



Composting 101

I. Resources to Prepare a Lesson Plan

- A. The Value of a Compost - <http://compost.css.cornell.edu/why.html>
- B. Why Compost? - <http://www2.ca.uky.edu/agcomm/pubs/id/id192/id192.pdf>
- C. Composting for Kids - <http://aggie-horticulture.tamu.edu/kindergarden/kidscompost/CompostingForKids.pdf>
- D. How to Compost with Kids - <https://www.gardeningknowhow.com/special/children/composting-ideas-for-kids.htm>
- E. 8 Great Reasons to Compost – www.thespruce.com/great-reasons-to-compost-1709082
- F. Home & Environment: Household Composting <https://www.extension.purdue.edu/extmedia/HENV/HENV-103-W.pdf>
- G. UK Home composting: A Guide to Managing Yard Waste - <http://www2.ca.uky.edu/agcomm/pubs/ho/ho75/ho75.pdf>
- H. Household Composting with Worms - <https://www.extension.purdue.edu/extmedia/HENV/HENV-104-W.pdf>

II. Materials Needed

- A. How to Build a Compost Bin - <http://extension.missouri.edu/p/G6957>;
 - 1. Wire Mesh Unit
 - a. Materials
 - 10-foot length of 36-inch-wide 1-inch galvanized chicken wire, or
 - 10-foot length of 1/2-inch-wide hardware cloth (note: This will make a bin with a diameter of 3 feet)
 - Heavy wire for ties
 - Three or four 4-foot-tall wooden or metal posts (for chicken wire bin)
 - b. Tools
 - Heavy-duty wire or tin snips
 - Pliers
 - Hammer (for chicken wire bin)
 - Metal file (for hardware cloth bin)
 - Work gloves
 - 2. Snow Fence Holding Unit
 - a. Materials
 - Four wooden or metal posts, 4 to 5 feet long (use pressure-treated lumber for the wooden posts)
 - Heavy wire for ties
 - A 13-foot length of snow fencing, at least 3 feet tall
 - b. Tools
 - Heavy-duty wire or tin snips
 - Pliers
 - Sledge hammer



3. Wood and Wire 3 bin Turning Unit
 - a. Materials
 - Work gloves
 - Four 12-foot lengths of pressure-treated 2 x 4 lumber
 - Two 10-foot lengths of pressure-treated 2 x 4 lumber
 - One 10-foot length of construction-grade 2 x 4 lumber
 - One 16-foot length of 2 x 6 lumber
 - Six 8-foot lengths of 1 x 6 lumber
 - A 22-foot length of 36-inch-wide 1/2-inch hardware cloth
 - 16d galvanized nails (2 pounds)
 - Poultry wire staples (250)
 - Twelve 1/2-inch carriage bolts, 4 inches long, with washers and nuts
 - One quart wood preservative or stain
 - b. Materials for optional lids
 - One 4-x-8-foot sheet of 1/2-inch exterior plywood
 - One 4-x-4-foot sheet of 1/2-inch exterior plywood
 - Six 3-inch zinc-plated hinges
 - Twenty-four 3/16-inch galvanized steel bolts, with washers and nuts
 - c. Tools
 - Tape measure
 - Hand saw
 - Hammer
 - Tin snips
 - Carpenter's square
 - Drill with 3/16-inch and 1/2-inch bits
 - Screwdriver
 - Adjustable wrench
 - Pencil
 - Safety glasses, ear protection, dust mask, and work gloves
- B. How to Build a Wood Compost Bin - <http://www.diynetwork.com/how-to/outdoors/gardening/how-to-build-a-compost-bin>
 1. Materials
 - compost materials
 - 3" galvanized deck screws
 - speed square
 - water
 - 1x6 boards
 - 2x6 boards
 - five-quarter pressure-treated decking boards
 - 3" galvanized screws
 - 5/4" decking
 - 2x2 boards
 2. Tools
 - level
 - post level



- ear protection
- drill bits
- sawhorses
- cordless drill
- measuring tape
- pencil
- saw
- safety glasses
- garden hose
- gloves

C. How to Build a DIY Compost Bin - <http://www.practicallyfunctional.com/how-to-build-a-diy-compost-bin/>

1. Lumber –

- **2×6 boards** (*two 12' boards and three 10' boards*), cut into the following pieces:
 - 15 – 2×6 at 3'
 - 2 – 2×6 at 3' 3"
- **2×4 boards** (*one 12' board and one 10' board*), cut into the following pieces:
 - 7 – 2×4 at 3'
- **2×2 boards** (*two 12' boards*), cut into the following pieces:
 - 2 – 2×2 at 3'
 - 2 – 2×2 at 1' 3-3/4"
 - 2 – 2×2 at 3' 1/2"
 - 3 – 2×2 at 2' 9"

2. Materials

- 15' of 3' tall hardware cloth
- box of #8 2-1/2" deck screws
- box of #8 1" wood screws
- 3' x 3' corrugated polycarbonate panel
- clear silicone sealant
- 2 gate handles
- 4 3-1/2" door hinges
- 4 3-1/2" latch post safety hasps
- 8 2-1/2" flat corner braces
- 2 3" T-plates
- 4 4' fence stakes

3. Tools

- cordless drill
- circular saw (if you need to cut down your polycarbonate panel)
- 3/8" drill bit
- driver bit (Phillips or square drive, depending on the deck screws you have)
- staple gun and staples
- carpenter's square
- wire cutters
- Pencil



- tape measure
 - fence post driver (or a hammer and a spare block of wood)
- D. Other Components Needed
1. Aerator
 2. Thermometer
 3. Sieve

III. Budget Range - \$800 - \$1500

- A. Compost Bin Hardware – \$170.00
https://secure2.homedepot.com/account/view/list/shared/details/6900aa20-18e8-11e7-86b2-5b875a9d48e1/Jessi%20Wohlwend?AID=11210757&PID=7317082&cm_mmc=CJ--7317082--11210757&cj=true
- B. Compost Bin Tools - \$383.00
https://secure2.homedepot.com/account/view/list/shared/details/9194a660-1a7a-11e7-9cc6-d1214a08b87b/Jessi%20Wohlwend?AID=11210757&PID=7317082&cm_mmc=CJ--7317082--11210757&cj=true
- C. Compost Materials - \$200.00
- D. Lumber - \$60.00

IV. Example Project – Morehead State University

- A. Grant Applicant who provided these details: Morehead State University, Holly Niehoff, h.niehoff@moreheadstate.edu
- B. University students constructed a 3-bay compost facility out of concrete block walls with a roof shelter to help control moisture and other environmental factors to speed the composting process. It is utilized by MSU facility groundkeepers, MSU farm employees and student workers, the Earthwise Eagles, and the MSU Center for Environmental Education to compost all organic landscape material from the main campus.

Some of the items used to compost were from the cafeteria and included, but not limited to, fruits and vegetables, eggshells, coffee grounds and filters, tea bags, and nut shells. Commonly, food waste ends up in landfills and dumps, poisoning our water, land and air. It leads to the emission of methane gas that significantly contributes to climate change while forcing gardeners and farmers to rely on chemical fertilizers, leading to agricultural runoff that contaminates ground water.

From offices and other sources on campus we collected shredded newspaper, cardboard, paper, yard and grass trimmings, hay, straw, leaves, sawdust, and wood chips. We also took from the laundry mat the dryer lint.

V. Complementary Projects

- A. Tool Shed