Home ReSource

Zero Waste Ambassadors Program

ZWAP!

2017 Report

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ZWAP! 2017 Report

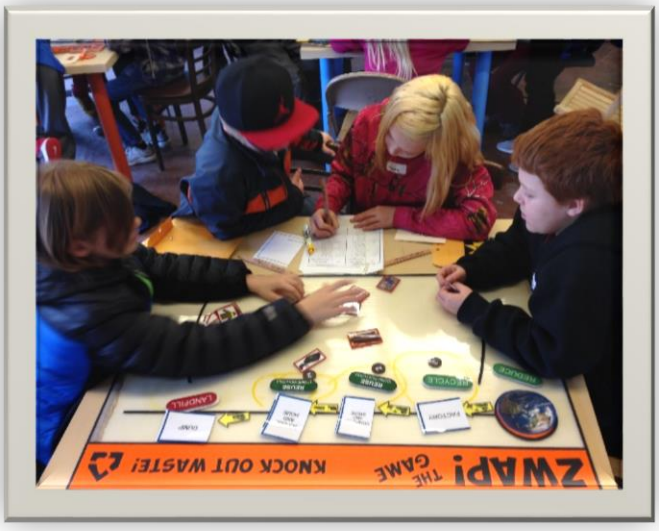
If you are interested in obtaining a copy of the ZWAP! 2017 Full Report, which includes extensive appendices that cover all aspects of the planning, curriculum as well as complete evaluation results, please contact Jeremy Drake, Community Engagement Manager, at jeremy@homeresource.org or (406) 541-8301.

A 2nd Year of ZWAP!

We hit the ground running in October 2016 ready to flesh out the lessons learned and recommendations from the first year of ZWAP!, the Zero Waste Ambassadors Program for 5th graders we launched earlier that year. We designed the Zero Waste Ambassadors Program to help young Missoulians 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. We implemented many changes to ZWAP! to more intentionally engage students in creative play and problem-solving activities. With the 2nd year of ZWAP!, we learned again. We learned how its participants want to engage in the program based on our own observations as well as from feedback from students, teachers, and parents.

Through our broader Zero Waste work in the community we made progress toward our goal to have ZWAP! become a part of every young Missoulian's fifth grade experience by partnering with Missoula County Public Schools (MCPS). The partnership is centered on our shared Energy Corps service member, Katie Anderson, who will improve and implement ZWAP! while also coordinating the effort to develop a Zero Waste Plan for the school district and assisting with Zero Waste pilot initiatives primarily at Franklin Elementary School and possibly other schools as well.

This report is a summary of our 2017 adventure and a distillation of the lessons learned in a set of recommendations that we hope to implement for ZWAP! 2018. It is further proof that we are committed to making ZWAP! as fun and effective as it can be. As we move forward with MCPS, we are eager to align our program more fully with the learning standards and deliver this educational adventure to more of Missoula's 5th graders.



At Home ReSource, our end goal is to help create a culture of sustainability. We believe that in order to do so we need to think differently about waste and how to reduce it. Through ZWAP! and our related Zero Waste work with MCPS, we hope to imbue 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!

Jeremy Drake, October 2017

Summary of ZWAP! 2017

We call ZWAP! an educational adventure. Turns out that is true for more than just the participants! We have found that while in the midst of program implementation we pay constant attention to what is working and what is not, we make mid-course corrections, and we devise and deploy new ways to get the ZWAPers to where we want them to go. The destination is the same - think differently about waste and how to reduce it; how we get them there is what we are tinkering with. Without a pre-existing model to use for this kind of interactive curriculum, we are learning as we go.

This section chronicles the changes we made from 2016 to 2017. This is a small part of the story of the evolution of ZWAP!. We believe it is important to highlight those changes so we know where we have been and can use our past to guide us toward our vision for the future of this program. Some of the changes emerged from the recommendations of the first ZWAP! report while others emerged from our team's creative thinking around our programmatic goals.

We simplified the in-class lecture.
In 2016 we covered a lot of ground in our lecture. We refined our messages and focused the lecture more for greater impact on fewer key points.

We added natural systems to the in-class lecture.
From the beginning we've wanted to bring a systems-thinking perspective to this issue. We defined a "system" in our quiz and we talked about the global system that allows materials to become stuff and move around the planet. We realized that we were missing an obvious and effective teacher of systems-thinking: the planet's own natural systems. So we now create a framework for understanding systems by starting there.

We created teams for the field trip and made it into a contest.
During the ZWAP! 2016 field trips, students sat as a class in a large group. The only time they teamed up was for the "Let's Build This" activity. In 2017, after a brief welcome we grouped the students into 5 teams. Each team came up with its own name and competed against other teams to win the most points during the activities with the goal to be recognized as the ZWAP! Masters at the end of the field trip.

We added a visioning element to the field trip.
We asked students at the beginning of the field trip to use ZWAP!-branded carpenter's pencils to draw a picture based on the prompt "What does a Zero Waste world look like to you?" The drawing exercise helped students begin to articulate their own vision of Zero Waste in their lives.

We introduced a new way to review the lecture during the field trip.
ZWAP! The Game emerged from feedback from 2016 that our review of the lecture during the field trip was, well, a boring waste of time to put it bluntly. We wanted a way to revisit the key points of the lecture and increase the likelihood of understanding and retention. We reimagined the review in the form of a board game.

We developed an activity to introduce the concept of shopping for Zero Waste.
The Wheel of Zero is a TV-game-show-style game where contestants apply their knowledge of Zero Waste to the food item that corresponds to the colored segment on which the wheel stops after giving it a good spin. The hope is that later, when shopping at a grocery store, students will focus on buying food – or food in reusable or recycling packaging – not packaging that is designed for the dump.

What We Accomplished

Program Reach

Number of Schools: 13

Chief Charlo Elementary School*, Cold Springs Elementary School*, Franklin Elementary School*, Hawthorne Elementary School*, Hellgate Elementary School, Lewis and Clark Elementary School*, Lowell Elementary School*, Missoula International School, Ovando School, Paxson Elementary School*, Rattlesnake Elementary School*, Target Range Elementary School, Woodman School
*Missoula County Public Schools

Participating Classes: 33

- Classroom visits: 33
- Field Trips: 24

Number of Students: 737

- Classroom visits: 737
- Field Trips: 557

Total Hours of ZWAP!ing: 105

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.
Here are the results so far:

Spring 2017

- Average Class Score (pre-ZWAP!) : 59%
- Average Field Trip Score (post-ZWAP!) : 86%
- Average Gain in Knowledge: 45%

Spring 2016

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

Considering that we revised the ZWAP! quiz after our inaugural year, we cannot see these results from 2016 & 2017 an an apples-to-apples comparison. We assume that the increase in average pre-ZWAP! test scores is attributed to the adjustments we made to the quiz questions. We aligned the quiz more closely with our takeaways and also clarified confusing wording where needed. We are seeking to understand the cause of the decrease in post-ZWAP! test scores and will work to improve the average gain in knowledge for 2018.

What We Heard

We invited teachers and chaperones to provide feedback after completion of the ZWAP! experience using an online Google form. The 34 respondents included 25 teachers and 9 parents and chaperones. Below is a summary of the feedback we received.

"What did you like best about the ZWAP! experience?"

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

"Going to the resource center and the students experiencing how material can be reused, along with letting them see how easy it can be to be less wasteful." "The kids understanding what it means to reduce, reuse and recycle." "I liked all of the games the kids played to retain the great information." "The hands on experiences." "I loved that if a student answered incorrectly the docent found way to find some correctness in the answer and encouraged the students to think about different ways to look at the question! The information was presented in a way that will be memorable to students."

"Was the content delivered effectively?"

32 out of the 34 respondents said that they thought the content was delivered effectively. The reason given for the two "no" responses were that they board game seemed a little confusing and complicated another person said "There wasn't a whole lot of enthusiasm and the kids started to lose interest."

"Did you find any of the content depressing?"

Seven of the survey respondents found at least some of the lesson content to be depressing. Their explanations for this answer were: "As a society, we do not take very good care of the earth! I appreciate the positive action taken by Home Resources." "The amount of trash that montanans produce on average :(" "Wow, we create a lot of waste before it even "becomes" waste!" "We produce sooo much waste!" "It's just hard information to hear, but very necessary" "The diagram brought into light the huge scale of the systems that need improving" "Depressing and slightly embarrassing in regards to the fact that we have gotten to this point and it doesn't seem that there is as much of a sense of urgency in our country to make significant changes."

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

Many responses involved facilitator tips. As a result, we have created a sheet of Facilitator Tips for future ZWAP! educators to use as a reference. Also, a few respondents requested incorporating more movement/group interaction into the lessons.

What We Learned & Recommendations for ZWAP!

BIG PICTURE

Challenge: How do we ensure ZWAP! supports the teacher's curriculum and goals?
Recommendation: Share 5th grade waste unit developed by local teachers with all participating ZWAP! teachers & provide supporting in-class activities, e.g. Trash Tracker. Review with MCPS Instructional Coaches.

Challenge: How do we inspire students to act as Zero Waste Ambassadors after the program?
Recommendation: Create an incentive for students to continue engaging in Zero Waste Ambassador activities outside of ZWAP!. Possibilities include: 1. Create a ZWAP! Passport that outlines several specific individual actions to complete over the summer and provide a "prize" or incentive to students who complete it and return it to Home ReSource; 2. Develop a ZWAP! summer camp.

IMPLEMENTATION

Challenge: While the added competitiveness of the point system on the field trip is motivating, we observed that it distracted students from the content.
Recommendation: Explore ways to get students to engage in and complete activities without a competitive point system. One solution could be to use a ZWAP! Passport in which the field trip is only one "stop" in a larger series of "stops" or actions. This would create a broader community-focused challenge supported by incentives from Home ReSource and remove the distraction of winning in the moment.

Challenge: The Zero Waste World drawing activity produces inspiring, yet monotone pencil drawings.
Recommendation: Consider making available colored pencils for students to make more colorful drawings. Also consider how expanding color choice that might impact the length of the activity.

Challenge: Students sit for much of the field trip.
Recommendation: Incorporate movement into activities or between activities. Shoot for 15-minute blocks of activity to keep students' attention and keep them engaged.

Challenge: Reflections during field trip can be long, don't flow well into each lesson, and take up too much time. We didn't have time for Let's Build This! reflection for a 2nd year in a row.
Recommendations: Create short reflections that flow and lead into each activity.

Challenge: Post-ZWAP! test scores were down in 2017 from 2016.
Recommendations: Look into how to support greater learning as pertains to the quiz questions through the in-class presentation and field trip.

CONTENT

Challenge: Some of the quiz questions are still a little confusing and need clarity.
Recommendation: The upstream question is still a complicated concept for 5th graders. Brainstorm ways to convey the impact of upstream waste. Use "request" instead of "write" to be consistent with "R" words.

Challenge: Effectively connecting the concept of "closing the loop" to the Materials Economy is difficult.
Recommendation: Comparing natural systems to the linear Materials Economy system helped students understand this concept. For example, "The Materials Economy is a one-way, linear system made by people. We can learn from nature to help create many circular systems inside of that system, which looks more like a straight line than circle. What happens when a leaf falls off a tree? Does it become

trash? No, it becomes nutrients for the soil from which another tree can grow. It's a circular system that loops on and on and on. There are three loops we can create within this system using the three R words as a guiding principle. Two REUSE loops and one Recycling loop."

Challenge: Parts of ZWAP! The Game are confusing. Students have difficulty figuring out where to put the "reduce" game piece. Students have difficulty placing the loops correctly on the Materials Economy.
Recommendation: Leave it up to the students to place the reduce piece where they think it helps the most along the system. Determine "correctness" based on their explanation. This allows for multiple correct answers. OR Tell them to place the Reduce piece next to the planet and the activity could be to write-down or explain how reducing helps the planet. The loops need either more explanation as to what they are representing or a different design.

Challenge: ZWAP! The Game Round Three reinforces why the 3 R-words are in order for a reason and gives the students a chance to practice putting these R-words in action. The ZWAP! Field trip will no longer be a point-based lesson (where teams earn points to see who wins at the end of the day) but we still need to reinforce the order of the three R's and why.
Recommendation: Find a way to still reinforce the order of importance of the three R-words without assigning points and without having the students complete the *Round Three: Tracking our Trash Worksheet*.

Challenge: Math activity in Let's Build This! Takes too long and doesn't fit with the overall goals of ZWAP!
Recommendation: Consider ways to simplify this part of the activity. Possible solution: Add a number on the bottom of each project list and add each group's numbers together at the end of the activity, then tell students "This is the weight of how much stuff was kept out of the landfill by reusing building materials."

Challenge: The Wheel of Zero is too specific to reinforce the goals of ZWAP!
Recommendation: Replace Wheel of Zero with problem solving lesson.

LOGISTICS

Challenge: Often scheduling does not allow enough time between the in-class lesson and the field trip for students to complete the Class Trash Tracker activity.
Recommendation: Schedule more time between the class visit and field trip. In 2018 consider the following: schedule all in-class visits for January and February and schedule all field trips for March, April, May. In the future, consider the possibility of providing ZWAP! in the fall semester as well.

Challenge: One teacher conveyed that at least one parent was concerned about "too harsh" wording in liability waiver and was reluctant to sign it.
Recommendation: Revisit waivers and possibly reword.

Challenge: Students only used one or two pages in each pad ZWAP! pad.
Recommendation: Provide good-on-one-side (GOOS) paper for students instead of ZWAP! pads.

Challenge: ZWAP! pencils don't have erasers, are hard to sharpen, and students may not have an easy way to sharpen them once they go home.
Recommendation: Roughly 2/3 of students took pencils with them. Decide whether to continue distributing ZWAP! pencils once current supply runs out.

Looking Ahead

Our new partnership with Missoula County Public Schools (MCPS) gives us hope that ZWAP! will achieve the impact we envision – a generation of citizens willing to help knockout waste in Missoula. As our Zero Waste work with MCPS evolves and as the City implements its forthcoming Zero Waste Plan, future ZWAP!ers will begin to see congruence between what they learn in ZWAP! and what they see happening in their schools and in the community at large. As noted in the WorldWatch Institute State of the World 2010 publication, when we align the world's leading institutions—education, the media, business, governments, traditions, and social movements—we can reorient our culture toward sustainability. We see this happening in Missoula are hopeful about the outcome.

As for ZWAP!, we will continue to evolve the program as we brainstorm, workshop, consult with educators, and engage more of Missoula's youth in this empowering educational adventure.