

Mission Monday Activities

CELEBRATE EARTH DAY 2020!

INDOOR

ENERGY DETECTIVE

In celebration of Earth Day 2020, put on your detective cap and investigate energy use in your own home! Create an energy checklist to find areas where you can save energy and reduce the amount of waste your household produces.

Supplies:

- Pencil/pen
- Paper and clipboard or notepad
- Energy checklist

What to do:

- Using your energy checklist, go on a tour of your house room by room and consider the items and suggestions on the checklist. You can create your own energy checklist starting with the sample checklist provided or you can find an already made list online.
- While on your tour, write down any additional things you think of or ideas you have on how to use less energy and create less waste in your house.
- Once you are finished, discuss your checklist and any new ideas with your parents to see if any changes can be made.
- Take a picture of your completed checklist or changes you've made and post to social media #MissionMondays and tag Wonders of Wildlife

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SAMPLE ENERGY CHECKLIST:

WATER

- Is there any constant flowing water? (toilet/faucet leak)
- How long does the faucet run when you brush your teeth?
- Can you decrease amount of laundry loads by doing only full-sized loads?
- Can you reduce water use when washing dishes?
- Can you reduce water use during baths/showers?
- Can you limit use of outside water hose/sprinklers?

ELECTRICITY

- Do you turn off lights when you leave a room?
- Do you turn off devices when not in use (TV, Computer, Video game console)?
- Do you unplug space heaters, fans or other small appliances when not in use?
- Do you close the refrigerator door immediately after removing an item?
- Do you have energy efficient CFL or LED light bulbs in all your fixtures instead of incandescent bulbs?

WASTE/RECYCLING

- Do you reuse plastic shopping bags?
- Do you have a lot of food waste/scraps that goes into the trash can or garbage disposal?
- Have you considered an indoor or outdoor compost bin for your food waste?
- Do you eat a lot of prepackaged foods or snacks?
- Could you purchase more raw food items or ingredients for preparing meals instead of ready-made or prepackaged items?
- Do you use disposable paper or foam cups, plates or plasticware regularly?
- Could you switch to re-useable plates, cups and silverware instead of disposable kitchenware?
- Do you reuse the same drinking cup or bottle throughout the day?
- Do you have a recycle bin along with your trash dumpster that is picked up by the waste management service?
- Can you reduce the amount of printing from your home computer?

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OUTDOOR

BUILD A WORMERY

A great way to interact with nature and celebrate Earth Day 2020 is to build your own Wormery compost bin! Using the natural process of vermicomposting (A decomposition process using worms, to create a mixture of decomposing vegetable or food waste) and help from our slimy underground friends the worms, you can reduce the amount of food waste that goes into your trash and create useful nutrient-rich compost for backyard gardening. Here is what you need get started!

THIS PROJECT WILL REQUIRE THE ASSISTANCE OF AN ADULT

*The following supplies and instructions are for a three level worm bin whereby three totes are stacked inside one another, allowing for easier maintenance and upkeep. Any materials not already available at home can be purchased online, including worms.

Supplies:

- 3 plastic totes and 1 tote lid
- 1 plastic cooler drain plug or plastic spigot attachment (optional)
- Drill with ¼" drill bit
- Some wooden blocks, bricks or objects to set the totes on to elevate it and allow room for the drain plug/spigot
- Hole-cutting drill bit (for installing cooler drain plug or spigot)
- Worms (Red wigglers are preferred and can be ordered online and mailed direct to your home)
- Bedding: Shredded newspaper and/or torn up corrugated cardboard (Dead leaves, crushed egg shells, egg carton, coffee trays, or even agricultural lime could also be added in small amounts, but avoid any oily or strongly scented material and glossy printed paper)
- Potting soil
- Food waste (Table scraps are best. Just avoid any oil or animal products like bone, meat or fat, or any dairy like butter or yogurt. Citrus is ok to use, just go light with acidic substances like citrus and coffee grounds. Diversity is the key to keeping a balanced composting ecosystem.

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What to do:

- **STEP ONE: DRILL VENT HOLES**
 - Drill ¼" holes in a row along the top 2 inches of all four sides, on two of the three totes. These holes are for ventilation while the top and middle totes are stacked inside one another with the 3rd tote on the bottom. The bottom tote will not get any ¼" holes drilled. When stacked inside one another the holes should be visible and not covered by the tote below.

- **STEP TWO: DRILL BOTTOM HOLES**
 - Drill ¼" holes in the entire bottom surface of the same two totes which you drilled vent holes around the top edge. The holes can be approximately 2 inches from each other covering the entire bottom of the tote. These holes allow for necessary drainage to the bottom tote where the "worm tea" is collected over time. (Worm tea is one of the end products of the decomposition of the table scraps by way of the worms breaking down the material) The "tea" is nutrient rich and can be added to garden soil to act as a fertilizer. These bottom holes also allow the worms to migrate between the middle and top totes as the totes are rotated inbetween compost cycles.

- **STEP THREE: DRAIN PLUG OR SPIGOT INSTALLATION (Optional)**
 - The 3rd undrilled tote will be the bottom tote once all three totes are stacked during assembly. The bottom tote will act as a collection bin for the worm tea drippings throughout the vermicomposting process. The optional plastic cooler drain plug or spigot can be installed on the bottom surface of this tote to allow for easy emptying of the tea drippings when the tote becomes full.
 - To install the drain plug or spigot use a hole-cutter drill bit matching the size of the drain/spigot fitting.
 - If you choose not to install a drain plug or spigot, you will simply need to unstack the bottom tote from the top two totes and empty the bottom collection tote. Then restack the totes as before.

- **STEP FOUR: BEDDING**
 - Now that your totes are prepped its time to add the bedding. To do this you'll need to wet the shredded paper and/or cardboard in a separate container. After wetting, squeeze out excess moisture so the paper is not dripping wet.
 - Next, line one of bins with ¼" holes (This will become the middle bin) with the wet paper/cardboard to a depth of 3-4 inches.

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- STEP FIVE: SOIL
 - Spread the potting soil over the wet paper bedding to a depth of 1-2 inches.
- STEP SIX: WORMS
 - Now it's time to add the worms! Simply dump the worms onto the soil.
 - Allow the worms to settle into the bedding overnight. Start feeding the next day.
 - It's best to feed the worms 1-2 times per week rather than daily. Do Not use meat, dairy products or pet waste.
 - A handful of crushed eggshells can be added on top of the bedding about once a week. Eggshells counter the acidity in food scraps.
- STEP SEVEN: ASSEMBLY & TOTE ROTATION
 - Now you're ready to assembly your wormery! Simply stack the tote with newly prepared bedding/soil/worms inside the bottom collection tote (the tote with no ¼" holes).
 - Then place the tote lid onto the top tote.
 - The 3rd remaining tote (the extra tote with ¼" holes) will be added once the worms have finished breaking down the first tote of compost.
 - To add the 3rd tote you will repeat STEP FOUR: BEDDING, by creating the same bedding/soil layers in the 3rd tote.
 - Once bedding and soil are prepared in the 3rd tote, simply stack it on top of the other two totes.
 - Once the worms have exhausted all food scraps and bedding in the middle tote, they will move up into the new top tote bedding through the ¼" holes drilled in the bottom of the top tote.
- STEP EIGHT: REMOVING FINISHED COMPOST
 - After adding the 3rd tote on the top of the stack, allow the worm's time to migrate upward into the top tote.
 - Once the majority of the worms have moved upward, remove the middle tote and empty the compost.
 - To reset simply repeat STEP SEVEN: ASSEMBLY & ROTATION
- Take a picture, post to social media #MissionMondays and tag Wonders of Wildlife!