Let’s make THE chair!

Goal:
Encourage children spend more time outdoors

Product:
Cardboard chair “Cardair” (+ Activity making a personalized cardboard chair)

Client:
Xraise, the Outreach program at the Cornell Laboratory for Accelerator-based Sciences & Education
http://xraise.classe.cornell.edu/

Audience:
Children (age 5 to 7)

Gap (based on interviews and literature):
Currently, the Xraise program occupies a doublewide trailer called the “eXploration” station, located behind the Wilson Synchrotron Lab on Cornell’s Ithaca campus. Despite the enthusiasm and engagement in science that the space supports, the station poses some health-related issues. One of the issues brought up during interviews was the lack of support for connecting with nature. Two bushes in front of the station were trimmed recently, and one bench has been dilapidated. Although the program offers some outdoor activities, such as launching bottle rockets, making bubbles, team building, touring resources around campus, and a picnic, it is difficult to spend time outdoors spontaneously. Children would spend more time in nature if there were some seating areas.

The extant research highlights positive impact of nature on children, from physical to psychological, and introduces some interventions, like implementing park and exercising, to increase opportunities to connect with nature. Despite the close relationship between children and nature, a myriad of studies often neglect “the role of children as stakeholders in the environment” (Barratt Hacking et al., 2007, p.532). Childhood environment research in UK indicates that there is “a gap between what children know about, and want for, their local environment, and the extent to which they are able to take action to achieve this” (Barratt Hacking et al., 2006, p. 132). Indeed, current data have a gaping hole that there has not been investigation in participatory interventions in which children are actively involved in environmental behaviors. Through this project, I intend to introduce a
participatory activity that engages children to make their own chairs to solve an issue of disconnection from nature. By upcycling cardboards and materials available in the “eXploration” station, the process of making a chair is sustainable in environmental scale. A participatory experience of creating a personalized, portable, and lightweight chair would encourage children to spend more time outdoors.

![Materials in “eXploration” station that can be upcycled to make chairs](image)

**Evidence-Based Approach:**

Human contact with nature may influence health in multiple pathways, such as physical activity, social cohesion, and stress reduction (Hartig et al, 2014). In fact, the notion that prescribes nature to children is a new strategy to improve health by curing “nature deficit disorder.” Instead of demanding intense outdoor activities, lifestyle interventions, which are moderate forms of activities such as walking and using the stairs, have been suggested to be more conducive with increasing the level of physical activities (Frank et al, 2003; Kerr et al, 2004). For children, in particular, lifestyle interventions may be interpreted as a variety of creative outdoor plays and child-planned activities (Henniger, 1994). Therefore, easily accommodating green meeting places with portable outdoor chairs may increase spontaneous chances for outdoor activities (Skar & Krogh, 2009).

Although making an outdoor chair itself may not be considered as a moderate level of physical activity, the product from this activity prompts children to be more physically active, because time spent outdoors is associated with increased physical activity (McCurdy et al, 2010). Research on garden intervention demonstrates that children’s physical activity has significantly increased in the outdoor garden lessons, which lead to more varied movements, than in indoor lessons (Wells et al, 2014). Moreover, 10-15 minutes of sun exposure can resolve vitamin D deficiency which may lead to a number of diseases, such as diabetes, osteoporosis, and cardiovascular disease (McCurdy et al, 2010). In addition to promoting physical health, spending more time outdoors is associated with psychological well-being of children. Children with attention deficit hyperactivity disorder (ADHD) were found to function better in green settings and their ADHD symptoms were less severe (Faber Taylor et al, 2006). Moreover, nature buffers the effect of stressful life events on children (Wells & Evans, 2003). Overall, findings indicate that exposure to nature enhances physical and mental health of children. Therefore, I propose this activity of making a cardboard chair as the tool to bridge the gap between the lack of support for actively connecting with nature and importance of exposure to nature.

**Usability:**

- Ingredients for this activity are simple and sustainable (a 20”x20”x24” unfolded cardboard box, wood glue, tape, ruler, x-acto knife, and design plan/drawing).
- Children can personalize designs and self-assemble their own chairs.
- Children may also use my sample plan of my chair design (at the bottom) as the template. The height of the chair is 10 3/8” and the angle of the back is 110°.
Sample plan of my chair
References


