



Write-it Do-it



Why Write It Do It?

- Test a team's ability to communicate using technical writing
 - Writer – describes in writing how to build the given model
 - Builder – Builds the model from parts using the writer's instructions
- Promotes critical skills needed in all areas of science
 - Critical thinking
 - Problem solving
 - Written communication
 - Promotes estimation skills
 - Observation and recording data
 - Ability to analyze methodically and be systematic

Rules--

- No scoring violations / penalties
- Abbreviations do not have to be defined
- Some symbols are allowed
 - Editing symbols such as ->, ^, strikeouts etc.,
 - Punctuation symbols
 - Scientific symbols in appropriate context such as ° for degrees, " for inches, ½ for half
- Any drawing – Tier 2
- Drawing of portion of the model – Tier 2
- Drawing a picture of the model - DQ

Rules--

Allowed

- Numerals
- Words
- Letters
- Abbreviations
- Symbols
 - Editing symbols such as $\rightarrow$, $\wedge$, strikeouts etc.,
 - Punctuation symbols
 - Scientific symbols must fit within the context of the written description
 - Place stick at 120° south...
 - Place stick 2" from edge...
 - $\frac{1}{2}$ of the paper will be...
 - 25% of the paper will be...

Not Allowed

- Drawing of the model - Disqualified
- Partial drawing of the model – Tier 2
- Any symbol or writing that can be interpreted as a drawing – Tier 2
 - ✗ Use pipe cleaners to form a " Σ "
 - ✗ Use pipe cleaners to form the symbol for "sigma"
 - ✗ It looks like a T
 - ✓ It looks like the letter T
 - ✗ The toothpicks should be arranged like $\lessgtr$
 - ✓ The toothpicks arranged to look like a less than symbol followed by a hyphen and then a greater than symbol
- ✓ You'll do great! 😊

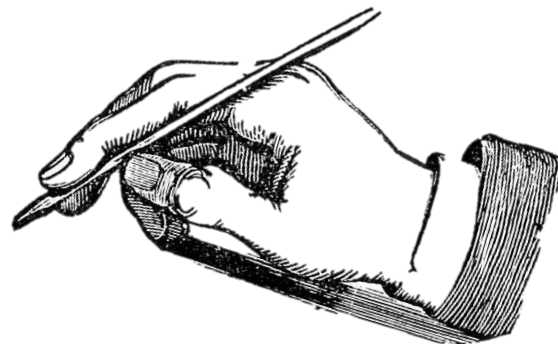
Scoring

- Winner – Built model nearest to the original model
- Scoring Rubric is based on
 - Use of part (size, color)
 - Location of part
 - Orientation in reference to another part on the model
 - Connection to other parts/model
- Pieces connected correctly beyond an incorrect connection will be counted
- No Penalty for unused parts
- Tie-Breaker – Shortest time of construction
- Written instructions are quickly gone through to make sure drawings and inappropriate usage of symbols are not present

Assembling the team

- Both students should have decent spatial sense
- Students must be able to communicate – Most Important!
- Writer
 - Must be VERY observant and detail oriented
 - Must have legible handwriting
 - Must be able to make estimations
 - Must be able to think like a builder
- Builder
 - Must be VERY good with following instructions & assembling things
 - Must be able to understand the writer's style of communication
 - Must be able to make estimations

Writing



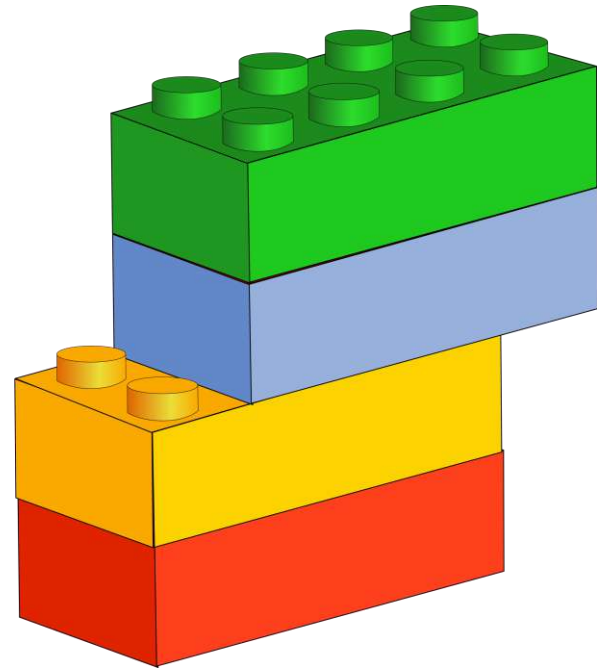
Writing Tips

- Materials list – Some teams prefer this and some don't – find what works
 - Be specific (size, type, color, texture)
- When appropriate, begin with an overall description of the object
“looks like a four sided tower”
- Imagine the sequence of steps you the builder will have to take to build
 - Usually build from the ground up in layers: base, middle and top
- Orientation
 - Be sure to identify which part should be facing the builder
 - Use clock reference for round objects (put paper clip at 12 o'clock on the CD face)
 - Use “Northern hemisphere” or “Southern hemisphere” for spherical objects
 - Compass points
- Use the entire 25 minutes – There's no penalty or advantage to finishing early

Writing Tips

- For complicated structures, think in sections
 - Usually there is a “base” around which everything is built.
- Provide specific instructions on how to assemble each section
- Remember connection orientation – pieces must be connected properly
- Note the colors and size – Builders will often be given similar material but of different colors and/or size
- Use personal references for distance (1 cm=width of fingernail)
- Keep your writing neat and legible!

Building



Builder Tips

- Briefly read through the entire description first
- If a materials list was provided by the writer or supervisor, then compare each of the materials on the list with those that are present at the station
 - Make sure nothing is missing or broken
- Separate materials into groups
- Look for details
 - Color, ridges, patterns, size
- Folds
 - Folds will have specific alignment with reference to other objects and lines/edges
- Ask event supervisor if s/he will provide additional material in case you damage the one provided in the bag
 - At Regional usually they will, at State they may not

- Assemble as many pieces as possible (skip steps if time is short)
- If running out of time, add/attach ALL pieces – there are no negative points for using extra pieces
- Make sure your build is in the correct orientation for scoring!
- Your build should be secure
 - If the part falls off during transportation to the judging room, you will be at disadvantage
 - If something is very loose or insecure, it's probably not correct
- Pace yourself.....20 minutes goes quickly

Coaching



Coaching Tips

- PRACTICE, PRACTICE, PRACTICE
- Debriefing – Integral part of practice
 - Compare original and one produced
 - Discuss written instructions together
 - Thought process while writing/building
 - Make sure kids are leading this debrief
- Let kids build a model AND create the scoring rubric
- Switch roles and use several tryouts to identify the best student to play specific role
- Have writer sit with the builder as they build and take notes when they struggle
- Have builder make notes on the writing when something is not clear or not mentioned

Practice, practice, practice!

- Have your student teams practice together with a variety of objects.
 - Building sets such as Legos, K'nex, Tinker Toys, etc.
 - Cheap materials such as popsicle sticks, straws, string, etc. Styrofoam cups, plates or bowls are great building surfaces.
- Determine which student is a better writer or builder, and have them practice those skills.
- Have students practice with objects that are as unique and challenging as possible.
- Start with small, simple builds to develop common language

EVENT SUPERVISORS:

- When creating models for invitationals
 - Make sure there is a designated “front” for scoring purposes.
 - Make sure model is stable and sturdy
 - Bring extra parts in case of breakage
 - A well-run event will have a well-built model with a very detailed rubric
 - Significantly reduces ambiguity in judging
 - Allows the supervisor to objectively and consistently review the built model to provide points
 - More points/connections, the better!
 - Division B models will have around 60+ points
 - Division C models will have around 80+ points
 - AVOID TIES!!

- At the invitational
 - Take photos of builds with team #s before you score anything!
 - If you have volunteers helping you score, assign each volunteer to score the same part of every build to ensure consistency.
 - Talk about scoring rubric before competition begins
 - Score one build together !
 - Give volunteers photo or model to take with them as they score, or have a model readily available

Material and Past Models

Materials

- Chenille sticks (pipe cleaners)
- Cheerios
- Popsicle sticks
- Toothpicks
- Paper cutouts, hole reinforcements
- Straws
- Washers (metal, from hardware store)
- Clothespins
- CDs
- Foam shapes
- Spoons and forks
- Candy, Pushpins, T-pins, Yellow headed quilting pins, Safety pins
- Index cards, Post Its, Small, Dixie cups, paper plates, paper clips, chopsticks
- Ribbon, yarn, twist ties, twine, rubber bands
- Seasonal items (jingle bells, ornaments, valentines cards, etc.)
- Storage: Zip lock bags, plastic shoe boxes

NO STICKERS, MESSY ITEMS, GLUE, TAPE

Sample Rubrics

WIDI Test Rubric

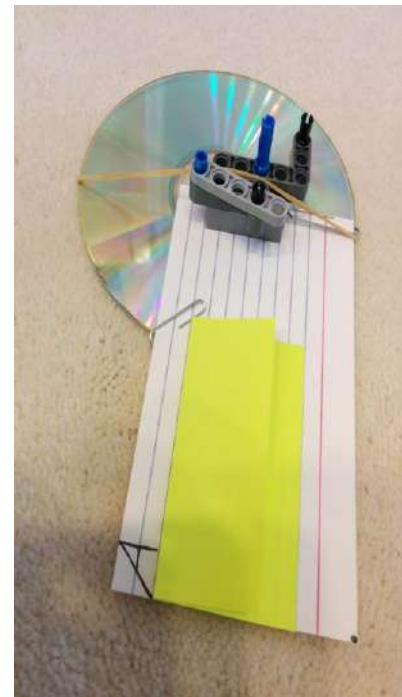
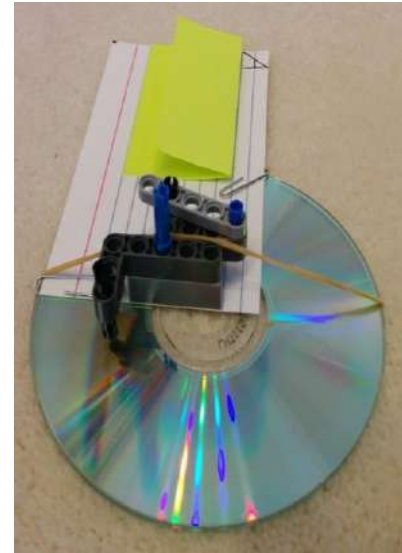
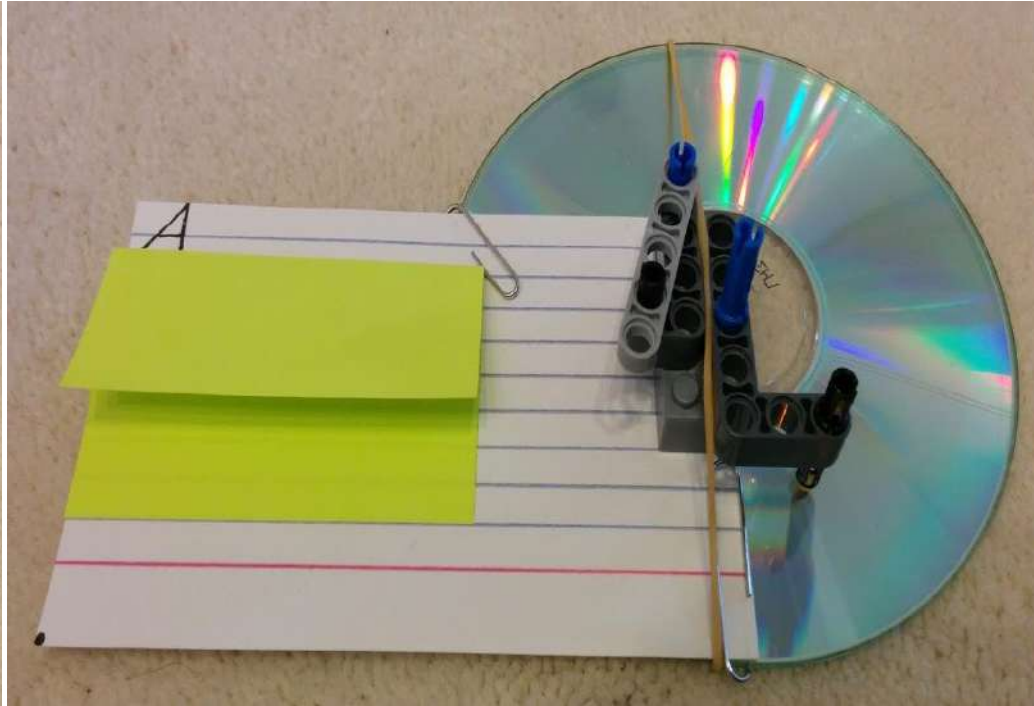
No partial points; Model needs to be placed that such Red line on index card is North/Top, Rubric is worded for this orientation

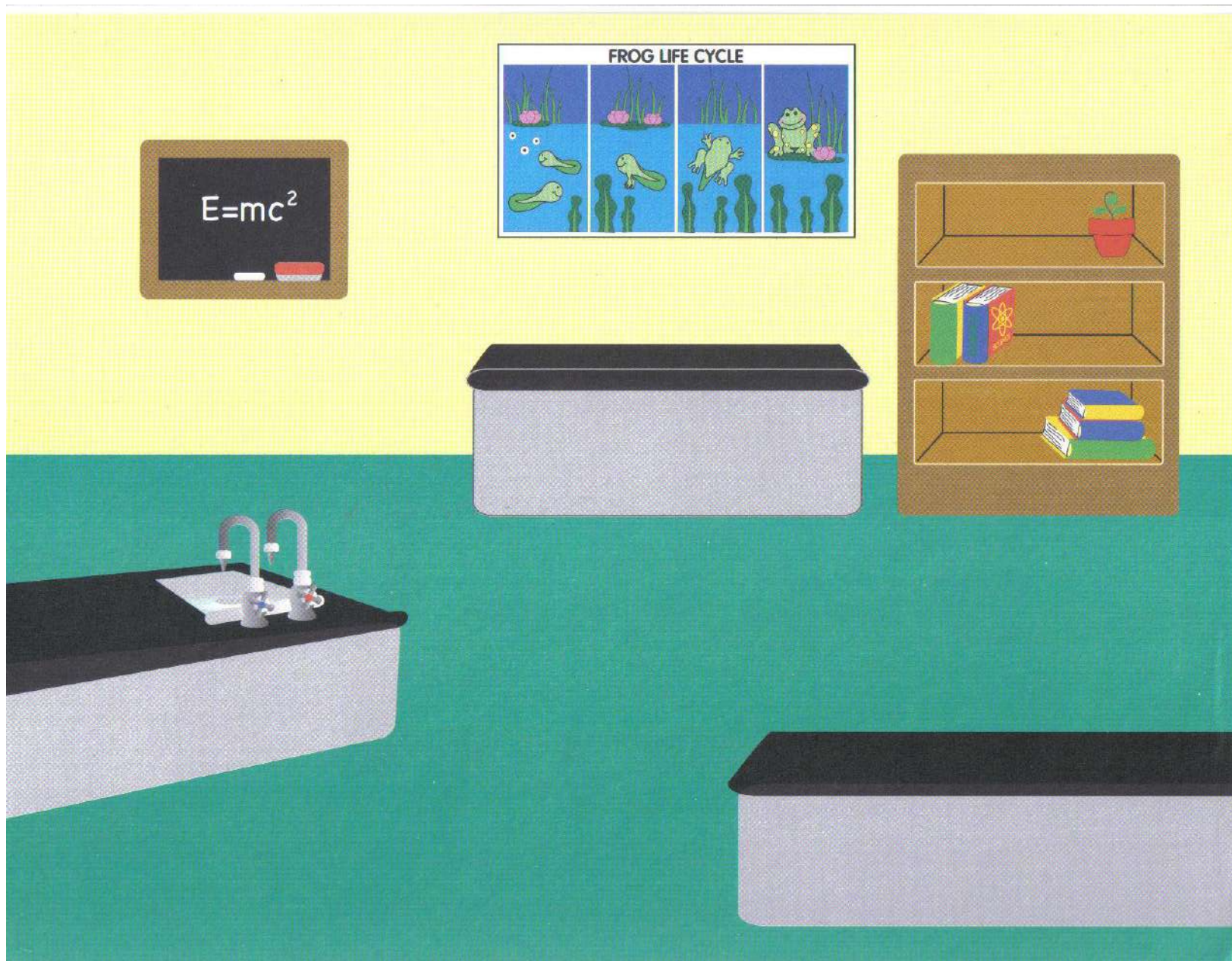
#	Criteria	Pts Score
1	Index Card (IC)	2
1.1	Used in Model	
1.2	Lines on the IC are facing up	
2	Yellow Ruled Sheet (YRS)	13
2.1	Used in Model	
2.2	Is folded into rectangles	
2.3	Is folded along the 6th line from the bottom	
2.4	Is folded such that a portion of the paper is vertical	
2.5	is folded along the 6th line from the bottom, and the folded bottom portion of the paper is vertical	
2.6	is placed such that the top (wide margin) edge of the YRS is oriented South to East on the IC	
2.7	is placed such that the top side of the YRS is oriented South to East on the IC when IC is oriented with Red Line N/Top	
2.8	is placed on the IC such that one corner touches the side of the IC	
2.9	is placed such that two corners touches two different sides of the IC	
2.10	is placed such that two corners touches two different sides of the IC on the East side and the South side in the model	
2.11	is placed such that a side of the YRS touches a corner of the IC	
2.12	is placed such that two corners touches the East and South sides of the IC and a side touches the NW corner of the IC	
2.13	is placed exactly as in model	
3	Paper clip (PC)	8
3.1	is used in model	
3.2	is a regular sizes silver paper clip	
3.3	is clipped such that the narrow portion is visible	
3.4	is clipped such that the open end faces North	
3.5	is clipped so it is parallel to the long edge of the IC	
3.6	is clipped to the IC and the YRS	
3.7	is clipped to the IC and the YRS at the NW corner of the IC	
3.8	is clipped exactly as in model	
4	Dixie Cup (DC)	10
4.1	is used in model	
4.2	is placed upside down on the model	
4.3	is placed completely on top of the YRS	
4.4	is placed completely within the boundaries of the IC	
4.5	is placed on the top right corner of the YRS (wide margin as top of YRS)	

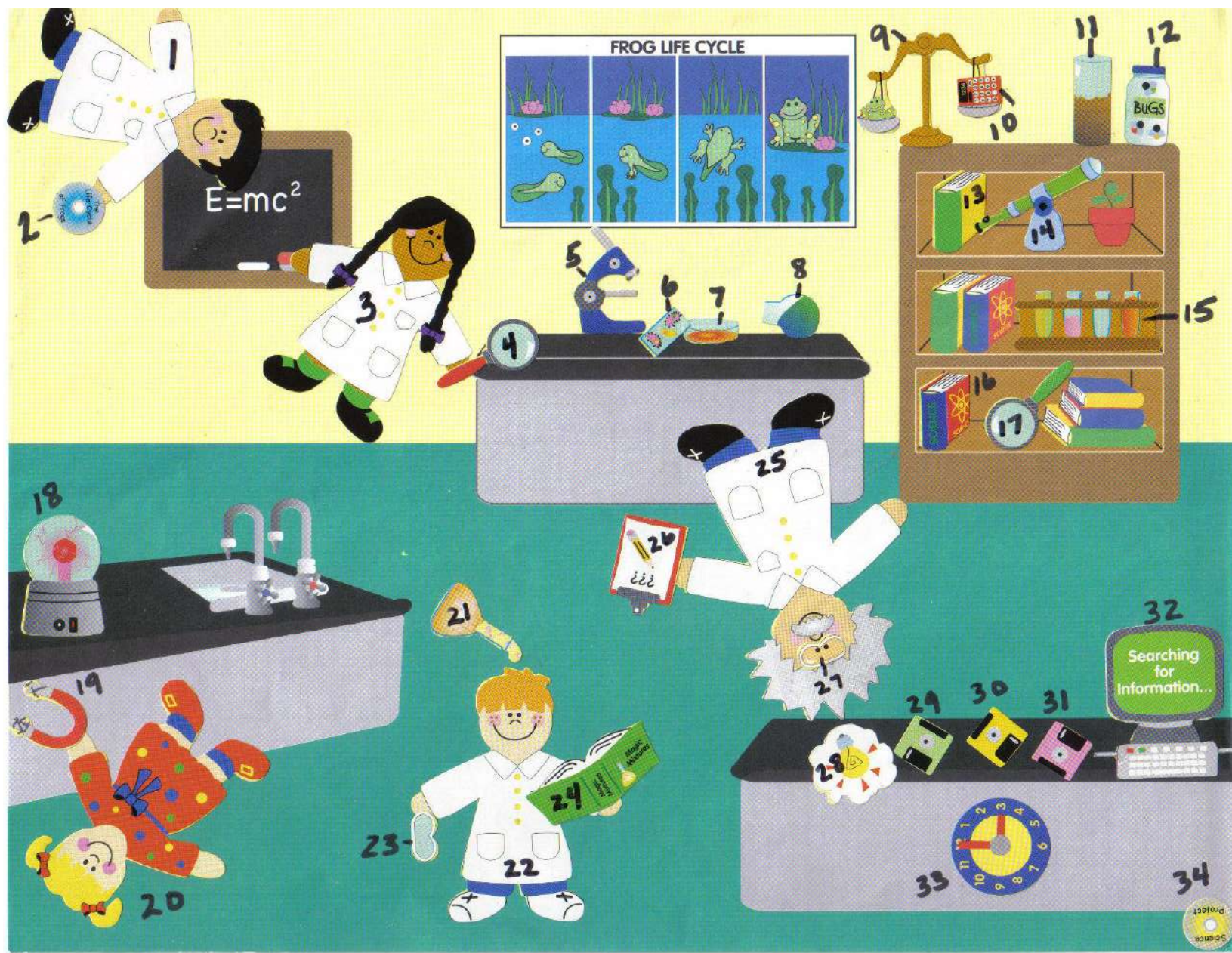
#	Item	Correct Location	Correct Orientation	Detail	Detail
1	Bamboo Skewer	On plate	Pointed end north 12-6	Flat end flush with edge	
2	Curler	On skewer	Parallel to skewer	North end one inch from rim	
3	Coffee stir #1	Joining plate & culrer	Thru 2:00 and 3 rd hole of curler	1/2 " of stir outside of plate	
4	Black bead	On coffee stir 1	Between curler & clear bead	Touching curler & bead	
5	Clear bead	On coffee stir 1	Between black & red beads	Touching both beads	
6	Red bead	On coffee stir 1	Between clear bead and paper clip	Touching clear bead & clip	
7	Black paper clip	On coffee stir 1	After red bead	Vertical	Long part in front
8	Toothpick	Through curler	6 th hole from N end	Angled 45 degrees to left	Below ring on flat end of toothpick
9	Striped Dark Orange Sticker	On toothpick	Pointing to left	Folded in half	
10	Coffee stir #2	Joining plate & curler	Thru 9:00 & 1 st hole of curler	End is flush with edge of plate	
11	Drinking straw	On plate	Thru 4:00 and under skewer, perpendicular	End is bent 45 degrees NE	Red line on top
12	Bobby pin	On straw	Clipped to end of straw	Covering Red Stripe	Whole pin on straw
13	Mini clothespin	On skewer	Vertical	Touching straw	
#	Item	Correct Location	Correct Orientation	Detail	Detail
14	Round red sticker	On skewer	Arrow pointing N	Sticker wrapped around	Edge of sticker touching edge of plate
15	Plain Dark orange Sticker	On plate	Horizontal, lined up with 3:00	Left edge under skewer	
16	Striped Yellow sticker	On top of orange sticker	4 th stripe lined up with top edge of orange sticker	½" from right end of orange	
17	Round Green sticker	On top of yellow sticker	Centered at intersection of green/yellow	Letter A is upright	
18	Round Yellow sticker	On plate	At 5:00	Smiley face is upside down	Sticker edge touching edge of hole
19	Round Blue sticker	On plate	Centered in SW quadrant	Arrow pointing at 8:00	
20	Light Orange sticker	On plate	Along edge of plate, ending at 7:00	Long edge of sticker just inside rim	
21	Green sticker	On plate	On edge between 10 – 11:00	Short edge flush with edge of plate	
22	White paper clip	On green sticker	Opens to right	Left side flush with side of sticker	

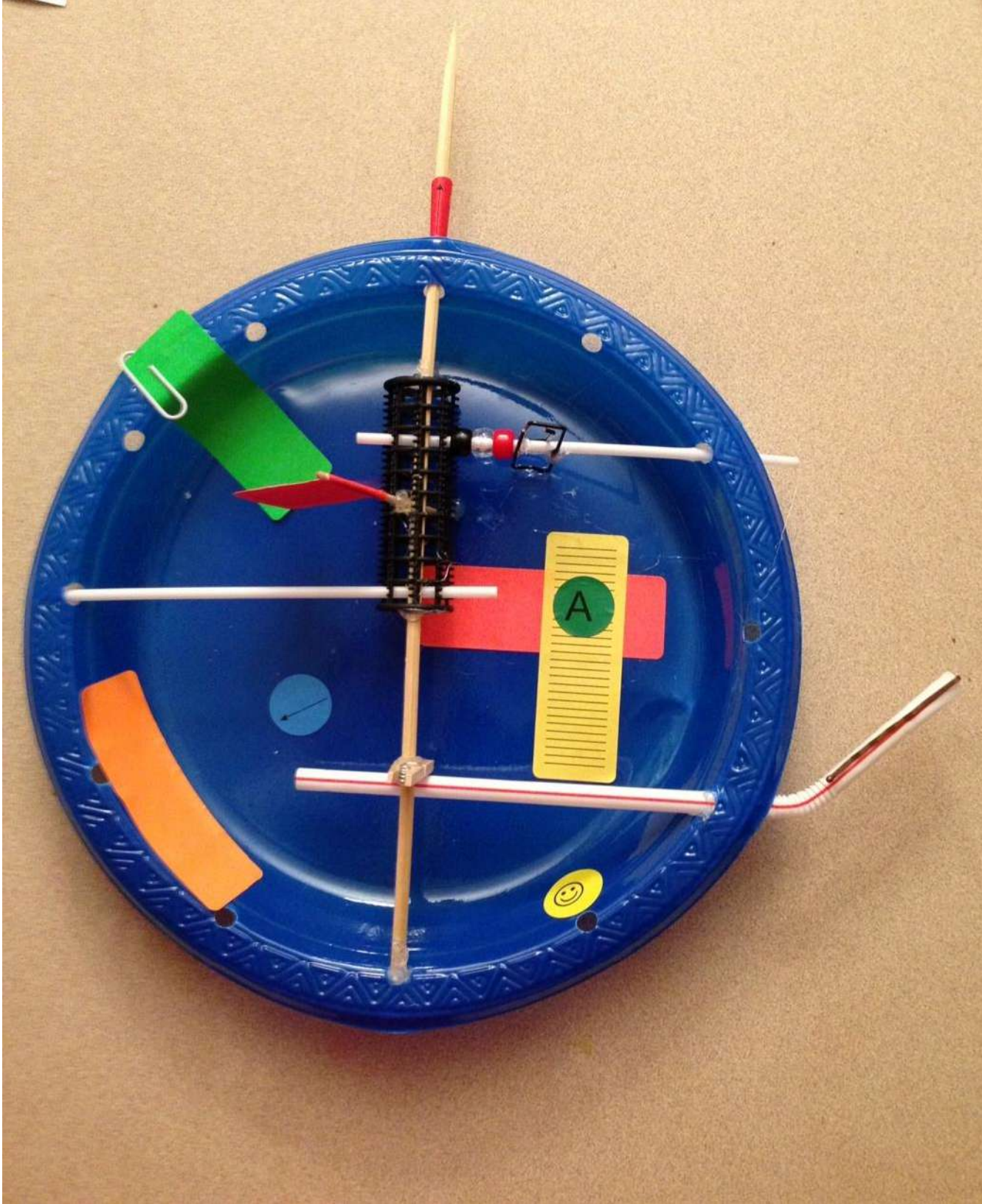
Other Information

Past Models and Rubric – 2014 Ionia Invitational



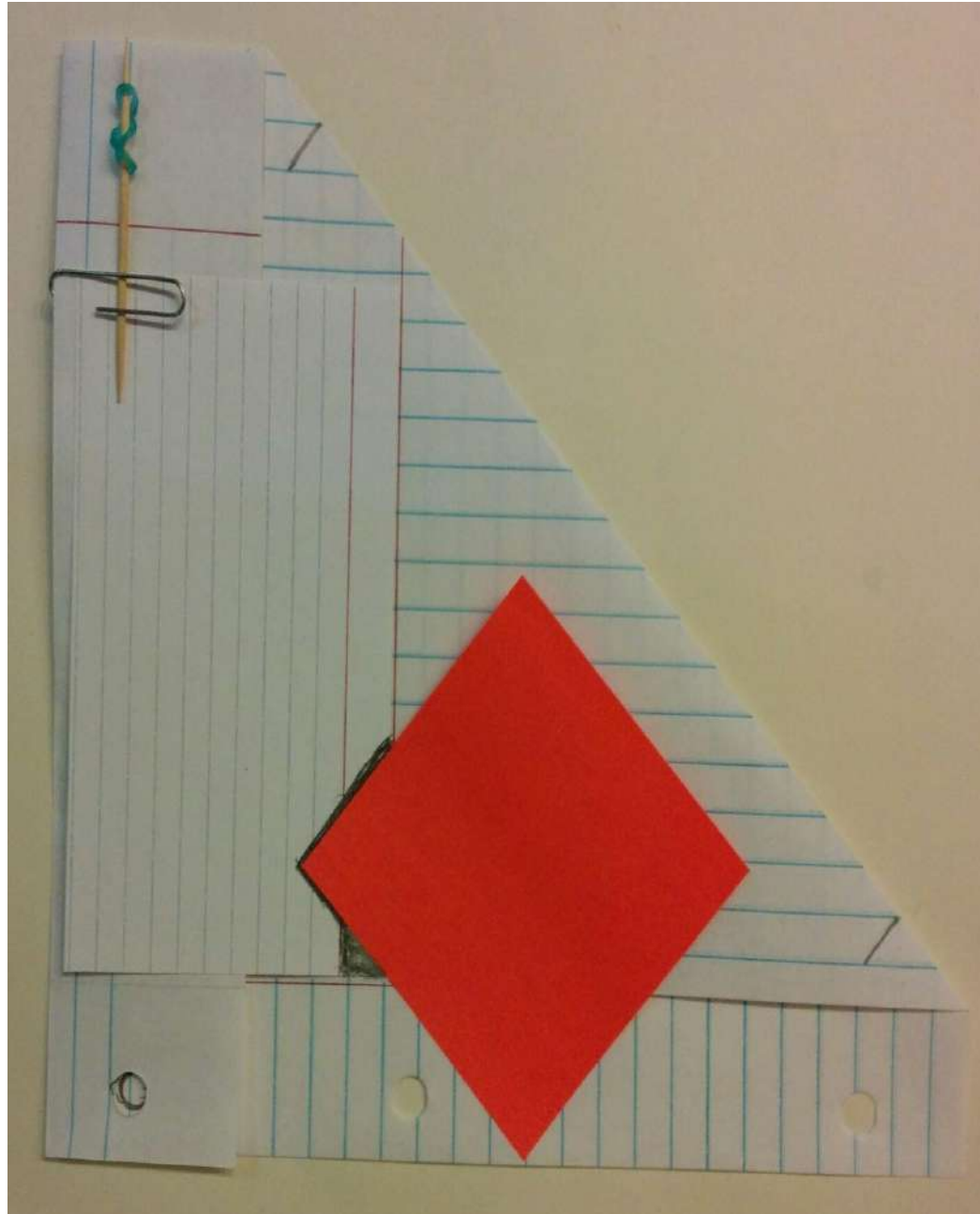




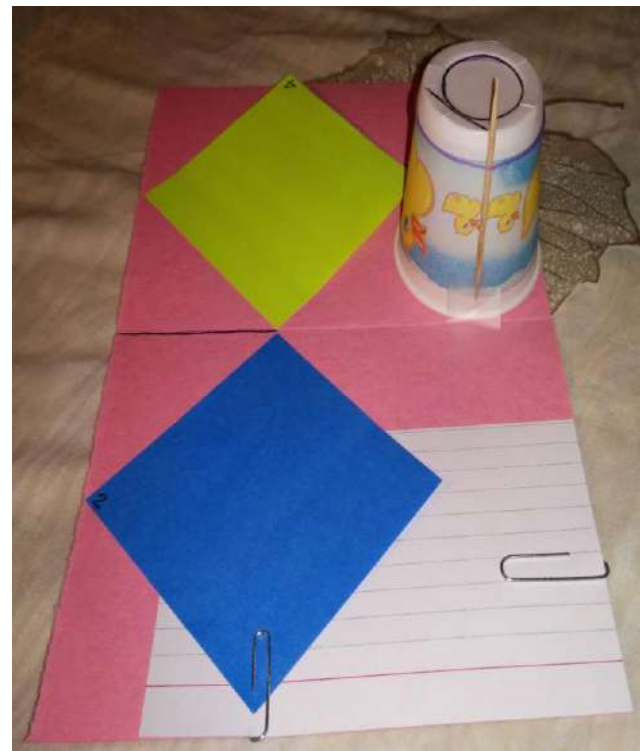
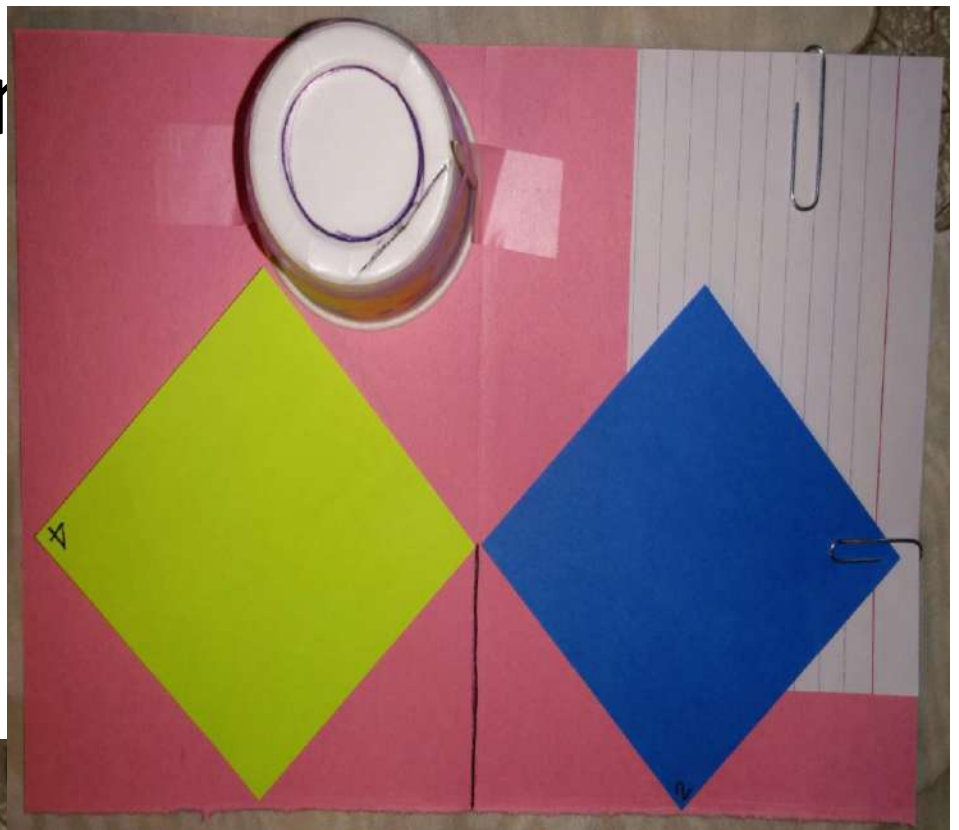


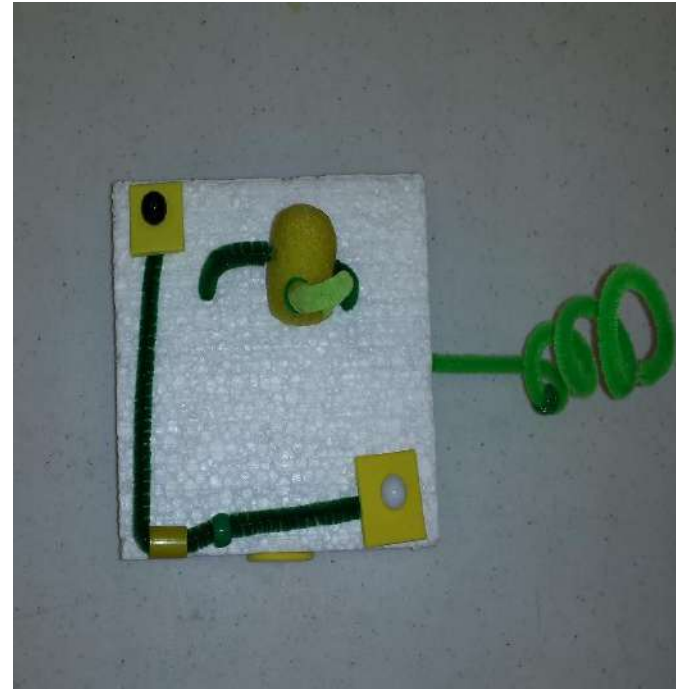
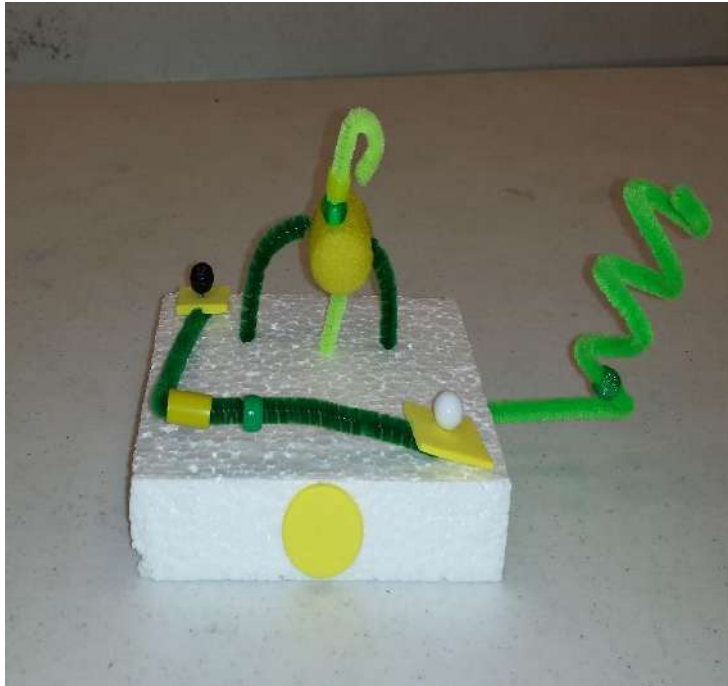


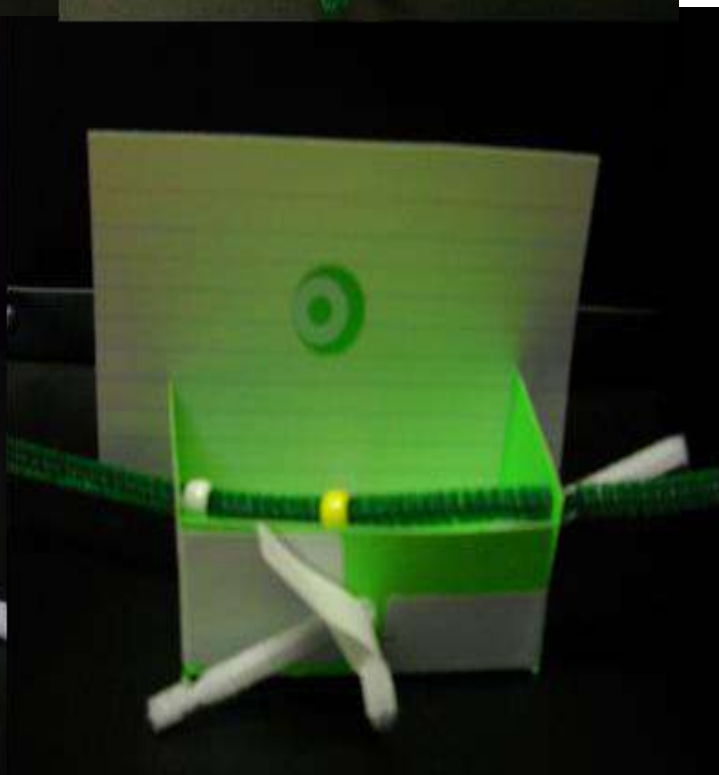
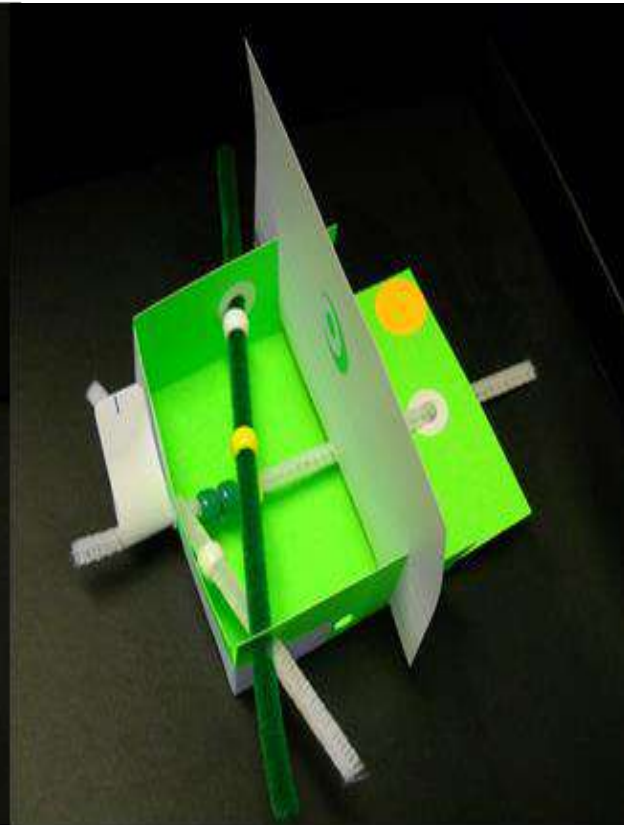
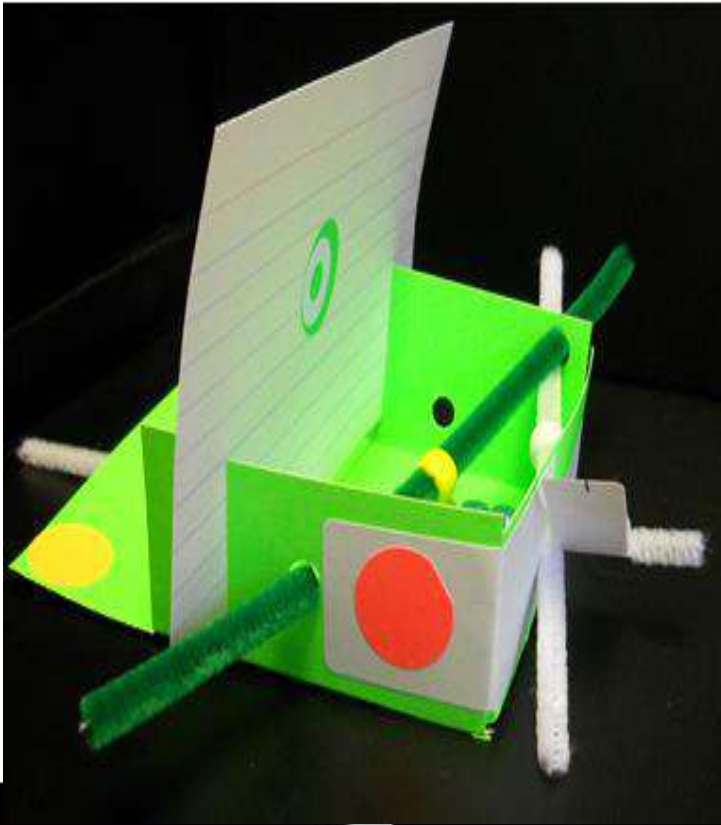
BCS Cobra Invitational - Spring 2015

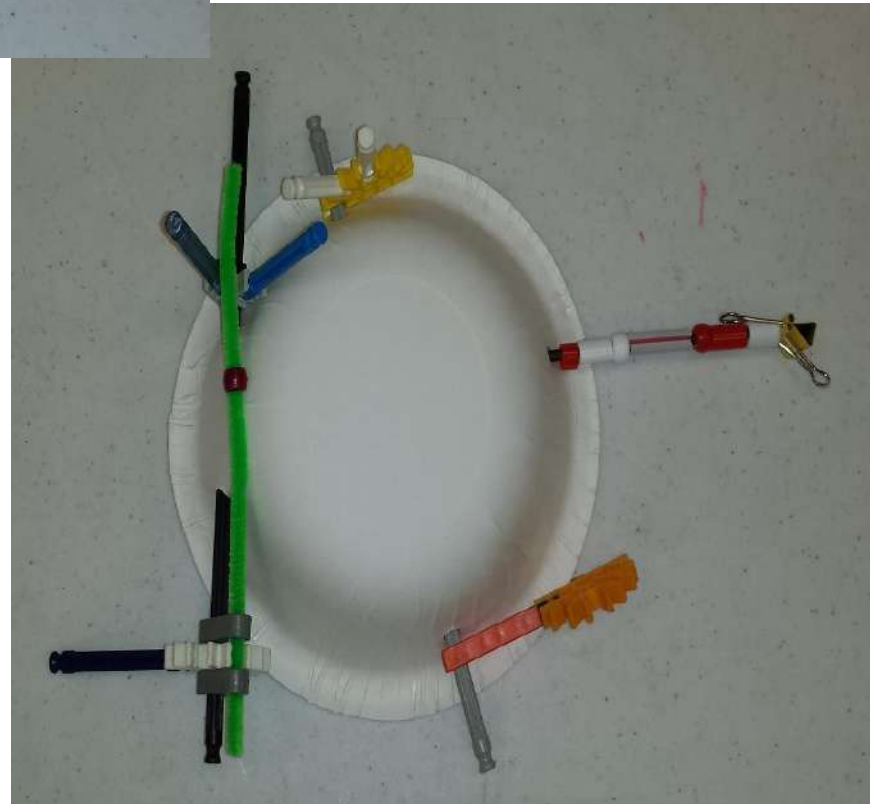
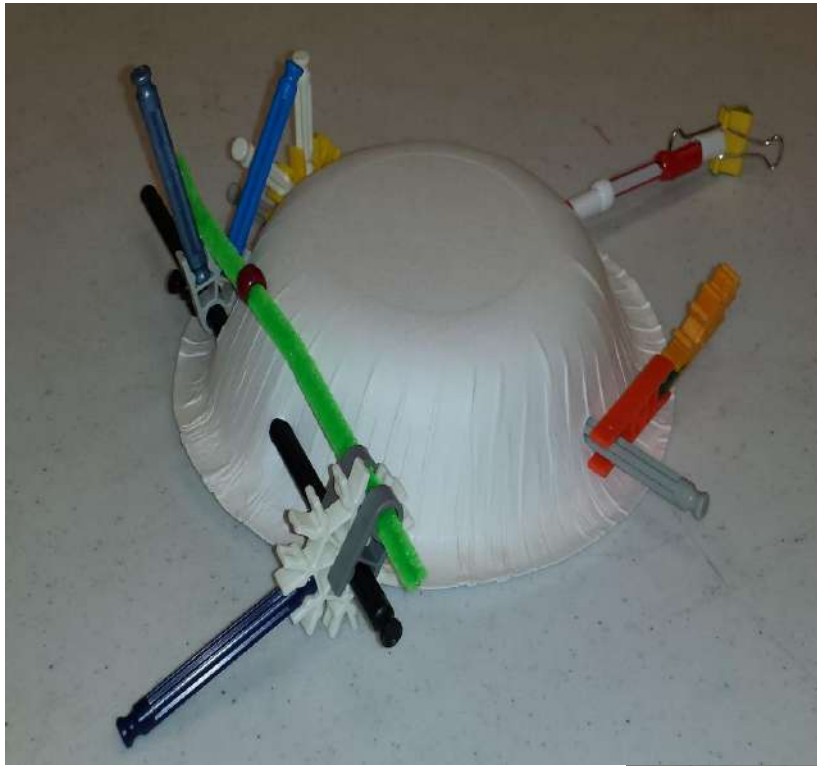


2015 Oakland Region









WRITER INSTRUCTIONS

1. Supervisor – have students wait in the hallway (do not let anyone in the room because you do not want anyone to see the builds early).
2. Instruct the builders on where they should go to ROOM _____.
3. When you have the writers in their seats, be sure to check wristbands.
4. **Provide the following instructions (written on board):**
 - You will have 25 minutes to write.
 - There is no advantage to finishing early.
 - Do not touch the model – this will be grounds for a disqualification.
 - Be sure to write your names on your sheet.
 - There are no extra parts.
 - If you need more paper, raise your hand.
 - You will be dismissed as a group.

Additional Verbal Instructions:

- a) The models have been glued to prevent shifting during transport. Do not include the drops of glue in your descriptions.
- b) There are two pins that are not visible: metal round and clear plastic.
- c) Students may not leave until time is up.

BUILDER INSTRUCTIONS

1. While waiting for the writers to finish, please check your build packets. There is a packing list included. Make sure that the packet contains all the items.
2. You will have 20 minutes to write.
3. **Build time is a tie breaker.** When you are finished with your build, raise your hand and call out your team #.
4. You are not allowed to touch the build again (if you do, this will result in restarting your time).
5. There are no extra parts.
6. Special Instructions:
 - A. If a piece breaks during building, raise your hand and let me know right away for a replacement piece.
 - B. Be sure your build is in the correct orientation to be scored- your builds will be scored with the label facing forward.
7. You are excused as soon as you are finished building.

Write it Do it Blank Score Sheet

Team Name _____ Team Number _____ Pts _____/_____ Build Time _____ Tie Breaker _____ Rank _____

TIER 2? *Y* *N* *Reason* _____

[illegible]