



Colorado Springs Utilities
It's how we're all connected

LEADER GUIDE

**Water Wise Demonstration Garden
discovery activities for youth**

Welcome Leaders! Here are a few instructions to get you started.

Before Your Visit:

- [Reserve](#) a time slot
- Review the Leader Guide and Student Workbook to familiarize yourself with the activities.
- Gather Materials to bring with you:
 - o pencils for each student.
 - o optional - blue painters tape, masking tape, or similar tape for Station 4 activity (tape is available on-site when the building is open, or bring your own).

During Your Visit:

- Pick up Leader Guides and Student Workbooks from the clear box located on the right side of the front entry.
- There are five stations, with four in the garden and one inside the building. You may do as many as you like and in any order.
- A map is included to help you find the starting point for each station.
- The Leader Guide gives you all the instructions for each station.
- If applicable, divide your party into groups. At least one adult leader per group is required.
- Restrooms are available inside the front entrance when the building is open Monday – Friday from 8am to 5 pm.
- You are welcome to eat in the two locations marked on the map, or on the lawn on the west side of the building.
- We appreciate you taking care to protect the plants and animals. Enjoy using your senses of sight, sound, smell and touch to discover the Water Wise Demonstration Garden.

After Your Visit:

- Complete the email survey that will be sent to you to help us improve.

Thank you for coming and we hope you enjoy your visit!

Colorado Springs Utilities Water Wise Demonstration Garden at the Conservation & Environmental Center, 2855 Mesa Rd., Colorado Springs, CO 80904

For questions [email us](#) or call 719-668-8232.

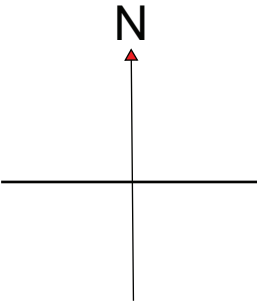
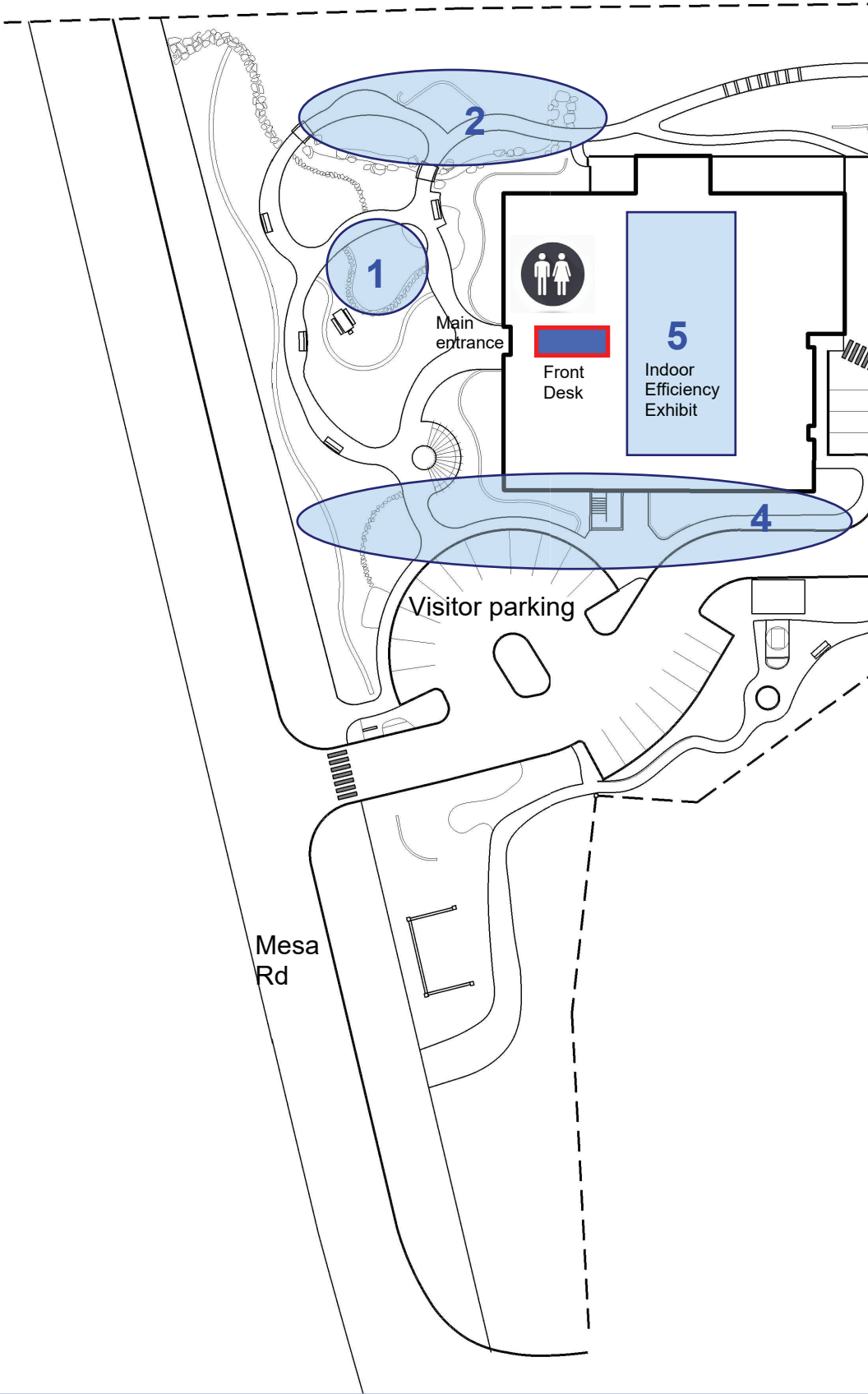
Map for Self-Guided Youth Activities

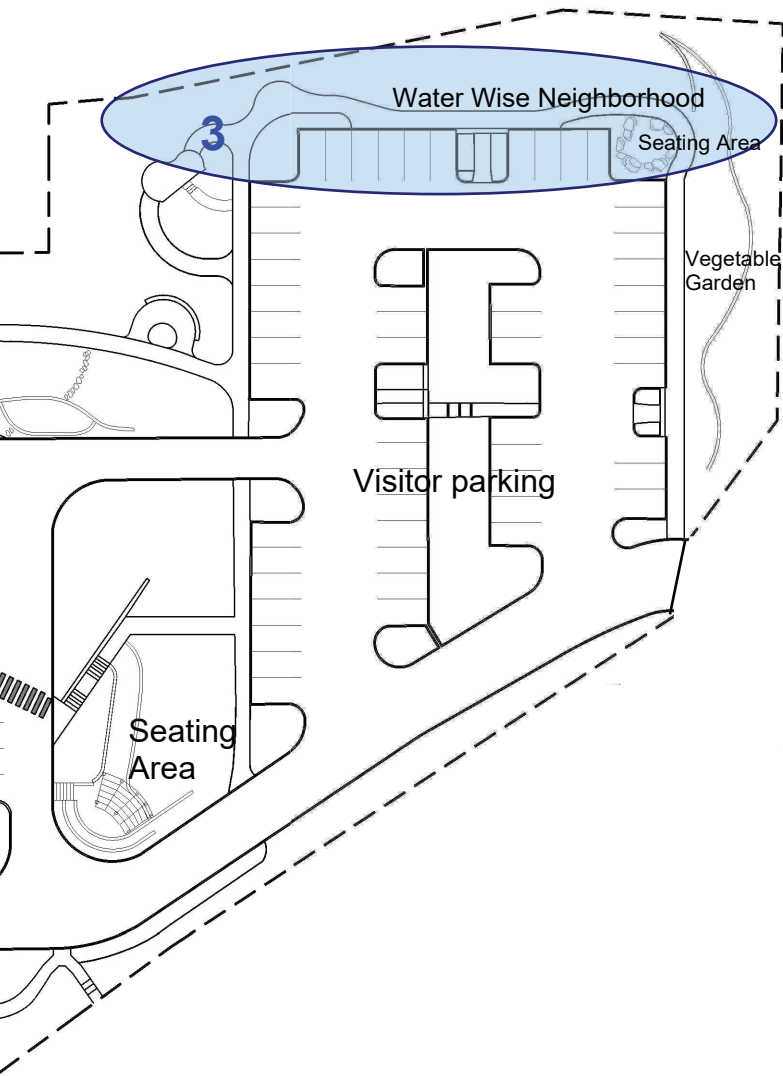
Colorado Springs Utilities Conservation and Environmental Center
Water Wise Demonstration Garden

2855 Mesa Rd, Colorado Springs, CO 80904, (719) 668-8232, csu.org

Garden Hours:
6 am to 9 pm
every day

Building Hours:
8 am to 5 pm
weekdays





Activity Stations

1. Water System Relay
2. Pollinators
3. Plant Adaptation Scavenger Hunt
4. Plant Sensory Exploration Zone
5. Indoor Water Efficiency Exhibit

Please check out the activity kits from the front desk staff. You are welcome to eat lunch in either of the seating areas, or on the lawn used for the Water System Relay activity. Enter through the main entrance to get to the restrooms.



Colorado Springs Utilities

It's how we're all connected

STATION 1 LEADER INSTRUCTIONS – Water System

START AT THE PERGOLA SOUTH OF THE FRONT DOORS

What You'll Do:

1. Discuss our water system.
2. Read the “Tracing our Water” sign and fill out Station 1 student workbook page.
3. Play the water droplet relay race.
4. Brainstorm ways to use water wisely and complete bottom portion of student page.
5. Extra activity – inspect a raw water delivery pipe segment and look at the water treatment plant next door.



1. DISCUSS OUR WATER SYSTEM

Many people think we get our water from the snow that falls on Pikes Peak. But the snowmelt from Pikes Peak and the streams in our local watershed make up only 20% of the water we use in town. The remaining amount is imported from other watersheds in Colorado. It takes a lot of work to bring that water to town.

Most of the water in Colorado is actually located on the western side of the state, on the other side of the Rocky Mountains. Colorado Springs Utilities brings the water through tunnels in the mountains and then pipes it to town. Some of your water has travelled 100 miles to get here! Once it is here, we store the water in reservoirs. From the reservoirs we pipe water to our water treatment plants where we clean the water before sending it to your house.

You use water for all sorts of things such as drinking, cooking, cleaning, showering, and watering your yard. What happens to the water once you are done with it? The water goes to our water resource recovery facilities where we clean it up, then send it down Fountain Creek to the next community.

In Colorado Springs, it requires a lot of effort to bring the water we need to town and in years of less snow, we may have less water available to use. Also, everyone downstream needs the water too. In Colorado Springs we are at the top of the watershed, so we get to use the water first. We need to use it wisely so that everyone downstream will also have enough clean water.

2. READ THE “TRACING THE SOURCE” WATER SYSTEM SIGN



- Read the sign about our water system – students can take turns reading sections of the sign.
- Point out Pikes Peak. Discuss that our water comes primarily from melted snow from the mountains. We have 25 reservoirs (human-made lakes) to store about three years' worth of water demand.
- Find Colorado Springs on the map – how many major pipelines are bringing water to town? **Answer = 4**
- Water is cleaned at six (6) water treatment plants – look to the south and see the Tollefson Water Treatment Plant next door that has been in operation since 1942. Our water is some of the best quality in the nation!
- Complete page 1 in the student workbook by deciphering the code to find out where our water comes from.

Decoder Answer = **Snowmelt** is collected in the **Rocky mountains** and travels up to **100 miles** in **pipelines** to get to **town**.

3. RUN THE WATER DROPLET RELAY RACE



Water collected in the Rocky Mountains travels 100 miles to town through large pipes. This water flows by gravity whenever possible, and sometimes gets an extra boost at a pump station. The water inside the pipe travels at approximately 5 miles per hour and takes roughly 20 hours to reach town. Students will be water droplets that run around the paved walkway in the front garden in a race to see how fast they can go.

Water Droplet Relay Race Instructions

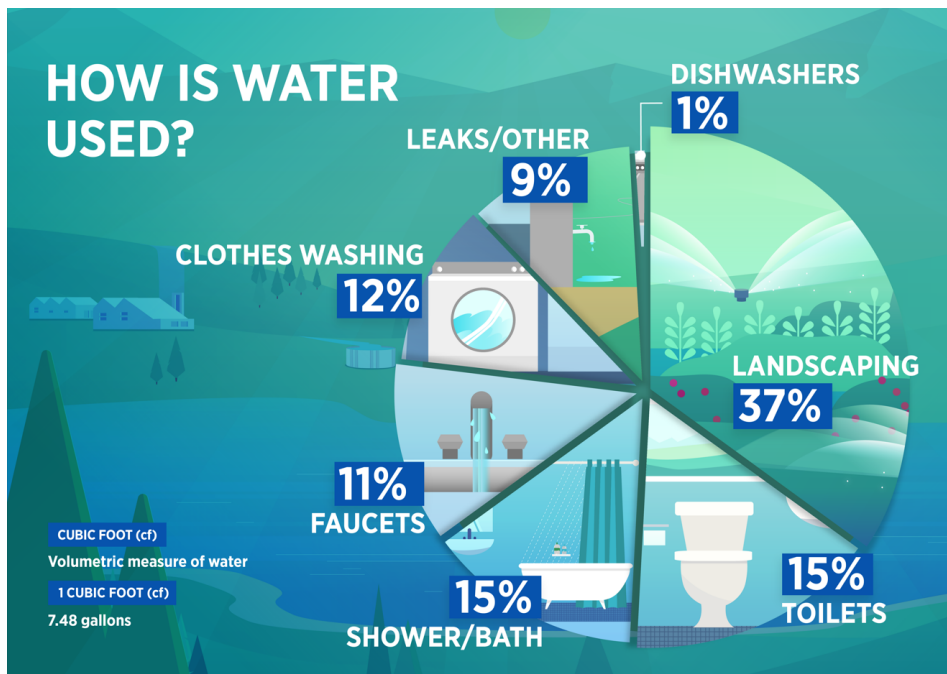
1. Divide students into two groups and have them line up in grassy area north of the front of the entry doors.
2. Walk the route you want the students to run – we suggest the circular path shown in red on Figure 1.
3. One student from each team will start by running around the walkway route determined by the Leader.
4. The next student will begin their lap when their teammate returns to the starting point.
5. Continue until all players have had a chance to run the water droplet relay.
6. Variations – try fast walking, skipping, backwards, etc.

4. WATER USE DISCUSSION and WAYS TO SAVE WATER

Getting water to our city is no easy task! Colorado Springs Utilities has more than 400 employees working in the Water Services Division to make sure you have clean, high quality water.

We depend on the weather to provide enough snow to fill our reservoirs. Sometimes we are in drought – times of less precipitation than normal – so it is even more important to use water efficiently.

Discuss how water is used. Can you guess what a Colorado Springs resident uses the most water for? 35% is used for outdoor watering. How about inside the house – what do you think uses the most water inside? Toilets and showers use the most water inside the home (15% each).



A Colorado Springs resident uses an average of 77 gallons of water every day.

Brainstorm ways to use water wisely. Station 5 student workbook page has a checklist that can be reviewed if you aren't able to do that station. *Station 5 is inside the Conservation & Environmental Center and can only be included if the building is open during your visit. The Center is open during normal operating hours Monday – Friday from 8:00 – 5:00 pm.*

5. EXTRA ACTIVITY

Inspect a piece of our raw water delivery pipe. This pipe segment is located on the south side of the front parking area behind the small brick building.

- Can you see the steel pipe? It is lined with concrete on the inside to ensure water quality and coated with wire-wrapped concrete on the outside to protect it from breaking.
- Look through the fence at the water treatment plant. Most of the water you see here came from the mountains up to 100 miles away! The large basin nearest you are settling tanks where most of the dirt is removed from the water before the water is filtered. This basin holds 3 million gallons of water! The water treatment plant can clean up to 1 million gallons per hour if needed. Our city uses an average of 70 million gallons per day. We have six water treatment plants to meet this demand for water.



STATION 2 LEADER INSTRUCTIONS - Pollinators

START AT THE SMALL PATIO ON THE NORTHWEST SIDE OF THE BUILDING

What You'll Do:

1. Learn which animals and insects pollinate flowers in the garden.
2. Visit a native bee hotel.
3. Search for pollinators in action.
4. Extra activity – read about hummingbirds.

Materials needed:

- Student workbook, page 2
- Pencil
- Pollinator Photos found at the back of this booklet



1. INTRODUCE THE CONCEPT OF POLLINATION

Wherever there are flowering plants, there are pollinators. Pollinators are insects and animals of all sorts that move pollen from one flower to another. They are looking for something very tasty. Do you know what it is? Nectar! Nectar is a sweet liquid that attracts pollinators. But as they sip this sweet juice, the plant puts pollen on the animal's body. When they visit the next flower, some of the pollen comes off the animal's body. This process helps the plants develop fruits.

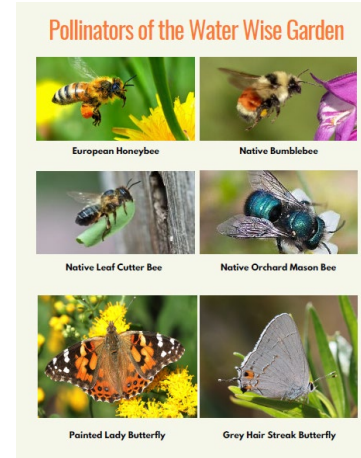
DESCRIBE WHICH ANIMALS ARE POLLINATORS

What animals are pollinators? You may be familiar with bees, butterflies and hummingbirds. They like to visit this garden a lot. But they are not the only pollinators you will find in the garden. Beetles, flies, and even some wasps all visit the Water Wise Garden looking for nectar. In fact, there is a great variety of creatures moving pollen from one flower to another throughout the growing season.

In this activity you will get a chance to look around the garden and see how many different pollinators you can see. But before we do so, I will share with you some interesting facts about these animals so you can recognize them.

TEACH ABOUT BEES

The most well-known pollinator is the European honeybee (**Show picture of European honeybee on pollinator sheet located at the back of this booklet.**) The European honeybee a non-native brought to the United States by European immigrants. Honeybee hives are shipped all over the US to help crops from almonds to strawberries. European honeybees love to visit the flowers in this garden. Look for fuzzy bees with orange and black stripes. Insects with bright yellow and black stripes are usually wasps rather than bees, so be sure to not get too close to them.



2. VISIT THE NATIVE BEE HOTEL



Did you know there are 947 species of bees native to Colorado? Some are as small as a grain of rice while others are big, like the bumblebees. This “house” is a “bee hotel” for native bees. Since most of these bees are solitary- meaning they live alone—native bee houses look different than European honeybee hives. Individual female bees enter the holes in the wooden blocks, lay an egg on a ball of pollen and nectar and then seal the chamber with a piece of vegetation. Each individual hole in a bee block may contain a number of eggs, each in their individual chambers. If you look closely at our bee hotel, you may see where female bees have laid eggs and then covered the chambers with pieces of vegetation. You might also see the bees

themselves. **Show pictures of bumblebee, leaf cutter bee and mason orchard bee on pollinators sheet.**

TEACH ABOUT BUTTERFLIES

Many different types of butterflies visit the Water Wise Garden. Adult butterflies are usually looking for nectar while their caterpillars are eating the leaves of specific “host” plants. Female butterflies “taste” the plant with their feet before depositing eggs. Three common types of butterflies you’ll see in this garden are the painted lady butterfly, grey hairstreak and cabbage white butterfly. **Show pictures of butterflies on pollinators sheet.**

Because caterpillars make good food for other animals, especially birds, they hide by using camouflage or they have bright warning colors and long guard hairs to keep from being eaten.

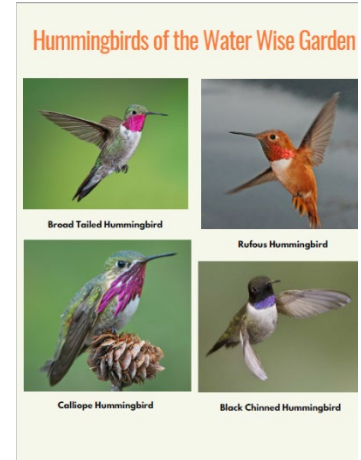
TEACH ABOUT HUMMINGBIRDS Hummingbirds are incredible acrobatic fliers. Males will often claim patches of flowers and not let other males feed there. High speed, squeaky battles ensue as they fight over the valuable flowers. Calliope, Broad-tailed, Rufous and Black-Chinned Hummingbirds all visit the Water Wise Garden.

Let's look at the pictures of the four most common types of hummingbirds of the water wise garden. **Show pictures on hummingbirds sheet.** Males are much easier to identify, but only when the light hits their throat patch or "gorget." This patch of shiny feathers is how the males attract females and flashes shades of gold, red, and purple when the light hits it.

3. SEARCH FOR POLLINATORS

Now that you've learned a bit about pollinators, you can walk around the north side of this garden to find as many different types as you can. But before we start, we need to set some rules.

- Stay in designated areas outlined by the teacher/leader.
- Your goal is to find different types of pollinators. Look closely at the flowers, because that's where pollinators land. When they land, try to see what type of insect or bird they are, then tally them in your workbook.
- Please stay on the path so you don't step on the plants.
- Please do not disturb the various pollinators. Many are delicate and easily injured like butterflies, and bees and wasps can sting you if you get too close to them.
- For an extra challenge, write down the name of the plant that type of pollinator was visiting.
- We'll meet back at the patio in 10 minutes to see what you find.



Give students 10-15 minutes to explore the garden looking for pollinators and make tally marks in their workbooks. They may also take pictures if they have cameras or cell phones to use.

HAVE THE STUDENTS MEET BACK AT THE PATIO AND REVIEW THEIR FINDINGS

Growing water wise plants is not only good for our water supply but is also a way to support birds and insects. How might we protect pollinators?

1. Where we can, add plants that provide them with food.
2. Think carefully before we use chemicals that kill insects.
3. Provide a water source, when possible.

4. EXTRA ACTIVITY

Read the hummingbird descriptions on the back of the Hummingbirds of Water Wise Garden sheet at the back of this Leader Guide.

<p>Butterfly Butterflies hold their wings upright when they land.</p>	<p>Honeybee Honeybees are fuzzy and have orange and brown stripes on their abdomen</p>	<p>Native Bee Native bees might be yellow and black, solid black, green, or even blue.</p>
<p>Hummingbird Hummingbirds are small and make a buzzing sound when they fly close to you.</p>	<p>Bumblebee Bumblebees are large, round, yellow, black and fuzzy!</p>	<p>Lady Beetles These common insects have red wings with black spots. They eat aphids rather than pollen and nectar.</p>
<p>Wasp Wasps are all different colors, but have a very narrow waist.</p>	<p>Beetle Beetles have thick outer wings that close when they land to cover their back.</p>	<p>Fly Flies have only two wings rather than four, like bees.</p>

STATION 3 LEADER INSTRUCTIONS – Plant Adaptations Scavenger Hunt

START BY THE PURPLE HOUSE IN THE WATER WISE NEIGHBORHOOD

What You'll Do:

1. Learn about how plants have adapted to survive in our dry climate.
2. Do a scavenger hunt to find plant adaptations.
3. Brainstorm ways to keep yourself hydrated.

Materials needed:

- Student workbook, page 3
- Pencil
- Plant adaptation cards found at the back of this booklet



1. INTRODUCE “ADAPTIONS”

Plants can't walk and move like us, but they have made changes to their shape, leaves and roots to be prepared for the environment in which they live. This is called an adaptation. All living things make adaptations in order to stay alive. For example, a polar bear has thick fur to keep it warm in cold, snowy conditions.

An adaptation is a characteristic an organism has developed to help it survive in a certain environment.

Plants have adaptations, just like animals. Plants that thrive in Colorado Springs have figured out how to conserve water. These plants have developed clever ways to keep from losing too much water through their leaves. They are water wise plants! Let's take a look at a few water wise plant adaptations.

EXPLAIN WATER WISE PLANT ADAPTATIONS WITH THE CARDS (located at the back of this guide)

Some plants have created a way to store water when it's available so that they can have water later when it's dry. At Colorado Springs Utilities, we do that too. We store melted snow (water) in reservoirs (human made lakes) so that we have enough water for our community in the summer when it is hot and dry.

**PLANT
ADAPTATION
CARDS**

FOR STATION 3
PLANT ADAPTATIONS
SCAVENGER HUNT

SHOW THE SUCCULENT CARD TO THE STUDENTS

Plants with thick, fleshy or squishy leaves are called succulents. Succulent plants store water similar to how we would store water in a water bottle. You can tell a plant has succulent leaves because they are much thicker than normal leaves and firm because all of the water inside (just a like a full water balloon).

SHOW THE LIGHT COLORED LEAVES CARD TO THE STUDENTS

Wearing light-colored clothing reflects the sun's heat and keeps you cooler. Plants have figured out that growing lighter colored leaves helps them save water by not letting their leaves get as hot.

SHOW THE FUZZY LEAVES CARD TO THE STUDENTS

Another way that plants to keep their leaves cooler is with small hairs on the surface. These hairs feel fuzzy to the touch. The hairs act as a type of sunscreen to shield the leaf from intense sunlight.

SHOW THE WAXY LEAVES CARD TO THE STUDENTS

Have you ever used lip balm to keep your lips moist? Some plants have developed a similar type of adaptation to keep the moisture from escaping their leaves: they have a waxy coating on the surface to minimize water loss. Plant leaves that look shiny or feel like they have a hard coating on their leaves use this adaptation – waxy coating.

SHOW THE TINY LEAVES CARD TO THE STUDENTS

Another way for a plant to stay cooler is to expose a smaller surface area to the heat of the sun. Several types of plants have this adaptation and have tiny leaves. When you walk around this area, notice how some plants have larger leaves while others have very tiny leaves.

SHOW THE NEEDLES FOR LEAVES CARD TO THE STUDENTS

Evergreen trees grow very well in Colorado Springs. They have both waxy and tiny leaves. Their leaves are so narrow that we call them “needles.” Because needles help evergreen trees conserve water, you'll see many more of them than trees that lose their leaves in the winter (deciduous trees).

SHOW THE NO LEAVES CARD TO THE STUDENTS

Some plants are so water wise that they have no leaves at all. Can you think of a plant that has no leaves? Cacti are a good example. Rather than making their own food in their leaves, they make their food in their stems.

EXPLAIN THAT WATER WISE PLANTS CAN HAVE MORE THAN ONE ADAPTATION

Plants can have more than one adaptation to help them survive. The Yucca plant has light colored and waxy leaves. In addition, its leaves are upright so they don't get direct sunlight during the hot part of the day. This clever plant also has U-shaped leaves to capture rain drops and direct them to the roots just like a water slide.

2. EXPLAIN THE SCAVENGER HUNT

Now that you've learned about water wise plant adaptations, you're going to get the chance to look for water wise plants in this section of the demonstration garden. Here's how it works:

- You can explore the Water Wise Neighborhood as an individual or with a partner. You do not need to go in any specific order.
- Go through the garden looking for the numbered stakes labeled as "stops" and take a close look at the plant next to the marker. There are seven stops altogether.
- When you find a numbered stake by a plant, determine what plant adaptations that plant has. Record your answer on page three in your workbook. Remember that a plant may have more than one adaptation. Be careful not to step on the plants.
- When you're done with all the stations, meet under the shaded area under the blue cloth. You can sit on the rocks.



LET THE KIDS EXPLORE THE AREA FOR ABOUT 7-10 MINUTES. BE SURE TO VISIT EACH STOP YOURSELF SO YOU CAN REVIEW THE ANSWERS WITH THE KIDS.

DISCUSS CONCLUSIONS - MEET IN THE SEATING AREA WITH THE ROCK SLABS TO REVIEW THEIR ANSWERS. YOU'RE WELCOME TO SIT ON THE ROCKS.

Now that you've had a chance to explore, let's review what you came up with.



Plant Adaptation Scavenger Hunt Answer Key

- Stop 1- Needles for leaves (N), waxy leaves (W), tiny leaves (T)
- Stop 2- Light colored leaves (L), fuzzy leaves (F)
- Stop 3- Tiny leaves (T)
- Stop 4- Fuzzy leaves (F), light colored leaves (L)
- Stop 5- No leaves (0)
- Stop 6- Waxy leaves (W)
- Stop 7- Succulent leaves (S)

3. EXTRA ACTIVITY

Have students answer the last question on page 3 of their workbooks – what was their favorite adaptation and why? Discuss ways students can “adapt” at home to save water. Ideas might include turning off the water while brushing teeth or washing hands, taking a 5-minute shower, or filling the bathtub only halfway full.

STATION 4 LEADER INSTRUCTIONS- Plant Sensory Exploration

START AT SOUTHEAST CORNER OF THE BUILDING

What You'll Do:

1. Use sight, touch and scent to discover amazing characteristics of water wise plants at 10 stops.
2. Make a keepsake bracelet or press plant parts.
3. Extra activity – get free seeds to plant at home.

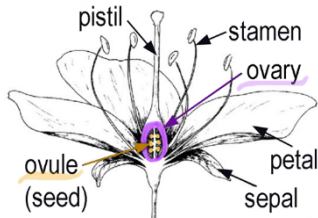
Materials needed:

- Student workbook, page 4
- Pencil
- Optional: Blue painters' tape – bring your own or get a roll inside when the building is open.



1. INTRODUCE THE ACTIVITY

Because plants don't move around, sometimes we don't notice all the amazing things they do. But if you look closely and use your senses, you'll discover that plants have fascinating characteristics that help them support themselves and life on Earth. We're going to be looking at some water wise plants and learning about how they thrive in a dry climate.



To help you explore these plants, we're going to be using our senses of touch, sight and smell. You will get to pick some of the leaves and petals from certain plants to create your own bracelet that you get to take home. *If no blue painter's tape is available, students can place their plant samples in their workbook and press them at home.*

GIVE EACH STUDENT TAPE FOR BRACELETS

Wrap each student's wrist with a strip of blue painter's tape. Put the sticky side outward so they can stick their flowers and leaves to it.

EXPLAIN TO CHILDREN

Plants can't walk and move like us, but they have made changes to be prepared for the environment in which they live. This is called an adaptation. All living things make adaptations in order to stay alive. Let's go find the first water wise plant and learn about its adaptation. As we walk around, please try not to step on the plants. Be gentle when picking a leaf or flower petal so you don't hurt the plant.



FIND CURLY LEAF SEA KALE- STOP 1

This plant is called curly leaf sea kale. Can you see the curly edges of its leaves? Sea kale has a waxy coating to keep water from escaping the leaf. It's like putting on lip balm to keep your lips from drying out. You can rub a leaf with your fingers and notice how waxy it feels. The waxy coating helps this plant live in dry areas.



Note to leaders: This plant blooms in April and May. If it has flowers, the kids can take one and stick it to their bracelets. If it's not in bloom, go to the next plant.

What if children want to take a flower or leaf from a plant that's not marked as part of this activity? It's okay to let them if there are plenty of them present in the garden. If there are just a few, please leave them for other visitors to enjoy. Use your best judgment.

GO WEST (LEFT) AND FIND LITTLE TRUDY CATMINT- STOP 2

This plant is called catmint. Catmint has fuzzy leaves. The hairs on fuzzy leaves act to shade the leaf so it doesn't get so hot. Having a fuzzy leaf is a plant's way of putting on sunscreen. Touch some of the leaves to see how fuzzy they are. Also, if you rub the leaves and smell your fingers, you'll notice they have a minty smell.



Note to leaders: This plant blooms in May, June and August. If it has flowers, the kids can take one and stick it to their bracelets. If it's not in bloom, they can pick a leaf for their bracelets or go to the next plant.

FIND BLUESTEM JOINT FIR- STOP 3

Where are the leaves on this plant? You may be surprised to know that blue stem joint fir has no leaves at all! It saves water by photosynthesizing in its stem instead of its leaf. Who knows what photosynthesis is? It's the way the plant makes its own food by using the energy from sunlight to turn water and carbon dioxide into sugars and starches.



Note to leaders: This plant doesn't have nice flowers, but sometimes has orange berries in fall. If it happens to have orange berries they may take one and stick it to their bracelets.

FIND CHOCOLATE FLOWER- STOP 4

This plant is called chocolate flower. It is native to the southwest United States. It grows beautiful yellow flowers with a brown center. In the morning, the flowers open and smell like chocolate. In the afternoon, they close and rest until the next day. Let's pick one flower for our group and see if we can notice the scent.



Note to leaders: Please take only one flower for your group.

FIND HUMMINGBIRD MINT- STOP 5

We have found a plant called hummingbird mint. This plant is native to Arizona and New Mexico. It has long orange flowers that attract hummingbirds and butterflies. If you put your hand gently in the center of the plant and wiggle it, then smell your hand, you'll notice the scent of mint. That's why it's called hummingbird mint.

Note to leaders: This plant blooms in July and August. If it's in bloom, the kids can each take one flower. If not, they can add a leaf to their bracelets.



FIND MESA VERDE ICEPLANT- STOP 6

Iceplant was brought here from South Africa! It is also hot and dry in South Africa, just like Colorado Springs. Plant explorers thought it might also grow in our hot and dry climate. What adaptation do you think the ice plant has made to use water wisely? Feel the leaves. They are thick and squishy – we call that succulent. The ice plant stores water in its leaves. Just like you would bring a water bottle on a hot, dry day to keep hydrated, this plant does the same. You can buy this plant at a plant nursery or garden center for your own yard.

Note to leaders: Let the kids take a leaf from this plant and either stick it to their bracelet or squish it between their fingers. Please don't let the kids take flowers from this plant because it only blooms once during the year.



GO WEST ACROSS MAIN PATH, PAST "TRACING THE SOURCE" SIGN AND FIND BRONZE FENNEL- STOP 7

We can grow plants in our landscape that are water wise, beautiful AND edible. Who here likes dill pickles? This plant grows yellow flowers in the summer that turn into seeds in the fall. Some recipes use fennel seeds to turn cucumbers into dill pickles. Notice its soft feathery leaves. If you gently pet them, you'll notice they smell like licorice. Dill is closely related to fennel.

Note to leaders: This plant sometimes has clusters of yellow flowers. Students may take a flower or a small feathery leaf for their bracelets.



GO NORTH ON PATH AND FIND CULINARY SAGE- STOP 8

Here's another plant you might recognize. This is culinary sage. Let's take a leaf for our group and rub our fingers on it. What food does that remind you of? Sage is often used in Thanksgiving stuffing and chicken recipes. It has beautiful purple flowers in summer.

Note to leaders: This plant sometimes has clusters of purplish-white flowers. Students may take a flower or a leaf for their bracelets.



FIND LEMON BALM- STOP 9

Rub the leaves of this plant and tell us what it smells like. You might notice a lemon scent. This plant is called lemon balm. It is used for its fragrance and in tea.

Another interesting feature is its stem. Who knows the function of the stem? To keep the plant upright/ provide structure and move water and nutrients from the roots to the leaves. Most stems are round. However, plants in the mint family have square stems (show samples and let kids twirl them between their fingers). Lemon balm is closely related to mint, so it has a square stem, too.



Note to leaders: This plant does not have noticeable flowers. Students may take a leaf for their bracelets.

FIND MUNSTEAD LAVENDER- STOP 10

Have you ever used lavender soap before? The fragrance of that type of soap comes from this plant, the lavender plant. It has small, grey green leaves that have a strong fragrance. Touch a few and see for yourself. It also has spikes of purple flowers in summer that attract bees.



Note to leaders: This plant has clusters of purple flowers in July. Students may take a flower or a leaf for their bracelets.

DISCUSS CONCLUSIONS

Did you learn something new about the plants in this garden? Plants have amazing attributes that we use in our kitchens, soaps and landscapes. When you're in your own yard or around plants in your day-to-day life, take some time to notice their scents, colors and textures.

EXTRA ACTIVITY

Complete page 4 in your workbook. Free seed packets to take home are available upon request while supplies last. Ask for seed packets at the front desk inside the Conservation & Environmental center or email us at communityrelations@csu.org

To learn more about beautiful water wise landscape plants that grow well in Colorado Springs, visit waterwiseplants.org.

STATION 5 LEADER INSTRUCTIONS- Indoor Water Efficiency Exhibit Scavenger Hunt

GO INSIDE THE CONSERVATION & ENVIRONMENTAL CENTER BUILDING MAIN ENTRANCE INTO THE INDOOR EFFICIENCY EXHIBIT. The building is open M – F from 8 am – 5 pm.

What You'll Do:

1. Discuss water conservation
2. Conduct a scavenger hunt to find six (6) hidden Dewey water drops
3. Review answers to water saving questions
4. Complete a water conservation pledge
5. Extra activities:
 - Take home toilet testing tables to check your toilets for leaks
 - Bring in up to two (2) showerheads to exchange them for free high-efficiency ones.

Materials needed:

- Student workbook, page 5
- Pencil



1. DISCUSS WATER CONSERVATION INSIDE THE BUILDING

What does it mean to “conserve” water? To conserve water is to use it efficiently and not waste it. Why is it important to conserve water? Colorado Springs is a high elevation, semi-arid environment with a limited amount of water available. To ensure there is enough water for everyone, we must all use it wisely. Small actions add up to big savings. For instance, turning off the faucet while you wash your hands or brush your teeth can save 10 gallons of water a day. A slow drip from a faucet can waste more water than you might expect. A single faucet dripping 10 drips a minute wastes 350 gallons a year. That’s as much water as taking 30 showers! Fixing the leak will make a significant contribution to our water supply sustainability.

2. CONDUCT THE INDOOR WATER EFFICIENCY SCAVENGER HUNT

- There are 6 blue Dewey water drops hidden in the water efficiency exhibit area. It doesn’t matter what order you find the Dewey clues.
- Students can pair up or conduct the scavenger hunt individually.
- Use the Station 5 Student Workbook page for the scavenger hunt clues and fill in the water facts from each area where Dewey is found.

- Give the students 10 - 15 minutes to find the Deweys and fill in the water savings tips on their data sheet.

3. REVIEW ANSWERS to WATER SAVINGS QUESTIONS

Clue #1 - What uses less water – washing dishes by hand or using the dishwasher?
_____ Dishwashers use less. Newer model Energy Star certified dishwashers are very efficient and use as little as 3 gallons per load. _____

Clue #2 –It takes _____ 62.5 _____ gallons of water to produce a glass of milk.

Clue #3 –Energy Star washers use ___ 13 ___ gallons of water verses the average 23 gallons used in a regular washer, which saves ___ 3,000 ___ gallons of water a year.

Clue # 4 –How many gallons a year do you save if you switch to a high-efficiency toilet?
___ 10,000 ___ gallons saved a year.

Clue # 5 –How many gallons of water are saved per year by replacing one 60 watt lightbulb with an LED lightbulb? ___ 20 ___ gallons of water saved per year.

Clue #6 –What is the typical annual home water use? _____ 100,000 _____ gallons per home every year

DISCUSS CONCLUSIONS

It takes everyone to help conserve water so that we have enough water supply for the future. Reducing your water sue by 10 gallons a day will make you an efficient water user. The best ways to do that are to fix leaks, take shorter showers or fill the bathtub only half full, don't leave the faucet running while washing hands or brushing teeth, scrape your plates inside of rinsing them, and run only full loads of laundry or dishes. Consider upgrading to a newer Water Sense high efficiency toilet for long-term, significant water savings.

4. COMPLETE A WATER CONSERVATION PLEDGE

Complete page 5 in the student workbook by checking off ways you can commit to saving water. Take advantage of Colorado Springs Utilities free showerhead exchange. Bring in up to 2 showerheads from home and get new, high efficiency showerheads for free (while supplies last). That will save water AND money.

5. EXTRA ACTIVITIES

Check your toilet for leaks - The Environmental Protection Agency estimates 1 in 4 toilets are “silent” leakers, losing an average of 20 gallons of water a day. The only way to know if your toilets are “silent” leakers to conduct a dye test. Have students take home toilet leak testing tablets and follow the instructions on the card.

Exchange your showerhead – The typical showerhead flows at 2.5 gallons per minute. Bring in your old showerheads and we'll give you new, high-efficient ones for free (up to two per customer, while supplies last). Not only will you save a significant amount of water and the energy needed to heat the water, but up to \$77 a year on your utility bill!

POLLINATOR PHOTOS

FOR STATION 2
POLLINATORS OF THE WATER WISE
DEMONSTRATION GARDEN

Pollinators of the Water Wise Garden



European Honeybee



Native Bumblebee



Native Leaf Cutter Bee



Native Orchard Mason Bee



Painted Lady Butterfly



Grey Hair Streak Butterfly

Pollinators of the Water Wise Garden



Cabbage White Butterfly



White Lined Sphinx Moth



Miller Moth



Wasp



Beetle



Flower Fly

HUMMING BIRD PHOTOS

FOR STATION 2
POLLINATORS OF THE WATER WISE
DEMONSTRATION GARDEN

Hummingbirds of the Water Wise Garden



Broad Tailed Hummingbird



Rufous Hummingbird



Calliope Hummingbird



Black Chinned Hummingbird

Hummingbird Descriptions



Broad-tailed Hummingbird: This is by far our most common hummingbird in Colorado. They arrive the earliest in our area, some seen as early as mid-April. Males make a distinct “metallic trill” sound as they fly by. This is caused by the wind going across special feathers on their wings and thus is known as a “wing whir”. Males have bright reddish/rose gorgets, when the sun hits them, with green heads and white breasts. Males will also perform diving flight displays to impress the females. Broad-taileds will nest high up in the mountains and since they can’t maintain their high metabolism without constant feeding, at night they go into a type of hibernation called torpor, even in the summer.



Rufous Hummingbird: This bright orange hummingbird is known for being rather pugnacious and will often take over feeders or patches of flowers when they arrive in July/August. Males are a shimmering gold/orange color with a vibrant orange gorgets. Their migration route is elliptical, going up the Pacific Coast in the spring and down the Rocky Mountains starting in July. They breed farther north than any other hummingbird, some going all the way to southeast Alaska!



Black-chinned Hummingbird: According to bird guru Ted Floyd this bird was not known in the Pikes Peak region and points north until “In the past decade, the Black-chinned has expanded its range rapidly into the northern Front Range region”. Arriving in late April, this hummingbird is a little less obtrusive with males sporting a gorget without much iridescence. Their throats are a dull black with just a thin iridescent strip of purple beneath when the light hits them.



Calliope Hummingbird: Calliopes are another later arriving hummingbird, not showing up until late July in our area. They are distinguished by their incredibly small size, in fact according to Ted Floyd, they are “the smallest bird in North America”. They make up for their small size by males having incredible purple gorgets that flare out in an explosion of feathers looking like a starburst! Though tiny in stature they are known to migrate up to 5,000 miles round trip each year!

PLANT ADAPTATION CARDS

FOR STATION 3
PLANT ADAPTATIONS
SCAVENGER HUNT



SUCCULENT LEAVES

STORE WATER





LIGHT COLORED LEAVES

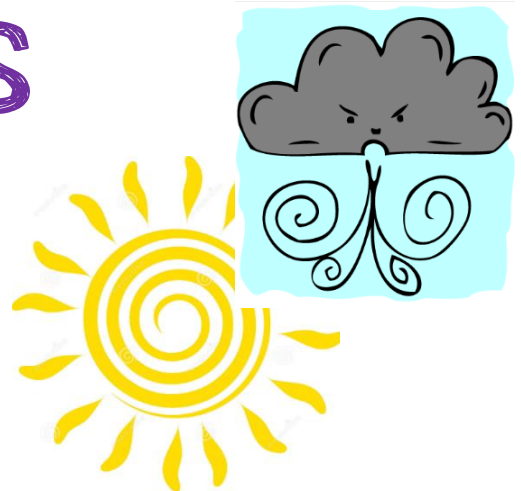
KEEPS LEAVES COOL





FUZZY LEAVES

PROTECTS FROM
DRYING OUT





WAXY LEAVES
SEAL IN MOISTURE





TINY LEAVES
LOSE LESS WATER





NEEDLES FOR LEAVES

TINY AND WAXY





DOESN'T HAVE LEAVES

**DOESN'T LOSE WATER
THROUGH LEAVES**



CONSERVATION AND ENVIRONMENTAL CENTER (CEC)

Visit our Conservation and Environmental Center for all your energy and water efficiency needs:

Get your ducts in a row

- Learn how to improve duct performance in your house by properly sealing air leaks and earn a rebate of up to \$200.

Turn up the savings with a smart thermostat

- Compare smart thermostat models and learn how you can save with our \$50 rebate.

Watts up with renewable energy?

- Understand how solar panels work, how to get a renewable energy rebate and what we are doing to protect the energy future of the Pikes Peak region.

See LED efficiency in a new light

- Test and evaluate LED, CFL and incandescent light bulbs and compare savings year over year.



Tour our indoor exhibit during our regular business hours.

Customer programs and resources

- Water Wise Demonstration Garden tours
- Water Wise Landscape Classes
- Water Wise Yard Exhibit
- Home energy audit
- Home efficiency exhibit
- Smart thermostat display
- Renewable energy display
- Energy and water efficiency rebates including:
 - irrigation
 - insulation and air sealing
 - water heater
 - renewable energy
 - refrigerator/freezer recycling
 - electric clothes dryer
 - furnace
 - smart thermostat
- Showerhead exchange
- Explore Your Water System interactive display
- Holiday light exchange
- Annual Efficiency Expo, 2nd Saturday in June

2855 MESA ROAD

Open M-F, 8 a.m. to 5 p.m.

• 719-668-8232 • csu.org •

Water Wise Demonstration Garden & Yard Exhibit: Open seven days a week during daylight hours

Save some bank at the water tank

- Discover practical DIY options to save on water heating costs and learn about our \$50 rebate.

Power up with the ChargePoint electric vehicle charging station

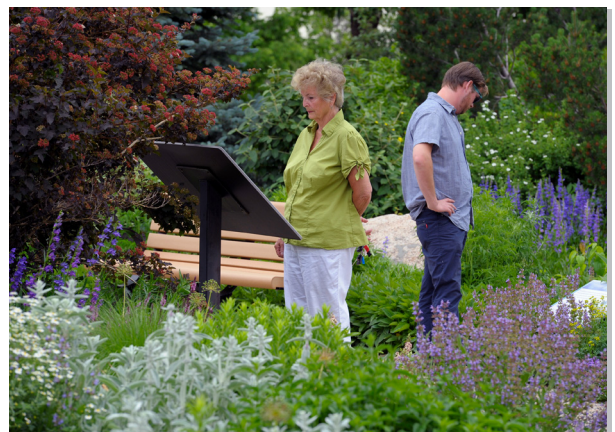
- Learn about the benefits of electric vehicles (EVs) and their impact on the environment.

Reduce, reuse, recycle

- Confused about recycling? Get the facts from food waste to major appliances and even toilets.

Learn from the best

- Our experts are on hand to answer all your questions on energy and water efficiency, rebates, renewable energy, water wise landscaping and more.



Best time to tour our gardens: April to October.