Botball Lesson Plan

**Title:** Programming: Functions

**Concept / Topic to Teach:** Using functions for repeated actions

**Standards Addressed:**

**Goal:**

By the end of this activity, students will be able declare and implement functions for repeated actions.

**Anticipatory Set:**

This is important because using functions makes a program easier to read and write.

**Time Required:**

**Required Materials:** Computer with KISS-IDE, Demo bot, download cable

**Activity Procedure:**

1. Open KISS-IDE
   1. Target: CBCv2
   2. New Program
2. Watch Video
3. Try it out
   1. Write a function for turning
   2. Write a function for driving straight

**Assessment:**

Students write code to drive robot in a square.

Code should include:

1. Function prototype
2. Function call inside of main statement
3. Function definition after the main statement

Should be no more than 8 lines of code inside the main statement.

**Extension Activities:**

The above assessment with 4 lines of code in the main statement.

**Functions Handout**

**Before main statement:**

Function type. Value that the function returns, will be “void” if not returning a value.

Function name. Name the function.

Values to pass into the function. Leave blank inside parenthesis if none apply.

Semicolon

**Inside the main statement:**

Call the function by its name, include the necessary values

**After the main statement:**

Repeat the prototype from above the main statement

Replace the semicolon with block of code

**Example**

void straight(int speed, int distance);

int main(){

straight(300,1000);

}

void straight(int speed, int distance){

clear\_motor\_position\_counter(0);

clear\_motor\_position\_counter(3);

mtp(0,speed,distance);

mtp(3,speed,distance);

bmd(0);

bmd(3);

}