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Intent

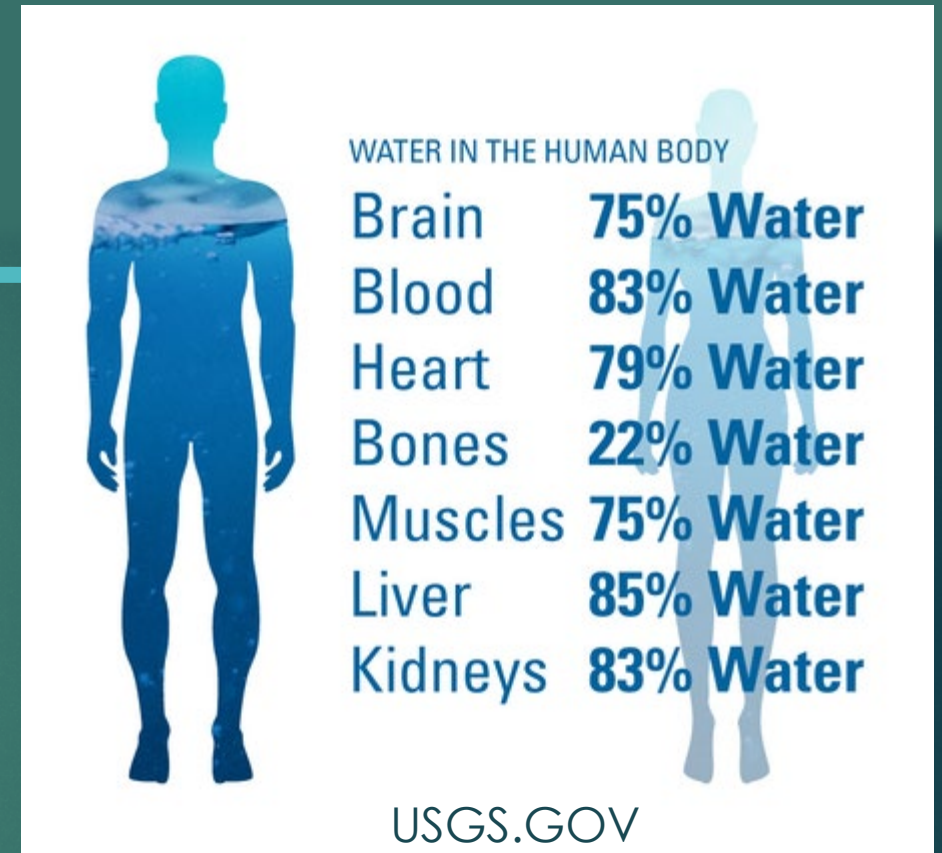
- ▶ Look at benefits of adding water to your landscape
- ▶ Discuss and illustrate quick, easy ways to add water to your landscape
- ▶ Give basic knowledge and resource locations of needed information and points to consider

Elixir of life

► 70% of the Earth's surface

► one-third of our bodies

► brain and heart are composed of 73% water



Emotional/Physical Benefits

- ▶ Sight and sound of water can induce a flood of neurochemicals that promote wellness, increase blood flow to the brain and heart
- ▶ Negative oxygen ions generated by the crashing water that produces the positive effect
- ▶ Numerous researchers have found a connection between negative ions and stress reduction

AHHH –sitting still at the base of a waterfall

Researchers haven't decided how much time you need to hang around a waterfall for optimal benefits, but belief is exposure to a good splash of negative ions could* positively affect

- ▶ Metabolism
- ▶ Immune system
- ▶ Digestion
- ▶ Blood pressure
- ▶ Sleep quality
- ▶ Emotional state

*research on going on benefits

Photo: Switzerland Travel



Improved air quality and reduced noise pollution

- ▶ A flowing water feature will mask nearby noise pollution
- ▶ Releases a continuous flow of negative ions



Running water attracts wildlife



- ▶ Water features attract birds, squirrels, rabbits and other fauna
- ▶ Bird baths, drippers, self made ponds
- ▶ Keep it clean
- ▶ Heated possibly or moving in winter

*Boosts Curb Appeal? **

- ▶ Can add an aesthetic value
- ▶ Won't add value in terms of dollars
- ▶ Can go either way*



Start Small



- ▶ Terra Cotta Saucer-12" to 18" wide
- ▶ Gravel
- ▶ Moist sand mixed with compost or garden soil
- ▶ Larger rocks or pebbles
- ▶ Water
 - ▶ Mineral or distilled water
 - ▶ collected rainwater
 - ▶ tap water allowed to stand a few days to allow chemicals evaporation

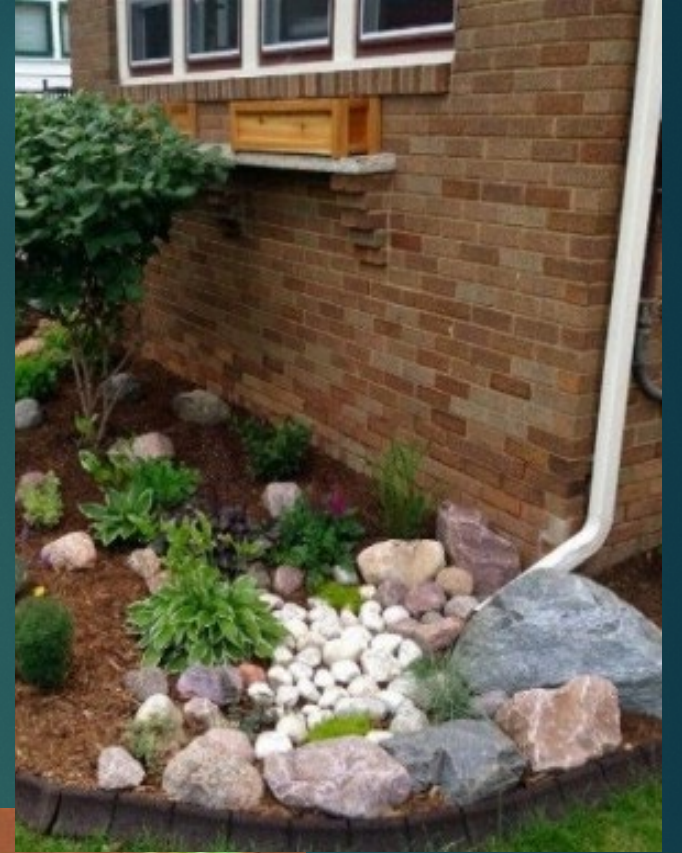
Keep it simple

- Resin waterfall rock
- 120-GPH recirculating pump
- NEEDS
 - Electricity
 - Birdbath or shallow basin at least 2" high
 - at least 1.5" of water



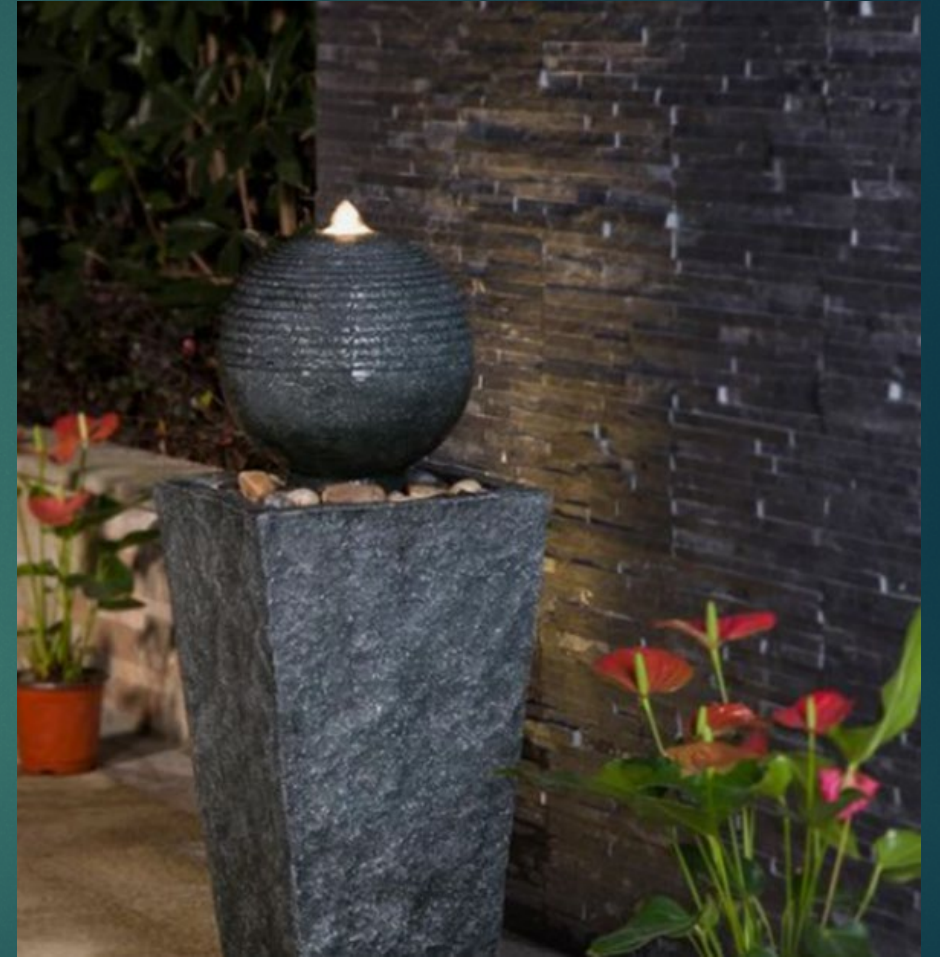
Capture the Rain

- ▶ Redirecting rainwater to a garden low area
- ▶ Temporary rain feature – plan accordingly
- ▶ Enables water to be absorbed slowly back into the soil/groundwater



Purchased Kits/Sets

- ▶ Today's Market – Wide Open
- ▶ Determine placement and room available
- ▶ Pick a price point
- ▶ Pick a size
- ▶ Determine the amount of upkeep you can live with





- Comes in kits with everything you need but water and then it is up to you on where to place in your landscape for maximum effect



Stone bowls, metal dishes, weathered steel dishes, recycled containers and all manner of objects can be turned into water features. Select one that is in keeping with the style of your house and garden



Many How To's Are Out There



BETTER HOME AND GARDENS

<https://www.bhg.com/home-improvement/porch/outdoor-rooms/outdoor-fountain/>



SKY NURSERY

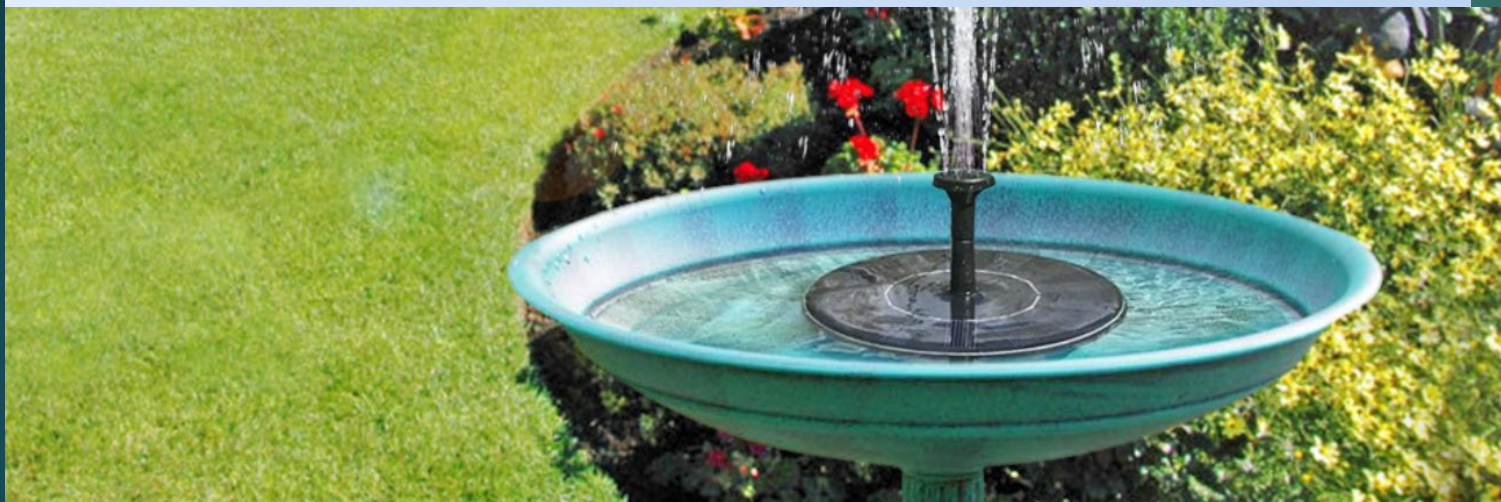
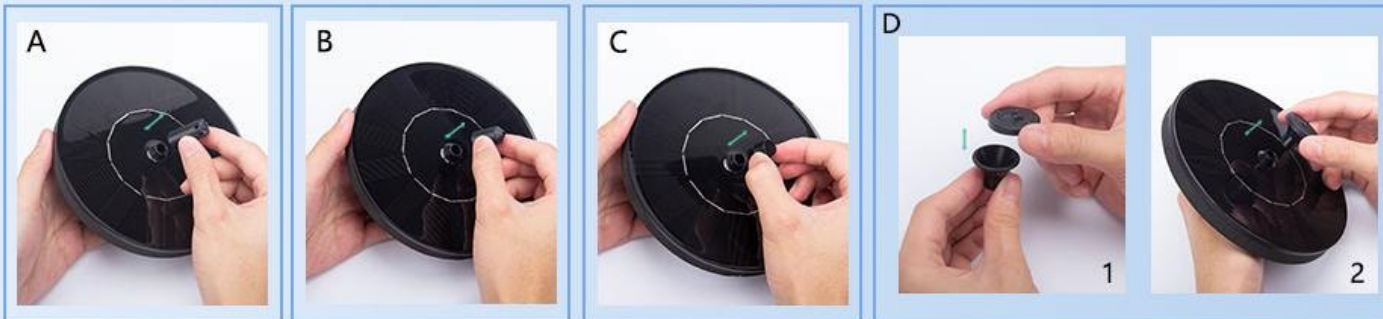
<https://skynursery.com/2015/06/06/create-water-bowl-garden/>

Go solar

- ▶ Solar power is one of the greenest sources of energy in the world, transforming the light from the sun into electricity
- ▶ cheaper than other powered water features – solar power is free solar powered water features free-standing
- ▶ May limit where you can place your water feature



How to install



Note : The solar pump may not work well under below situations!

1. In shadow



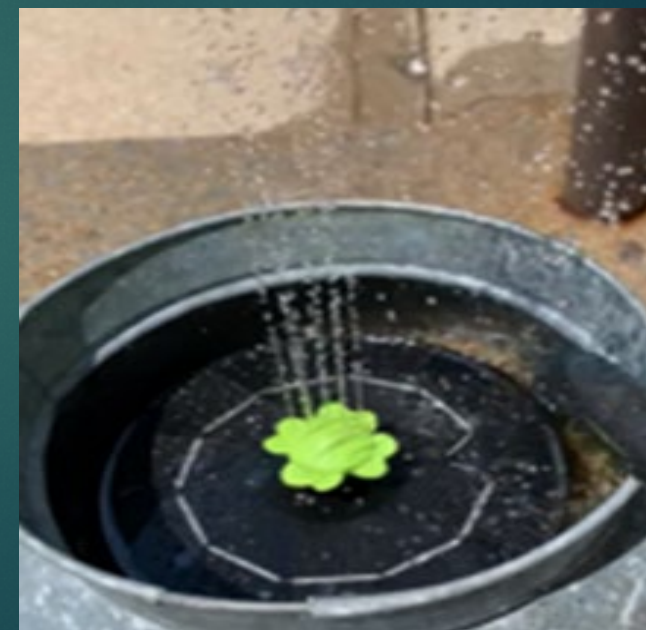
2. The water level is too low



3. Solar panel is blocked



4. Water inlet is blocked



Install A Raised Pond As A Focal Point

- ▶ leads the eye to a focal point or view
- ▶ can be constructed from a variety of materials, including steel, stone or even recycled materials to create distinctive, sculptural creations
- ▶ position so that it can be enjoyed from many angles
- ▶ plants around or in the pool can enhance the natural look and feel of the pond
- ▶ Adding fish can do the same – but both add more upkeep



For all budgets and sense of aesthetics



*“Beautiful Backyard Pond
Ideas For All Budgets”*

<https://empressofdirt.net/backyard-pond-ideas/>

How To's and Resources Abound

- ▶ How to build a pond in your garden – from large ponds to container ponds -

<https://www.countryliving.com/uk/homes-interiors/gardens/a26865154/build-garden-pond/>



How To's and Resources Abound

You will need:

- a watertight container



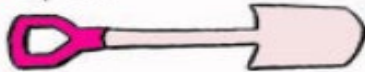
- old bricks, rocks and pebbles



- pond plants



- spade

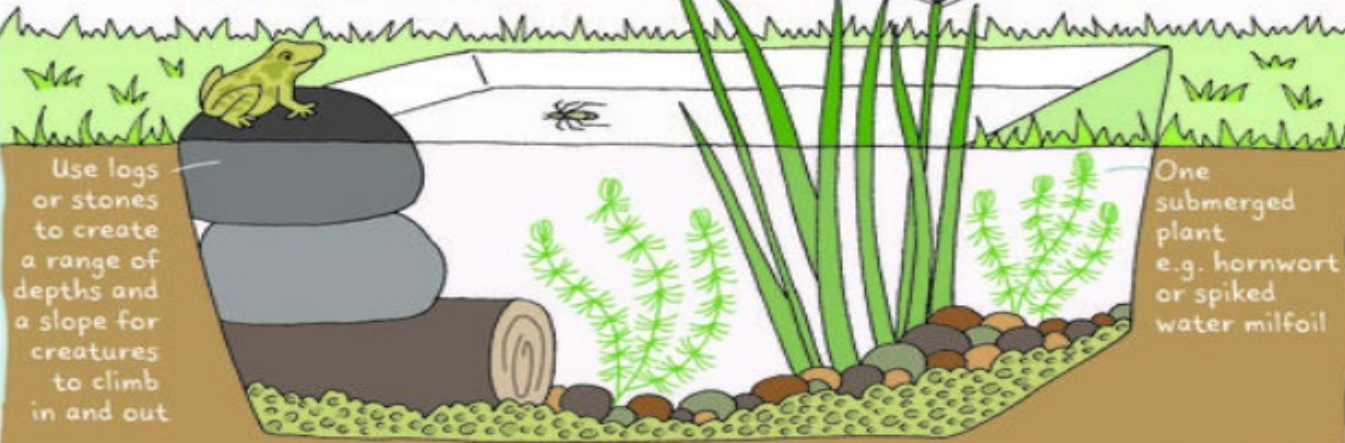


* Is there anything that you can upcycle? It could be an old washing-up bowl, sink or even a plant pot. Aim for 20-30cm deep.

- 1 Choose a spot. Your pond will need light, but not full sunlight all day. You can dig a hole and sink your container, or just have it sitting on top.

- 2 If the container isn't watertight, e.g. an old plant pot, then add a piece of pond liner.

One vertical growing plant that reaches out of the water e.g. flowering rush



Use logs or stones to create a range of depths and a slope for creatures to climb in and out

One submerged plant e.g. hornwort or spiked water milfoil

- 3 Add a layer of gravel and rocks.

- 4 Fill your pond with rainwater (tap water contains chemicals).

- 5 Start planting... you only need two or three plants.

- 6 Now watch and wait! Wildlife will come to your pond of its own accord.

IMPROVE HABITAT WITH WILDLIFE POND

- ▶ Wildlife ponds can work in gardens of different sizes and styles
- ▶ CAN attract an array of creatures, from insects and birds, to amphibians and mammals
- ▶ organic shape than a formal pool, naturally low point in the garden
- ▶ wildlife ponds tend to be better positioned in quieter corners of the garden where the wild visitors will not be disturbed
- ▶ include aquatic plants in the water and marginals around the edge
- ▶ The ideal location is in part sun and part light shade – AVOID OVERHANGING OR CLOSE TREES
- ▶ Dig the pond to different water depths to attract a variety of wildlife, including at least one slope for allowing easy access and exit

All Things Considered - Concerns

- ▶ GFI - Ground Fault Interrupter - device protects us from receiving electric shocks from faults in the electrical devices we use in and around our home
 - ▶ Compares the input current on hot side to the output current on the neutral side
 - ▶ slightest difference in current indicates is current leaking out somewhere, possibly through somebody's body
 - ▶ quickly cuts off the power supply
- ▶ GFI protection receptacle should be installed in any area subject to moisture
- ▶ GPH – Gallons per hour – amount of gallons a pump will circulate through in an hour
 - ▶ Important when powering waterfalls, fountains, and maintain fish
- ▶ Winterizing – disconnect pumps; drain water and store

All Things Considered - Problems

▶ Algae

- ▶ need water, sunlight, and nutrients to grow
- ▶ limit the sunlight
- ▶ Limit nutrients - potted plants or fish
- ▶ Underwater plants and floating plants compete directly with algae for nutrients
- ▶ algicides that are safe for aquatic plants, fish, and organisms found in backyard ponds and water garden containers

▶ Mosquitoes

- ▶ only a problem when not maintained.
- ▶ small aquarium fish or goldfish will eat any mosquito larvae.
- ▶ Mosquito Dunks contains the bacteria *Bacillus thuringiensis* subspecies *israelensis*
 - ▶ can be placed in gutters, rain barrels, swimming pools, birdbaths, animal watering troughs, and anywhere else water accumulates.
 - ▶ effective, long lasting,
 - ▶ safe for people, pets, and fish.

The Math Calculating Water Feature Water Capacity

- ▶ Rectangle or Square
 - ▶ *length x width x pond average depth x 7.5 = volume in gallons
- ▶ Circular
 - ▶ *diameter x diameter x depth x 5.9 = gallons
- ▶ Oval with straight sides
 - ▶ *width x length x depth x 6.7 = gallons

*Length, Width, Diameter in feet

Water Gardens: Installation and Maintenance

*(The following information was prepared by Steven Dobbs, former Extension Horticulturist at
Oklahoma State University)*



https://scott.ca.uky.edu/files/h2o_gardens_install_and_maint.pdf

- ▶ Necessary Supplies
- ▶ Installing a Water Garden
- ▶ Pool Styles
- ▶ Ready, Set, Dig
- ▶ Fountains and Waterfalls
- ▶ Calculating Pond Capacity
- ▶ Aquatic Plants
- ▶ Pond Animal Life
- ▶ Caring for the Water Garden
- ▶ Sources

Other Resources

- ▶ <http://butterfly-lady.com/butterfly-puddling/>
- ▶ https://web.extension.illinois.edu/containergardening/water_problems.cfm
- ▶ <https://www.healthline.com/health/negative-ions>