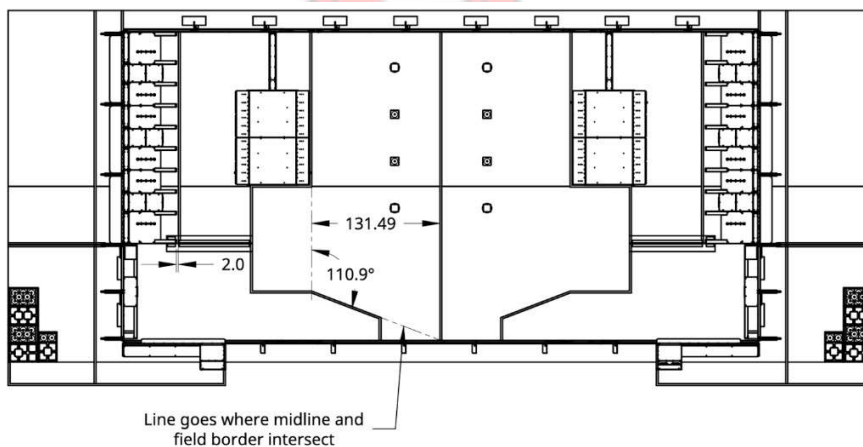


## STEMley 2023 – Rule Changes

rev: Aug 2, 2023

1. **Draft order:** 1-8, 8-1 (same as District events). Any undrafted teams should remain ready in case they are called in as backups.
2. **Double elimination playoff structure:** playoffs will follow the double elimination structure used by *FIRST* in the 2023 season.
3. **SuperCharged:** scoring will follow Team Update 21 including supercharged nodes and six links required for sustainability.
4. **Robot weight limit:** increased by 5 lbs
5. **Modified loading zone:** to reduce the likelihood of unnecessary penalties, the corner of the loading zones will be chamfered (thanks to [TRI](#) for this):



6. **STEMley Charge Extender (CE):** two special STEMley Charge Extender (CE) game pieces will be in play at the STEMley Cup Championship. CE CONES are dimensionally similar to the regulation yellow CONES but are red and blue in colour. The “feet” on CE CONES have a slightly different profile than regulation CONES.



Figure 1: Regulation yellow CONE “foot”

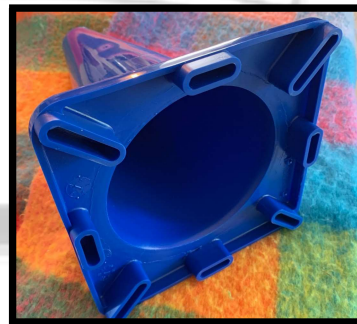


Figure 2: STEMley CE CONE “foot”

In fairness to teams who prefer to handle CUBES rather than CONES, the STEMley Cup Championship will have red and blue Charge Extender (CE) CUBES too. CE CUBES are dimensionally similar to regulation purple CUBES. They are the unmodified version of the Flaghouse inflatable cube ([part number 17810](#)) and include see-through vinyl pockets on each face. The red CE CUBE will have flexible red cards placed in each pocket while the blue CE CUBE will have flexible blue cards placed in each pocket.



Figure 3: Red CE CUBE



Figure 4: Blue CE CUBE

Prior to each MATCH, one CE CONE **or** one CE CUBE (as decided upon by the ALLIANCE prior to the match) will be placed in each of the ALLIANCE SUBSTATIONS. The CE GAMEPIECE is in addition to the normal complement of game pieces staged before each match.

One CE CONE **or** one CE CUBE per ALLIANCE may be entered into the playing field by the ALLIANCE's HUMAN PLAYER through the SINGLE or DOUBLE SUBSTATION in the last thirty (30) seconds of the MATCH. If introduced early as determined by the REFEREES, a FOUL will apply and that CE CONE or CE CUBE will not be eligible for any BONUS scoring.

The BONUS scoring condition for the CE CONES and CE CUBES is:

- a. at the end of the match, every CE CONE or CE CUBE in a scored position will have the effect on scoring of adding a bonus virtual GAMEPIECE to each of the vertically aligned nodes. In other words, each scored CE CONE or CE CUBE is worth three regulation GAMEPIECES.
  - b. CE CONES and CE CUBES scored in the CO-OP GRID contribute to the COOPERTITION BONUS as if each of the three levels vertically aligned to the CE CONE or CE CUBE was occupied by a GAMEPIECE
  - c. scored CE CONES and CE CUBES are counted when calculating SUPERCHARGED NODES as if each of the three levels vertically aligned to the CE CONE or CE CUBE was occupied by an additional GAMEPIECE
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Example 1: a blue ALLIANCE robot places a CE CUBE on the HYBRID NODE. At the end of the match, no other CUBES were placed on the middle or top rows vertically aligned to the scored CE CUBE. The scorekeeper enters one GAMEPIECE on each of the HYBRID, middle, and top NODES. Note in the example shown in Figure 5, the bonus GAMEPIECE combines with two horizontally adjacent CONES to create a LINK across the top row.

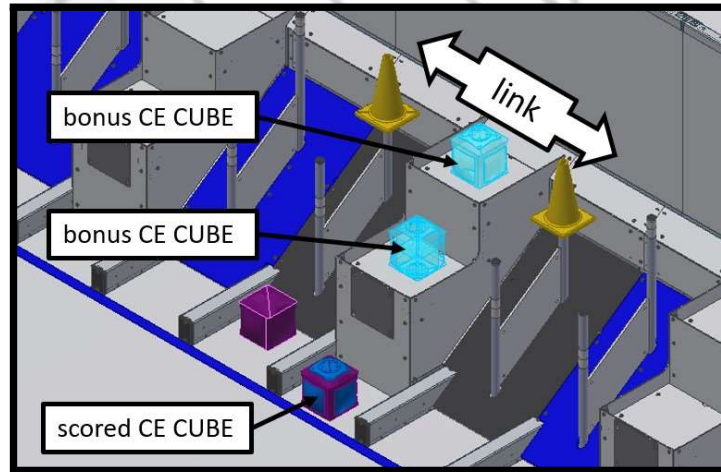


Figure 5: Illustration of Example 1

Example 2: a red ALLIANCE robot places a CE CONE on the middle NODE. At the end of the match, a yellow CONE has been scored on the NODE above the CE CONE. The scorekeeper enters one GAMEPIECE on each of the HYBRID and middle NODES and two GAMEPIECES on the top NODE. Since the grid is not SUPERCHARGED, the second cone on the top NODE has no effect on scoring. Figure 6 shows one of the bonus GAMEPIECES combining with two horizontally adjacent CUBES to create a LINK across the HYBRID row.

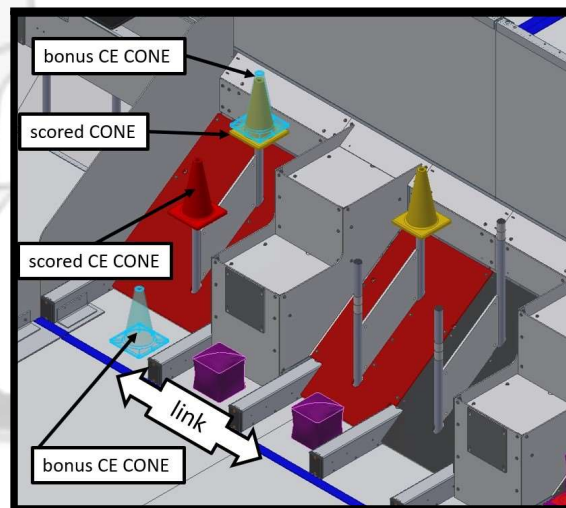


Figure 6: Illustration of Example 2

Example 3: a blue ALLIANCE robot places a CE CONE on the top NODE to complete the GRID and make the blue ALLIANCE eligible for SUPERCHARGING. One yellow CONE had already been placed on the mid and HYBRID NODES below the NODE where the CE CONE was scored. The scorekeeper enters one GAMEPIECE on the top NODE, two GAMEPIECES on the mid NODE, and two GAMEPIECES on the HYBRID NODE. The mid and HYBRID NODES are considered SUPERCHARGED.

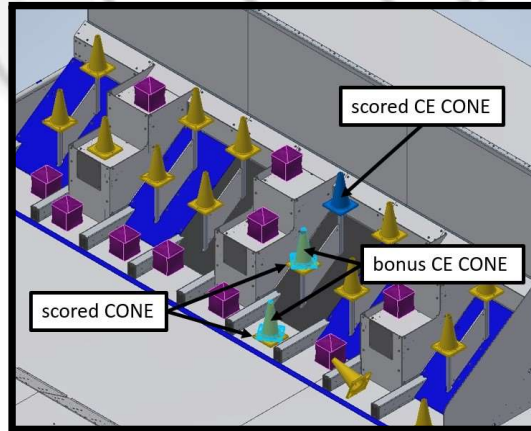


Figure 7: illustration of Example 3

BONUS points due to CE CONES and CUBES (if any) will be added to the MATCH SCORE prior to the posting of the official final MATCH SCORES. The ruling of the HEAD REFEREE is final.