

### *Species Identification*

There are over 165 freshwater fish species in NYS. Check out <http://www.dec.ny.gov/animals/84775.html> for more information on local freshwater fish species.



### *Size Limit*

Many fish have size limits to protect the species. Size limits are dependent on each individual species. Most often **minimum size limit** regulations are enacted to insure that the fish can reproduce at least once before they are taken from their environment.

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## *Open Season*

Some fish species have seasons when you can and cannot fish for them. These are most often based upon the spawning and reproduction time for that species.

## *Daily Limit*

There are a certain number of fish of a given species that you can keep on a daily basis. The **daily limit** encompasses the entire day regardless of how many times or places one goes fishing. Daily limits are set to help sustain the fishery.

## **Enforcement**

Environmental Conservation Police Officers enforce the rules and regulations set forth by the NYSDEC. Rule violation can result in a ticket/fine and possible confiscation of fishing equipment. Note that any fish species that is not listed in the regulations guide is currently not regulated.



## *Main Activity*

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Begin the program by introducing yourself and describing to the students what they will be learning about that day. Explain that you will be talking about several local freshwater fish species and the New York State Freshwater Fishing Regulations. Tell the students that they will get to play a matching card game to review these species and the regulations pertaining to them.

## **Fish Identification**

1. Introduce 3-5 local freshwater fish species:
  - a. Name(s)
  - b. Habitat
  - c. Diet
  - d. Safety concerns for self from fish; i.e. teeth, dorsal fin
  - e. Safety concerns for fish; i.e. slime layer
  - f. Regulation for each fish

## **Memory Game**

1. Assign students to a group (3-5 students per group).
2. Tell the students that they are going to play a game of “memory” based on the fish and regulations they just learned.
  - a. Show two cards
    - i. One card has the picture and regulations
    - ii. One card has the fish name
  - b. Explain that the first player will go, turning over 2 cards. If they match, they pick up, set aside, and get to go again. If they do not match, the player places the cards down and the next player goes.
  - c. Option: have laminated copies of fish picture and appropriate name
3. Students can use the *FW Fish ID Memory Game Answer Sheet* for assistance.

## Wrap Up

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### Relation to fishing

Close by reminding the students that it is important to be able to identify fish to follow the rules and regulations, for protection against sharp teeth or protruding spines, for the safety of the fish, and for consumption or eating purposes. Remind students that anglers are not required to memorize the fishing regulations but are responsible for knowing them when they are fishing. They should always carry the most current Regulations with them when fishing.



### Review

- Ask the students to identify the 3-5 different local fish species shown earlier in class
- Have the students explain open season, size limit, and daily limit

### Questions for Discussion

Q: Name a local freshwater fish species

Q: When handling fish, what are some external anatomy features you should watch out for?

A: Spines, sharp teeth

Q: Why do fish have a slime layer?

A: covers the scales to protect the fish from parasites and bacteria in the water

Q: Why are some species catch and release only?

A: to preserve the population

Q: How does the NYSDEC enforce fishing regulations?

A: Environmental Conservation Police Officers inspect anglers to see if they are keeping short fish, fishing out of season, or keeping too many fish. They also check to see that the angler has a license.

Q: Who needs a license to go freshwater fishing?

A: anyone over the age of 16

Q: Why are there different regulations for different species of fish?

A: Regulations are determined for each species by the common size at which the species reproduces, the time of year when the species spawns, and the species population size.

Q: Why is it illegal to take as many fish as you want when you are fishing?

A: Daily limits are set to prevent overfishing

### Related Materials

NYS DEC Freshwater Fish Species Information <http://www.dec.ny.gov/animals/84775.html>.  
*NYS DEC's Freshwater Fish site provides information on a variety of species, with over ten series on fish including true bass, common minnows, common prey fish, sunfish, and trout.*

NYS DEC Freshwater Fishing Regulations Guide

<http://www.dec.ny.gov/outdoor/7917.html#View>

*PDF version of the most recent Freshwater Fishing Regulations Guide*

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NYS DEC Fishing License

<http://www.dec.ny.gov/permits/6091.html>

*Provides information on how to obtain a fishing license*

## **Additional Resources**

“Fish Anatomy.” Florida Fish and Wildlife Conservation Commission.

<<http://myfwc.com/fishing/freshwater/fishing-tips/anatomy/>>.



# I NY Fish ID Memory Game



Black Crappie



Largemouth Bass



Bluegill Sunfish



Pumpkinseed Sunfish



Brook Trout



Rainbow Trout



Brown Bullhead



Walleye



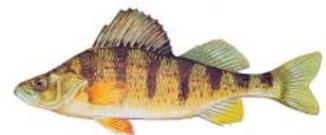
Brown Trout



White Perch



Chain Pickerel



Yellow Perch

I  NY



Nassau County

Open Season: All Year  
Minimum Length: 8"  
Daily Limit: 15

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Yellow Perch

I  NY

I  NY



Nassau County

Open Season: All Year  
Minimum Length: Any Size  
Daily Limit: 15

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Pumpkinseed Sunfish

I  NY

I  NY



Nassau County

Open Season: All Year  
Minimum Length: Any Size  
Daily Limit: 15

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Bluegill Sunfish

I  NY

I  NY



Nassau County

Open Season: April 1 - Sept 30

Catch & Release Only

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Brook Trout

I  NY

I  NY



Nassau County

Open Season:	All Year
Minimum Length:	Any Size
Daily Limit:	3

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Rainbow Trout

I  NY

I  NY



Nassau County

Open Season: All Year  
Minimum Length: Any Size  
No Daily Limit

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Brown Bullhead

I  NY

I  NY



Nassau County

Open Season: All Year  
Minimum Length: Any Size  
No Daily Limit

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



White Perch

I  NY

I  NY



Nassau County

Open Season: 1st Saturday in  
June- April 30  
Catch & Release Only

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Largemouth  
Bass

I  NY

I  NY



Nassau County

Open Season: 1st Saturday in  
May - March 15  
Minimum Length: 18"  
Daily Limit: 3

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Chain Pickerel

I  NY

I  NY



Nassau County

Open Season:	All Year
Minimum Length:	Any Size
Daily Limit:	3

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Brown Trout

I  NY

I  NY



Nassau County

Open Season:	All Year
Minimum Length:	9"
Daily Limit:	15

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Black Crappie

I  NY

I  NY



Nassau County

Open Season: 1st Saturday in  
May - March 15

Minimum Length: 15"

Daily Limit: 5

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Walleye

I  NY

I  NY



Suffolk County  
Open Season: All Year  
Minimum Length: Any Size  
Daily Limit: 15

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Yellow Perch

I  NY

I  NY



Suffolk County  
Open Season: All Year  
Minimum Length: Any Size  
Daily Limit: 15

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Pumpkinseed  
Sunfish

I  NY

I  NY



Suffolk County  
Open Season: All Year  
Minimum Length: Any Size  
Daily Limit: 15

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Bluegill  
Sunfish

I  NY

I  NY



Suffolk County

Open Season: April 1 - Sept 30

Catch and Release Only  
\*Special Regulations exist for  
some waters

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Brook Trout

I  NY

I  NY



Suffolk County

Open Season: All Year  
Minimum Length: Any Size  
Daily Limit: 3

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Rainbow Trout

I  NY

I  NY



Suffolk County  
Open Season: All Year  
Minimum Length: Any Size  
No Daily Limit

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Brown Bullhead

I  NY

I  NY



Suffolk County  
Open Season: All Year  
Minimum Length: Any Size  
No Daily Limit

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



White Perch

I  NY

I  NY



Suffolk County

Open Season: 1st Saturday in June  
- Nov 30

Minimum Length: 12"  
Daily Limit: 5

Open Season: Dec 1- April 30  
Catch and Release Only  
\*Special Regulations exist for some  
waters

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Largemouth  
Bass

I  NY

I  NY



Suffolk County

Open Season: 1st Saturday in  
May - March 15

Minimum Length: 15"  
Daily Limit: 5

\*Special Regulations apply  
for Deep Pond

I  NY

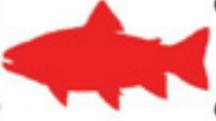
Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Chain Pickerel

I  NY

I  NY



Suffolk County

Open Season: All Year  
Minimum Length: Any Size  
Daily Limit: 3

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Brown Trout

I  NY

I  NY



Suffolk County

Open Season: All Year  
Minimum Length: 9"  
Daily Limit: 15

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

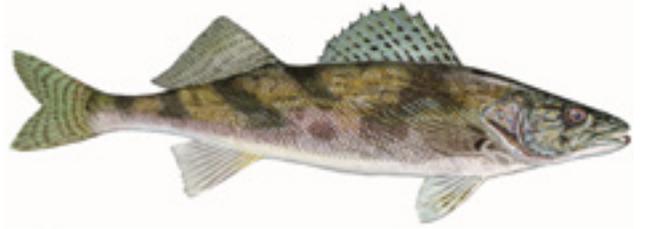
I  NY



Black Crappie

I  NY

I  NY



Suffolk County  
Open Season: 1st Saturday  
in  
May - March 15  
Minimum Length: 18"  
Daily Limit: 3

I  NY

Instructions: Cut out cards along dotted line. Fold cards vertically along solid line. Laminate cards.

I  NY



Walleye

I  NY