Botball Lesson Plan

**Title:** iRobot Create: Basic Movement

**Concept / Topic to Teach:** Driving the iRobot Create without sensors

**Standards Addressed:**

**Goal:**

By the end of this activity, students will be able to drive the Create without using sensors.

**Anticipatory Set:**

This is important because driving without sensors is the stepping-stone to driving with sensors. With or without, driving the Create is necessary to a successful robot entry.

**Time Required:**

**Required Materials:** Computer with KISS-IDE, CBC, iRobot Create, download cable

**Activity Procedure:**

1. Open KISS-IDE
   1. Target: CBCv2
   2. New Program
2. Watch Video
3. Try it out
   1. Drive specific distances using sleeps
   2. Drive specific distances using get\_create\_distance()

**Assessment:**

**Extension Activities:**

**iRobot Create: Basic driving handout**

create\_connect(); You must include this command if you wish to use the create

create\_full(); You probably want to use this command, it keeps the create from turning itself off if it thinks that it is in danger of falling off the board.

create\_drive\_direct(left wheel speed, right wheel speed); speed from -1,000 to 1,000

create\_drive\_straight(wheel speed); both wheels will turn this one speed.

get\_create\_distance(.01); returns the distance in millimeters that the create has travelled

Because it returns an integer, some of the precision is lost. For instance, 11.9 becomes 11.

Each time this function is called, it will truncate a number, so the more you use, the less accurate it becomes. When using this in a loop we recommend sleeping for 5/wheel speed. If travelling at 500, you should sleep for 5/500 = .01 seconds before taking the next reading. This number goes inside the parenthesis.

set\_create\_distance(give it the number); This resets the value of the distance counter to whatever you tell it.

set\_create\_distance(0); will set the counter back to 0.