

Keep Exploring!



EcoHEROES



Name: _____

To explore other curriculum and activities developed by
Central Utah Water Conservancy District head to:
<https://cuwcd.com/education.html>

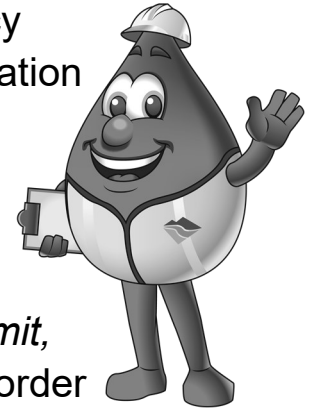
 Central Utah Water STEM Club Passport

Who is Central Utah Water?



Central Utah Water Conservancy District is a government organization with the mission to move water across county boundaries.

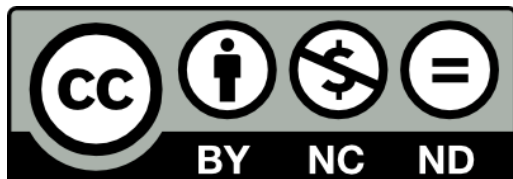
We have 8 counties located within the District (*Duchesne, Juab, Salt Lake, Sanpete, Summit, Uintah, Utah, and Wasatch*). In order to meet our mission of moving water, Central Utah Water stores water in 9 reservoirs, maintains over 180 miles of large diameter pipelines, and runs 3 regional drinking water treatment plants.



In addition to our primary responsibility to move water, Central Utah Water is the second largest producer of hydropower in the State of Utah, works to protect endangered species, supports community based water conservation projects, and is a regional leader in water education.

To learn more about Central Utah Water and our work in the community go to CUWCD.com

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FURTHER ADVENTURES



Just because this club is done, doesn't mean you have to end the fun! H₂Joe has done his research and found you a bunch of other environmental science related activities and games that you can do at home.

EPA - Test Your WaterSense

<https://www.epa.gov/watersense/watersense-kids>

National Geographic - Recycle Roundup

<https://kids.nationalgeographic.com/games/action-and-adventure/recycle-roundup-new/>

NOVA - Energy Lab

<https://www.pbs.org/wgbh/nova/labs/lab/energy/>

Smithsonian- Habitats Game

<https://ssec.si.edu/habitats>

Welcome to the EcoHeroes STEM Club! Together we will be tackling 3 unique activities, each one exploring a different way that we can help protect our planet. If you work as a team to defeat all 3 challenges a special surprise will greet you at the end of the club. So roll up your sleeves and let's change the world!



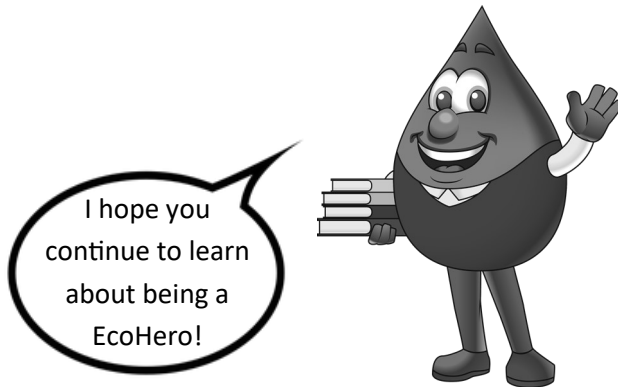
Activity 1 - Water Warrior



Activity 2 - Ultimate Upcycler



Activity 3 - Habitat Hero





WATER WARRIOR

Water is an incredible molecule that is required for all life on planet earth. Water is a limited resource and every single drop is constantly being recycled through a process called the water cycle. Water Warriors across the globe work hard to protect, manage, and conserve this precious resource so that everyone in their communities has access what they need.

For The Water Warrior Activities I Need...

- A Stopwatch
- Calculator *(optional)*
- Large Bowl
- My Water Footprint
- Measuring Cup
- Glass of Tap Water
- Water Faucets

FUN FACT

The average American has a water footprint of 2057 gallons per day. That is enough to fill an Olympic sized swimming pool!

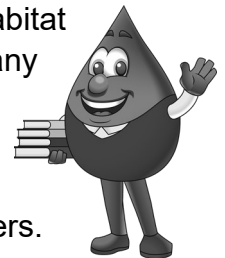


WAYS TO BECOME A HABITAT HERO



- Dispose of Litter Properly
- Plant Flowers for Pollinators
- Clean Your Shoes Before Hiking
- Don't Disturb Wildlife
- Become a Citizen Scientist
- Teach Others To Be Habitat Heroes

While anyone can become a citizen Habitat Hero in their communities, there are many who choose to make it their career. Habitat Hero professionals include Biologists, Wildlife Officers, Rangers, Educators, and Environmental Engineers.





MEET A HABITAT HERO

Jaimi Butler - Wildlife Biologist



“Most people don’t care about the Great Salt Lake because they have been taught that it is stinky, buggy, and ‘worthless’, when it is actually one of the most alive places on the planet.”

- Base:** The Great Salt Lake Institute at Westminster College
- Mission:** Connect people to the Great Salt Lake through education and research
- Required Training:** At least a bachelor's degree in wildlife, fisheries, or other environmental field
- How to become a sidekick:** Learn more about the Great Salt Lake and become a citizen science through projects like the PeliCam project!

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WATER WARRIOR



A Water Warrior’s journey often begins by learning about their water footprints. These water footprints allow them to understand how much water they use to complete different every day tasks. Once they have calculated their water footprint they are able to find ways to shrink their footprint and conserve water.

Water footprints are divided to pieces, the visible and invisible. Below write or draw down at least 10 things that have a visible water footprint and 10 with an invisible water footprint:

Visible

Invisible

3



WATER WARRIOR

Your visible water footprint is easy for you to spot and measure, because it is water that you can see, touch, or taste. Because it is so easy to see your visible water footprint it is a great place for a Water Warrior to get instant feedback on their conservation efforts.

How many cups does your water faucet produce in 1 minute?

How many people live in your town or city?

How many gallons of water would be saved everyday if everyone in your town or city turned off the water when they brushed their teeth?

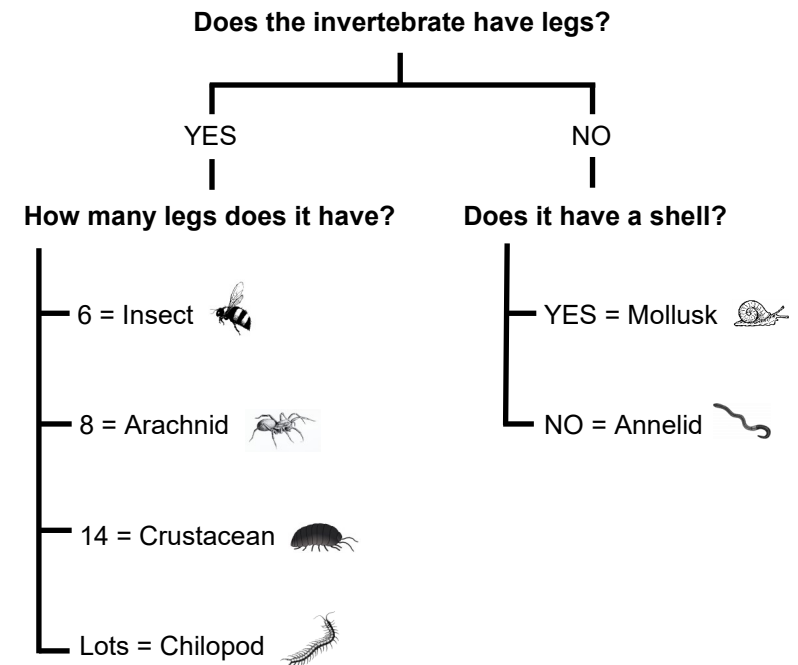


HABITAT HERO



Large creatures such as birds, mammals, or reptiles are not the only important organisms that can call our backyard habitats a home. Invertebrates such as bees, lady bugs, and spiders have special jobs that help keep ecosystems healthy.

There are lots of different types of invertebrates. Use this dichotomous key to determine if the invertebrate is an insect, arachnid, annelid, mollusk, crustacean or chilopod.





HABITAT HERO

Birds are one of the most colorful members of a backyard habitat. In order to keep the birds in our community happy and healthy, we need to make sure they have enough food and have access to materials to help

The types of birds you expect to see depends on the type of year. Here are some of species that are commonly found in Utah backyards.

Summer



American Robin



Mourning Dove



House Finch



Barn Swallow

Winter



European Starling



Black-Billed Magpie



House Finch



Black-Capped Chickadee

Bird sketches from the Audubon Society

WATER WARRIOR



Your visible water footprint is easy to observe and measure...In contrast your invisible water footprint, requires math to uncover because it measures how much water it takes to grow or create the stuff we use. Even though it is challenging to measure your invisible water footprint a Water Warrior does it so they understand the impact they have on the planet!

Using the My Water Footprint-School Lunch worksheet create meal you would want to eat that uses under specified amount of water.

1000 Gallons	750 Gallons
500 Gallons	250 Gallons



MEET A WATER WARRIOR

Chris Clemens - Water Quality Specialist



“It is important for different communities to work together to research and test for water quality threats and create plans to help them provide clean, safe drinking water to their citizens.”

- Base:** Water Supply Section at Orem City
- Mission:** Deliver clean and safe drinking water
- Required Training:** A Grade 4 Water Distribution License... Bachelor’s Degree in Environmental Science is a preferred addition
- How to become a sidekick:** Help protect your community’s water supply by keeping storm drains clean and reporting when your drinking water looks, tastes, or smells weird!



HABITAT HERO



Plant and animal habitats don’t just occur in completely wild places. In fact, some organisms do bests in habitats created by humans. Let’s explore what it takes to create a healthy backyard habitat.

In order for a plant or animal to survive, they need an environment that provides them with key resources. Identify examples of the different types of resources in local outdoor spaces below:

Food	
Water	
Shelter	
Space	





HABITAT HERO

We share our planet with many incredible creatures. Habitat Heroes work hard to make sure that plants and animals have the resources they need to survive and thrive.

For The Habitat Hero Activities I Need...

- Pinecone
- Seed Butter (such as peanut)
- Bird Seed
- Ribbon
- Clothes Pin
- Bamboo Sticks
- Tacky Glue

FUN FACT

The average American backyard has an estimated 300 different species living in or visiting it. These species include birds, insects, plants, and even mammals.

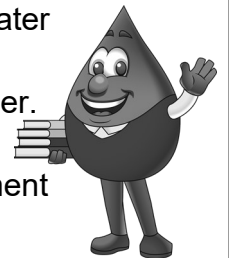


WAYS TO BECOME A WATER WARRIOR



- Tracking Your Water Footprint
- Fixing Leaks
- Turn Off The Faucet
- Use A Reusable Water Bottle
- Garden With Water Wise Plants
- Teach Others To Be Water Warriors

While anyone can become a citizen Water Warrior in their communities, there are many who choose to make it their career. Water Warrior professionals include Hydrologists, Engineers, Water Treatment Operators, and Landscape Architects.





ULTIMATE UPCYCLER

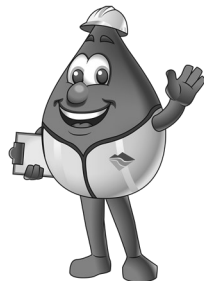
Everyone on planet earth produces waste, and the choices we make around that waste can have a big impact on our planet. Ultimate Upcyclers work hard not only to recycle, but also find creative ways to reuse materials and to reduce the amount waste they produce.

For The Ultimate Upcycler Activities I Need...

- | | |
|------------------|-------------------|
| Scissors | Ribbon |
| Tacky Glue | Makers (optional) |
| Empty Cereal Box | Various Packaging |
| Waste Paper | |

FUN FACT

The average American produces 1,704 pounds of trash every year...that is about three times more than the global average.

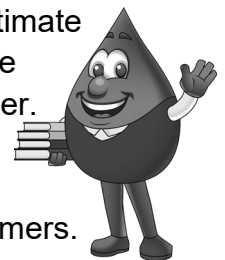


HOW TO BECOME AN ULTIMATE UPCYCLER



- Wash And Sort Your Recycling
- Try Composting Organic Waste
- Buy Things Second Hand
- Borrow Books From The Library
- Find New Uses For Worn Out Things
- Teach Others To Be Ultimate Upcyclers

While anyone can become a citizen Ultimate Upcycler in their communities, there are many who choose to make it their career. Ultimate Upcycler professionals include Waste Managers, Chemists, Sorters, Truck Drivers, Artists, and Farmers.





Mary Closser - Education Director











“Earth day should be every day of the year. We all need to be kind to our planet every single day.”

- Base:** Recycle Utah in Park City
- Mission:** Educate the public how to recycle
- Required Training:** A Master’s Degree in Environmental Science or Education
- How to become a sidekick:** Reduce the amount of waste that needs to be recycled by choosing reusable options like bringing a bag to the grocery store or using a reusable water bottle when hiking.

We have three tools to shrink amount of waste that enters landfills. These tools are called the 3 Rs and they are Reducing, Reusing and Recycling. The one that makes the biggest impact is reducing the amount of waste we produce.

Small actions can make a big difference. Look at each pair of items and circle the option that would reduce the amount of waste produced.

Paper Towels		Dish Towels	
Bar Shampoo		Bottled Shampoo	
Individual Cereal Box		Family Cereal Box	
Paper Mask		Cloth Mask	

Add Your Own Examples



ULTIMATE UPCYCLER

When something you own or buy wear out, it is important to think about creative ways we could reuse them. This process of finding new ways of using old things is called upcycling.

Replacing one-use packaging with an upcycled alternative is a great way to be an Ultimate Upcycler. Below sketch a design for your cereal box gift bag:











ULTIMATE UPCYCLER



If you can't reduce or reuse an item, then best option let it to recycle it. Recycling involves a community collecting certain types of waste then shipping them to a company to break the items down and turn them into something new.

Not every item can be recycled and not every community has the facilities to process items that can be recycled. In order to help people know what can be recycled were special symbols are added to packaging. Here are some examples:

 1 PET	Polyethylene Terephthalate	 22 PAP	Mixed Paper
 2 HDPE	High Density Polyethylene	 41 ALU	Aluminum
 4 LDPE	Low Density Polyethylene	 70 GL	Mixed Glass
 21 PAP	Cardboard	 71 GL	Clear Glass

