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Edutainment...

Bringing Measurability to Behavior Change

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Who We Are: Conservation Generation

- A new company with a **social mission** to conserve natural resources such as water
- Mainstreaming conservation by making it easy, fun and rewarding, creating a Generation of Conservation
- A totally **new approach** to natural resource efficiency:
 - Harnessing the social and cultural phenomenon of ludification, "the increasing spread of play as a routine activity in everyone's life"
 - Applying insights from sociology and environmental psychology to real-world efforts
 - Combining technological and non-technological tools to spark change
 - Results-based, evaluating of our efforts

Part of Our Approach

• A = Ludification includes

- Gamification, "use of game thinking and concepts in non-game settings" - like airline loyalty cards
- Game-inspired / playful design, "creating game experiences in everyday life", like the Urinal Fly
- B = Edutainment is "content that is designed to educate as well as to entertain", like Sesame Street



both ASB

The overlap is that both approaches

- engage users in solving problems
- make use of 'serious games', "games with serious outputs or outcomes", like our CG Trump Cards

Case Study of Edutainment and the Overlap

- Summer 2014 pilot at Blue Star Camps and Camp Judaea
- 1,300 children aged 6 to 16, and 600 counselors and staff
- Why camp?
 - Willing: most camps are aware of environmental stewardship
 - **Complementary**: camp is about enjoyment and appreciation of the natural world
 - Receptive: research shows that those with greater affinity for nature demonstrate more environmentally responsible behaviors
 - **Opportunity**: small part of the camp experience to take home



Is camp an appropriate place?

Camp owners/directors think so

- 95% concerned or very concerned about not wasting water at camp (ACA March 2014 Survey; 60 respondents)
- Over 50% had undertaken education to promote water-saving

Camp staff and counselors think so

 98% of those we surveyed at our two camps agreed that it was a great place to teach environmental stewardship (n=204, both camps)

Parents think so

 97% agreed camp was an appropriate place to teach children and teens about water conservation (n=437, both camps)

Campers think so

 62% said yes/maybe to "should we do water-saving and other environmental activities at camp next year?" (n=298, Camp Judaea)



What We Set Out to Do

- 1. Encourage campers to take up three water-saving tips
 - a. Turn of the water when you brush your teeth
 - b. Take shorter showers
 - c. Don't use the toilet as a waste bin
- 2. Encourage campers to talk about water-saving with family and friends
- 3. Encourage campers to take home learning to parents

How We Did It

- Hardware: retrofitted efficient shower heads and faucet aerators (and energy efficient lightbulbs)
- Playware: supplied fun evidence-based products to encourage change
- Focus: emphasized three key water-saving behaviors
- Extension: encouraged discussion and take-home messages
- Finance: linked into local rebate programs

Some Elements of Our Edutainment Program

- Guide with 30+ easy to implement games, activities and competitions
- Products to underpin these, including wall stickers as behavior change prompts
- Eco Trump card game



Measuring Impact of the Camps Pilot

- Like the program, our evaluation approach holistic
- Our goals were to quantify real water savings and behavioral changes
- Sources of data:
 - 1. Baseline and follow-up surveys of camp staff and counselors
 - 2. Baseline and follow-up surveys of campers' parents
 - 3. End of camp **feedback** forms completed by campers
 - 4. Participant observation conducted by CG staff
 - 5. Interviews with key staff at camps and at CG
 - 6. Information related to hardware removed and products retrofitted
 - 7. Where available, water meter and wastewater flow data
 - 8. Where available, electricity bills

Measuring Impact of the Camps Pilot

- Evaluation of the camp pilot is still underway
- Final report expected **December 2014**; if you'd like to be notified, please give us your card and we'll add you to our e-newsletter
- Sources of data:

1. Baseline and follow-up surveys of camp staff and counselors

2. Baseline and follow-up surveys of campers' parents

- 3. End of camp feedback forms completed by campers
- 4. Participant observation conducted by CG staff results ready
- 5. Interviews with key staff at camps and at CG
- 6. Information related to hardware removed and products retrofitted
- 7. Where available, water meter and wastewater flow data

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Did children take up the three water-saving tips?

- After camp, did fewer children leave the water running while brushing teeth?
- Did campers take shorter showers after camp?
- Did fewer children flush the toilet for anything besides the 4Ps (poop, pee, puke and t-paper)?



Did children take up the three water-saving tips?

- Before camp 23% usually/almost always/always left the water running - after camp this had fallen to 15% (p=0.074)
- After camp, children tended to take shorter showers (p=0.042)

Ves!

- Firstly, more children took shorter showers (≦5 min.) after camp (27%) than before (22%)
- Secondly, fewer children took long showers (16-20 min.) after camp (6%) than before (11%)
- No change in children not using the toilet as a trash can, since before camp the vast majority didn't do this
 - Interesting to see on-site change at one camp, which experienced less trash in their wastewater



Did children talk more about water-saving with family and friends?

- After camp, did children talk more about saving water?
- After camp, did children encourage more their family/friends to save water?



Did children talk more about water-saving with family and friends?

- Before camp 15% of children sometimes talked about saving water after camp this increased to 23% (p=0.012)
- Before camp 37% of children encouraged their family and/or friends to save water - after camp this had increased to 49% (p=0.012)



Did parents learn anything from their children?

- After camp, did families' increase their efforts to save water?
- Did parents estimate per capita water use more accurately after camp?



Did parents learn anything from their children?

- Families' efforts to save water increased after camp the proportion who did not try to save water had fallen from 17% before camp to 10% after camp (p=0.031)
- Parents' per person daily water use knowledge improved after camp - before camp the average (median) was 20 gallons while at follow up it was 30 gallons, which is still a long way off from the actual 80-100 gallons range (p=0.037)

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Notes and Caveats

• To note

- We used a matched sample; i.e., those individuals in our sample (about 140) completed both the baseline survey and the follow-up survey, which means we can be confident that changes we've seen are not due to differences in respondents at baseline and at follow-up
- The changes are modest but significant, which should be expected given that the water-saving program was only a tiny part of the camp experience.
- Used **p=0.1 as cutoff** point because of the small size of the sample
- Caveats
 - We were unable to set up a control, which means we cannot be 100% sure that the changes we've seen are 100% due to the CG program. Factors such as weather, media coverage of drought, etc. may have had some influence
 - It also is possible parents felt they should report improvement after camp; however, we doubt this because energy and waste behaviors we asked about did not change

Next Steps



Mayor's Certificate of Commendation

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Camp

In Grateful Recognition of Your Conservation Action Plan

Congratulations on your Conservation Action Plan that is comprised of: behavior change stickers, Israel initiative stickers, shower timers, rain barrels, compost and Gabi Trumps. Congratulations on your efforts to educate our youth about conservation and reducing our carbon footprint. Many thanks for a job well done!

You all are a part of what makes the City of Hendersonville the wonderful place it is to live, work and visit.

Barbara S. Voek

Barbara G. Volk, Mayor

