The Technology

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Section 4 – The Technology

4.1 – Overview

This section provides rules and requirements for the design and construction of the technology used in your Story Space. There are very specific types of technology that are required to be included and used in your Story Space. There are also restrictions. Those are detailed in the following document. Prior to competing at each event, all Story Space Technology will have to pass an inspection. Refer to Appendix A for the Technology Inspection Guidelines and the Inspection Checklist.

4.2 – Technology Rules

There are specific rules and limitations that apply to the design and construction of your technology. Please ensure that you are familiar with each of these robot rules before proceeding with robot design.

<R1> One Story Space Technology Setup will be allowed per team. Though it is expected that teams will make changes to their technology at the competition, a team is limited to only ONE Setup.
   a. It is against the intent of this rule to compete with one set up, while a second set up is being modified or assembled.

<R2> Every Story Space Technology Setup will be required to pass a full inspection before being cleared to compete. This inspection will ensure that all safety and challenge rules and regulations are met. Initial inspections will take place during team registration/practice time.
   a. If significant changes are made to the technology, it must be re-inspected before it will be allowed to compete.
   b. All technology configurations must be inspected before being used in competition.
   c. Teams may be requested to submit to random spot-inspections by event personnel. Refusal to submit will result in disqualification.
   d. Referees or inspectors may decide that a Setup is in violation of the rules. In this event, the team in violation will be disqualified and the Setup will be barred from the Story Space until it passes re-inspection.

For more information on the inspection process please refer to Appendix A, Technology Inspection Guidelines.

<R3> The following types of mechanisms and components are NOT allowed:
   a. Those that could potentially damage Story Space or Story Space components.
   b. Those that pose a safety hazard as determined by the inspector(s).

<R4> At the beginning of any presentation the presentation and all elements of the presentation must not exceed the Story Space.

<R5> The following are the restrictions on the technology to be used.
   a. Up to ten (10) motors may be used. Any combination, servos, steppers, etc., up to 10.
   b. A maximum of 2 pneumatic tanks may be used. Only VEX pneumatics (pistons and tanks) are allowed.
   c. Up to 3 of the batteries listed below may be used. The following is a complete list of competition legal batteries/chargers:
      i. Tenergy NiMH 9.6V 2000mAh High Capacity Battery Pack --- Item No. 11401-01
      ii. Tenergy NiHH 8.4V 1600mAh Flat Battery Pack --- Item No. 11328
      iii. Tenergy NiMH 7.2V Flat Battery Pack 3000mAh --- Item No. 11204-01
      iv. VEX 9.6V Remote Battery NiMH – Discontinued
      v. VEX 7.2V Robot Battery NiMH 2000mAh --- P/N: 276-1456

      vi.   VEX 7.2V Robot Battery NiMH 3000mAh --- P/N: 276-1491

      vii.   Tenergy Universal Smart Charger for HiMH/NiCd Battery Packs (6V – 12V) --- Item No. 01025

      viii. VEX Smart Charger v2 w/ Power Cord Options --- P/N: 276-2519

  d. All parts, EXCEPT pneumatics, 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 system/component 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.

  e. No control system, part, or set of parts, can act in a fashion that inhibits the normal operation and/or communication of other teams' technology is allowed.

  f. No power sources other than pneumatics, batteries, or compression (rubber bands, springs, etc.), are allowed.

  g. CREATE officials reserve the right to restrict any material or part that interferes with the normal operation of the Story Space or another team's technology. If you are unsure, ask first.

  h. Voltage may not be combined. (i.e. you cannot double your voltage and halve your current.)

<R6> Teams must display their team number at all times. Whether in the pits or during presentations the team number must be displayed. When in the pits your team sign must be on your table, centered, and toward the front. During your presentation your sign must be on the floor, even with the front of the story space and on the left side as you face the audience. Team name is recommended as well, but is not required. The characters that make up the team number must be at least 4" high with at least 1" stroke.

<R7> Speakers are not only allowed but encouraged. However, keep in mind that ALL electronic equipment must be powered from one of the 3 allowed batteries.

<R8> Notebook computers, Tvs/monitors, etc., are allowed. However, keep in mind that ALL electronic equipment must be powered from one of the 3 allowed batteries. Also, keep in mind that a team that uses a device like a Raspberry PI to do video versus a team that uses an iPad or like device, will score higher particularly if they are able to explain how it works.

<R98> The entire Story Space Technology Setups are to be built by the students. Adults, coaches, parents, mentors are to be facilitators, offer suggestions, teach, and guide. We understand that each student is unique and their learning facilitated by different styles which may benefit from varying levels of assistance. For instance, if a student cannot remove a stripped bolt it is perfectly acceptable for an adult to do that for the student. If a student has never seen a particular mechanism it is a great learning experience for the student to build it with an adult. However, any mechanism that is in ANY significant way built by an adult should be dis-assembled and re-assembled by the student(s). It is very important that the students understand their technology and are able to fix/modify it during the tournament, as adults are not to assist in any capacity, except to help remove stripped bolts or where safety is involved. Teams with adults acting in discord with this rule will be removed from consideration for judged awards. Repeated and/or egregious infractions may result in a team being disqualified from the tournament.