Project Requirements Sheet

Sponsor Requirements	Engineering Requirements	Justification
2	Device must use open source software.	Project should be expandable by others after the team finishes.
6	Device must have low power consumption.	Circuits will be enclosed inside a sealed shell, and should have a long enough operation on a single charge for a class session.
7,10	Device must be easily portable.	Target audience for the product is young to middle aged children.
7,10	Power will be provided by external power or rechargeable battery pack.	Device parts will be enclosed inside blocks, and user will not have to open any block to operate device.
8,10	Block function selection must be clearly visible.	Users cannot properly operate or build programs without knowing what each block represents.
10	Each block must be able to indicate proper operation and placement.	Users will need feedback while developing code to learn from their mistakes.
4,9	Essential programming elements must be represented in system by a block.	Functional programs require standard programing elements
4,9,10	Must compile and run simple programs.	Creating programs is the main function of the system, and necessary for instruction.
10	Device must produce an output based on the program compiled.	Users must have a useable/knowable result.
1,2,3	Circuits must be built from common components.	Custom ordered parts raise unit price and prevent product from being rebuilt without redesign.
1	Part selection for devices will be aimed at extended prices.	Final product will involve a larger number of blocks, and extended prices will be a better representation of actual production costs.

Sponsor Requirements

1	Low hardware production costs.
2	Open Source Hardware Design & Board (can use “closed source” components: ASICs, uC, etc.)
3	Must Have a Multi-Chip solution – e.g. no single SoC;
4	Fundamental grammar functioning, assignments, and binary operators.
5	Open software repository.
6	Low power operation.
7	Built in power source or power pack.
8	Blocks should have multiple possible functions.
9	Control structure blocks.
10	System must be accesible to novice coders, and is intended for use in a class room, by children of approximatley 10-14 ears of age.