Activity

Once all the Output Components catch their balls the Code student tells the class what type of output component the Output Component line represents and the Output Components strike a pose depending on the signal they received. In the example below poses for LEDs and Servos are shown, but students should be encouraged to make up their own output poses or actions. For example, to represent a HIGH value with motor component outputs students might run in place as fast as they can.

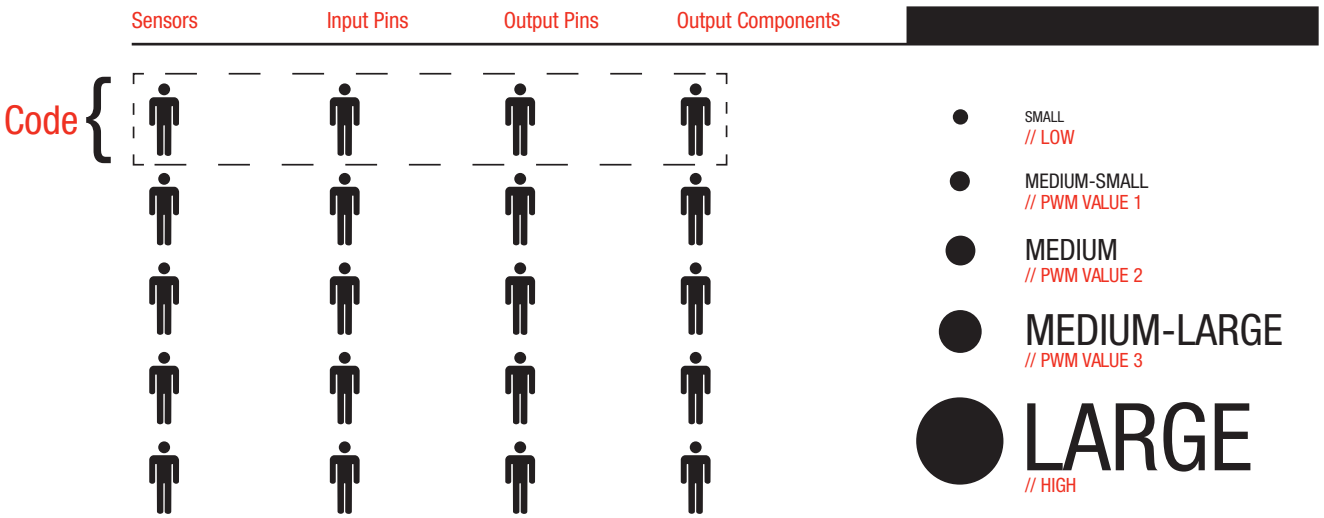
Once the Output Component line has finished, the balls are thrown back to the Sensor line, the Code students are replaced by another student in their line and the process starts over. Once every student has had a chance to be the Code student the lines should switch so eventually everyone has a chance to play each part of the input/output process.

This version of the input/output activity is the simplest form of the activity. If students are comfortable with this version and want more of a challenge there are many ways to complicate the activity.

Give the Output line a set of balls as well as the Sensor line and place a piece of code between the Input and Output lines. The code should be a map command switching the Output signal. For example use:

map(signal, 0, 1023, 255, 0);
so that the Output line must throw a large ball (HIGH signal) when the Input line receives a small ball (LOW signal). You can then switch this code through out the game.

Get rid of the Code students and have the Sensor line choose which ball they will throw. Each student can yell out what their line's value equals depending on the size of the ball they catch. This version is a little more fun but will also be a little more chaotic.



Additional thoughts: This is a great activity just prior to computer lab time. Instead of having kids bouncing off the monitors they will be calmer and ready to sit still applying the concepts they just solidified through physical activity. This is great for kinesthetic learners in particular.