Project Name: Copper Country Recycling Initiative
Grantee Houghton County

Project Goals and Objectives

The primary goal of this project was to initiate a cardboard recycling program within Houghton County with a desired end result of recycling 75% of the cardboard waste generated in the County after two years. These goals were to be achieved through a County wide recycling education effort and with the purchase of two cardboard bailers, one housed at the Houghton County Transfer Station (Transfer Station) and the other at the Chassell Township Department of Public Works Garage.

The cardboard bailers were purchased and a new structure was built to house the unit purchased for the Transfer Station. Both Locations began to accept cardboard in early 2016.

The educational component of the program was accomplished using a two pronged approach the first of which was Houghton County contracting with the local intermediate school district to provide educational programs within the various area schools while members of the Copper County Recycling Initiative conducted a community outreach program to promote the recycling initiative.

Copper County Recycling Initiative Partners

Copper Country Recycling Initiative
Houghton County Controller's Office
Houghton County Building Department
Houghton County Planning Commission
Houghton County Transfer Station
Chassell Township Department of Public Works
Copper Country Intermediate School District
Michigan Technological University
Portage Lake District Library
Lake Superior Stewardship Initiative
Calumet Laurium Keweenaw Schools
Lake Linden Hubble Schools
Houghton School District

South Range Elementary School
Jeffers School District
Hancock Middle School

Results

Thru the end of the grant period, both recycling locations produced a combined total of 145 bales of cardboard which weighed from 1,300 – 1,400 pounds each which equates to close to 100 tons of cardboard collected, baled and recycled over the grant period. This however falls far short of the stated goal of the grant to recycle 75% of the estimated 1,300 tons of cardboard waste that is generated every year in Houghton County.

While the level of volunteer effort provided by the Copper county Recycling Initiate for this project was impressive, and the purchase of the recycling equipment and building construction went smoothly, the level of recycling fell short for a number of reasons.
Firstly, a large portion of the household garbage that comes into the Houghton County Transfer Station is collected by various municipalities within the County, none of which have the capabilities to provide curbside recycling. Any residents of those municipalities wishing to recycle would have to separate their cardboard from the rest of their garbage and drive it to the Transfer Station. However, the majority of the cardboard that is being dropped off at the Transfer Station is coming from these residents that have not patronized the Transfer Station in the past. Transfer Station staff estimate that 80% of the cardboard that is collected comes from these individuals. They come in to drop off cardboard and nothing else.

Two of the larger communities in the County (Houghton and Hancock) do provide curbside recycling but they do not dump at the Transfer Station so, their recycling figures are not included here.

Residents who have been long time customers of the Transfer Station, many of who have inquired about the cardboard recycling, have chosen not to make the effort to separate and flatten their cardboard. Transfer Station staff estimates that only 2% of these customers have chosen to recycle.

The Copper County Recycling Initiative did take the time to make face to face contact with the local business community regarding separating their cardboard, and a number of them are doing so to the point where it is generating approximately 20% of the total cardboard collected. However a number of business that generate large amounts of waste cardboard have stated to staff at the Transfer Station that they were not willing to incur the labor cost to have their staff separate the cardboard from the rest of their waste.

Products Created

The following items were purchased, constructed or produced during the process of the Copper Country Recycling Initiative grant.

The following was purchased and reimbursed by grant funds from the DEQ grant:

- Construction of an 800 square foot building at the Houghton County Transfer Station to house a cardboard bailer and bales including upgrade of electric service to handle power needs
- Modification of Chassell Township Department of Public Works garage to allow for placement of bailer and related operations.
- Two 10hp 3 phase balers.
- Pallet jack for the Houghton County building.
- Signage for Houghton County building.
- Ways to Recycle in Houghton County brochures.

The following items were generated as a result of the educational component of the project:

- Brochures for in-class recycling presentations
- Classroom presentation synopsis
- Cardboard Recycling event brochure
- Cardboard Recycling Launch brochure
- Various recycling press releases
- Flyer regarding acceptable and unacceptable materials at the Houghton County Transfer Station.
- Waste reduction competition guidelines
- Waste walk through assessment form
- Summary of school presentations
- 1-year recycling anniversary flyer
- Recycling and waste reduction workshop flyer
- Reduce your waste and recycling activity kits

Conclusion

With the conclusion of the DEQ grant, cardboard will continue to be collected at both the Transfer Station and Chassell sites and the Copper Country Recycling Initiative continues as a functioning group. It is expected that we will continue to receive a steady flow of cardboard at both facilities but, in the absence of a continuing promotional campaign, it is not expected that the recycling rates will increase over time.

Thank you to Our Sponsors

Down Wind Sports
Kirkish Furniture
Rhythm Bike & Board Co.
Dan Riutta Contracting & Sales
Cross Country Sports
Monte Consulting
Good Times Music
Surplus Outlet
Chickadees
Blue Terra Energy
The Print Shop
BHK Child Development Board
Manderfield Plumbing, Heating & Electric
State Wide Real Estate – Kevin Liimatta
Keweenaw Brewing Company
Portage Lake District Library
Keweenaw Food Co-op
Lake Superior Stewardship Initiative
Keweenaw Kountry Store

COPPER COUNTRY
Recycling Initiative

We are a grass-roots community organization
OUR MISSION:

WORKING TOWARD A ZERO WASTE COMMUNITY

Curbside recycling MUST be at the curb by 7 AM on your service day.

Recycling MUST be in bins, totes, or a box. Cardboard boxes must be flattened. City of Houghton or Hancock residences who miss their recycling day may bring their recycling to Waste Management for NO ADDITIONAL CHARGE WITH PROOF OF RESIDENCY.

WE ARE A SINGLE STREAM RECYCLING CENTER. ALL ACCEPTABLE ITEMS CAN BE MIXED.

COPPER COUNTRY
Recycling Initiative

Contact and Find Us on the Web @:

www.coppercountryrecyclereuse.com

coppercountryrecyclereuse@gmail.com

www.facebook.com/coppercountryrecyclereuse

WAYS TO RECYCLE IN HOUGHTON COUNTY

1. Cardboard recycling
   At Houghton Co. transfer station, free to Houghton Co. residents, $3/ load for businesses.
   At Chassell Township DPW.

2. Curbside Recycling
   For cities of Houghton & Hancock.

3. Waste Management Recycling Station
   Free drop-off for Houghton/Hancock
   $4/load for non-residents.

4. Up-to-date Directory for:
   Batteries, medications, electronics, household goods, hazardous wastes, other items
   coppercountryrecyclereuse.com.

COPPER COUNTRY
Recycling Initiative

UNACCEPTABLE

No STYROFOAM OF ANY KIND
No Plastic lids, rings, or caps
No PLASTIC BAGS (grocery store bags)
No used paper food products – plates, cups, etc.
No paper towels, napkins, or tissue paper
No metal spiral or plastic ring bindings
No window glass, dishes, mirrors, bulbs
No candy wrappers or chip bags
No wax paper or waxy anything
No plastic transparencies or photographs
No brightly colored (fluorescent) paper
No paper ream wrappers (most have a plastic coating)
No *Tyvek* (reinforced-fiber)
No padded brown envelopes w/ string closure
No dark-colored hanging files
No carbon paper (carbonless is OK)
No plastic food wrappers or packaging
No gift wrap or ribbons
No packing peanuts
No cloth

This project was made possible by the Michigan Department of Environmental Quality, Community Pollution Prevention Grant Program

ACCEPTABLE

Plastics #1-#7, discard lids & caps
Glass – all colors, jars & bottles only
Aluminum cans, tin cans, jar lids, & foil products only
Corrugated Cardboard –empty/flattened
Cereal box type cardboard (remove inner packaging) – empty/flattened
Pizza Boxes – **Clean and empty**
Soft drink or beer cartons – empty/flattened
White boxboard or card stock
Newspapers and inserts
Magazines and Catalogs
Paper bags and other brown paper- empty
Gray paperboard, boxboard, egg cartons
Office paper
Junk mail
Envelopes (labels and windows OK)
Telephone books
Packing Paper (NO tissue)
Soft cover computer manuals
Dark colored accordion files
Manila file folders
Paperback books
Hard cover books
Shredded paper stapled shut in paper bag

CCRI History

1988-1990 and 1993: Grassroots groups initiated recycling trials at the former Houghton County transfer station.
1996: Citizen's Committee initiated monthly curbside recycling in Hancock. Participation was >20% of households.
2003: Waste Management established a recycling drop-off center in Houghton.
2014: Houghton County Planning Commission invited Elisa Seltzer, Emmet Co. Dir. of Recycling to speak. People in attendance were motivated to form a Task Force, apply for the new MDEQ grants, and formally establish the CCRI.
2015: CCRI received a $92,000 MDEQ grant (one of the two largest in the state) to recycle cardboard at the County Transfer Station and to provide a recycling education program.
2016: Cardboard (only) recycling centers were completed at the Houghton County Transfer Station, and the Chassell Township DPW. "Cardboard Launch" celebration was held at Portage Lake District Library.
2016 fall: The cities of Hancock and Houghton worked together to establish city-wide, weekly curbside recycling contracts w/ Waste Management.
2017: "Recycling 1-Year Anniversary" Celebration at the Portage Lake District Library.

New *Reduce YOUR Waste* Presentation for 4th - 6th grade classes

Working towards a zero waste community.

Houghton County 4th, 5th & 6th grade teachers are invited to register for a FREE in-class recycling presentation for students.

The 1-2 hour lesson will demonstrate the importance of reducing waste and recycling, and inspire conscientious behaviors through videos, demonstrations and hands-on activities.

To register, fill out the online Registration Form here. You may also visit our website at wupcenter.mtu.edu or email Marcy Erickson at maericks@mtu.edu .

Funding for this program provided by the Copper Country Recycling Initiative.
coppercountryrecyclereuse.com

COPPER COUNTRY Recycling Initiative

Coordinated by
MICHIGAN TECH'S CENTER FOR SCIENCE & ENVIRONMENTAL OUTREACH

In partnership with

Western Upper Peninsula Center for Science, Mathematics and Environmental Education

Phone: 906-487-3341
wupcenter.mtu.edu

updated 2/2016

COPPER COUNTRY Recycling Initiative

Center for Science & Environmental Outreach
Michigan Tech University

Western Upper Peninsula Center for Science, Mathematics and Environmental Education

Reduce YOUR Waste

Summary

Students explore the question, "Is Garbage a Problem?" They learn what makes up our garbage and that many discarded items can be reused or made into new products. They also discuss the option of reducing packaging to decrease the amount of garbage generated.

Objectives

Students will learn that we can reduce the amount of solid waste produced by more than half if we practice the "3 R's" of solid waste management.

Materials

Trash Talk video free online at http://oceantoday.noaa.gov/trashtalk_specialfeature/welcome.html
Recycling Survey handouts
Garbage Pizzas and tags
Storage tub full of garbage
Bathroom scale
What are We Wasting? worksheets

Lunch Safari Items

Pre-packaged cracker, chips, cookies, raisins, etc.
Fresh fruit
Juice boxes
Large container juice
3-pack apple sauce
Lion King canteen
lunch bags
reused clear plastic bag
plastic tableware (forks, knife)
Lunch boxes
Lifesavers Sqeezit 6-pack
Rubbermaid sandwich container
Sour cream containers
yogurt containers
small Rubbermaid juice container
Ziploc freezer bag
Packaging comparison bag

Composting

1 composting bin and food waste

I. Introduction

Recently, your class watched the video called ***Trash Talk***. What did you learn from that video? Do you think trash is a problem in our community today? Is it a problem in your school? At home? You also did a recycling survey, how many of you surveyed someone that recycles? Write this number on the board. How many don't recycle, show hands? Write number on board and discuss results. What can be done to get more people recycling? Why do you think some people don't recycle? Today, we are going to continue learning about garbage and some easy ways for you to reduce the amount of trash you throw away.

II. What Do You Know About Garbage? - Class Discussion

Why is it a Problem?- pollutes air, land, water; wastes resources, looks bad, etc.
Solutions?- recycle, don't buy, reuse, burn, reduce, etc.
What's in it (contents)? - newspaper, cans, glass, plastic, etc.

II. Garbage Pizza - Small Group Work

How much do students already know about trash? Students work in groups. Hand out the garbage pizzas and labels. Arrange these categories of waste from largest to smallest, according to what you think we throw away the most, down to what we throw away the least, **BY WEIGHT!** Place the garbage category labels on the appropriate pizza slice from the biggest category of trash, to the smallest.

What did your group decide is the largest category of garbage in the U.S.? Ask a different group each time for the next largest category of garbage. According to the Environmental Protection Agency, Americans threw away:

Waste Category	% by weight (1996)	% by weight (2015)
Paper and cardboard	32	27
Yard waste	14	13
Plastics	12	13
Metals	6	9
Glass	6	5
Food waste	9	15
Other	21	18

II. <u>A Closer Look at Garbage</u>

Let's find out the kinds of stuff and how much garbage we, the average person, throw away in the United States. I've brought a couple of days-worth of garbage to show you as an example. (Alternatively, use trash bins from the classroom or other places in the school: office, lunchroom, teachers' lounge, art room, etc.) In a moment we'll sort through the trash, and group it into categories. But first, let's talk about what types of things end up in the trash: paper, plastics, metals, food scraps, glass, broken objects, etc.

Either have a group(s) of students sort through the trash provided or trash from bins around the school. Lay out a cloth, sheets of newspaper, a tarp or sheets of plastic and empty the garbage on that to keep the desk/table/floor clean. Have students decide how to sort the trash, offer guidance if needed. When trash is sorted, What major groups or categories of trash do you see? *paper, glass, metals, yard waste, food waste, plastic and other (clothing, wood scraps).*

Ask the class: Is all of this trash a problem?
YES! *– the average US citizen generates 4.5 pounds of trash every day. That's thousands of TONS every year!! litter, leaky landfills, water pollution,* ***wastes limited energy and natural resources*** *because we have to mine and refine more oil and minerals to make new products every day.*

Let's take a look at our trash here and see how much we could reduce it. Direct students to sort their items into those that can be reused or repaired, those that can be recycled and those that can be composted. All others are trash. Have students record their results on the handout provided. To enhance this portion, have students weigh each pile of items and discuss the fact that disposal costs are usually determined by weight, not volume.

Notice how small our trash pile is now! It's so easy to reduce the amount of trash we create, we just have to think about what we are doing and not mindlessly throw things away. Now look again at our recyclable objects—so you see anything that could be saved from the recycling pile? Some things can be reused. Let's discuss some ways to help reduce our trash volume.

III. <u>Refuse, Reuse, Repair, Reduce, Recycle and Rot – Class Discussion</u>

What can we do to reduce the quantity of garbage that we produce?

Discuss each of the R's above and give specific examples of how to refuse excess packaging by choosing a different product; how we can reuse something by purchasing second-hand clothes or giving something away rather than throwing it away or we can sometimes fix a broken object rather than trashing it and buying a new one; we can reduce the amount of stuff we buy—many things we buy are nice to have but not necessary, think of individually packaged lunch items: is convenience better than not caring about trash??? Recycling is good but should be the last option since most objects will get *downcycled* and eventually trashed because we can't endlessly recycle something like plastic (this is why there are different codes of plastics); composting is super easy especially if we have a garden! Write ideas on the board.

Recycling Food Wastes = Composting = food rotting

Food wastes can be recycled into soil, rather than thrown in the garbage….and ultimately a landfill. Many people use a compost bin, some just make a compost pile in their yard. As food sits and is exposed to air, moisture and warmth from the sun it starts to rot and decay. It eventually becomes really great soil. And that soil happens to be really wonderful for growing food! Many people add composted soil to their garden and their plants grow much better because of all the nutrition in the soil. How many of you compost at home? Do you think that composting is possible at school?? What would have to happen for the school to compost?

(Note: if sink disposals come up, mention that they require extra water, fill up septic tanks requiring additional pumping, and make municipal water treatment more difficult. Plus, items like meat grease and oils can clog your pipes and slow decomposition rates.)

In a landfill, food wastes are cut off from rain, sun, and air, and can remain undecomposed (not broken down) for years. By making compost at home for breaking down food (and yard wastes), we save landfill space.

Let's list **ways that we can <u>REUSE</u> items** that are often thrown away.

1. *Give old clothes, toys, etc., to charities*
2. *Have a garage sale to dispose of usable items*
3. *Use grocery bags for trash bags.*
4. *Return grocery bags to the store.*
5. *Write on both sides of paper*
6. *Start a paper scrap box at home and school*
7. *Use jars, plastic food containers, plastic bags, boxes again before throwing away.*
8. *REPAIR broken appliances, toys, furniture for your use or another's*
9. *Use disposable products more than once (plastic tableware, foil, plastic cups)*
10. *Share items with others (chemicals, paints)*

III. <u>Lunch Safari - REDUCING Our Garbage</u>

REDUCING the amount of things we use once and then throw away is what we want to try to do first. This is the best way to decrease your personal garbage pile. Most of us have packed food for a lunch at school or the beach or for camping, so let's look at how you could apply what we are learning today and REDUCE the amount of disposable products you use. I've set out some typical lunch items: chips, cheese, crackers, fruit, drinks, cookies. Let's first pack a super quick, convenient lunch, in other words, a lunch where no prep is involved. Easy as pie, right? Throw a bag of chips, a package of peanut butter crackers, a yogurt container, some fruit cups a package of cookies, and a drink box in a brown bag and, presto! Lunch in less than one minute!

Looks like a good lunch too! But wait a minute….look at all the garbage that is created from this lunch! Is there a way to pack a lunch without ONE SINGLE PIECE OF TRASH? Of course there is!! Let's look at a second way to pack a lunch. Have two students put together a lunch with the idea of reducing their packaging waste to a minimum. (Allow 1 minute. When they are done, set their items together, near the first group's choices.)

A. Compare and discuss the two lunches:

- ♣ fresh fruit v. canned fruit,

- ♣ individual chips/cookies/crackers in their own packaging v. a big package that one puts individual servings into a reusable container,
- ♣ individual drinks v. reusable drink container that can be filled with reconstituted frozen juices or water,
- ♣ paper lunch bag v. reusable cloth bag or reusable plastic lunch box, etc.

B. Compare and discuss the amount of packaging in a single-serving size bag of chips versus the large-size bag of chips:

Have 2 students count the number of times a single-serving bag of chips can be overlain on a big bag of chips. Note how many more servings you can get from the larger package per area of package. When trying to reduce the amount of packaging, it makes sense to buy items in the large-size.

Let's summarize the **ways that we can REDUCE** the amount of garbage produced in the first place:"

1. *Buy products with less packaging.*
2. *Avoid buying individual servings or small packages; instead buy products in larger* sizes (but only if you can use it up! i.e. paint)
3. *Buy durable products rather than disposable or those that are easily broken (razors, cameras, clothes, poorly made toys, etc.)*
4. *Buy soft drinks in returnable bottles.*
5. *Reduce the purchase and use of disposable paper products (towels, napkins, plates, cups, etc.)*
6. *Carry purchases home without a bag.*
7. *Use reusable canvas shopping bags.*
8. *Look for and purchase products with the recycled symbol printed on it.*

V. Wrap-up Day's Lesson:

Now ask the students to answer the **"Question for the Day:" Is Garbage A Problem?**

We've learned a lot today:

- Garbage is something that we no longer need or can use.
- Garbage is made up of seven major categories: paper, yard waste, plastics, food wastes, metals, glass, or other (clothing, construction/demolition waste, old appliances)
- Throwing away paper or plastic packaging, glass jars, metal cans, cardboard boxes, **wastes energy and resources** because we have to mine the metals or oil all over again or cut down more trees.
- We can reduce our garbage by recycling, repairing what breaks instead of buying a new item, giving reuseable items away, and reducing what we use in the first place. When we make our school lunches, we can choose to reduce packaging waste.
- We recycle food (and yard) wastes by composting.

This lesson was developed in 1996 by the Center for Science & Environmental Education with a grant from the Kellogg Foundation, and adapted for current classroom use with a grant from the Michigan Department of Environmental Quality to the Houghton County Commissioners and the Copper Country Recycling Initiative.

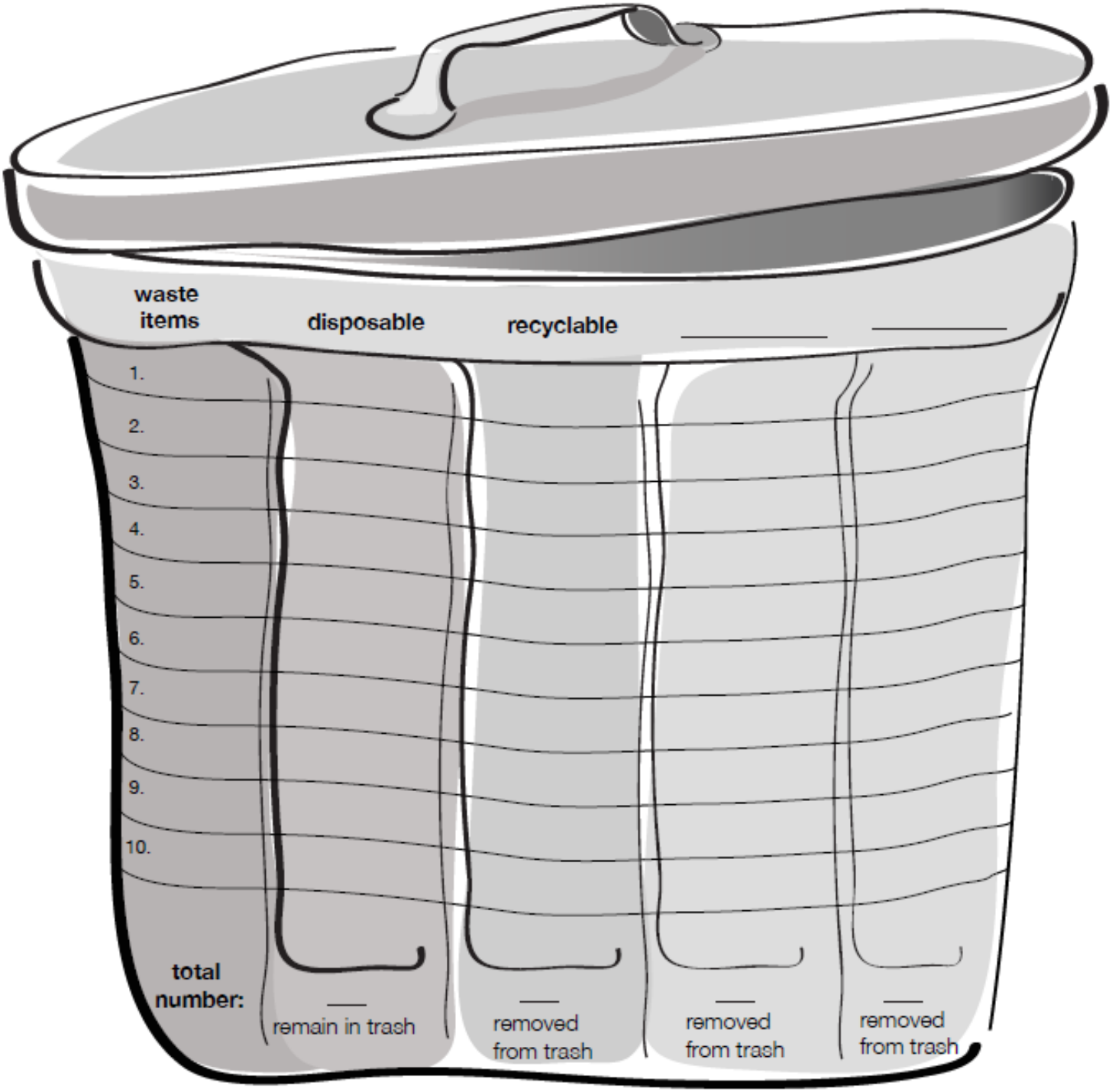
Name: _____

What Are We Wasting?

Directions: Record and review your list of personal waste and decide which items can be recycled and which must still be disposed of in the trash. (If composting is an option for the classroom, mark a "c" in the recycling column next to any item that you will compost).

Materials:

- ☐ kitchen trash bags (one per student)
- ☐ latex gloves
- ☐ old newspapers
- ☐ data collection worksheet provided
- ☐ pencils
- ☐ scale



January 1 – March 31, 2017: Summary of Work – Western U.P. Center for Science, Math & Environmental Education

Joan Chadde (Director), Brian Doughty (Education Coordinator) and Erika Vye (Education Program Assistant)

Task 1: Public Outreach and Education (40%)
Public outreach and recycling education campaign in eight school districts in Houghton County (Houghton, Hancock, Dollar Bay, Chassell, Lake Linden, Calumet, Adams Township, Stanton Township), reaching 500 students in grades 4-8.

Subtasks Addressed:

1.3 Education Coordinator and Copper Country Recycling Initiative (CCRI) Task Force will help participating schools create plans for collection & transportation of OCC to Transfer Station and education program

- Conducted a "Garbology" waste audit with Hancock Middle School, where in 182 pound of waste was physically sorted and separated. CCRI volunteers were on hand to teach students about which items could and could not be recycled.
- Local TV, radio, and newspaper were contacted and publicized event to the local and regional public.
- Garbology events at Houghton High School and CLK High School have been postponed due to scheduling conflicts. Efforts continue to reschedule and carry out these events as well as secure commitments from additional schools.

1.4 Education Coordinator and CCRI Task Force assists teachers and students with public events/forums to present their "garbology" results and recommendations

- Education Coordinator has coordinated with CCRI to have the Hancock Middle School Class present their "Garbology" findings to the Houghton County Commissioners, as well as to CCRI.

Deliverables:

1. **20 classroom presentations (500 student target)**
    - Developed and disseminated information on classroom recycling presentations recycling workshop registration materials to teachers in Houghton County Schools.
    - 18 classes **(409 students in grades 4-8**) in Houghton County received the "Reduce Your Waste & Recycling" classroom presentation from December 2016 through March 2017.
2. **Creation and use of Recycling Activity Kit in classrooms, loaned through WUPC's Resource Clearinghouse (400 student target)**
    - The Recycling Activity Kits have been checked out 3 times by local teachers and used in 5 events by CCRI staff, including the Western UP STEM Festival from 4-8 pm, on March 16, for 400 area students & families. The Recycling Activity Kits are also the centerpiece of the 18 classroom presentations.

3. **Two community programs at Portage Lake District Library (150 community member target)**
    - 1-year Anniversary Recycling Celebration event held at the Portage Lake District Library on Feb 4, 2017, for ~100 community residents attended.
    - Education Coordinator assisted CCRI in development and publication of a trifold brochure to be distributed at public events and to new residents.

1.6: Conduct two teacher training workshops on "*Reduce Your Waste & Recycling" that provides teachers with classroom lessons, curriculum resources, and information on local recycling programs and waste management.*

- A 2nd teacher workshop was held from 8:30-3:30 pm, Feb. 17, 2017, at the Michigan Tech Great Lakes Research Center for 5 area teachers.
- A 3rd teacher workshop was held after school on March 8, 2017, from 3-5 pm, at CLK Elementary for five 4th grade teachers who were unable attend the 2/17/17 recycling workshop.

1-Year of Recycling Successes

Anniversary Celebration!

11 am -1 pm, Sat., Feb. 4th

Portage Lake District Library

COPPER COUNTRY
Recycling Initiative

There's LOTS Happening!!

11 am-1 pm Hands-on Activities for Kids! (all ages!)

- ◇ Make Recycled Art
- ◇ Build Cardboard Forts
- ◇ Packaging Detectives
- ◇ Green Household Cleaners
- ◇ Toy & Book Swap
- ◇ Recycle Your Cardboard
- ◇ Make Recycled Instruments & Performance

11 am-1 pm MTU Renewable Energy Demonstration House

Noon Recycling Reports (Houghton Co., Kew. Co., Chassell)

11-Noon Backyard Composting (MSU Ext.)

12:30 pm Recycling Awards & Recognition

**** CAKE, COFFEE & RAFFLE PRIZES ****

Bring your Toys & Books (in good condition) to SWAP! One person's trash is another's treasure!

Sponsored by:

Copper Country Recycling Initiative ▪ Portage Lake District Library, Western U.P. Center for Science, Mathematics and Environmental Education, Lake Superior Stewardship Initiative, and Keweenaw Coop

Recycling & Waste Reduction Workshop

for Grades 1-8 Teachers

Friday, February 17th

8:30 am - 3:30 pm

At 104 MTU Great Lakes Research Center

COST:

FREE to all CCISD and GOISD teachers and LSSI community partners. Lunch, classroom materials and MTU parking passes provided at the workshop.

TO REGISTER:

wisdomwhere™ CCISD

- CCISD participants: www.solutionwhere.com/ww/ccisd/
- GOISD participants: www.solutionwhere.com/ww/goisd/ PEER to the CCISD

SCECHs approved ($5)

For More Information:

Joan Chadde, coordinator
487-3341 / jchadde@mtu.edu

Western Upper Peninsula Center for Science, Mathematics and Environmental Education
(Keweenaw, Houghton, Ontonagon, Baraga, Gogebic)

Develop the knowledge and skills to engage your students in learning about recycling and waste reduction using a variety of hands-on activities.

Co-taught with Copper Country Recycling Initiative Task Force.

Topics include:

- ⇒ Recycling in our community
- ⇒ Project Learning Activity Guide (K-8) hands-on classroom activities
- ⇒ Michigan standards addressed for science, social studies, math
- ⇒ Recycling Activity Kit resources
- ⇒ Engaging your students in service learning & waste reduction
- ⇒ Teachers brainstorming strategies for classroom implementation.

Coordinated by the Western UP Center for Science, Math & Environmental Education and the Lake Superior Stewardship Initiative with a grant from the Michigan Department of Environmental Quality to Houghton County.

Conducted by the Michigan Tech Center for Science & Environmental Outreach

COPPER COUNTRY Recycling Initiative

Great Lakes Research Center, Michigan Technological University, 1885

DEQ

Lake Superior Stewardship Initiative

COPPER COUNTRY Recycling Initiative

Center for Science & Environmental Outreach
Michigan Tech University

Western Upper Peninsula Center for Science, Mathematics and Environmental Education

Reduce Your Waste & Recycling Activity Kit (2 Tubs)

Target Grades: 4th-8th

Summary
Students explore the question, "Is Garbage a Problem?" They learn what makes up our garbage and that many discarded items can be reused or made into new products. They analyze their waste stream, make garbage pizzas and a waste-free lunch, then become packaging engineers (optional) as they design improved packaging to decrease the amount of trash created. Students discover that we can reduce the amount of solid waste produced by more than half by practicing the "3 R's" of solid waste management.

Tub#1 Checklist

Reduce YOUR Waste & Recycling Lesson Plan

Trash Talk video (online): http://oceantoday.noaa.gov/trashtalk_specialfeature/welcome.html
What Are We Wasting? worksheets

Supermarket Safari Items (* check to be sure these items are present)

crackers*	Lifesavers Sqeezit juice drink 6-pack
fresh apples*	Rubbermaid sandwich container (optional: bring a sandwich)
fresh oranges*	small Rubbermaid container
fruit snacks	Ziploc freezer bag
3-pack juice boxes	Large freezer bag
Oreo snack pack and Oreo mini cookies	2 empty glass juice containers
Rice Crispy treats	3 small brown plastic trays
cheese peanut butter crackers	Lion King canteen
3-pack apple sauce	paper lunch bags
snack-sized potato chips	2 lunch boxes
snack-sized Cheetos	reused clear plastic bag
bulk tortilla chips	
plastic tableware (5 forks, 1 knife)	
peanut butter	

Tub #2 Checklist

Recycling Survey handouts
Garbage Pizzas and labels
Tub full of garbage
Big copy of trash can

2 bags containing: "Waste" and their Recycled Products
(Do as a matching game by laying products out on table in 2 piles. Student draws item from Pile #1 and selects an item from Pile #2 that it could be "recycled into")

Newspaper / Celotex ceiling tile & pencils
Magazines (shiny paper) / Fast-food bags, egg cartons
Corrugated cardboard / Cereal box, (Kleenex) tissue products
Steel soup can (flattened) / New soup can
Old aluminum can / New aluminum pop can
Used clear glass bottle / New clear glass bottle
#2 HDPE plastic milk jug / Yellow or blue plastic "lumber" (flower pot, detergent/oil bottle, buckets)
#1 PET plastic soda bottle / cloth bag
Food wrapper (made of plastic and foil) / NOT RECYCLED
Styrofoam cup / Plastic ruler
Milk carton and juice box / envelope & (toilet) tissue products
Styrofoam peanuts / REUSED by Shipping Shop

Alternatives to Hazardous Household Cleaners (Optional exercise but materials are in another box)
Ammonia-based window cleaner
Plastic bottle with vinegar & water
Plexiglass (2'x3')
Paper towels
Grease, oil or butter

Miscellaneous
Houghton County Recycling Info Handout

Homework Assignment
25 copies each: Recycling surveys

Study teaches students to think about recycling

FEB 8, 2017; Graham Jaehnig, Staff Writer gjaehnig@mininggazette.com

Graham Jaehnig/Daily Mining Gazette Brian Doughty (l) of the Center for Science & Environmental Outreach at Michigan Tech, and Erika Vye (R) of the Western U.P. Center for Science, Math & Environmental Education, discuss the results of the Garbology study conducted at the Hancock Middle School Tuesday.

HANCOCK — Hancock Middle School's Garbology Waste Stream Study revealed some surprising results for a school in a city where 50 percent of its residents take advantage of curbside recycling. Of a total of 182 pounds of material collected at the school and weighed, almost 72 percent of it was trash, meaning just 27.8 percent of the total was recyclable. Of that percentage, 12.6 percent of it was cardboard and paper. The purpose of the activity was to expose students to critically think about the items they handle before entering them into the waste stream.

"This activity is excellent, because one of the activities that we have in our waste kit that we check out to schools and that we present is the garbage pizza," Brian Doughty, education coordinator at the Center for Science & Environmental Outreach said. "They have a round cardboard pizza circle, and it's (divided) up into percentages by weight; how much we use as a country; and we have all these categories of waste, and then they pick it." Students almost always, overwhelmingly assume plastic as the highest percentage of waste, he said.

Using the garbage pizza as an example of the waste stream, students are startled by the statistics, Doughty said.

"They're really surprised to learn that it's really cardboard and paper products, which makes up 25 or 28 percent of the stuff that we throw away, and that blows their minds," Doughty said.

Typical of similar studies elsewhere, of the 182 pounds of total material collected, just under 8 percent of it was plastic.

Erika Vye, of the Western U.P. Center for Science, Math & Environmental Education WUPC) said the study is an excellent activity, because it teaches students to look at waste from a different perspective.

"It's great just to do this incrementally," she said, "just to get kids thinking about how things can be sorted out ahead of time."

All ages join in celebrating first year of local recycling

Feb. 6, 2017

Graham Jaehnig, Staff Writer gjaehnig@mininggazette.com

MTU student Christine Wood offered a demonstration called “What Makes a Good Package” at Saturday’s cardboard recycling celebration at the Portage Lake District Library in Houghton.

HOUGHTON — Local residents celebrated a year of recycling Saturday at the Portage Lake District Library in Houghton.

The two-hour event was well-attended, and visitors found presentations and activities to meet a wide range of recycling interests for all age levels.

Children learned about recycled art, how to build a fort from cardboard and several other activities, including a toy and book swap. There were presentations on green household cleaners, as well as recycling reports from Houghton and Keweenaw counties and Chassell Township.

At 11 a.m., Michael Schira, of the MSU extension office in Hancock, gave a one-hour presentation on backyard composting, in which he discussed the benefits of composting. During his presentation, he addressed his talk to people who may have tried composting in the past, and were not either successful, or were not as successful as they had hoped to be. Along with his one-hour talk were included handouts and informational sheets.

Evan McDonald, co-chairman of the Copper Country Recycling Initiative, was on hand and said he was happy with the turnout. He said he was encouraged by the interest of the members of the community in recycling and the steps they can take in reducing the waste stream.

The event was sponsored by the Copper Country Recycling Initiative, the Portage Lake District Library, the Western U.P. Center for Science, Mathematics and Environmental Education, the Lake Superior Stewardship Initiative and the Keweenaw Coop.

###

Classroom Recycling Presentations for Grade 5-8 Classes Offered ~ Dec. 1st 2016 to March 24, 2017

The Michigan Tech Center for Science and Environmental Outreach will offer **free classroom recycling presentations to introduce Grade 5- 8 students to recycling and waste reduction**. This program is offered in partnership with the Copper Country ISD and the Copper Country Recycling Initiative, with grant funding from the MI Dept. of Environmental Quality to Houghton County.

The presentations are 1-2 hours in length (on the same day), meet science and social studies grade level standards (see below), and include demonstrations, hands-on inquiry activities, and video clips.

During the presentation, students will learn how to pack waste-free lunches, brainstorm what to do with their trash, find out where items can be recycled locally, what the items can be recycled into, and design a way to separate various materials in a single waste stream. Students will also do a 'garbology' study in which they analyze a bag of trash to discover that over half of what we commonly consider garbage can be recycled. Recycling boosts the economy by providing more jobs than the landfill industry, helps keep our land and water clean, conserves natural resources, reduces pollution and reduces our dependency on petroleum and coal.

Classroom presentations are available from December 1st 2016 through March 24, 2017.

Register Online

Presentations are *free and open to all grade 5th to 8th classes in the Copper Country ISD*. This program is limited to the first 20 requests. Sign up soon to reserve your day: Recycling Presentation Request Form

Presentations are coordinated and delivered by Center staff:

Brian Doughty, Outdoor Science Investigations Field Trip coordinator
Erika Vye, PhD, Geoheritage and Earth Science educator

Classroom Presentations incorporate some of the following depending upon grade level:

SOCIAL STUDIES

Citizen Involvement

Act constructively to further the public good.

5 – P4.2.1 Develop and implement an action plan; know how, when, and where to address or inform others about a public issue.

5 – P4.2.2 Participate in projects to help or inform others

Environment & Society

6 – G5.1.1 Describe examples of how humans have impacted and are continuing to impact the environment in different places as a consequence of population size, level of consumption, and technology.

6 – G5.1.2 Explain how different technologies can have positive and negative impacts on the environment.

6 – G5.1.3 Identify ways in which human-induced changes in the physical environment in one place can cause changes in other places.

SCIENCE

Earth Systems

5-ESS3-1 Obtain information about ways individual communities use science ideas to protect the Earth's resources and environment.

Human Impacts

MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Human Sustainability

HS-ESS3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

Recycling & Waste Management Teacher Workshop ~ February 1, 2017

Teacher Participants' Reflection (3 responses)

1. **How can you connect the ideas that we explored today to your own teaching?**

   - Just spreading awareness.
   - Bring recycling into our everyday classroom, connect NGSS & GLCE to recycling.
   - Reduce, reuse, recycle, repair saves energy, which is a big element of teaching now.

2. **What two ideas presented in today's workshop will be useful to you?**

   - Garbology- a lot of what is in our garbage can be recycled. Looking at standards & PLT book for ideas.
   - The recycling kits – garbage pizza & the ocean video.
   - Spreading the word about the recycling initiative in the Copper Country. Making paper to show recycling paper, fun craft.

3. **How could we make this a more useful workshop, if it is presented next year?**

   - N/A - Good! - Maybe more implementation ideas.
   - Make a lesson plan – materials list & connect to GLCE/NGSS.
   - I think it is great!

4. **How many students in Houghton County will you reach each year with information about recycling and waste management?**

   - 25
   - 25
   - 75

5. **How do you plan to use the information that you gained from today's workshop?**

   - Push for recycling in Portage Twp. & schools.
   - Implement lesson plans from project learning tree.
   - I will incorporate lessons from the project book and discuss the recycling program with my students.

"Reduce your Waste by Recycling!"
Summary of Houghton County recycling classroom presentations
January to March 2017

Teacher Name	Date	School Name	Grade Level	Number of classes	# students
Julie Fenton	2/15/2017	CLK Elementary	5th	2	47
Cathy Olsson/Scott Lion	1/6/2017	CLK Elementary School	5th	2	46
Kathy Wetton	2/15/2017	CLK Elementary	4th	1	23
Deborah (Deb) Pavolich	1/13/2017	CLK Elementary	4th	1	24
Melissa Schneiderhan	1/4/2017	CLK Elementary School	4th	1	24
Jackie Mishica	2/15/2017	CLK Elementary	4th	1	23
Mollie Trewartha	2/10/2017	Houghton Elementary	5th	4	96
Jen Davis	2/1/2017	Hancock Middle School	8th	2	48
Deb Olson	4/24/2017	Barkell Elementary	4th	3	63
Kari Anderson	1/13/2017	CCISDLC	3rd - 7th	1	10
			Total	**18**	**404**

Cardboard recycling launch event features fun, education

January 18, 2016

By DAN ROBLEE (droblee@mininggazette.com) , The Daily Mining Gazette

Save |

HOUGHTON - The Portage Lake District Library was not as quiet as the traditional book repository Saturday, but the kids were getting excited about waste and recycling at the Cardboard Recycling Celebration.

With activities for all ages - from a cardboard box castle for the little ones to tables where older kids could consider their lunchtime choices with waste in mind - there was plenty to keep them thinking and chattering, and plenty to share with mom and dad.

"The idea is to get the kids involved and they engage their parents," said Suzanne Van Dam, co-chair of the Copper Country Recycling Initiative, which hosted the event along with the library and some help from Joan Chadde of the Western Upper Peninsula Center for Science, Math & Environmental Education.

Article Photos

Dan Roblee/Daily Mining Gazette

Copper Country kids of all ages make their own recycled paper at the Cardboard Recycling Celebration Saturday at the Portage Lake District Library. Clockwise from lower left are Janel Kangas, 5, volunteer Zack Ackerman, Irene Hillman, 13, and Oliver Hillman, 10.

Alexandra Larson, attending with her son Alan, said she thinks kid leadership can be an effective strategy.

"When I was a kid, I dragged my parents into recycling," she said.

Van Dam said the event was held primarily to celebrate the launch of the recycling center at the Houghton County Transfer Station earlier this month, and the new satellite cardboard recycling center in Chassell.

One way to celebrate was to make some use of the new opportunity by collecting cardboard on the spot and trucking it up to the Houghton County facility in Atlantic Mine. Volunteer Dave Rulison, who brought the truck with the topper, said he'd run up about three truckloads.

There were indoor activities for adults, with a 3-D printer demonstration and an educational display on possible routes to increased curbside recycling, but things were mostly focused on the kids, with about half a dozen youth-oriented stations.

"Probably the most fun is the recycling machine," Van Dam said, pointing to a cardboard box "machine" that would exchange recycled waste for finished products.

"When you put something in and get something out you see the benefits," she said.

Larson said she liked Van Dam's table, where Van Dam showed how lunchbox choices can make a difference in reducing waste - by taking portions of raisins from a big box, for example, instead of using individual little boxes.

"It's pretty neat, makes a profound statement," Larson said. "If we can make a small difference, we should."

Volunteer Raymond Naasko, 16, was leading a paper recycling activity where old Daily Mining Gazettes were pulped, bleached, pressed, decorated and dried into new decorative paper. Naasko said he'd come out to help because he saw recycling as important to everyone's future.

"We need to take care of our planet or we won't have it later on," he said.

Houghton County

Cardboard Recycling Kickoff & Celebration!

11am-1 pm, Saturday, Jan. 16
Portage Lake District Library

Kids' Hands-on Activities

Making Paper, Garbage Pizzas, Recycling Machine, Forts, Lunch Safari

Recycling Display & Information

FREE Refreshments & Cake!

Raffle Prizes

Free Cardboard Recycling
—Bring Your Cardboard to library!

Sponsored by:

Copper Country Recycling Initiative
Portage Lake District Library ▪ Keweenaw Food Co-op
Down Wind Sports ▪ Rhythm Bike & Board Co. ▪ Good Music Tunes
Surplus Outlet ▪ Chickadees ▪ Lake Superior Stewardship Initiative

Panel explores recycling efforts

By DAN ROBLEE (droblee@mininggazette.com) , The Daily Mining Gazette November 20, 2015

HOUGHTON - The good news, Copper Country Recycling Initiative co-chair Suzanne Van Dam said at a panel discussion Thursday, is Houghton County expects to open a new cardboard recycling drop-off next month. That's thanks to a $92,000 grant from the Michigan Department of Environmental Quality.

The bad news, according to co-chair Evan McDonald, is the probable reason the DEQ looked on the grant request so favorably.

According to a 2013 study, he said, the Western Upper Peninsula Planning and Development Region, which includes **six western U.P. counties, recycles less cardboard than any other region in the state.**

With limited recycling drop-offs and only the City of Hancock offering curbside recycling, the same study reported that "in Houghton County we do not have convenient access to recycling," McDonald said.

The Recycling Initiative hopes to change that, beginning with cardboard, which Van Dam said makes up about 10 percent of Houghton County's waste.

The new cardboard recycling program was just one of the ideas recycling initiative members and guests discussed at the Thursday's Green Lecture Series forum, which was held at Michigan Tech and **sponsored by the Lake Superior Stewardship Initiative** and several partner organizations.

Recycling event raises awareness

BY HARRI LEIGH SATURDAY, JANUARY 16, 2016

Upper Michigan News Source (TV6)

http://uppermichiganssource.com/news/local/recycling-event-raises-awarenes

HOUGHTON — The U.P. has one of the lowest rates of recycling in the state.

A new cardboard recycling transfer station is hoping to change that.

Cardboard boxes make great forts to play in, or shredded, handmade paper. Those are just some of the ways to recycle them. The Portage Lake District Library in Houghton had them all on display today, and more.
"It reduces the amount of carbon dioxide we're putting into the environment, it's production in the sense that it actually garners some money coming in and we can reuse that instead of just landfilling it, which costs money and wastes resources. Overall it's just the right thing to do," Suzanne Van Dam, Co-Chair of the Copper Country Recycling Initiative, said.

The initiative held a family day to learn about recycling. The focus was cardboard, because a new cardboard recycling transfer stationed opened in Houghton just two weeks ago.

Of course, recycling goes beyond cardboard. The Keweenaw Co-op provided carrot cake on ceramic plates that can be washed, rather than disposable. A 3D printer was making U.P. keychains. Some can now print with recycled plastics.

Recycling is only one side of the equation.

"That's the other side of it, is when you go to the store and you have a choice of what you buy, choose those items that are made from recycled products," said Joan Chadde, Director of the Center for Science and Environmental Outreach at Michigan Technological University, as well as Education Coordinator for the Western U.P. Center for Science, Math, and Environmental Education. Then we can close our loop."

The transfer station accepts cardboard and paperboard from individuals for free, and from businesses for a nominal fee.

There are certain restrictions to what the station can accept. To find out more, visit:
http://your.kingcounty.gov/solidwaste/facilities/houghton-transfer.asp?ID=341#disposal

###

HOUGHTON COUNTY CARDBOARD RECYCLING CENTER

Located at the Houghton County Solid Waste Transfer Station

ADDRESS:
17808 Erickson Dr.
Atlantic Mine, MI 49905
906.482.8872

HOURS:
M-F: 8AM – 4PM
S: 8AM – 2PM

ACCEPTABLE MATERIALS	UNACCEPTABLE MATERIALS
Corrugated Cardboard	Food
Boxes made of paperboard (shoe, cereal, detergent boxes…)	Grease or oil saturated materials
Brown grocery bags & packaging	Paper products: newspapers, magazines, junk mail
Frozen pizza boxes	Plastic or plastic bags
Boxes with small amounts of tape, staples, plastic windows	Styrofoam
***All boxes should be free of food & flattened/broken down.**	
***Do not place recyclables in plastic bags.**	

COST

Free for residential users; commercial users must check with office for rates.

DRIVING DIRECTIONS FROM HOUGHTON:

Head west on highway M26 toward Atlantic Mine/South Range. One mile past the stoplight at Green Acres Road turn right onto Erickson Drive. Recycling Center is on right after about 0.1 mile.

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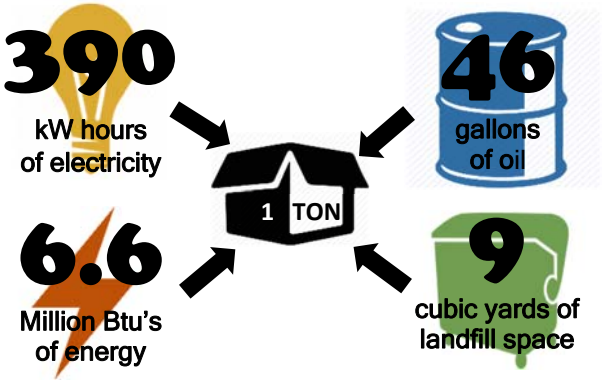
WHERE DOES MY CARDBOARD GO?

The cardboard products you recycle will be sold to industries that use recycled cardboard to manufacture new products. The money from the sale of the cardboard will be used for operating costs at the Houghton County Recycling Center.

WHY RECYCLE CARDBOARD?

One ton of recycled cardboard saves:



Cardboard and paper waste make up 41% of the municipal solid waste stream, in other words, cardboard is the biggest manufactured product in the waste stream by weight.

Recycling cardboard takes 24% less energy and produces 50% less sulfur dioxide than making cardboard from raw materials.

Individuals who recycle will see a reduction in their costs for waste disposal. Waste Management is now charging for recycling, but at the Houghton County transfer station, cardboard recycling is free for individuals.

The Cardboard Recycling Center was built through funds granted to Houghton County by the MI Department of Environmental Quality-Department of Environmental Assistance. The Copper Country Recycling Initiative Task force together with the Houghton County Board of Commissioners have been instrumental in the development of the Center. *Dec. 2015*

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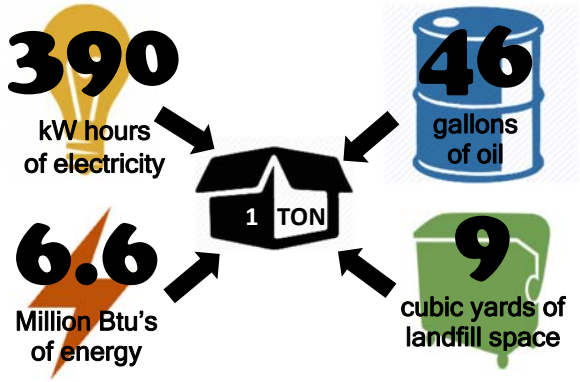

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Houghton County Schools
Waste Reduction & Recycling Competition Guidelines

Introduction

Reducing waste and recycling are the most effective ways schools can reduce their carbon footprint, conserve natural resources, and save money. Waste and Recycling Facts:

- A school of 300 students can prevent 14.5 tons of greenhouse gases from entering the atmosphere per year by increasing the rate of recycling by 30% to 35%.[1]
- Recycling one ton of paper saves between 15 and 17 mature trees.[2]
- Recycling one aluminum beverage can saves enough energy to run a computer for two hours.[3]
- Recycling one ton of cardboard saves 9 cubic yards of landfill space and 46 gallons of oil. [4]

Many of the actions schools can take to increase recycling and reduce waste are small but significant, requiring only a slight change in procedure. Additionally, these actions can serve as great tools for teaching students about the importance of conserving natural resources through experiential learning.

Most local school districts do not actively encourage recycling although they understand that recycling improves their environmental bottom line and defrays costs associated with solid waste disposal. Waste reduction and recycling programs can bring the school community together as a collaborative project, improving the qualitative school environment. The new Cardboard Recycling Center at the Houghton County Transfer Station presents an easy opportunity for schools to reduce solid waste by diverting cardboard and paperboard into the recycling stream. Most of the local school districts already haul waste to the transfer station. The center is scheduled to open sometime in December 2015.

Waste Reduction Challenge

Schools are invited to join a county-wide competition to reduce solid waste production in their school buildings. Winning schools will receive a monetary prize as well as recognition for their achievements. Students will be invited to present their projects at community events sponsored by the CCISD and Michigan Tech, and possibly others.

The winning team will be determined by a point system. Teams are required to submit the evidence of the activities they conduct in their schools. The team that reduces their solid waste production by the greatest amount (per capita) will be awarded 10 points. Teams will also achieves points by fulfilling any number of the following in addition to the mandatory actions (1pt per item):

Suggested Course of Action:

1. Recycling Team (mandatory) - Form a Recycling Team (team members should include members from the whole school community: teachers, students, administrator(s), custodian(s) and parents/guardians).

2. Conduct a school (mandatory) -wide waste reduction/recycling audit.

Use the attached *Waste Walkthrough Assessment* sheet to examine the school waste reduction and recycling program. Students should perform the audit with the guidance of a teacher or advisor. Through the audit, students will determine the items in that can be reduced, reused, recycled, or composted. The school's garbage, recycling and composting generation rates and associated costs will also be calculated by using the Audit sheet. **Submit the audit form to Marcy Erickson by Feb. 5, 2015 (maericks@mtu.edu).**

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[1] Calculations made according to the EPA Warm Model (http://epa.gov/climatechange/wycd/waste/calculators/Warm_home.html)
[2] Environmental Protection Agency (EPA) Factoids (http://www.epa.gov/epawaste/education/pdfs/toolkit/tools-m.pdf)
[3] ibid.
[4] Recycling Facts: recycleacrossamerica.org (http://recycleacrossamerica.org/recycling-facts)

- Use the school's map to identify existing recycling, composting and garbage bin locations. Make recommendations for improving bin location and signage locations for additional bins.

3. Education (mandatory): Develop and implement a plan that ensures all students, during the course of the competition, have been introduced waste reduction/reuse/recycling/composting through lessons, demonstrations, classroom activities or presentations. Team must also present to the school board before the competition is over.

- Students, with the guidance of a teacher or advisor, prepare a school-wide waste reduction, recycling, and composting plan that is based on the waste audit results. The plan will target specific materials for increased recycling, reuse or reduced use.
- Students present the results of the school-wide waste reduction, recycling, and composting plan to the school community.
- Students have responsibilities related to waste reduction and recycling at school. Possible assigned jobs include: helping to collect recyclables, supervising the sorting of food scraps in the cafeteria, monitoring garbage, recycling and composting bins.

4. Take Action– Adopt best management practices for waste reduction and recycling, which may include any of the following in addition to the first bullet point:

- □ Recycle cardboard/paperboard on campus at Houghton County Cardboard Recycling Center (**mandatory** unless school uses WM for waste disposal).
- □ Recycle pop bottles and cans on campus, collect deposit money for fundraiser.
- Recycle plastics, paper and metal cans at Waste Management.
- □ Provide readily accessible areas for storage and collection of materials for recycling on campus.
- □ "Universal Waste" such as batteries, electronic devices and florescent light tubes/bulbs are properly recycled through hazardous waste facilities, collectors and/or services. (see attached list of area businesses that recycle specific products)
- □ Reuse or donate surplus materials/equipment on campus including the lost and found items.
- □ Adopt a policy to purchase office paper and paper products that contain at least 30% recycled content.
- Promote an adoption of a waste-free celebration/ event policy.
- Adopt an environmentally preferable purchasing policy.
- Adopt a policy that encourages the recycling of broken metal items such as file cabinets, chairs, and desks.
- Adopt a policy that encourages use of reusable foodware.
- Adopt an "Offer vs. Serve" policy for the Cafeteria to reduce food waste.
- Adopt a policy that encourages students and parents in menu planning to reduce food waste.
- Implement a Waste-Free Lunch policy for lunches brought from home.
- Adopt a policy that promotes the collection of food scraps (kitchen food scraps and leftovers from students' meals & snacks) and soiled paper for composting.
- Place labeled paper reuse trays in each classroom, staff workroom, and office where one-sided copies are generated or used.
- Set up a cafeteria food scraps collection program to be composted on or off-site.
- Collect paper towels in the bathrooms to be composted.

- ☐ Students design displays for the foyer, commons, cafeteria, bulletin boards or other space to educate students and staff about the school's waste reduction, recycling and composting program and list actions that they can take at school and at home.
- ☐ Collect e-waste and hazardous waste such as batteries, ink cartridges, and toners used on campus in a dedicated recycling area on campus familiar to all staff (this can be a fundraiser too!)
- ☐ Replace disposable utensils with reusable utensils in the cafeteria.
- ☐ Replace disposable utensils with compostable utensils in the cafeteria.
- ☐ Replace disposable plates, glasses and cups with reusable products in the student lunchroom/ cafeteria.
- ☐ Replace disposable/ non-compostable serving trays with reusable, recyclable or compostable (paper or other compostable products) serving trays.
- ☐ Use bulk dispensers instead of packaged products (ketchup, mustard, milk, forks, spoons, napkins, etc) in the lunchroom/ cafeteria.
- ☐ Post signs on or near recycling bins to educate the types of materials that are accepted in the school's recycling program
- ☐ Students create “Think Before You Print” signs for all computers at school.
- ☐ Other:_____

5. Audits and Calculations - Students develop a database to record information, draw graphs and analyze the data from the waste audit.

- ☐ Students track waste disposal costs with help of school accountant **(mandatory)**
- ☐ Students develop a Power Point, which can be downloaded on a school website that summarizes the results and recommendations of waste in the walkthrough assessment.
- ☐ Students assist with the recycling/collection of mixed paper, bottles & cans throughout the school campus that are serviced by the local hauler.
- ☐ Students recycle and collect pop bottles and cans for fundraising.
- ☐ Students take field trips to the transfer station
- ☐ Students track waste disposal costs with help of school accountant

6. Reflection and Celebration – These types of activities encourage school-wide support and show appreciate for all those who’ve taken action.

- ☐ Recognize the class(es), club(s), and/or custodian(s) that have led the school’s waste reduction and recycling program through rallies, awards, etc.
- ☐ Recycled art project displays.
- ☐ Organize an Earth Day celebration.
- ☐ Other:_____

7. Teachers and Staff Take Action - The success of the students’ efforts will largely depend on the support they get from their teachers and administrators. Actions that teachers can take include:

- ☐ Recycle mixed paper, bottles and cans in their classrooms.
- ☐ Make double-sided copies whenever possible.
- ☐ Limit use of paper handouts. Use the blackboard/whiteboard, overhead projector, and/or refer students to books and web sites whenever possible.

- Create and sign a personal Waste Reduction, Recycling, and Composting Pledge that includes at least five actions to take to reduce waste.
- Reduce excess newspaper deliveries and request removal from vendor mail lists.
- Print only the number of copies needed for students and use half sheets to “right size” the paper for each job.
- Bring "waste-free" lunches to school.
- Use a reusable water bottle and/or cup.
- Replace disposable plates, glasses and cups with reusable products in the classroom/ staff break room/ meeting room.
- Set up and maintain a classroom worm composting bin.
- Set printers and copies to default double-sided printing and copying.
- Change the default margins in word processing programs from 1.25 to 0.75 inches.
- Encourage and publicize waste reduction, recycling and composting at school and at home through signage, daily announcements, school newsletter and through other means.
- Provide students, parents/ guardians, faculty, and custodians information about the school’s waste reduction, recycling and composting procedures and program through newsletters, announcements, mailing packets, etc.
- Issue a press release(s) to local media outlets about the school's waste reduction, recycling and composting efforts and results of the program.
- Promote “waste free lunches” through signage, daily announcements, or school newsletters, etc., and by having staff/teachers asking students/ families to bring their lunch in reusable bags/boxes and to use reusable water bottles.
- Student, staff and/or parent volunteers oversee waste sorting during lunch and break period so students properly compost and recycle their waste.
- Implement waste-free celebrations and events.
- Establish a relationship with a sister school internationally with similar academic/ environmental goals so students can be engaged with the global community.
- Students develop and send surveys out to parents regarding waste reduction, recycling and composting at school and at home.
- Students create pamphlets for parents informing them about the environmental effects of waste reduction, recycling and composting.
- Students and their families create and sign a Family Waste Reduction, Recycling, and Composting Pledge that includes at least five actions they will take to reduce waste.
- Students teach other students using activities, lessons, skit, puppet show, or other type of educational entertainment relating to waste reduction, recycling, and composting.

Resources for Schools:

1. Green Schools Initiative: http://www.greenschools.net/
2. Events
    a. No Waste Events: http://www.recycleworks.org/schools/nowaste.html
    b. Special Event Recycling: http://www.stopwaste.org/docs/specialevents-swp.pdf
    c. Zero Waste Checklist for Events: http://www.sfenvironment.org/downloads/library/zero_waste_event_checklistupdated_122009.pdf

2. No Waste Lunches: http://www.recycleworks.org/schools/lunch.html
3. Green Schools Buying Guide – http://www.greenschools.net/buyingguide

Waste Reduction Competition Reporting

The recycling team is responsible for submitting an analysis of their efforts by Earth Day, April 22, 2015.

There is no required format for submissions, but creativity is encouraged!

A minimum of what must be included is:

1. Evidence that solid waste was reduced in your school. This is most easily done by submitting a financial account (obtained from the superintendent's office) for waste disposal that shows the average monthly costs for FY2014 and the monthly costs for Feb-Apr 2016. Determine the amount saved ***per capita*** and report that number.

2. Evidence that all members of your recycling team played an active role in this project.

3. The waste reduction plan that was developed by the recycling team and conveyed to the rest of the students and employees at the school.

4. The Waste Reduction Checklist indicating which activities your team completed with evidence for each one. Evidence can be in the form of photos, videos, fliers, handouts, press clippings or other documentation that supports each of the activities your team conducted at your school.

5. A summary of what worked well, what you would change and how you think this effort can continue in your school beyond this competition.

Submissions will be reviewed by a committee and points will be awarded per the Competition Guidelines. The winning team will be announced during the first week of May 2016.

Walk-Through Waste Assessment

School Name:	Phone #:
Address:	Total # of students in building:
Principal/Teacher responsible for program:	
List the members of the Green Team:	
Hauler/company responsible for the school's garbage and recycling service:	
Identify custodian's role with collecting garbage and recycling on campus.	
Identify the teachers' role and administrator's role with recycling on campus.	
Identify the students' role and/or the environmental club or class's role with recycling on campus.	
Average amount school spends on solid waste disposal per month (avg. from FY2014):	

Paper Fiber

What to look for:	1) Where is the paper fiber generated? □Classroom □ Printer/Copier Area □Computer Lab □Other
	2) What types of paper fiber are generated? □ White □ Mixed □Cardboard □ Non-Recyclable
	3) What are the management practices? □ Disposal □Reuse □Recycle
	4) Are recyclables (paper fiber) in the garbage? □Yes □No Quantity%_____ (Visual Observation)

Recycling Evaluation

Containers	Type(s), Size(s), and Number of Containers	How often are they serviced?	Notes:
Indoor Containers (classrooms/office)			
Outdoor Containers			

Additional Questions	1) Where are containers located? □Classrooms □ Centralized □Other
	2) Are containers properly labeled? □Yes □No
	3) Are containers contaminated with garbage? □Yes □No

Additional Notes & Comments:

Bottles/Cans (B&C)

What to look for:	1) Where are B&C generated? □Classroom □Outside Lunch Area □ Cafeteria /MU Room □Vending Machines □ Kitchen □Other
	2) What types of B&C are generated? □Aluminum □ Glass □Plastic □ Tin/Bi Metal □ Non-Recyclables
	3) What are the management practices? □ Disposal □Reuse □Recycle
	4) Are recyclables (B&C) in the Garbage? □ Yes □No Quantity%_____ (Visual Observation)

Recycling Evaluation

Containers	Type(s), Size(s), and Number of Containers	How often are they serviced?	Notes:
Indoor Containers (classrooms/office)			
Outdoor Containers			

Additional Questions	1) Where are containers located? □Classrooms □ Kitchen □ MU Room / Cafeteria □Outdoor Lunch Area / Picnic Tables □ Centralized □ Other
	2) Are containers properly labeled? □Yes □No
	3) Are containers contaminated with garbage? □Yes □No

Additional Notes & Comments:

Organics Collection (Organics used for Composting)

What to look for:	1) Where are organics generated? □Outside Lunch Area □ MU Room/Cafeteria □Kitchen □Yard/Garden □Other
	2) What types of organics are generated? □ Food Scraps (Pre-Consumer & Post Consumer) □ Soiled Paper □ Yard Waste
	3) What are the management practices? □ Disposal □Commercially Composted (collected by the hauler) □Composted on-site or off-site (district's maintenance facility)
	4) Are organics in the Garbage? □Yes □No Quantity%_____ (Visual Observation)

Recycling Evaluation

Containers	**Type(s), Size(s), and Number of Containers**	**How often are they serviced?***	**Notes:**
Indoor Containers (MU room/kitchen)			
Outdoor Containers			

Additional Questions	1) Where are containers located? □ Kitchen □ MU Room/Cafeteria □Outdoor Lunch Area/ Picnic Tables □ Centralized □Other
	2) Are containers properly labeled? □Yes □No
	3) Are containers contaminated with garbage? □Yes □No

Additional Notes & Comments:

* Not all the haulers collect organics for commercial composting.

Garbage (Solid Waste) Collection

Container(s)	**Type(s), Size(s), and Number of Containers:**	**How often are they serviced?**	**Notes:**
Container(s) serviced by the hauler			

Questions	1) Where is (are) container(s) located?
	2) Where is (are) the loading area(s)?

Recycling Education

A total of 21 classroom presentations on reducing waste were conducted during April and May 2016. The presentations were given to 526 students in grades 4-7 at six Houghton County schools. The content of the presentations focused on reducing what we throw away, and raising awareness of the fact that we are an overly wasteful society. Topics included recycling, consuming less, composting, and thinking differently about how we shop.

Students analyzed the garbage in their classrooms through a 'garbology' study of their trash cans. They categorized the trash into piles of recycleable/reuasable materials and weighed the piles to determine how much of their trash, by weight, is *truly* trash. In almost every classroom a mere 2 ounces was all that had to be trashed, out of an average of 3.5 pounds of garbage. It was an eye-opening experience for the students as well as the teachers! Here is a link to a TV6 report on the recycling presentation at CLK Elementary School on April 20, 2016: http://www.uppermichiganssource.com/content/news/Elementary-students-get-messy-during-recycling-lessons-376438711.html

Recycling Presentations Delivered:

	Teacher Name	School Name	Grade	# students	Date
1	Kristina Mechlin	Houghton	5th	26	5/20/2016
2	Kathy Wetton	CLK Elementary	4th	23	4/21/2016
3	Michelle Axford	Lake Linden-Hubbell	4th	24	5/16/2016
4	Michelle Axford	Lake Linden-Hubbell	4th	24	5/16/2016
5	Deb Olson	Barkell	4th	20	4/26/2016
6	Sheri Normand	South Range	4th	35	4/21/2016
7	Jessica Schuett	South Range	5th	33	4/25/2016
8	Deborah Pavolich	CLK Elementary	4th	24	5/2/2016
9	Amy Aldrich	Houghton	5th	28	4/28/2016
10	Amy Hakala	CLK Elementary	5th	26	4/22/2016
11	Julie Fenton	CLK Elementary	5th	26	4/22/2016
12	Jennifer Pera/Cheryl Ruohonen	Jeffers	7th	28	5/3/2016
13	Melissa Schneiderhan	CLK Elementary	4th	24	4/20/2016
14	Jackie Mishica	CLK Elementary	4th	23	4/20/2016
15	Heather Brinegar	CLK Elementary	5th	27	4/19/2016
16	Cathy Olsson	CLK Elementary	5th	28	4/19/2016
17	Margo Hall	Houghton	4th	23	4/28/2016
18	Kathy Liimatta	Barkell	4th	19	4/27/2016
19	Shannon Lehto	Houghton	4th	23	4/25/2016
20	Neeta Jacobson	Houghton	4th	21	4/29/2016
21	Julie Koskela	Barkell	4th	21	5/19/2016
	TOTAL			526	

The education coordinator spent a total of 63 hours planning, scheduling and delivering field trips and travelled a total of 340 miles to and from schools to conduct presentations in the classrooms.

Education coordinator hours:

Date	Hours	Activity
4/7/16	1.5	Scheduling recycle presentations
4/8/16	3	Scheduling recycle presentations
4/11/16	1	Scheduling recycle presentations
4/12/16	1	Scheduling recycle presentations
4/13/16	1	prepare materials for recycling presentation
4/18/16	3.5	prepare materials for recycling presentation
4/19/16	7	recycling presentations
4/20/16	6	recycling presentations
4/21/16	5.5	recycling presentations
4/22/16	5	recycling presentations
4/25/16	5	recycling presentations
4/26/16	3	recycling presentations
4/27/16	1.5	recycling presentations
4/28/16	3.5	recycling presentations
4/29/16	1.5	recycling presentations
5/2/16	2.5	recycling presentations
5/3/16	3	recycling presentations
5/4/16	1	recycling presentations evaluation form
5/16/16	3.5	recycling presentations
5/19/16	1	recycling presentations
5/20/16	2	recycling presentations
6/9/16	1	reporting
TOTAL:	63	

Education Coordinator Travel Log

DATE	FROM	TO (school):	MILES (round trip)
3/15/2016	MTU	Chassell	22
3/16/2016	MTU	Dollar Bay	10
1/7/2016	MTU	Dollar Bay	10
1/14/2016	MTU	Chassell	22
4/19/2016	MTU	Calumet	29
4/20/2016	MTU	Calumet	29
4/21/2016	MTU	Calumet	29
4/21/2016	MTU	South Range	20
4/22/2016	MTU	Calumet	29
4/25/2016	MTU	South Range	20

4/25/2016	MTU	Houghton	3
4/26/2016	MTU	Barkell	6
4/27/2016	MTU	Barkell	6
4/28/2016	MTU	Houghton	6
4/29/2016	MTU	Houghton	3
5/2/2016	MTU	Calumet	29
5/3/2016	MTU	Jeffers	30
5/16/2016	MTU	Lake Linden	34
5/20/2016	MTU	Houghton	3
		TOTAL:	340

The CSEO received a $350 grant from the Upper Peninsula Environmental Coalition (UPEC) to purchase recycling bins in support of the Houghton County education/outreach recycling effort to help schools make recycling a more permanent and visible part of their school culture. With the funds, we were able to purchase 30 recycling bins for the Dollar Bay Schools and a worm composter and food composting collection containers for the Chassell Schools. The Chassell Schools have grades K-12 in one building with 299 students and staff members. The Dollar Bay schools have grades K-12 in one building with 370 students and staff members. The Dollar Bay School was already recycling cardboard and whatever paper they could manage to collect with transient/temporary containers, but now recycling can be implemented in every single classroom in the school and teachers and students will face a decision each time they dispose of something: “Do I trash it or recycle it?” Small changes like this help increase exposure and awareness of recycling and may lead to long term shifts in attitudes and behaviors around recycling and reducing waste.

Working with other community organizations we are able to do more!