Write It Do It #1: Stereotypical Build - Images

Front view:
Write It Do It #1: Stereotypical Build - Materials

(since some of these materials may be difficult to find, the notes in the parentheses refer to the rubric and any changes that would need to be made to it if this build is recreated with different materials)

- 1 plastic cup
- 1 paper plate

- 1 pink circle sticker
- 1 green square sticker
- 1 orange diamond sticker
  (for the stickers: if needed, change 3a, 3b, 3c, and 3d)

- 1 green pipe cleaner
- 1 purple pipe cleaner
- 1 spool

- 1 clip
  (original build used a refrigerator clip; if a binder clip or other type of clip without a magnet is used, omit 4j)

- 9 small beans
- 6 large beans

- 3 toothpicks
  (original build used toothpicks where one side is sharp and the other is not; if toothpicks where both sides are pointy are used, omit 5f and 5i)

- 1 wooden cylinder (5c)
- 1 plastic crab (5k and 5l)
- 1 blue push pin (5o and 5p)
- 1 orange push pin (5s and 5t)
- 1 metal washer (change 5p)
- 1 large ring (change 5t)
- 1 blue plastic rabbit/frog (6a and 6b)
- 1 pink plastic rabbit/frog (6h and 6i)
- 1 yellow star-shaped sticky note (6c and 6d)

- 1 green dot
- 1 blue dot
- 1 red dots
  (for the dots: if needed, change 6e, 6f, and 6g)
Write It Do It #1: Stereotypical Build - Rubric

Each line is one point. The orientations used in the rubric are based on the front or top perspective images. Partial credit may be added, especially if only the writer’s portion is being graded, not the builder’s.

1. Paper plate
   a. ____ Upside down
   b. TOTAL: ____ / 1

2. Cup
   a. ____ Upside down
   b. ____ Placed in center of plate
   c. ____ “SOLO” text on cup is on left and right
   d. TOTAL: ____ / 3

3. Stickers
   a. ____ Pink circle on first “O” in the word “SOLO” on left side of cup
   b. ____ Green square on first “O” in the word “SOLO” on right side of cup
   c. ____ Orange diamond on front of cup
   d. ____ Orange diamond approximately on the same vertical level as the circle and square
   e. TOTAL: ____ / 4

4. On top of cup
   a. ____ Green pipe cleaner folded into shape of a straw/“L”
   b. ____ Spool on center of long portion of pipe cleaner
   c. ____ Spool and green pipe cleaner are angled correctly: if originally horizontal, 45 degrees clockwise from the horizontal (TIEBREAKER 1)
   d. ____ Bent portion of straw points down towards the plate
   e. ____ Purple pipe cleaner bent into circle
   f. ____ Purple pipe cleaner approximately same size as top of cup (when cup is upside down)
   g. ____ Purple clip holds purple pipe cleaner in circular shape
   h. ____ Purple circle placed onto cup
   i. ____ Purple clip on front of cup
   j. ____ Purple clip has handle with hole closest to ceiling, handle with magnet closest to table (TIEBREAKER 2)
   k. TOTAL: ____ / 10

5. On plate
   a. ____ Small bean at 12:00
b. ___ Large bean at 1:30

c. ___ Blue wooden cylinder lies on rim between 1:30 and 3:00

d. ___ Small bean at 3:00

e. ___ First toothpick resting on plate between 3:00 and 4:30

f. ___ First toothpick sharp end points towards cup

g. ___ Large bean at 4:30

h. ___ Second toothpick resting on plate between 4:30 and 6:00

i. ___ Second toothpick sharp end points away from cup

j. ___ Small bean at 6:00

k. ___ Crab sitting on raised part of plate in front of cup at 6:00

l. ___ Crab is standing up, not lying flat

m. ___ 5 small beans at 7:00

n. ___ Small bean at 8:00

o. ___ Blue push pin in raised part of plate at 8:00

p. ___ Metal washer around blue push pin

q. ___ 3 large beans at 9:00

r. ___ Third toothpick pushed into raised part of plate and standing vertically at 9:00

s. ___ Orange push pin in raised part of plate at 10:00

t. ___ Pink ring around orange push pin

u. ___ Large bean at 10:30

v. TOTAL: ___ / 21

6. On table

a. ___ Blue rabbit/frog at 4:30

b. ___ Blue rabbit/frog faces away from cup

c. ___ Yellow star sticky note at 8:00

d. ___ One point of star points towards cup **(TIEBREAKER 3)**

e. ___ Green dot on point of star left of the one pointing towards the cup

f. ___ Blue dot on point of star right of the one pointing towards the cup

g. ___ Red dot between two points of star farthest from the cup

h. ___ Pink rabbit/frog on star

i. ___ Pink rabbit/frog has hands on points of star farthest from the cup **(TIEBREAKER 4)**

j. TOTAL: ___ / 9

FINAL TOTAL: ___ / 48
Write It Do It #2: Balance Challenge - Images

Front view:
Write It Do It #2: Balance Challenge - Materials

(since some of these materials may be difficult to find, the notes in the parentheses provide suggestions for alternate materials and mention any changes that would need to be made to the rubric if different materials are used)

- 1 arch-shaped wooden block
  (suggested replacement: rectangular wooden block; if needed, change 1a)
- 1 wooden triangle
  (suggested replacement: flat rectangular wooden block; if needed, change 1b and 1c)
- 1 red paperclip
- 1 yellow paperclip
- 1 white paperclip
- 1 pink paperclip
  (change/omit 1d, 1e, 1f, 1g, 1h, 5g, and 6f if any color changes/omissions)
- 1 plastic flower shape
  (suggestion: if recreating, either omit 2 completely, or use beads in another way, maybe on a pipe cleaner ring or placed inside a bottle cap)
- 1 wooden cylinder
- 1 toothpick
- 1 rubber band (if color changed, change 3c)
- 1 yellow paperclip (if color changed, change 3f and 3g)
- 2 metal bolts
- 1 rectangular wooden block
- 1 black checker
- 1 red lego cylindrical cross piece
- 1 yellow lego cylindrical cross piece
  (suggestion: if recreating, either omit 4d and 4e completely, or use a small wooden dowel with the end colored or with rubber bands around one end)
- 1 red 2x4 lego
- 1 gray 2x4 thin lego
- 1 small binder clip
- 1 empty tape roll
- 1 ping pong ball (if needed, change 6b, 6c, 6d, and 6e)
- 1 white chess pawn (if needed, change 6e)
Write It Do It #2: Balance Challenge - Rubric

Each line is one point. The orientations used in the rubric are based on the front or top perspective images. Partial credit may be added, especially if only the writer’s portion is being graded, not the builder’s.

1. On table
   a. ___ Wooden arch is oriented correctly, with largest flat face on table and longest side going front to back
   b. ___ Orange wooden triangle is oriented correctly, with the largest face flat on the table, the longest leg parallel to the longest side of the wooden arch, the shortest leg farthest back, and the hypotenuse going from front left to back right
   c. ___ Orange wooden triangle is placed about 1 cm to the right of the wooden arch
   d. ___ Chain of paperclips has correct colors: red, yellow, white, pink from left to right
   e. ___ Chain of paperclips forms a right angle like a top left corner where the red+yellow paperclips go front to back and the white+pink go left to right
   f. ___ Red and yellow paperclips lie on the table to the left of the wooden arch
   g. ___ White paperclip lies in the curved part of the arch
   h. ___ Pink paperclip lies on the orange wooden triangle
   i. TOTAL: ___ / 8

2. Light blue plastic flower shape
   a. ___ Flower shape oriented so lines in middle form an X, not a + (TIEBREAKER 1)
   b. ___ Green bead in top left circle of flower
   c. ___ Orange bead in top right circle of flower
   d. ___ Black ring around bottom left circle of flower
   e. ___ Yellow bead in bottom right circle of flower
   f. ___ Light blue plastic flower shape placed in center of blue wooden block
   g. TOTAL: ___ / 6

3. Red cylinder
   a. ___ Toothpick, parallel to the red wooden cylinder, is tied tightly to the front of the cylinder
   b. ___ Toothpick pokes out a tiny bit above the cylinder
   c. ___ Rubber band used to tie paperclip is green
   d. ___ Rubber band used to tie paperclip is about 1 cm from the top of the cylinder
   e. ___ Red wooden cylinder stands vertically on the orange triangle behind the pink paperclip (TIEBREAKER 2)
   f. ___ Yellow paperclip hooked onto top of toothpick
4. On arch and triangle
   a. ____ Two metal bolts stand up straight on the flat parts of the wooden arch, with hexagonal ends on bottom
   b. ____ Blue wooden block placed on top of bolts
   c. ____ Black checker placed on front of blue wooden block
   d. ____ Gray cross shaped rod has red and yellow pieces on left end, with red piece closer to edge
   e. ____ Rod placed horizontally so it lies with red and yellow pieces on blue wooden block, other end on red cylinder (TIEBREAKER 3)
   f. TOTAL: ____ / 5

5. Front structure
   a. ____ Red 2x4 lego oriented so long side is front to back
   b. ____ Thin gray 2x4 lego oriented so long side is front to back
   c. ____ Thin gray lego pushed into center of red lego so on its side, bumps point to right
   d. ____ White binder clip clipped onto top of thin gray lego so it covers the two center top bumps
   e. ____ Left handle of white binder clip is down
   f. ____ Right handle of white binder clip is up (TIEBREAKER 4)
   g. ____ This structure is placed in front of the main structure, to the right of the red paperclip
   h. TOTAL: ____ / 7

6. Left structure
   a. ____ Empty tape roll placed on circular side on table
   b. ____ Orange ping pong ball has rubber band wrapped around its equator (TIEBREAKER 5)
   c. ____ Orange ping pong ball has text on top
   d. ____ Orange ping pong ball placed onto empty tape roll
   e. ____ White chess pawn placed on top of orange ping pong ball
   f. ____ This structure is placed to the left of the main structure, to the left of the yellow paperclip
   g. TOTAL: ____ / 6

FINAL TOTAL: ____ / 39
Write It Do It #3: Illegal Lego Techniques - Images

Top view:

Front view:
Write It Do It #3: Illegal Lego Techniques - Materials

(this build may be very difficult to recreate if you do not have Lego and K’nex pieces; if any changes are made, an entirely new rubric may need to be created)

Legos:
- 1 6x12 green lego plate
- 1 6x12 gray lego plate
- 3 blue 2x4 legos
- 1 green 2x4 lego
- 1 yellow 1x6 lego
- 1 yellow 2x3 lego
- 1 yellow 2x4 lego
- 1 2x3 red lego
- 1 2x4 red lego
- 1 2x4 black lego
- 1 1x2 orange lego
- 1 thin 1x2 yellow lego

K’nex:
- 2 small yellow 90 degree joints
- 1 large yellow 180 degree joint
- 1 small red 180 degree joint
- 1 large red 90 degree joint
- 1 small purple ladder-shaped joint
- 1 thin, medium length gray rod
- 3 thin, very short black rods
- 2 thin, short yellow rods
- 1 thick, long blue rod
- 2 thin, short green rods
- 2 orange connectors
Write It Do It #3: Illegal Lego Techniques - Rubric

1. Lego plates
   a. ____ Green lego plate is upside down
   b. ____ Green lego plate longest side goes left to right
   c. ____ Gray lego plate is upside down
   d. ____ Gray lego plate longest side goes left to right
   e. ____ Rightmost column of green plate clipped onto leftmost column of gray plate
   f. TOTAL: ____ / 5

2. W (described from a TOP VIEW where “top” is farthest away from viewer, “bottom” is closest to viewer)
   a. ____ First yellow 90 degree K’nex piece oriented so flat sides form a 90 degree angle like a bottom left corner
   b. ____ Gray rod inserted into vertical gap of first yellow K’nex piece
   c. ____ First black rod inserted into horizontal gap of first yellow K’nex piece
   d. ____ Small red 180 degree K’nex piece oriented so flat side is in front
   e. ____ First black rod inserted into left horizontal gap of red K’nex piece
   f. ____ Second black rod inserted into vertical gap of red K’nex piece
   g. ____ Third black rod inserted into right horizontal gap of red K’nex piece
   h. ____ Second yellow 90 degree K’nex piece oriented so flat sides form a 90 degree angle like a bottom right corner
   i. ____ Third black rod inserted into horizontal gap of second yellow K’nex piece
   j. ____ First yellow rod inserted into vertical gap of second yellow K’nex piece
   k. ____ First yellow rod attached to bottom gap of purple ladder-like piece
   l. ____ Second yellow rod attached to top gap of purple ladder-like piece
   m. ____ Orange connector in last row, third column HOLE of the green lego board
   n. ____ Orange connector through hole of red K’nex piece
   o. TOTAL: ___ / 13 **TIEBREAKER 2: HIGHER TOTAL FOR “W” SECTION**

3. First I (described from a TOP VIEW where “top” is farthest away from viewer, “bottom” is closest to viewer)
   a. ____ Red 2x4 lego oriented upside down, long side top to bottom
   b. ____ Red lego placed so bottom 3 rows of red lego are in rows 1-3, columns 9-10 GAPS of green lego board
   c. ____ Thin orange 2x1 lego oriented upside down, long side top to bottom
   d. ____ Orange lego placed into top two HOLES of red lego
4. D (described with a mix of TOP and FRONT views since the legos are upside down; “top” and “bottom” are used from a TOP view, “front” and “back” are used from a FRONT view)
   a. Yellow 6x1 lego oriented upside down, long side front to back
   b. Yellow lego in first visible column of gray lego board
   c. Green 2x4 lego oriented upside down, long side front to back
   d. Green lego first column, bottom 2 row bumps into first two rows of yellow 6x1
   e. Blue 2x4 lego oriented upside down, long side left to right
   f. Top half of green 2x4 bumps into left half of blue 2x4
   g. Yellow 2x3 lego oriented upside down, long side front to back and tilted
   h. Top left bump of yellow 2x3 into last row and last column of blue 2x4
   i. Another blue 2x4 lego oriented upside down, long side front to back and tilted
   j. Top half of blue 2x4 bumps into bottom 2 rows of yellow 2x3
   k. Red 2x3 lego oriented upside down, long side front to back and tilted
   l. Bottom half of blue 2x4 bumps into top 2 rows of red 2x3
   m. These three pieces (yellow 2x3, blue 2x4, red 2x3) are tilted to the right
   n. Yellow 2x4 lego oriented upside down, long side left to right and tilted
   o. Yellow 2x3 top left bump into last column of yellow 6x1
   p. Another blue 2x4 lego oriented upside down, long side left to right and tilted
   q. Blue 2x4 top left bump into bottom right of yellow 2x4
   r. Pieces are tilted so the blue 2x4 can fit into the red 2x3
   s. Blue 2x4 top right bump into bottom left of red 2x3
   t. All pieces are connected and form a D shape
   u. TOTAL: ____ / 21 TIEBREAKER 1: HIGHER TOTAL FOR “D” SECTION

5. Second I (described from a TOP VIEW where “top” is farthest away from viewer, “bottom” is closest to viewer)
   a. Big yellow 180 degree K’nex piece oriented so flat side on bottom
   b. Blue rod in vertical gap of yellow K’nex
   c. Big red 90 degree K’nex piece oriented so flat sides like the roof of a house
   d. Blue rod in vertical gap of red K’nex
e.  ___ Small green rod in left gap of red K’nex
f.  ___ Second small green rod in right gap of red K’nex
g.  ___ Orange connector in last row, second to last column HOLE of the gray lego board
h.  ___ Orange connector through hole of yellow K’nex piece
i.  TOTAL: ___ / 8 TIEBREAKER 4: HIGHER TOTAL FOR SECOND “I” SECTION

FINAL TOTAL: ____ / 55