



MCHE 201: Intro. to Eng. Design Robotics Contest Spring 2018

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In Fall 2013...



A MCHE470 special topics class on robotics kick-started...

The Master Plan Contest



UNIVERSITY
OF
LOUISIANA

L a f a y e t t e™

Mechanical Engineering
Robotics Competition

In Spring 2015...



Plan

LA FAYETTE 出行



our people.

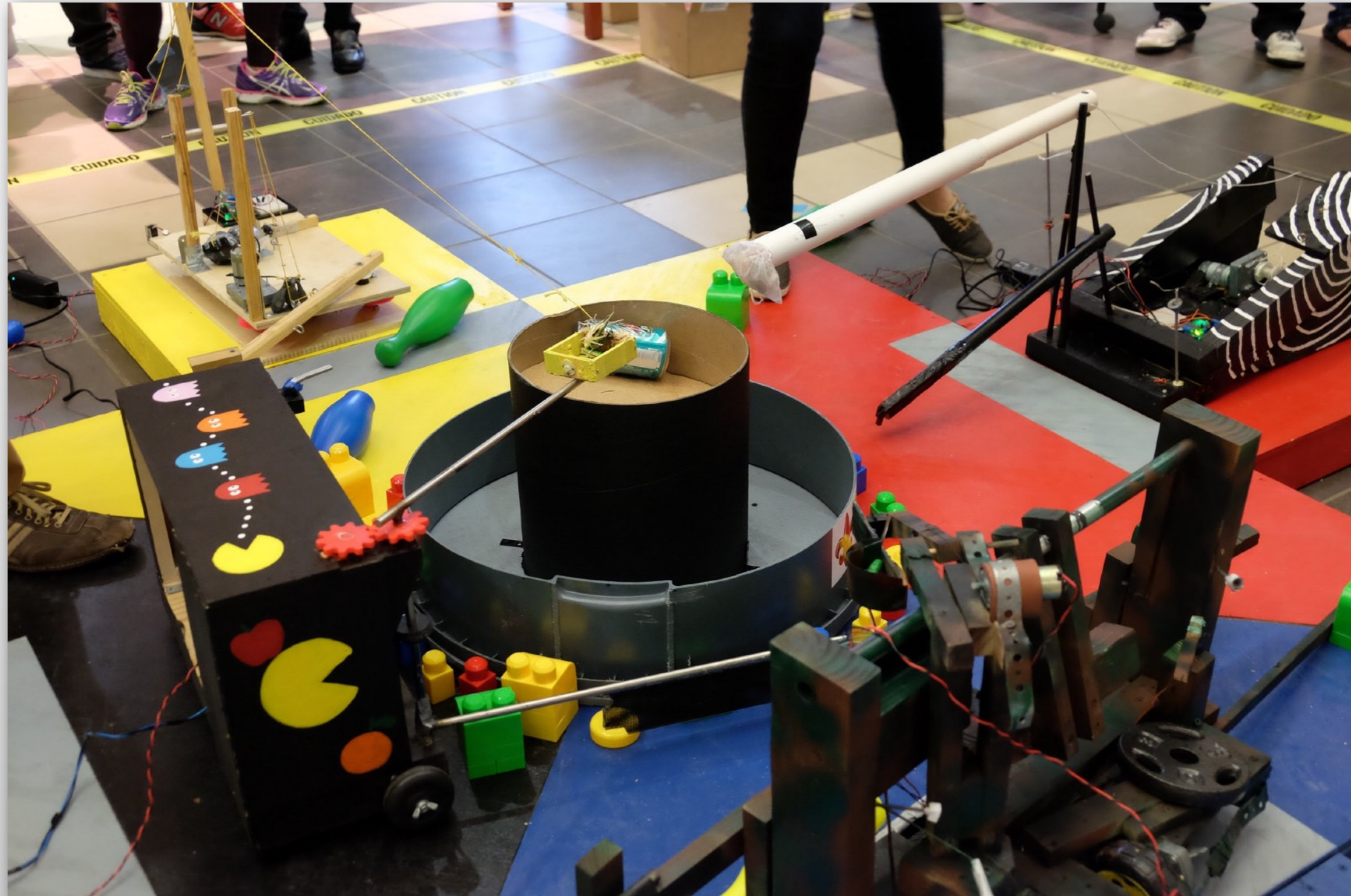
our community.

our economy.

In Fall 2015...



MCHE201 Teams helped James Bond defeat Blofeld and SPECTRE, saving the world...



In Spring 2016...



... with the world safe, people are again free to enjoy arts and entertainment.



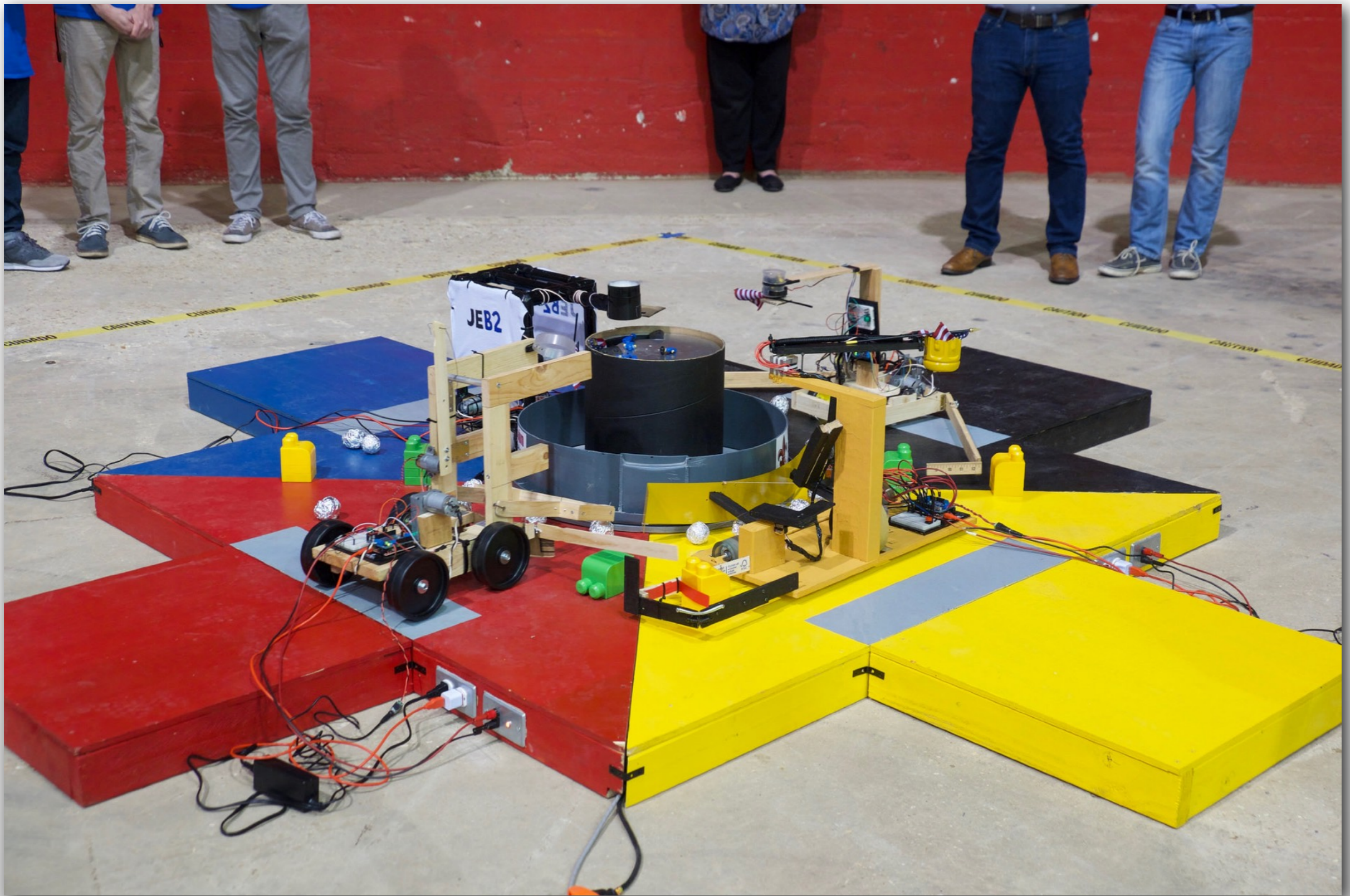
Festival International de Louisiane



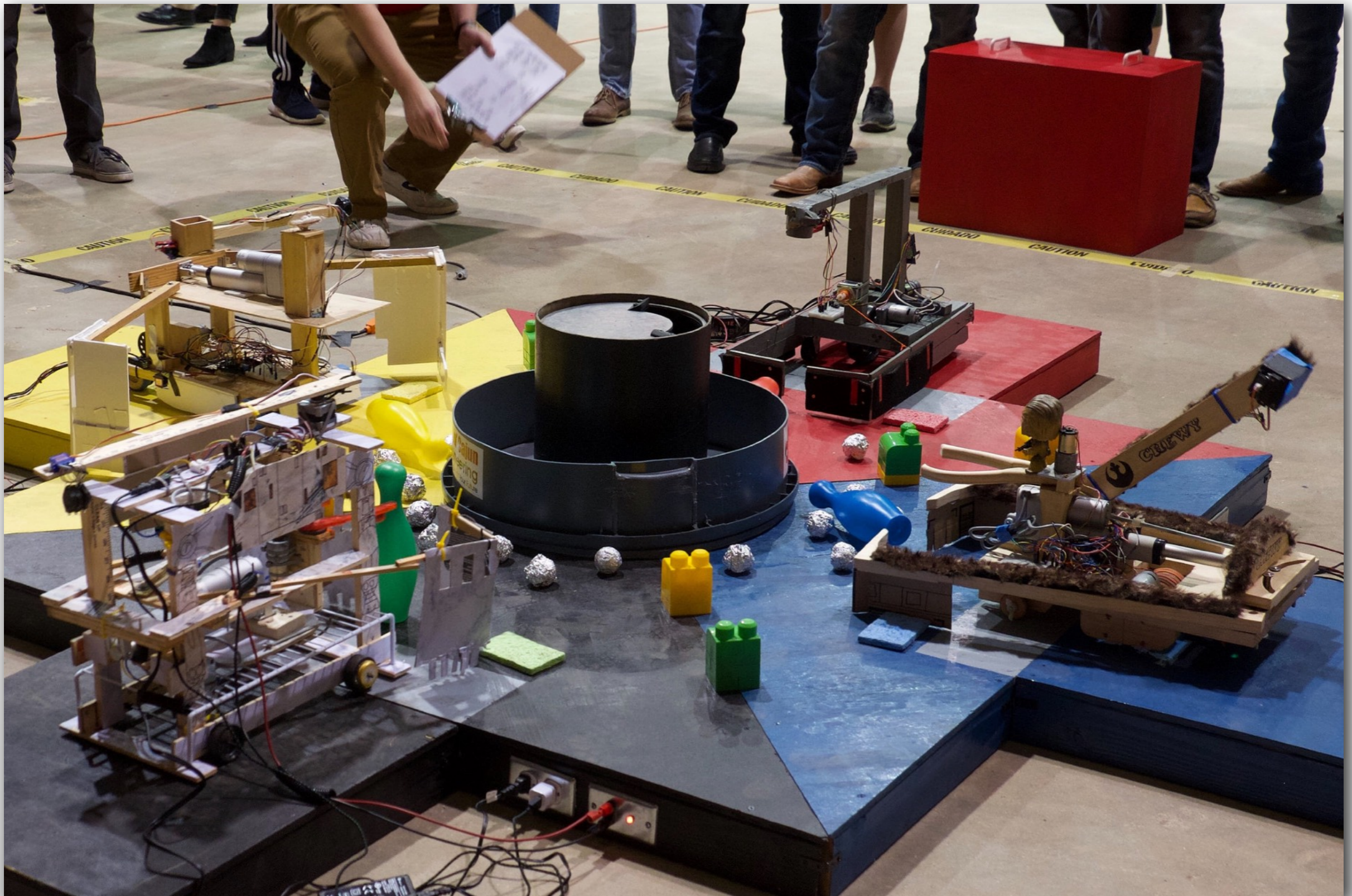
In Fall 2016... RobotX



In Spring 2017... Mission to Mars



In Fall 2017...**STAR WARS**



Now...



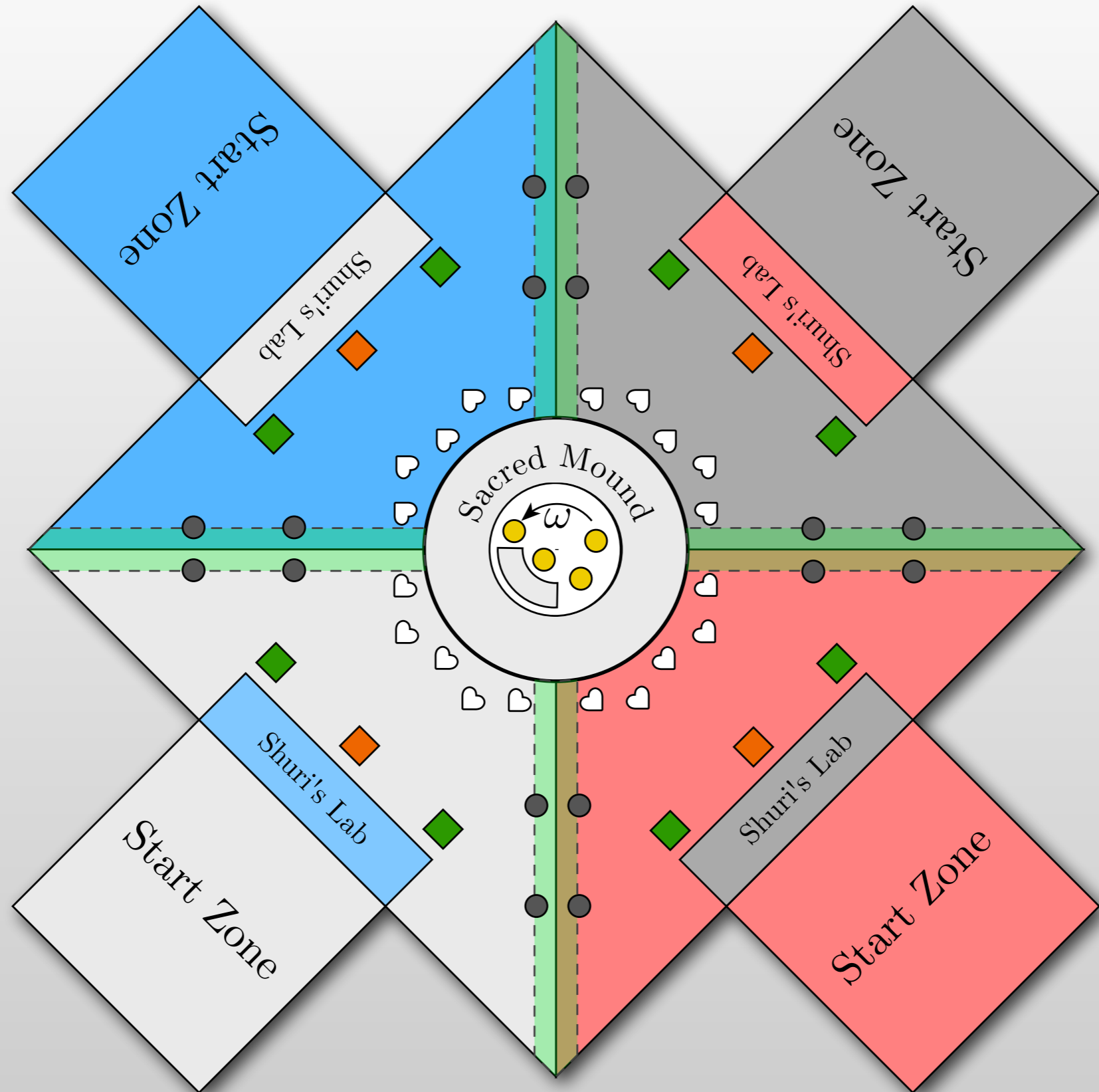
Image from: https://www.rottentomatoes.com/m/black_panther_2018/pictures/

To Become the Black Panther

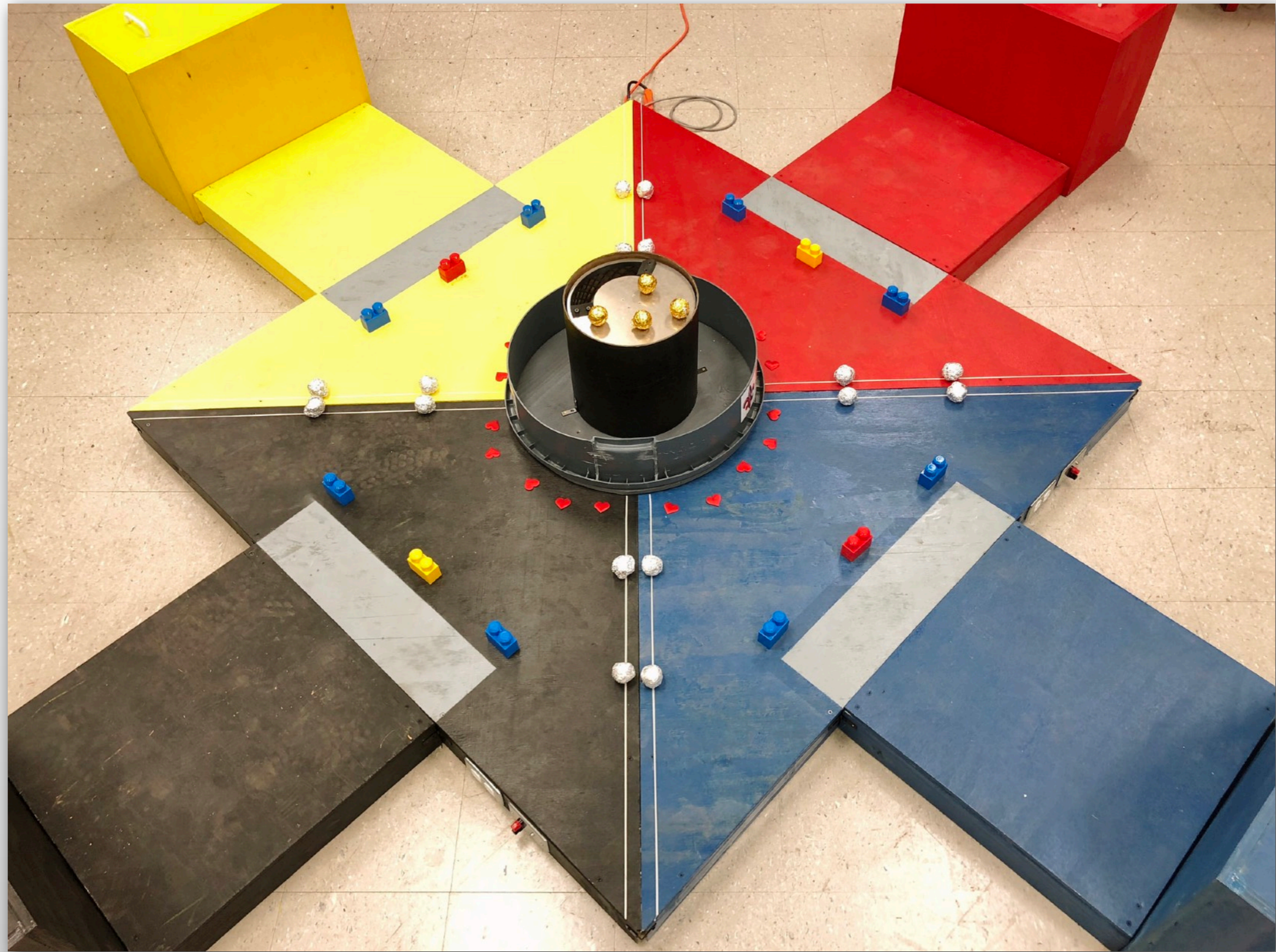


- Defeat Ritual Challengers
- Collect Heart Shaped Herb
- Collect Kimoyo Beads
- Return Vibranium to the Sacred Mound
- Put on the Black Panther Necklace

Wakanda



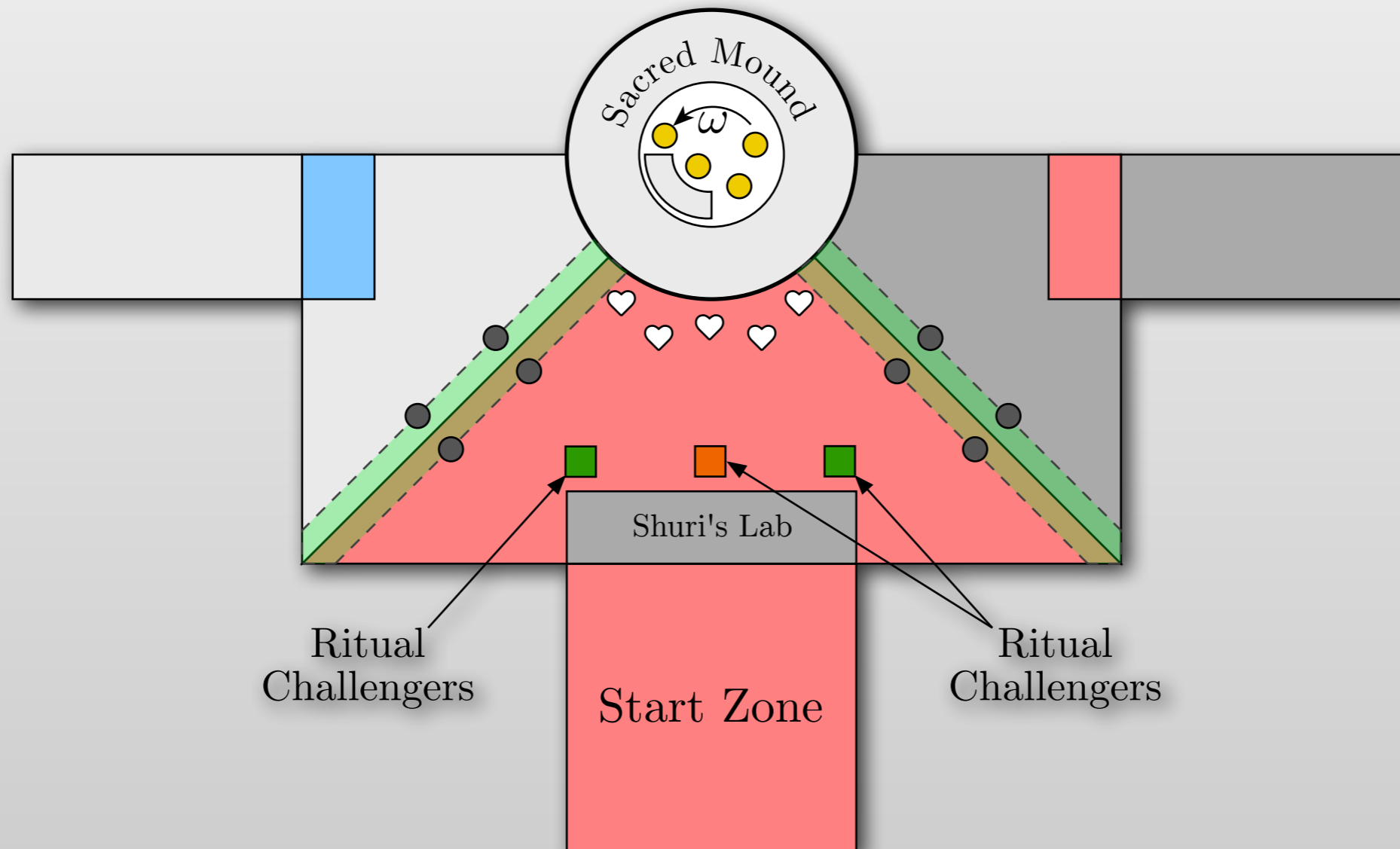
Wakanda



Defeat Ritual Challengers



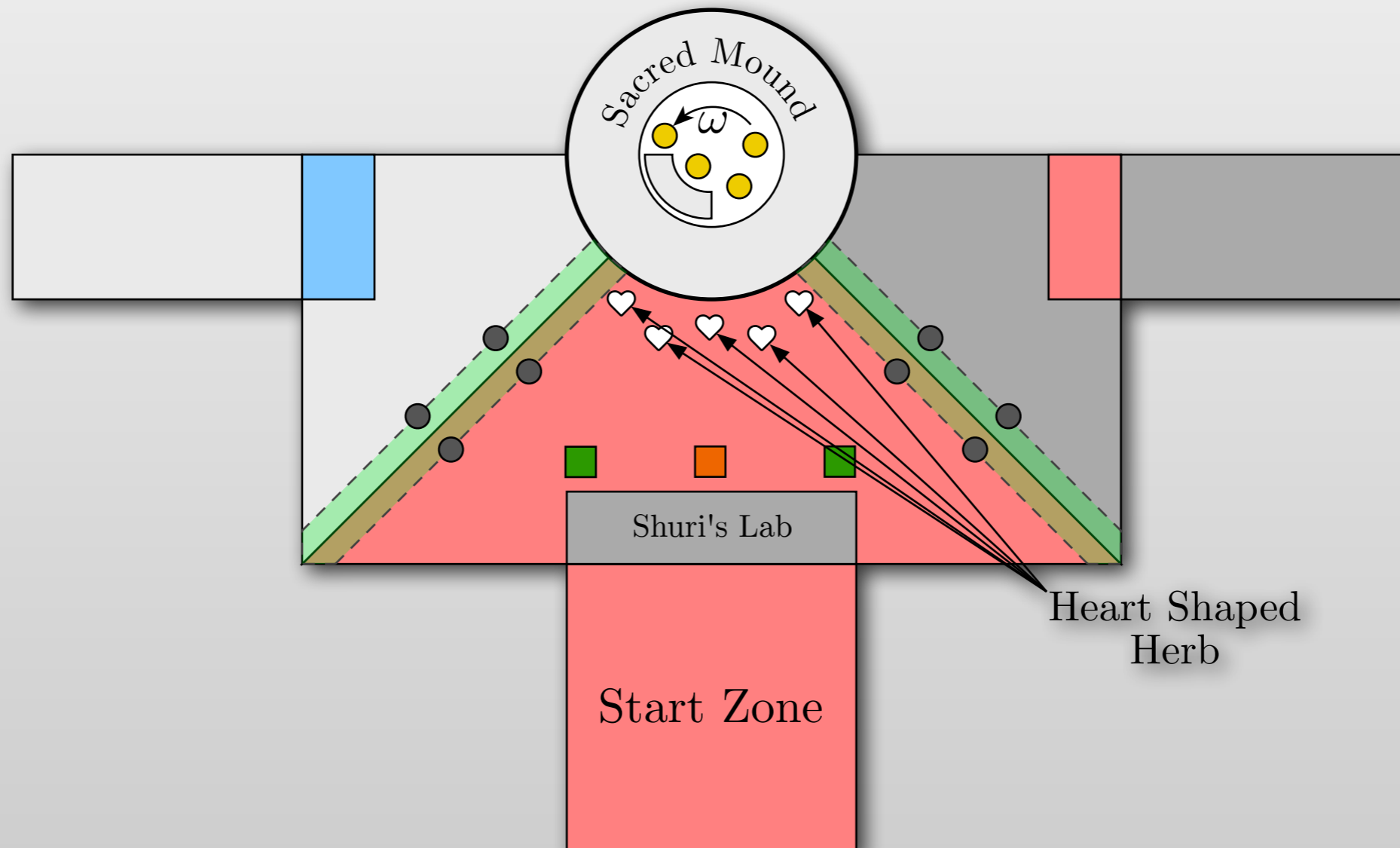
- Three Ritual Challengers (toy blocks) are directly in front of Shuri's Lab:
 - **-10 points** for each not defeated by *completely* removing it from the team zone



Gather Heart Shaped Heb



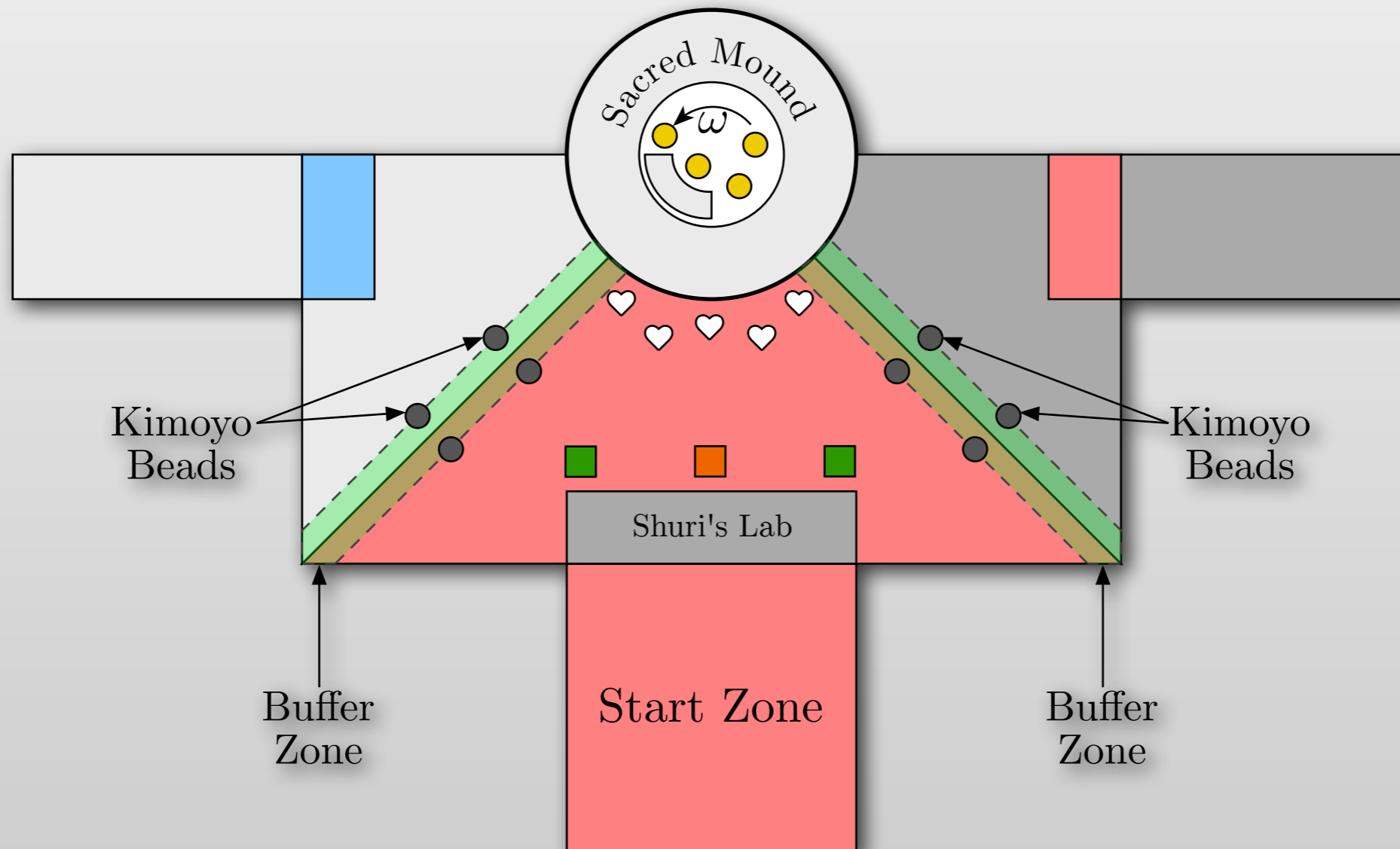
- 5 pieces of Heart Shaped Herb (small heart-shaped sponges) are in each zone:
 - **+5 points** for each collected *completely* into Shuri's Lab
 - **x2** if 4 or more are collected *completely* into Shuri's Lab



Collect Kimoyo Beads



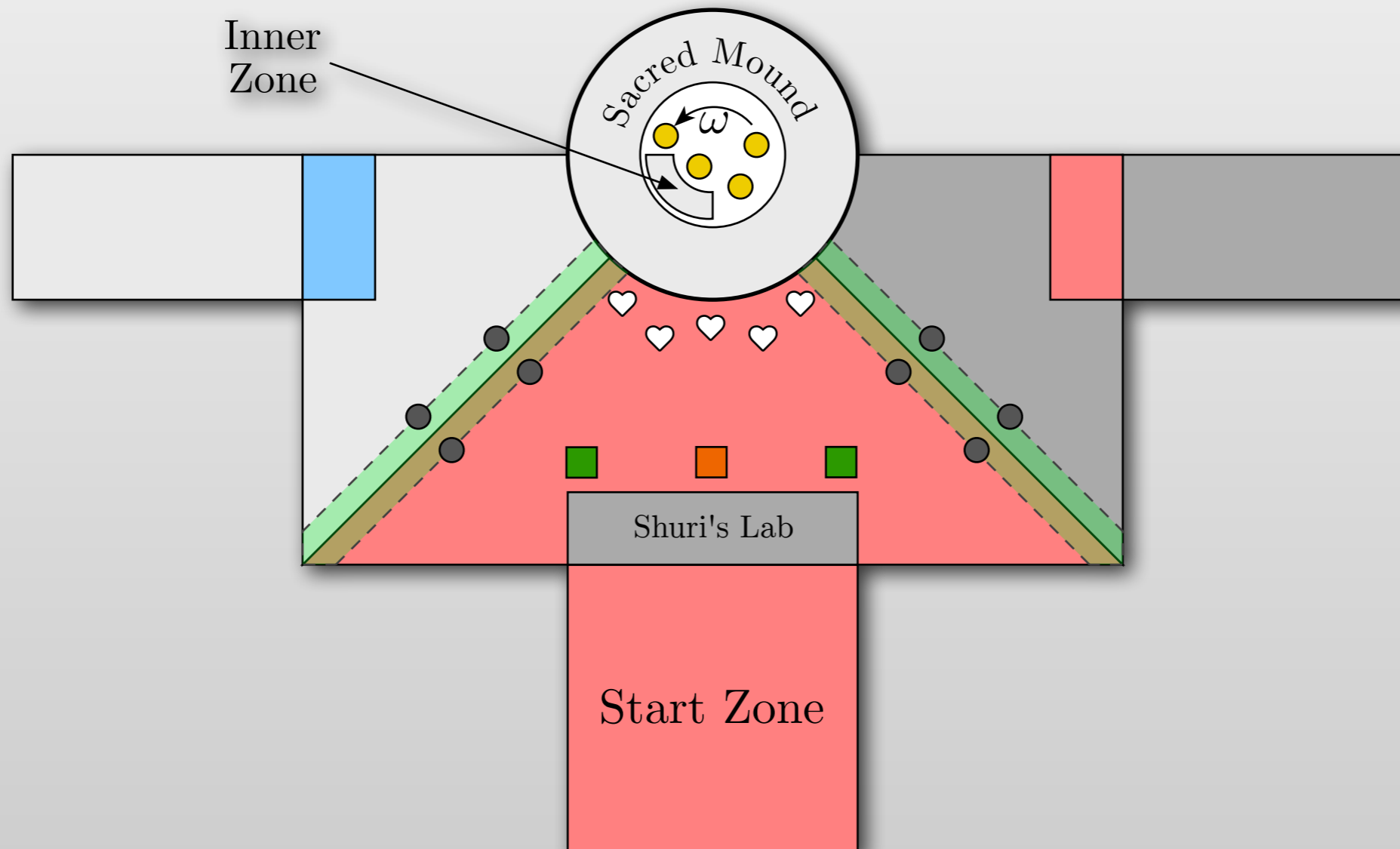
- Kimoyo Beads (foil-wrapped table tennis balls) are in a buffer zone at each zone edge:
 - **+5 points** for each collected *completely* into the team zone



Return Vibranium to the Sacred Mound



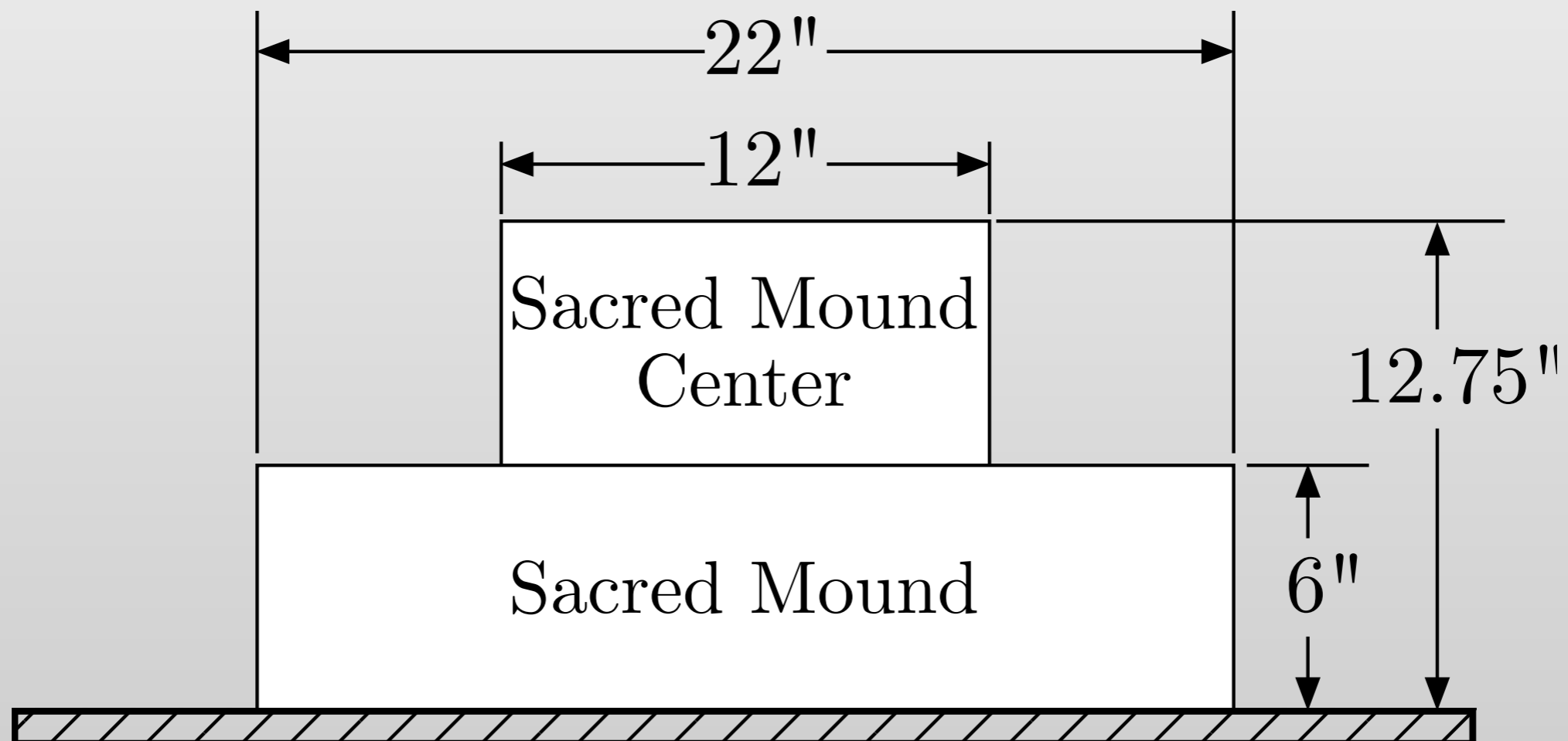
- Each team given 3 pieces of Vibranium (LED keychains)
 - **+5 points** for each placed in the Sacred Mound
 - **+15 points** for each placed in *rotating* Inner Zone



Return Vibranium to the Sacred Mound



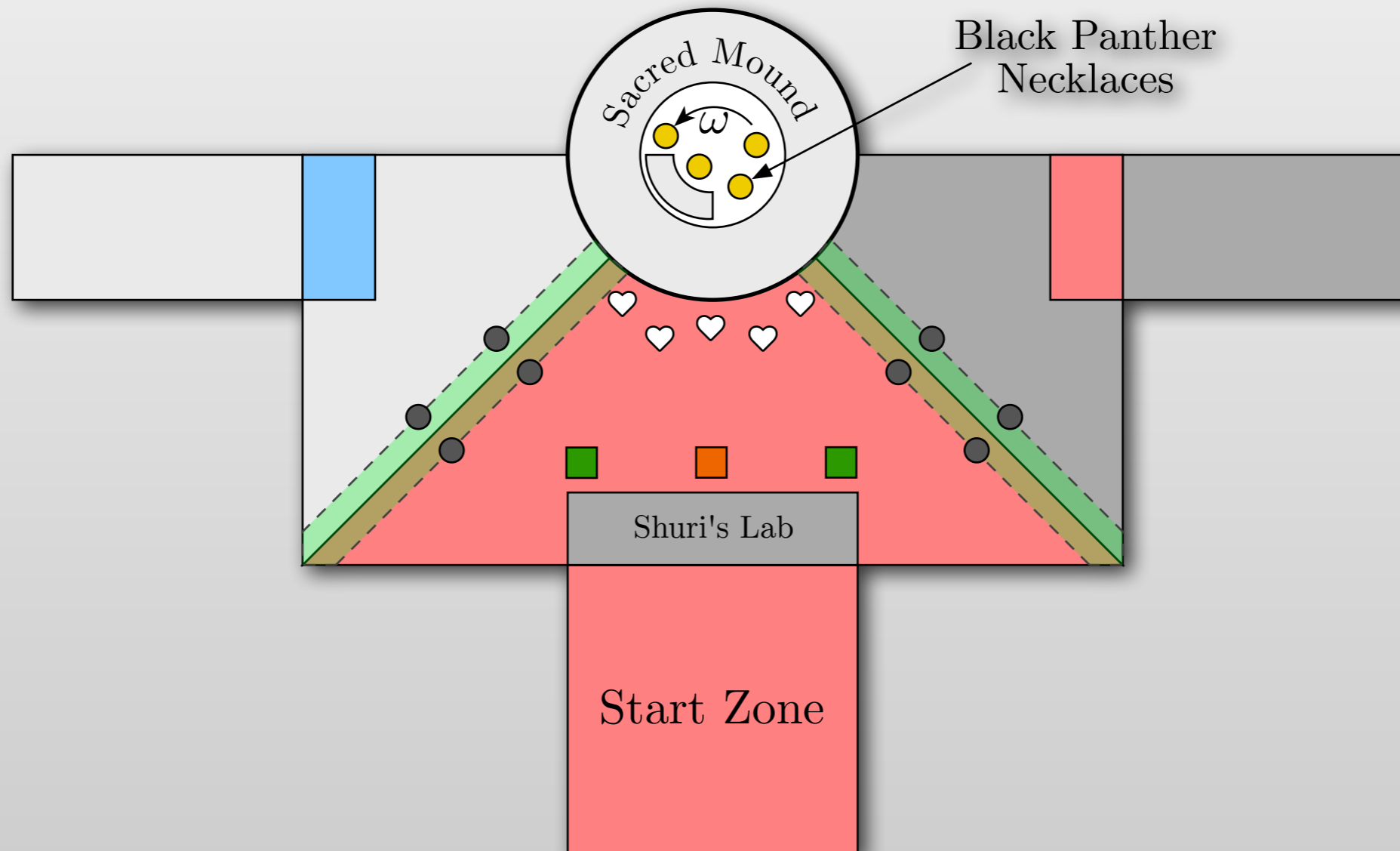
- Each team given 3 pieces of Vibranium (LED keychains)
 - **+5 points** for each placed in the Sacred Mound
 - **+15 points** for each placed in *rotating* Inner Zone



Put on the Black Panther Necklace



- Four necklaces (foil-wrapped table tennis balls) are in the Sacred Mound:
 - **+25 points** if 1 or more *completely* in team zone
 - **+50 points** if 1 or more *completely* in start zone

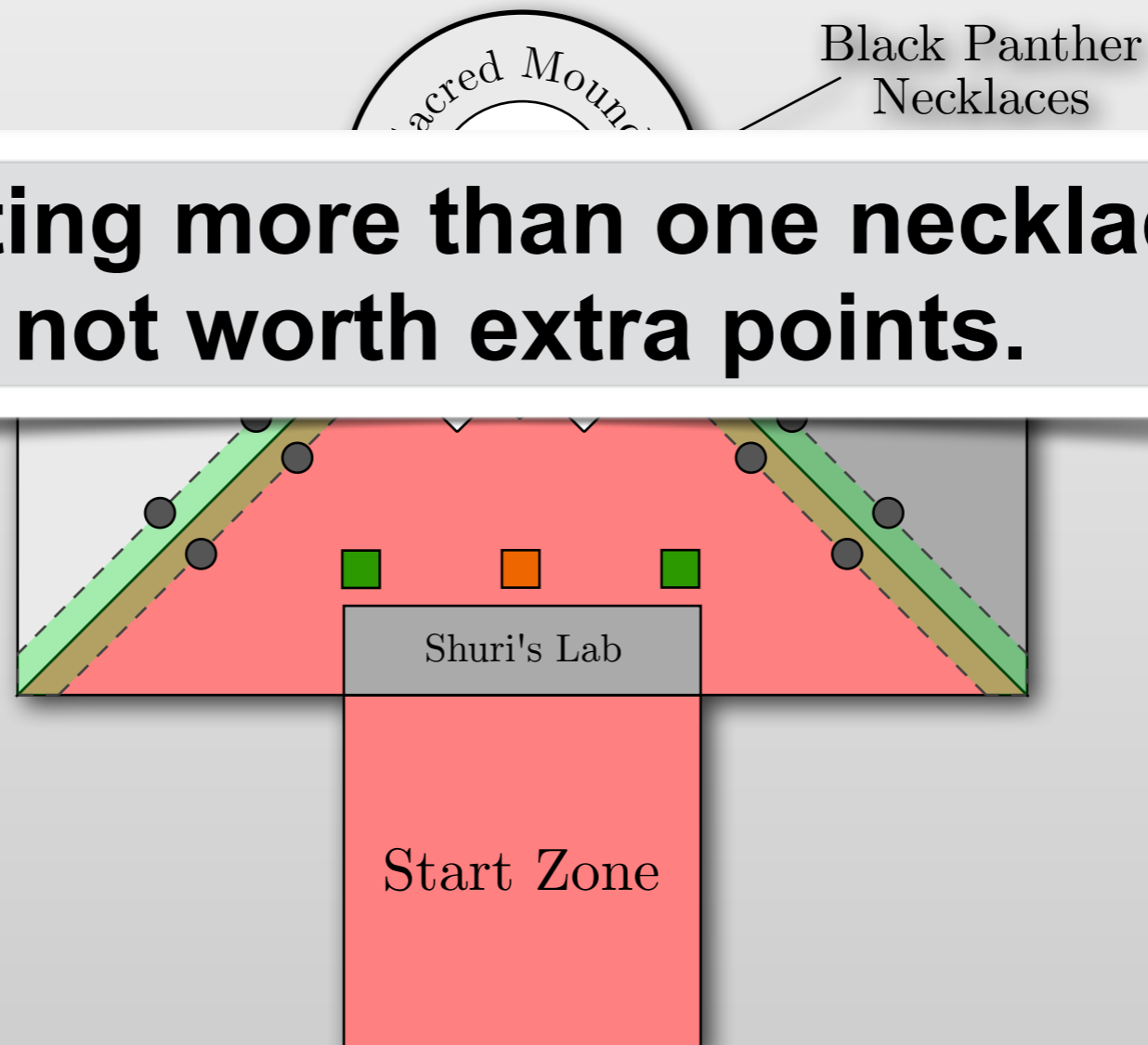


Put on the Black Panther Necklace



- Four necklaces (foil-wrapped table tennis balls) are in the Sacred Mound:
 - **+25 points** if 1 or more *completely* in team zone
 - **+50 points** if 1 or more *completely* in start zone

Collecting more than one necklace is not worth extra points.



More Details



- Must operate autonomously
- Can use:
 - 1 pyboard microcontroller
 - Components from 3 kits
 - Gravity
 - MCHE201 kit
- Will need to sense a “start” signal from the track
- Teams can buy <\$100 of additional
 - Sensors
 - Building materials
- Must fit onto 2ft-by-2ft starting area and <12"x24"x18"

Size Requirements



- Your device must be “boxed” prior to each run
- After “boxing” you can only move your device into its final position. You may *not* make *any* other adjustments.
- If adjustments are made, you must re-box your machine (even just reaching inside may warrant this)



Even More Details



- Machines cannot:
 - Use energy other than that from gravity or the components in the kit
 - Wantonly damage other machines
 - Damage the competition track
 - Damage any competition pieces
 - Operate for more than 30sec.
- Teams cannot:
 - Enter the competition track during a match
 - Interfere with your machine during a match
 - Use foul language during a match

**Any one of
these will
result in a DQ**

Final Competition



- Thursday, April 19th at Blackham Coliseum
 - Design Review - 5:00pm
 - Black Panther Contest - 6:15pm
- Family, friends, UL faculty/staff, high school robotics teams, and industry sponsors attend
- Official National Robotics Week Event



Design Review



- “Science Fair-style” presentation to:
 - Faculty/staff
 - Graduate students
 - Local robotics clubs
 - Industry guests
- Judged on:
 - Aesthetics
 - Ingenuity
 - Presentation
- 5 grade points



Black Panther Contest

