



## *Rival for Survival Game Instructions*

| <i>Materials</i> | <i>Number of Players</i> |
|------------------|--------------------------|
| Game board       | 2–5                      |
| Movable pieces   |                          |
| Game cards       |                          |
| Score paper      |                          |
| Die              |                          |
| Pen or pencil    |                          |

### *Objective*

To have the **most points** when all players have reached the “Finish” position, at the Great Lakes.

### *Directions*

1. Each player rolls the die, and the player with the highest number goes first.
2. Player 1 rolls the die and moves the playing piece the number of spaces shown on the die. Player 1 chooses a question card and hands it to the player on the left, who reads the question aloud. Player 1 chooses the best answer.
3. Points received are based on the player’s answer and are recorded on the score sheet.
4. When landing on a space that requires the player to move ahead or backward, the player moves the game piece before picking a question card.
5. Some answers will cause a player to lose points. If the player has no points, however, he or she cannot go below zero, even if told to subtract a point.
6. Play continues in a clockwise direction until all players reach the Great Lakes region or the time limit is reached. The player with the **most points** is the winner—not the player who reaches the Great Lakes first. Finishing first may not necessarily be a good thing in this game!

## Game Cards—Front a

- Q** Your aquarium is no longer functioning. You decide to get rid of the fish. You should
- flush them.
  - find them a new home in another aquarium.
  - drop them in the local pond.

- Q** To prevent the transfer of exotic species from one lake to another, you should
- pull your boat quickly from one lake to another.
  - inspect your boat trailer and equipment.
  - wash your boat in cold water.

- Q** How many of these species are exotic: goldfish, purple loosestrife, sea lamprey, starling?
- one
  - three
  - four

- Q** Bringing in natural predators may be the way to handle exotic species such as purple loosestrife. Choose a potential problem with the above idea.
- Purple loosestrife would decrease.
  - Predators may not die out after plants are gone.
  - Native plants would repopulate area.

- Q** Some exotic species can be a nuisance. How many of these are nuisance species: carp, alewife, purple loosestrife, zebra mussels, sea lamprey?
- two
  - three
  - five

- Q** You find a beautiful plant while on vacation in Mexico. Do you
- take a picture?
  - dig it up and transplant it in your garden?
  - pick the flowers off of it?

- Q** The role an organism has in its environment is its niche. Exotic species
- try to take over the niche of another organism in an ecosystem.
  - have no niche in an ecosystem.
  - are not organisms.

- Q** Zebra mussels each filter about
- 0.25 liter of water per day.
  - 0.50 liter of water per day.
  - 1.0 liter of water per day.

- Q** How could you gain information about exotic species in your area of the country?
- Contact the Wildlife Service.
  - Complete an Internet search on the topic.
  - Both a and b.

- Q** The sea lamprey is an exotic species in Lake Erie. Why is it so damaging to other fish?
- It eats their eggs.
  - It carries a large number of diseases.
  - It sucks out the blood and body tissues of other fish through its suckerlike mouth.

- Q** In any ecosystem, there is a limited amount of resources. If an exotic does well in a new ecosystem, that usually means native species are
- getting more resources than before.
  - getting the same amount of resources than before.
  - getting less resources than before.

- Q** Exotic species are
- rare organisms.
  - organisms brought into an environment not their own.
  - worth a lot of money.

## Game Cards—Back a

**A** a = 0 pts. No! You might transfer species from one body of water to another.  
b = 3 pts. Good decision! You ensure there are no organisms transported on your boat.  
c = 1 pt. You're trying to remove all organisms—use 140°F water.

**A** a = 0 pts. Not a good choice!  
b = 3 pts. This is the best thing to do.  
c = -1 pt. Take a point away. You could be introducing a new species to the pond and upsetting the ecosystem!

**A** a = 0 pts. This is what we would want to happen!  
b = 3 pts. Could be a very real problem. You'd just be trading one exotic species for another.  
c = 0 pts. This is a positive effect of introducing a natural predator; the question asked for negative effect.

**A** a = 1 pt.  
b = 2 pts. All four are exotic!  
c = 3 pts.

**A** a = 3 pts. Correct! You can enjoy the plant without damaging it or carrying it into an ecosystem not its own.  
b = -1 pt. Take a point away. You risk creating an invader species that could damage the ecosystem back home.  
c = 0 pts. This could damage the plant.

**A** a = 1 pt. True, but not the best food answer.  
b = 2 pts. You are getting closer.  
c = 3 pts. This is right! All are nuisances!

**A** a = 0 pts. Not right!  
b = 0 pts. Closer, but still not right.  
c = 3 pts. You got the right answer!

**A** a = 3 pts. They try to do this.  
b = 0 pts. No.  
c = 0 pts. All living things are organisms.

**A** a = 0 pts. Not true.  
b = 0 pts. Not the problem.  
c = 3 pts. Gross, but true.

**A** a = 1 pt. Good choice, but not the best!  
b = 1 pt. Good choice, but not the best!  
c = 3 pts. This is the best choice!

**A** a = 0 pts.  
b = 3 pts. This is the correct answer.  
c = 0 pts. b is a much better choice.

**A** a = 0 pts. Have new competition for and usually get less.  
b = 0 pts. No! If there are more organisms trying to eat the same food, they won't get as much.  
c = 3 pts. Correct, because there are more species competing for the resources.

## Game Cards—Front b

- Q** You find some zebra mussels on a beach. You should
- leave them where they are.
  - take them home.
  - put them in a pond near your home.

- Q** Exotic species are
- plants.
  - animals.
  - both.

- Q** Zebra mussels are believed to have entered the Great Lakes
- by traveling in the ballast water of commercial freighters.
  - by attaching to large fish.
  - because people brought them here to increase the mussel population.

- Q** Purple loosestrife was brought into the United States to
- beautify wetlands.
  - be used in landscaping.
  - feed large herbivores.

- Q** While traveling through another part of the country, you encounter a small tortoise. Do you
- put it in your aquarium?
  - sell it to a pet store?
  - leave it alone?

- Q** Purple loosestrife is an exotic species that is invading North American
- deserts.
  - forests.
  - wetlands.

- Q** Indigenous plants and animals are those
- that are naturally found in an ecosystem.
  - are imported into an ecosystem.
  - make you sick if you eat them.

- Q** Exotic species
- are good for the environment they enter.
  - are bad for the environment they enter.
  - can be either good or bad, and some have no effect.

- Q** The effect zebra mussels have on water intake pipes is to
- help rebuild them.
  - clog them.
  - clean them.

- Q** Round gobies can eat up to
- five sea lampreys per day.
  - 1 pound of purple loosestrife per day.
  - 78 zebra mussels per day.

- Q** How are yellow perch affected by aquatic invaders?
- The round goby eats yellow perch eggs.
  - The fishhook flea competes for the same food as the yellow perch.
  - The yellow perch swallows zebra mussels that get stuck in its digestive system.

- Q** The fishhook flea keeps from being eaten because
- its long tail, shaped like a fishhook, makes it difficult for larger fish to swallow.
  - it latches on to fishhooks and escapes when fishermen pull their poles out of the water.
  - it stays away from fishhooks and thus is not eaten by fish.

## Game Cards—Back b

**A** a = 1 pt. True, but not the best choice.  
b = 1 pt. Also true, but not the best choice.  
c = 3 pts. Exotic species can be plants or animals.

**A** a = 3 pts. This is the best choice.  
b = 0 pts. You risk spreading them to new locations.  
c = -1 pt. Take 1 point away. This is a very poor choice because you may infest the pond.

**A** a = 0 pts. Not true.  
b = 3 pts. This was why people brought purple loosestrife into the United States.  
c = 0 pts. Purple loosestrife has no natural enemies in the United States.

**A** a = 3 pts. True. Ballast water is used by freighters to keep the ship evenly weighted.  
b = 0 pts. Sea lampreys attach to fish; zebra mussels do not.  
c = 0 pts. Not true.

**A** a = 0 pts. Wrong.  
b = 0 pts. Wrong.  
c = 3 pts. Purple loosestrife is a wetland plant.

**A** a = 0 pts. While this wouldn't hurt the environment, it could be an endangered species and should be left alone.  
b = 0 pts. Same reason as choice a.  
c = 3 pts. Best choice. Allows the animal to remain in its ecosystem; wouldn't negatively affect another ecosystem.

**A** a = 1 pt. Might be true, but unlikely.  
b = 1 pt. True often, but not always.  
c = 3 pts. This is the best choice.

**A** a = 3 pts. This is the correct definition of indigenous.  
b = 0 pts. This is the definition of nonindigenous.  
c = 1 pt. Some may make you sick, others may not. Not the best choice.

**A** a = 0 pts. This would be helpful, but it is not true.  
b = 0 pts. This is also incorrect.  
c = 3 pts. This is correct.

**A** a = 0 pts. No, zebra mussels do not help rebuild pipes.  
b = 3 pts. Yes! Zebra mussels cause problems because they clog water intake pipes.  
c = 0 pts. This is also incorrect. They clog pipes, not clean them.

**A** a = 3 pts. Exactly! This is why it is called the fishhook flea.  
b = 0 pts. Sorry, this is incorrect.  
c = 0 pts. This is also a wrong answer.

**A** a = 3 pts. Good answer!  
b = 3 pts. This is also a correct answer!  
c = 0 pts. The yellow perch do not eat zebra mussels.

## Game Cards—Front c

**Q** Boaters or anglers can prevent the spread of zebra mussels by

- wearing gloves while they are fishing.
- emptying their bait buckets on land only.
- washing their boat, tackle, trailer, and other equipment in 104° F water.

**Q** A sea lamprey can grow

- up to 6 inches long.
- up to 36 inches long.
- up to 18 inches long.

**Q** The fishhook flea most likely traveled to the United States

- attached to other fish migrating toward the United States.
- because it got lost.
- in the ballast water of freighters.

**Q** How might a native brown trout be killed by an aquatic invader?

- Round gobies could eat eggs of the brown trout.
- A sea lamprey could carve a hole in the side of the brown trout and suck out its bodily fluids.
- The brown trout could try to swallow a fishhook flea and get it stuck in its digestive system.

**Q** A female zebra mussel can produce up to

- 10,000 eggs a year.
- 100,000 eggs a year.
- 1 million eggs a year.

**Q** What do round gobies do to make fishermen angry?

- They eat all the eggs of the native fish, leaving no more fish to catch.
- They tease them that they can't catch fish.
- They aggressively take bait from hooks used by fishermen.

## Game Cards—Back c

**A** a = 0 pts. Sea lampreys can get bigger than that!  
b = 0 pts. Wow, that would be one giant sea lamprey.  
c = 3 pts. That is correct!

**A** a = 0 pts. Unfortunately, wearing gloves has nothing to do with it.  
b = 3 pts. Good job! This will help prevent the spread of zebra mussels.  
c = 3 pts. This too will aid in the prevention of zebra mussel infestation.

**A** a = 2 pts. This is close. Round gobies eat the eggs of the lake trout.  
b = 3 pts. Exactly, this is why the sea lamprey is so dangerous!  
c = 1 pt. This might be possible.

**A** a = 0 pts. No, it is the sea lamprey that attaches to fish.  
b = 0 pts. This is incorrect.  
c = 3 pts. You got it!

**A** a = 1 pt. This is a possibility.  
b = 0 pts. This is unlikely.  
c = 3 pts. That's right!

**A** a = 0 pts. This isn't even close.  
b = 1 pt. This is getting closer.  
c = 3 pts. Yes, this is correct.