

# Snohomish County Elementary School Waste Reduction and Recycling Program

School-wide Assembly, Classroom Workshops and Technical Assistance  
Evaluation Report Draft



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September 2012-January 2013*

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# Snohomish County Elementary School Waste Reduction and Recycling Program

## Program Background and Overview

In 2012, Waste Management began working with Triangle Associates, Inc. to offer the School Assembly, Workshop, and Technical Assistance Program for elementary schools in the Waste Management service areas of Snohomish County. The intent of the program is to educate students and their families on why and how to reduce waste, recycle, and compost as well as support schools interested in setting up or improving their recycling and composting programs. The program consists of three key components: an all-school assembly show, individual classroom workshops, and technical and project assistance to school staff. Key messages and scripts for program components were developed with consultation and oversight by Waste Management and the Snohomish County Solid Waste Department.

September 2012 - January 2013 Program Activities					
Program Component	Activity	# of Schools	# of Districts	# of Programs	# of Students
Assembly	Assembly teaches way to keep waste out of the landfill through reuse and recycling	27	8	40	10,923
Classroom Workshops	Classroom workshops expand on concepts introduced in the assembly	21	7	96	2,395
Technical Assistance	Technical assistance helps schools implement or improve waste reduction and recycling programs	7	4	10 visits	3,985
					17,303 Total Student Contacts*

\* This number reflects the total number of student contacts, understanding that students may have participated in multiple program components.

## Assembly Program

The school-wide assembly program provided an opportunity to educate all grades at a school in a familiar format about the messages of waste reduction and recycling in a high energy and engaging way. The Waste Management live theater assembly show for grades K-6 engaged students and staff alike as they learned how to make choices that contribute to a more sustainable school, community, and planet. In both primary and intermediate versions of the show, actors entertained, while presenting typical situations at home and at school. Students walked away understanding that recycling and waste reduction is important, and that they play a role at home and at school to prevent waste. Assembly messages taught students to:

- reduce the amount of waste created.
- understand what happens to their garbage.
- keep waste out of the landfill through reuse and recycling.
- separate "garbage" for recycling, reuse, composting, and garbage.
- set up a classroom or home to make recycling and reuse easy.
- get everyone in the family and in the classroom to participate.



Students learned that garbage in Snohomish County is transported by train to eastern Washington and that they can take specific actions as demonstrated to reduce the amount of waste going to the landfill such as packing their lunch in reusable containers, using both sides of a piece of paper before recycling, and using a reusable water bottle. They also learned that recyclables are made into other useful



products such as fleece clothing, carpets, and more. Intermediate students also learned how throwing away items includes throwing away all the resources that went into producing and distributing those items.

Triangle Associates initially scheduled the assembly at eight schools in order to preview the assembly and make final adjustments to the script. Additional schools were then invited to participate. In the first phase of the program, Triangle presented 40 assemblies at 27 public and private schools reaching 444 teachers and 10,923 students in eight school districts.

Evidence of the program's effectiveness is presented in this report. Students clearly left the assembly with a better understanding of what happens to their garbage and the importance of reducing waste, and they were able to identify specific actions to take. Teachers confirmed the program's success by giving the assembly high ratings in its effectiveness in educating students on why and how to reduce waste and recycle. The following teacher comments exemplify this.

- *This was a fantastic assembly! It kept every student (K-6) engaged the entire time. Not only was it engaging, but it was very informative in a very accessible way! Great Job!*
- *The program was very engaging, 3rd graders immediately put reuse box in place. Teacher (me!) more cognizant. We took paper from recycle and made note pads.*
- *What a wonderful assembly! Important information was presented in an engaging way that inspired students to rethink how they can reduce waste.*
- *This was a well thought out assembly. The kids connected to it and loved the rhymes and songs associated with the reuse ideas.*

## Classroom Workshops

Classroom workshops provided a more intimate setting to provide students with a deeper understanding on the importance of reducing waste and how this connects to a sustainable environment. The Waste Management workshops used hands-on activities combined with table group and large group games to make learning fun and reinforce key program messages. Workshops were developed to align with Grade Level Expectations (GLEs) and expected students to use critical thinking skills and explore the impacts of their choices, thus encouraging behavior change. Three different waste reduction and recycling workshops targeted to different grade levels and appropriate curriculum tie-ins were offered to schools: Recycling 101, Habitat Connections and Landfill Laboratory. After each workshop, the teacher received a list of student activity ideas and each student received a take-home survey. (See Appendix for samples.)





Classroom Workshops for WRR Elementary Education			
Workshop	Description	# of Workshops	# of Students
<b>Recycling 101</b> (Grades 2-5)	Teaches students the concepts of waste reduction and recycling at home and in school. Students learn about natural resources through an activity that shows the life cycle of a piece of paper, sort recyclables, play a fast-paced quiz game, and learn how to reduce contamination and improve recycling.	39	960
<b>Habitat Connections</b> (Grades 2-3)	Introduces students to the basic components of habitat – food, water, shelter, and space—through a variety of examples and hands-on activities. Students then make the connection between their waste reduction and recycling actions and protecting the habitat of native Northwest animals. Students sort recyclables and discuss the 4Rs.	28	713
<b>Landfill Laboratory</b> (Grades 4-5)	Explores with students what happens to the things we throw in the trash. Students learn where their garbage goes and, using inquiry-based activities, students “dig into” what a landfill is, the simple science of decomposition, and the importance of the four Rs.	29	722
<b>Total</b>		<b>96</b>	<b>2,395</b>

During the pilot phase of the project, elementary schools that received the assembly were invited to schedule from three to five classroom workshops. In order to provide workshops at more schools after the initial pilot, schools were limited to three workshops and interested schools unable to schedule the assembly were invited to schedule workshops. Between September 2012 and January 2013, 93 classrooms at 21 schools received individual workshops, reaching 2,395 students.

Teacher’s unanimously found the workshops interesting and engaging for their students and that they enhanced student understanding of waste reduction and recycling. Representative comments include:

- *I loved the hands on piece to it. It was very relevant to students.*
- *The visuals used were very helpful in getting students engaged and understanding the concepts being taught. Thank you!*
- *I liked the sorting and showing how long some things take to decompose.*
- *This class was very engaging for my students. All of the hands on activities and pictures helped my English Language Learners. Thanks so much!*
- *I thought the workshop was well organized and engaging. ...the sharing by each group was great, and picking an animal or manipulative and having that individual be responsible for sharing for the group was highly effective, and kept all students engaged and accountable.*



## Technical Assistance

Schools were encouraged to move from learning to action through hands-on technical assistance and project assistance. This included on-site visits, materials such as containers and signs, data tracking, and assistance with classroom projects. Written “leave behind” materials supported teachers wishing to initiate a conservation-related project with their classrooms.

From November 2012 through January 2013, Triangle Associates provided technical assistance to seven elementary schools in Snohomish County that have Waste Management as their current recycling hauler. In addition to the in-person assistance delivered to these schools, Triangle also communicated with two schools that have contracts with Waste Management but did not have any recycling needs at the time. Additionally, Triangle communicated with one school that has Waste Management for garbage collection but Republic Services for recycling services.



WM Schools Receiving Technical Assistance	
School Name	# Visits
College Place Elementary	2
Discovery Elementary	1
Marshall Elementary	1
Martha Lake Elementary	2
Mukilteo Elementary	2
Odyssey Elementary	1
Westgate Elementary	1
<b>Total</b>	<b>10</b>

For the seven elementary schools assisted in the first phase of this program, Triangle provided the following:

- Communication with an average of 3 people per school
- An average of \$115 per school on new bins
- An average of 6 new recycling bins per school
- An average of 40 recycling signs per school

## Evaluation

To evaluate the effectiveness of the program in meeting Snohomish County’s goal of educating elementary school students on reducing, reusing, and recycling their waste, measures of student learning and teacher satisfaction were designed and administered. Student learning was assessed through before-and-after measures on topics such as knowledge of what happens to waste at the landfill, natural resource use, proper recycling techniques, and appropriate reduce and reuse actions. For this phase of the project, 327 elementary students from 17 schools participated in the assembly evaluation. Teacher satisfaction with the assembly was based on responses from 132 teachers from 18 schools and from 50 teachers from 18 schools receiving classroom workshops.

## Evaluation Results

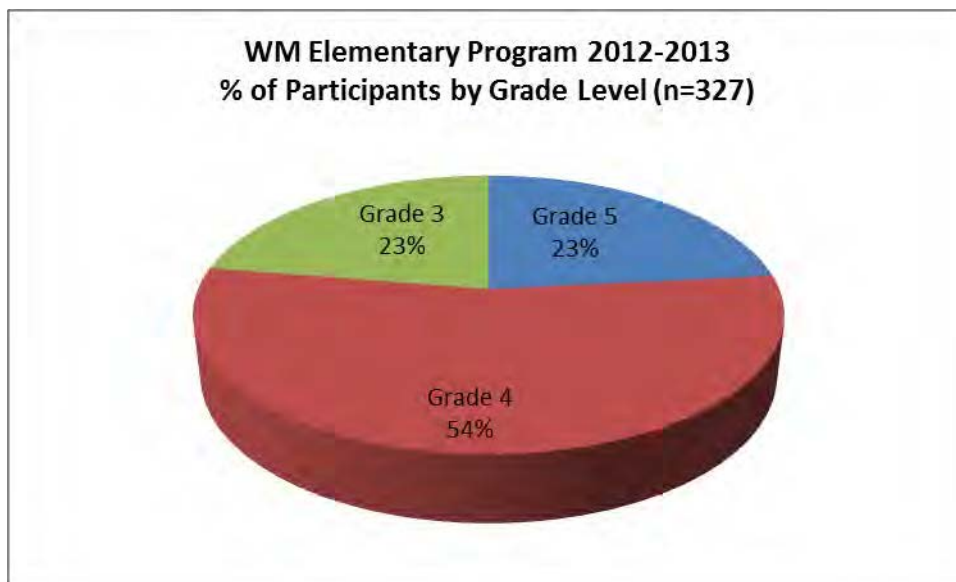
Findings from this evaluation include elementary student knowledge assessment based on the Waste Management (WM) WRR assembly program, elementary teacher program satisfaction with the assembly presentation, and elementary teacher satisfaction with classroom workshops. A copy of each instrument is included in the Appendix.

### Elementary Student Knowledge Assessment

The WM assembly program was performed for elementary students from grades kindergarten through six. Classrooms participating in the knowledge assessment portion of this evaluation were limited to grades three through six because pre and posttests are self-administered and require sufficient reading and writing skills. Table 1 shows the grade levels for elementary students participating in this year's evaluation. A pie chart following Table 1 illustrates the grade spread.

**TABLE 1**  
**Grade Distribution of Elementary Student Respondents – 2012/2013**  
(n=327)

<u>Grade Level</u>	<u>% of Respondents</u>
3	22.5%
4	54.2%
5	23.4%



This year's student participants include a majority of fourth grade students (54%) with the remainder split evenly between third (23%) and fifth (23%) grade students. A total of 327 students were tested before (pretest) and after (posttest) the assembly presentation to assess changes in their understanding of the WRR concepts presented during the assembly. (A sample size of 327 allows estimation of population percentages within 5 percent with 95 percent confidence. Students were

drawn from 17 different elementary schools to ensure representation from across Waste Management's service area.

The elementary evaluation instrument attempts to measure student understanding of a number of the most important WRR concepts covered in the assembly. The pretest/posttests asks students about what happens to garbage when it goes to a landfill, the natural resources that go into pop cans, plastic bottles and cardboard, items that can go into a home recycling bin, best choices for saving natural resources and things that students and their families can do to make less garbage. Identical questions were asked before (pretest) and after (posttest) the assembly presentation. Any increases in correct responses are attributed to student learning as a result of the assembly presentation. (A copy of the elementary instrument is included in the appendix.) Each of these questions follows, along with student responses. Correct answers for each question are indicated in **bold**. The first question posed to students follows.

*When garbage goes to a landfill, it*

- Turns to compost.
- **Sits there forever as a wasted resource.**
- Gets recycled.
- Don't know.

Student responses to this question and the associated chart are presented below.

**TABLE 2**  
**Garbage in a Landfill 2012/2013**  
(n=327)

<u>What happens:</u>	<u>Pretest % of Students</u>	<u>Posttest % of Students</u>
Turns to compost	43.4%	4.3%
<b>Sits there forever as a wasted resource</b>	<b>26.6%</b>	<b>92.7%</b>
Gets recycled	19.9%	2.1%
Don't know	8.6%	0.3%

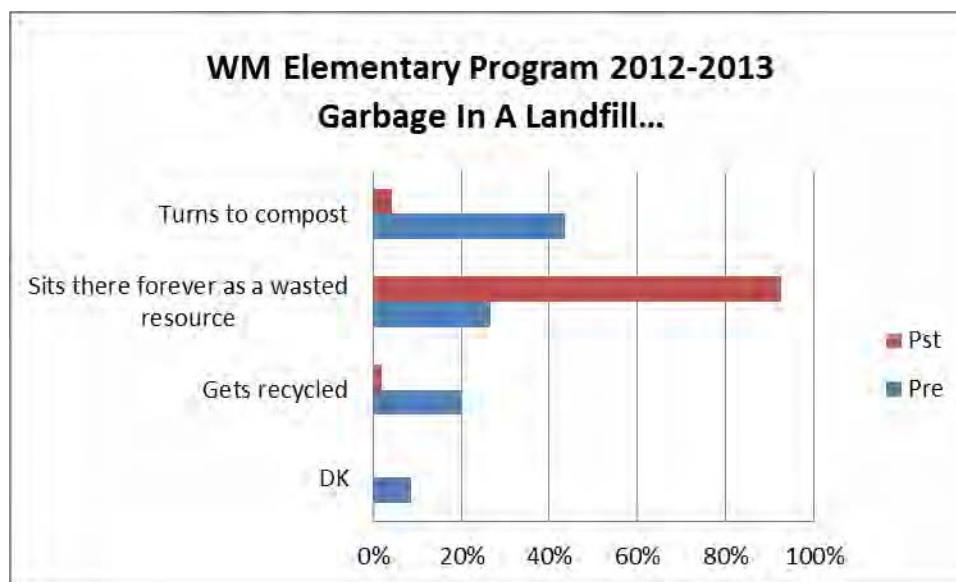




Table 2 shows students clearly learn from the assembly that when garbage goes to a landfill, it *sits there forever as a wasted resource*. Prior to the assembly, only about one-quarter (27%) of students chose the correct option, with the greatest number (43%) thinking it *turns to compost*. As shown, students moved from 27 to 93 percent correct responses, a very large increase in understanding for this concept.

The next question presents students with a list of three common packaging items – pop cans, plastic bottles, and cardboard – and four natural resources that go into making each item – trees, oil, metal and water. The correct natural resource choice for each packaging item is shown in **bold**.

*The things we use are made from natural resources. Circle all the natural resources that are used to make each thing on the list, or circle DK if you don't know.*

Things	Natural Resources				
Pop cans	Trees	<b>Oil</b>	<b>Metal</b>	<b>Water</b>	DK
Plastic bottles	Trees	<b>Oil</b>	Metal	<b>Water</b>	DK
Cardboard	<b>Trees</b>	Oil	Metal	<b>Water</b>	DK

Table 3 gives students' responses and indicates percentage of correct responses for each item.

**TABLE 3**  
**Natural Resources in Types of Packaging – 2012/2013**

		(n=327)	
		<u>Pretest %</u>	<u>Posttest %</u>
		<u>of Students</u>	<u>of Students</u>
<b>Pop cans</b>			
	Trees	3.3%	5.8%
	<b>Oil</b>	<b>6.7%</b>	<b>19.6%</b>
	<b>Metal</b>	<b>79.8%</b>	<b>83.5%</b>
	<b>Water</b>	<b>6.1%</b>	<b>34.3%</b>
	DK	6.4%	2.4%
<b>Plastic bottles</b>			
	Trees	22.3%	21.7%
	<b>Oil</b>	<b>25.7%</b>	<b>56.3%</b>
	Metal	7.3%	6.1%
	<b>Water</b>	<b>14.7%</b>	<b>47.7%</b>
	DK	31.8%	2.8%
<b>Cardboard</b>			
	<b>Trees</b>	<b>75.5%</b>	<b>85.0%</b>
	Oil	5.5%	11.0%
	Metal	3.1%	1.2%
	<b>Water</b>	<b>4.0%</b>	<b>29.4%</b>
	DK	11.3%	2.5%

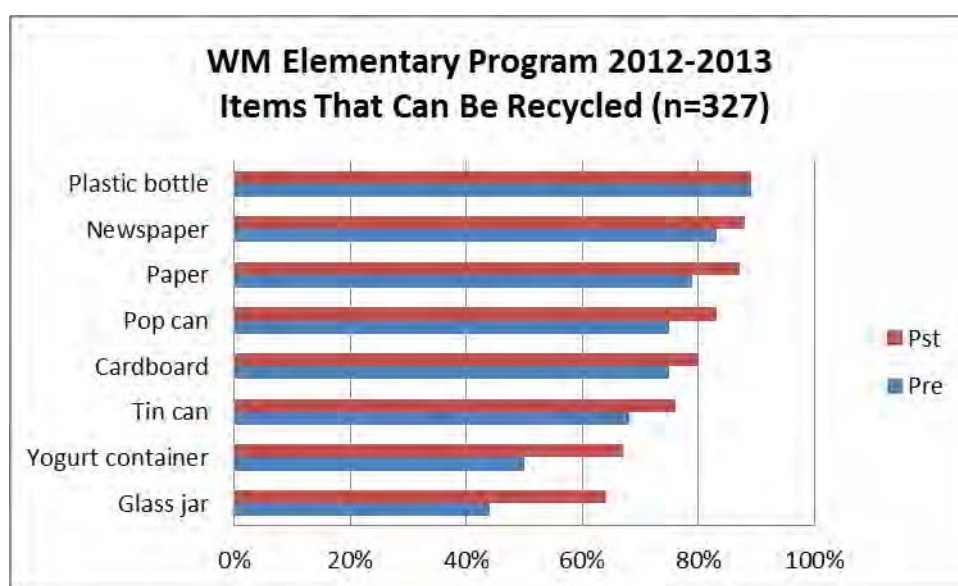
Table 3 results confirm that after the assembly students became more able to identify the natural resources used to manufacture *pop cans*, *plastic bottles* and *cardboard*. For *pop cans*, students show sizeable increases in identifying *oil* and *water* as essential manufacturing resources with gains of 13 and

28 percent, respectively. Students have a small gain in identifying *metal* (80% to 84%), but students' high level of awareness prior to the assembly likely results in the limited gains. For *plastic bottles*, students clearly learn that *oil* and *water* are necessary, with gains of 30 and 33 percent, respectively. Finally, for cardboard, students realize a 25 percent gain in recognizing *water* as a key component and move from an already high 76 percent for the natural resource, *trees*, to 85 percent after the assembly.

Another key message for elementary students is identifying items that are appropriate for their home recycling bin. Students were presented with a list of containers and wrappers and asked to circle the ones that could be recycled. Their percentage of correct responses, grouped by recyclable and non-recyclable items, are presented in Table 4.

**TABLE 4**  
**Items That Can Be Recycled In A Home Recycling Bin – 2012/2013**  
(n=327)

<u>Items</u>	<u>Pretest % of Students</u>	<u>Posttest % of Students</u>
<i>Recyclable</i>		
Plastic bottle	89%	89%
Newspaper	83%	88%
Paper	79%	87%
Pop can	75%	83%
Cardboard	75%	80%
Tin Can	68%	76%
Yogurt container	50%	67%
Glass jar	44%	64%
<i>Non-recyclable</i>		
Chip bags	72%	85%
Pencils/pens	83%	79%
Capri Sun juice pouch	66%	71%
Plastic sandwich wrap	69%	70%



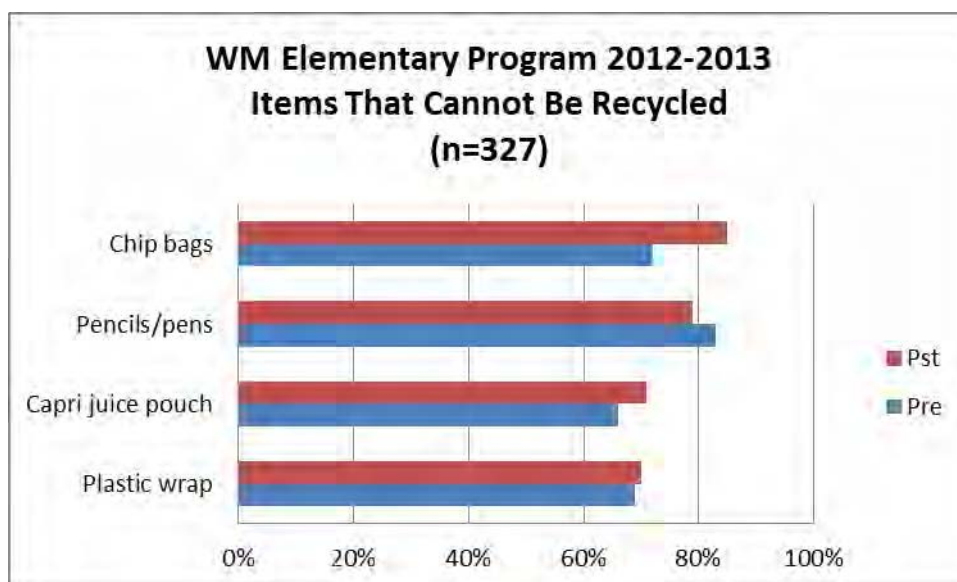


Table 4 and the two charts above show changes in student understanding of items that are recyclable or non-recyclable. Of the eight recyclable items (*plastic bottle, newspaper, paper, pop can, cardboard, tin can, yogurt container, glass jar*), *plastic bottle* remains high at 89 percent before and after the assembly. The next five items – *newspaper, paper, pop can, cardboard, tin can* – show modest gains of five to eight percent improvement after the assembly, with all posttest scores near 80 percent correct. The remaining recyclable items, *yogurt container* and *glass jar*, show the largest improvement at 17 and 20 percent, respectively. Approximately two-thirds of the students correctly identify these as recyclable after the assembly, indicating there is still some confusion among students about whether these items belong in the recycle bin. Of the four non-recyclable items (*chip bags, pencils/pens, Capri juice pouch, plastic wrap*), only *chip bag* showed a modest gain in correct identification at 13 percent. The remaining items were relatively unchanged, though two-thirds or more of students could correctly identify them as non-recyclable.

The next question posed to students included two everyday activities where they had the opportunity to save natural resources. Students were asked to identify the best choice for each. The question and student responses follow.

*If you want to save natural resources, check the best choice in each group.*

#1 – You are packing a snack for school.

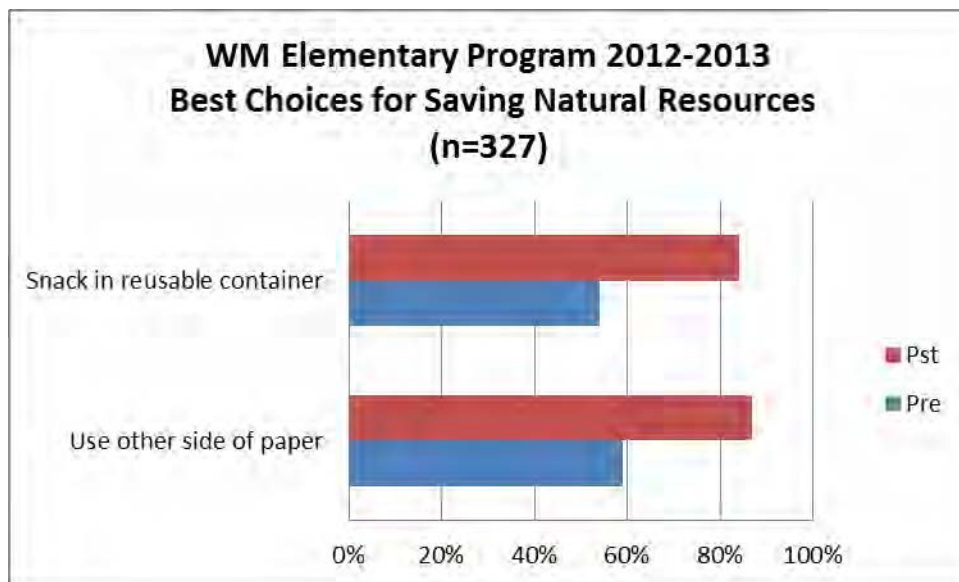
- You put it in a plastic bag that you can throw away.
- **You put it in your own reusable container.**
- You put it in a paper bag and recycle it when you're done.
- Don't know.

#2 – You are done with your spelling paper.

- You put it in the recycle bin.
- You throw it in the garbage.
- **You save it to reuse the other side.**
- Don't know.

**TABLE 5**  
**Best Choices To Save Natural Resources – 2012/2013**  
(n=327)

<u>Items</u>	<u>Pretest % of Students</u>	<u>Posttest % of Students</u>
<i>Packing a snack for school.</i>		
Put in a plastic bag that you can throw away.	13%	5%
<b>Put it in a reusable container.</b>	<b>54%</b>	<b>85%</b>
Put in a paper bag and recycle when done.	26%	9%
DK	7%	1%
<i>Done with your spelling paper.</i>		
Put it in the recycle bin.	33%	11%
Throw it in the garbage.	2%	0%
<b>Save it to reuse the other side.</b>	<b>59%</b>	<b>87%</b>
DK	7%	0%



In a final pretest/posttest question, students were presented with an open-ended question and asked to: *List three things you or your family could do to make less garbage.* Table 6 displays student responses to the question before and after the assembly.

**TABLE 6**  
**Three Things Could Do To Make Less Garbage (Pretest, Posttest) – 2012/2013**  
(n=327)

<u>Actions</u>	<u>% of Students</u>	
	<u>Pretest</u>	<u>Posttest</u>
Recycle/recycle more	22%	30%
Choose reusables	24%	27%
Buy/waste less	14%	13%
Compost/yard waste	3%	5%
Reduce, 4REs	1%	5%
Use proper disposal practices	7%	3%
Earth friendly practices	5%	2%
DK	26%	15%

Student responses were grouped into the categories listed in the chart above. The most frequent responses were *recycle/recycle more* (22% pretest, 30% posttest), *choose reusables* (24%, 27%), and *buy/waste less* (14%, 13%). Student responses were generally unchanged after the assembly, with the *recycle/recycle more* category showing the largest change at 8 percent. These response categories were followed by relatively small numbers of students reporting *composting/using a yard waste bin* (3%, 5%), *reduce or 4 REs* (1%, 5%), *use proper disposal practices* (7%, 3%) and *use earth friendly practices* (5%, 2%). Again, these categories were relatively unchanged after the assembly. If students could not think of anything they or their families could do to make less garbage, they were instructed to write *Don't know*. The percentage of students choosing this response moved from 26 percent at pretest to 15 percent after the assembly. Typical examples of student responses to each of the categories in Table 6 follow.



### Recycle/Recycle more.

- *Recycle milk cartons, paper, glass, metal, plastic.*
- *Teach my younger sisters to recycle.*
- *Don't recycle plastic bottle caps.*

### Reuse/choose reusable items

- *Buy reusable stuff so it doesn't go into the landfill.*
- *Put your sandwich in a reusable container.*
- *Bring your own bags to the grocery store.*
- *Drink out of reusable bottles.*

### Buy/waste less

- *Don't buy more than you need.*
- *Use less paper.*
- *Eat leftovers.*
- *Think before throwing away.*
- *Buy fewer things that are not reusable.*

### Composting/using a yard waste bin

- *Put fruit peels in the compost.*
- *Put food in the yard waste and turn it into soil.*

### 4 REs and reduce combinations

- *Think before we throw things in the garbage.*
- *Make less garbage.*
- *Reduce the stuff we use.*

### Use proper disposal practices

- *Don't mix garbage with recycling.*
- *Snack wrapper goes in the garbage.*

### Use earth friendly practices

- *Instead of throwing away old clothes, you can donate them*
- *Donate toys/clothes.*

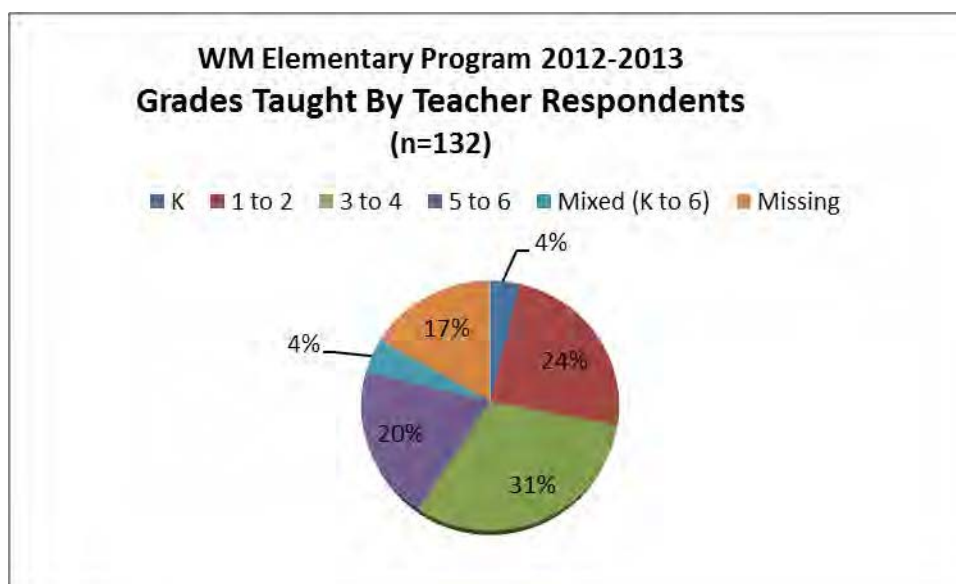


## Elementary Teacher Measures of Assembly Effectiveness

In addition to student testing, elementary educators were asked to help evaluate the assembly's effectiveness. The grades taught by educators participating in the elementary assembly evaluation are displayed in Table 7. Teachers taught kindergarten through grade 6, with a fairly equal distribution across grades 1-2 (24%), grades 3-4 (31%) and grades 5-6 (20%). A small percentage taught kindergarten (4%) and mixed grades (5%), while a relatively large percentage (17%) did not report the grades being taught. These figures are presented in the following table and the accompanying pie chart.

TABLE 7  
Grade Taught by Elementary Teacher Respondents 2012-2013  
(n=132)

<u>Grade</u>	<u>Percentage of Respondents</u>
Kindergarten	3.8%
1 - 2	24.2%
3 - 4	31.1%
5 - 6	19.7%
Mixed grades (K-6)	4.5%
Missing	16.7%



## Assembly Effectiveness

Elementary teachers were asked to provide feedback on their overall impression of the elementary assembly sponsored by Waste Management. They were asked to *Rate the effectiveness of this assembly in educating your students about the importance of reducing waste and recycling* using a five-point scale, ranging from *Very effective* to *Not at all effective*. The results of this rating are shown in Table 8. A pie chart illustrating the ratings also follows.

**TABLE 8**  
**Effectiveness In Educating About Importance Of Reducing Waste And Recycling 2012-2013**  
(n=132)

<u>Overall Effectiveness</u>	<u>% of Respondents</u>
Very effective	74.2%
Effective	25.0%
Neutral	0.8%
Not effective	0%
Not at all effective	0%



As Table 8 and the accompanying chart show, teachers rated the assembly as being highly effective in educating students about the importance of reducing waste and recycling. Nearly three quarters (74%) rate it as *Very effective*, with 25 percent rating it as *Effective*, and only one percent rating it as *Neutral*. No teachers assigned ratings of *Not effective* or *Not at all effective*.

In a similar question, teachers viewing the assembly were asked to rate the *effectiveness of this assembly in educating your students about how to reduce, reuse and recycle*. Again, teachers were asked to use a five-point scale, ranging from *Very effective* to *Not at all effective*. The results of this rating are shown in Table 9. A pie chart illustrating the ratings also follows.

**TABLE 9**  
**Effectiveness In Educating How To Reduce, Reuse and Recycle 2012-2013**  
(n=132)

<u>Overall Effectiveness</u>	<u>% of Respondents</u>
Very effective	77.3%
Effective	20.5%
Neutral	2.3%
Not effective	0%
Not at all effective	0%

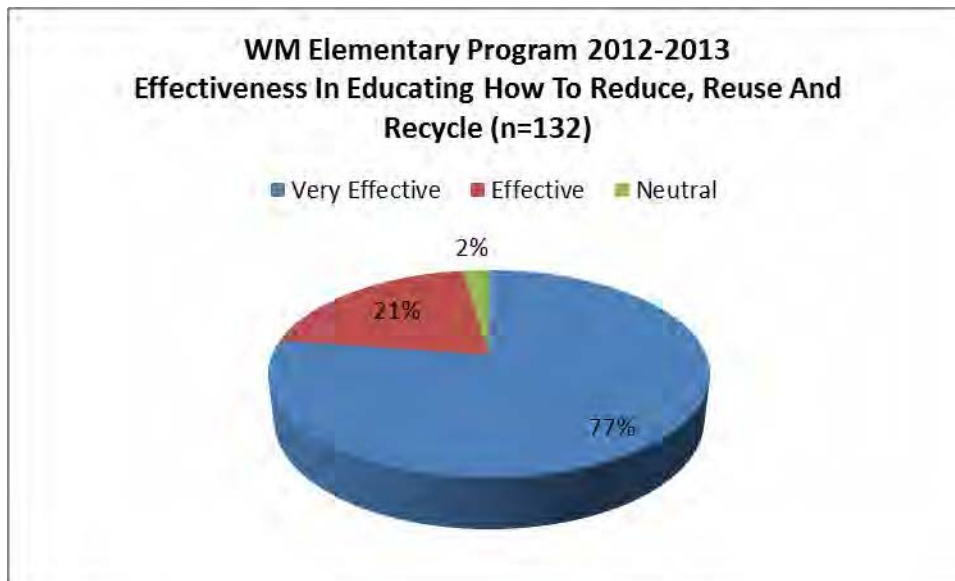


Table 9 and its accompanying chart show teachers assign even greater effectiveness to the assembly for its ability to educate students about how to reduce, reuse and recycle. Over three quarters (77%) rate it as *Very effective*, with 21 percent rating it as *Effective*, and just two percent rating it as *Neutral*. No teachers assigned ratings of *Not effective* or *Not at all effective* to this dimension.

The assembly presentation often acts as a catalyst for classroom activities that implement its message to reduce, reuse and recycle. Teachers were presented with a list of possible activities and asked to identify any that their classroom undertook. Each of these activities follows, with the percentage of teachers selecting each item indicated.

- Improved ongoing classroom recycling –80.3%
- Prompted classroom discussion on recycling/waste reduction – 65.2%
- Set up a reuse box –41.7%
- Reduced waste in the classroom –34.1%
- Moved the recycle bin next to the trash can – 30.3%
- Inspired class to do a waste reduction or recycling project –12.1%
- Started to do classroom recycling –9.8%

As the list shows, teachers' top two choices of activities include *improved ongoing classroom recycling* (80%) and *prompted classroom discussions* (65%). These two activities were undertaken by a majority of the respondents. Next, *set up a reuse box* (42%), *reduced waste in the classroom* (34%) and *moved the recycle bin next to the trash can* (30%), were mentioned by about one-third of all teachers. The two final items on the list, *inspired class to do a waste reduction or recycling project* (12%) and *started to do classroom recycling* (10%), were chosen by a small percentage of teachers. In addition to these activities, teachers could also list "other" activities their classrooms did as a result of the program. Several responses were given:

- *Use recycling and reuse boxes better.*
- *Worm bin.*

- *Composting.*
- *Heightened awareness for home recycling too.*
- *Spoke with students about their positive attitudes and to have further discussions at home.*
- *Reminder to not throw recyclables in the recycle bin.*
- *Kids started checking what garbage vs. recycle vs reusable was.*
- *Have art paper scrap box.*

In a final question, elementary teachers were asked to make comments or suggestions regarding the assembly program. The vast majority of teachers' comments were positive and complimentary. A number of teachers also made suggestions for improvements. Representative comments in each area, along with the grade being taught, are listed below.

### ***General positive comments***

- *Excellent presentation that really kept the kids attention.*
- *The program was very entertaining as well as a way to gain knowledge.*
- *Nicely done! Engaging and informative!*
- *Wow! We were very impressed!*
- *I loved it. It gave so many ideas for children to think about for school and home.*
- *Students like the program and were talking about it after the assembly. Asked questions after we returned to class.*
- *This program was excellent...don't change a thing.*
- *This was a fantastic assembly! It kept every student (K-6) engaged the entire time. Not only was it engaging, but it was very informative in a very accessible way! Great Job!*
- *Great actors! Very well presented! The children really enjoyed the show and the messages were clear and easy to follow.*
- *Your assembly TOTALLY captivated my students' attention! They are now excited.*
- *This was one of my favorite assemblies ever. I loved, loved the actors. It was super entertaining. Please, please come back!*
- *Kids enjoyed the assembly. It gives us common experience and common language to discuss recycling.*
- *So fun and engaging. GREAT acting! Catchy jingles and hand signals. Very effective in cementing important information.*
- *The program was very engaging, 3rd graders immediately put reuse box in place. Teacher (me!) more cognizant. We took paper from recycle and made note pads.*
- *The presenters put on a great performance. The student really loved it. I would love to show it again next year!*
- *Wow! I thought this assembly was one of the best I have ever seen. It was fast paced, engaging, age appropriate, and very entertaining.*
- *This was a well thought out assembly. The kids connected to it and loved the rhymes and songs associated with the reuse ideas.*
- *What a wonderful assembly! Important information was presented in an engaging way that inspired students to rethink how they can reduce waste.*
- *Very engaging for the younger grades, "chants" were continued in class by students.*



### Suggestions for improvement

- *Hilarious! The actors/presenters were very entertaining and informative. Both adults and students were engaged. Excellent props and visuals. Suggestion: Show more garbage examples like ziplocs, yogurts, and other plastic wrappings.*
- *The actors did a nice job staying in character and getting the kids excited. My suggestion would be to watch the vocabulary (such as destination).*
- *Very entertaining and engaging. Grab kids from the back of the room. They are older and more able to engage.*
- *When selecting volunteers, grab kids who sit towards the back too, so they don't get discouraged when they want to volunteer.*
- *The actors rocked! A tad bit on the long side (Maybe 10 minutes less). Nicely done however.*
- *Kids like the drama but the message gets lost in the acting. A handout with the talking points of the assembly would be good. (Yes, I know we are trying to reduce waste. A poster for the classroom instead?)*
- *Actors were engaging and funny. It was a bit young for 6th graders but they laughed and enjoyed it anyway and will focus on it in class.*
- *The accents of the characters may be difficult for some students to understand.*
- *This assembly was completely engaging for our students. They enjoyed the humor and the audience participation. It was the right length. More Q&A at end would be good.*



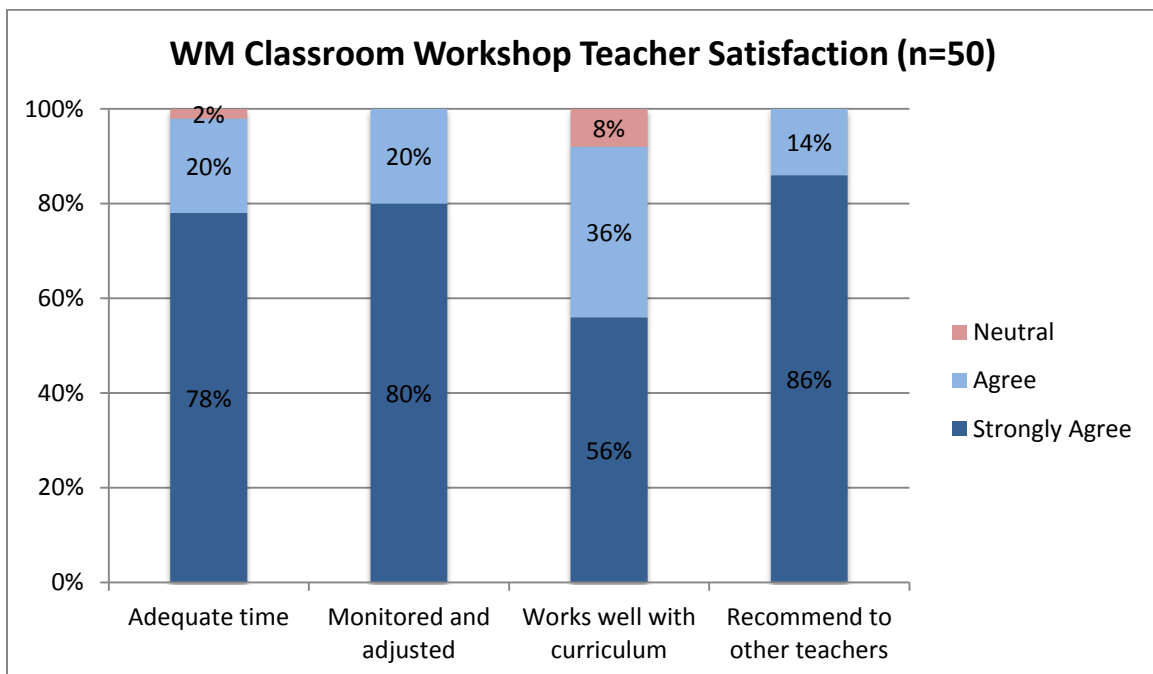
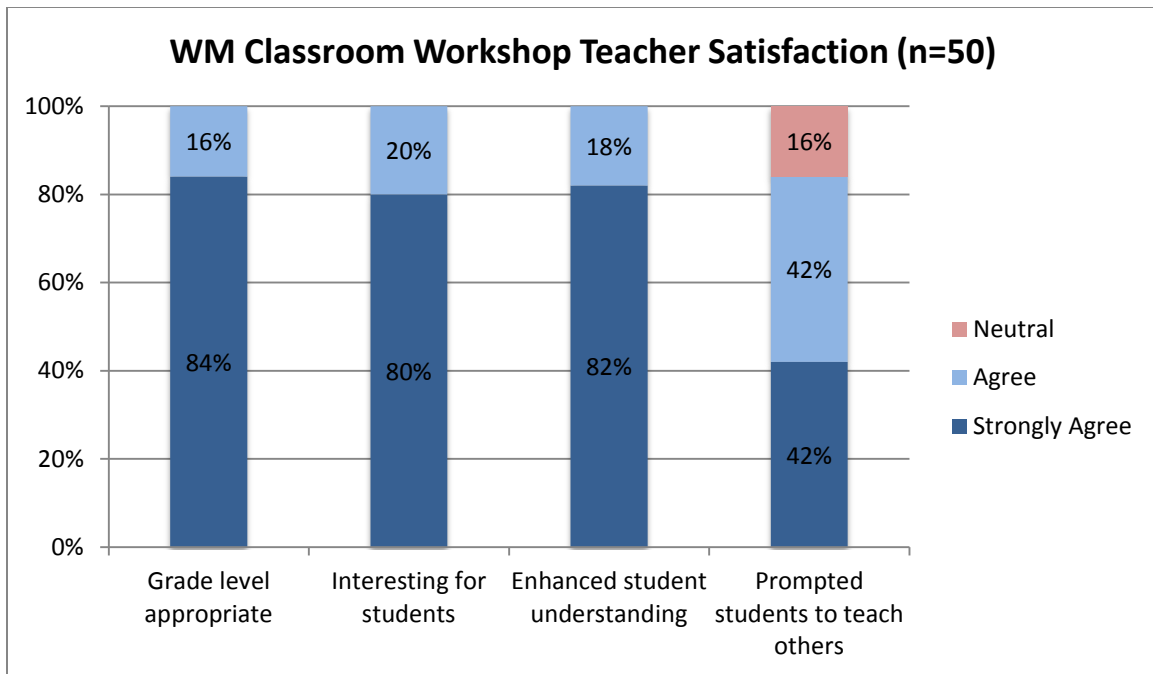
### Elementary Teacher Measures of Workshop Effectiveness

Teachers whose classrooms participated in classroom workshops were also asked to complete an online survey to determine the effectiveness of the workshop presentations. A total of 50 teachers completed workshop surveys with 21 of the respondents teaching second grade, 10 teaching third grade, 12 teaching fourth grade, five teaching fifth grade, and two unknown. All the teachers agreed that the workshop was appropriate for the grade level, interesting for students and kept them engaged, and enhanced students' understanding of waste reduction and recycling, with over 80 percent selecting the highest rating. The highest rating reported (86% strongly agree) was that teachers would recommend this workshop to their colleagues. Teachers were presented with a series of statements regarding their satisfaction with various aspects of the workshop and were asked to rate their agreement with each. The results are presented in the following table.

**TABLE 10**  
**WM Classroom Workshop Teacher Satisfaction 2012-2013**  
(n=50)

<u>Statement</u>	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>
<i>Grade level appropriate</i>	84%	16%	0%	0%
<i>Interesting for students</i>	80%	20%	0%	0%
<i>Enhanced student understanding</i>	82%	18%	0%	0%
<i>Prompted students to teach others</i>	42%	42%	16%	0%
<i>Adequate time</i>	78%	20%	2%	0%
<i>Monitored and adjusted</i>	80%	20%	0%	0%
<i>Works well with curriculum</i>	56%	36%	8%	0%





The overwhelming majority of teachers agrees or strongly agrees with each of these statements with nearly 100 percent expressing their agreement. Ranking their responses in order of strongly agree, teachers selected *Would recommend this workshop to other teachers* (86%), *Was appropriate for grade level* (84%), *Enhanced students' understanding of waste reduction and recycling* (82%), *Was interesting for the students and kept them engaged* (80%), *Monitored and adjusted to meet student needs* (80%), *Appropriate amount of time was allocated for the workshop* (78%), *Works well with my existing curriculum and/or supplements my curriculum well* (56%). While the statement *Prompted my students to teach others about waste reduction and recycling* had the lowest level of strong agreement

(42%), no doubt because this is harder to observe, when combined with the “agree” statement, this becomes a significantly large number (84%). In a final series of open-ended questions, teachers were asked to comment on the most valuable aspects of the workshops, any suggestions for improvements, and any general comments they would like to share. Teachers frequently noted that they appreciated the hands-on style of the workshops and how this engaged the students. Other popular aspect included having real props and giving students the opportunity to practice sorting. Suggestions included providing follow-up or extension activities. The typical responses to each of these open-ended questions follows, sorted by workshop with grade level noted in parentheses.

## Recycling 101

### *Most valuable aspect of the workshop*

- *Students were engaged and active.*
- *This is a subject that really needs to be taught and retaught-- it's very important. The lesson repeated the information several times.*
- *I loved the hands on piece to it. It was very relevant to students.*
- *I liked the pace of the workshop. The kids were engaged the entire time.*
- *The message was clear and easy to understand and apply.*
- *Talking about what should be recycled, why, and how.*
- *The kids were actively engaged, and constantly a part of the presentation. That works well for my group. Thank you!*
- *Awareness of what can be recycled and the importance of using our natural resources wisely. The kids see a lot of reuse of materials in the classroom, and it helps to remind them to be green.*
- *Review of practical recycling tips.*
- *Hands on quizzing with actual materials and wonderful special effects assembly.*
- *The hands on activities. Students loved the presentation!*
- *The most valuable part of the workshop was when students had to through garbage and tell whether it should be recycled, reused, or thrown away.*
- *Kids having time to practice sorting materials.*
- *Giving ideas for improving the planet...very important the idea of stewardship of the earth.*
- *The hands on activity sorting the garbage and recycling items.*



### *Suggestions for improving the workshop*

- *The sorting of trash felt repetitive. Maybe if the example had been pictures, then the activity a bag of trash?? Also, the compost option was not offered until after the sort was complete, which was confusing for those who knew enough to know those items are not trash...*
- *Although the length of the workshop worked well, I think that it might be nice to have a component to the workshop where students do a little writing regarding what they have learned at the end.*
- *It might be nice to have a "take away" that the kids can take home to remind them to talk to their parents about the workshop. I know you had a flyer, but I didn't get it run off before the kids left for the day.*
- *The kids loved the Recycle chant that was said at the assembly. It would be good to have this in the workshop presentation too. A little more movement for all of the kids.*
- *Sometimes I think a good video link would be interesting. Maybe showing them what an actual landfill looks like. We have interactive whiteboards in the classroom and if a good video link could maybe add a little more interest.*

- No not really, maybe for kids to make a plan for how they can share their learning with others
- Possibly extend the students' learning from the assembly more than what was done
- Could have been a little longer to have students reflect on the lesson and take next steps to recycle or make less garbage at home.

#### **Other comments**

- I thought the presenter adjusted the presentation appropriately based on the time available.
- This was a great follow up to the assembly. Thank you!
- Both the assembly and the workshops were wonderful. It got us all talking about recycling and we learned great things along the way. Thank you so much.
- I liked the activity where groups had to sort items, by trash, recycle, and compost. Made for a good discussion among the kids. Thanks for also clarifying that are school can recycle other materials. We were always told that just clean paper could go into the recycle bins. Hope we have the opportunity to schedule again next year. Jen did a great job!

### **Habitat Connections**

#### **Most valuable aspect of the workshop**

- Students were engaged and active.
- Great management techniques by the presenter. She was excellent!
- Very hands-on. High interest with the materials related to each animal.
- Jen did a great job presenting and managing the class. She had great knowledge and the students enjoyed as well as educated themselves.
- That the students can take information and share it with family members.
- Engaging activities kept kids very involved.
- That the students can take information and share it with family members.
- I thought the workshop was well organized and engaging. I think the most valuable aspect was the small group activity, once they were broken into animal groups with the manipulatives (stuffed animal, food, etc.). It provided enough time for each to share their thinking and they all had a good discussion going on. Also, the sharing by each group was great, and picking an animal or manipulative and having that individual be responsible for sharing for the group was highly effective, and kept all students engaged and accountable.
- Hands on activities are always a good way for 2nd graders to make connections.
- The discussion of natural resources and how we impact the environment.
- Tied right in with the 4 basic needs of the Pilgrims we were beginning to study!



#### **Suggestions for improvements**

- Come up with a song.
- Provide small extensions or challenge questions for groups that may finish task earlier than others. Those challenges could be written on the white board on a piece of paper as "extra" challenge tasks. Otherwise some kids begin to "goof off" with items in the bags.
- I would like to have more materials to share and work through with students afterwards, to test their understanding and continue to increase their knowledge base.
- The cards that the students read were beyond the reading level of many 2nd graders and Hispanic students. Have cards designed for the older students, a different color and easier reading level for younger. Also, have the cards written in Spanish.

### ***Other comments***

- *Fantastic job. Highly entertaining and informative. Thank-you!*
- *This class was very engaging for my students. All of the hands on activities and pictures helped m English Language Learners. Thanks so much!*
- *Great activity and props!*
- *I thought it was a wonderful lesson and activity. Very effective, engaging, and FUN!*
- *Jen did a great job presenting and held the student's attention. She kept students actively involved.*



### **Landfill Laboratory**

#### ***Most valuable aspect of the workshop***

- *Explaining "Landfills are forever."*
- *The discussion about landfills and the assembly!*
- *My students were very engaged in the lesson and seemed to enjoy it.*
- *Hands on activities reviewing/reinforcing the information from the assembly.*
- *Good pacing of materials and activities. Students were engaged and enjoyed the activities.*
- *I liked the sorting and showing how long some things take to decompose.*
- *Lots of hands-on activities.*
- *The hands-on activity where the students had to sort trash on a timeline. It sparked good discussion about how long it actually takes for waste to break down.*
- *I think the most valuable aspect was seeing how little trash would end up in our landfills if you recycle. I am noticing the kids doing a better job in our room putting the recycled materials in our recycle bin.*
- *The photos of items decomposing, the landfill and the recycling facility, and hands-on activity of sorting out the items to guess how long each would take to decompose.*
- *The visuals used were very helpful in getting students engaged and understanding the concepts being taught.*

#### ***Suggestions for improving the workshop***

- *Providing technology activities that "we" can do in the classroom - Maybe Internet activities/games that reinforce the concepts.*
- *It was just what my students needed, and Mrs. Rodgers was great!*
- *Maybe even more hands on time for the kids.*

### ***Other comments***

- *We started a re-use box of paper in our class room and it is reducing recycling and waste.*
- *Though I will recommend this workshop to other 5th grade teachers in the district, we've had the problem in the past where multiple teachers will schedule the same workshop...so if I were wanting, ... because it fits perfectly with my curriculum, and students already had that in 4th grade, it makes me hesitant to schedule this. It would be good to have a list of all the workshops available, and which teachers had them which years, so we could decide which workshops to hold for which grade levels, so content could be spiraled instead of repeated.*

## Technical Assistance Findings

During the first phase of this project, technical assistance was provided to seven schools in Waste Management's service area in Snohomish County. An additional two schools were contacted but did not request assistance at this time and one school was referred to their recycling hauler for technical assistance.

Technical assistance begins with an initial in-person site visit to determine a school's current recycling structure and opportunities for improvement. During the initial visit, the technical assistance advisor meets with the school's interested team, (typically consisting of the custodian, a dedicated teacher or two, and ideally the principal), walks through the school with extra focus on lunchroom recycling operations, and provides recommendations for additional bins or changing current bin placement as well as educational next steps. Schools are also asked what they thought would be helpful in improving their programs. Each school can receive a variety of recycling bins totaling \$200 appropriate for different locations such as the lunchroom, classrooms, hallways, copy rooms, etc. In addition to operational guidance, the school receives educational signs and ideas to get the whole school on board with its enhanced or new recycling program. The school's initial recycling rate is calculated according to the dumpster size, collection frequency, and fullness estimates provided by the custodian.



Follow up assistance is provided regularly via phone, email, or visit to support the school with delivery of bins and signs, ideas for creating customized posters, potential educational projects, and questions about proper waste disposal methods. Follow-up visits were conducted at three schools during this time period.

### Initial Findings

During this initial technical assistance phase, Triangle learned that most schools are interested in recycling, want to do "the right thing" and very much appreciate having someone give free guidance and tools. Teachers and administrative staff are extremely busy and operating under limited budgets. Therefore, changes of any kind can appear daunting. Bringing in an outside technical assistance advisor has been welcomed and appreciated.

Triangle has identified the following successes with the technical assistance program thus far:

- Teachers who have had classroom workshops from the Triangle team are great in-roads for technical assistance.
- Teachers and custodians are grateful for the free-of-charge assistance, signs and bins. The hands-on support was mentioned as a key component for motivation and follow through for the schools.
- On the whole, schools do not know that milk cartons are recyclable. This information from the technical assistance advisor has been very helpful.

*"We've been working for several years on improving our recycling activities, and I'm happy to hear that there is someone at one of our recycling partners that can assist us. Thank you very much."*—Robb Stanton, Director of Operations Services, Lake Stevens School District



*"We truly appreciate all the hard work you're doing to help us with our recycle program. What an exciting and worthwhile project for our students to experience. Thank you."* —Robert Cross, Day Custodian, College Place Elementary

Triangle has also identified the following challenges with technical assistance:

- Schools that do not have a dedicated teacher or green team are not as easy to access.
- Custodians are too overworked to add a recycling program by themselves.
- Lunchrooms, the main area for high quantities of wastes, do not have consistent operational structures. Lunchroom bins range from none at all for recycling to a compost bin without recycling to a full set of well-labeled garbage and recycling bins. The Triangle team has talked with many schools about creating "waste stations" in the lunchroom. A waste station provides a one-stop-shop for students to empty their wastes and a prime spot for education in the form of clearly identified lunchroom monitors and posters explaining where wastes should go. The technical assistance advisor recommends getting the appropriate bins in place in the lunchroom before focusing on other parts of the school since this is where the highest volume of recyclable materials is concentrated. Surprisingly, most schools do not know that they can recycle milk cartons. Aprons that identify lunchroom monitors and other incentives have taken longer to obtain for the program than originally anticipated. Schools are anxiously awaiting these materials and this will be an appreciated addition to the assistance provided to student teams.
- In schools that do not already capture food wastes, it would be helpful to clarify Waste Management's priority: starting or improving existing recycling programs or adding food waste composting..
- Schools also seem to need help with consistent and easy-to-read signs to hang on bins and throughout the school touting their recycling programs.
- Scheduling a visit ahead of time is required since teachers and staff are very busy. Finding the appropriate contact and getting an invitation to a school is not always easy.

Technical Assistance September 2012-January 2013					
School Name	# of Visits	Initial Recycling Rate	# of Bins Delivered	Interest in Printed Signs	Interest in Aprons
Cedar Park Christian (Lynnwood, Everett, Mountlake Terrace)	No needs at this time	n/a	n/a	n/a	n/a
College Place Elementary	2	40%	10	Y	Y
Discovery Elementary	1	38%	6	Y	Y
Eagle Creek Elementary	No needs at this time	n/a	n/a	n/a	n/a
Marshall Elementary	1	67%	n/a	n/a	n/a
Martha Lake Elementary	2	38%	n/a	Y	Y
Mukilteo Elementary	2	Not calculated	5	Y	Y
Odyssey Elementary	1	36%	2	N	N
Westgate Elementary	1	50%	n/a	Y	N

## Discussion of Program Results

Evaluation results indicate that the assembly and classroom workshops have a major impact on students' understanding of what happens to the garbage they create and what they can do to reduce the amount of waste going to the landfill. Students learned that garbage does not readily decompose in the landfill and actions such as reusing paper or packing lunch in a reusable container can reduce the amount of waste they produce and save natural resources. Students for the most part seem to understand what can be recycled and made modest gains in adding yogurt containers and glass jars to the list of what can go into their home recycle bins. Most popular responses after the assembly on how to reduce waste included recycle more, reuse materials, and buy or waste less.



Teachers clearly found both the assembly and the classroom workshops highly effective in educating their students on waste reduction and recycling. The demand for workshops is high and the number per school had to be limited in order to reach more schools. If additional workshops can be provided, schools will schedule them. The most frequent suggestion is to provide take-away or follow-up activities to the program so they can expand on student learning after the presentation. An assembly discussion guide that provides key vocabulary and facts, pre and post-assembly discussion questions, and easy activities would be an easy way to

respond to this request. It can include web links for additional resources. Another idea for younger students is to create a student coloring sheet with tips on how to reduce waste and recycle.

Support for projects, still in its initial stage, also can help students put into practice what they have learned in the program and reinforce learning so reducing, reusing, and recycling become second nature at school and at home. It can also help schools improve their WRR programs and increase exposure to key messages. Triangle recommends providing Green Team support in the form of classroom visits and follow up support to teachers. The distribution of aprons for lunchroom monitors will help clearly identify these volunteer Green Team members as recycling experts in their school. Certificates and/or other rewards such as reusable water bottles for completion of projects can serve as recognition for a job well done and also motivate other classrooms to participate in the program.

Triangle recommends that technical assistance continues in the schools and that the team gains further support from custodians, principals and engaged teachers. Consistent follow-up and subsequent visits as appropriate are helpful for schools as they set up their recycling programs. Most schools are highly interested in the kid-friendly recycling/garbage/composting signs as well as lunchroom monitor aprons. Triangle recommends delivering these to the schools whenever possible.

Working with school district staff may also increase effectiveness. For schools to change their dumpster sizes, collection frequency, or even the type of liner bags used in recycling bins, they need district-level support. Having buy-in from the district will create consistency across schools with Waste Management as their contracted hauler and lead to a more legitimate recycling program on the school level. Triangle has started contacting district-level resource conservation specialists or recycling contacts about further recycling needs for Waste Management-serviced schools as part of the next phase of the project.

Schools could benefit from periodic Waste Management updates about new materials that are accepted or reminders about what is allowed in the recycling bins. Teachers, staff and even custodians do not always know where to turn with waste questions or may not even know what questions to ask. Having a technical assistance advisor or some other regular contact with Waste Management could be helpful for the schools to stay on top of what items are recyclable, such as milk cartons.

The Triangle team determined that it would be helpful for teachers to have a leave-behind document after the initial site visit that would provide simple guidelines for structuring the school's recycling program. This will provide an in-hand resource for teachers and staff with helpful operational and educational tips. The document is being drafted as part of the 2013 education program.

## **Appendix A**

- School Program List

### **Evaluation Instruments**

- Assembly Teacher Satisfaction Survey
- Pre Test
- Post Test
- Classroom Workshop Feedback Form

### **Assembly**

- Program Promotional Flyer
- Assembly Agreement Form – Original Form
- Assembly Agreement Form – School Copy
- Letter to School

### **Workshop**

- Student Activity Ideas
- Home Survey

### **Technical Assistance**

- Sort Sign – All Services
- Sort Sign – Recycling and Garbage
- Bin Signs – Garbage, Recycling, and Food Waste
- Recycling Containers Sample Booklet

## Waste Management Waste Reduction and Recycling Assembly, Workshops and Technical Assistance Schools Reached

School District	School Name	Assembly	Workshop	Technical Assistance
Arlington School District	Eagle Creek Elementary	x	x	x
Arlington School District	Pioneer Elementary	x	x	
Edmonds- Private	Cypress Adventist School	x	x	
Edmonds School District	Cedar Valley Community School	x		
Edmonds School District	Chase Lake Elementary	x		
Edmonds School District	College Place Elementary	x	x	x
Edmonds School District	Madrona School	x		
Edmonds School District	Martha Lake Elementary	x	x	x
Edmonds School District	Seaview Heights Elementary	x		
Edmonds School District	Sherwood Elementary	x	x	
Edmonds School District	Westgate Elementary	x	x	x
Everett- Private	St. Mary Magdalen	x	x	
Everett School District	Cedar Wood Elementary	x		
Everett School District	Mill Creek Elementary	x	x	
Everett School District	Penny Creek Elementary	x	x	
Lake Stevens School District	Highland Elementary	x	x	Republic
Lakewood School District	Cougar Creek Elementary	x	x	
Marysville School District	Kellogg Marsh Elementary	x	x	
Marysville School District	Marshall Elementary	x	x	x
Marysville School District	Shoultes Elementary	x		
Marysville School District	Sunnyside Elementary	x	x	
Monroe- Private	Monroe Christian	x		
Mukilteo School District	Columbia Elementary		x	
Mukilteo School District	Discovery Elementary	x	x	
Mukilteo School District	Fairmount Elementary	x		
Mukilteo School District	Mukilteo Elementary	x	x	x
Mukilteo School District	Odyssey Elementary	x	x	x
Mukilteo School District	Picnic Point Elementary	x	x	
Northshore School District	Crystal Springs Elementary		x	
<b>Totals</b>		<b>27</b>	<b>21</b>	<b>7</b>



# Recycling Assembly for Elementary Schools

## Teacher Satisfaction Survey



School \_\_\_\_\_ Grade \_\_\_\_\_

**We would appreciate your help in evaluating the Waste Management recycling elementary school program. Your response will help us in designing future programs and activities. Thank you for your time and effort.**

**1** Rate the effectiveness of the recycling assembly in educating your students about the *importance* of reducing waste and recycling.

- ☐ Very effective    ☐ Effective    ☐ Neutral    ☐ Not effective    ☐ Not at all effective

**2** Rate the effectiveness of the recycling assembly in educating your students about *how to* reduce, reuse, and recycle.

- ☐ Very effective    ☐ Effective    ☐ Neutral    ☐ Not effective    ☐ Not at all effective

**3** Check all of the following activities that apply to your classroom as a result of this program.

- ☐ Prompted classroom discussion on recycling/waste reduction.  
☐ Started to do classroom recycling.  
☐ Improved ongoing classroom recycling.  
☐ Inspired class to do a waste reduction or recycling project.  
☐ Reduced waste in the classroom.  
☐ Moved the recycle bin next to the trash can.  
☐ Set up a reuse box.  
☐ Other \_\_\_\_\_  
☐ Did not do any assembly-related activities.

**4** Please give us your comments about this program or any suggestions you may have for improvement.

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**5** Please note any recommendations for additional programs or waste reduction and recycling assistance that you would like us to offer for your class or your school. If you would like assistance, please provide your name and contact information below.

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Name \_\_\_\_\_ Contact me at \_\_\_\_\_

**Please return this form to Triangle Associates, 811 1st Ave., Seattle WA 98104 Fax: 206-382-0669**

# BEFORE THE ASSEMBLY

Waste Reduction and Recycling Education for Elementary Schools



Name \_\_\_\_\_  
Grade \_\_\_\_\_

School \_\_\_\_\_  
Teacher \_\_\_\_\_

**Please read the questions below and select the best answer. You may not know the answers to all the questions, and that is OK! Just choose "Don't know".**

## 1 When garbage goes to a landfill, it

- ☐ Turns to compost.
- ☐ Sits there forever as a wasted resource.
- ☐ Gets recycled.
- ☐ Don't know.

## 2 The things we use are made from natural resources. Circle all the natural resources that are used to make each thing on the list or circle DK if you don't know.

Things	Natural Resources
Pop cans	Trees Oil Metal Water DK
Plastic bottles	Trees Oil Metal Water DK
Cardboard	Trees Oil Metal Water DK

## 3 Put a circle around all the things that can be recycled in your HOME recycling bin.

Plastic bottle	Capri Sun juice pouch
Pop can	Paper towel
Cardboard	Paper
Plastic sandwich wrap	Pencils/pens
Newspaper	Chips bags
Glass jar	Tin Can
Yogurt container	

## 4 If you want to save natural resources, check the best choice in each group.

### #1-You are packing a snack for school.

- ☐ You put it in a plastic bag that you can throw away.
- ☐ You put it in your own reusable container.
- ☐ You put it in a paper bag and recycle it when you're done.
- ☐ Don't know.

### #2-You are done with your spelling paper.

- ☐ You put it in the recycle bin.
- ☐ You throw it in the garbage.
- ☐ You save it to reuse the other side.
- ☐ Don't know.

## 5 List three things you or your family could do to make less garbage.

---

---

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# AFTER THE ASSEMBLY

Waste Reduction and Recycling Education for Elementary Schools



Name \_\_\_\_\_  
Grade \_\_\_\_\_

School \_\_\_\_\_  
Teacher \_\_\_\_\_

**Please read the questions below and select the best answer. You may not know the answers to all the questions, and that is OK! Just choose "Don't know".**

## 1 When garbage goes to a landfill, it

- ☐ Turns to compost.
- ☐ Sits there forever as a wasted resource.
- ☐ Gets recycled.
- ☐ Don't know.

## 2 The things we use are made from natural resources. Circle all the natural resources that are used to make each thing on the list or circle DK if you don't know.

Things	Natural Resources
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- ☐ Don't know.

### #2-You are done with your spelling paper.

- ☐ You put it in the recycle bin.
- ☐ You throw it in the garbage.
- ☐ You save it to reuse the other side.
- ☐ Don't know.

## 5 List three things you or your family could do to make less garbage.

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# Waste Management Classroom Workshop Feedback 2013

## 1. Please fill in the information below.

Name	<input type="text"/>
School	<input type="text"/>
Grade Level	<input type="text"/>
Number of Students	<input type="text"/>

## 2. Workshop Title

## 3. Who was your presenter?

## 4. Please rate this workshop presentation.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Agree
This workshop was appropriate for the grade level.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This workshop was interesting for the students, and kept them engaged.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This workshop enhanced students' understanding of waste reduction and recycling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An appropriate amount of time was allocated for the workshop.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This workshop prompted my students to teach others (e.g. students, family members, other school staff) about waste reduction and recycling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This workshop works well with my existing curriculum and/or supplements my curriculum well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The workshop presenter used effective teaching strategies, and monitored and adjusted to meet students' needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would you recommend this workshop to other teachers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**5. What was the most valuable aspect of the workshop?**

**6. Do you have any suggestions for improving the workshop?**

**7. What time of year is this workshop best for you?**

☐

Fall

☐

Spring

Ideal Month

**8. Other comments are welcome:**

Done

Powered by **SurveyMonkey**  
Check out our [sample surveys](#) and create your own now!



# **FREE Recycling Assembly and Classroom Workshops!**

**Now Scheduling Schools for Fall 2012!  
Space is Limited!**

## **Recycling Assembly**

This **FREE live assembly show** will ignite school-wide interest in recycling and waste reduction by taking students on a fun and interactive adventure to learn:

- The importance of recycling and reducing waste.
- What can and can't be recycled.
- Simple everyday actions they can take to cut down on garbage.

The assembly is available selected dates between October and December.

## **Classroom Workshops**

Receive **3 FREE follow-up classroom workshops for grades 2–5!** These engaging workshops reinforce the assembly messages through hands-on learning and are aligned with GLE's. In these 45 minute workshops students will learn about recycling, habitat connections and the science of the landfill.

- Recycling 101 (Grades 2–5)
- The Habitat Connections (Grades 2–3)
- Landfill Laboratory (Grades 4–5)

**Now scheduling dates between November 1st and December 21st.**

**Sign up Now to Save Your Spot**

**Contact Triangle Associates for more information**

**email:** [workshops@triangleassociates.com](mailto:workshops@triangleassociates.com) or

**call:** Sheryl Taylor at 206-583-0655





**ORIGINAL FORM**  
Please complete,  
sign and return.

# Waste Management Assembly and Workshop Agreement Form

## Waste Reduction and Recycling Assembly and Workshop Program

Please complete the following actions:

- ☐ Review and complete any missing information.
- ☐ Sign and return this agreement.
- ☐ Schedule up to three workshops.
- ☐ Participate in the evaluation process.

### School Information

**School** \_\_\_\_\_  
**District** \_\_\_\_\_  
**Address** \_\_\_\_\_  
\_\_\_\_\_  
**Phone** \_\_\_\_\_

### Contact Information

**Contact** \_\_\_\_\_  
**Title** \_\_\_\_\_  
**Email** \_\_\_\_\_  
**Phone** \_\_\_\_\_  
**Best time to be reached** \_\_\_\_\_

### Assembly Information

**Assembly Date** \_\_\_\_\_

**Time 1** \_\_\_\_\_ **Time 2** \_\_\_\_\_

☐ Primary

☐ Intermediate

☐ Primary

☐ Intermediate

**# Students** \_\_\_\_\_ **# Teachers** \_\_\_\_\_

- ☐ The assembly is 45 minutes. Please allow additional time for students to arrive and depart.
- ☐ Performers arrive 30 minutes prior to the first performance. Please give them access to an area that will allow them to easily unload the set.
- ☐ PLEASE have the students sit on the floor during the assembly, but teachers in chairs!
- ☐ Requires gymnasium or multipurpose area with an electrical outlet.
- ☐ The set will be on the floor, not on the stage.

### Classroom Workshop Information

Date	Start	End	Teacher Name	Grade	# Students	Workshop Title

- ☐ The workshops are 45 minutes in length. Workshops are scheduled back-to-back with 5-10 minutes in-between.
- ☐ Schedule up to three workshops, please schedule one classroom per workshop.
- ☐ If you have any questions, please email [workshops@triangleassociates.com](mailto:workshops@triangleassociates.com) or call (206) 583-0655.

**Over, Please**



**ORIGINAL FORM**  
Please complete,  
sign and return.

## Directions to School:

From I-5/Shoreline

---

---

---

---

*Please sign and return this form.*

Principal Name \_\_\_\_\_  
Printed Name Signature

Date \_\_\_\_\_ Email Address \_\_\_\_\_



Mail to:

Triangle Associates  
811 First Ave, Ste 255  
Seattle, WA 98104  
Phone: (206) 583-0655

OR



Fax To:

(206) 382-0669

## Thank You!

We look forward to bringing this exciting program to your school!



**SCHOOL COPY**  
Please save for  
your records.

# Waste Management Assembly and Workshop Agreement Form School Copy

Waste Reduction and Recycling Assembly and Workshop Program

Please complete this form and save it for your records.

## School Information

**School** \_\_\_\_\_  
**District** \_\_\_\_\_  
**Address** \_\_\_\_\_  
\_\_\_\_\_  
**Phone** \_\_\_\_\_

## Contact Information

**Contact** \_\_\_\_\_  
**Title** \_\_\_\_\_  
**Email** \_\_\_\_\_  
**Phone** \_\_\_\_\_  
**Best time to be reached** \_\_\_\_\_

## Assembly Information

**Assembly Date** \_\_\_\_\_

**Time 1** \_\_\_\_\_ **Time 2** \_\_\_\_\_

☐ Primary

☐ Intermediate

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☐ Intermediate

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- ☐ Schedule up to three workshops, please schedule one classroom per workshop.
- ☐ If you have any questions, please email [workshops@triangleassociates.com](mailto:workshops@triangleassociates.com) or call (206) 583-0655.

9/26/2012

Dear Nancy O'Connor,

Your school has scheduled Waste Management's live assembly program on **10/4/2012**. The Waste Management *Recycling Assembly* teaches students about the importance of recycling, how to recycle, and how to reduce waste in an exciting and interactive adventure. To ensure that this program provides information in a way that is both useful and fun, we are asking participating schools to provide us feedback in two ways:

- Have one intermediate (grade 3 or above) classroom that will watch the assembly complete a pre- and post-test. We have enclosed 28 copies of these tests along with the instructions. These evaluations help us to measure what students may have learned through the assembly and thereby improve our program.
- Ask teachers to complete a short survey evaluating the assembly program. Enough copies are included for all participating teachers.

As the designated school representative, please distribute the enclosed evaluation forms to one intermediate classroom and to the teachers at your school, collect them within two weeks, and return the completed forms to Triangle Associates, 811 1<sup>st</sup> Avenue, Suite 255, Seattle WA 98104. A mailing label is enclosed for your use.

We appreciate any feedback that you and the teachers can provide. We are always looking to make the program as educational and fun as possible. **Thank you for your assistance.** If you have any questions or would like more information about the program, please contact Sheryl Taylor at Triangle Associates, (206) 583-0655.

Enjoy the program!

Sincerely,

Sheryl Taylor  
Program Coordinator

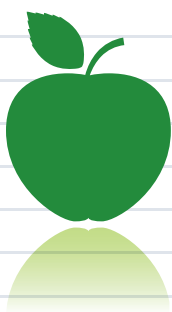


# Reduce, Reuse and Recycle Student Activity Ideas



## In the Classroom

- **Place** the classroom recycling bin next to the garbage bin where they will be easy to see and use.
- **Label** the recycling and garbage bins and attach or make signs listing what can and cannot go in each bin. Students could help make the signs.
- **Designate** a recycling monitor to check for garbage in the recycling as a classroom job.
- **Check** with your custodian on how students can help with recycling collection.



## In the Lunchroom

- **Have** students record lunch items for one week. Is there a lot of packaging going to the garbage? Are there any recyclable or reusable items? What could they do differently to reduce their waste? Are students only taking what they will eat from school lunches? Are students using a share table for food they do not want?
- **Hold** a waste-free lunch challenge to see which lunch group creates the least amount of garbage.
- **Conduct** a lunchroom waste audit measuring the amount of trash and recycling. Audit waste before and after education campaigns to see if things have improved. If the school has compost collection, add "compost" as a third category for the waste audit.
- **Create** 3-D signs using common lunchroom items to hang near bins. Glue objects onto poster boards showing what can go in each bin for recyclables, compost and garbage bins.



## School-wide Recycling

- **Have** students educate other students and staff by performing skits, creating posters and making PA announcements.
- **Assign** students to spot check the garbage and recycling bins in classrooms, office and library for proper recycling.
- **Hold** a contest between classrooms to see who has the least amount of garbage in their recycling. Designate a mascot or trophy that moves from classroom to classroom. A custodian can be the judge.
- **Plan** a recycling week with fun activities, games, announcements, and posters to raise awareness of reducing, reusing and recycling.



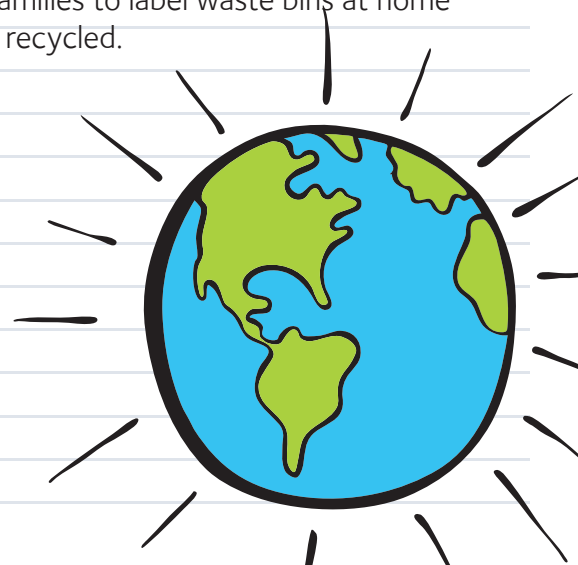
## Creative Reducing, Reusing and Recycling

- **Reduce** paper use by printing on both sides, making double-sided copies and using your projector and dry-erase board whenever possible.
- **Create** a reuse box for one-sided paper for every classroom and workroom.
- **Save** recyclables to use for art projects or costumes for a fashion show. Hold collection drives to collect items such as magazines, plastic jugs and bottle caps.
- **Reuse** party supplies. Store them in a central location for others to reuse. Students can make holiday decorations from recyclables.



## At Home

- **Choose** an idea from the classroom tips above for students to try at home and report back to class with their results.
- **Ask** students to research what is recyclable at home. These may be different items than school recycling allows. Visit [www.wmnorthwest.com/washington](http://www.wmnorthwest.com/washington) to research what is accepted in your city.
- **Encourage** students to work with their families to label waste bins at home and share information about what can be recycled.



# Home Survey

Take a look at your household habits. Are there ways you can reduce, reuse and recycle even more?

## Rethink and Reduce

Look in your kitchen garbage and find four items that your family regularly throws away.  
Could you rethink any of these items in your garbage? (Hint: Think about the four Rs.)

### How can you rethink it?

#### Item

Example: Plastic sandwich wrapper

Example: Apple core

Pack my sandwich in a reusable container.

Put it in the yard waste bin so it can be composted.

- 1.
- 2.
- 3.
- 4.

## Reuse

What type of bag does your family use for shopping?

☐ Plastic

☐ Paper

☐ Reusable bag

If your bag is not reusable, what do you do with it afterward?

☐ Throw it away

☐ Reuse it

If you use reusable bags, what does your family do to remember to bring the reusable bags to the store?

☐ Store them in the car

☐ Keep them with the coats and jackets

☐ Hang them by the front door

☐ Other: \_\_\_\_\_



#### Did you know?

Recycling one aluminum can saves the amount of energy it takes to run a TV for three hours.



Paper

Landfill

#### Did you know?

18% of Snohomish County's landfill is paper that could have been recycled.

## Recycle

Do you have recycling collection where you live?

☐ Yes

☐ No

If yes, where are your recycling carts located?

\_\_\_\_\_

Does everyone in your home know what's recyclable?

☐ Yes

☐ No

List three recyclable items here:

\_\_\_\_\_

Does your family recycle anywhere else?

☐ School

☐ Work

☐ Community Center

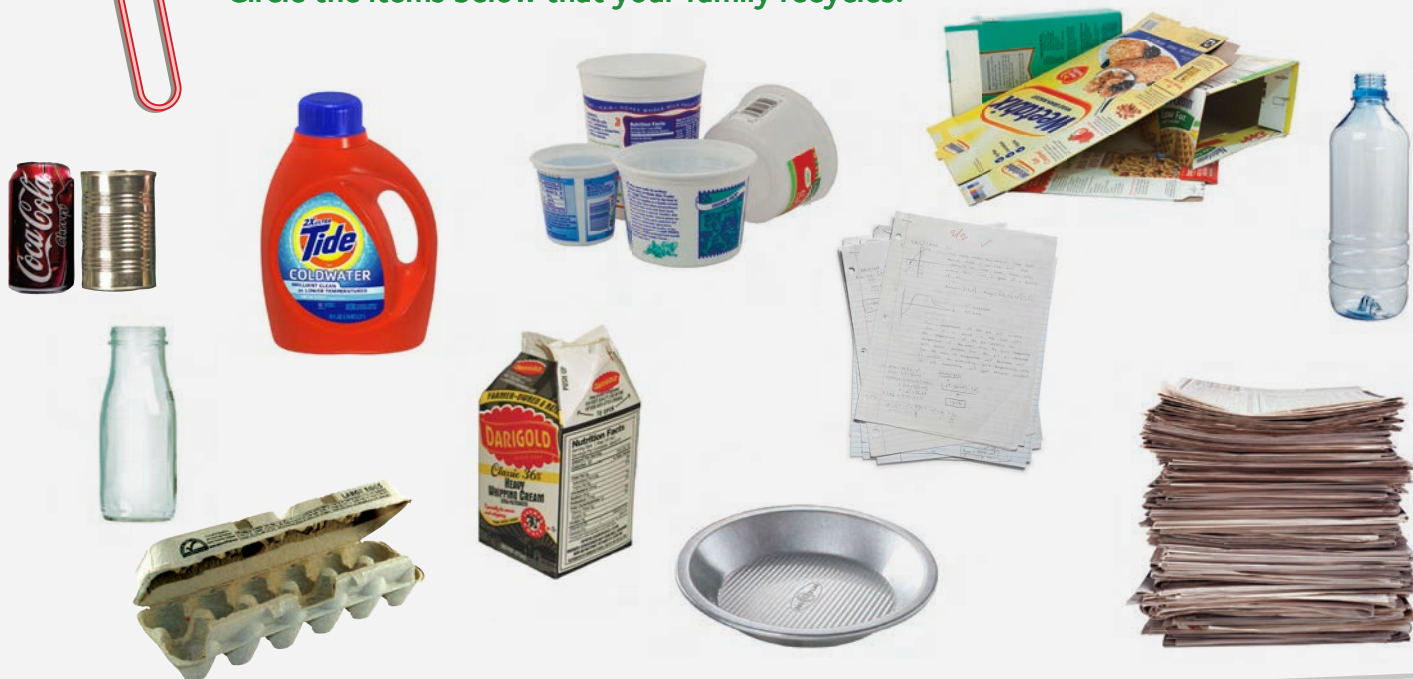
☐ Park

☐ Other

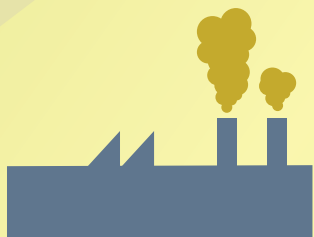
\_\_\_\_\_

Pick three actions your family is willing to take to reduce, reuse and recycle. Be prepared to share your ideas with your class.

All of the items below are accepted in your home recycling.  
Circle the items below that your family recycles.



## Educate



} 60%  
less

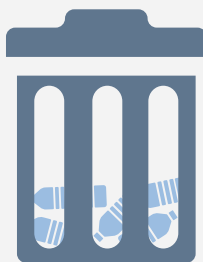
**Paper Fact:** Recycling paper uses 60% less energy than making a new piece of paper, reduces pollution, and helps preserve forests.

- U.S. Environmental Protection Agency

**Actions:** Create a paper reuse box for your home. Use both sides of paper before recycling it. Buy paper made with recycled content.



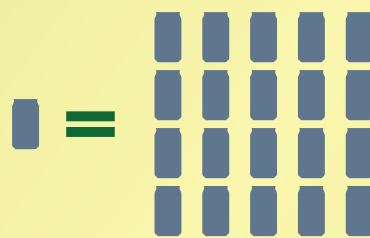
1/3  
of garbage {



**Plastic Fact:** Did you know one third of what we throw away in the U.S. is packaging and single-use containers?

- U.S. Environmental Protection Agency

**Actions:** Bringing your lunch in reusable containers and filling a reusable bottle means there is nothing to throw away. You can wash the containers and reusable bottle to use again and again.



**Aluminium Fact:** The same amount of energy is used to make 1 completely new soda can or to make 20 cans from recycled aluminum.

- Can Manufacturers Institute

**Actions:** Recycle empty clean cans. A recycled aluminum can can be back on the store shelf in 60 days as a new can!

- Northeast Recycling Council

To learn more and begin educating others visit:

### Recycling World

[www.thinkgreen.com/recycle-world](http://www.thinkgreen.com/recycle-world)

### Student Resources

[www.thinkgreen.com/students-k-5](http://www.thinkgreen.com/students-k-5)

[www.thinkgreen.com/students-6-8](http://www.thinkgreen.com/students-6-8)



Printed on Recycled Paper





# FOOD WASTE

## Food Scraps



## Food-Soiled Paper



# RECYCLING

## Paper



## Plastic



## Glass & Metal



## Reminders

- Keep Recycling Clean



- Bag your bags and return to the grocery store



# GARBAGE



# RECYCLING

## Paper



## Plastic



## Glass & Metal



## Reminders

- Keep Recycling Clean



- Bag your bags and return to the grocery store



# GARBAGE



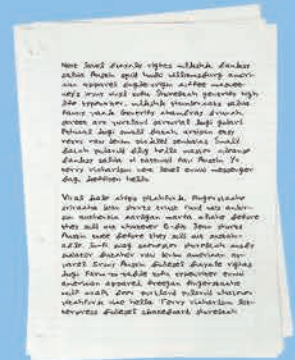


# GARBAGE



# RECYCLING

## Paper



## Plastic



## Glass & Metal

### Reminders

- Keep Recycling Clean



- Bag your bags and return to the grocery store





# FOOD WASTE

## Food Scraps



## Food-Soiled Paper





## RECYCLING CONTAINERS FOR SCHOOL PROGRAMS

This guide includes containers and equipment that are used by schools for indoor collection of recyclable materials.



### SMALL CONTAINERS

These containers are suitable for classroom, desk side, and office collection of recyclable materials.

PHOTO EXAMPLES	DESCRIPTIONS	CAPACITY SIZE	Source
	<p>RUBBERMAID Deskside Recycling Container</p> <p>Placed beside traditional wastebaskets, these containers make it easy to collect paper and other recyclable materials. Good choice for classroom and office recycling programs.</p> <p>Color: blue, recycling logo</p>	<p>10.25" W 14.4" L 15" H</p>	<p><b>Home Depot</b></p> <p>Model # FG2956-73 BLU</p> <p>Store SKU # 162951</p>
	<p>RUBBERMAID Recycling Box</p> <p>Ergonomic carrying handles. Nesting capability. Good choice for classroom recycling programs.</p> <p>Color: blue, recycling logo</p>	<p>18 gal, 26" x 16" x 14-3/4" H,</p>	<p><b>KaTom Restaurant Supply</b></p> <p>Product Code: <b>007-571873BLUE</b></p>



## MEDIUM CONTAINERS

These containers are suitable for recycling collection in cafeterias, hallways, and other public areas. They can be used to consolidate recyclable or compostable materials from classrooms, offices, and cafeterias.

PHOTO EXAMPLE	DESCRIPTIONS	CAPACITY SIZE	SOURCES
	<p>RUBBERMAID Waste/Recycling Cans - Brute Series</p> <p>Can be used in school lunchrooms for the collection of milk cartons, plastic bottles, aluminum cans.</p> <p>Plastic: won't rust, chip or peel. Resists dents. Reinforced rims, built-in handles, non-slip lifting, anti-jam nesting. Double-ribbed base increases stability and dragging capacity.</p> <p>Color: blue, recycling logo</p>	<p>32 gallon: 22" diameter 27.25" H</p>	<p><b>Home Depot</b></p> <p>Model # FG 2632-73 BLU</p> <p>Internet # 100641411</p>
<p><b>Container with Lid:</b></p> 	<p>20-gallon with lid</p> <p>32-gallon yellow or red container; works well for food scrap collection in lunchrooms and other areas</p>	<p>20-gallon: 19.5" diameter, 22.75 H</p> <p>32 gallon: 22" diameter 30" H</p>	<p><b>Home Depot:</b></p> <p>Model # FG8620-20GRA</p> <p>Store SKU # 338608</p> <p><b>KaTom Restaurant Supply:</b></p> <p>Product Code: <b>007-2632G</b></p>

CONTAINER LID / DOLLY			
PHOTO EXAMPLE	DESCRIPTION	CAPACITY SIZE	SOURCES
	<p>CONTINENTAL Tops for containers</p> <p>Several types of strong, snap-on lids are available. Holes can be cut in tops to accommodate different types of recyclable materials. A round hole in the lid will help students and staff to remember to place only milk cartons, plastic bottles, and aluminum cans in the container.</p>	<p>Various sizes and types</p>	<p><b>Home Depot:</b></p> <p>Model # FG 2631 GRA</p> <p>Internet # 100079179</p>
	<p>CONTINENTAL Conversion garbage can dolly</p> <p>Works with different size containers. Rated for 350 lbs. Easy twist on, twist off. Heavy duty, non-marking casters.</p>	<p>18-1/4" W 6-5/8" H</p>	<p><b>Home Depot:</b></p> <p>Model # FG264000 BLA</p> <p>Store SKU # 640699</p>
	<p>RUBBERMAID Tandem Brute dolly</p> <p>Tandem dolly allows collection of recyclable materials and garbage at the same time. Rated for 400 lbs. Allows a combination of same or different size Brute containers – 20, 32 and 44 gallon plastic garbage/recycling containers. Easy twist on, twist off. Folds in center for easy storage. Innovative center hinge design and fixed wheels help transport of uneven loads. Heavy duty, non-marking swivel casters with 8" wheels in middle.</p>	<p>45" L 20-1/4" W 8" H</p>	<p><b>Home Depot:</b></p> <p>Model # FG 2646 BLA</p>



Liquids Buckets/Strainers			
PHOTO EXAMPLE	DESCRIPTION	CAPACITY SIZE	SOURCES
	<b>5 Gallon Pail EZ-Strainer</b>	4" height, 11.5" ID, 12" OD	<b>Biodiesel Supply Store &amp; Chemicals</b>
	<b>Homer Bucket 5-Gal. Orange Buckets (3-Pack)</b>	14.5" H 12" in D 12" W	<b>Home Depot:</b>  Model # 05GLHD2  Internet # 100672960

Disclaimer: The information provided here is for educational purposes only. Inclusion in the guide does not constitute an endorsement by Waste Management or any of its staff or contractors. Similarly, the guide is limited in scope. Exclusion from the guide is no comment on suitability of any other container or vendor. Any cost information provided reflects the best information available at the time. **Cost information is subject to change.** Manufacturers and distributors may offer discounts from time to time or for volume purchases. **Taxes and shipping will add to the cost.**

**Updated December 2012**

## **Appendix B**

### **Scripts**

- Waste Reduction and Recycling Assembly Script
- Habitat Connections Script
- Landfill Laboratory Script
- Recycling 101 Script

### **Photos**

- Waste Reduction and Recycling Assembly and Workshop Photos

## WRR Elementary Assembly Waste Management & Snohomish County

<b>Pre-show: As students enter the room and get settled</b>
---

*Backdrop: Mural of awards show*

*Entertainment Reporter walks around the room with a glittery microphone. She is a snappy, smart celebrity entertainment reporter who clearly loves her job. She does a chatty, informal “meet and greet” in character with the kids as they enter, helping to set the stage and establish that they are at an awards show. Sample conversation could include “Welcome to the celebrity award show of the year—is this your first year at the event? ... I can’t believe who will be coming down the red carpet momentarily...”*

*A cue card has been given to the school’s designated contact to read at the very start to launch the show. The school contact will read “Our assembly today is brought to us by Waste Management, the company who collects our recycling, garbage and compost, in partnership with our local government, Snohomish County. Today’s show will teach us about our garbage, why reducing, reusing and recycling is so important, and what exactly belongs in our recycle bins. (Contact may insert any special instructions about student behavior expectations). Enjoy the show- now over to you Miss Glitter!”*

<b>SCENE 1: Celebrity Awards Show</b>
---------------------------------------

1 R: *(Speaking into her fake glitzy microphone)* Hi, I’m Gilda Glitter, your “go to” reporter  
2 for celebrity gossip and news. Thanks for joining me on the red carpet, where you’ll get  
3 up close and personal with today’s top celebrities. Today we’re lucky to have an  
4 exclusive interview with world famous celebrity Manny Mayhem. That’s right, the same  
5 Manny who does everything larger than life. The man who once drove six sports cars at  
6 the same time while filming a commercial for three different kinds of hair gel. In just  
7 moments Manny will talk about his award for most excellent and coolest rocker celebrity  
8 of the decade. *(Speaking into her headset)* What’s that? He’s approaching the red carpet?  
9 People, please put your hands together for the one and only Manny Mayhem...

10  
11 *Reporter claps along with the audience as Manny enters from back of the room as if*  
12 *stepping out into the spotlight. He’s a super cool-guy rocker type—think Rock-of-Ages*  
13 *Tom Cruise with a dash of Bill and Ted. He’s wearing sunglasses and hipster jacket. He*  
14 *waves to fans as he makes his way to the front, stooping to give low fives and asking if*  
15 *people want his autograph. When he reaches into his jacket for a pen, trash (crinkled*  
16 *paper, can, etc.) falls out. He scoops it up and stuffs it back into his jacket muttering “So*  
17 *much stuff to keep track of. Go big or go home though right?”*

18  
19 M: *(Arrives at front and strikes a pose)* Hello out there fans. I am thrilled to be here with  
20 you today.

21  
22 R: *(Dashing over to catch his attention)* Manny, can we ask you some quick questions  
23 before you head in to the award ceremony?  
24

25 M: You bet. I'd never miss a chance to be one with the fans. Rock on!

26

27 R: Your fans are excited to know just how you became so cool.

28

29 M: The Coolest Man in the Universe, according to a recent poll. And Miss Glitter-

30

31 R: (*Gushing*) Oh call me Gilda!

32

33 M: Gilda, the universe is a big place so I figured I'd better start doing everything in a big

34 way.

35

36 R: A BIG way? Tell us more.

37

38 M: Well, it's Go Big or Go Home! My fridge is stocked 24/7 with the biggest assortment

39 of individually packaged snackables? Even my cell phone has the biggest number of

40 totally useless apps.

41

42 R: WOW! Share with your fans just how you became so dedicated?

43

44 M: I just love... stuff.

45

46 R: And being so famous, I'm sure you know how to manage all the stuff you use... don't

47 you?

48

49 M: Sure, my approach is simple. After I use something, I throw it away. For example, if

50 I use something I like or even something I don't like, I use it and just toss it in the

51 garbage too. (*Breaks into rock song a la air guitar*)

52 If it's green or if it's blue- put it in the garbage

53 If it's old or if it's new- put it in the garbage

54 If it's something I can use- put it in the garbage

55 If it's--

56

57 R: (*Cutting him off*) Whoa! You mean to say that you use things *just* so you can throw

58 them away in the garbage? Well, I'm sure you don't really mean--

59

60 M: (*Still singing*) Paper-cans- bottles pots and pans-.put it in the garbage (*Turning to*

61 *audience*) I hold the current record for making 276 bags of garbage in just one day.

62 How's that for cool?

63

64 R: (*Lowers the mic a bit flabbergasted*) Um. Making 276 bags of garbage is actually not

65 cool at all.

66

67 M: (*Ignoring her, lost in his own 'greatness'*) And the best part is that once you throw it

68 away, then poof it's GONE.

69

R: Gone? Garbage doesn't just go away. All of our garbage here in Snohomish County gets picked up by trucks, then packed on trains then sent hundreds of miles where it gets dumped into a landfill and sits there forever.

M: Forever? (*Defensive*) Well, then what do they do with all that stuff they use but don't really need?

R: Well, that's just the thing. They know that wasting things is, well, a waste. Most people try to use just what they need. And they practice the four Rs.

M: (*Looking baffled, long pause*) The ... four what's?

R: You've never heard of the four Rs?

M: Um... well, of course I've heard of the four Rs (*counting on his fingers, struggling to remember*). There's... um... R for rubbish and, uh...R for refuse and um (*giving up*)... OK, no I have never heard of the four Rs.

R: (*To audience*) How can someone so cool not know about the four R's? They are (*counting off fingers*) Rethinking, Reducing, Reusing, and.... everyone... Recycling. I think we should show him. (*Looking at watch*) Let's get a move on if we're going to make it back in time for your award.

M: Make it back? Where are we going?

R: To your house. Come on!

*Actors spin backdrop to home scene.*

## SCENE 2: HOME

***Backdrop: Cross section of kitchen in his home***

***Props: Trash can and recycle bin with large removable fronts, small compost bin, reuse bin, giant earth with Velcro/magnetic stick on images, two bottles with cut-outs for faces, recycled plastic items (fleece vest, carpet sample, Treks bench sample, Frisbee), fake cell phone***

M: (*Enters as he is mumbling from backstage in a whiny tone*) You're joking! We had to come all the way back to my house for this four-R stuff? I'm like in the middle of being famous you know.

R: Trust me, you'll be even cooler once you learn this. (*Looking around with a sigh*) Look at all of this garbage. (*Noticing a recycling bin*). Wait- you have a recycling bin right here? But it's filled with all sorts of junk...

M: (*With a chuckle*) Oh, is *that* what that thing is? I thought that was just a fancy blue garbage can.

116  
 117 R: (*looking around at the mess*) Didn't your parents ever teach you about recycling?  
 118  
 119 M: I think they might have mentioned something a few *million* times. You know how  
 120 parents are. (*Opening fridge to reveal that it's packed with individual packages of stuff,*  
 121 *Pulls out a pop can*). Ice old beverage?  
 122  
 123 R: I *do* know how parents are- smart. Recycling *is* important! Take that pop can for  
 124 example. Every time you use a pop can, you're using resources from the earth, so you  
 125 don't want to just throw it away.  
 126  
 127 M: (*Inspecting the can, turning it around as if looking for something*) Wait, back up.  
 128 Using resources from the earth? I don't see the earth in here. (*Playing it cool*) Look I'm a  
 129 big-minded guy, okay, it's kinda hard for me to focus on small things sometimes.  
 130  
 131 R: OK, then let's look at the BIG picture. Hang tight a second. (*Starts to walk backstage*  
 132 *to grab prop, stops and nudges Manny*) We'll need an assistant.  
 133  
 134 *Manny selects volunteer to come up from audience, to help hold props.*  
 135  
 136 R: (*Brings back out a giant earth prop with spots for things to be stuck on*) You said big  
 137 so here's big. OK, this is our earth.  
 138  
 139 M: That's what I'm talking about!  
 140  
 141 R: Our earth is filled with natural resources. Like water, trees, oil and metals (*flips up*  
 142 *example of each resource from the earth as she says its name*).  
 143  
 144 M: Oh, a natural resource is something that comes from... nature. Re-source... the source  
 145 of our stuff. (*Proud that he put it together. Palling around with his volunteer*) Right on,  
 146 we get it.  
 147  
 148 R: Right, and your can there doesn't just appear out of thin air. To make it, we mine into  
 149 the earth for the minerals and metal.  
 150  
 151 M: OK, so metal is a natural resource from the earth (*break metal*). We take metal out of  
 152 the earth and use it to make things like aluminum cans. That is righteous. (*Gilda helps*  
 153 *volunteer pace things on the earth*)  
 154  
 155 R: Absolutely. And take these snack packs you have in the fridge.  
 156  
 157 M: (*Reluctantly handing over the cardboard packaging*) OK, but seriously don't eat all  
 158 my snackables.  
 159  
 160 R: (*Volunteer holds up cardboard snack package and sticks it onto earth next to trees*)  
 161 Fine, but to make the cardboard and paper products, we cut down trees.



162  
 163 M: Trees are another natural resource that we take from the earth (*break tree*). We use  
 164 those trees to make all sorts of paper and cardboard.  
 165  
 166 R: That's right. Now let's look at this plastic bottle and yogurt tub, we drill into the earth  
 167 for oil.  
 168  
 169 M: Oil is a natural resource that we take from the earth (*breaks oil*). We use oil to make  
 170 plastic things.  
 171  
 172 R: Last we have water here. One of earth's most precious resources.  
 173  
 174 M: (*Excitedly guessing*) Ooh, I know- water is used to make water fountains?  
 175  
 176 R: Water is used to make everything! Every single thing we make uses some water.  
 177  
 178 M: Oh, so all of the things I use are made from resources taken from the earth. Way to  
 179 help out- round of applause for our assistant (*volunteer seated*).  
 180  
 181 **INTERMEDIATE ONLY\*\*\*\*\***  
 182 (*Reporter flips all resources back down except for tree*)  
 183  
 184 **M: I get it now, trees make paper. Good to go, ready to roll.**  
 185  
 186 **R: (*Breaking in*) Whooooa. It's not so simple. Making that paper or bottle takes lots**  
 187 **more steps and uses even more resources from the earth. (*Picks up more images and***  
 188 ***hands some to Manny. They take turns sticking them to the earth as they are talking,***  
 189 ***until the earth appears totally covered up. This part is fast paced*)**  
 190  
 191 **M: More?**  
 192  
 193 **R: To transform trees into paper that you can read or write on...first you have to**  
 194 **cut down the trees (*stick on pic of two trees*) and haul them on a huge truck (*stick on***  
 195 ***pic of two logging trucks/equipment*), which probably uses lots of gasoline (*stick on***  
 196 ***two pics of gas*). Eventually they end up at factory (*stick on pic of factory*).**  
 197  
 198 **M: And factories have to use lots of water (*stick on two pics of water*) and electricity?**  
 199 **(*stick on two pics of electrical transmission wires*).**  
 200  
 201 **R: And making trees into paper takes chemicals and dyes (*stick on pic of bottles of***  
 202 ***chemicals and dyes*). Of course once the paper is made, it is packaged up in more**  
 203 **paper or maybe plastic (*stick on pic of packaging*).**  
 204  
 205 **M: And it has to get shipped to stores by truck, train, boat or even airplane (*stick on***  
 206 ***different pic of transportation*). And transportation uses lots of gas and oil (*stick on***  
 207 ***pic of gas again, then steps back a bit horrified*) Whoa! Look at all this stuff it takes**

208 **just to make a piece of paper! (*Sees that earth is totally covered in images*) And**  
 209 **where has our beautiful earth gone?**  
 210  
 211 **END INTERMEDIATE \*\*\*\*\***  
 212  
 213 M: Clearly I shouldn't be using quite as much stuff in the first place. But what's the big  
 214 deal if I toss it into the garbage can? I have to put it somewhere when I'm done and I'm  
 215 no litterbug.  
 216  
 217 R: (*Exasperated*) Garbage can? After seeing all of earth's natural resources used to make  
 218 it!? You clearly need more information Manny. The garbage can is the start of a one way  
 219 trip to the landfill. And all those natural resources sit in the landfill forever.  
 220  
 221 M: But if I recycle my stuff, like this paper for example—  
 222  
 223 R: It can be made into something new—and it gets a whole new life (*pointing to recycle*  
 224 *bin*).  
 225  
 226 M: Something new? Like what- another magazine with my face on the cover? (*Gets*  
 227 *distracted pretending to snap pictures of himself with an invisible camera*)  
 228  
 229 R: A-hem. (*Getting his attention*) Yoo-hoo, Manny?  
 230  
 231 M: (*Still distracted, mugging into an invisible mirror*) Huh?  
 232  
 233 R: Focus. I think it might help to *see* the difference between garbage and recycling. Let's  
 234 get some volunteers.  
 235  
 236 M: Oh yeah- good idea.  
 237  
 238 *Manny gets two new volunteers who hold cut-outs of plastic bottles with holes for*  
 239 *volunteers' faces and hands them to volunteers to hold up.*  
 240  
 241 R: (*Turning to face invisible news camera, with extra dramatic news reporter voice flair*)  
 242 Welcome to another episode of "Sibling Rivalry". Here before us stand two identical  
 243 water bottles. Twins born on the same fateful day, made from the same natural resources,  
 244 and sent off together to the grocery store. They were separated soon after purchase and  
 245 were sent on two very different journeys. (*Each grab their volunteer and step apart*)  
 246  
 247 M: I got this one! (*Manny takes Bottle Number One and acts out the following*) Boy am  
 248 I thirsty, good thing I have an extra large bottle of water to quench my thirst. (*Pretends to*  
 249 *drink it up*). Now that's what I call refreshing. (*Looks at bottle 1*) Sorry man, now that  
 250 you are empty, you are no good to me. Now I'll put you in the garbage (*Helps volunteer*  
 251 *step in the garbage*)  
 252

253 R: *(Standing by other volunteer)* Let's see what happened to his/her twin brother/sister.  
 254 *(Acts out the following)* I sure could use a cold drink of water. *(Drinks up the bottled*  
 255 *water and takes it to the recycle bin)*. Ahh, nothing says refreshment like H2O,  
 256 especially when the bottle goes right into the recycling bin! *(Helps volunteer step into*  
 257 *the recycle bin)*  
 258  
 259 *Each actor stands next to and coaches one of the volunteers, as they stand behind their*  
 260 *bins and it appears as though they are now in the bins.*  
 261  
 262 M: Garbage can bottle... Your destiny *(pretend to read crystal ball)*. "Put in the garbage  
 263 can- go straight to the Landfill. Stay there forever". *(Put landfill card on)*.  
 264  
 265 R: Recycling bin bottle... Your destiny *(read into crystal ball)* "Put in the recycling bin-  
 266 next stop recycling center. Have a swell journey!" *(Put on recycling center sign)* The  
 267 landfill or the recycling center- let's see what happens once they each arrive at their  
 268 destinations? Go!  
 269  
 270 *Actors take their volunteers to their destination. The actors take turns with the ensuing*  
 271 *conversations, interspersing them with the other but allowing for each to be heard...*  
 272  
 273 M: *(Standing by the landfill volunteer, chatting with him at first sounding excited but*  
 274 *then losing steam)* Hey, how was that train ride to the landfill? What- it was how many  
 275 *(up to 12?)* hours long and what- almost 360 miles? Whoa- this place is huge, it's acres  
 276 and acres for garbage. *(Long pause)* Now what? Oh, just sitting here, alongside these  
 277 diapers, broken toys and other garbage.  
 278  
 279  
 280 R: *(Standing by the recycling center volunteer, chatting with her as she hands holds up*  
 281 *different items made from recycled plastic.)* Ah, here at the Recycling center. Wow- your  
 282 plastic is being recycled into all sorts of new things. Like this fancy fleece vest, classy  
 283 new carpet, even a Frisbee. All this from recycled plastic bottles...this is so fun. Look at  
 284 all this stuff we're making.  
 285  
 286 M: Still here at the landfill. *(Long pause)* So, how's the family? *(Long pause)* Hey, I  
 287 wonder what those guys over there are up to?  
 288  
 289 R: *(To other team)* Plastic bottles can be recycled into new swing sets, park benches, play  
 290 fields, even a winter jacket. Hey over there, what are you guys making?  
 291  
 292 M: Nothing. We're stuck here at the landfill forever!  
 293  
 294 R: Oh, sorry sensitive subject I guess.  
 295  
 296 M: Let's review. *(Both actors come to center for recaps)*. My bottle in the garbage took a  
 297 one way trip to the landfill. All of those resources gone.  
 298

299 Both: Gone?- Gasp! (*With hand motion*)  
 300  
 301 R: While my bottle in the recycling bin was made into any one of a dozen new everyday  
 302 items. Resources got to be used over and over and over again.  
 303  
 304 Both: Da dun da dun... (*carnival sound*)!! *Let's give our bottles a round of applause.*  
 305  
 306 **INTERMEDIATE ONLY**\*\*\*\*\*  
 307  
 308 *Manny removes cut-outs from volunteers while Reporter quickly grabs the big earth*  
 309 *prop with all of the resources stuck on it, from earlier. Reporter holds earth prop while*  
 310 *Manny and both volunteers remove items from it as he talks.*  
 311  
 312 **M:** So when you recycle something, like that paper we made earlier, you don't need  
 313 to cut down as many new trees in the first place. (*Removes one tree from earth,*  
 314 *though leaves one on*), less trees means less truck trips and less gas (*removes one*  
 315 *truck and one gas*), you use fewer chemicals (*removes some of the chemicals*),  
 316  
 317 **R:** And making recycled paper uses less water and electricity than making it from  
 318 scratch (*remove some water and electricity*).  
 319  
 320 **M:** (*Stands back proudly admiring that you can see some of the earth again*). So you  
 321 take less from the earth!  
 322  
 323 **END INTERMEDIATE**\*\*\*\*\*  
 324  
 325 M: I get it! I won't just trash everything anymore. My mom was right about this fancy  
 326 blue bin. And my daughter will need to hear about this too.... They can help me to sort it  
 327 all out! (*Exits with earth prop and bin fronts and changes into Daughter costume*)  
 328  
 329 R: (*Monologue is long to allow for Manny's costume change*) Finally. I thought he'd  
 330 never understand the difference between garbage and recycling! I bet he has 50 garbage  
 331 cans in this house. Well it's a good thing we took this little trip home and set things  
 332 straight. (*Congratulating herself*) And to think it was little ole me who taught *the* Manny  
 333 Mayhem, rocker celebrity of the decade, about recycling! (*Suddenly, looking at watch*  
 334 *anxiously*) Look at the time, we only have another half hour. Maybe I should go help  
 335 him out. Do you think that Manny needs help? (*Exits and changes into Grannie, just as*  
 336 *Daughter enters*)  
 337  
 338 Daughter: (*Valley girl. Same general look as dad but with pigtails and lots of attitude*).  
 339 Oh hey there I'm Manny's daughter. OMG, I know what you're thinking—people tell me  
 340 I look so much like my dad. Anyway, he said I'm like supposed to come check out all  
 341 this trash or something? And start "sorting" some of this out? I'm sure! Like I know how  
 342 to do that. (*Puzzled, picking up things and putting them back down, not sure where to*  
 343 *begin*) I dunno about all this- I mean, my BFF Beverly is meeting me at the mall in a half  
 344 hour.

345  
 346 Grannie: *(Enters backstage, talking as if to her son in the back room)* I'm so proud of you  
 347 Manny, finally using that recycling bin. Ooh, hello there sugar pie.  
 348  
 349 D: Hi Grannie.  
 350  
 351 G: Your dad is up to his neck sorting the garbage. What have we got here?  
 352  
 353 D: Stuff, and lots of it, but I don't think it's all in the right places. Where do we start  
 354 Granny?  
 355  
 356 G: Oooh-wee, we need to sort it out.  
 357  
 358 *(Both characters burst into rap song with dance moves)*  
 359       You just S-O-R-T sort it out  
 360       You just S-O-R-T sort it out  
 361       We've got garbage, recycling, reusables too  
 362       All you gotta do is think it through  
 363       Wicky wicky wicky wicky wicky woo  
 364       Word to your Grannie  
 365 *(Grannie ends with breakdance backspin on the floor then gets up creaky slowly)*  
 366  
 367 D: Grannie, I didn't know you were so good at breakdancing  
 368  
 369 G: I haven't done that move since 1930. OK, let's get some of these fine folks to help  
 370 out. We've got our garbage and recycling. Now here's another one of those Rs- Re-us-  
 371 able. This reuse box is for things that don't have to be thrown away—they can be used  
 372 again. *(Adds reuse bin to garbage and recycling).*  
 373  
 374 D: *(To the audience)* OK everyone, this stuff is either...  
 375  
 376 *One actor holds up each bin as it is mentioned, while the other shows the audience hand*  
 377 *motions for each bin. This section is fast paced.*  
 378  
 379 Both: Reusable *(hands going round and round)*, recyclable *(hands in triangle)* or  
 380 garbage *(thumbs down)*. Everyone...reusable, recycleable or garbage.  
 381  
 382 G: I'll hold up an item and ask you what to do with it. For example *(Pulls out two*  
 383 *examples of kid items- like a stuffed toy and party gift bag)* Is this toy and perfectly good  
 384 gift bag...  
 385  
 386 Both: Reusable, recyclable or garbage? *(Audience calls out and shows with hands)* Yes,  
 387 reusable!  
 388  
 389 D: OH – MY – GOSH! I loved that toy! I don't use it anymore so I'm glad it's going to  
 390 someone else to enjoy. Bye Fluffy.

391  
 392 G: That's the beauty of reusing! (*Pulls out piece of paper and cereal box*) Next up, are  
 393 these paper and cardboard items...  
 394  
 395 Both: Reusable, recyclable or garbage? (*Audience calls out and shows with hands*)  
 396  
 397 G: Yes, paper and cardboard are recyclable!  
 398  
 399 D: (*Pulls out pop can and steel can*) Next up, are these cans...  
 400  
 401 Both: Reusable, recyclable or garbage? (*Audience calls out and shows with hands*)  
 402  
 403 D: Yes, metal cans are recyclable! Yeah, but like, drink your drink or eat your spaghettios  
 404 first. The cans have to be empty and clean or that's like, con-tam-ination. (*Both Gasp!*  
 405 *Pulls out plastic bottle and plastic tub*). Next up, is this plastic bottle and plastic tub...  
 406  
 407 Both: Reusable, recyclable or garbage? (*Audience calls out and shows with hands*)  
 408  
 409 D: Yes, plastic bottle and tubs are recyclable!  
 410  
 411 G: And remember make sure your bottle is empty first. (*Grannie quickly chugs the drink*  
 412 *and slam dunks it into the recycling bin—then pops back into Grannie mode. Next she*  
 413 *pulls out chips bag and napkin*) OK, last one... is this chips bag and this tissue...  
 414  
 415 Both: Reusable, recyclable or garbage? (*Audience calls out and shows with hands*) Yes,  
 416 chips bags and tissues are garbage!  
 417  
 418 D: (*Holds up paper plate and banana*) How about this used paper plate and rotten banana  
 419 Grannie?  
 420  
 421 G: Ah, that's a tricky one. (*Holds up little compost bin*) If you have a compost bin or a  
 422 yard waste container then they belong in there. Food scraps and food-soiled paper can be  
 423 composted into rich soil for people's gardens. If you *don't* have composting, then these  
 424 things belong in the garbage.  
 425  
 426 D: Look how easy that was. All we had to do was...  
 427  
 428 (*Both characters burst into rap song with dance moves*)  
 429       You just S-O-R-T sort it out  
 430       You just S-O-R-T sort it out  
 431       We've got garbage, recycling, reusables too  
 432       All you gotta do is think it through  
 433       Wicky wicky wicky wicky wicky woo  
 434       Word to your Grannie  
 435 (*Both end with snake/wave*)  
 436



437 D: That is like A.T.D.-- almost to die for, like nice job everyone. Hold on- I gotta tell  
 438 Beverly (*opening flip phone and pretending to text*). Bev, you won't believe.  
 439 Garbage=waste. Reuse and recycle= smiley face. What? He's where? OK, be there  
 440 ASAP. (*Snaps phone shut*) There's been a Justin Beiber sighting at the mall—I gotta go.  
 441 Toodles, bye Granny. (*Daughter smiles and makes heart sign with hands and then exits*  
 442 *backstage and changes back to Manny*)  
 443  
 444 G: But wait a minute—aw drats, she left before I could tell her that glass bottles and jars  
 445 are recyclable. Remember to take off those lids. And plastic bags might not be recyclable  
 446 but they sure can be reused. I reuse mine at the grocery store...  
 447  
 448 M: (*Manny comes running in excited and breathless*) Mom this is amazing! I sorted out  
 449 42 bags of trash into reusables, recyclables and just a little bit was garbage.  
 450  
 451 (*Both characters burst into rap song with dance moves*)  
 452 You just S-O-R-T sort it out  
 453 You just S-O-R-T sort it out  
 454  
 455 G: Well done sonny boy- fist pump Grannie.  
 456  
 457 M: I just wish I hadn't used so much in the first place. If only I could go back in time to  
 458 when I was a school-boy when I first learned about all this. I'd pay attention this  
 459 time...things would be different. I guess I'd better go sort the rest (*wanders off backstage*  
 460 *singing S-O-R-T song*).  
 461  
 462 G: (*Gleam in her eye*) If he wants to go back to when he was young let's help him go  
 463 back. C'mon people don't just sit around, put your hands together like this ( *rubs hands*  
 464 *together*). A bit more... oooh I think it's working. Now this (*Wayne's World fingers*)...  
 465  
 466 *Backdrop starts to spin. Grannie exits with it as it spins and Little Manny comes out.*  
 467 **SCENE 3: SCHOOL**  
 468 ***Backdrop: Close up of a classroom (the reuse bin and garbage can on backdrop have***  
 469 ***slits so actor can pop head out from behind and "be" the bins)***  
 470 ***Props: Garbage can and recycle bin, rolling table/cart used for scenarios, various small***  
 471 ***prop items for scenarios***  
 472  
 473 *Manny enters- but now he is the boy version of himself. He's wearing a school uniform*  
 474 *and a beanie with windmill on his head.*  
 475  
 476 M: (*Skiping in and doing some action that establishes that he's the same character- just*  
 477 *younger*) Ah, Shiny Day Elementary school 1987. Manny Mayhem reporting for class.  
 478 (*Glancing at the A-Team poster "I Pity The Fool Who Doesn't READ" on wall*)  
 479 Someday I'll be famous just like Mr. T-- pity the fool. I wish I didn't have to miss  
 480 recess today. I guess that's what happens when you don't pay attention in class. (*Starts*  
 481 *writing*) I will not daydream in class. (*Frustrated, he, wads up his paper*) This always

482 comes out wrong (*stuffs it into garbage can on backdrop*). Guess I'll just start fresh with  
 483 another sheet of paper.  
 484  
 485 Garbage: (*Actor head poking out from painted garbage can on backdrop*) Blaaaaaaaah  
 486 (*spits paper back out*).  
 487  
 488 M: (*Taken aback*) That was weird, it's almost like the garbage spit my paper back at me.  
 489 Let me try that again. (*Stuffs it in again*)  
 490  
 491 Garbage: I said Blaaaaaaah (*spits back out*)  
 492  
 493 M: I must be day dreaming again. (*Manny goes to put it in for a third time and is cut off*  
 494 *by a gruff voice with a New Yorker accent.*)  
 495  
 496 Garbage: Don't chu even think about it. Step away from the can.  
 497  
 498 M: I'm sorry. Did you say something?  
 499  
 500 Garbage: Yeah, you hoid me. Whaddya think I am just some big can-a-garbage?  
 501  
 502 M: Well... yes. Aren't you a garbage can... for garbage?  
 503  
 504 Garbage: (*Short on patience*) Yes I'm a can for garbage. But what yer holdin in yer hands  
 505 hardly seems to qualify.  
 506  
 507 M: Sorry?  
 508  
 509 Garbage: Simply put- that paper there is NOT garbage.  
 510  
 511 M: It's not?  
 512  
 513 Garbage: Of course paper isn't garbage. I don't get it, almost 20% of what's at the  
 514 landfill is paper that doesn't belong there. All kinds of paper can be recycled—like yer  
 515 school paper there.  
 516  
 517 M: (*Holding things up from the art cart as he talks*) And craft paper? Oh and I bet  
 518 computer paper, newspaper, magazines—even cardboard boxes.  
 519  
 520 Garbage: You got it kid. Even with all the writing and staples- why even a bit of glue on  
 521 it. All should be recycled.  
 522  
 523 M: Thank you for telling me this, Mr. Can.  
 524  
 525 Garbage: Look as a receptacle for garbage I may not have the 'cleanest' reputation, but  
 526 I'm no crook and I don't like to take things that don't belong to me. Find a different spot  
 527 for that paper, will ya. Blaaaah. (*Disappears abruptly*)

528  
 529 M: (*Wandering toward recycling bin talking to himself*) I just wasn't thinking- silly me.  
 530 Now I know that all my used paper belongs here in this recycling bin. (*About to drop it*  
 531 *in when he is interrupted by a voice coming from the Reuse bin on the backdrop*).  
 532  
 533 Reuse Box: (*Actor pokes head through hole in backdrop and has a spunky, cartoon*  
 534 *character-ish voice*) A-hem. Excuse me but what are you doing with that paper?  
 535  
 536 M: (*Proudly*) Why, I'm recycling it.  
 537  
 538 Reuse: Not so fast smart stuff.  
 539  
 540 M: But I just learned that—  
 541  
 542 Reuse: Yes yes you're right, paper *is* recyclable. But you've skipped a step, you've only  
 543 written on ONE side.  
 544  
 545 M: (*Turning paper over to show one side blank*) I'm supposed to use both sides?  
 546  
 547 Reuse: Sure are—when you use both sides, you only need half as much in the first place.  
 548 And that's where *I* come in.  
 549  
 550 M: Where you come in?  
 551  
 552 Reuse: Yes, yup, your teacher set up a classroom that reduces waste. (*In a storytelling*  
 553 *voice*) She took me in, a lonely old cardboard box and gave me a whole new life as a...  
 554 reuse box!  
 555  
 556 M: A reuse box. A place to put paper that's only been used on one side- neat.  
 557  
 558 Reuse: Yep. C'mon, bring it on over. C'mon.  
 559  
 560 (*Manny walks over to backdrop and feeds paper into box*)  
 561  
 562 Reuse: (*Happy snacking sound*) Num num numy. Gulp- thank you. Now don't forget,  
 563 next time you need a practice sheet- (*sliding paper back out*)  
 564  
 565 M: - I'll get one from you instead of wasting brand new paper.  
 566  
 567 Reuse: Precisely! I'm always here for ya. Reuse ya later! (*Disappears*)  
 568  
 569 M: How super cool is that? There could be a reuse box in every classroom of the school.  
 570 (*To himself*) Jeesh, I wonder if there's a box like that where the teachers make all those  
 571 copies. Ooh, I can even make one for my house. We have lots of paper that's only used  
 572 on one side.  
 573

574 *Teacher appears from backstage. She's wearing Sally Jessie type glasses, big shoulder*  
 575 *pads, bright colors and has good 80's hair.*  
 576  
 577 Teacher: Manny, are you just about done with your assignment-  
 578  
 579 M: Teacher, Teacher, I just learned all about the reuse box.  
 580  
 581 T: Wonderful. May I assume then that there will be no more unnecessary trips to the  
 582 garbage can and the recycling bin. Here at my teacher's desk I always keep them toge—  
 583 *(looks at the garbage and recycling and gasps).*  
 584  
 585 M: What's the matter?  
 586  
 587 Teacher: The garbage and the recycling, this is not how I left them. They are out... of...  
 588 place.  
 589  
 590 M: There's a *place* for them?  
 591  
 592 Teacher: There are a few simple steps to setting up a classroom that reduces waste. Let's  
 593 rethink this. It may seem like a small detail but proper recycling works best when the  
 594 two bins are right next to each other!  
 595  
 596 M: *(Sheepish)* Oh, so people don't get lazy and just use whichever bin is closest.  
 597  
 598 Teacher: Exactly, come on Manny help me reunite these two bins.  
 599  
 600 M: OK, ready or not here I come. *(After bins bump)* Tag, you're it.  
 601  
 602 *Each character grabs one of the bins from the opposite sides of the "room". They hold*  
 603 *their bin out in front of them, The bins come together in the center and do a mid-air bump*  
 604 *before being set down together.*  
 605  
 606 Teacher: *(Snappy transition out of the frozen slo-mo)* Ah, much better. Oops, one more  
 607 quick thing *(sticks Recycling YES list poster onto front of bin and Landfill on garbage*  
 608 *can)* always helpful to have signage.  
 609  
 610 M: I like this whole Rethinking waste thing. Can we practice more? I have a situation in  
 611 mind.  
 612  
 613 Teacher: Sure, I'll grab a helper.  
 614  
 615 *Teacher brings up one volunteer from audience. The volunteer is helped into the school*  
 616 *uniform like Manny's, but slit up the back so they can slide into it and wear it on front*  
 617 *only. Teacher puts on uniform shirt and plays along too.*  
 618

619 M: *(To volunteer)* Pssst- just play along. *(To audience)* Me and my good buddy \_\_ here  
 620 *(insert volunteer's name)* get super thirsty when we're running around and playing sports.  
 621 Here hold this *(hands volunteer reusable water bottle, while he picks up his bottled*  
 622 *water)*. That was so cool the other day when you ruled the 4-square court *(high five-ing*  
 623 *volunteer)*. I'm more of a tetherball man myself.  
 624  
 625 Teacher/Playground Kid: *(Teacher has been standing off to side and now puts on uniform*  
 626 *too)* Hey, I wanna play too. Hey, what's going on Manny?  
 627  
 628 M: We're just quenching our thirst with our bottles of cool clear water. Check out my  
 629 BOTTLED water here from the supermarket—fully recyclable.  
 630  
 631 Teacher/Kid: *(To volunteer)* What about you? What's that you're holding?  
 632  
 633 Volunteer: A water bottle *(if they don't say "reusable" water bottle, Manny asks prompt*  
 634 *questions)*.  
 635  
 636 M: *(Standing back, in the presence of greatness)* Jump back! It's like a futuristic BPA-  
 637 free, fully REUSABLE water bottle. Face!  
 638  
 639 Teacher/Kid: A reusable water bottle. That's cooler than a recyclable one. But how does  
 640 it work?  
 641  
 642 Volunteer: *(Will say something like)* I drink it and then fill it up again. *(Manny asks*  
 643 *prompting questions if volunteer doesn't answer the question adequately)*  
 644  
 645 Teacher/Kid: Then what?  
 646  
 647 Volunteer: I drink it again and fill it up again.  
 648  
 649 M: Check it. That reusable bottle doesn't even need to get thrown away or recycled  
 650 because it's made to be used over and over again.  
 651  
 652 M and Teacher: *(In song/chant, getting volunteer and then audience to join in)* You just  
 653 wash-rinse-and use it again. You just wash-rinse-and use it again. You just wash-rinse-  
 654 and use it again.  
 655  
 656 M: Give my buddy here a round of applause. *(Volunteer seated and Teacher and Manny*  
 657 *take off uniforms)*  
 658  
 659 Teacher: *(Back in teacher mode)* That was so fun, quick let's practice one more before  
 660 recess is over. *(Sees Manny pulling out his Munchable and starting to snack)* U-hem,  
 661 what are you doing?  
 662

663 M: Sorry, all this learning makes me hungry. Let me just get a quick bite of my (*said in*  
664 *one quick breath as if in commercial*) 6.5 ounces of processed food in this fun package  
665 designed to appeal to children under the age of 12.  
666

667 T: Oh Manny- we're practicing REDUCING waste. There's barely any food in there for  
668 all of that packaging. And what will you do with that package when you're done?  
669

670 M: Throw it in the garbage I guess?  
671

672 T: Aw Manny, almost a third of our garbage is packaging. Looks like we'll need another  
673 volunteer.  
674

675 *Manny gets a volunteer from the audience and puts an apron on herself and pops a clip-*  
676 *on tie onto the volunteer's shirt. Rolls cart to center.*  
677

678 Teacher/Mum: (*To volunteer*) Play along here, we're going to pretend to be Manny's  
679 British parents.  
680

681 M: But my parents are from Edmonds--  
682

683 Teacher/Mum: (*Switching to very proper British accent*) Never mind that, chop chop  
684 come along then. Dad here and I are going to show you how to pack a waste-free lunch  
685 for school. The key to a waste-free lunch is the reusable container. (*Holds up reusable,*  
686 *compartmentalized lunch container*). Manny what would you like for your lunch today?  
687

688 M: (*Starts in regular kid voice and slowly turns into British accent as well*) Well, I really  
689 like cheese and crackers... and carrot sticks... and maybe some cookies... um could I  
690 have a few more cookies? Hey, listen now I'm from England too.  
691

692 *As Manny names the food, the Teacher/mom instructs the volunteer/dad to take the food*  
693 *from larger bags and put portions into the reusable container. Explaining as they work*  
694 *and getting the volunteer to explain what they are doing.*  
695

696 Teacher/Mum: Bravo—well done, dad. Now put the lid on. Oops and don't forget a spot  
697 of tea for later (*hands him a thermos to pack into a reusable lunchbox*).  
698

699 M: Mum, dad- you packed just the lunch I like to eat and it's all in reusable containers.  
700 You just wash-rinse-and use it again.  
701

702 M and Teacher/Mum: (*In same song/chant, getting volunteer and then audience to join*  
703 *in*) You just wash-rinse-and use it again. You just wash-rinse-and use it again. You just  
704 wash-rinse-and use it again.  
705

706 M: My dad helped me rethink how I pack my lunch. (*To volunteer*) Now give us your  
707 best Cheerio before you sit down.  
708

709 Volunteer: Cheerio!  
 710  
 711 G: Give him a round of applause. (*Volunteer seated*)  
 712  
 713 M: (*Back to regular self again. To Teacher with a sigh*) Teacher, now that I've learned all  
 714 about the four Rs, I wonder what I'll be like when I'm all grown up. I wish I could fast  
 715 forward in time 25 years... Ah well, guess I'll just catch the last few minutes of recess  
 716 (*runs off stage calling to classmates "hey guys, wait for me- I get next"*).  
 717  
 718 Teacher: (*Same gleam in her eye that Grannie had earlier. Same routine.*) If he wants to  
 719 fast forward to the future then let's help him go forward in time. Put your hands together  
 720 like this ( *rubs hands together*). A bit more... I think it's working. Now this (*Wayne's*  
 721 *World fingers*)...  
 722  
 723 *Backdrop spins back to first award show scene*  
 724  
 725 **SCENE 4: RETURN TO AWARDS- GAME SHOW**  
 726 *Backdrop: Awards show again.*  
 727 *Props: Game show buzzer box, Game show board, rolling table/cart used for game*  
 728 *show choices, various examples of choices*  
 729  
 730 *Manny walks in as his full grown self again. He's right where he left off on the red*  
 731 *carpet.*  
 732  
 733 M: (*A bit confused and jostled in*) Wha, where am..?. Right, the awards show. And right  
 734 on, they're just about to give me my award. (*To audience*) I feel like I just went on the  
 735 strangest journey- and you were there and you were there. (*To recycling bin and garbage*  
 736 *can*) And you were there and you were there.  
 737  
 738 R: (*Enters to the side, in reporter mode again, and begins talking into her microphone*)  
 739 Gilda Glitter here again, hoping you will join me as we watch the man of the hour accept  
 740 his awards for... Reducer, Reuser, Recycler and Rethinker of the Year!!! (*Applause*)  
 741  
 742 M: (*Walking to the podium waving to fans*) Thank you, thank you all so much. I share  
 743 this award with all the people who have educated me throughout my life. I've been taught  
 744 and tested since my school days. (*Finger to chin, getting an exciting idea*). Hm, school  
 745 days...tested...  
 746  
 747 R: Manny, are you thinking what I'm thinking?  
 748  
 749 M: I'm thinking what you're thinking. It's time to put them to the test. Let's play...  
 750  
 751 Both: "The Big Picture RRRReview Show!" We'll need some final volunteers...  
 752  
 753 *Reporter picks four volunteers while Manny brings out game show board and buzzer box.*  
 754



M: *(Takes two of the volunteers up to the buzzer box)* Let's play! Contestants, each one of you will be asked a question with two/three possible answers. When you know the answer, you can race to hit the buzzer. The first one to hit the buzzer will answer first. (Primary: ... when you know the answer hit this buzzer. But if you hear this noise that means time is up and you should just take a guess).

**NOTE: Primary version has two options in black. Intermediate version has one additional, slightly less clear cut option in blue. Option in bold is the correct answer. Actors pick "randomly" from the categories around the board.**

### **ROUND 1: Rockin Rethinking**

R: *(Pulls question off and reads it as she crosses and hands it to Manny)* Round one, Rockin' Rethinking. You're at home or at school and you know that rethinking just a few simple steps will help make recycling so much easier.

M: *(Holding up big cards that show examples for each option)*

- You stuff as much paper as you can into the recycling bin. Those trees will grow back eventually, right?
- You just get a ginormous recycling bin. Go Big or Go Home!
- **You put the garbage can and recycle right next to each other, post a sign about what can be recycled, and make a reuse box for one-sided paper. Hey, that was simple!**

Volunteer 2: Pair up the bins, etc...

Both: That's absolutely right! *(Spotlight volunteer song)*. Ahhh!

*Manny and Reporter swap roles, so now Manny reads the question and Reporter reviews answers.*

### **ROUND 2: Reduce Your Use**

R: *(Pulls question off and reads it as she crosses and hands it to Manny)* Round one, Reduce Your Use. You're helping yourself to an afterschool snack when oops- you spilled some juice on the counter...

M: *(Holding up big cards that show examples for each option)*

1. You promise to only drink from those cute little non-recyclable juice pouches- they don't spill.
2. **You grab the nearest sponge to just, wipe, rinse and use it again.**
3. You grab a paper towel to wipe it up, then throw it into the garbage can. Bon voyage- send a postcard from the landfill!

Volunteer 1: Grab a sponge.

Both: Grab a sponge. That's absolutely right! *(Spotlight volunteer song)*. Ahhh!

**ROUND 3: Reuse-it Don't Lose-it**

M: *(Pulls question off and reads it as he crosses and hands it to Gilda Glitter)* Round three, Reuse-it Don't Lose-it. You're at the toy store buying birthday present for a friend when the person at the check-out stands asks you two words: paper or plastic

R: *(Holding up big cards that show examples for each option)*

- **You say “neither thanks” I brought my own reusable bag- voila! Fashionable!**
- You choose a plastic bag. They're so light and fluffy- so what if they waste natural resources and sit in the landfill forever.
- You grab a paper bag because hey, can't you recycle it when you're done?

Volunteer 3: Bring your own bag.

Both: Bring a reusable bag. That's absolutely right! *(Spotlight volunteer song)*. Ahhh!

**ROUND 4: Recycling Revelry**

M: Moving on to round four, Recycling Revelry. *(Pulls question off the board and looks excited)* Ding Ding Ding- Why, you've hit the daily double. It's time to...

Both: (together) SORT IT OUT!

M: Lot's of the stuff at the landfill doesn't belong there. Let's do a speed sort.

R: *(To volunteer 4)* You remember this I'm going to pull something out of the bag and you will tell us where it belongs. Are the items I show you—

BOTH: Reusable, recyclable or garbage? *(Pulls out used construction paper and pop can, chips bag and Styrofoam, reusable water bottle and echo mic toy)*

Both: That's absolutely right! *(Spotlight volunteer song)*. Ahhh!

*All four volunteers are lined up at the center, in front of the buzzer box.*

M: These four volunteers have shown us that it's easy to Reduce, Reuse, Recycle and Rethink. They're all award winners in my book. Let's give them a big round of applause. *(Volunteers seated)*

R: And when you go home today share at least one thing you learned with your families. *(Into reporter microphone)* That's our show for today folks.

M: In order to get out of here in a timely manner make sure to look to your teacher for instructions.

Both: Thanks for coming and that's a wrap. *(Both actors wave goodbye and take a mini bow)*

# **The Habitat Connection**

## **Final Script 2012-13**

**Grade Levels:** 2-3

**Workshop Length:** 45-50 minutes

**Workshop Objective:** Students will learn the four main components of a healthy habitat. They will explore how natural resources create products we use. People's actions affect animals and their habitats. Students will learn how rethinking, reducing, reusing, and recycling can save natural resources and protect animals and their habitat.

**Key Messages:**

Students will:

- Define what a habitat is and list several examples of habitats.
- Recite the four key components of habitat—food, water, shelter, space—and compare and contrast each of these four components.
- Recognize that natural resources are found in nature and we use them to make products and identify some examples of natural resources.
- Trace where their garbage goes and identify what a landfill is.
- Discuss how rethinking our choices, reducing our use of products, reusing and recycling helps protect habitat.
- Inspect how and why their choices regarding natural resource use matter.
- Sort recyclables/compostables/garbage properly.

**Washington State EALR Science Content Standards addressed:** See last page.

**Vocabulary:** habitat, natural resource, recycle, compost, landfill

**Materials:**

- 1 set Natural Resource word and definition cards, laminated
- 4 R board with Velcro words
- 6 laminated pictures of local habitats (stream, forest, shrub-steppe desert, ocean, wetland, mountain)
- 24 laminated animal/habitat component picture cards with yarn necklace (4 -food, water, shelter, space on back- for each of 6 animals)
- 6 cloth bags - plush animals, fact cards, props/photos for 4 habitat needs
- Carabineer clips or binder rings to connect habitat item, photo, and fact

- Natural resources & products we use activity: fake tree, piece of paper, plastic bottle, oil can, soda can, rock, jar/bottle of water
- 1 large, laminated photo of landfill on one side, recycling center on other side
- 14 half sheet laminated sort cards: 7 Recyclable, 7 Non-Recyclable, 7 compost (different colors)
- 7 small sort bags (Juice pouch, Chip bag, Cardboard, Plastic baggie, Paper (Double sided), Plastic bottle with cap, Soda can)
- 7 Waste Management's Accepted Recyclable & Compostable Items for Snohomish Co. lists
- 1 Rethink bubble
- 1 full sheet, laminated Reuse card
- Recycling and Landfill sort cards for 7 small sort bags

**Home connection/Leave behind:** Project idea list for teachers.

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## The Habitat Connection

### Workshop Script

#### Introduction (5 minutes)

Before the workshop begins, the presenter writes her or his name on the board along with “The Habitat Connection.” Display the 4 R board without the Velcro pieces attached.

*Hi, my name is \_\_\_\_\_ and I’m here on behalf of Waste Management and Snohomish County. Waste Management is the company in our community that collects garbage, recycling, and food and yard waste from your home and school. Today we are going to learn about animals and their habitats and what we can do to help animals and their habitats. Before we get started lets go over some classroom expectations. Can you show me, with your voices off, what you do when you have a question? Great, we raise our hands. Next can someone raise their hand and tell us what everyone should be doing while someone is speaking? Great...quiet hands, voices off, listening.*

If class has NOT had assembly:

*Let’s get started by learning about the 4 R’s. I happen to have a piece of paper here. Often when we make a mistake on our work or when we finish an assignment we crumple up our paper and throw it in the garbage. Yikes....we need to Re-think (put Velcro words on poster) my actions. Every time we head to the garbage we need to re-think our actions. How can we reduce my waste? Can we re-use this paper (show reuse box) or should we recycle our paper? By practicing the 4 R’s (re-think, reduce, re-use and recycle), we can conserve our **natural resources**. Show definition card.*

If class has had the assembly:

*I heard my friends came to visit you recently during a fun assembly about the 4 R’s. What is something you learned from that assembly? Prompts if needed: What things could you recycle at home or at school? Where does our garbage go? What are examples of ways you could make less garbage in the first place? Call on several students. Review the 4 R’s, students add the Velcro words to the R board as they name the four R words. It sounds like you learned a lot about ways to reduce waste and to recycle at school and at home. By practicing the 4 R’s, we help conserve our **natural resources**. Show definition card.*

Ask several students to point out a natural resource in the classroom, or something made from natural resources. *Today we are going to learn how to use these R words to help protect habitats and the animals that live in them.*

**Components of habitat (large group discussion and students use hand motions -8 minutes)**

*If we are going to learn how to keep animals and their habitats healthy, first we need to know what a habitat is! Can anyone tell me what habitat means? Right, a home. Every living thing has a home. Everywhere in the world is a home to at least one kind of living thing. Habitats are all around us! Can you think of an example of a habitat? Write several students' answers on the board with a picture symbol for each habitat (e.g. forest - write forest & draw a tree, ocean – write ocean and draw a wave, desert, backyard, wetland, and schoolyard, etc.).*

*For humans, habitat may mean the neighborhood or city in which we live. What basic things do we need to stay healthy in our habitat? Give students clues for each habitat component: food, water, shelter, space. Write it on the board and do the action after each one.*

- Food: What do we need when we are hungry? Food! Let's show food like this (hands over stomach)
- Water: What do we need when we are thirsty? Water! (hands over mouth)
- Where do we sleep? In our house, that means we need shelter. (Hands make a roof over head) Other animals may build nests or burrows for shelter. Still others find shelter under trees or in a large herd.
- Space: To find food, water, and shelter, we need space. (hold arms out wide to the sides).

*Do animals need food, water, shelter, and space too? They do. We need all four ingredients to make a healthy habitat for an animal or a person. Review with motions for "food, water, shelter, space".*

**Learning about Washington animals and their habitat needs (large group / table group activity - 15 minutes)**

*Now we know the four things that make a habitat healthy. Let's discover some animals that live close to us, in habitats right here in Washington. We're going to learn more about our native animals by becoming the animals! I'm going to give each of you a necklace with a picture of an animal on it. Please put it around your neck with the animal picture facing out. Take a good look at it. You can look at your neighbors' animals too. Each student gets a laminated card with a yarn necklace attached to it of a native WA animal. Each student puts it around their neck so that the animal photo is facing out on the student's front.*

Each student will "become" their animal and move like their animal over to their habitat to find the four ingredients they need to have a healthy habitat. To get groups started, show a photo of six different habitats, one at a time around different parts of the room or at different tables. Give students clues about which animal(s) live in that habitat. The students decide which animal belongs in that habitat, then that animal group moves like their animal over to their habitat.

Example: Hold up the photo of the stream habitat. *Some of you are an animal that lives part of its life in a stream. You are a very famous animal in Washington and you have gills and scaly skin. Right, you are salmon. Salmon, quietly swim over to your stream habitat. Use as many hints as needed. Repeat for each of the remaining animals.*

*Some of you are animals that live in the forest. You fly through the skies looking for prey. You are known as the symbol of the United States. Part of your name comes from the white feathers on top of your head. Right, you are bald eagles. Soar over to your forest habitat.*

*Some of you are animals that live way high up in the mountains where you leap from rock to rock on your four swift hooves. Your shaggy fur keeps you warm in the cold. Yes, you are mountain goats. Climb over to your mountain habitat.*

*Some of you are big animals that live in the ocean. You might even live in Puget Sound! You like to swim together with your family called a pod. Right, orca whales swim over here to your marine habitat.*

*Some of you are an animal that lives in the wetland where there is a lot of water on the ground. You zip through the sky with your fast wings. You are also known as the Washington State insect. Right, Green Darner Dragonflies fly on over to your wetland habitat.*

*Some of you are an animal that live in the desert where it is hot and dry. You love to sit on rocks warming your scaly skin in the sun. Yes, you are a Western fence lizard. Scurry over to your desert habitat.*

*Now each of you animal groups is going to get a special mystery bag to learn more about your animal and its habitat. Take turns pulling out different items, and read the fact attached to each item out loud to your group. You'll get about five minutes to learn more about your animal, and then we will share what we learned together.* In groups, students take some time to explore the contents of their bag and learn about their animal, habitat, and four habitat needs. The bags contain a plush animal, physical examples/replica of its habitat components with a fact and photo attached to each.

*What do ALL habitats need to be healthy? Remember our four ingredients: food, water, shelter, and space? I'm going to show one of the signs for a habitat ingredient. When I do, I'd like one person from each group to stand up and hold up your animal's habitat ingredient for everyone to see.* As the groups are standing in their habitats, the presenter does a motion for "food, water, shelter, or space." The animal groups hold up their picture cards that match each symbol. Explain that all animals need food, water, shelter, and space, but sometimes they are different. *Does all of the food look the same? No, different animals need different food.* (Ex. Food could be insects or fish; shelter could be a bush or a tree; water could be a puddle or an ocean, space could be a park or a whole ocean).



**Connecting habitat and natural resources (large group activity - 5 minutes)**

*How are we connected to animals and their habitats? We use natural resources to make products. Hold up a piece of paper. What natural resources do we use to make paper? Students can hold up their habitat component cards - trees and water. What animal needs trees and water for their habitat? The bald eagle.*

*Hold up a plastic bottle. Does anyone know what natural resource we use to make plastic? We have to dig deep down into the ground to find oil. The ground could be shelter or space for a desert animal.*

*Hold up a soda can. From what natural resources are cans made? Yes, metal. How do we get metal? We have to mine it from rocks. We have to take some space and shelter from the mountain goat to get the metal to make our cans.*

*We use water to make everything we have. What animals need water? That's right, all of them.*

*What happens when we throw a piece of paper in the garbage? It goes to the landfill and just sits there forever. Hold up the paper against the big photo of the landfill. The trees and water used to make that paper can never be used again. The landfill is a dead end. How can we make more paper? We have to get more trees from the forest habitat.*

*Stop! Rethink! Hold up Rethink bubble. Instead of sending everything to the landfill, what are some choices we can make to keep habitats healthy and to share natural resources with the animals? If we reuse the paper, we need to take fewer trees. Do you have a reuse box in your classroom? When it's all used up, we can recycle the paper. The old paper gets made into new paper without using more trees. We can choose to keep habitats healthy by practicing the 4 R's.*

**Protecting habitat by recycling (small group sort - 10 minutes)**

*Recycling is an excellent way to keep natural resources out of the landfill so they can be used again. When we recycle something we help keep habitats healthy. What are some examples of items that may be recycled at home or in the classroom? Call on several students and show example items. When something is recycled it can be made into new things. Show the photo of the recycling center. Why is it important to sort recyclables properly?*

*Something that doesn't belong in the recycling is called "contamination." Contamination can ruin a whole batch of recycling. Write the word on the board. Explain an example of contamination such as paper towels, straws, items with food or liquid.*

*Hold up jar of compost. Have you heard of composting? It's nature's way of recycling, or a way we can recycle our food scraps. They turn into dirt, or compost, full of vitamins to grow new plants. If a food waste or yard waste bin is not available, what should you do with food scraps? They go into the garbage.*

*Let's practice keeping habitat healthy by becoming recycling experts! Work together with your table group to sort your bag using your cards: recyclable, compostable, or garbage/landfill. You can use your sort cards as clues to help you out.* Hand out one sort bag per table group and a Waste Management Accepted Items list. (Bags include: juice pouch, chip bag, cardboard, plastic baggie, paper (Double sided), plastic bottle with cap, soda can). Student groups self-assess based on the WM accepted items list and presenter checks answers for each group.

Challenge students who sort quickly to think of creative ways to reuse things before recycling. At first glance you might think it is garbage or immediately recyclable, but what is a new/different use for this item?

Review anything tricky or confusing. Hold up the reuse card. *Stop! Rethink!* Hold up the rethink bubble. *I would like each group to hold up three things that could be reused before they are recycled or thrown away.* Each group holds up three things that could be reused before recycling or garbage.

### **Wrap-Up**

*We have learned a lot about animals and their habitats today. We discussed the 4 R's, what natural resources are, and we learned that recycling what we can helps protect animals' habitats.*

*Can someone remind us what a natural resource is? Can someone remind me why it is important to re-use and recycle natural resources?*

*Can someone raise their hand and tell me something they learned today that they didn't know before?*

**Closing challenge:** *Thank you for learning with me today! Because you were such an amazing group, I've got a couple of items to leave with you. Now that you are recycling experts, what is one thing you can teach your friends and families at home to help them be expert recyclers too? Explain to them why it is not only important to recycle properly, but also to reduce our garbage, reuse more, and rethink our actions.*

*Please put your right hand in the air, wrap it around to your back, and give yourself a pat for being awesome.*

Give teacher project idea list.

**If time allows, play a trivia game as review:** Two students at a time come to the bell in the front of the room. If the teacher has a "name cup" it makes it easy to select two contestants. The first person to hit the bell and answer the question correctly wins. The rest of the group can be involved by "Ask the Audience" and have them use a thumbs up, thumbs down, or thumbs sideways to provide feedback to the contestant's answer.

To prevent students from hitting the bell multiple times, explain they may only hit the bell once and only if it is their turn or the game show will end.

### Example Trivia Questions

- *How does reducing our waste and making smart “R” choices help protect habitat?*
  - *What is a natural resource?*
  - *What are the four ingredients for a healthy habitat?*
  - *What is one thing students can do at school to help protect animals and their habitats?*
  - *Name one thing you can recycle at home.*
  - *Name one thing you can recycle at school.*
  - *What is one R choice you can practice to help keep habitats healthy?*
    - Rethink before throwing things in the garbage
    - Recycle or reuse paper
    - Recycle bottles and cans
    - Keep litter in garbage can
    - Keep recycling clean
    - Bring reusable water bottles and lunch containers
    - Make a reuse box at home and school
    - Reduce paper use by writing on both sides
    - Donate things you no longer want
- 

### Washington State EALR Science Content Standards addressed:

#### Science

- **K-1 APPC:** A problem may have more than one acceptable *solution*.
- **K-1 ES2A:** Some objects occur in nature; others have been *designed* and processed by people.
- **K-1 LS2A:** There are different kinds of natural areas, or *habitats*, where many different plants and animals live together.
- **K-1 LS2B:** A *habitat* supports the growth of many different plants and animals by meeting their basic needs of food, water, and shelter.
- **K-1 LS2C:** Humans can change natural *habitats* in ways that can be helpful or harmful for the plants and animals that live there.
- **2-3 INQA:** Scientific investigations are designed to gain knowledge about the *natural world*.
- **2-3 INQB:** A scientific investigation may include making and following a plan to accurately observe and *describe* objects, events, and *organisms*; make and record measurements; and *predict* outcomes.
- **2-3 SYSA:** A *system* is a group of interacting parts that form a whole.
- **2-3 SYSB:** A whole object, plant, or animal may not continue to function the same way if some of its parts are missing.

- **2-3 LS2A:** *Ecosystems* support all life on the planet, including human life, by providing food, fresh water, and breathable *air*.
- **2-3 LS2D:** Humans impact *ecosystems* in both positive and negative ways.
- **2-3 APPB:** Scientific ideas and discoveries can be applied to solving problems.
- **4-5 SYSA:** Systems contain *subsystems*.
- **4-5 SYSB:** A *system* can do things that none of its *subsystems* can do by themselves.
- **4-5 SYSC:** Systems have *inputs* and *outputs*. Changes in *inputs* may change the *outputs* of a system.
- **4-5 SYSD:** One defective part can cause a *subsystem* to malfunction, which in turn will affect the *system* as a whole.
- **4-5 INQA:** Scientific investigations involve asking and answering *questions* and comparing the answers with *evidence* from the real world.
- **4-5 INQD:** Investigations involve systematic collection and recording of relevant *observations* and data.
- **4-5 ES2A:** Earth materials provide many of the resources that humans use.
- **4-5 LS2A:** An *ecosystem* includes all of the plant and animal *populations* and *nonliving resources* in a give area.
- **4-5 LS2E:** All plants and animals change the *ecosystem* where they live. If this change reduces another organism's access to resources, that *organism* may move to another location or die.
- **4-5 LS2F:** People affect *ecosystems* both positively and negatively.
- **4-5 LS2D – Ecosystems** can change slowly or rapidly. Big changes over a short period of time can have a major impact on the *ecosystem* and the *populations* of plants and animals living there.

## Social Studies

- **Geography 3.2.1:** Understands that people in communities affect the environment as they meet their needs and wants.

## Communication

- **1.1.1:** Applies a variety of listening strategies to accommodate the listening situation.
- **1.2.1:** Understands how to use strategies to infer and make personal connections to auditory and visual information.
- **2.2.2:** Understands how to contribute responsibly in a one-to-one conversation or group setting.
- **3.1.1:** Applies skills to plan for effective oral communication and presentation.
- **3.3.1:** Applies skills for delivery of effective oral communication and presentations.
- 

## Health and Fitness

- **3.1.2:** Understands the effects of environmental and external factors on personal, family, and community health.
  - Understands how positive health behaviors contribute to a healthy environment.

# Landfill Laboratory

## Final Script 2012-13

**Grade Level:** 4-5

**Workshop Length:** 45-50 minutes

**Workshop Objective:** Students will learn what a landfill is and how they can reduce the waste sent there. Students explore the topic of decomposition, and compare and contrast decomposition in nature with the landfill process. Students will learn how practicing the 4 R's - rethinking, reducing, reusing, recycling prevent items, and the natural resources used to make those items, from sitting in the landfill forever.

**Key Messages:**

Students will:

- Define decomposition and distinguish decomposition as a natural process for handling wastes.
- Recognize where their garbage goes and identify that a landfill is a dead end for natural resources.
- Assess the natural life cycle of decomposition and the human-derived cycle of sending items to a landfill through comparing and contrasting.
- Identify the 4 R's of waste reduction: Rethink, Reduce, Reuse, and Recycle – and give examples of how to practice them.
- Differentiate and properly sort recyclables, compostables, and garbage through a sorting activity.
- List which items can be recycled at home and at school.

**Curriculum Connections:** Study of soils and natural systems, land and water units

**Washington State EALR Science Content Standards addressed:** See last page.

**Vocabulary:** compost, compostable, contamination, decomposition, landfill, natural resource, recyclable

**Materials:**

- 4 R board with Velcro words
- 1 set Natural Resource word and definition cards, laminated
- 1 bag of example garbage items
- 1 large jar of compost, labeled

- 11 decomposition photos: 3 each of bread, banana peel, apple core, 1 compost, 1 plastic bottle
- 7 sets of decomposition sort items: timeline ribbon, apple, sheet of paper, hot dog, cotton sock, aluminum can, plastic bottle, Styrofoam, small bag to hold items
- Items for landfill path demo: small black stuffed garbage bag, mini garbage can, truck, transfer station?, train, landfill photo
- 1 large, laminated photo of landfill on one side, recycling center on other side
- 14 half sheet laminated sort cards: 7 Recyclable, 7 Non-Recyclable, 7 compost (different colors)
- 7 sort bags (with real and plastic sample items found in garbage)
- 7 Waste Management's Accepted Recyclable & Compostable Items for Snohomish Co. lists
- 1 Rethink bubble
- 1 full sheet, laminated Reuse card

**Home connection/Leave behind:** Take home survey for students and project idea list for teachers.

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## Landfill Laboratory

### Workshop Script

#### Introduction (5 minutes)

Before the workshop begins, the presenter writes her or his name on the board and “Landfill Laboratory.” Display the 4 R board without the Velcro pieces attached.

*Hi, my name is \_\_\_\_\_ and I’m here on behalf of Waste Management and Snohomish County. Waste Management is the company in our community that collects garbage, recycling, and food and yard waste from your home and school. I am here with a special assignment and I hope you can help me out! Today we are scientists and this classroom is our laboratory. In our lab today, we are going to study our garbage and the place it goes – the landfill. We’ll also learn how nature deals with “waste” and how that compares to what we as humans do with our garbage. So before we get started lets go over some classroom expectations. Can you show me, with your voices off, what you do when you have a question? Great, we raise our hands. Next can someone raise their hand and tell us what everyone should be doing while someone is speaking. Great...quiet hands, voices off, listening.*

If class has NOT had assembly:

*Let’s get started by learning about the 4 R’s. I happen to have a piece of paper here. Often when we make a mistake on our work or when we finish an assignment we crumple up our paper and throw it in the garbage. Yikes....we need to Re-think (put Velcro words on poster) my actions. Every time we head to the garbage we need to re-think our actions. How can we reduce my waste? Can we re-use this paper (show reuse box) or should we recycle our paper? By practicing the 4 R’s (re-think, reduce, re-use and recycle), we can conserve our **natural resources**.*

If class has had the assembly:

*I heard my friends came to visit you recently during a fun assembly about the 4 R’s. What is something you learned from that assembly? Prompts if needed: What things could you recycle at home or at school? Where does our garbage go? What are examples of ways you could make less garbage in the first place? Call on several students. Review the 4 R’s, students add the Velcro words to the R board as they name the four R words. It sounds like you learned a lot about ways to reduce waste and to recycle at school and at home. By practicing the 4 R’s, we help conserve our **natural resources**. Show definition card.*



### Assessing prior knowledge – What do we throw away? (5 minutes)

*Speaking of our everyday stuff...what usually happens to things when we are done using them? Yes, they get thrown away. Think of some things you threw away in the past day, what are they? Pull out prop bag of garbage; pull several items from bag as students share. Did you know that an average person in the U.S. throws away about 4 1/2 pounds of garbage each day? Point half way up the classroom garbage bin. That's about this much garbage for each person each day!*

*Now use your scientific thinking skills. What might happen if we took this bag of garbage and dumped it outside in your schoolyard? Lead students to conclusion that some items would rot and some wouldn't. Natural resources have their own special process of breaking down. This process is called decomposition. Write the word on the board.*

### What is decomposition? (10 minutes)

*I bet all of you have seen decomposition in action. Have you ever forgotten a snack left in your backpack or some leftover food that got pushed to the back of the fridge at home? What happens to it? Call on several students. Maybe it gets moldy and slimy and it slowly decomposes. The stuff left over is rich in nutrients that support the growth of new plants and animals. Decomposition is nature's way of recycling!*

*I have some photos that show how things left outside change over time. **Three volunteers** come up and hold the laminated photos of the apple core, piece of bread, and banana peel. Stack the 3 photos of each item, so the volunteer is only showing the first photo of each set to the class. As a scientist today, make a prediction to yourself about what these items might look like after one week outside. Students turn to a neighbor to share their predictions, and then call on several students to share their predictions with the class. On the count of three, help the volunteers reveal the next pictures of the decomposing apple core, piece of bread, and banana peel. Make another prediction in your mind about what they might look like after another week. Then turn to a different neighbor and whisper it. Several students can share their predictions, and then the volunteers show the last pictures of the decomposing items. Make a prediction of what these items will look like in one month and share it with a new neighbor. Several students can share their predictions. Are you ready to see it? Are you sure you can handle it?? Presenter can play it up like the remaining photos will be really gross then volunteers reveal the final photos of compost. Volunteers sit back down. That's right; they all end up as compost, which is full of vitamins and nutrients to grow new plants. Show the example jar of compost. Isn't it cool that during the process of decomposition - something breaking down- something new is created - compost?*

*Let's explore the ingredients needed for items to decompose. Ask students for ideas and write them on the board as they name them. Give large group clues for them to learn the components needed: Air, heat, moisture, and the FBI (fungus, bacteria, invertebrates).*

Clues can include:

- Air: We need it to breathe but we also need it for decomposition.
- Heat: What does the sun provide? Or Why do we put food in the fridge? To keep it cold so it stays fresh. What's the opposite of keeping it cold? Heat!
- Moisture: Rain will help with this ingredient.
- FBI: These are the decomposers, living things that help something break down. Mushrooms are a kind of fungus. Bacteria are teeny tiny organisms that are found just about everywhere. Invertebrates are animals without backbones. These can include insects, worms, slugs, and roly poly bugs.

*There are definitely items that take a much longer time to decompose than others. Some items never decompose even if tons of time has passed! Show photo of plastic water bottle. Predict what will happen to this plastic water bottle if I threw it onto the ground like I did the apple core and just left it? After two weeks? Two months? Show the same photo after each question. Why do you think it isn't breaking down like the apple core, banana peel, or bread did?*

### **Decomposition sort: (10 minutes)**

*Ok scientists, we just learned what it takes for items to decompose, and we discovered that all things don't decompose the same. Now we're going to study some everyday items to compare how long it takes for them to decompose. It's your job to work together with your lab group to sort all seven items along a timeline of how long you think it will take for them to decompose if all the ingredients for decomposition are present – air, heat, moisture, and the FBI. Ask each other questions and make observations to put them in order from shortest amount of time to decompose (3-4 weeks) to longest amount of time (Never.) Can you figure out what natural resource was used to make the item?*

Table groups work together to match items to the dates listed on the timeline. Presenter can give hints about items as students are working (e.g. natural products decompose more quickly...paper faster than fabric...) Use prompts, such as "What patterns are you noticing about the items you think will take a shorter time to decompose versus the items that are taking a longer time?" **OR** "Do you think size and shape of the items influence the decomposition process? Why or why not?" **OR** "What natural resources make up this or that item and how do you think materials affect decomposition?"

List of items:

- apple (3-4 weeks)
- sheet of paper (1 month)
- meat (2 months)
- cotton sock (6 months)

- aluminum can (200-500 years)
- plastic bottle (500-1000 years)
- foam block (never)

Review as a large group. Number students in each group (1-6 or however many students in each table group). *If you are a one, hold up the item your group thought takes the least amount of time to decompose. Number twos hold up the item your group thought takes 1 month to decompose. And so on. Groups can rearrange their items as you review the correct order. You can use the prompt questions written above to review as a whole group as well.*

### **Looking at our landfill: what happens to our garbage? (5 minutes)**

*Why is decomposition so important? Well, what usually happens to most of these items we just studied? Right, they get thrown in the garbage. Where does our garbage from Snohomish County go? To the Roosevelt landfill. **Choose a volunteer to hold items** representing the steps our garbage takes to get to the landfill (garbage bag, curbside bin, truck to transfer station, train, landfill picture). *It takes a lot of resources to transport our garbage!**

*The landfill is designed to hold garbage and to prevent it from polluting the soil and water. Here's how it works. A big hole is dug into the ground. Before any trash is put in, there is a big liner like a trash bag that goes in the ground to protect the soil and water underneath. Then garbage is piled in and buried by a layer of dirt each day until the area is full. Once an area is full, it is sealed shut with another plastic liner. Think of a ravioli of trash! That's what we've got. Presenter can draw a cross-section of a landfill on the board showing that our county landfill is comprised of many "trash raviolis"—sealed at bottom and top and layered in the middle with garbage and dirt, then sealed on top with vegetation.*

*Let's review those ingredients we need for decomposition to occur. There might be heat but review that we don't have air, moisture, or the FBI in a landfill so garbage just sits there. *The landfill is a dead end compared to recycling or composting, nature's way of dealing with waste. The natural resources that end up here can never be used again!**

### **Landfill human bar graph (5 minutes)**

*How much of our landfill is full of items that could have been reduced, reused, or recycled? Each group will get an item that represents a material that ends up in the landfill. Presenter hands out items to each group representing: Paper, Plastic, Metal, Food and Yard Waste, or Other. Designate five areas in the room where students should move based on what their item is. Students move to five designated areas in room. After students have found their spot, they count up how many students are in their group. The presenter or a student graphs each category on a bar graph on the board. *This graph shows us what's in our landfill now. How could we reduce**

*the amount of garbage we send to the landfill? With your group, think of at least one way you can send less garbage to the landfill.*

### **Rethinking: Reducing waste in the landfill (5 minutes)**

As students are in their groups, hand them a few items representing their material (paper, plastic, metal, food and yard waste, garbage). Ask them to RETHINK each of the items so they can get out of the landfill. Call on students one at a time (or pairs) to get themselves “out of the landfill”. As students think of ideas to keep their items out of a landfill, have them sit back down and erase each section from the bar graph.

*If we rethink, reduce and recycle, we’d prevent all those natural resources from sitting in a landfill forever. If we remove paper, plastic, aluminum, and food and yard waste, how much garbage would we send to the landfill? A lot less!*

### **Wrap-Up**

*We have learned a lot today. We discussed the 4 R’s, what natural resources are, where our garbage goes, and we investigated the ingredients needed for things to decompose.*

*Can someone remind us what a natural resource is? Can someone remind me why it is important to re-use and recycle natural resources?*

*Can someone raise their hand and tell me something they learned today that they didn’t know before?*

**Closing challenge:** *Thank you for learning with me today! Because you were such an amazing group, I’ve got a couple of items to leave with you. What is one thing you can teach your friends and families at home? Show the Home Survey. Explain to them why it is not only important to recycle properly, but also to reduce our garbage, reuse more, and rethink our actions.*

Give teacher project idea list and home surveys.

**Optional if time allows - Recap/trivia game:** Two students at a time come to the bell in the front of the room. If the teacher has a “name cup” it makes it easy to select two contestants. The first person to hit the bell and answer the question correctly wins. The rest of the group can be involved by “Ask the Audience” and have them use a thumbs up, thumbs down, or thumbs sideways to provide feedback to the contestant’s answer.

To prevent students from hitting the bell multiple times, explain they may only hit the bell once and only if it is their turn or the game show will end.

Sample Trivia questions:

- What is a natural resource?
- Name two things that can be recycled.
- Name two things that can be composted.
- How can we rethink our choices to make less garbage?
- What is one way to reduce the amount of garbage you make?
- What is one example of reuse in the classroom?
- Hold up an item and ask, “How can we keep this out of the landfill?”
- Why is the landfill a dead end?

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**Washington State EALR Science Content Standards addressed: See last page.**

**Science**

- **2-3 INQA:** Scientific investigations are designed to gain knowledge about the *natural world*.
- **2-3 INQB:** A scientific investigation may include making and following a plan to accurately observe and *describe* objects, events, and *organisms*; make and record measurements; and *predict* outcomes.
- **2-3 APPA:** Simple problems can be solved through a *technological design process* that includes: defining the problem, gathering information, exploring ideas, making a plan, testing possible *solutions* to see which is best, and communicating the results.
- **2-3 APPB:** Scientific ideas and discoveries can be applied to solving problems.
- **2-3 SYSA:** A *system* is a group of interacting parts that form a whole.
- **2-3 SYSB:** A whole object, plant, or animal may not continue to function the same way if some of its parts are missing.
- **2-3 LS2D:** Humans impact *ecosystems* in both positive and negative ways.
- **4-5 SYSA:** Systems contain *subsystems*.
- **4-5 SYSB:** A *system* can do things that none of its *subsystems* can do by themselves.
- **4-5 SYSC:** Systems have *inputs* and *outputs*. Changes in *inputs* may change the *outputs* of a system.
- **4-5 SYSD:** One defective part can cause a *subsystem* to malfunction, which in turn will affect the *system* as a whole.
- **4-5 INQA:** Scientific investigations involve asking and answering *questions* and comparing the answers with *evidence* from the real world.
- **4-5 INQB:** Scientists plan and conduct different kinds of *investigations*, depending on the *questions* they are trying to answer. Types of *investigations* include systematic *observations* and descriptions, *field studies*, *models*, and *open-ended explorations* as well as *controlled experiments*.

- **4-5 APPA:** *Technology* involves changing the *natural world* to meet human needs or wants.
- **4-5 APPD:** Scientists and engineers often work in teams with other individuals to *generate* different ideas for solving a problem.
- **4-5 ES2A:** Earth materials provide many of the resources that humans use.
- **4-5 LS2D – Ecosystems** can change slowly or rapidly. Big changes over a short period of time can have a major impact on the *ecosystem* and the *populations* of plants and animals living there.
- **4-5 LS2F:** People affect *ecosystems* both positively and negatively.

### Social Studies

- **Geography 3.2.1:** Understands how the environment affects cultural groups and how cultural groups affect the environment.

### Communication

- **Communication 1.1.1:** Applies a variety of listening strategies to accommodate the listening situation.
- **Communication 1.1.2:** Applies a variety of listening and observation skills/strategies to interpret information.
- **Communication 1.2.1:** Applies strategies to comprehend auditory and visual information.
- **Communication 2.2.2:** Understand how to contribute responsibly in a one-to-one conversation or group setting.

### Health and Fitness

- **3.1.2:** Understands the effects of environmental and external factors on personal, family, and community health.
  - Understands how positive health behaviors contribute to a healthy environment.

**Link to WM Website:**

Where does my recycling go? <http://wmnorthwest.com/cascaderecycling/index.html> This links to videos, great photos of the recycling center, as well as fast facts.

WM Landfills: <http://wmnorthwest.com/landfill/index.html> Provides details on the landfill.

<http://www.thinkgreen.com/recycle-world> This interactive “world” changes as you click objects and learn more about recycling.

**Videos:**

<http://wmnorthwest.com/guidelines/videos/sally.htm> This is a funny video with child Sally and a reminder to recycle paper from Giant Homework.

<http://wmnorthwest.com/guidelines/videos/ron.htm> This is another funny video with Ron showing kids how to teach Dad to recycle:

<http://wmnorthwest.com/guidelines/videos/jimmy.htm> WM This is a funny composting video.



# **Recycling 101**

## **Final Script 2012-13**

**Grade Levels:** 4-5

**Workshop Length:** 45-50 minutes

**Workshop Objective:** Students will learn about the basic items that belong in recycling, garbage, and compostable food/yard waste collection. Students will learn that their garbage is taken to a landfill and recyclable items taken to a recycling center. Students will understand they can make choices to conserve resources, reduce contamination, and recycle properly.

**Key Messages:**

Students will:

- Define and discuss the 4 R's of waste reduction: Rethink, Reduce, Reuse, and Recycle.
- Recognize that everyday items are made from natural resources.
- Properly identify and sort recyclables such as paper, cans, and bottles; compostables; and garbage.
- Trace where their garbage goes and define what a landfill is.
- Trace where their recycling goes and define what a recycling center is.
- Demonstrate how to reduce contamination in recycling collection (e.g. juice pouches, Ziploc bags, paper towels/tissues)

**Washington State EALR Science Content Standards addressed:** See last page.

**Vocabulary:** compostable, contamination, landfill, natural resources, recyclable

**Materials:**

- 1 4 R board with 4 Velcro words
- 1 large, laminated photo of landfill on one side, recycling center on other side
- 2 laminated photos of recyclable materials
- 1 11x17 laminated "Natural Resources" definition card
- Paper Life Cycle items: piece of paper, tree, 3 trucks, wood chips, bottle of chemicals, bottle of pollution, bottle of dye/ink, car, train, gray desk side garbage container
- Large bag of everyday items: paper, plastic bags, soda can, milk carton, plastic bottle, pencil, chip bag, candy wrapper, zipper bag, paper napkin, plastic utensils, paper lunch bag, etc
- Reusable items: water bottle, lunch bag, lunch container, metal utensils

- 21 half sheet laminated sort cards: 7 blue Recyclable, 7 gray Landfill, 7 green Compost/Yard Waste
- 7 sort bags (with real and plastic sample items found in garbage)
- 7 Waste Management's Accepted Recyclable & Compostable Items for Snohomish Co. lists
- 21 baskets: 7 Green labeled Food Waste, 7 Blue labeled Recycling, 7 orange labeled Garbage
- 1 Rethink bubble
- 1 full sheet, laminated Reduce / Reuse card
- Reuse box example
- 1 bell for trivia
- Jar of compost, labeled

**Home connection/Leave behind:** Take home survey for students and project idea list for teachers.

## Recycling 101 (Intermediate)

### Workshop Script

#### Introduction (5 minutes)

Before the workshop begins, the presenter writes her or his name on the board and “Recycling 101.” Display the 4 R board without the Velcro pieces attached.

*Hi, my name is \_\_\_\_\_ and I’m here on behalf of Waste Management and Snohomish County. Waste Management is the company in our community that collects garbage, recycling, and food and yard waste from your home and school. Today we are going to talk about recycling. By the end of our time together, you will be well on your way to becoming recycling experts! So before we get started lets go over some classroom expectations. Can you show me, with your voices off, what you do when you have a question? Great, we raise our hands. Next can someone raise their hand and tell us what everyone should be doing while someone is speaking? Great...quiet hands, voices off, listening.*

If class has NOT had assembly:

*Let’s get started by learning about the 4 R’s. I happen to have a piece of paper here. Often when we make a mistake on our work or when we finish an assignment we crumple up our paper and throw it in the garbage. Yikes....we need to Re-think (put Velcro words on poster) my actions. Every time we head to the garbage we need to re-think our actions. How can we reduce my waste? Can we re-use this paper (show reuse box) or should we recycle our paper? By practicing the 4 R’s (re-think, reduce, re-use and recycle), we can conserve our **natural resources**.*

If class has had the assembly:

*I heard my friends came to visit you recently during a fun assembly about the 4 R’s. What is something you learned from that assembly? Prompts if needed: What things could you recycle at home or at school? Where does our garbage go? What are examples of ways you could make less garbage in the first place? Call on several students. Review the 4 R’s, students add the Velcro words to the R board as they name the four R words. It sounds like you learned a lot about ways to reduce waste and to recycle at school and at home. By practicing the 4 R’s, we help conserve our **natural resources**. Show definition card.*

### **Assessing prior knowledge – Stand up if (moving activity – 10 minutes)**

*Ok recyclers...let's see what you already know. Let's play a game of "Stand up if." If you think you know the answer to the question quietly STAND UP.*

*Stand up if:*

- *You know what a natural resource is (give examples or trees, metal, oil, etc. from assembly)*
- *You can name at least three things that can be recycled.*
- *There is a reuse box in your classroom (Show reuse box again)*
- *Your home has a recycling bin next to each garbage bin.*
- *You know where your garbage goes*
- *You know what a landfill is*
- *You have recycled something today*
- *You know what contamination is.*
- *You bring your lunch or part of your lunch in a reusable container.*
- *Stand up if you rethink before throwing something in the garbage.*

Presenter makes this game interactive and fun. For example ask "can you point to the recycling bin?" Tell students to ask someone to help them if they are "stuck" answering a question. Pick multiple students for multiple answers. Put hands on head if you agree with the answer. Put thumb on your nose if you have something to add to an answer. Keep students moving and engaged by asking more than one student to contribute information.

*Wow! We sure know a lot which is great. My next question is "Why should we care about all of this? Why should we recycle?" Let's answer this question by playing a game. Is that ok? Do you want to play a game?*

### **"Life cycle" to landfill activity/ game (10 minutes)**

Key Message: Each natural resource travels along an "energy journey" from nature to disposal and we have a choice as to where that natural resource ultimately ends up— a landfill, recycling center, composting facility, or reuse bin. It takes resources to make the things we use, resources to ship them to us, and resources to get rid of the things when we're done with them.

*Let's play a game to learn more about the complicated journeys that our natural resources take from nature to landfills, recycling centers, composting facilities, or reuse bins. I need your help. I need everyone to stand up and make a circle around the room (get students to form a semi-circle with presenter and presenter's materials forming the closing of the circle). Ready? Here we go. Let's investigate the life cycle of a piece of paper. First step is we need to cut down trees for paper (presenter takes out tree and passes it to the student on their left. Students continue to*

pass tree around the circle until it gets all the way around and ends at the student on the right of presenter). As tree is making its way around the circle presenter says *we need to saw down trees to make paper...let's start sawing down trees*. Students make sawing action as tree is passed. *Next, we need to truck the trees to the paper mill* (presenter passes a truck to student on left and truck gets passed around circle until it is next to the tree). As truck is passed around, presenter says *we need to drive our truck to take the trees to the paper mill so let's all drive the truck* (everyone puts their hand in the position of driving the truck). *Next the trees are chopped into wood chips* (presenter takes out bag of wood chips and passes them to student on the left who passes them around the circle). Wood chips are passed around the circle until they are next to the truck. Presenter says *we need to chop up the trees into wood chips* and uses hand motion to chop. *Next, wood chips are processed into paper using water and energy*. Presenter passes paper to student on left and paper makes its way around circle while students smash hands together in a flattening motion. *Next, the newly made paper is trucked to the printer where dyes are added* (repeat passing around another truck with hand motions and then small container of dye and plug nose to refer to chemicals). *Freshly printed and dyed paper is then trucked to the stores* (another truck) *and then we get in the car and buy it* (pull out truck and a car and pass around). *Whew! THEN....we use the paper and throw it in the garbage (OH NO!) where it gets on a train and goes to the landfill* (picture of landfill and a toy train go around circle).

*Imagine if every time we did our homework and made the mistake of putting the paper in the garbage. Think about all the natural resources (trees, metal, oil) we see in front of us that are wasted and the paper ends up in the landfill. Items that go to the landfill stay there forever, never to be used again. The landfill is a dead end. "Wow...that makes us "re-think" our actions doesn't it?"*

Ask students with props to come up and place them in the bin while the other students quietly sit back down at their desks.

### **Rethink/Recycle Game (5-10 minutes)**

*Wow, we have all these natural resources, let's see what choices we have for the items that we use every day? Let's play the "Rethink/ Recycle" Game. We are going to figure out what items are recyclable, what items are reusable and which items have to go in the garbage. First we need to learn this little jingle, ready...bottle shape/ cup shape, paper, cans. Great job! This little jingle is going to help us figure out what can go in the recycling bin.*

*Your teacher is going to pick two students at a time and when I pull an item out of the bag, the first one to ring the bell and tell the class if the item is recyclable, reusable or garbage gets a point. Place bell in front of class and ask teacher to pick two students at a time. Review bottles shape, cup shape, paper, cans and start game by pulling one item at a time out of bag while students ring bell.*

*That was great! You now see which items are recyclable and will get sent to a recycling center for a new life. Let's take a closer look at the recycling center (photos) (5 minutes)*

*Recycling is an excellent way to keep natural resources out of the landfill so they can be used again. You have a choice. You can either throw it away and it's gone forever OR you could recycle it and it becomes a new product. Include science idea of a system: input something old, process to create something new as output. Recycling saves resources, energy, and space.*

*Show the photos of the recycling center and recyclable materials. When something is recycled it can be made into new things. The recyclable materials are sorted at the recycling center and then they are sent to factories to be made into new products. The natural resources such as trees, metal, and oil get a new life! That's much better than sitting stuck in a landfill forever.*

*What are some examples of items that may be recycled at home or in the classroom? Call on several students and share other examples. Review what can and cannot be recycled for different categories (i.e. paper, plastic, metal). Plastic can be tricky, but ask yourself "Is it a cup shape or bottle shape?" If the answer is yes, you can recycle it if it is empty and clean.*

*It is important to sort recyclables properly. Something that doesn't belong in the recycling is called "contamination." Contamination can ruin a whole batch of recycling. Write the word on the board. Explain an example of contamination such as paper towels, straws, items with food or liquid, chip bags, juice pouches, and wrappers.*

*Composting is nature's way of recycling, or a way we can recycle our food scraps. Compost is like dirt that is full of vitamins and nutrients to grow new plants. If a food waste or yard waste bin is not available, what should you do with food scraps? They go into the garbage.*

### **Reducing waste in the landfill (small group sort activity) (10 minutes)**

*Do you want to play another game? Of course!!!*

*Here is your chance to take all the knowledge you learned today and put it to the test as recycling experts! Work together with your table group to sort your bag into three piles: recyclable, garbage/landfill, and compost/yard waste. You can use this handy list if you are unsure about a particular item. Hand out one sort bag, set of baskets and Waste Management Accepted Items list to each table group. (Bags may include: Paper, bottles, cans, juice boxes, milk cartons, one-sided paper, envelope paper, paper with envelopes, paper with staples, paper only used on one side, other items from school such as juice cups with foil, disposable fork, paper lunch bag, yogurt cup, plastic baggie, juice pouch, etc.) Student groups self-assess based on the WM accepted items list and presenter checks answers for each group.*

*Challenge students who sort quickly to think of creative ways to reuse things before recycling. At first glance you might think it is garbage or immediately recyclable, but what is a new/different use for this item?*

Review anything tricky or confusing. Hold up the reuse card. *Stop! Rethink!* Hold up the rethink bubble. *I would like each group to hold up three things that could be reused before they are recycled or thrown away.* Each group holds up three things that could be reused before recycling or garbage.

## **Wrap-Up**

*We have covered a lot of information in a very small amount of time. We discussed the 4 R's, what natural resources are, and we came up with an easy way to remember what can go in the recycling bin ( bottle shape, cup shape, paper, can).*

*Can someone remind us what a natural resource is? Can someone remind me why it is important to re-use and recycle natural resources?*

*Can someone raise their hand and tell me something they learned today that they didn't know before?*

**Closing challenge:** *Thank you for learning with me today! Because you were such an amazing group, I've got a couple of items to leave with you. Now that you are recycling experts, what is one thing you can teach your friends and families at home to help them be expert recyclers too? Show the Home Survey. Explain to them why it is not only important to recycle properly, but also to reduce our garbage, reuse more, and rethink our actions.*

*Please put your right hand in the air, wrap it around to your back, give yourself a pat for being awesome, then be quiet and ready for your teacher's next instructions.*

Give teacher project idea list and home surveys.

## **OR, if time allows**

**Review/trivia game ( 5 minutes):** Two students at a time come to the buzzer box in the front of the room. If the teacher has a "name cup" it makes it easy to select two contestants. The first person to hit the bell and answer the question correctly wins. The rest of the group can be involved by "Ask the Audience" and have them use a thumbs up, thumbs down, or thumbs sideways to provide feedback to the contestant's answer.

To prevent students from hitting the buzzer multiple times, explain they may only hit the buzzer once and only if it is their turn or the game show will end.

Sample Trivia questions:

- What is a natural resource?



- Name two things that can be recycled.
- Name two things that can be composted.
- What is contamination?
- How can we rethink our choices to make less garbage?
- What is one way to reduce the amount of garbage you make?
- What is one example of reuse in the classroom?
- Hold up an item and ask, “How can we keep this out of the landfill?”
- Why is the landfill a dead end?

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**Washington State EALR Science Content Standards addressed:**

**Science**

- **2-3 INQA:** Scientific investigations are designed to gain knowledge about the *natural world*.
- **2-3 APPB:** Scientific ideas and discoveries can be applied to solving problems.
- **2-3 SYSA:** A *system* is a group of interacting parts that form a whole.
- **2-3 SYSB:** A whole object, plant, or animal may not continue to function the same way if some of its parts are missing.
- **2-3 LS2D:** Humans impact *ecosystems* in both positive and negative ways.
- **4-5 SYSA:** Systems contain subsystems.
- **4-5 SYSB:** A system can do things that none of its subsystems can do by themselves.
- **4-5 SYSC:** Systems have *inputs* and *outputs*. Changes in *inputs* may change the *outputs* of a system.
- **4-5 INQA:** Scientific investigations involve asking and answering questions and comparing the answers with *evidence* from the real world.
- **4-5 APPA:** *Technology* involves changing the *natural world* to meet human needs or wants.
- **4-5 APPD:** Scientists and engineers often work in teams with other individuals to *generate* different ideas for solving a problem.
- **4-5 ES2A:** Earth materials provide many of the resources that humans use.
- **4-5 LS2E:** All plants and animals change the *ecosystem* where they live. If this change reduces another organism’s access to resources, that *organism* may move to another location or die.
- **4-5 LS2F:** People affect *ecosystems* both positively and negatively.

**Social Studies**

- **Geography 3.2.1:** Understands that people in communities affect the environment as they meet their needs and wants.

**Communication**

- **1.1.1:** Applies a variety of listening strategies to accommodate the listening situation.

- **1.1.2:** Applies a variety of listening and observation skills/strategies to interpret information.
- **1.2.1:** Understands how to use strategies to infer and make personal connections to auditory and visual information.
- **2.1.1:** Uses language and adapts to the needs of the audience, situation.
- **2.2.2:** Understands how to contribute responsibly in a one-to-one conversation or group setting.
- **3.1.1:** Applies skills to plan for effective oral communication and presentation.
- **3.3.1:** Applies skills for delivery of effective oral communication and presentations.

### **Health and Fitness**

- **3.1.2:** Understands the effects of environmental and external factors on personal, family, and community health.
  - Understands how positive health behaviors contribute to a healthy environment.

### **Link to WM Website:**

Where does my recycling go? <http://wmnorthwest.com/cascaderecycling/index.html> This links to videos, great photos of the recycling center, as well as fast facts.

WM Landfills: <http://wmnorthwest.com/landfill/index.html> Provides details on the landfill.

<http://www.thinkgreen.com/recycle-world> This interactive “world” changes as you click objects and learn more about recycling.

### **Videos:**

<http://wmnorthwest.com/guidelines/videos/sally.htm> This is a funny video with child Sally and a reminder to recycle paper from Giant Homework.

<http://wmnorthwest.com/guidelines/videos/ron.htm> This is another funny video with Ron showing kids how to teach Dad to recycle:

<http://wmnorthwest.com/guidelines/videos/jimmy.htm> WM This is a funny composting video.

# Waste Reduction and Recycling Assembly and Workshops Photos









