

# Seabird Survival Card Game

## Webs Under Waves: Exploring Coastal Marine Life

Students will play a card game in small groups (4-5 students) to test their knowledge about seabird adaptations.

**Sample card game provided - Students can cut-out cards and play**

Time: 10-15 minutes

**Preparation: To make more game cards from the master.**

Copy the attached pages and cut up the cards. To make a complete deck, you will need:

- 3 copies of the sheet that has 9 different adaptation cards, and 1 copy of the sheet that has 3 different adaptations cards.
- 2 copies of the sheet that has 12 environmental challenge cards.
- 1 copy of the sheet that has
- 4 environmental challenge cards (*human-made threat*) they are included with a different border.

To avoid card tears and losses, laminate the playing cards.

Print the adaptation cards on different colored paper than the environmental challenge cards for easier identification.

Enlarge, copy, and laminate the Seabird Survival Card Game Rules sheet.

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## Objectives

Students will...

- Play a small group card game to learn about seabird adaptations in a fun and interactive way. (4-5 students in a group works.)
- Learn how seabirds have adapted to different environmental challenges.
- Learn about several hazards that face marine life.

## Vocabulary

**Adaptation-** A physical characteristic or behavior that helps an organism survive in its environment. Examples: physical bird adaptations include having hollow bones that help with decreasing weight in flight and the Common Murres pear-shaped eggs which roll in a circle instead of off the cliff edge. Behavioral characteristic include nesting in colonies which decrease predation.

**Seabird-** A bird that frequents coastal waters and the open ocean. Some species spend the majority of their lives for out at sea while others rarely venture for from the coast, but virtually all seabirds feed in the ocean waters.

**Hazard-** A source of danger; an event or object that may cause harm or injury.

**Natural environmental challenge-** The hazards an organism must face due to their environment. An example of a natural environmental challenge Common Murres must face is that they have to protect themselves and their eggs from gulls and ravens.

**Human-made threat, environmental challenge-** Human actions that can cause harm to an organism. An example of human-made threat, presented to Common Murres is plastic trash in the ocean where they hunt for food.

## Introduction

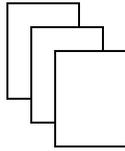
This activity will reinforce students' knowledge of seabirds and their place in the coastal marine food web.

### Seabird Survival Card Game Rules

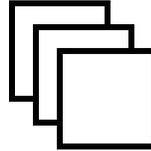
1. The object of the game is to collect as many environmental challenge and adaptation card matches as possible. (Human-made threat challenge cards do not have matches.)
2. One student shuffles the deck and deals 4 adaptation cards to each player.
3. The rest of the adaptation cards and all the challenge cards are placed face down in 2 separate piles in the center of the playing area.
4. The player to the left of the dealer goes first. Continue clockwise.
5. When it is your turn, pick up a challenge card from the pile.
6. If you have the adaptation card that matches that challenge, you get to keep both cards and lay your match in front of you.
7. After a match, draw another adaptation card from the pile to make 4 adaptation cards.
8. Repeat steps 5 and 6 until you cannot make a match, at the end of your turn you should have 4 adaptation cards left.
9. If you cannot make a match leave the challenge card face-up next to the face down challenge card pile. This ends your turn.
10. If you pick up a *human-made threat* challenge card, tell others how you can help the threat on the card and keep the card. This card does not have a match. *This ends your turn for that round.*
11. Read your cards out loud and share the information with the other players.
12. The next player sees if they can match any or all turned up challenge cards. If they match all the turned up challenge cards, then they can draw from the challenge card pile. If they can't match any of the turned up challenge cards, they can draw from the challenge card pile.
13. The game ends when the adaptation pile is gone or time is up.
14. The winner is the player with the most matches.

## Playing field

(face down)  
**Rule #3**



(face down)  
**Rule #3**



**Rule #8**

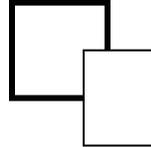


## Player #1

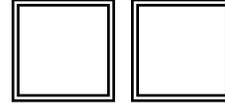
4 Adaptation cards  
**Rule #2**



Matches  
**Rule #6**



Human-made threat  
**Rule #9**



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## Student Assessment

1. Name two seabird adaptations.
2. Explain why that adaptation is important to the murre's survival.
3. What is one environmental challenge (threat) that is caused by humans?
4. Describe one way you can help seabirds.

## Extensions

- Students draw a Common Murre and label its adaptations.
- Students design their own coastal marine creature and its adaptations.

## Additional Resources

The Common Murre Restoration Project

[www.fws.gov/sfbayrefuges/murre/murrehome](http://www.fws.gov/sfbayrefuges/murre/murrehome)

PRBO Conservation Science Education

[www.prbo.org/cms/index](http://www.prbo.org/cms/index)

Oikonos Ecosystem Knowledge Seabird Projects

[www.oikonos.org/projects/projects](http://www.oikonos.org/projects/projects)

Project Puffin and the Seabird Restoration Program

[www.audubon.org/bird/puffin/](http://www.audubon.org/bird/puffin/)

Mark Rauzon, Seabirds. Franklin Watts, 1996.

Zoobooks, Seabirds. Wildlife Education Ltd., 1995

## Source

Seabird Survival Card Game created for Webs Under Waves.

This adaptation game was inspired by this marine mammal adaptation

game: [www.aeoe.org/conference/resources/2005/marinemammals/adaptationgame.pdf](http://www.aeoe.org/conference/resources/2005/marinemammals/adaptationgame.pdf)

Make 1 copy of this page

**Adaptation Card**

Oil Glands

Most seabirds have an oil gland that helps them stay waterproof.



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**Adaptation Card**

Nests on cliff edges

Murres nest on steep cliff edges to reduce competition with other seabirds.



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**Adaptation Card**

Nests on cliff edges

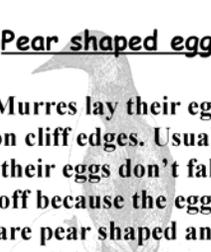
Murres nest on steep cliff edges to reduce competition with other seabirds.



**Adaptation Card**

Pear shaped eggs

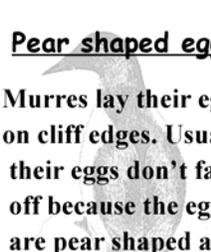
Murres lay their eggs on cliff edges. Usually their eggs don't fall off because the eggs are pear shaped and roll in a circle when bumped.



**Adaptation Card**

Pear shaped eggs

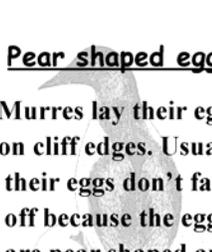
Murres lay their eggs on cliff edges. Usually their eggs don't fall off because the eggs are pear shaped and roll in a circle when bumped.



**Adaptation Card**

Pear shaped eggs

Murres lay their eggs on cliff edges. Usually their eggs don't fall off because the eggs are pear shaped and roll in a circle when bumped.



Make 3 copies of this page

**Adaptation  
Card**

**Salt glands**

Seabirds can drink salt water since they have salt glands above their eye sockets, to remove extra salt.



**Adaptation  
Card**

**Air Sacs**

Flying is harder than walking, so birds have air sacs to help them take in more oxygen.



**Adaptation  
Card**

**Wings that act  
like paddles**

Most seabirds dive for their food. Some like the murre have wings that can be used for flying under the water!



**Adaptation  
Card**

**Hollow bones**

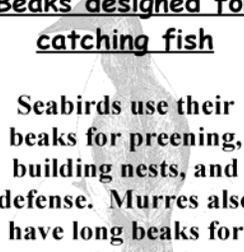
Birds have hollow bones to keep their weight down so it is easier for them to fly.



**Adaptation  
Card**

**Beaks designed for  
catching fish**

Seabirds use their beaks for preening, building nests, and defense. Murres also have long beaks for catching fish.



**Adaptation  
Card**

**Broadly webbed  
feet**

Seabirds have legs set further back and broadly webbed feet to help them move easily under water.



**Adaptation  
Card**

**Down Feathers**

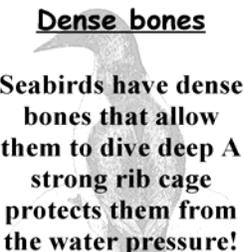
Down feathers are the fluffy under feathers that keep a bird warm.



**Adaptation  
Card**

**Dense bones**

Seabirds have dense bones that allow them to dive deep. A strong rib cage protects them from the water pressure!



**Adaptation  
Card**

**Nest in colonies**

Murres nest together in large colonies for protection from predators like gulls.



**ENVIRONMENTAL  
CHALLENGE CARD**

You have to move quickly in the water.

Adaptation: Legs that are set further back and feet that are webbed

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

It is cold and wet in the ocean and you need to stay dry.

Adaptation: Oil gland to keep feathers waterproof

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

Its cold in the air when flying high.

Adaptation: Down feathers

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

You need extra oxygen to be able to fly.

Adaptation: Air sacs that help you breath

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

You need to fly!

Adaptation: Hollow Bones

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

You need to catch a slippery fish for dinner.

Adaptation: Beak designed for catching fish

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

You have to dive deep to catch your food.

Adaptation: Dense strong bones and a strong ribcage

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

You have competition for nesting areas from other seabirds.

Adaptation: Nest on cliff edges

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

You have to stay safe from predators like gulls.

Adaptation: Nest in colonies

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

Your eggs are very close to the cliff edge.

Adaptation: Pear shaped eggs

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

You need to swim underwater to catch your food.

Adaptation: Wings that act as paddles

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD**

You have to drink salt water.

Adaptation: Salt glands

If you don't have this adaptation:  
Your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD  
Human-made Threat**

There is trash in the ocean that  
can hurt you.

Adaptation: NONE

Pick up one piece of trash and then  
your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD  
Human-made Threat**

You are caught in a fishing net.

Adaptation: NONE

Think of one reason birds get  
caught in fishing nets and then your  
turn is over

**ENVIRONMENTAL  
CHALLENGE CARD  
Human-made Threat**

There is plastic in the ocean that  
you mistake for food.

Adaptation: NONE

Think of a type of plastic that  
could get in the ocean and then  
your turn is over.

**ENVIRONMENTAL  
CHALLENGE CARD  
Human-made Threat**

You swim through an oil spill and  
get oil on your feathers.

Adaptation: NONE

Think of one way you can keep oil  
out of the ocean and then your  
turn is over.

Copying Directions:

Make 1 copy of the environmental challenge-human threat cards

Make 2 copies of each of the environmental challenge cards