Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Chino Creek Wetlands and Educational Park

WATER SCOUT WORKBOOK

HI FRIENDS!

My name is Owlie and I am the mascot of the Chino Creek Wetlands and Educational Park. I'll be joining you on your journey to become a Water Scout! Here's how it works:

1) **Visit** the Chino Creek Wetlands and Educational Park with a parent, guardian or chaperone, and be sure to bring your Water Scout Workbook with you.

2) **Completely fill out** the workbook. Don't be afraid to ask your troop leader, parents or friends for help if you need it.

3) Once your workbook has been completed and signed off by your troop leader, ask them to **send an email** to *hceron@ieua.org* with "Water Scout Fun Badge" as the subject line and let us know you're ready to receive your badge.

4) A member of our team will **coordinate a pick up time** to pick up your badge from IEUA's Headquarters (6075 Kimball Ave, Chino, CA 91708).

5) **Congratulations**, you are an official Water Scout! Wear your badge proudly!

Good luck and remember to have fun!

Owlie

Where Does Water Come From?

Learn about the water cycle, where drinking water comes from and natural water systems.

Grab your favorite pens, pencils and markers!

Please draw your interpretation of the different locations listed below.

1. Cloud

2. Glacier

3. River

4. Lake

5. Animals

6. Plant

7. Soil

8.Groundwater

After you have completed your drawings, draw arrows to connect the locations. Remember to number your arrows as you work.

The following list is your guideline for your journey. Look at your map while you read the different ways water can travel from one location to the next.

1 Groundwater → Plants

- Plant roots absorb water through the process of osmosis.
- Groundwater is the water below our feet inside aquifers and one of the places humans get their drinking water.
- Aquifers are made from a series of rocks, soil and clay and collect runoff or rainwater as it soaks through the soil. As humans pump water out of the ground it must be replenished. Water treatment facilities like Regional Water Recycling Plant No. 5 at the Inland Empire Utilities Agency (IEUA) help by cleaning the water and pumping it back into the ground.

2 Plants → Clouds

- Just as people perspire, plants also lose moisture through their leaves. This process is called transpiration.

3 Clouds → Glacier

- Precipitation: Water released from the clouds in four (4) different forms—rain, snow, sleet, and hail.

4 **Glacier → River** 

- The frozen water is experiencing a phase change as it turns from a solid to a liquid.
- Phase change = Temperature changes can alter matter (like water), causing it to transform from one state to another.
- The three different states of matter are liquid, solid and gas.

5 **River → Lake** 

- Rivers transport water from one location to another. After the water flows down through the drainage basin, it will flow out to a large body of water such as a lake or ocean. This is what we call a watershed.
- Drainage basin = The streams and rivers that are connected and transport the water from the mountains to the ocean or lake.
- Watersheds and basins are naturally occurring shapes in nature. Mountains are most often formed by movement of the tectonic plates in the Earth's crust. Great mountain ranges like the Himalayas often form along the boundaries of these plates. Tectonic plates move very slowly. It can take millions and millions of years for mountains to form.

6 **Lake → Animals** 

- Many animals use lakes, ponds and rivers for drinking water.

7 **Animals → Soil** 

- Animals drink water, which is filtered through the kidneys and excreted from the bladder.

8 **Soil → Plants** 

- The roots absorb water and nutrients from the soil.

Scavenger Hunt Map

1. Pipe Man
2. Upside-down Boat Clarifier
3. Storm Drain Pipe #1
4. Amphitheater
5. Black Walnut Tree
6. California Sycamore Tree
7. Willow Trees
8. Storm Drain Pipe #2
9. Outlet

Why is Water Important for Life?

Scavenger Hunt

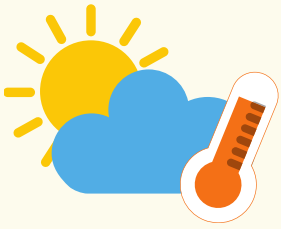
Look for Owlie to get your directions.

Visit the Chino Creek Wetlands and Educational Park to complete the tasks on the following pages.

1 Look for the #1 on your map to find our Pipe Man. Pipe Man is made from old digester pipes that were once part of a clarifier, a large tank used in the water recycling process. There are many structures throughout the park that are made from recycled materials.

Take a picture with our Pipe Man and insert the photo here.

2 Without looking up the temperature, use your senses to tell us about the weather. Is it hot or cold? Sunny or cloudy? Windy or rainy?



Write your observations.

_____

_____

_____

3 The next stop is the boat clarifier. Look for the #2 on your map. Clarifiers are part of the _____ process. This one has been flipped upside down for shade and holds information about water and the history of the region.

4 Once you're inside the boat clarifier, search for the sign that has dinosaurs on it. The water we drink today is the same water dinosaurs drank! This water is _____ years old.

5 Remember, your map is your guide through the Chino Creek Wetlands and Educational Park. You can see the walking trails, ponds and bridges. How many ponds does the Chino Creek Wetlands and Educational Park have? _____

Count the number of ponds on your map.

6 Find the large storm drain located at stop #3 on your map and stand inside. Look for signs about native vegetation.

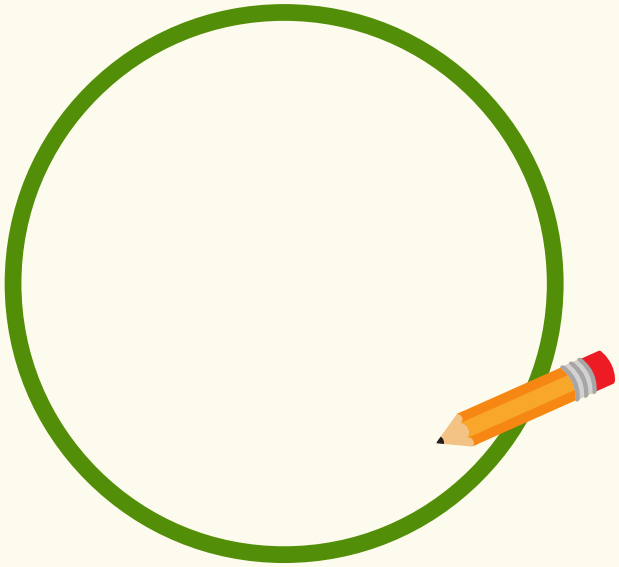
Name two types of native plants.

_____

_____

7 A woolly mammoth tusk and bones were found during construction of Regional Water Recycling Plant No. 5 (Next door to the Chino Creek Wetlands and Educational Park). As you walk through the storm drain into the amphitheater, look for a mammoth.
This is stop #4 on your map.

Draw a picture of the woolly mammoth you find.



8 Black Walnut Trees are deciduous plants, meaning that they shed their leaves during autumn and winter and grow them back during spring and summer. You can find this tree at stop #5.

Draw a picture of what you think the tree looks like during all four seasons.

Autumn	Winter	Spring	Summer

9 The watershed bridge is an excellent place to spot birds and other wildlife.

Draw a picture of any bird you see during your visit at the park.

10 Blackberry plants can be found throughout the park. Many people confuse them with ivy.

Take some time to observe the plant and fill in the following the information. We do not recommend touching the plant. Use your eyes to observe its different elements.

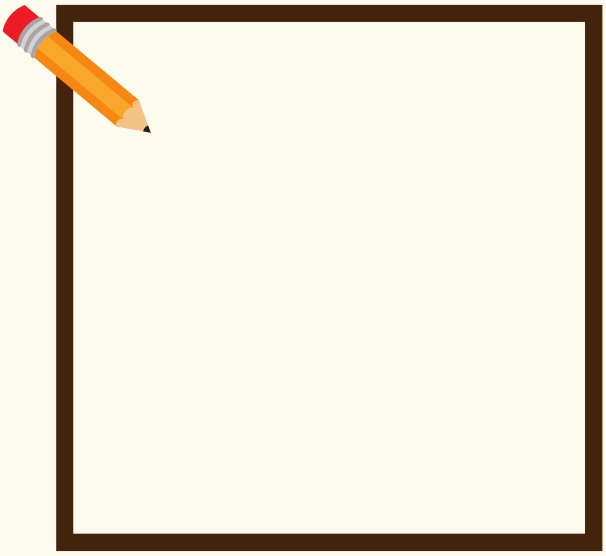
Color:

Leaf shape:

Leaf edges:

11 Head to stop #6 to see a California Sycamore. California Sycamores are commonly planted along city streets and schools, so it may look familiar!

Look closely at the leaves. Palmate leaves are the kind of leaves that look like your palm. They have five points and a large, flat surface. Spread your fingers out and look at the leaf next to your palm.



Draw a picture of one of the leaves.

12 As you stand on the _____ at stop #7, look around. Notice the tall trees with long, thin leaves. Those trees are a species of Willow.

The bridge stands over a small stream that has water just a couple of months per year. The Willows can access the groundwater because they have long roots that can reach far below the surface.

13 As you walk through the storm drain at stop #8, imagine you're the water rushing through the pipes.

Write down the kind of pollutants you think you would see in a storm drain. Be sure to check the signs around you.

_____

_____

_____

14 You'll notice a sign inside the pipe that says **Wrongville and Rightville.** This sign shows great ways to keep our watershed healthy. One example is to use a _____ instead of a hose to clean your driveway!

15 You may have noticed there are bird houses throughout the park. They were installed by an Eagle Scout and provide our tree swallows a safe place to build nests and care for hatchlings.

Take a picture of one of the birdhouses you see and attach it here.

16 At this point, you might have seen a few insects on your walk such as bees, butterflies or even spiders!

Draw a picture of an insect you saw today.

17 Do you hear a waterfall? Follow the sound to the outlet at stop #9. There are six ponds throughout the park. As the water flows through all of the ponds, it leaves pond _____ through the outlet which feeds into the Santa Ana River Watershed.

18 Purple Sage is a plant that you'll notice throughout the park. Smell the leaves and describe the scent.

_____

_____

_____

RP-5 Video Questions

The Regional Water Recycling Plant No. 5 (RP-5) video can be found on our YouTube channel, IEUAWater.

1. **How many steps are there in the recycled water treatment process?**

2. **What does FOG stand for?**

3. **How can we reduce the amount of grit in the water?**

4. **What does RP-5 stand for?**

5 **How do microorganisms remove contaminants in the wastewater?**

6 **What are the two zones in the aeration basin?**

7 **What is recycled water used for?**

Draw a Picture

Draw a picture of a water conservation practice you learned, or about your unique water cycle journey.

Answer 3 Main Questions

1 **Where does water come from?**

_____

_____

2 **Why is water important for life?**

_____

_____

3 **How do plants absorb water?**

_____

_____

I, _____ , certify that I have completed the Water Scout Workbook to the best of my ability and promise to use my knowledge to be an environmental steward today and every day.

_____

TROOP LEADER SIGNATURE

Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

(909) 993-1600 | **info@ieua.org**

@IEUAWater

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT