An underdeveloped ability of individuals to identify and regulate their own energy poses a challenge for global environmental awareness, in addition to personal development and well-being. This study investigates whether child-nature interaction in a nature preschool can help foster self-regulation in young children. The University of Washington’s Arboretum shelters an outdoor preschool named Fiddleheads Forest Nature Preschool. My yearlong internship with this program has involved assistant teaching twice a week, in addition to collecting video footage of children interacting with nature (and other children) based on a randomized time sampling methodology. For the purposes of this study, I have analyzed 74 clips of video data through the lens of five established criteria for self-regulating behavior, first introduced by Roy Baumeister and Kathleen Vohs (2011): (1) Attain, maintain and change one’s level of energy to match the demands of a task or situation, (2) Monitor, evaluate, and modify one’s emotions, (3) Sustain and shift one’s attention when necessary and ignore distractions, (4) Understand how to sustainably engage in social interactions, and (5) Connect with and care about what others are thinking and feeling. Of these clips, over 50% of them demonstrate one or more of these five components of self-regulation, taking forms like conflict mediation, physical risk-taking, continued focus, alone time, sharing of tools for emotional calmness, and more. Results show a connection between these behaviors and the natural features that the classroom affords. These results can provide design implications for the emerging North American movement toward outdoor nature schools.