



# Registration Form

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## TEAM INFORMATION

Team Name: Britney Azcona

Project Title: BLOX3R

Department: Electrical Engineering

Faculty Advisor: Tim Lei

Team Member: Britney Azcona

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## PROJECT INFORMATION

### Description:

BLOX3R is a children's math app for smart devices which integrates the use of physical number blocks providing children with a tactile learning experience.

### Abstract:

Many educational math apps are currently available for children; however many of these apps have the child use fine motor skills and minimal body movement. The BLOX3R app integrates physical number blocks for children to use and interact with in conjunction with the smart device. This provides tactile learning, integrating body movement to provide a better experience for the child.

The integration of hardware and software is accomplished using Passive Radio Frequency Identification (RFID), Bluetooth communication and a math application developed via Unity software. A RFID tag is placed on each object/block to uniquely identify them. These tags are read via a scanner connected to a microprocessor. A HC-05 Bluetooth communication device is connected to the micro-processor. Using a Universal Asynchronous Receiver-Transmitter (UART) for serial communication the Bluetooth and micro-processor send information to the smart device. The game is programmed to receive and respond to the information provided.