**THE LEGO GAME**

**Instructor’s Edition**

* Items in *italics* not told to students the first time
* Illustrations of what the parts should look like not shown to students the first time

**Materials Needed**

For each assembly line of five (5) students:

* 4 X 2 blocks (2) (any color, but should all be uniform) “Color 1”
* 4 X 2 block (1) (any color, but should all be uniform) “Color 2”
* 2 X 2 block (1) (any color, but should all be uniform) “Color 3”
* Rubber bands able to wrap around the assembly
* 4-6 2 X 2 and 6-8 4 X 2 blocks that are NOT the “right” color (i.e., not Colors 1, 2, or 3)
* Potholder (or other kind of glove, e.g., nitrile glove)

Note: For the sake of the illustrations:

* Color 1 is blue
* Color 2 is red
* Color 3 is grey
* Defective component color is pink

**Step 0:**

Let the students play with the LEGOs a little to familiarize / refresh them on how they work.

**Step 1:**

Students are assigned a workstation (1-5) where they are seated. Ideally, there should be

Each student at a station is given a bin of parts, whether bricks, a pile of rubber bands, and a set of work instructions. In those bins will be a few wrong parts (i.e., the wrong color), and/or insufficient parts.

* Stores of blocks will be elsewhere (front desk).
* The tools (potholder gloves) will be stored elsewhere (front desk).

A lot of 10 pieces is needed. Each station is told that it can only pass a lot of 10 to the next station; no less.

When students realize they have insufficient / wrong parts, they need to go get the pieces themselves. Same with the “tools” needed to do the assembly.

**Work Instructions:**  Instructions in italics are NOT told to the assemblers, but are only on the Station 5 QC document.

A lot of 10 assemblies is required: No lot can be passed on incomplete.

Station One: Attach a 2 X 2 “Color 2” block to a 2 X 2 “Color 2” block. 2 X 2 block on the blue

pegs, *on one end*.

Station Two: Attach a 4 X 2 “Color 1” block on top of the first 4 X 2 block on the remaining pegs,

*centered so that both ends overhang.*

Station Three: Using a potholder to hold the existing assembly, add on a 2 X 4 RED block, *covering*

*all the exposed pegs of the previous level. Note that while there are three lines there are*

*only two potholders.*

Station Four: Put a rubber band around the whole thing to hold it together. *The rubber band will go*

 *around the assembly three times.*

Station Five: Inspection. Rejects are passed back to the prior station with “It’s wrong.”

*Only this station knows what the final assembly should look like (picture which they can*

*show ONLY when passing things back upstream).*

**Step 2:**

Debrief the students. Hand out post-it pads.

On whiteboard, write “TIM WOOD” – each category broken down (e.g., Transportation, Inventory, etc.) plus “General Observations”. “TIM WOOD + 1”.

Let the students write down observations of the existing line for each of the TIM WOOD + 1 categories.

Create an Affinity Diagram with students putting each observation in the appropriate space.

Talk through each one. Sort and organize.

**Step 3:**

Students then write ideas down to improve the line, again using TIM WOOD + 1 as an Affinity Diagram guide.

Go through each TIM WOOD + 1 category.

Using these as a guide let the students redesign the line and flow.

**Step 4:**

Redo the exercise, taking the students’ ideas into account – let them redesign the exercise.

**Step 5:**

Debrief and discuss what happened – and the improvements made.

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