



Roll Out the Rain Barrel – Service Learning Project

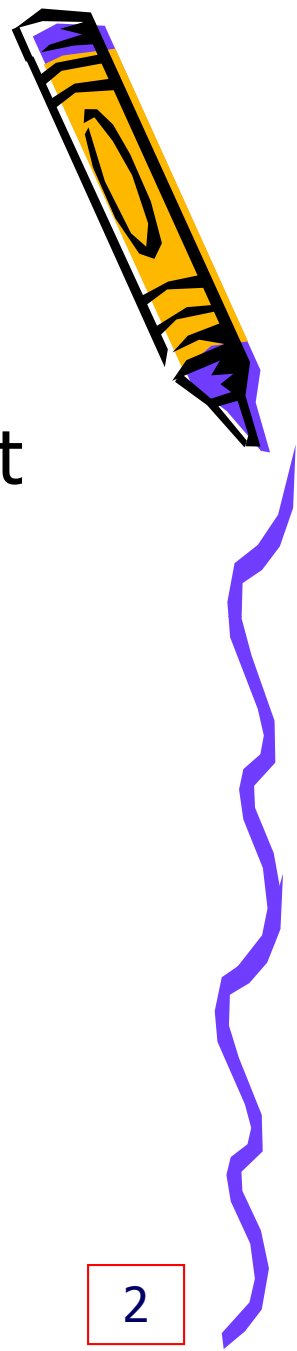
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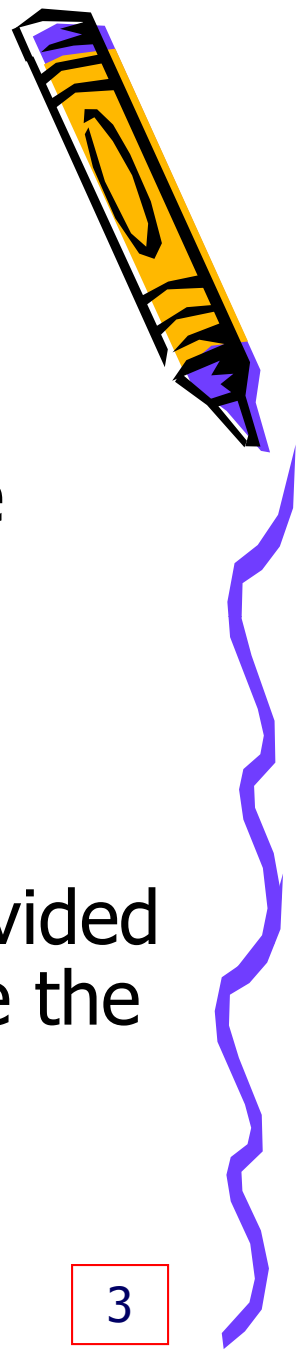
Service-Learning Definition

- ✓ A method of teaching and learning that integrates community service activities into academic curricula and expands the learning of students from the classroom to the community.



Home Horticulture Service-Learning Project

- ✓ Home Horticulture is a survey course covering a range of topics from houseplants to landscaping.
- ✓ The project focused on helping community members construct rain barrels to capture rainwater and provided them with information on how to use the water in the home landscape.



Project Sponsors

- ✓ Kansas Clean Water Neighbor Grant funded by EPA 319 Funds and Kansas Water Plan Funds.
- ✓ Coca-Cola Enterprises, Inc. supplied food-grade barrels at no cost (recipients charged a fee of \$10 to pay for shipping costs).



Russell – March 6

A student puts screen material over the intake spout.



Students were shown how to put the barrel together.



Russell – March 6

Students put on the bung to attach the faucet.



Once completed barrels were carried out for distribution to customers.

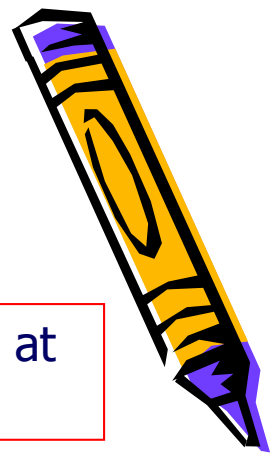
Ellis – April 15

Holes were drilled.



Students put on the overflow value on the barrel.

Ellis – April 15



Students enjoyed pizza at the end of the day.



Students loaded barrels onto a trailer.



Hays – April 20

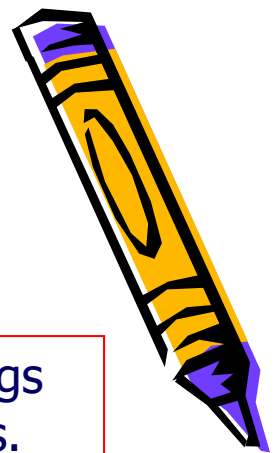


Barrels were unloaded from the trailer to be made into rain barrels.

Customers lined up to register for rain barrels.



Hays – April 20

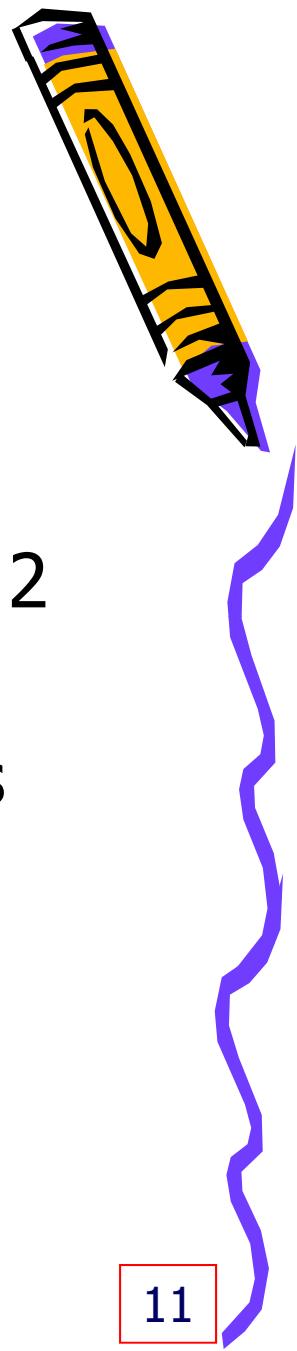


Students unpackaged bungs and values for the barrels.

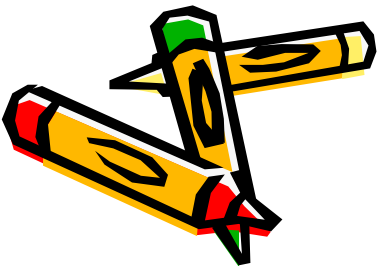
Holes were drilled for the downspout.



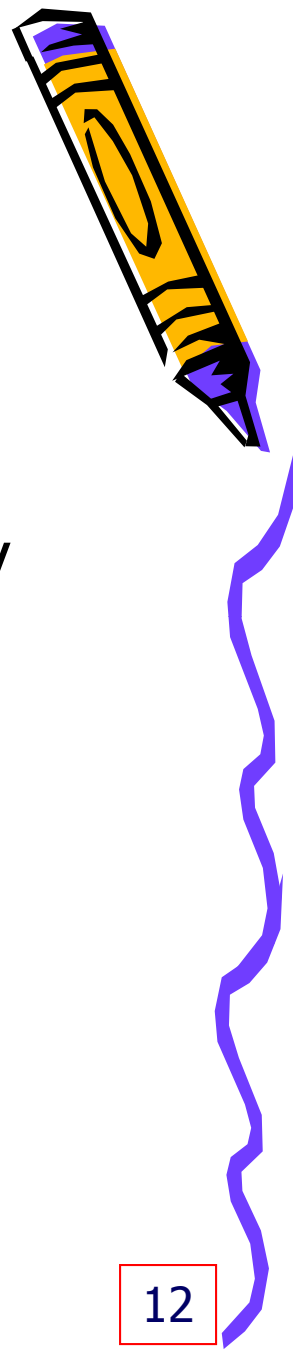
Rain Barrel Recipient Feedback



- ✓ 97% felt the event was effective.
- ✓ Over 50% installed the rain barrel within 2 weeks after the event.
- ✓ 84% learned new conservation measures from the event.



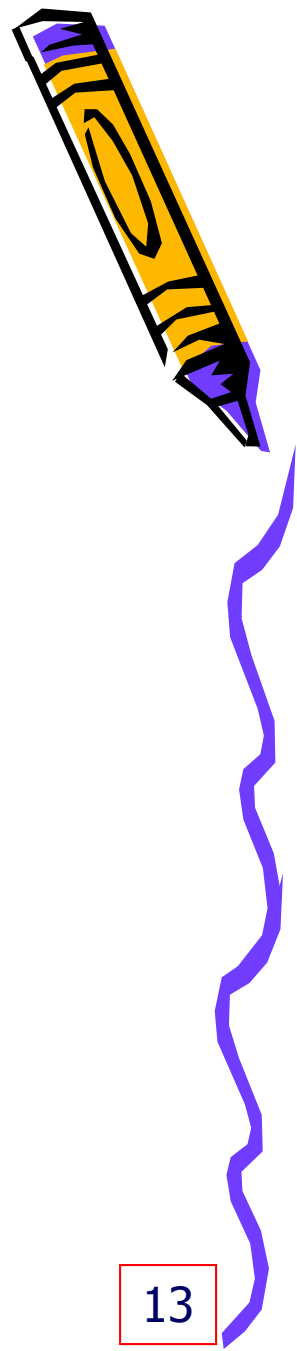
Student Survey



- ✓ 93% felt the community aspect of the course helped them to see how course material learned can be used in everyday life.
- ✓ 64% felt that participating in the community helped them enhance their leadership skills.



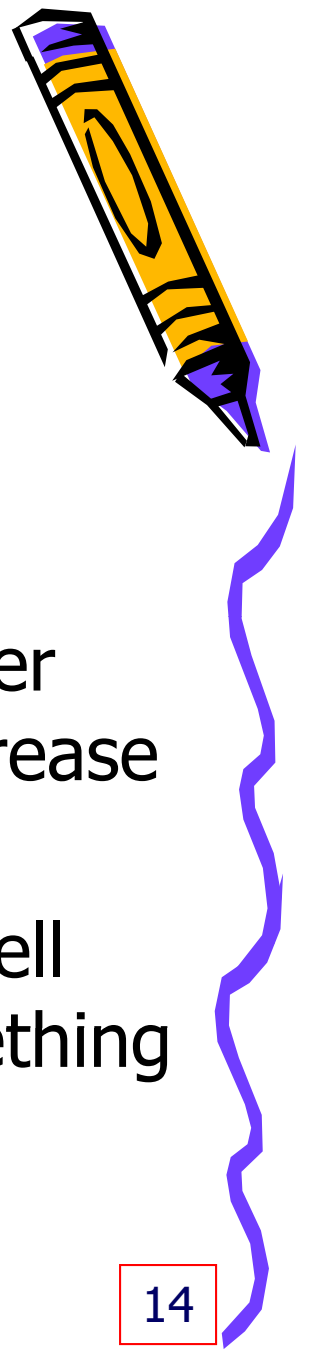
Student Survey



- ✓ 93% believe this experience had positive impacts on informing the public about ways to improve water quality in the community.
- ✓ 93% believe they learned more participating in the service-learning project than writing a term paper on water conservation.



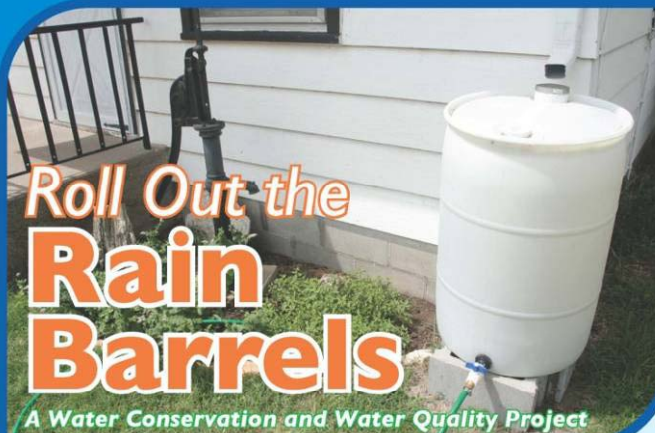
Student Comments



- ✓ It made me realize that I could make a difference in the community.
- ✓ It's a great way to connect with the community and bring more students closer together as a team which can overall increase classroom learning.
- ✓ It will help develop students into more well rounded individuals, and they learn something while they do it.



Rain Barrels - Educational Material



Roll Out the Rain Barrels

A Water Conservation and Water Quality Project

Two historical events mark heightened awareness of the need for citizens and communities to help protect water as a natural resource:


- In the 1930s, severe drought and dust bowl conditions demonstrated the need for water conservation; and
- In the 1970s, Congress passed the Clean Water Act to enforce water quality standards in the United States.

Today, communities should be even more concerned about water conservation and quality because of more variable precipitation, increasing populations, expanding urban areas, and more pollutants in local waterways.

Each of us can make simple changes to conserve and protect water supplies.

Here are examples:

- Outdoor landscapes** – Plant trees and shrubs to prevent erosion and promote water infiltration into the soil. Use grass swales (low areas in the lawn) or porous walkways to increase infiltration and decrease runoff. Install gravel trenches along driveways and patios to collect water and allow it to filter into the soil.
- Install rain barrels** to collect runoff for later use. Don't have a rain barrel? Try reusing an old container. Wooden, metal, and plastic barrels, old bathtubs, buckets, trash cans, and pots are a few of the items that have been recycled for this purpose.



Smoky Hill River Kanopolis Lake Watershed

Collecting rain water is budget and environmentally friendly. It may save money on your water bill.

- In the heat of the summer, nearly 40 percent of household water is used for outdoor watering.
- Collecting rainwater and using it slowly on your landscape encourages infiltration, which helps prevent runoff of pollutants — including nitrogen, phosphorus, sediment, and *E. coli* bacteria — into local streams, creeks, and rivers.
- Rainwater may be better for flowers, vegetables, trees, shrubs, and lawns because it is not chlorinated. It is chemical-free, naturally soft, oxygen rich, and warmer than water coming from the hose or sprinkler.
- Plants, trees, and shrubs may be more vibrant and hearty when irrigated with rainwater.

Rain barrels connect to the home's downspout and allow the rainwater coming off the roof to fill the barrel. If space is available, several rain barrels can be connected, allowing for larger amounts of storm water to be collected and stored.

Did you know that with a 1-inch rain it only takes 88 square feet of roof to fill a 55-gallon rain barrel?

- On the typical 1,200 to 2,000 square foot roof, 750 to 1,250 gallons of water could be collected from a 1-inch rain.
- To calculate the potential harvesting amount of water from a roof, take the area times 0.623. This will give you the amount for a 1-inch rain.

Being a good steward of natural resources makes a difference. Water from our kitchen faucet is considered to be safe and reliable. In many areas, tap water is surface water that has run down a city street, drained into a creek, river, or stream, flowed through a water distribution system and been treated at a water plant to meet state and federal drinking water standards. Ensuring a safe, reliable water supply takes cooperation. Installing rain barrels at home is one way to do your part.




For more information on water quality protection, contact Stacie Minson, K-State Research and Extension Watershed Specialist, sedgett@ksu.edu, 785-814-7100; James Leiker, Watershed Project Technician, jaleiker@ksu.edu, 785-623-8513; or visit www.MyKansasWatershed.com

Financial assistance for this project has been provided through an EPA 319 grant agreement with the Kansas Department of Health and Environment and the State of Kansas Water Plan Funds.



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How to Build a Rain Barrel

Big Creek Middle Smoky Hill River Watersheds

Cuts:

- 1) Using the 1.5 inch hole saw, cut a hole centered 2.5 inches off the bottom of the barrel.
- 2) Using the 4 inch hole saw, cut a hole on top of the barrel through the plug opposite 1).
- 3) Optional- Using the 1 3/8 inch hole saw, cut a hole 4 inches from the top on either side for the overflow fitting



Supplies

- 55 gal Barrel
- 1/2" Heavy Duty Drill
- Hole Saws (4" and 1.5")*
- Tape Measure
- 2" Crescent Wrench
- Yard Stick w/ Duct Tape
- 3/4" Tank Bung
- 3/4" Threaded Nipple
- 3/4" Threaded Ball Valve
- 3/4" Brass Hose Adapter
- 3"-4" PVC reducer
- 6"x6" Fiberglass screen
- 3"-5" Hose Clamp

Optional:

- 1" Overflow Fitting
- 1 3/8" Hole Saw*
- *Can use jigsaw

Fittings:

- 1) Attach inside of tank bung to end of yard stick wrapped in duct tape. Insert into bottom hole then tighten fitting securely
- 2) Fit threaded nipple, threaded ball valve, and brass hose adapter into tank bung.
- 3) Place fiberglass screen over PVC reducer and stretch by tightening hose clamp; trim excess.
*Insert into 4 inch hole on top of barrel
- 4) Optional- Insert and tighten overflow fitting into cut overflow hole



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Installation, Maintenance, Benefits & Tips

Installation:

- 1) Place 3 concrete blocks on stable, level ground where the barrel will sit
- 2) Measure the height of the barrel plus filter assembly adding 7 inches to the total to determine downspout height
- 3) Using the measurement from above, cut existing downspout and reinsert downspout elbow
- 4) Adjust height of downspout elbow so it rests within 0.5" of filter assembly. Screw back into place



Maintenance:

If the barrel is properly installed it should require little maintenance.

Algae:

Because the barrel is white it will require periodic treatment to inhibit algae growth. Simply add 3/4 cup bleach when barrel is full to kill algae. Wait 2 days to use water.

Mosquitoes:

As long as the filter assembly is in place, no mosquitoes should be able to enter the barrel.

Trash:

Debris such as leaves and asphalt will not enter the barrel as the filter is self cleaning. However sediment will, so periodically rinse the barrel to remove sediment.

Winter Weather:

Either remove the hose and open the ball valve or remove the barrel and reattach a downspout of previous length.

Benefits:

Collecting rainwater is FREE! There are no added costs to your monthly water bill, it actually offsets them!

Rainwater is naturally soft, meaning it contains no minerals or chemicals that inhibit plant growth

Collecting rainwater reduces storm-water runoff into creeks and streams

Use it to:

- Water the Garden
- Water Indoor Plants
- Clean Garden Tools

Tips:

Do NOT drink the water in the barrel, it is non-potable

Increase water pressure by elevating the barrel

Be careful around the barrel when full as it weighs nearly 400 lbs

Contact Information:

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