



MASSACHUSETTS
FARM TO SCHOOL

School-Wide Composting

January 18, 2023



MASS. FARM TO SCHOOL OVERVIEW

Mass. Farm to School strengthens local farms and fisheries and promotes healthy communities by increasing local food purchasing and education at schools.

Get involved through our:

- Professional learning opportunities
- Networking
- Policy/Advocacy
- Communications

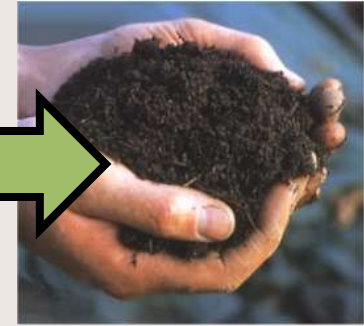
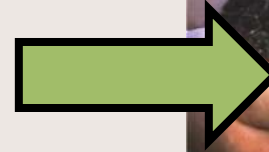
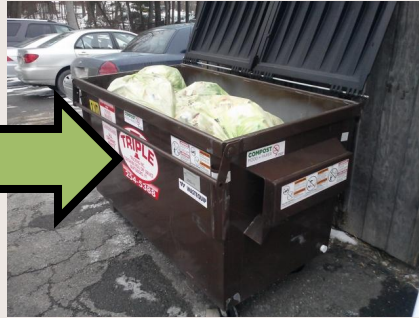
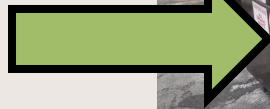


Presenters

Amy Donovan is the Program Director at Franklin County Solid Waste Management District, in Greenfield, Mass. The Solid Waste District manages programs for 21 member towns, including 17 transfer stations and 25 public schools. Fourteen transfer stations in Franklin County offer free drop-off organics programs for residents, and the majority of schools within the solid waste district divert food waste from the trash. Amy enjoys working with schools, and has set up indoor worm compost bins in dozens of classrooms since 2007.



School-Wide Composting



Mass Farm to School
Webinar
January 18, 2023

Amy Donovan
Program Director
Franklin County Solid Waste District



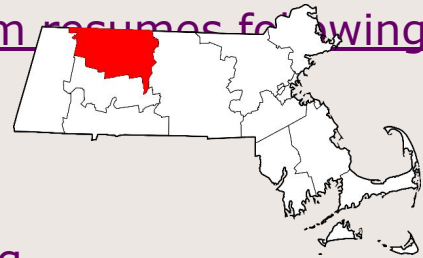
Today's agenda:

- A. About FCSWMD / 33 of 35 schools in Franklin County before pandemic
- B. Why compost?
- C. Curriculum tie-ins
- D. What "size" compost system for your school?
- E. Logistics, examples: **Buckland-Shelburne Elementary School** (David Conlon)
- F. How to sort lunch waste: school slides
- G. Resources: NEW - **Green SWoRD** a

A. About FCSWMD / Press for School Composting

Greenfield Recorder, 2022:

- [Spearheaded by honor society, Mohawk Trail Regional School resumes composting](#)
- [Bernardston Elementary composting program resumes following pandemic-induced hiatus](#)



2018:

- [33 of 35 County Schools Actively Composting](#)
- [Composting Before Kindergarten](#)
- [Editorial - Composting: Kids Have Got it Down Pat](#)

2017:

- [Conway students learn about the role of worms in composting](#)

Spearheaded by honor society, Mohawk Trail Regional School resumes composting

GREENFIELD RECORDER

March 2022



Mohawk Trail Regional School senior Austin Sullivan, at left, monitors the sorting station, while other students sort their lunch waste into trash, recycling or compost bins. Food and paper waste is sent to Martin's Farm in Greenfield for composting. CONTRIBUTED

Mohawk's compost program started in March 2012!



In 8.5 years, MTRS has composted an estimated:

- **550 cubic yards,**
 - **or 23 huge dumpsters of food and paper!**
- Saved 100's of metric tons of greenhouse gases*
- Saved 1000's of bags of trash!

*metric tons of carbon dioxide equivalent (MTCO₂E)

Pioneer Regional High School/Middle School Compost Program (Northfield, MA); since 1999 or 2000

Waste stations around school:



B. Why Compost?





Trash goes to landfills, incinerators



- Does NOT become soil
- Expensive
- Incinerators at capacity
- 5 years left in MA landfills
- No landfills in western MA
- Contributes to climate change

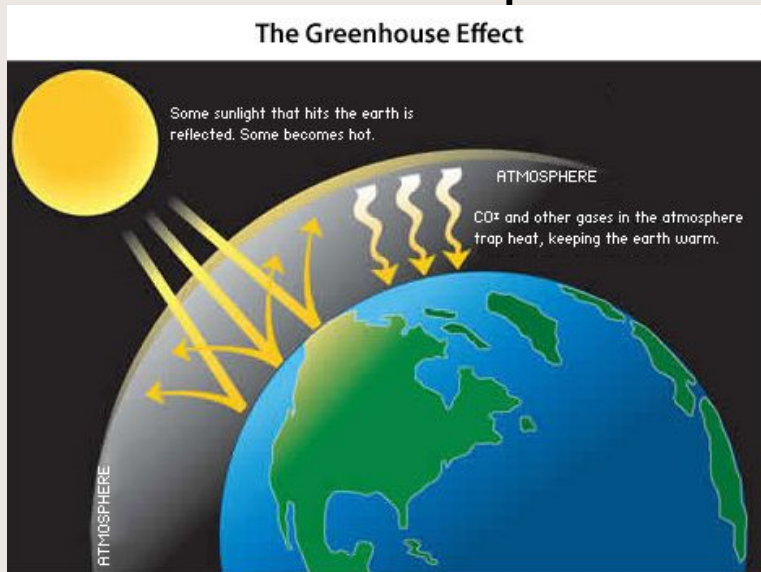
MSW from western Mass
Sent by train to landfills in
faraway states:

South Carolina
Pennsylvania



Composting and recycling help slow **Climate Change**

Climate Change is caused by greenhouse gases in earth's atmosphere.



Greenhouse Gases:

- Carbon Dioxide
- **Methane** (food waste in landfills)
- Nitrous Oxide

When food waste (and paper) decay in a landfill **methane** is released. ge

Methane is a greenhouse gas **28 - 80 times** more potent than carbon dioxide. (US EPA)

Methane pipe at a landfill



MassLive
photo

Why doesn't *composting* release methane?
Because oxygen is part of the composting
process. There is *no* oxygen in a landfill.

Windrow turner
at Martin's Farm
turns/stirs
windrows.

Windrows at
Martin's Farm,
Greenfield, MA

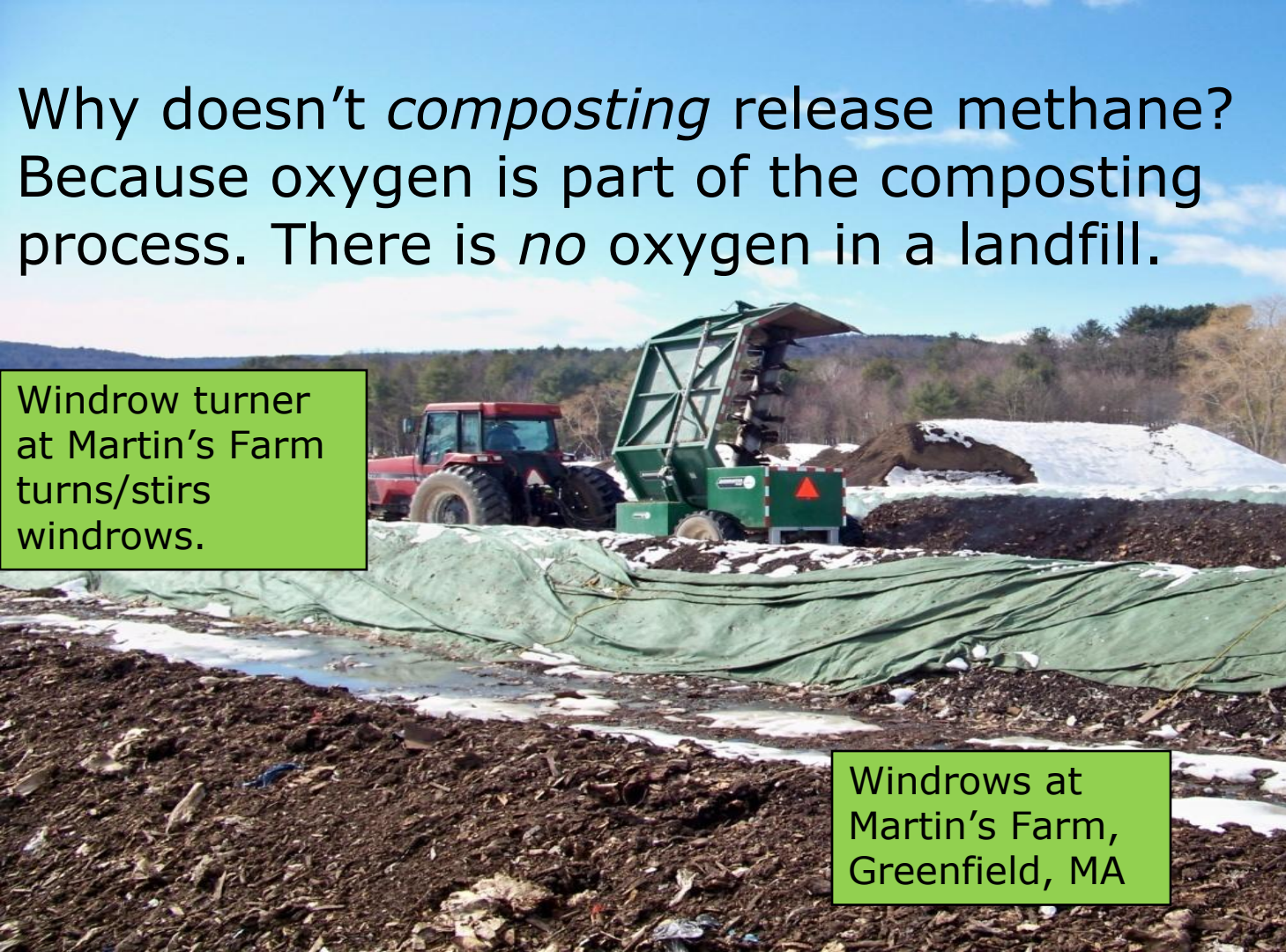
**Martin's Farm
in Greenfield
accepts
organics from:**

25 public and
private schools,
UMass, colleges;

10 municipal
organics programs

Greenfield,
Deerfield,
Northfield,
Bernardston,
Shelburne Falls

restaurants
-Shelburne Falls
Compost
Collection



Compost = "Garden Gold"



- adds nutrients and minerals to soil
- replaces chemical fertilizers
- reduces watering
- improves soil structure



C. Curriculum tie-ins




Greenfield Recorder photo

MassDEP's Green Team

www.thegreenteam.org



- Free activities, prizes, bins, worm certificates for classroom worm bins
- Activities and lesson plans that align with Massachusetts Curriculum Frameworks for Math, ELA, and Science and Tech

	THE GREEN TEAM	Compost Lesson	<small>THE GREEN TEAM A program of the Massachusetts Department of Environmental Protection 413-445-4556 ext. 25</small>
	<small>E-mail: recycle@thegreenteam.org</small>	<small>www.thegreenteam.org</small>	
Compost Lesson Plan			
THEME:	Composting is the oldest form of recycling. It provides an opportunity for students to observe the decomposition process and energy cycle at work; produces a valuable soil supplement; and reduces the amount of organic material requiring landfilling or incineration.		
GOAL:	Students will learn how soil organisms recycle organic wastes through composting.		
METHOD:	Students will observe soil organisms in a compost sample, then fill a compost bin with organic wastes and observe the decomposition of the organic wastes into humus during the school year.		
TIME:	45 - 60 minutes for discussion and bin set-up, several months for observations.		
MATERIALS:	<ol style="list-style-type: none">1. Compost bin2. 3-4 large bags of wet leaves (can also use straw, sawdust, cardboard, paper). If the leaves are not wet, they will need to be thoroughly dampened during the bin set-up. If a hose is not available for use, it is more effective to dampen the leaves ahead of time. Spread the leaves out on the ground prior to a rainfall or in a location where a hose can be used. Once they are thoroughly wet, put them in plastic bags and they will		

What is compost?

- During decomposition, worms, bugs, fungi, and bacteria eat dead leaves, trees, and animals.
- As living things decompose, **compost is created**



COMPOST
FOOD + PAPER

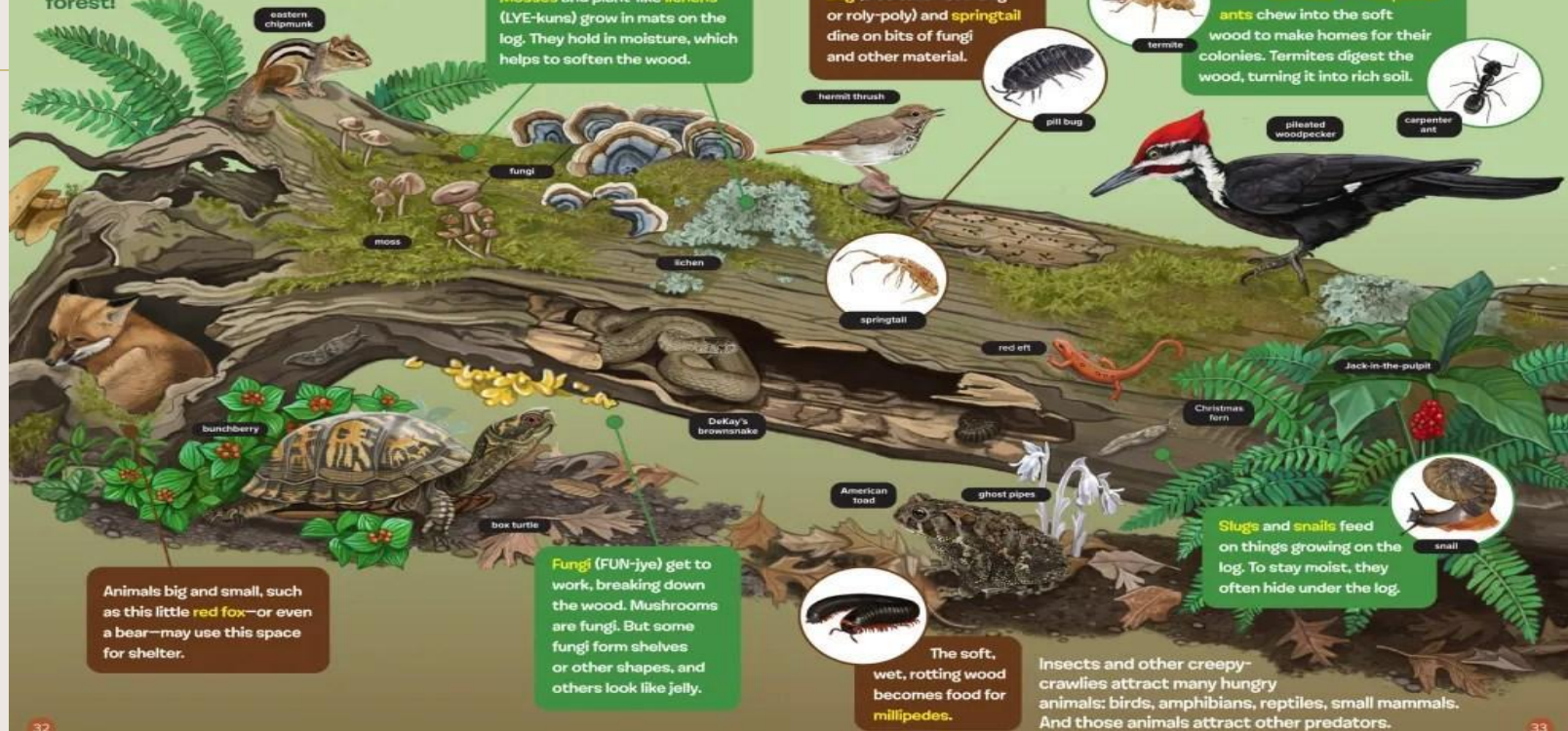


Funded by a grant
from MassDEP



WE DIG
DIRT!

Check out the new life that takes over a rotting log in an eastern North American forest!



eastern chipmunk

Mosses and plant-like lichens (LYE-kuns) grow in mats on the log. They hold in moisture, which helps to soften the wood.

Creatures such as the pill bug (also called sow bug or roly-poly) and springtail dine on bits of fungi and other material.

Both termites and carpenter ants chew into the soft wood to make homes for their colonies. Termites digest the wood, turning it into rich soil.

Animals big and small, such as this little red fox—or even a bear—may use this space for shelter.

Fungi (FUN-jye) get to work, breaking down the wood. Mushrooms are fungi. But some fungi form shelves or other shapes, and others look like jelly.

The soft, wet, rotting wood becomes food for millipedes.

Slugs and snails feed on things growing on the log. To stay moist, they often hide under the log.

Insects and other creepy-crawlies attract many hungry animals: birds, amphibians, reptiles, small mammals. And those animals attract other predators.



COMPOST
FOOD + PAPER
NO PLASTIC
Funded by a grant from NewDCP



Harvest



Commercial Composting



D. What type/size compost system?



Earth Machine, left and New Age Composter provided by Mass DEP's The Green Team.

(+ Green "Sure Close" compost pail)

at Frontier High School Garden, Deerfield, MA

3 "sizes" of composting:

which size is right for your classroom, school, school district, or home?

Small: Indoor **worm bin**
(vermicomposting)

- ✓ Red Wiggler worms
- ✓ Newspaper bedding
- ✓ Raw vegs, fruits *only*
- ✓ Newspaper, bones, dairy,

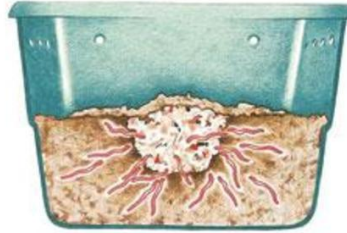


Medium: Backyard or **on-site** composting

- ✓ Veggies, fruit, bread
- ✓ Yard waste, leaves
- ✓ No meat, bones, dairy,



Worm Bin



YES!



YES: fruits, vegetables,
eggshells, coffee grounds +
paper filters, newspaper

NO!



wiseGEEK



NO: meat, cheese, bread,
crackers, **pineapple**,
salad dressing

On-site composting:

*Educational on-site
compost bins
at schools*



YES: compost fruit, peels, vegetables, bread, pasta, leaves, yard waste

NO: animal products – meat, bones, cheese!

NO: paper, milk cartons

Buy home compost bins “at cost” from your municipality.

MassDEP
free com



Composting is easy!

To make compost, just follow these simple steps:

1. Add three parts "browns"...

Fall leaves, straw, salt marsh hay, shredded paper and cardboard (newspaper, paper towels, paper plates, paper bags), chipped brush, sawdust, pine needles (pine needles should not make up more than 10% of total material in pile).

...and one part "greens"

Grass clippings, weeds (not laden with seeds), vegetable and fruit wastes, seaweed, eggshells, coffee grounds and filters, tea bags, manure (horse, cow, rabbit, chicken, goat, gerbil, etc).

2. Mix or layer materials.

After every 12" or so, add a few shovelfuls of rich soil or compost.

3. Keep it damp and aerated.

Wait a few months, and voila...black gold!

For best results, and to keep out odors and pests,

DO NOT ADD:

- Meat, bones, fat, grease, oils
- Peanut butter
- Dairy products
- Cooked foods with sauces or butter
- Dog and cat manure
- Diseased plants
- Weeds gone to seed
- Weeds that spread by roots and runners (vines)



Compost Bin in School Garden



Greenfield Recorder photo

YES:
fruit,
vegetables,
bread,
leaves,
garden waste,
grass clippings

NO:
meat,
bones

Medium: on-site school composting (similar to home composting)

- Larger system: 3-bay compost system
- No meat, bones, dairy, oily foods, peanut butter
- Kids empty pail after lunch
- Cover w/ leaves, **add leaves regularly**
- Stir/ turn often

- Hawlemont "HAY"
Agricultural Curriculum
- Adds compost to gardens



Medium
Sized
Composting

Sign for
on-site
composting
@
Franklin
County
Technical
School

COMPOST

FOOD (NO MEAT, BONES, CHEESE)
NAPKINS

YES!



YES- DO compost:

"Vegetarian" food waste:

- Fruit, peels
- Vegetables, tater tots
- Salad (no heavy dressing)
- Bread, pasta, rice, cereal
- Crackers, cookies, cake

Paper:

- Napkins
- Straw wrappers

YES!

NO- DO NOT compost:

- **NO** meat, chicken, fish
- **NO** cheese, yogurt, dairy
- **NO** peanut butter
- **NO** mayonnaise, oil
- **NO** plastic, metal, foil
- **NO** packets (mayo, etc.)
- **NO** trash



NO!



**Franklin County
Technical School**

82 Industrial Blvd, Turners Falls, MA 01376 | 413.863.9561

On site composting
from Culinary Arts,
Cafeteria, Kitchen;
No animal products
Composted by
Landscape
Horticulture students
*Pictured: Landscape
Horticulture
Students rake leaves
from fields and use*



Large: Commercial Composting at compost facility accepts:

ALL food: including meat, bones, cheese, oily foods...

Paper: napkins, paper towels, food boats, paper lunch trays,

Up to 93% of a school lunch is compostable!



Enacted Nov. 1, 2022: MassDEP waste ban on food waste - more than 1/2 ton/week from commercial/institutional.

Windrows at Bear Path Farm, Whately, MA



School composting: ALL food is acceptable!

ALL food: meat, bones, cheese, (yes, animal products)
bread, veggies, fruit...

ALL paper: napkins, paper towels, paper trays, (milk cartons)

Compostable Plastic: special cups, bags: "BPI-certified"



**Windrows and
windrow turner at
Martin's Farm**

Federal St School: 82% of cafeteria waste is compost!



Trays: stacked,
then composted

451 lbs. compost/week
Cafeteria and Kitchen

97 lbs. trash/week
Cafeteria and Kitchen

E. Logistics and Examples

HS School Kitchen:

- Same 32-gal barrel as cafeterias
- 2-3 compost barrels on wheeled dollies. Roll out to compost dumpster; lift and carry multiple bags.



Small school kitchen:

- 23-gallon compost barrel;
- 5-gallon trash pail
- 1 lb. of trash/ day!



Signage is important



Compostable bags:
32 or 38-gallon, must
be BPI-certified:
<https://bpiworld.org/>

COMPOST

ALL FOOD:



Yes, compost: meat, bones, cheese,
bread, pasta, veggies, fruit, condiments



PAPER:

Paper trays, milk/juice cartons,
napkins, paper plates, paper 'boats'



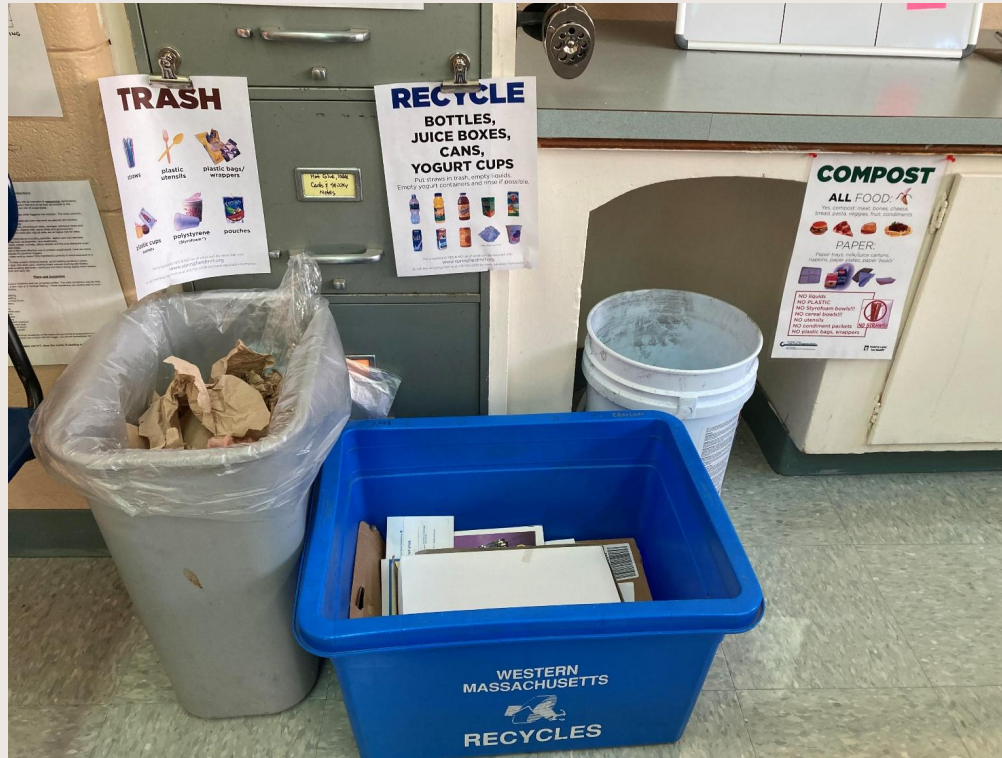
NO liquids
NO PLASTIC
NO Styrofoam bowls!!!
NO cereal bowls!!!
NO utensils
NO condiment packets
NO plastic bags, wrappers



School-wide composting at Buckland-Shelburne Elementary School (BSE): cafeteria



School-wide composting at Buckland-Shelburne Elementary School: classrooms



School-wide composting at Buckland-Shelburne Elementary School: hallway stations



Classroom "job" - students empty classroom bins into hallway stations



David Conlon photo

Buckland-Shelburne Elementary School: washing classroom pails



David Conlon photo

School-wide composting at Buckland-Shelburne Elementary School: bathrooms

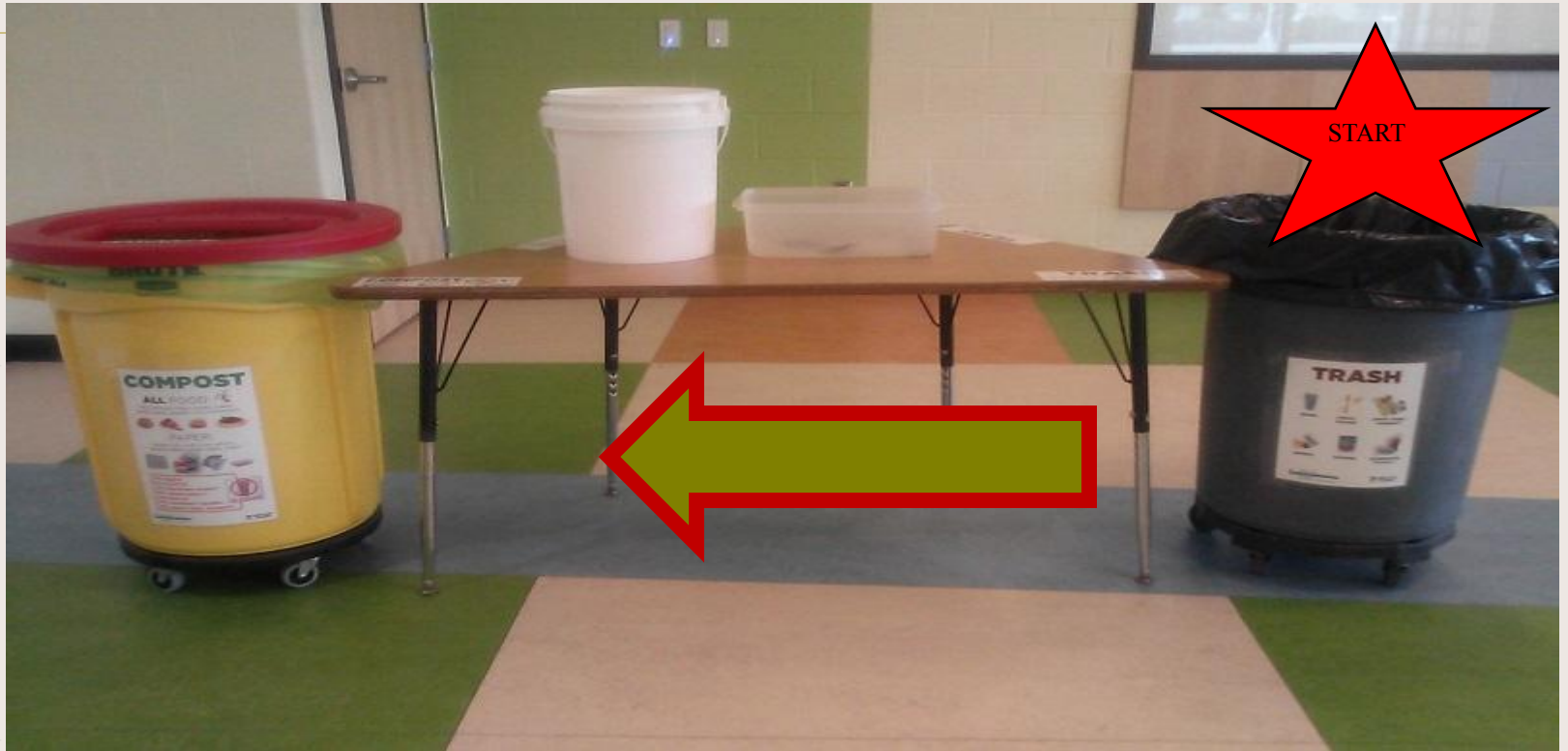


Buckland-Shelburne Elementary School compost dumpster (emptied weekly, brought to Martin's Farm)



F. How to sort lunch waste

Actual school
pres. slides



TRASH

PLASTIC WRAPPERS, STRAWS, ETC.

Funded by a grant
from MassDEP

Before
you get
up,
make a
trash pile:

The rest
is food &
paper for



Step 1:

TRASH

PLASTIC WRAPPERS, STRAWS, ETC.

Funded by a grant
from MassDEP



straws



plastic
utensils



plastic bags/
wrappers



packets



pouches

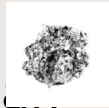


polystyrene
(Styrofoam™)

Step 2:



Recycle
juice **boxes:**
Empty, throw away
straws



Recycle clean
aluminum
Foil

RECYCLE



**BOTTLES,
JUICE BOXES,
CANS,
YOGURT CUPS**

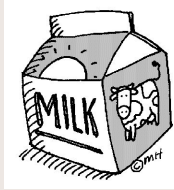


Throw away straws, empty liquids,
empty yogurt containers (rinse if possible)



For a complete YES & NO of what can be recycled,
visit www.franklincountywastedistrict.org or call 413-772-2438

Step 3 – Compost milk carton:



Throw away straws.
Empty milk
into pail



Put carton in
compost bin.



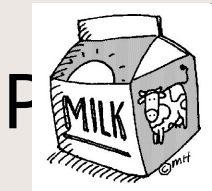
Step 4:

COMPOST
FOOD + PAPER



Funded by a grant
from MassDEP

ALL *leftover* food
(eat your lunch!)



F : r ca nap od boar, tray
Trays stacked,
then composted

YES!

Paper comes from trees,
so it will turn into soil = compost!



Lunch trays should ideally be BPI certified or PFAS free:
<https://bpiworld.org/>

G. Resources



- MassDEP's Green Team: free bins, activities, lesson plans that align with state standards: www.thegreenteam.org
- Green Team Films: <https://thegreenteam.org/recycling-facts/food-waste-reduction/>
- **Green Team's 9 Minute Film about Franklin County Schools (How to Set Up a School Compost Program"):** https://www.youtube.com/watch?time_continue=2&v=YD4hYv-UEeo
- Recycling Works MA lists organics haulers, gives free assistance: <https://recyclingworksma.com>
- ****** Green SWoRD ****** is a state initiative on school waste reduction. **Next mtg:**



MassDEP's RDP program

Your city/town's earned "RDP" funds: can be used to support school composting:

- Signage
- Bin liners
- Equipment (bins, etc.)
- Post consumer recycled content plastic trash barrels, etc.
- Collection/processing costs
- Stipends for personnel coordinating new compost programs



Amy Donovan (all photos by A. Donovan except when noted)

Program Director

Franklin County Solid Waste Management District

Greenfield, MA

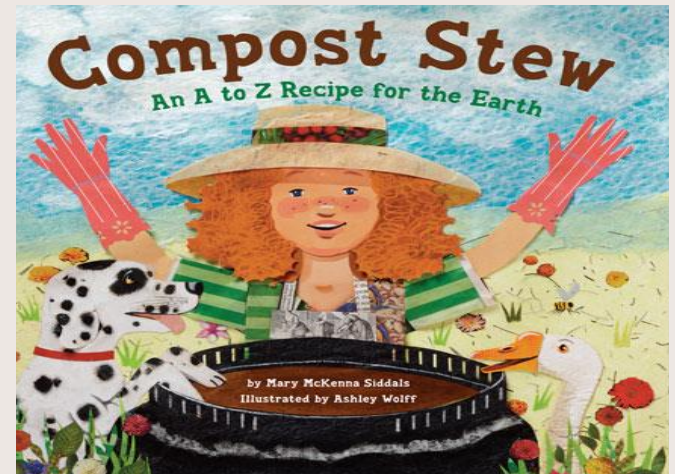
413-772-2438

amy@franklincountywastedistrict.org

David Conlon: dconlon@mtrsd.org

6th Grade Teacher

Buckland-Shelburne Elementary School



Great Book for K-4 >>>>

STAY IN TOUCH!



Visit us online:

www.massfarmtoschool.org

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