



Exploring the World of Science

University of Michigan Science Olympiad
2021 Invitational Tournament

Write It CAD It C ANSWER KEY

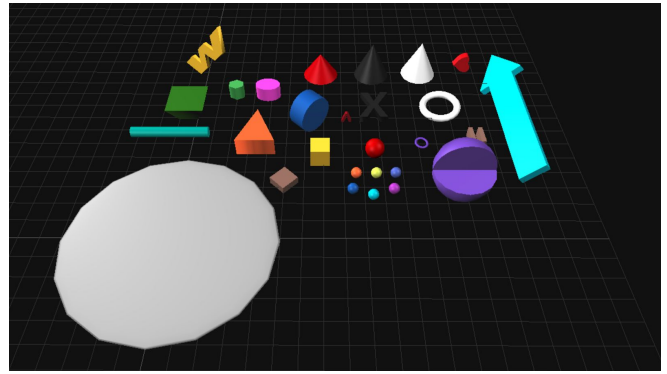
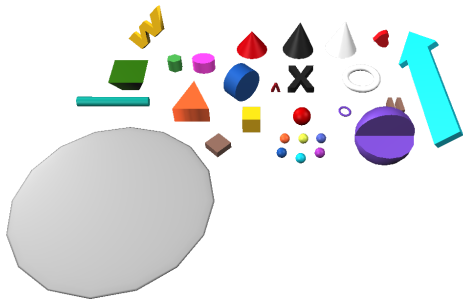
Test length: 50 Minutes

Team name: KEY

Student names: KEY

- Each object is graded on location, orientation, and rotation
- Tiebreaker is based on CADER's time taken to complete build

Link to completed build: <https://3dc.io/gallery/86d33cbc24e44eeb9091dc8b4d448d1c305b0d0b>



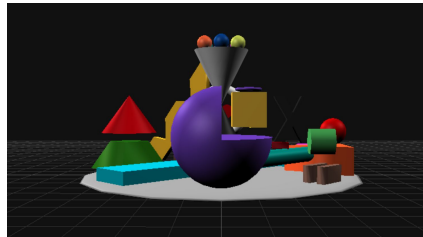
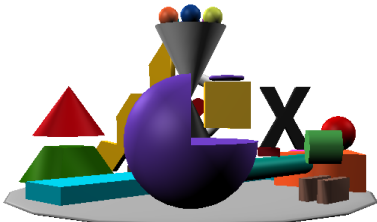
POV 1: TOP-FRONT

- Pink oval cylinder
 - ❑ @ 2 o'clock
 - ❑ Close to base edge
 - ❑ Right next to light blue arrow (not on top)
 - ❑ Standing ppd to base
 - ❑ (from top pov) Longer oval side is 90°
- Black X
 - ❑ @ 2 o'clock
 - ❑ Right side on top of pink cylinder
 - ❑ Left side above blue arrow
 - ❑ Standing upright / Longer sides are upright
 - ❑ Aligned hz (|| w white ring)
- Green pyramid
 - ❑ @ 9 o'clock
 - ❑ In between base edge and arrow
 - ❑ Smaller square base is up / larger square base is flat on base
 - ❑ Edge || w arrow
- Brown square
 - ❑ In center of base's second quadrant / tlc
 - ❑ Below yellow zigzag
 - ❑ Laying flat on base
 - ❑ Edges 45° to arrow
- Black cone
 - ❑ @ center
 - ❑ On top of blue arrow
 - ❑ Tip pointing up
- White cone
 - ❑ @ center
 - ❑ On top of black cone
 - ❑ Tip pointing down
- "The Six Wellness spheres" -- each sphere graded on:
 - ❑ On top of white cone
 - ❑ Near cone's edge
 - ❑ Correct location: 2-4-8-10 o'clock
 - ❑ Correct color: purple-lime-orange-aqua



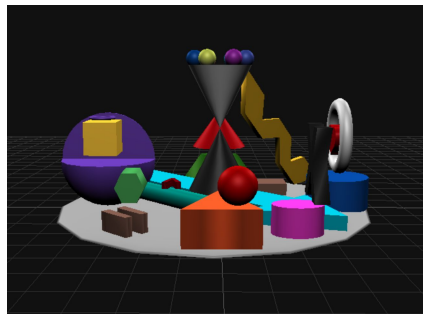
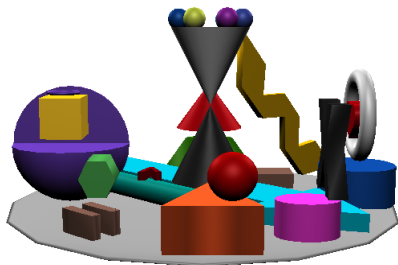
POV 2: TOP

- Light blue arrow
 - ❑ @ center
 - ❑ Flat on base
 - ❑ Arrow points from blc to trc
- Orange tri prism
 - ❑ @ 3 o'clock
 - ❑ Close to base edge
 - ❑ Tip points to center of base
 - ❑ Triangle bases flat and || to base
- Red sphere
 - ❑ @ 3 o'clock
 - ❑ On top of orange tri prism
 - ❑ On the upper end/top corner of tri prism triangle base
- Brown logs
 - ❑ Between 4-5 o'clock
 - ❑ Near base edge (within 2 grid cells)
 - ❑ Both logs flat on base (not stacked upright)
 - ❑ (top POV) **Pointing from blc to trc** / || to blue arrow
- Purple ring
 - ❑ @ 6 o'clock
 - ❑ On top of yellow cube
 - ❑ Aligned on the center of cube
 - ❑ Laying flat
- Teal pipe
 - ❑ @ 4th quad
 - ❑ Connects pacman and orange prism
 - ❑ **45°** / || to arrow or
- Red v logs
 - ❑ @ 4th quad
 - ❑ On top of teal pipe
 - ❑ On center of pipe
 - ❑ Laying flat
 - ❑ Tip points to the left: <



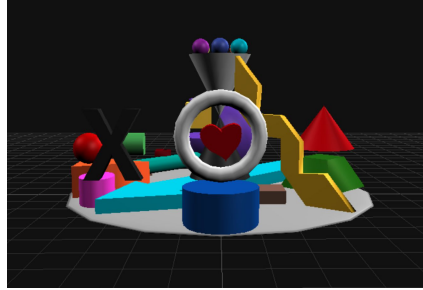
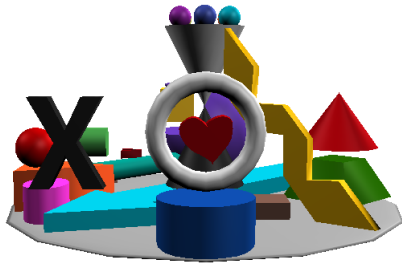
POV 3: FRONT

- Purple pacman
 - ❑ @ 6 o'clock
 - ❑ Near base edge (within 2 grid cells)
 - ❑ "Mouth" is first quadrant at 90° (front POV)
- Yellow cube
 - ❑ @ 6 o'clock
 - ❑ Floating above purple pacman
 - ❑ Above center of purple pacman mouth
 - ❑ Close to right edge of pacman
 - ❑ Edges || w pacman edges



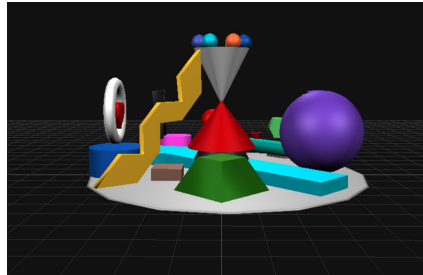
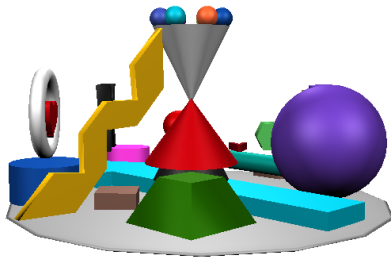
POV 4: RIGHT

- Green prism
 - ❑ Between 4-5 o'clock
 - ❑ Near base edge (within 2 grid cells)
 - ❑ Floating directly above logs
 - ❑ (top POV) Laying hz / Hexagonal bases || w right edge of orange tri prism
 - ❑ (right POV) Rectangular face || to base



POV 5: BACK

- Blue cylinder
 - ❑ @ 12 o'clock
 - ❑ Close to base edge
 - ❑ Standing parallel to base
- White ring
 - ❑ @ 12 o'clock
 - ❑ Floating above blue cylinder
 - ❑ Above center of cylinder (top POV)
 - ❑ Standing upright
 - ❑ **Aligned horizontally** / || w black X
- Red heart
 - ❑ @ 12 o'clock
 - ❑ Floating in the center of white ring
 - ❑ Standing upright
 - ❑ Aligned horizontally / || w black X



POV 6: LEFT

- Red cone
 - ❑ @ 9 o'clock
 - ❑ Floating directly above green pyramid
 - ❑ Tip pointing up
- Yellow zig zag
 - ❑ In second quad of base
 - ❑ Forms 135° angle (top POV)
 - ❑ 3 peaks / 2 valleys pointing up
 - ❑ One side flat on base
 - ❑ Other side resting on hourglass

/99 points