1. **The students will create a substantially original design and build the car themselves, under the guidance of adults.**

   The car should be fabricated from parts and designed and assembled by the students. Simply attaching a motor and drive system to an existing wagon, go-cart, bicycle, or other vehicle is not allowed. Adults may perform operations under the direction of the students when safety is a concern. Examples may be welding, drilling large diameter holes, or similar operations where students don't have the strength or skill to safely perform the operation. The learning experience requires that students be allowed to make their own mistakes and learn from them. Adults can provide several design options to students and ask questions to stir up ideas when appropriate but should not steer them towards any particular solution. Adults under the guidance of the students may procure parts.

2. **The car must be stable and balance itself without the driver's help.**

   Vehicles that require the driver to participate in balancing (as in a bicycle for example) are not allowed.

3. **Wear eye protection when working on the car. Use of power tools must be supervised.**

   Everyone in the vicinity of a power tool being used must wear eye protection and it is recommended that eye protection be worn at other times as well. Other forms of protection should be worn as necessary (examples: gloves, helmet, welding goggles, etc.). An adult who understands the safe and correct operation of the power tool must supervise whenever a power tool is used.

4. **Spend no more than $100.**

   Each team will not spend more than the $100 budgeted by B*E*S*T. All other parts must be scavenged. No outside money or donated non-scavenged parts are allowed.

5. **Use approved batteries, motors, and circuit breaker.**

   Each car will be powered only by the battery and motor(s) issued by B*E*S*T. No substitution of parts or additional power sources are allowed. The circuit breaker provided by B*E*S*T must be wired directly to the battery with no other parts between them. All power for the car must pass through the circuit breaker. Any wiring and all connections between the battery and the circuit breaker must be insulated and protected from accidental contact with conducting material. It is recommended that the circuit breaker is directly attached to the battery. (This circuit breaker "counts" as one of the two power switches for item 7, below, only if it is within easy reach of the driver.)

6. **Wiring must be safe.**

   The car will be wired in such a way to minimize the hazards of shorting. Insulated wire must be used where appropriate. Wires must be routed and secured so that pinching, scraping, and snagging of wires is not a hazard. Of particular importance, the battery posts and the wiring in-between the circuit breaker and the battery posts must be fully protected from accidental shorting by insulating materials.

7. **Two power switches needed. Removing power must not affect steering.**

   The car will have at least two devices that cut power to the motor(s) within easy reach of the driver. At least one of these switches, the one that the driver normally uses to apply and remove power, must be designed so that power can be removed without altering the driver's normal way of steering. For example, if steering is done using handlebars that normally are controlled by two hands, then removing the power must not require removing either hand from the handlebars.

8. **Brakes must work. Braking must not affect ability to steer. Brakes must not scrape the ground.**

   The car must have a braking system that is in satisfactory operating condition, which will stop the car in a reasonable manner. The brakes must be designed so that they can be applied without altering the driver's normal way of steering. For example if steering is done using handlebars that normally are controlled by two hands, then applying the brakes must not require removing either hand from the handlebars. The brakes should not scrape against the ground (to avoid damaging the running track on Race Day).

9. **Steering must work.**

   The car must have a steering system in satisfactory operating condition.

10. **Mechanical hazards must be shielded. Battery must be attached.**

    The car should not present any hazards to the driver or others like sharp edges, corners, or points. Moving parts like pulley, belts, chains, and gears should have adequate guarding. Heavy parts (such as the battery) must be secured so that they will remain in place if the car is tipped over on its side or upside down.

11. **Flag pennant and flag needed.. (optional for 2007)**

    Each car shall have a pennant mast mounted vertically on their car. A pennant mast is a four-foot long flexible rod like those used on bicycles. The mast will be provided by B*E*S*T. The students should create a pennant to fly at the top of the mast that is made of cloth or some other flexible material and is any shape, but is no larger than two feet by two feet.

12. **Drivers must be qualified.**

    Each driver shall have practiced at least those items described on the Driver Practice Report. Bring this report form to Race Day; it will be reviewed during the car inspection prior to the races.