



Zero Waste Ambassadors Program



2016 Report

Prepared by

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Becca and Mr. McHugh's fifth grade class from Cold Springs Elementary in Missoula, March 2016

A ZWAP! in the Last Best Place

In early 2016, Home ReSource launched ZWAP!, the Zero Waste Ambassadors Program. This educational adventure is the newest initiative of the Home ReSource Education Program, which seeks to increase waste reduction awareness, knowledge, and skills and to celebrate reuse. We designed the Zero Waste Ambassadors Program to help Missoula's youth begin to think more critically about materials – where they come from and where they go – and to empower them with the knowledge that their choices really do matter. ZWAP! engages students in creative play and problem-solving activities that aim to inspire them to think differently about waste and how to reduce it. We hope to imbue our youth with the skills and knowledge to be Zero Waste Ambassadors in their homes, classrooms, and our community so that they can choose to join the effort to knockout waste in Missoula!

ZWAP! is part of a larger Zero Waste movement taking place in Missoula and around the world. Our February launch of the program was just four days before the Missoula City Council unanimously passed the visionary Missoula Zero Waste Resolution, which calls for Missoula to achieve a 90% reduction in municipal solid waste by 2050 and the creation of a Zero Waste Plan to get us there. Additionally, the *Our Missoula City Growth Policy* states Zero Waste education is a high-priority near-term action. We believe ZWAP! can play a significant role in helping the City realize its goal of Zero Waste by guiding the leaders of tomorrow with a framework for understanding materials and a vision of Zero Waste.

We piloted ZWAP! in 2015 with two spring semester fifth grade classes at Rattlesnake Elementary and a spectrUM summer camp for 10-12 yr old youth. Each class participated in an hour-long introductory classroom lesson about the materials economy followed by a field trip to Home ReSource. During the field trip, students reviewed the lesson, engaged in the hands-on “Let’s Build This” building materials reuse project planning activity, and reflected on what a Zero Waste world would look like. With widespread rollout of the program in spring 2016, Home ReSource educated 600 students in and around Missoula, all of whom concluded the program by signing the ZWAP! wall, which is our visual—and colorful!—record of program participation.



We created this report—our first assessment of ZWAP!—in hopes that it will allow us to improve the program moving forward. We are committed to making ZWAP! as fun and effective as it can be and we aspire to have it be a part of every young Missoulian's fifth grade experience. We look forward to growing and developing ZWAP! as we integrate feedback from parents, teachers, and youth and as we learn from our own experiences. We have been impressed with our community's support of ZWAP! thus far and we invite feedback and partnerships that will allow us to engage Missoula's youth in this empowering educational adventure. Finally, we are excited for the opportunity to contribute to our community's culture of learning and to help move Missoula toward Zero Waste!

Jeremy Drake, October 2016

What We Accomplished

Program Reach:

Number of Schools: 13

Chief Charlo Elementary School*, Cold Springs Elementary School*, DeSmet School, Franklin Elementary School*, Hawthorne Elementary School*, Hellgate Elementary School, Lewis and Clark Elementary School*, Lowell Elementary School*, Missoula International School, Paxson Elementary School*, Rattlesnake Elementary School*, Sussex School, Target Range Elementary School*

*Missoula County Public Schools

Participating Classes: 28

- Classroom visits: 27
- Field Trips: 27
- Other: 1 (ZWAP! lesson for Missoula International School at Greenough Park)

Number of Students: 600

- Classroom visits: 574
- Field Trips: 576
- Other (ZWAP! lesson for Missoula International School): 35

Total Hours of ZWAP!ing: 110

Including classroom visits and field trips; not including outreach or preparation

Participant Learning:

The “What do you know about waste?” Quiz

Students took the quiz at the beginning of each classroom lesson and then again at the end of each field trip. The purpose of the quiz was to gauge student knowledge about various waste reduction concepts and facts before and after the program.

Results

- Average Class Score (pre-ZWAP!) : 55%
- Average Field Trip Score (post-ZWAP!) : 90%
- Average Gain in Knowledge: 67%



What We Heard

We invited teachers and chaperones to provide feedback after the completion of the ZWAP! experience using an online Google form. The 21 respondents included 17 teachers and 4 parent chaperones. Below is a summary of the feedback we received.

“What did you like best about the ZWAP! experience?”

This handful of teachers’ responses represents the wide variety of program elements that left an impression on adults who experienced the program:

- *I thought that the classroom lesson was very engaging for the students. The students learned a lot about how much waste we produce and what we can do about it. I also think that the (Let’s Build This building materials reuse project planning) activity was a fun idea for the kids.*
- *Super informative! and relevant!*
- *I loved watching the kids design their structures (during the Let’s Build This activity) and get excited about their ideas.*
- *Talking about the ways we can use all those R words in our lives (Reduce, Reuse, Recycle, etc.)*
- *The raising of awareness for the students - it was VERY well done!*
- *Listening to fifth graders get excited about waste and their responsibility with it.*

“Was the content delivered effectively?”

20 out of the 21 respondents said that they thought the content was delivered effectively. The reason given for the only ‘no’ response to that question was that the respondent believe the field trip could have been shorter.

“Did you find any of the content depressing?”

Three of the survey respondents found at least some of the lesson content to be depressing. Their explanations for this answer were: “We have a long ways to go to change,” “Humans produce so much waste! The numbers were hard for the kids to grasp,” and “The amount of waste is ridiculous. It is so important for all humans to understand how large this problem is.” One of the respondents who did not find the information depressing also submitted a comment for this question, writing, “Not depressing because tough and challenging facts were presented with actions people could take to improve situations.”

“What are the ways you think we could improve ZWAP!?”

The most common response to this answer was to shorten the lesson review during the fieldtrip.

What We Learned

- Challenge:** Teachers and chaperones told us that the lesson review during the field trip was too long.
Recommendation: Explore creative ways to review lesson material in the context of activities. Replace lecture-style review on the white board with games and activities that touch on and reinforce the key ideas from the lecture. Develop those games and activities.
- Challenge:** The Zero Waste station in the ZWAP! Room was hard for students to understand and use.
Recommendation: Redesign the Zero Waste station based on what we now know about the Missoula Public Schools sack lunches. Expand to include multiple bins for unopened food, with labels/signage/examples specific to lunch contents (e.g. a bin for packaged carrots & milk cartons).
- Challenge:** 75 percent of the classes did not complete the 'Class Trash Tracker' activity.
Recommendation: In each class, ask for one or two students to take the lead on the project and bring the tracker sheet to Home ReSource for the field trip.
- Challenge:** Students came to ZWAP! with varying levels of knowledge about waste and climate change. ZWAP! provides a good foundation for understanding these issues, yet we are uncertain of the program's lasting impact. We believe that students need additional opportunities to deepen that understanding.
Recommendation: Collaborate with teachers and other experts to develop and distribute a 'Waste Unit' to the elementary schools. The inclusion of a unit for 6th graders would be ideal, so that we can determine what students retained from participating in ZWAP! the previous year.
- Challenge:** Although the 2016 quiz reflects some of the key ZWAP! messages, there was not adequate emphasis on the upstream component of Zero Waste. Feedback from teachers and chaperones conveyed that the quiz should be made slightly more difficult.
Recommendation: Refine and revise the ZWAP! quiz.
- Challenge:** 75 percent of teachers and chaperones did not complete the online ZWAP! evaluation.
Recommendation: Design and hand out a card, printed on 100 percent recycled content paper, that includes a short explanation and link to the survey to both teachers and chaperones during the field trip. Encourage teachers and chaperones to fill out the survey as soon as possible.



Additional Recommendations:

- Focus more time on hands-on learning such as the 'Let's Build This' treasure hunt and math activities on carbon dioxide, upstream waste, and lifetime waste production
- Offer extended field trip option (4 hours) for classes that have a more flexible schedule; Develop an additional, hands-on activity for the additional time
- Host an end-of-semester event for current and previous ZWAP! participants and their families

Looking Ahead

We have learned many lessons in our first year of ZWAP!. Using the feedback from participants and our own experiences, we have developed several program adjustments that will launch with our second year of ZWAP! in February 2017.

If you are interested in seeing a more detailed version of the report with appendices including detailed lessons learned and recommendations please contact Jeremy Drake, Community Engagement Manager, at jeremy@homerresource.org or 541-8301.



Thank you so much! Dear Becca and Home Resources, We had so much fun!! I will try to do the three R's more often. I hope I get to come back soon! My favorite part was going on the scavenger hunt. I hope to see you soon!

No Global Warming!
- Sophie R.

1. Reduce
2. Reuse
3. Recycle.

No air Pollution!

Thank you so much! Thank you for letting us go to home resources and letting us do a quiz and scavenger hunt. Thank you for the tour.

Reduce
Reuse
Recycle

To: Becca From: Brett K

Thank you so much! For letting us come to Home Resources, it was really neat to see all of the stuff that people could throw away but instead they give it to you. Also to see all of the stuff you guys make it into. Then Lastly I give a gold star to Becca for how nice she was and for how well she explained everything.

By Izzy M.

Thank you so much! Dear Becca - I had a lot of fun there! Thanks for setting up the scavenger hunt for us. Also thanks for the AWESOME lesson!

- Ava J.

Thank you so much! 3/4/10
Much Becca. Thanks for the scavenger hunt. If we go there again can we build the robot.

From Josiah

Thank you

Thank you so much! Dear Becca and Home Resource, Thank you for providing the field trip. I had a good time. It was very informing. It was fun to see all the different things people had brought in. I really enjoyed the scavenger hunt. It was a great idea. Thank you for teaching us about ZWAP and reduce, reuse and recycle. I learned a lot of things I did not know about before. Thanks again!

Malia Bradford

Reduce, Reuse, Recycle ZWAP!