

Protect Our Ocean Activity Book

BE AN OCEAN GUARDIAN



www.sanctuaries.noaa.gov/education/kids_club.html

<http://marinedebris.noaa.gov/marinedebris101/>





This activity book is recommended for children in grades Kindergarten through 3rd.

A message from the National Oceanic and Atmospheric Administration

The Earth has one big, connected ocean. The ocean covers over 70% of the Earth's surface, surely making this a water planet. And, did you know that the same ocean, river or bay that you swim, fish, surf and dive in can also be a fabulous classroom? The ocean provides students of all ages with unlimited opportunities to learn about the world around us.

Sadly, one of the lessons the ocean and waterways are teaching us today is how hazardous marine debris (trash) is to the health of our ocean. While there are many different types of trash and debris, the one thing it has in common is people. When we don't put our trash in the proper place, it often ends up in the ocean. How does this happen? Many times trash blows around on the ground and ends up in storm drains, rivers and streams which carry the trash directly to the ocean.

Marine debris is more than just ugly - it's a serious problem that affects the wildlife, habitat and water quality of all of the world's inter-connected ocean and waterways. It is also an issue that will require continued attention for years to come. To learn more about marine debris and what you can do, please visit www.marinedebris.noaa.gov

The National Oceanic and Atmospheric Administration (NOAA) invites you to become a member of the National Marine Sanctuary Program's Ocean Guardian Kid's Club—to learn about your ocean, to understand your connection to the environment, and to take positive steps to conserve this ocean world.

This activity book was developed and produced by:

**The National Oceanic and Atmospheric Administration
1401 Constitution Avenue
Washington, DC 20230**

www.noaa.gov

Pages of this book are excerpts from "Understanding Marine Debris, Games and Activities for Kids of all Ages". This activity book can be found in its entirety at http://marinedebris.noaa.gov/marinedebris101/WYCD_student.html

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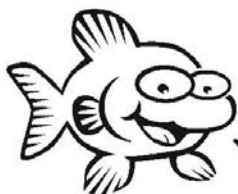
THE OCEAN

Let's learn about the ocean and why it's so important!

- ★ The Earth has one big connected ocean, yet there are many ocean basins, such as the Atlantic, Pacific, Indian, Arctic and Southern.
- ★ The ocean covers about 70% of the planet's surface making ours a water world.
- ★ Most of the Earth's water (97%) is in the ocean.
- ★ All water on Earth is connected! Water evaporates from the earth's surface, falls as precipitation (rain, snow, sleet, etc.) onto the land and ocean, and returns to the ocean as river runoff and groundwater (underground) flow. This exchange of water is known as the hydrologic cycle.
- ★ Although the ocean is large, it is finite and resources are limited.
- ★ The ocean affects every human life! It supplies freshwater (most rain comes from the ocean) and nearly all Earth's oxygen.
- ★ The ocean influences our planet's weather and climate and affects human health.
- ★ The first life is thought to have started in the ocean. The earliest evidence of life is found in the ocean.
- ★ Ocean life ranges in size from the smallest virus to the largest animal that has lived on Earth, the blue whale.
- ★ Estuaries are coastal areas where freshwater and saltwater intermingle. Estuaries provide important and productive nursery areas for many marine and aquatic species.
- ★ From the ocean we get foods, medicines, as well as mineral and energy resources. The ocean provides jobs, serves as a highway for transportation of goods and people, and plays an important role in national security.
- ★ Much of the world's population lives in coastal areas. And, coastal regions are susceptible to natural hazards such as tsunamis, hurricanes, cyclones, sea level change, and storm surge.



13 Million Pounds?!



It is estimated that 13 million pounds of litter are put into the ocean each year.* This litter is generated by many sources, from boats and oil rigs on the water to picnickers, fisherman, and beachgoers along the shore. Hidden below is a list of objects that have been discarded into our oceans. See if you can find them all!



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | B | A | B | I | H | O | S | E | A | T | M | R | G |
| E | G | U | T | A | C | A | N | C | E | W | E | L | L |
| K | L | R | C | R | L | A | R | N | R | N | O | U | A |
| T | O | A | P | K | C | L | G | D | I | A | K | M | S |
| R | V | D | O | A | E | N | O | A | H | W | T | B | S |
| A | E | I | D | W | I | T | T | O | A | A | M | E | B |
| S | H | O | E | H | D | N | G | R | N | L | T | R | O |
| H | S | W | S | B | O | T | T | L | E | C | A | P | T |
| B | K | I | P | C | T | S | J | B | U | R | G | Y | T |
| A | F | U | T | D | I | A | P | E | R | D | O | L | L |
| G | C | I | G | A | R | E | T | T | E | U | T | P | E |
| W | A | N | X | O | E | U | O | H | B | A | S | N | E |
| B | F | I | S | H | I | N | G | L | I | N | E | H | M |

These hidden words are found horizontally, vertically and diagonally. Answers on back cover.

- | | | | | |
|----------------|--------------|--------------|-------------|-----------|
| BAIT CONTAINER | CRATE | FISHING NET | LUMBER | SHOE |
| BALLOON | CUP | GLASS BOTTLE | PAINT BRUSH | SODA CAN |
| BUCKET | DIAPER | GLOVE | RADIO | STRAW |
| BUOY | DOLL | HARD HAT | ROPE | TIRE |
| CIGARETTE | FISHING LINE | HOSE | RUG | TRASH BAG |

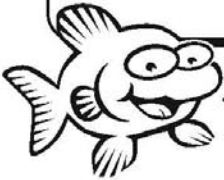
**1997 U.S. Academy of Sciences study.*

This activity page is an excerpt from "Understanding Marine Debris, Games and Activities for Kids of all Ages".



Litterless Lunches

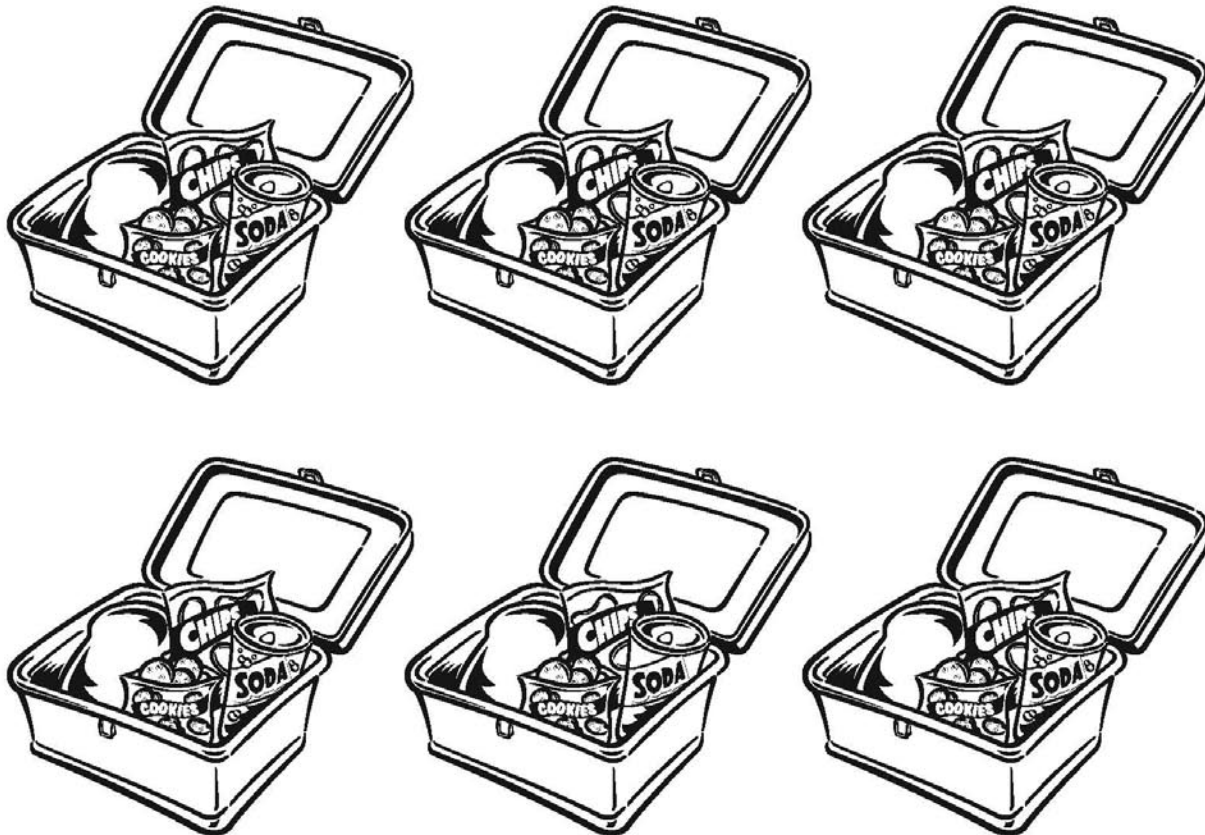
There are six packed lunches pictured. One of them is different from all the others. **Can you find the one that is different?**



HOW YOUR PACKED LUNCH CAN HELP MAKE LESS TRASH

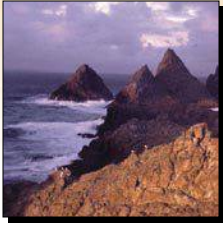
Many kids carry a packed lunch to school. Food packaging can create a lot of trash every year. Here are some ways to reduce the amount of trash generated by a packed lunch.

- ◆ **Reduce the amount of food packaging needed.** When planning your packed lunches, instead of buying 12 individual bags of cookies, you can buy one larger bag of cookies and divide it into serving sized portions in reusable containers.
- ◆ **Reusable plastic containers** can store cookies, chips and just about everything else you find in a packed lunch. These containers can be brought home, washed and used again.
- ◆ **Always recycle** the aluminum cans, glass bottles, plastic bottles and plastic containers found in your packed lunch.



The answer is on the back cover.

This activity page is an excerpt from "Understanding Marine Debris, Games and Activities for Kids of all Ages."



Gulf of the Farallones National Marine Sanctuary

includes nurseries and spawning areas for fish and shellfish; at least 36 species of marine mammals have been observed; and 160 species of birds use the sanctuary for shelter, food, or as a migration corridor. One-fifth

of California's harbor seals breed within the sanctuary. The Farallon Islands are home to the largest concentration of breeding seabirds in the contiguous United States, and the sanctuary protects a number of estuaries, bays and beaches for the public to enjoy.



Cordell Bank National Marine Sanctuary

is an underwater mountain that rises to within 120 feet of the surface with water depths reaching over 4,000 feet only a few miles away. This productive area off of Point Reyes, Calif., is a summer feeding ground for whales, Pacific salmon and

bottom fishes. The prevailing California current flows southward along the coast, and the upwelling of nutrient rich, deep ocean water stimulates the growth of organisms at all levels of the marine food webs. The sanctuary is a destination feeding ground for many migratory marine mammals and seabirds.



Oly Ma

3,3 wat Pen hor and of K thri ties. This sanctuary is also r over 150 documented historic contemporary cultures of the Quileute Nations.



Monterey Bay National Marine Sanctuary

is the nation's largest marine sanctuary, spanning over 5,300 square miles of coastal waters off Central California. Within its boundaries are a number of habitats, from rugged rocky shores and lush kelp forests to an underwater canyon, which is

over 10,000 feet deep. The sanctuary contains a great diversity of habitats and marine life. More than 450 species of algae grow here. And, 33 species of marine mammals, 94 species of seabirds, 345 species of fish, four species of sea turtles and thousands of invertebrates have been recorded in its waters.

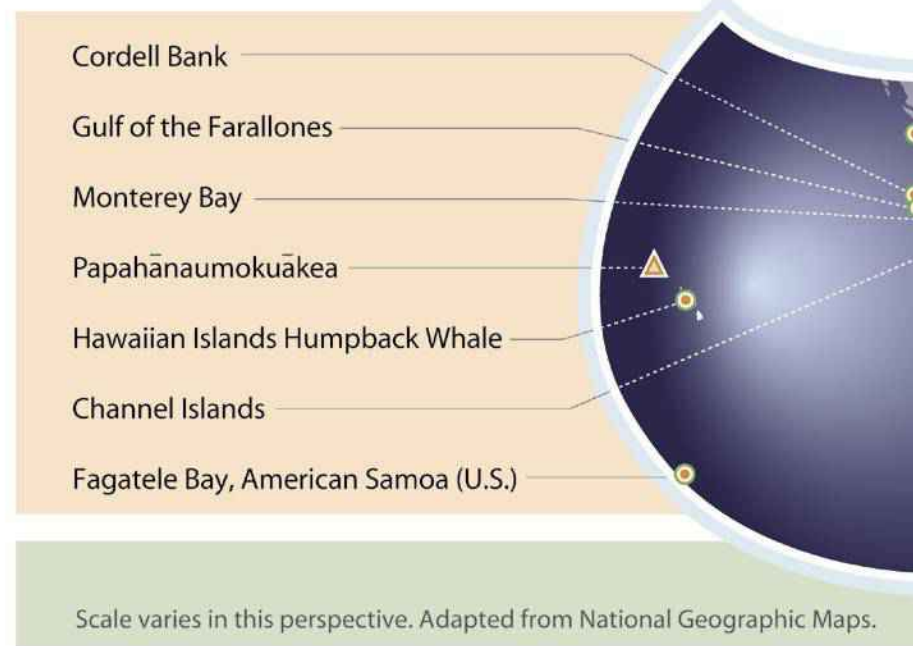


Channel Islands National Marine Sanctuary

encompasses the waters surrounding San Miguel, Santa Rosa, Santa Cruz, Anacapa and Santa Barbara Islands off the coast of California. The combination of warm and cold water currents results in a great variety of plants and

animals, including large forests of giant kelp, flourishing populations of fish and invertebrates, and abundant and diverse populations of whales, dolphins, sea lions, harbor seals and marine birds.

NATIONAL MARINE



Papahānaumokuākea Marine National Monument

contains one of the last large scale, predator-dominated coral reef ecosystems in the world. Its waters are habitat for over 7,000 marine species, a quarter of which are found only in Hawai'i. These include many endangered and

threatened species such as the Hawaiian monk seal and green sea turtle. The Monument is the largest fully-protected marine conservation area in the world. It encompasses 137,797 square miles of the Pacific Ocean—an area larger than all the country's national parks combined.



Hawaiian Islands Humpback Whale National Marine Sanctuary

lies within the shallow, warm waters surrounding the main Hawaiian Islands and is one of the most important humpback whale habitats in the world. Scientists estimate that two-thirds of the entire North Pacific humpback

whale population migrate to Hawaiian waters each winter to engage in breeding, calving and nursing activities. The continued protection of humpback whales and their habitat is crucial to the long-term recovery of this endangered species.



Fag

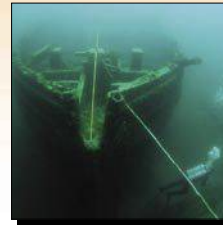
Ma a fr con can Fag sma one onl species of corals, macroinvertebrates have been recorded in the water Marine Sanctuary.



Olympic Coast National Marine Sanctuary spans 10 square miles of marine waters off the rugged Olympic Peninsula. The sanctuary is home to many marine mammals, seabirds, diverse populations of kelp and intertidal algae, and a living invertebrate community rich in cultural resources, with ancient shipwrecks and the vibrant Makah, Quinault, Hoh and



Gerry E. Studds Stellwagen Bank National Marine Sanctuary sits at the mouth of Massachusetts Bay between Cape Ann and Cape Cod. The 824-square-mile sanctuary encompasses mud-filled basins, rock ledges, boulder fields and the gravel and coarse sand bank that was formed by retreat of glaciers from the last ice age. The endangered northern right whale migrates through Stellwagen Bank National Marine Sanctuary. It is an important species to protect as there are currently only about 300 right whales left in the North Atlantic.



Thunder Bay National Marine Sanctuary and Underwater Preserve has an estimated 115 shipwrecks being well-preserved by the cold, fresh waters of Lake Huron within its 448-square-mile boundary. From wooden schooners to sidewheel steamers to modern freighters, the shipwrecks of Thunder Bay represent a cross-section of Great Lakes maritime history. Lake Huron's unpredictable weather—its murky fog banks and sudden gales—coupled with rocky shoals helped Thunder Bay earn the unfortunate name of “shipwreck alley.”

NE SANCTUARIES



Monitor National Marine Sanctuary was designated the nation's first national marine sanctuary in 1975. The site protects the wreck of the USS *Monitor*, a Civil War vessel that lies off the coast of North Carolina to safeguard our maritime past.

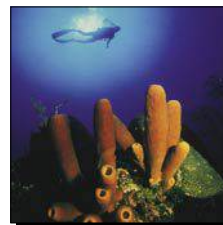


Gray's Reef National Marine Sanctuary, one of the largest nearshore sandstone reefs in the southeastern United States, is located just off the coast of Georgia, in waters 70 feet deep. Gray's Reef 'live bottom reef' consists of sandstone outcroppings and ledges up to three meters in height, with sandy, flat-bottomed troughs between. Because of the diversity of marine life, Gray's Reef is one of the most popular sport fishing and diving destinations along the Georgia coast.

Fagatele Bay National Marine Sanctuary embraces a thriving coral reef ecosystem contained within an eroded volcanic crater in American Samoa. Fagatele Bay is our nation's smallest marine sanctuary at one-quarter square mile and our only true tropical reef. Over 600 invertebrates, fish and microalgae species of Fagatele Bay National



Flower Garden Banks National Marine Sanctuary lies 100 miles off the coasts of Texas and Louisiana where three underwater 'gardens' emerge from the depths of the Gulf of Mexico. The Flower Garden and Stetson Banks are salt domes with coral reefs sitting on top of them on the edge of the continental shelf. These premier diving destinations harbor the northernmost coral reefs in the continental United States and serve as regional reservoirs of shallow-water Caribbean reef fishes and invertebrates.

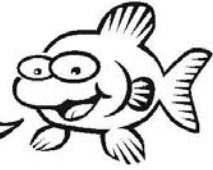


Florida Keys National Marine Sanctuary supports one of the most diverse groupings of underwater plants and animals in North America. Although best known for its coral reefs, the shallow waters contain marine habitats that include fringing mangroves, seagrass meadows, hardbottom regions, as well as patch and bank reefs. The sanctuary provides North America's only living coral barrier reef, and the third longest barrier reef in the world.



How Long Will it Take?

It takes just a moment for an item to be carelessly discarded or blown by wind into the ocean, but it can take many, many years for that item to completely decompose. Test your knowledge about decomposition times. Draw a line between each item (left) to its corresponding decomposition time (right).



How Many Years Will it Take for These Items to Decompose in the Ocean?



Fishing Line



Cigarette Filter

Undetermined

600 Years



Aluminum Can



Glass Bottle



Banana Peel

450 Years

200 Years

50 Years



Milk Carton



Styrofoam Cup



Plastic Beverage Bottle

1-5 Years

3 Months

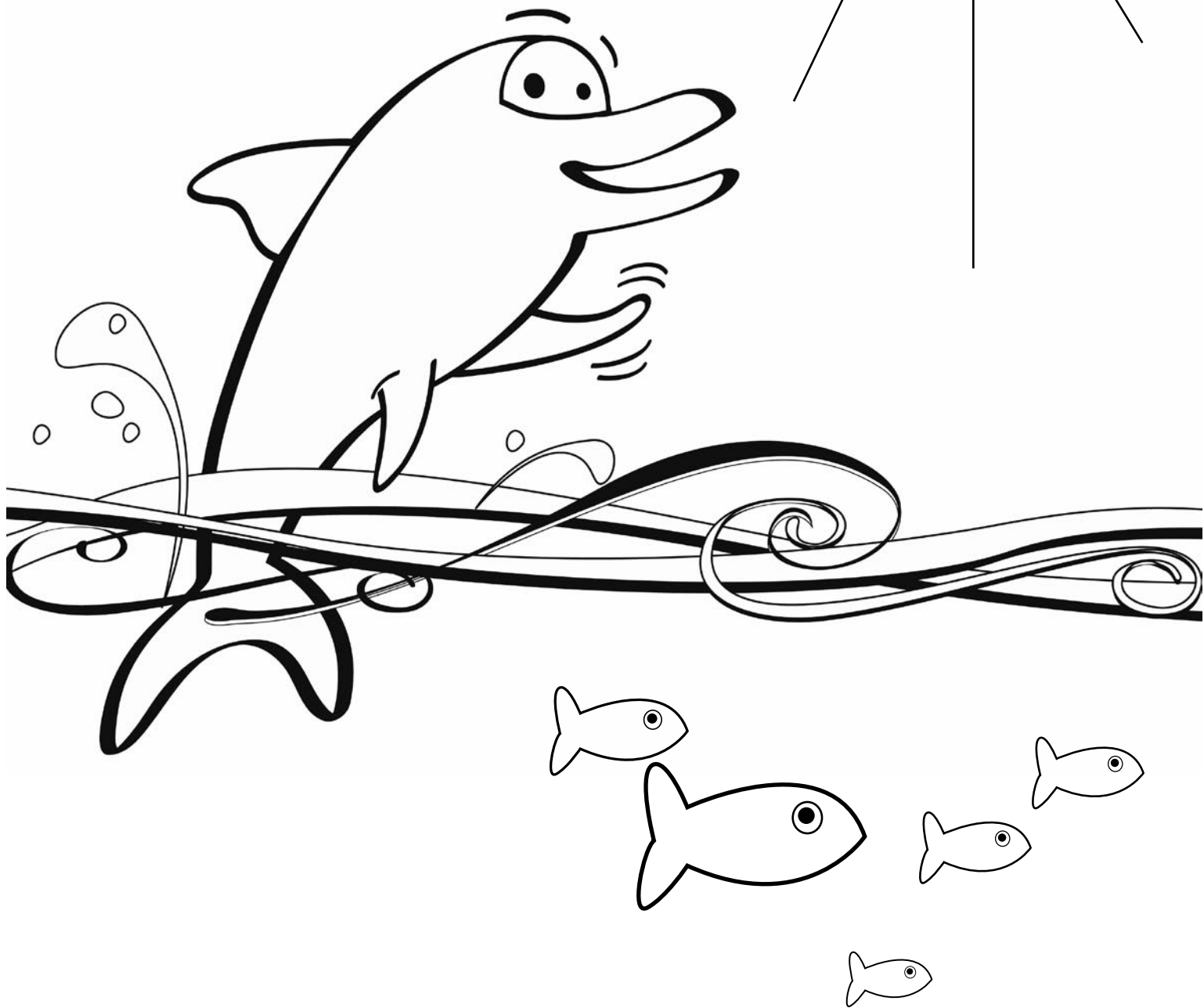
2-6 Weeks

The answers are on the back cover.

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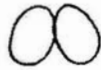


Color Me!



How to Draw a Monk Seal

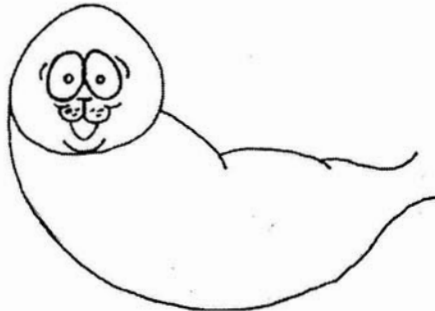
DIRECTIONS: USE A PENCIL, FOR YOU WILL HAVE TO ERASE A LINE AT THE END. WHEN YOU ARE FINISHED, YOU CAN TRACE OVER THE PENCIL LINES IN PEN OR COLOR YOUR SEAL.



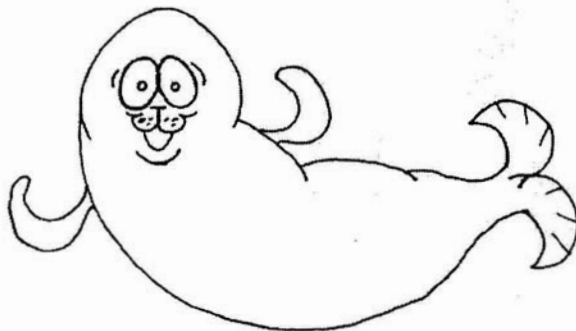
1. Draw two oval eyes.



2. Draw the face, nose and mouth.



3, Draw dots in and next to the eyes. Draw a chin and dots for whiskers near the nose. Draw the body.



4. Draw flippers and a tail. Erase the bottom portion of the head leaving the chin. You are finished!

There are fewer than 1500 Hawaiian monk seals left in the world. Baby monk seals (called pups) make a "mwaa, mwaa, mwaa" sound when calm and a loud "aaah" or "gaah" when scared. Adults make a "bubbling" sound when alarmed.



ILLUSTRATIONS BY BEN LUEDERS





Ocean Guardian Pledge:

Because I want to help the ocean and all the creatures that live in it and around its shores, I pledge today to do these things and accept membership into the NOAA National Marine Sanctuary Program's Ocean Guardian Kid's Club:

- Conserve water.
- Reduce waste and dispose of trash properly.
- Reuse or repurpose products to extend their usable life.
- Recycle disposable items and use products made of recycled materials.
- Be considerate of ocean wildlife and seabirds.
- Clean up the beach, park, or river and leave it better than I found it.
- Devote time every year to community service to benefit and beautify the environment.
- Increase my own awareness of the effects that I have on the ocean and our environment.
- Learn all I can about the environment, including special ocean areas like national marine sanctuaries.
- Promote ocean awareness and pass on my knowledge to friends and family.
- Encourage my family and friends to protect the ocean and our environment.

Signature

Print Your Name

Date





NOAA Office of National Marine Sanctuaries

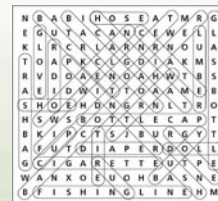
The NOAA Office of National Marine Sanctuaries seeks to increase the public awareness of America's marine resources and maritime heritage by conducting scientific research, monitoring, exploration and educational programs. Today, the sanctuary program manages thirteen marine sanctuaries and one marine national monument that together encompass more than 150,000 square miles of America's ocean and Great Lakes natural and cultural resources. Marine protected areas are living classrooms where people can see, touch and learn about our nation's underwater treasures, as well as protect them for future generations. The ocean sustains life on Earth, so find out more about these special ocean areas and what you can do to help at www.sanctuaries.noaa.gov/education.

NOAA Marine Debris Program

The NOAA Marine Debris Program, part of the Office of Response and Restoration, supports a national and international effort focused on preventing, identifying, and reducing the occurrence of marine debris. These efforts protect and conserve our nation's natural resources, ocean, and coastal waterways from the impacts of marine debris. The Marine Debris Program coordinates, strengthens, and increases the visibility of marine debris issues and efforts within NOAA, its partners, and the public. Learn more about what you can do to save our ocean and coastal waters from marine debris at www.marinedebris.noaa.gov. Also visit the Marine Debris Program's "Marine Debris 101" educational Web site where you can download informative marine debris brochures, posters, fact sheets, guidebooks, curriculum, and activity book tailored to specific audiences - <http://marinedebris.noaa.gov/marinedebris101/>.

ANSWERS:

Word Find (Page 2).



Which One is Different (Page 3).

The lunchbox that is different is found in the center of the bottom row of lunchboxes (hint: look at the "chips" bag closely).

Marine Debris Match Up (Page 6).

Glass bottle = undetermined
Fishing line = 600 years
Plastic beverage bottle = 450 years
Aluminum can = 200 years
Styrofoam cup = 50 years
Cigarette filter = 1-5 years
Milk carton = 3 months
Banana peel = 2-6 weeks

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