

# Pack 4031 Lego Derby Rules & Specifications

## Saturday, November 10, 2018

<b>Schedule:</b>	<b>9:00am – 9:20am</b>	<b>Car Check-in</b>
	<b>9:20am</b>	<b>Opening Ceremony and Announcements</b>
	<b>9:30am</b>	<b>Races Begin</b>

The Lego Derby competition is for scouts in K – 5<sup>th</sup> grade, siblings Kindergarten and up, and adults. The purpose of a Derby is to have fun! It is a chance for scouts, parents, and siblings to show good sportsmanship and cheer on everyone who has worked hard to build their Lego Derby cars.

The purpose of these rules is to keep an even and fair playing field for all participants. Any race-day interpretation of the rules will be made with this objective in mind. Please remember that everyone involved in running the Derby is a volunteer parent who is Doing Their Best!

**Scout and sibling behavior: In order to protect the cars that you have worked so hard on, there will be no running in the gym, climbing on the stage, etc.** Racers who are not currently racing and all spectators must remain in the bleachers or other designated areas. To be respectful to all participants and spectators it is important that children do not run around the gym during other den races. We will have craft/activity tables organized to help keep children occupied that may not be interested in watching other dens race.

To race in the Lego derby, cars must be checked in and fully meet the “Race Specifications” below. We will have medals and ribbons for race winners and one or more “creative” awards. All cars will be entered into the “creative” competition if they are checked in on time.

### Specifications for Both **Creative** and **Race** categories:

- Scouts must build the derby cars, with adult assistance as required. The level of adult assistance needed will vary by the scout’s age—Lions may need a lot of help, while Webelos should be building mostly themselves.
- The car must use the official MiniBrick Derby wheels and axles. Cars shall be built using compatible Lego Bricks or Mega Blocks.
- Cars must have been built for this year’s derby—you cannot use a car you built in prior year(s).

### Race Specifications:

- The car **WEIGHT** cannot exceed 9.0 ounces. The race scale shall be considered final. If you know the car is at the upper weight limit, be sure to have a way to easily remove weight on race day. No free weights or non-MiniBrick components are allowed.
- The overall **WIDTH** of the car must not exceed 3.125 inches.
- The overall **LENGTH** of the car must not exceed 9 inches.
- The overall **HEIGHT** of the car must not exceed 4 inches.
- The car must have 3/8” clearance underneath the body to be assured of clearing the guide rails on the track.
- No part of the car may protrude past the starting peg on the track. Any MiniBrick that extends past the part of the car resting on the starting pin would create an unfair advantage by setting off the finish line sensor early.
- You may not cut, drill, bevel, groove, narrow, round, or otherwise modify the wheels and axles. Polishing the wheels and axles is allowed to remove the flaws and rough spots left from the manufacturing process.
- You may not add wheel bearings, washers, bushings, or any other wheel parts that are not part of the MiniBrick derby kit. You may not add springs or a suspension. No starting or propulsion devices may be added. No loose material of any kind, such as lead shot.
- **You may not use liquid lubricants or any wet or sticky material.** Dry graphite is OK. ALL application of dry graphite must be done before you get to the school. (Note: This can be MESSY!!! And dark graphite will stain everything. Make sure to clean excess graphite off the car before you bring your car to race.)

**ABSOLUTELY NO GRAPHITE APPLICATION IN THE SCHOOL BUILDING**

# RACE DAY INFORMATION

Check-In: Cars will be weighed and measured during check-in. Cars must meet specifications to race. Participants will be allowed to modify their cars if they do not meet the specifications during check-in. Non-qualifying cars may still enter the creative judging. It is not possible to add racers once a race has started so please don't be late for check-in.

Car Garage: Once cars are checked-in you will enter your car into the Car Garage. The garage is organized by den/grade level; Kindergarten, 1<sup>st</sup> grade, 2<sup>nd</sup> grade, 3<sup>rd</sup> grade, 4<sup>th</sup> grade, 5<sup>th</sup> grade, and 6<sup>th</sup> grade through adult. (Grade levels may be combined if number of participants is too low to have a complete race)

Creative Judging: Creative categories will be judged by den leaders and other adults. There will be no scout voting this year. Voting will begin before the competitive race. A car must be checked into the garage on time to be part of the creative judging.

## Race Rules:

- Participants will be called up by grade level. Scouts and siblings will race against each other by age group. Medals will be awarded to the top three winners in each youth category.
- Cars will race against each other on a four lane track. The winning car will be determined electronically. If the electronic timer does not function the heat will be re-run. You will race in four heats and your race time is determined by the average of your heat times.
- All parts of the car must be behind the starting peg at the start of the race.
- If, during a race, a car leaves the track without interfering with its opponent, it shall be considered to have ended its heat at that point.
- If, during a race, a car interferes with another car, the heat shall be re-run. If the same car again interferes, the offending car shall be declared to have lost the heat.
- If a car is damaged during a heat, the Scout and his parent will be allowed to attempt repairs, but the car must be ready to run for its next heat, within a reasonable time (a few minutes). Repaired cars may be re-inspected.

## **10 tips for a Great Derby!**

1. Be Creative. The specifications are there to make sure your car fits and runs on the track, but the design options are endless.
2. Don't make the front of your car into a sharp point (so that if you look at it from the top it looks like a V). The car will have a very difficult time staying on the starting peg if you do.
3. Check wheels and axles for flaws and rough spots. You can smooth the wheels and polish the axles but be careful you don't damage or bend them in the process. (You will melt the wheels if you polish them too hard!)
4. Try to keep the bottom of your car flat. A car with its base level with the axles will be a more stable car. If you build the car and then just stick the axles on, your car will tend to flip over after it crosses the finish line. A flipped car can cause a lot of damage and has even taken cars completely out of the race.
5. Space your axles appropriately to the length of your car. Too much space between the axles can cause your car's structure to be weak in the middle. Not enough space can cause the ends of your car to rub the track on the down slope.
6. Heavier cars tend to run faster, add bricks to your car up to 9.0 ounces. But remember you cannot use non-MiniBrick components to add weight.
7. Light cars have a hard time reaching the finish line. A car that weighs in at less than 4oz usually has trouble reaching the finish line.
8. Try to distribute the weight of your car. If you put too much weight in one end of the car, it can make the car wobbly.
9. Avoid fragile decorations or you'll spend a lot of time picking up Legos off the floor.
10. Have Fun!