

Earth Hero: _____
Name

Grade: _____

Date: _____



*Don Edwards SF Bay
National Wildlife Refuge*

VIRTUAL EARTH DAY

Are you ready to be an Earth Hero?

EARTH DAY ACTIVITIES

Join the Mission!

Visit www.fws.gov/sfbayrefuges/

**APRIL 22ND
2021**



San Francisco Bay
Wildlife Society



NATIONAL
WILDLIFE
REFUGE SYSTEM

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EARTH DAY PLEDGE

Make a pledge to protect the Earth, every day



San Francisco Bay Wildlife Society

EARTH DAY HISTORY

Read the passage below to get a better idea of why we celebrate Earth Day!

Happy Earth Day!

This packet provides ways that you can help make your community a better place to protect our Earth, its resources, and its people. As Earth Heroes, you can find multiple ways to protect our planet by completing each activity in your classroom or at home.



HISTORY OF EARTH DAY

Our planet is a beautiful place, but it also needs our help to keep it that way!

The first Earth Day was celebrated on April 22nd, 1970. After hearing from his voters, Senator Nelson of Wisconsin called upon the nation to host a national demonstration of concern for the environment. People were starting to notice the negative impact of pollution and cutting down trees on the Earth and its plants, animals, and people. On that day in 1970, Nelson spoke at an event and stated,

“Our goal is not just an environment of clean air, and water, and scenic beauty. The objective is an environment of decency, quality, and mutual respect for all other human beings and all living creatures.”

He advocated for a movement that fought for the planet and its people, and demonstrations took place across the country. However, the global environmental movement would not have been possible without the incredible writing of Rachel Carson in her book *Silent Spring*. Carson advocated against the use of toxic chemicals that polluted water and other precious resources. Her work helped people understand ways they could protect the planet individually and together.

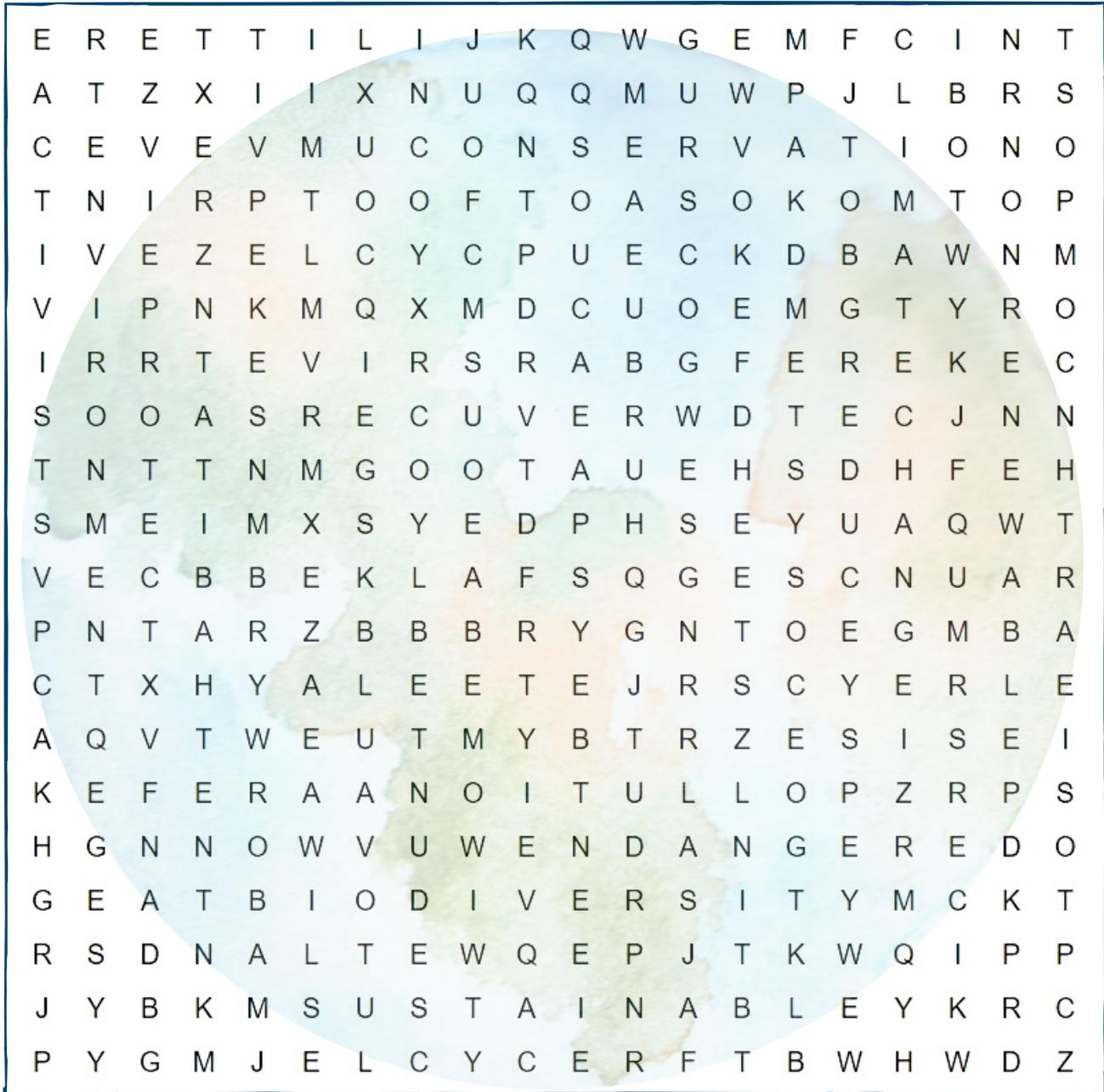
After that first Earth Day in 1970, many people came together to learn and recommend that we all do more to protect the planet. Because the people cared, the U.S. government created the Environmental Protection Agency to help keep the Earth healthy.

Now, every year on April 22nd, billions of people celebrate the Earth and participate in ways to protect it! By picking up litter or recycling, you can help save the Earth from pollution. By learning about climate change and the environment, you can help conserve our natural resources.

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EARTH DAY WORD SEARCH

Find the words from the list in the puzzle below. Words may go up and down, forward and backward, or diagonal. Circle each word as you find them!



activist
biodegradable
biodiversity
climate change
compost

conservation
earth
ecosystem
endangered
energy

environment
footprint
habitat
litter
nonrenewable

pollution
protect
recycle
reduce
renewable

resources
reuse
sustainable
upcycle
watershed
wetlands

EARTH DAY VOCABULARY



Use the following vocabulary words to help you through this packet. You can reference these definitions at any time to help you on your way to becoming an Earth Hero!

Activist: Someone who works to bring about positive change.

Biodegradable: A substance that can be decomposed by bacteria or other living organisms, breaking down into natural elements that are not harmful to the environment.

Biodiversity: The variety of life, like the different types of plants and animals, found in a habitat or the entire Earth. Scientists can measure the health of a habitat by its biodiversity.

Carbon Dioxide: A gas released by human activities that traps heat in Earth's atmosphere.

Climate: The average measurements of temperature, wind, and rain over the years.

Climate Change: The long-term changes in global temperatures that are happening much faster because of human activity.

Compost: Making food waste into a type of fertilizer by breaking it down into substances that are healthy food for soil, which helps plants grow.

Conservation: The wise use and protection of the Earth's natural resources like water, soil, animals, and plants so that they will still be around in the future.

Earth: The only planet in our solar system that can support life; it's our home!

Ecosystem: All of the living and nonliving things in an area and their environment. These plants, animals, water, rocks, and soil all make up a community and interact with each other.

Endangered Species: Any plant or animal species that is in danger of disappearing forever.

Renewable Energy: Energy that comes from natural processes like wind, water, and the Sun and will not run out. It is also called "Clean Energy" because it will also not pollute the air or water.

Environment: Where we live, work, eat, and play. All of the physical surroundings on Earth, including all living and nonliving things that rely on the environment to survive.

Ecological Footprint: The measurement of the impact of activities of a person or community on the environment. You can measure your carbon footprint by counting the amount of carbon dioxide released into the atmosphere or measure your water footprint by calculating your water usage.

The Greenhouse Effect: A process that happens when gases in Earth's atmosphere trap in the Sun's heat and is one of the causes of climate change.



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EARTH DAY VOCABULARY

Habitat: A place where an animal lives that provides it with food, water, and shelter; everything it needs to survive!

Litter: Trash that is not disposed of properly and can pollute the environment.



Nonrenewable Resources: Natural resources that cannot be replaced after they are used. Fossil fuels like oil, natural gas, and coal are examples of nonrenewable resources.

Pollution: The introduction of a harmful substance into an environment; the destruction or contamination of a natural resource.

Protect: To keep safe from harm. We can defend the Earth and its environment from danger by conserving our resources!

Recycle: The act of taking materials that are no longer useful and changing them into new, usable items. Recycled plastics can be turned into storage containers, shopping bags, even new backpacks!



Reduce: To use less of our natural resources to avoid waste.

Renewable Resources: Natural resources that cannot be used up within the span of our lifetimes. Resources like water, air, soil, and plants are examples of renewable resources.



Resources: Something that can be used for a purpose or to satisfy a need. We need to eat when we are hungry, and food is our resource!

Reuse: To use again; finding a new use for an item instead of throwing it away.

Sustainability: Using natural resources in a way that allows us to keep using them for a long time. We are sustainable when resources meet our needs without waste. When we actively try to reduce waste, we allow future generations to meet their needs too.



Upcycle: Reusing a waste item by turning it into something more useful and keeping it from a landfill.

Watershed: The entire land area where water drains and collects from rainfall. Watersheds are divided by ridges of high land, and the water from many sources travels to a common point or an eventual outflow point such as a bay.

Wetlands: A place where land and water meet; land flooded by water either permanently or seasonally. Wetlands are important to combating climate change because they can store excess carbon in their plants and soils.



LEND A HAND TO THE EARTH



Every person can take action to help the environment both as individuals and as a community, leading us to a healthier future.



INTRODUCTION

As the next generations of leaders and voters, you have the power to take positive action to protect the environment. In this activity you will create a "handprint" that will have the description of one way you can help the Earth. Show us how you will take action!

MATERIALS

- 2 Construction papers
- Markers
- Scissors

EARTH DAY FUN FACTS!

1. The theme for Earth Day 2020 was "CLIMATE ACTION."
2. Every year in the U.S., nearly 200 billion beverage containers are sold, 2/3 of which are incinerated, littered, or end up in landfills.
3. 20 million people across the world participated in the very first Earth Day in 1970.
4. About 8 million tons of plastic end up in our oceans every year.

For more information you can visit :
https://www.fws.gov/refuge/don_wards_san_francisco_bay/



INSTRUCTIONS

1. Select your construction paper which has been provided.
2. Place your non-dominant hand on the paper with your fingers slightly separated, and begin tracing your hand with a marker.
3. Carefully cut out your traced hand with a pair of scissors.
4. Using a blank piece of paper, glue your cut-out hand to the center of the page.
5. Now write down one or more actions on your traced hand to describe how you will take action in protecting the environment! You can use markers, pens, colored pencils or anything you have.



San Francisco Bay National Wildlife Refuge Complex

DON EDWARDS SF BAY NWR



Your friendly neighbor and National Wildlife Refuge Ambassador!



WHO IS CALI?

Cali is a California Ridgway's Rail - a special bird that lives only in the marsh habitats surrounding the San Francisco Bay! Cali eats small crustaceans buried in the mud of the salt marsh and can even drink salt water. They make their homes in dense and grassy vegetation stays hidden most of the time. This incredible bird species is also endangered.

WHAT DOES IT MEAN TO BE ENDANGERED?

An endangered species is an animal or plant species whose population has decreased and is now at risk for extinction.

WHY IS CALI ENDANGERED?

The California Ridgway's Rail population is endangered due to habitat loss and over-hunting. Over the past 150-200 years, marshes surrounding the Bay have been changed greatly due to human development. Because Cali can only live in the marsh, the species did not have enough room to thrive

WHAT IS BEING DONE TO PROTECT CALI?

The Don Edwards San Francisco Bay and San Pablo Bay National Wildlife Refuges, along with other land protection agencies across the Bay, are protecting and restoring the habitat that Cali needs to survive!



CHECK OUT CALI'S HOME!



Leave a comment and a like.



HOW CAN YOU HELP US PROTECT CALI?

Not many people know about California Ridgway's Rails because they are very secretive birds that do not often venture out of their grassy homes. You can also help Cali by throwing away your trash and recycling, as this helps prevent pollution from entering our watersheds, marshes, and the Bay!





SALINAS RIVER NWR

Your friendly neighbor and National Wildlife Refuge Ambassador!



WHO IS SNOWY?

Snowy is a Western Snowy Plover, who also happens to be the mascot of the Salinas River National Wildlife Refuge. Snowy is a small, white bird with black patches on its shoulders. Western Snowy Plovers make their home on sand near the edges of coastal ocean beaches. Their nest are shallow nooks in the sand where their speckled eggs camouflage perfectly.

WHAT DOES IT MEAN TO BE ENDANGERED?

An endangered species is an animal or plant species whose population has decreased and is now at risk for extinction.



WHY IS SNOWY ENDANGERED?

The Western Snowy Plover population is threatened due to habitat loss and human disturbance. Today there are only 28 major nesting areas remaining. Unfortunately, their camouflage works so well that humans often disturb their nests, not realizing they are there.

DRAW SNOWY WITH THE REFUGE RANGER!



Comment and Like



WHAT IS BEING DONE TO PROTECT SNOWY?

The Salinas River NWR, along with other partners, team up to monitor Snowy Plovers in the wild. Markers in the sand let visitors know which areas are being protected as vulnerable nesting sites. Biologists keep a close eye on the Plover nests and watch their progress.

HOW CAN YOU HELP US PROTECT SNOWY?

Let people around you know who Snowy is, and why this species is important. You can also help Snowy by respecting the fences placed around beaches. Human activities such as littering and plastic pollution can affect not only Snowy, but other important shorebirds.



THE THREE 'R'S YOU SHOULD KNOW

Reduce, Reuse, Recycle — Three great ways YOU can eliminate waste and protect your environment!

WHAT IS UP WITH YOUR WASTE?

Waste, and how we choose to handle it, affects our world's environment—that's YOUR environment. The environment is everything around you including the air, water, land, plants, and human-made things. Don Edwards San Francisco Bay National Wildlife Refuge is made up of critical wetland habitats where litter and other wastes end up after traveling from urban areas upstream. The Refuge and its surrounding communities are all part of the same watershed, and it is up to us to prevent pollution in these beautiful places. Healthy habitats make for healthy people and a healthy Earth!

PLASTICS AND SHOREBIRDS

One of the largest threats to our local habitats is the impact of plastic pollution. Scientists are finding more plastics than food in the stomachs of shorebirds, and almost 90% of sea birds will eat plastics during their lifetime. We can all help reduce our plastic consumption and pollution by following the three 'R's - Reduce, Reuse, and Recycle!



REDUCE

To lessen -
Use natural resources wisely, and using less than usual in order to avoid waste.

REUSE

To use again-
You can "reuse" materials in their original form instead of throwing them away, or pass those materials on to others who could use them too!

RECYCLE

To make something new, fresh, or strong again- don't throw away anything that can be recycled

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REDUCE

There are many different ways we can help the Earth. Some of the best ways are using the 3 'R's of

sustainability

WHAT IS MY CARBON FOOTPRINT?

A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are produced by human activities.

The average carbon footprint for a person in the United States is 6 tons (one ton is about the weight of one African elephant). Globally the average is closer to 4 tons making the U.S. the highest rate in the world.

CALCULATE YOUR CARBON FOOTPRINT!

Find out your carbon footprint and see what actions you can take to help the Earth

SCAN
THE
QR
CODE



Take the Challenge to Reduce Your Footprint

Day 01



Calculate
Carbon Footprint

Day 02



Use a reusable
shopping bag
twice this week.

Day 03



Don't use a car for
a day. Walk or ride
a bike.

Day 04



Shower for
5 minutes.

Day 05



ZERO
Technology Day

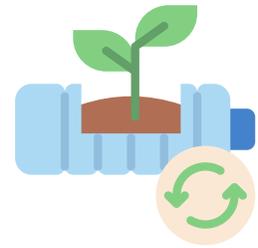
Day 07



Have a plant
(vegetable) based
meal

REUSE

Upcycled Seed Starters



WHAT DOES IT MEAN TO REUSE OR UPCYCLE SOMETHING?

Turning an object that would usually be trash into something else more useful is called **UPCYCLING**. Upcycling is a great way to not only reuse an everyday item, but turn it in to something better. An easy way to make sure household trash does not just go to the landfill is to make those everyday items into seed starters.

EXAMPLES

Examples of household waste items you can **reuse** as seed starters.

- Yogurt cups
- Egg Cartons
- Takeout containers
- Small milk cartons
- Empty jars
- Disposable cups
- Empty toilet paper rolls

WHY UPCYCLE?

Instead of recycling or throwing away these items when you finish with them, you can give them a new life through upcycling while you help new plants grow!

LANDFILLS & WATER POLLUTION

Landfills are a threat to our watershed and it is important to keep recyclable and reusable materials out of our landfills.

INSTRUCTIONS

1. Rinse your **reused** container well.
2. Decorate the outside of your container however you want! Paint, markers, and stickers work well. You can also glue or tape paper to the outside. If you can, write the name of the seed you are planting on the outside.

You can even decorate your seed starters to honor Earth Day!



POTTING INSTRUCTIONS

3. Fill your container with about two inches of soil. Make a small divot in the top of the soil with your finger and place your seed inside. Cover up with a little more soil and water lightly.
4. Place your seed starter near a sunny spot like a window ledge, and follow any other directions on your seed packet.
5. Water regularly and watch its progress as your little seed grows big and strong. Eventually, you can move your growing plant outside to be planted in the ground or in a bigger plant pot.

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RECYCLE

Recycling Decision Tree



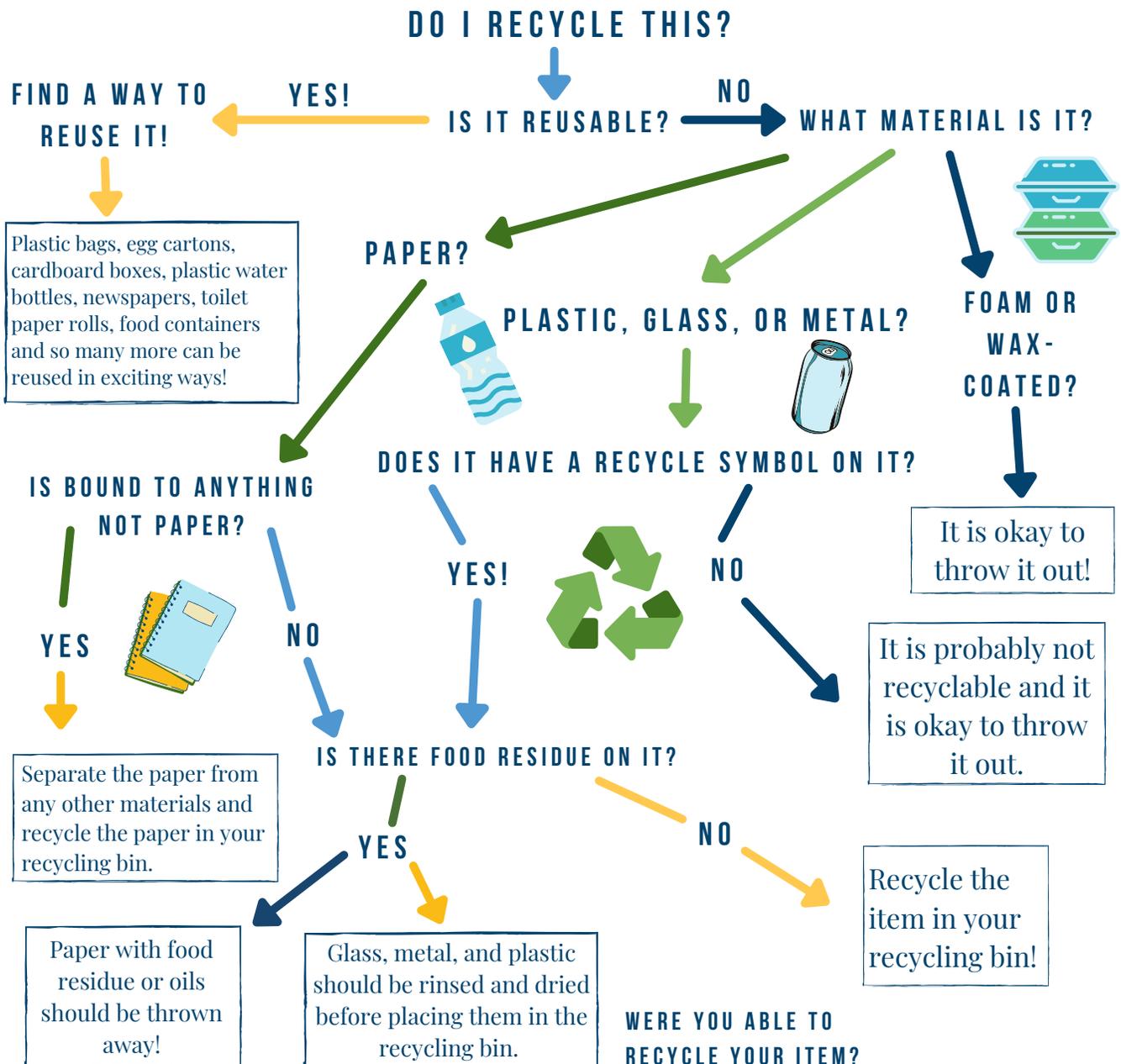
INSTRUCTIONS

Pick a waste item like a plastic bottle or an old notebook and follow the decision tree to determine where the item should go after you no longer need it. With a pencil, trace your path through the tree.

How can you tell if something is recyclable?

Not all recyclable materials have the helpful recycling symbol to let you know what to do with an item after it is no longer useful. It is important to take the time to evaluate waste items and dispose of them properly, whether it be in the trash or recycling. It is also necessary to make sure the items you recycle are clean so your trash service can recycle them well.

WHAT ITEM DID YOU CHOOSE? _____



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EARTH DAY PLEDGE

Celebrate Earth Day, All day, Every day

Dear Earth Hero:

The Earth gives us all we need to live: from the air we breathe, the water we drink, the food we eat, and the clothes we wear. Earth Day is a day that we can celebrate our planet and all that it gives us. By reducing our waste, recycling properly, and reusing items we help out our fellow plants and animals like the Western Snowy Plover or the California Ridgway's Rail; at the same time, we are saying 'thank you' to the Earth. There are many more ways we can say thank you to our beautiful planet like enjoying your local outdoors spaces, or telling people about the ways they can help. When we work together we can make our planet a safe and healthy place for all.



WHICH ACTIVITIES DID YOU COMPLETE?

- Earth Day Word Search
- Lend a Hand to the Earth
- Refuge Ambassador
- Reduce
- Reuse
- Recycle
- Earth Day Pledge
- BONUS: Earth Day, Every Day

You are an Earth Hero; you have the power to make the Earth a happy and healthy place. By writing your name on the line below, you pledge to celebrate the Earth every day, in the best way you can.

Thank you for completing the Earth Day Packet from the
San Francisco Bay National Wildlife Refuge Complex!

Your Signature

If we celebrated Earth Day every day, what would the world look like?

Use the space below to draw or paint a picture, write a story or poem. Your story, poem, or art piece will be posted to view at the Environmental Education Center at the Don Edwards San Francisco Bay National Wildlife Refuge. Please detach this page, cut off the top portion, and mail it to the EEC.

PO Box 411, Alviso, CA 95002

THANK YOU TO:



**NATIONAL
WILDLIFE
REFUGE SYSTEM**

The National Wildlife Refuge System protects some of the country's most iconic ecosystems and the fish and wildlife that rely on them. The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.
Learn more at: www.fws.gov/refuges



The San Francisco Bay Wildlife Society is a not-for-profit 501(c)(3) Friends group, authorized by Congress to support the education, interpretation, and research activities of the U.S. Fish and Wildlife Service. The San Francisco Bay Wildlife Society seeks to nurture in the public a sense of understanding, appreciation, and stewardship of the San Francisco Bay National Wildlife Refuges, their natural and cultural history, and to conserve, preserve, and restore bay lands as essential wildlife habitat.
Website: <http://sfbayws.org/>



**Santa Clara Valley
Urban Runoff
Pollution Prevention Program**

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Program) is an association of thirteen cities and towns in Santa Clara Valley, the County of Santa Clara, and the Santa Clara Valley Water District that share a common National Pollutant Discharge Elimination (NPDES) municipal stormwater permit to discharge stormwater to South San Francisco Bay. The Program and member agencies implement pollution prevention, source control, monitoring and outreach programs aimed at reducing pollution in stormwater runoff, protecting water quality and beneficial uses of San Francisco Bay and Santa Clara Valley creeks and rivers.
Website: <http://www.mywatershedwatch.org/>



Long time wildlife refuge neighbor and partner of the San Francisco Bay National Wildlife Refuge Complex.