

**Title: Evaluation of Prototype for Simulation for Environmental Exposure Education (SE3)**

**NCT #: 05875467**

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## Study Protocol

### Objective:

This study was designed to establish the technical merit and feasibility of producing and using a serious game to improve environmental health literacy among young people. We conducted play tests and a simultaneous evaluation with fifty middle school age participants from communities disproportionately impacted by environmental risk. The objective was to test the usability and playability of the prototype and assess the games impact on outcomes.

### Design

This is a single arm study with all participants receiving the intervention. This intervention is a prototype of online game, about 50 minutes in duration. The online game provides gameplay that allows the user, with a gameplay narrative, to identify and remove sources of environmental hazards in the home environment. Participants play the prototype game for about 50 minutes at which time the intervention is complete. Participants will take an online pre-test prior to the intervention, have one week to use the intervention, and complete a similar online post-test after using the intervention.

### Methods

*Recruitment and consent.* Under the supervision of the Principal Investigators, subjects were recruited through expert advisors on the project. One middle school teacher (two classrooms) made the opportunity available to her classes, utilizing two class sessions. The opportunity was announced to students, and they were provided with consent forms to take home for parent/guardian signature and an assent form for participant signature. The form included information on whom to contact if the subject has any questions about the study. Fifteen remote testers were recruited through expert advisors on the project. They forwarded the study information to teachers to pass along to students who may want to participate. Interested parents/students were contacted by study staff and had the study and procedures explained. If they chose to participate, they returned signed consent/assent forms. All materials and consent forms described the nature of the project, potential risks, payment offered, other potential benefits, and participant rights. They made clear that participation is voluntary, can be discontinued by the child or parent at any time. Project staff were available to answer any questions about the study in person for classroom participants and via phone or email for remote participants.

*Study participation.* For remote tests the participant completed a short online pre-test assessment (environmental health knowledge and intentions), was provided with a tablet if needed and was allowed to use the game for one week. At the end of the one-week period they completed a brief online posttest assessment.

In-person play testers participants completed a short online pre-test assessment (environmental health knowledge and intentions). During class they used the game and provided feedback on game play. One week later they played the game again and took a post-test survey. For all participants the game collected metrics on usage, player performance, and conditional knowledge including the ability to apply concepts in context.

Participants received a \$100 gift card at the conclusion of the study.