

Write It, Do It B/C

National SO Resources:

<https://www.soinc.org/write-it-do-it-c>

<https://www.soinc.org/write-it-do-it-b>

Event Objective: One student will write a description of an object and how to build it, and then the other student will attempt to construct the object from this description.

Equipment Needs:

- Parts of the device. Examples can include:
 - Random items (styrofoam bowls, plates, beads, pipe cleaners, toothpicks, paper clips, etc.)
 - These seem to work the best AND are the most inexpensive!
 - K-Nex
 - Legos
 - Other items
- Enough parts will be needed to build one device for each writer to observe in the writing section AND one device for each team (builder)
 - If your schedule has 10 teams per time slot and 30 total teams, you need enough materials for at least 40 devices
 - You do NOT need enough parts for every writer, just the number of writers per time slot
- Timer/stopwatch for use in the writing portion (25 minutes) and the doing part (20 minutes)

Number of Volunteers Needed:

- Minimum of two volunteers as helpers
 - One to observe writers to make sure kids don't touch the devices and keep time
 - One to observe the builders and keep time and mark the time completed for individual builders
- For the state tournament you will be provided names and contact info for your volunteers and YESS team. It is required that you contact them prior to the tournament to relay any event-specific information.

Prior to the Event:

- Prior to the event, you will need to build the device that the students will be expected to recreate. Supervisors are encouraged to make a device with lots of parts - some easy, some moderately difficult, some very difficult. A difficult model will help separate the teams. A model that is too easy will result in lots of ties, and with the time of the build the main tie-breaker, this has been known to create frustration with students in the past as it turns into a "race" instead of a true written communication exercise.

- After creating the device, you will need to create a rubric for scoring the devices. A sample rubric and picture are attached at the end of this document. Points should be assigned for the following:
 - Proper color/size/object
 - Proper location
 - Proper connection to other objects
 - Proper orientation (if applicable)
- It is important to note that rule 3c - pieces that are connected correctly beyond an incorrect connection will be counted in the score and no penalty will be assessed for parts that were not used.
- Make sure to print off enough copies of the rubric to fill one out for every competing team.
- Create your models for the writers. This can be done prior to the competition or the morning before the event begins. Make sure all of the models are as close to exactly alike as possible and all follow the rubric exactly.
- Create an item inventory list and bags of materials for all of the builders. This can be done prior to the event. Be sure to bring extras of every piece in case you make a mistake in filling the bags of materials.

Scoring of Individual Teams: Use the rubric that you created to score the devices. One point assigned as above. The tie-breaker is shortest time in the build portion. Be sure to evaluate the written directions for each team - students who draw a subsection of the model must be ranked in Tier 2 (ranked behind all other teams who didn't draw a subsection of the model). Students who draw a picture of the model will be disqualified.

Day of the Competition:

- Establish which room will be the “writing” room and which room will be the “building” room. Cover ALL windows in both rooms and make sure to avoid allowing any students to observe the models from outside, as students who compete later in the day may get a huge advantage by seeing the model early (and if teams are actively trying to steal a look at the model, give them a stern warning and if it continues, consider disqualification for dishonesty).
- Set up the same number of models in the writing room as there are teams competing. Each writer should get their own model. While it is possible to use fewer models and have writers crowd around a few models, this tends to cause issues with teams bumping into each other as they move around to see other parts of the model. *Remember, students can NOT touch the models under any circumstances and remind the students of this often!*
- When students arrive to compete, separate the writers and the builders. The builders can quietly wait in the building room until it is time for them to compete. While waiting have the volunteer in the room give the students the parts bags and an inventory sheet and take inventory. If the bags are missing any items get that item to the student. This will prevent the issue of a team claiming they didn't have all of their parts after the competition - by putting the responsibility on the students to do an inventory before starting building, it is their responsibility. Give the writers instructions and announce that they have 25 minutes to

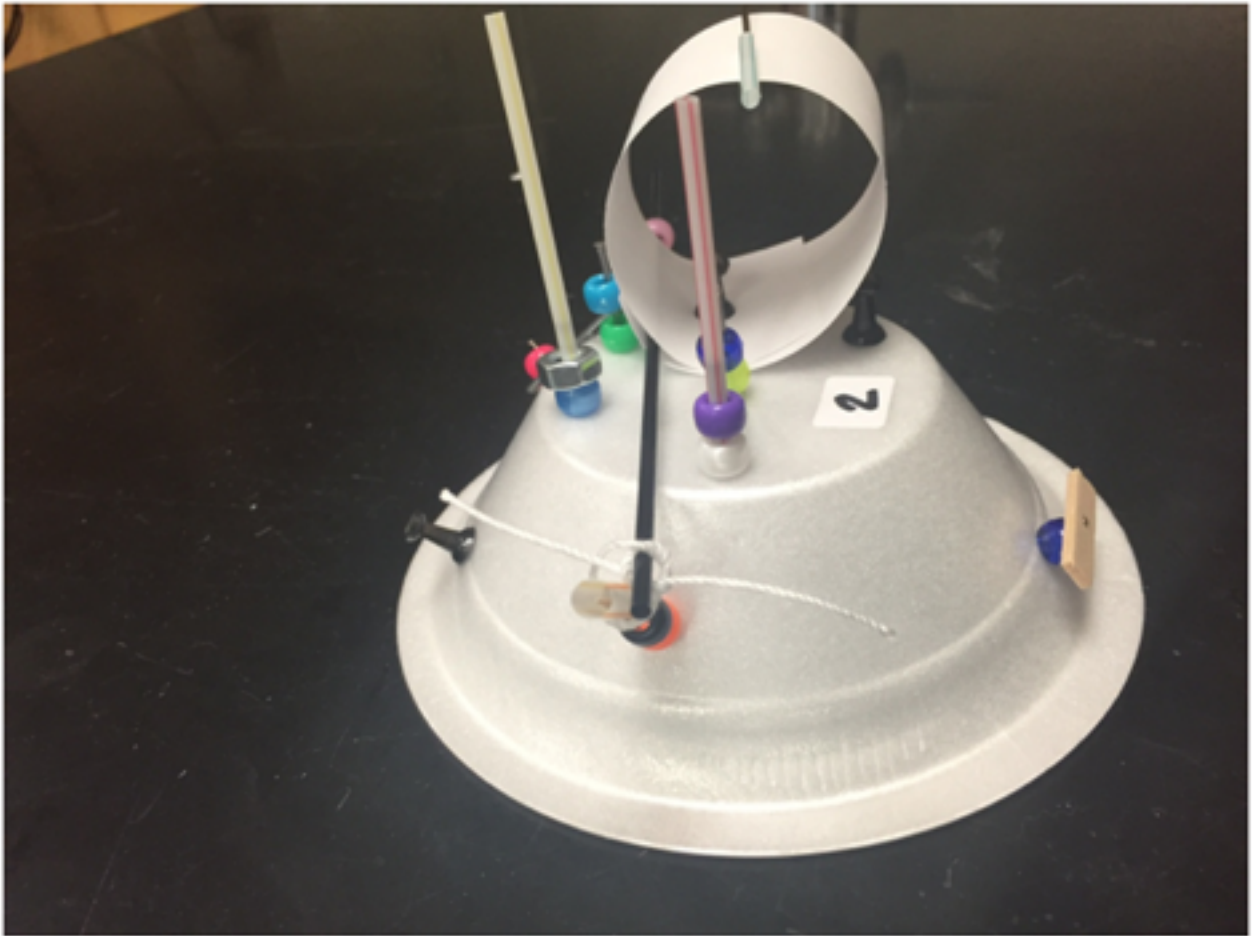
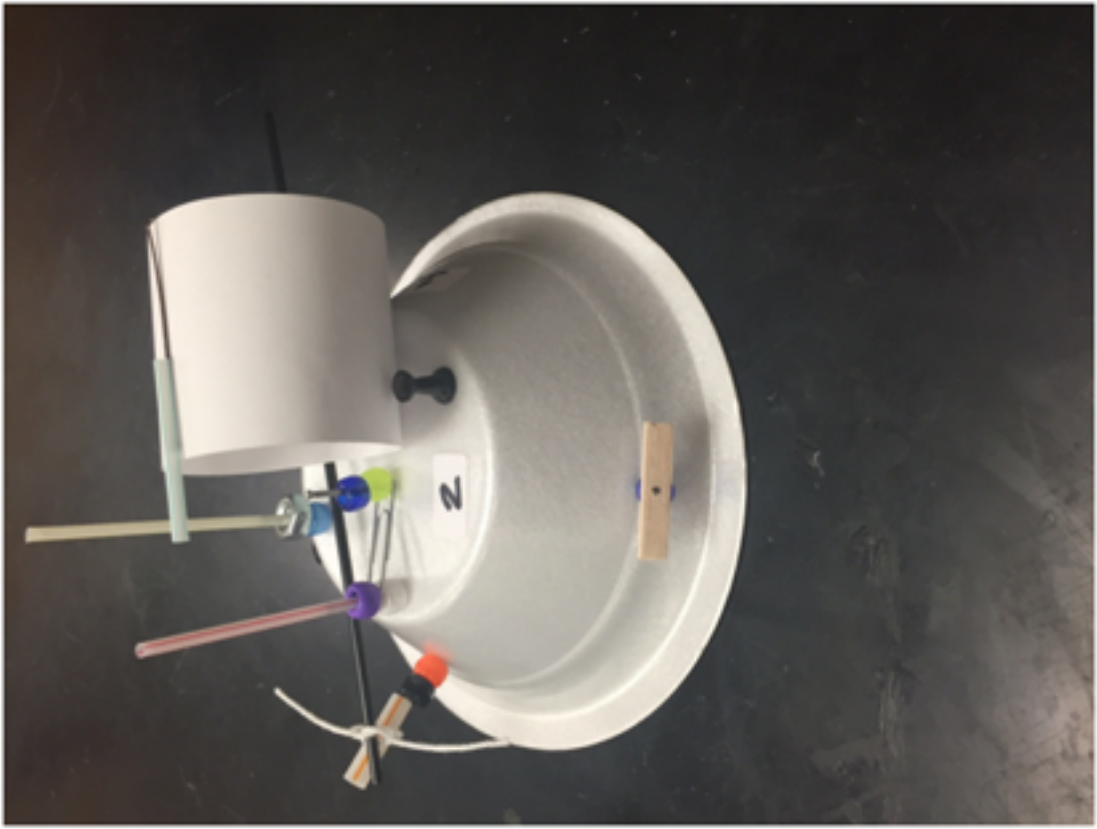
write and can not touch the devices. Give them 10- and 5- and 1-minute warnings and announce stop when time has expired.

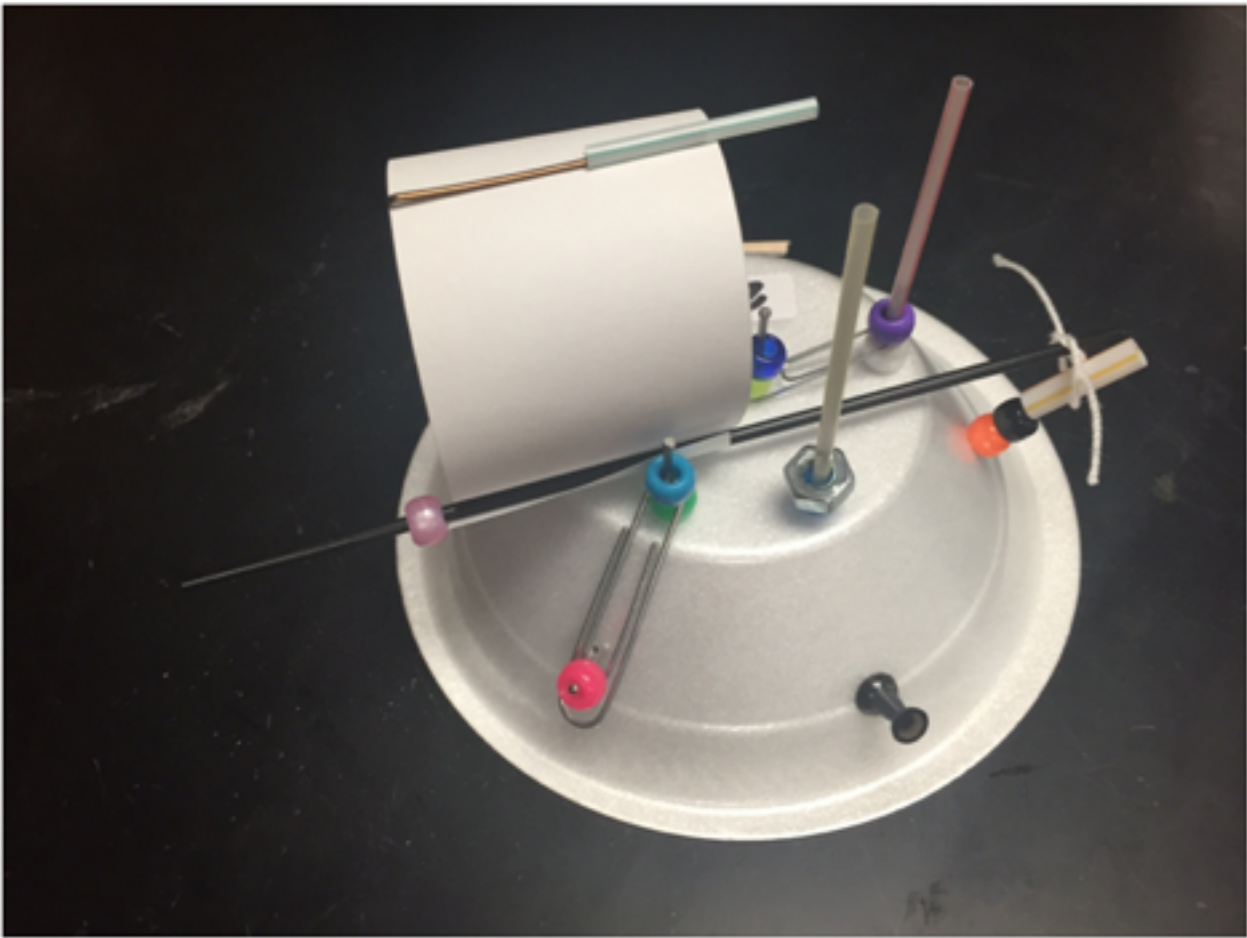
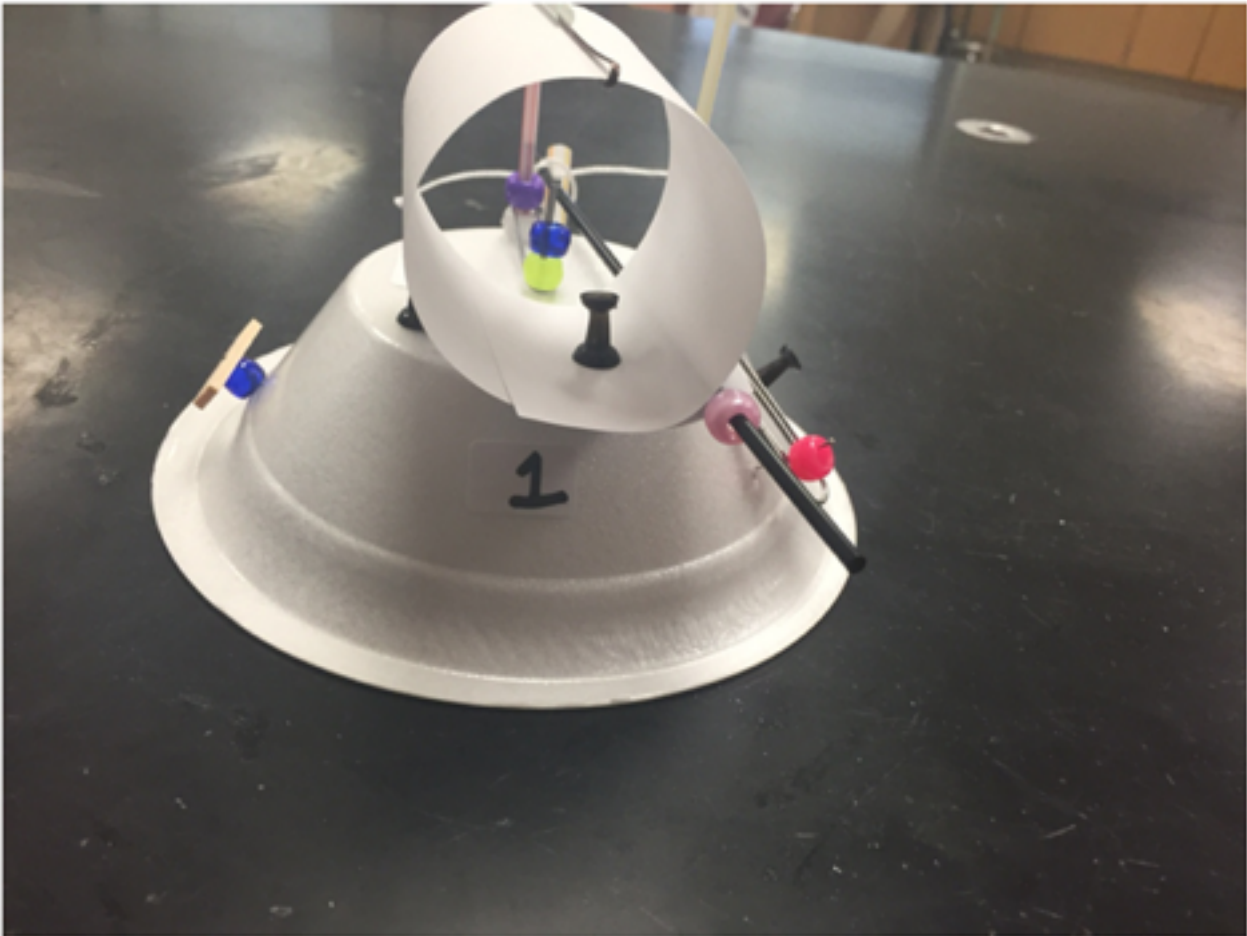
- Make sure that teams write their team name and number on the top of every page used. Take the pages over to the building room and give each team the written instructions and tell them that their 20 minutes have started. Give the students 10- and 5- and 1-minute warnings and announce stop when time has expired.
- Builders that finish early are to raise their hand and announce they are finished (announce this to students before starting) and mark their finish time on their written directions. This is used as a tie-breaker.
- Either score the devices before allowing the next build group of students into the room or move the devices to a safe location (making sure to NOT change anything) and finish scoring there. Supervisors are encouraged to take pictures of all built devices in case of arbitrations and/or other unexpected issues. After devices are scored and photographed they can be disassembled.

Scoring at End of Day: Write each team's score on the scorecard provided by the tournament director with high score winning. If tie-breakers are needed, add a 0.1 to the score of the team that finished building first. After all teams have competed, the models can be disassembled and the completed rubrics and scorecard should be taken to scoring to complete scoring.

Write It, Do It - National Science Olympiad, UW-Stout, May 2016
Division B
Event Supervisor: Andrew Hamm







Write It, Do It - Division B - Science Olympiad National Tournament - UW-Stout May 2016

Team Name: _____

Team Number: B _____

****Orient bowl so that 2 is upright facing you and balsa wood block front-center**

- _____ Bowl upside down
- _____ Push pin into side of bowl
 - _____ On crease of bowl
 - _____ Pointed end into bowl
- _____ Dark blue bead on push pin
 - _____ Bead is dark blue
 - _____ Bead contacts bowl on bottom
 - _____ Bead contacts balsa wood on top
- _____ Balsa wood block attached to pin
 - _____ Block connected to dark blue bead
 - _____ Pin head in contact with block
 - _____ Block oriented parallel to crease
- _____ Number 2 sticker attached on top of bowl
 - _____ Nearest side closest to wood & pin
 - _____ 2 is facing upright when wood facing
 - _____ Sticker parallel to wood block
 - _____ Sticker not overlapping edge of bowl
- _____ Black push pin to right of 2 sticker
 - _____ Pin is black
 - _____ Pinhead flush with bowl
 - _____ Pinhead contacts paper tube
- _____ Number 1 Sticker near 3:00 on side of bowl
 - _____ 1 is upright in this orientation
 - _____ Sticker midway between crease and top of bowl
 - _____ Sticker at 3:00
 - _____ Nothing connected to sticker
- _____ Toothpick near 9:00 on side of bowl at about 45° upwards
 - _____ Toothpick at 9:00 in this orientation
 - _____ Toothpick about 1/4 - 1/2 in to bowl
 - _____ Toothpick centered between crease and top of bowl
- _____ Orange bead on bottom of toothpick
 - _____ Bead is orange
 - _____ Bead contacts edge of bowl on bottom
 - _____ Bead contacts black bead on top
 - _____ Bead is closer to bowl than black one
- _____ Black bead in middle of toothpick
 - _____ Bead is black
 - _____ Bead contacts orange bead beneath
 - _____ Bead contacts yellow straw on top

- _____ Small yellow straw resting on toothpick
 - _____ Straw has yellow stripe on it
 - _____ Straw is wider than other straws
 - _____ Straw is shorter than others
 - _____ Straw is contacting black bead
 - _____ Straw is contacting string
- _____ Finishing nail on top of bowl near 9:00
 - _____ Pointed end into bowl
 - _____ Nail oriented vertically
 - _____ Finishing nail near edge at 9:00
 - _____ Nail contacts red straw throughout
- _____ White bead on bottom of tower on nail
 - _____ Bead is white
 - _____ Bead contacts bowl at bottom
 - _____ Bead contacts small paperclip on top
- _____ Small paperclip connects 2 finishing nails
 - _____ Paperclip is small
 - _____ Paperclip lengthwise contacts 2 finishing nails
 - _____ Inner end pointing towards center of bowl
 - _____ Paperclip contacts white and purple beads on outer nail and bowl and bright green beads on inner nail
 - _____ Paperclip contacts red straw
- _____ Purple bead on outer 9:00 finishing nail
 - _____ Bead is purple
 - _____ Bead contacts small paperclip
 - _____ Bead contacts red straw on inside
- _____ Red straw on top of 9:00 finishing nail
 - _____ Straw has red stripe on it
 - _____ Straw contacts nail throughout
 - _____ Straw contacts purple bead
 - _____ Straw contacts small paperclip
 - _____ Straw contacts white bead
- _____ Dark blue bead on center finishing nail
 - _____ Bead is dark blue
 - _____ Bead contacts bright green bead on bottom
- _____ Finishing nail near center of bowl
 - _____ Pointed end into bowl
 - _____ Nail oriented vertically
 - _____ Nail contacts small paperclip
 - _____ Nail contacts bright green bead
 - _____ Nail contacts dark blue bead

_____ Bright green bead on center finishing nail
_____ Bead is bright green
_____ Bead contacts bowl on bottom
_____ Bead contacts dark blue bead on top

_____ Finishing nail on bottom of bowl near 12:00
_____ Pointed end into bowl
_____ Nail oriented vertically
_____ Nail contacts yellow straw on all

_____ Yellow straw over finishing nail near 12:00
_____ Straw has a yellow stripe on it
_____ Straw contacts finishing nail on all
_____ Straw contacts light blue bead
_____ Straw contacts hex nut

_____ Light blue bead on bottom of 12:00 nail
_____ Bead is blue
_____ Bead contacts bowl on bottom
_____ Bead contacts hex nut on top
_____ Bead contacts yellow straw on inside

_____ Hex nut on top of 12:00 nail
_____ Nut contacts blue bead on bottom
_____ Nut contacts yellow straw on all

_____ Black push pin on side of bowl at 12:00
_____ Push pin is black
_____ Head of push pin contacts bowl side
_____ Pin oriented at 45° upwards

_____ Finishing nail near 1:30 on bottom of bowl
_____ Pointed end into bowl
_____ Nail oriented vertically
_____ Nail contacts green bead
_____ Nail contacts large paperclip
_____ Nail contacts light blue bead

_____ Green bead on bottom of 1:30 nail
_____ Bead is green
_____ Bead contacts nail on inside
_____ Bead contacts large paperclip on top

_____ Light blue bead on top of 1:30 nail
_____ Bead is light blue
_____ Bead contacts nail on inside
_____ Bead contacts large paperclip on bottom

_____ Large paperclip on 1:30 nail
_____ Paperclip is large
_____ Paperclip contacts 1:30 nail
_____ Paperclip contacts 1:30 side pin
_____ Inside of paperclip on 1:30 side pin
_____ Paperclip parallel to bowl side

_____ Straight pin at 1:30 on side of bowl
_____ Pointed end into bowl
_____ Oriented at 45° upward
_____ About 1/2 way between bottom and crease

_____ Pin contacts large paperclip
_____ Pin contacts hot pink bead

_____ Hot pink bead on 1:30 straight pin
_____ Bead is hot pink
_____ Bead contacts pin on inside
_____ Bead contacts large pc on bottom

_____ Paper tube on bottom of bowl around 3:00
_____ Paper rolled into tube
_____ Paper contacts bottom of bowl
_____ Paper around 3:00 on bowl
_____ Paper contacts head of black pin
_____ Paper contacts inside black pin
_____ Paper contacts bobby pin on top
_____ Paper contacts blue straw on top
_____ Paper contacts black stir stick

_____ Black push pin at 3:00 on bottom of bowl
_____ Pin is black
_____ Pin contacts paper tube
_____ Pin keeps paper tube in tube shape

_____ Bobby pin on top of paper tube
_____ Pin contacts paper tube
_____ Pin contacts blue straw
_____ Pin on top of paper tube
_____ Pin curved edge on outer edge of tube

_____ Blue straw on end of bobby pin
_____ Straw has a blue strip
_____ Straw contacts bobby pin
_____ About half of straw extends past tube
_____ Straw contacts paper tube

_____ Black stir stick rests across bowl
_____ Stir stick contacts crease of paper tube
_____ Stir stick contacts light pink bead
_____ Stir stick contacts string

_____ Light pink bead on stir stick
_____ Bead is light pink
_____ Bead contacts stir stick
_____ Bead is outside of paper tube/bowl bottom

_____ String tied in knot around stir stick and yellow ~~small~~ straw
_____ String contacts stir stick
_____ String contacts yellow small straw
_____ Single knot around stir stick & straw
_____ Second single knot around stir stick

Total Score: _____ / 170

Build Time: _____

Tier: _____

Write It, Do It Division B
National Science Olympiad - UW-Stout, May 2016
Parts List

- (1) Styrofoam bowl**
- (3) Black push pin**
- (1) Strip of typing paper, 2" wide**
- (1) Bobby pin**
- (2) Straight pin**
- (1) Balsa wood block**
- (2) Paperclips**
 - (1) Small**
 - (1) Large**
- (4) Straw Segments**
 - (1) Large yellow**
 - (1) Small yellow**
 - (1) Small blue**
 - (1) Small red**
- (4) Small finishing nail**
- (11) Plastic Beads**
 - (1) Black**
 - (2) Light blue**
 - (2) Royal blue**
 - (1) Green**
 - (1) Bright green**
 - (1) White**
 - (1) Purple**
 - (1) Orange**
 - (1) Light pink**
 - (1) Hot pink**
- (2) Small white stickers**
 - (1) Number 1**
 - (1) Number 2**
- (1) 1/4" hex nut**
- (1) Black stir stick**
- (1) String - short length**