CREATE Open – Rules Addendum
2016-2017

1) All VRC "Starstruck" rules for the game and robot apply unless expressly stated otherwise below.

2) Game Modifications

1. Robots will start from an OFF position. So getting your robot "booted" and active (i.e. linked quickly) is an important consideration.
2. Matches will start with a 25 second autonomous mode, followed by a 95 second driver mode. Remotes must be placed on the ground to start the match. A button(s) may be pressed if required to start the autonomous mode however the remote must stay on the ground and no contact is allowed after 3 seconds of the autonomous mode has elapsed.
3. There will be NO pause between autonomous and driver control.
4. The following will replace the VRC autonomous bonus::
    1. 4 points – for the alliance that has knocked more stars off the wall onto the other alliances side. Only the center of the star needs to be on the other side and either touching a tile or an opposing alliance robot (NOTE: Stars taken from the ground, regardless of where they started, are not included in this bonus. Only stars on the wall at the beginning of the match.
    2. Negative 2 points – for the alliance that has both "cubes" anywhere on their side. Only the center of the cuber needs to be on the other side and either touching a tile or an opposing alliance robot.
    3. Negative 2 points – for the alliance that has both Alliance Stars on their side. (An Alliance Star is the star in the middle of the back row, the row nearest the wall. It will be marked on the ends with the color of the alliance it starts in.) Only the center of the Alliance Star needs to be on the other side and either touching a tile or an opposing alliance robot to be considered on that side.
5. Teams touching their remotes outside of designated times may receive a 5 point penalty for their alliance. Egregious infractions may result in disqualification. The one exception to this rule is if a robot has not left it's starting tile a team may touch their remote (NOT their robot) in an effort to start their robot. If such a team starts their robot during autonomous mode they must stop touching their remote prior to their robot leaving it's starting tile. However at all times the remote must be flat on the ground and may not be held.
6. In addition to the regular hanging bonus scores the Open has two more hanging bonuses/options, the Inverted Hang, and the partner Corner Hang. For a robot to have scored an inverted hang the robot must be inverted such that if the ground were to rise to meet the robot, it would settle in a position that is completely upside down from the orientation used to play the match. This will be at the referees discretion to it would be best to get to as close to inverted as possible while hanging.
    1. Low hang – 4 points
    2. High Hang – 12 points
    3. High Inverted Hang – Negative 8 points for the opposing alliance.
    4. Partner Corner Hang – Negative 4 points for the opposing alliance. (This bonus is awarded ONLY if the alliance partner has successfully scored one of the hang bonuses on the hanging pole.) The Partner Corner Hang must be supported by two walls opposite the hanging pole and must be at least 4" off the ground.
7. For a robot to earn a hanging bonus of any kind it must have scored at least one other game object during the match.

3) Skills Modifications

1. Inverted hanging bonuses as described above DO NOT apply to skills in the Open.

4) Robot Build modifications

1. Any control system or material may be used to build the robot. This includes all VEX parts, electronics, motors, etc., but also allows Arduino based control system (or any other) as well as 3D printed parts, laser cut parts, hand made parts, etc.
2. Exotic/expensive materials such as titanium are not allowed. (We want to keep the playing field level). More materials may be added in the future.
3. A maximum of 2 tanks. (Again a desire to keep the playing field level.) Also for this year only VEX pneumatics (pistons and tanks) are allowed.
4. Up to 3 of the batteries listed below may be used. The following is a complete list of competition legal batteries/chargers:
    1. Tenergy NiMH 9.6V 2000mAh High Capacity Battery Pack --- Item No. 11401-01
    2. Tenergy NiHH 8.4V 1600mAh Flat Battery Pack --- Item No. 11328
    3. Tenergy NiMH 7.2V Flat Battery Pack 3000mAh --- Item No. 11204-01
    4. VEX 9.6V Remote Battery NiMH – Discontinued
    5. VEX 7.2V Robot Battery NiMH 2000mAh --- P/N: 276-1456
    6. VEX 7.2V Robot Battery NiMH 3000mAh --- P/N: 276-1491
    7. Tenergy Universal Smart Charger for HiMH/NiCd Battery Packs (6V – 12V) --- Item No. 01025
    8. VEX Smart Charger v2 w/ Power Cord Options --- P/N: 276-2519
5. All parts, EXCEPT pneumatics and the Reoffs, may be modified from their original factory condition. This includes all motors and electronics. Please keep in mind however that safety is a primary concern. Any robot deemed unsafe by the inspectors/referees will not be allowed to compete until the safety issue is resolved or may be disqualified from the tournament.
6. No rare earth magnets or electromagnets, other than those used in shielded motors, may be used as these pose an interference hazard with both electronics and metal.
7. No control system, part or set of parts can act in a fashion that inhibits the normal operation and/or communication of other robots is allowed.
8. No power sources other than pneumatics, batteries or compression (rubber bands, springs, etc.) are allowed.
9. CREATE officials reserve the right to restrict any material or part that interferes with the normal operation of the field or another robot. If you are unsure, ask first.
10. Voltage may not be combined. (i.e. you cannot double your voltage and halve your current.)
11. All battery power must be plugged directly into the Reoff.
12. A single battery must be plugged into circuit A and the output of that circuit must go to power the controller/brain.
13. The output of circuit A may not be combined in parallel with either circuit B or C.
14. Any Reoff (Remote On/Off Switch) must be installed such that the Reoff LED strips are clearly visible on 2 opposite sides of the robot and are free from obstructions that might cause interference.
15. A team license plate must be:
    1. Displayed on each side of their robot.
    2. Must be easily identified by judges, referees and announcer
    3. Must have numerals/letters that are at least 1.5” high, at least 1/2” stroke width, and are in a contrasting color from their background.

4) Awards

1. CREATE Open awards share many similarities to awards at events you are accustomed to with one significant exception. Great focus will be given to innovation. i.e. Using new methods of construction (3D printing, etc.) and different types of motors, controllers, etc. We really want to spur creativity.
2. At a few larger events 3D printers will be awarded to the Honor Award recipient, CREATE's highest award.
3. NEW in 2015-2016 is the Sensor Challenge. CREATE will award the team with the most innovative, creative and effective use of a specified sensor, an HOI Apollo control system. This award will be given at both the Nebraska State Championship and the CREATE U.S. Open. To get the specifics of this new challenge contact CREATE at Support@CREATE-Found.org and request the challenge details.