

ON GULL BEACH

EDUCATIONAL GUIDE

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ABOUT THE BOOK I

Sun, sea and.....gulls! While walking on Gull Beach, a young boy spies a sea star just within reach, but a Herring Gull swoops down and snatches it! The interplay between the gulls in flight as they toss the sea star back and forth is narrated as a detailed play-by-play that only a careful observer could provide. The boy joins them in the scuffle and finally returns the sea star to its place in the sea.

USING THIS EDUCATIONAL GUIDE

This guide features activities that target national education standards for a variety of subjects for grades K-5. Each activity lists which standards it meets:

- Science (SCI; Next Generation Science Standards)
- English Language Arts (ELA; Common Core State Standards)
- Mathematics (MATH; Common Core State Standards)
- Art (ART; National Core Art Standards)

Be sure to visit www.birdsleuth.org/GullBeach for access to many of the images and videos mentioned in this guide, as well as background information and a complete table of national education standards.



ON GULL BEACH

EDUCATIONAL GUIDE



DISCUSSION QUESTIONS |

BEFORE READING

Show the book title and cover and ask:

- What do you think those birds might be doing? What about the boy?
- What creatures might you see at the beach?
- Where do these animals live: In the water? In the sand? In the sky?

AFTER READING

After reading, ask:

- How do the birds in the book interact with each other and the sea star? Have you ever seen this kind of behavior in nature?
- How does the boy treat the animals in the story?

| ACTIVITIES

1 DISCOVER GULLS! (SCI)

Visit the BirdSleuth website to see videos of Herring Gulls. Make a list of the different behaviors you see in the videos (feeding, flying, carrying food, swimming, walking/wading, calling). Want a challenge? Chat about why students think the birds are behaving this way, and go outdoors to observe real bird behaviors.



ON GULL BEACH

EDUCATIONAL GUIDE



2 STAR TOSS (SCI)

Gulls and other creatures can appear to be playful. Look closely: is it all fun and games, or is there a deeper meaning to this behavior? Herring Gulls are omnivores, meaning they eat many things (from fish, insects, worms, and mussels to smaller seabirds, eggs of other gulls, carrion, and trash). They are also kleptoparasites—food stealers—which is probably what’s going on in this story. Break up into 3-5 small groups. One student volunteers to be the boy from the story while the others are gulls. Use a small bean bag to toss back and forth just as the sea star was tossed. Gulls can be noisy when they are trying to defend and protect their catch. Use your best ‘Gull’ voice to call out a friend’s name that you want to toss the sea star to. If the “boy” catches your sea star, you have to fly off to another group and see if you can be the winner of the meal there. If your name gets called, but you drop the sea star, switch places with the boy in your group.

Keep playing until the “fog horn” (any chime or sounds you have available) sounds. The one holding the sea star is the winner. Play several rounds as time allows.

CHALLENGE:

It’s fierce competition when you’re hungry. Here are some tricks for your classroom food chain:



- **Birds don’t have hands.** Try doing this with just one of the two that you have. Try your non-dominant hand for an even bigger challenge.
- **Birds have the advantage of flight over the boy.** Have your volunteer sit in a chair in the middle instead of standing.
- **Is it a hot day?** Use small water balloons: slippery snails and fish are harder to hold onto than sea stars!

ON GULL BEACH

EDUCATIONAL GUIDE



3 BUSY BEACH (SCI, ART)

Look closely: Gulls are not the only ones living at the beach. There are organisms that live in the tidepools, the sand dunes, the rocky shoreline and the ocean. Brainstorm two lists with your class: “Fish in the Sea” and “Other Animals in the Sea.” Then divide your class into small groups. After describing the primary characteristics of fish (animals with backbones, gills, and scales), have some groups research the fish list. If students discover that a listed animal is not a fish, have them determine what kind of animal it is. Ask the remaining groups to research animals from the other list to discover what kinds of animals they are—such as mammals, reptiles, mollusks, or echinoderms. Afterwards, have students create a class mural illustrating each of the animal groupings. Go further by reaching out to a local aquarium, zoo or nature center to see if they have traveling touch tanks that represent life along the shore or arrange for a visit.

4 FLUFFED UP FEATHERS (SCI, ELA, MATH)

Many of us think of the beach as a fun place to go on a warm day, but some gulls and other birds live there year-round. Think of swimming in water that is 45 degrees Fahrenheit most of the year... that’s near freezing! Many birds keep warm by having waterproof feathers, fluffing their feathers, and having a fluffy down that traps layers of insulating air. Illustrate the power of air as an insulator using a bin of ice water, a few gallon-sized bags, and some bubble wrap. Leave one bag plain but wrap other bags with 1–3 layers of bubble wrap, being sure to leave the opening of the bag accessible. First, make prediction: When submerged in the water, which bag will feel colder? Why? Then, have students place their hand in each of the bags and submerge their covered hands in the water (not so far that water floods the bag). How do their observations line up with their predictions? Consider recording the temperature of the water, and the internal temperatures of each bag if you have thermometers. Take it further by trying other possible insulators and measuring temperature. (Display items such as down coats, insulated lunch boxes, and double-wall insulated mugs, which are great real-world examples of air insulation.)

ON GULL BEACH

EDUCATIONAL GUIDE



5 STASH THE TRASH (SCI, MATH, ELA, ART)

Trash is a big problem for many ocean animals, including gulls. Every year, birds die from eating plastic that they have mistaken for food. Some birds eat so much that their stomachs have no room left for real food.

- How do you think trash ends up in the ocean? (It blows into the ocean, is carried there via streams and rivers, or dumped there.)
- How might we help with this problem? (Not littering, recycling, and picking up trash in the community.)

Take students outside to explore a defined area to walk along a path. As a group, explore the kinds and amounts of trash you see by making a list of items or collecting trash (if possible, using gloves and bags). Ask:

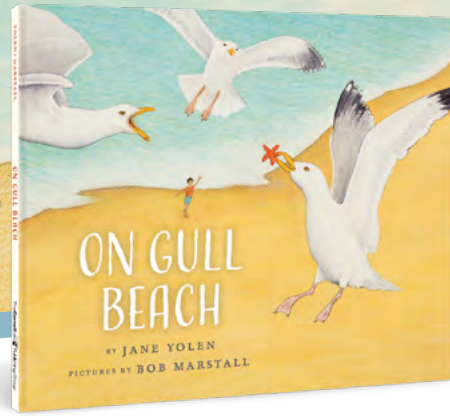
- How much of the trash we see is plastic? Which items would float? What happens to litter? (Some trash, especially floating plastic, ends up in the ocean.)
- Why do birds pick up trash to begin with? (It can resemble the foods they normally eat. For instance, a tin can might resemble the silver scales of a fish, a candy wrapper could be mistaken for an insect or small squid, rubber bands can look like worms.)



If you've collected trash, weigh it and calculate how much trash you picked up. Talk about ways in which students and their families can help keep trash out of the oceans and prevent harm to animals like gulls. Design posters related to discouraging littering, featuring litter's impact on wildlife. Research and write about the threats faced by gulls and other seabirds.

ON GULL BEACH

EDUCATIONAL GUIDE



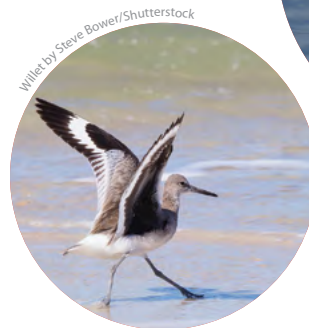
6 CAN YOU HEAR THE OCEAN? (SCI, ART)

Play a soundscape of the beach for students (find soundscapes at birdsleuth.org/GullBeach). Challenge students to listen carefully to the different sounds they hear. After listening, have kids create a list of all the sounds they could identify. Once the list is complete, sort students into groups representing each sound. Have each group copy their sound, either using their voices or with real or created instruments. Once everyone has practiced their sound, have students replicate the sounds of the beach.

7 BIRD COMPARISON (SCI, ART)

Refer to the species guide in the back of the book, showing your group the different species of birds that can be found near the ocean. Ask:

- What do you notice that's similar about the birds? What differences do you see?
- Which birds have the longest legs? Are they the largest birds? Why might long legs be useful? (For example, the long legs of the egret allow it to wade into the water to catch fish without getting its body or feathers wet.)
- Which birds have long bills? Why might long bills be useful? (Long bills are adaptations to catch fish in the water and probe for invertebrates in the sand.)
- What are the different colors and patterns you see? What is the purpose of the different colors and patterns? (Students might mention camouflage.)
- Have students draw their own sea bird that is well adapted for life on the coast.



ON GULL BEACH

EDUCATIONAL GUIDE



8 SEA STAR PERSPECTIVE (SCI, ELA, ART)

Involve children in a reenactment of the story of the events of *On Gull Beach* from the perspective of the sea star. Use pantomime as a way to retell the story without using words. Have children use hand gestures, facial expressions, and body movements to convey the action of the story. After they have completed the reenactment, have them rewrite *On Gull Beach* from the perspective of the sea star.



Sea Star by PicturePartners/Shutterstock

9 HOW SANDY! (SCI, MATH)

Sand has interesting properties. Because it is granular, it has properties of both a solid and a liquid. In a bucket, it looks solid. But poured out of the bucket, it behaves like liquid! Pour sand through funnels. If possible, use several funnel diameters and sand types to examine differences. For example, pour the same amount of sand through funnels of different sizes, and record and compare the time each takes. What is the relationship between funnel hole size and sand grain size with flow time?



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10 FLOATING AND SINKING (SCI, MATH, ELA)

Explore the density of salt water and fresh water. First, make a saltwater solution and dye it with food coloring. Fill a jar half full of salt water and then slowly pour tap water into the solution. The salt water should stay at the bottom of the jar because it is heavier. Ask students to predict how the density of seawater will affect an object's buoyancy (its ability to float). Invite them to make a buoyancy boat to test their ideas. Make the boat from a small plastic cup (for example, a yogurt or similar container) filled with some playdough, pennies, or other heavy objects, such that the cup floats level when placed in water. Use a permanent marker to mark $1/8$ " increments along the side of the boat so it's clear how much the boat sinks or floats. First float the cup in a container of freshwater. Record how far the boat sinks by recording where the waterline falls in your $1/8$ " increments. Repeat the procedure using salt water. Does the boat float better in fresh water or salt water? Have students record, graph, and write about their observations.



The **Cornell** Lab of Ornithology
BirdSleuth K-12

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