

# **Official Pinewood Derby Rules**

*The pinewood derby is one of the most popular and successful family activities in Pathfinders (except for maybe the camporee!). The pinewood derby car kit includes the wood to make your car, four axles, and four tires. Your car must be made from this kit to qualify for racing.*

*Please feel free to give guidance and minimal assistance to your Pathfinder as they build their car. This is a chance for your child to be part of a team (them and you), to enjoy the spirit of friendly competition with their peers, and to experience the satisfaction of building their own car from the kit provided.*

*Our goal with the pinewood derby is that each participant will learn:*

- *Sportsmanship – caring about their competitors*
- *Honesty - the ability to follow rules*
- *Craftsmanship – the skill necessary to build a car (do your best!)*

## **Have Fun And Be A Good Sport!**

*All entrants must be registered and go through inspection before the green flag is waved on race day. Late arrivals to registration and inspection will not be allowed to race. Below are the rules for building the car:*

*Rule #1: All cars are to be built from the official pinewood derby kit available at <https://www.scoutshop.org/official-pinewood-derby-car-kit-17006.html>.*

*Rule #2: All cars must be constructed during the current year. Cars determined to be from a previous year's race will not be eligible.*

*Rule #3: All cars must pass a pre-race inspection and the decision of the race officials shall be final in determining eligibility. Specifications are detailed below.*

*Rule #4: All cars must be constructed by the Pathfinder with minimal help from a parent or other adult.*



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## Length, Width and Clearance

- The maximum overall width of the car, including wheels and axles, shall not exceed 2¾ inches.
- The minimum width between the wheels shall be 1¾ inches so the car will clear the center guides on the track.
- The minimum clearance between the bottom of the car and the track surface shall be 3/8 inch so the car will clear the center guide strip on the track.
- The maximum overall length of the car shall not exceed 7 inches.

## Weight and Appearance

- The total weight of the car shall not exceed 5 ounces. The reading of the official scale will be considered final. The car may be hollowed out and built up to the maximum weight by the addition of wood or metal only, provided the material is securely built into the body or firmly affixed to it. No liquids or loose materials of any kind are permitted in or on the car.
- ***DO NOT put weights on the bottom of the car.*** This may interfere with the car traveling down the track and cause clearance issues with the center rail.
- Details such as steering wheel, driver, spoiler, decals, painting, and interior details are permissible if these details do not exceed the maximum length, width, or weight specifications. Lego drivers should always wear proper safety gear and seatbelts!
- Cars with wet paint will not be accepted.

## Body, Wheels and Axles

- Pathfinders must use the block of wood provided in the official pinewood derby car kit. Pre-made and pre-cut bodies are not allowed.
- Axles and wheels shall be only official, unmodified, approved wheels that come with the kit or purchased directly from the above website.
- Wheels may be lightly sanded to smooth out molding imperfections on the tread area.
- Axles may not be altered in any way except for polishing and removing burrs.
- Wheel bearings, washers, bushings, and hub caps are prohibited.
- The car shall not ride on any type of springs.
- The car must be freewheeling, with no starting device or other type of propulsion

## Lubrication

- Only graphite or powdered Teflon "white lube" will be allowed for lubricating the wheels and axles.
- No liquid or gel lubrication is allowed.
- Lubrication is messy! Any lubrication must be applied prior to registration.



## Ground Rules and Competition

- The Pinewood Derby Race is open to all Pathfinders registered with a Pathfinder Club in the Dakota Conference.
- Each Pathfinder may enter only one car in the competition.
- The car must have been built during the current year (the school year in which the Derby is held). Cars that have competed in a previous year's Pinewood Derby are not permitted.
- During the race, if a car jumps the track, the heat will be run again. If the same car jumps the track a second time, that car will automatically lose that heat.
- If a car leaves its lane and interferes with another car, the heat will be run again. Cars will run in the same lanes as the original heat. If the same car leaves its lane a second time and interferes with another car, the interfering car will automatically lose that heat.
- If a car becomes damaged during a heat and can be repaired in a reasonable amount of time (as determined by the race officials), the heat will be run again. If the damaged car cannot be repaired, the results of the heat will stand.
- If a damaged car interferes with another car, the heat will be re-run regardless of whether the damaged car can be repaired or not.
- All disputes or questions regarding the rules will be resolved by the race officials. Any dispute over the decisions of the race officials will be resolved by a Dakota Conference Executive, whose decision is considered final.



## Pre-Race Registration Procedure

**Please Pre-Register for the Race Online at:**

[dakotaadventist.org/ministries/pathfinder-ministries/pinewood-derby](http://dakotaadventist.org/ministries/pathfinder-ministries/pinewood-derby)

- When Pathfinders arrive on Race Day for check-in, their car will be inspected to insure it follows the specifications listed above.
- Any car which does not meet specifications will be returned to the Pathfinder for adjustments or modifications to pass inspection.
- All cars must meet the specifications listed above.
- If using graphite or dry lubricant on the axles, it should be applied prior to check-in and official inspection.
- Once cars have passed inspection they will be placed in a confined area and will only be handled from that point forward by race officials.
- Cars will be returned to the scouts at the conclusion of the race.

## Method for the Race

We will be using the last version of the Grand Prix Racing Manager (v23) to run our Pinewood Derby. This software offers several options to schedule and manage the race. The option that we have chosen is called the Perfect-N Method. What this means is each car runs in each lane the same number of times and faces every other car the same number of times. The goal is that this will allow each Pathfinder to race multiple times and have more opportunities to see their car race. Each car will receive points based on where they place in their respective Heat. At the end of all the Heats, their points will be totaled and the top 3 racers from each group will move on to the Grand Championship. The proposed groups will be as follows:

- Friend
- Companion
- Explorer
- Ranger
- Voyager
- Guide
- Staff
  - Grand Championship



Some may ask why we are choosing to use this format as opposed to the traditional single or double elimination method. There are a few reasons, one reason is that a lot of the software available today no longer supports this type of racing format. Another



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reason is that we wanted to provide an atmosphere that was more engaging to the Pathfinder and allowed them more opportunities to race their cars that they worked so hard on. I have listed a few advantages and disadvantages below to the Perfect-N Type Method.

- **Advantages:**

1. **Race in Each Track Lane** - This is one of the criteria that PPN charts must meet. Each racer has the same advantage/disadvantage when it comes to the lane assignments, so "slow" or "fast" lanes will not determine the outcome of the race.
2. **Equal Number of Heats** - This is one of the other criteria that PPN charts must meet. The race is made more fair by allowing the racers an equal chance to compete by racing an equal number of times.
3. **High Number of Opponents** - PPN Charts do a good job of maximizing the number of opponents for each racer without yielding as many heats as some other scheduling methods like the Stearns Method do. These charts are suitable for use when scoring by points due to the high number of opponents.
4. **Heats Spread Out for Each Racer** - Though it is possible for a racer to race in back to back heats, PPN charts generally spread out the heats for each racer. This will keep the racers more into the race and less likely to get into mischief.

- **Disadvantages:**

1. **Heat Randomness** - Though there are mathematical algorithms that determine when the racers will race, it can appear to be random to the lay person. This can be a bit confusing since racers can be unsure when they will be racing and in which lane. This confusion can slow down a race unless countermeasures are put in place (posting schedules, displaying On Deck racers) to make sure that the appropriate racers get to the start gate when they should.
2. **Some Charts Cannot be Generated** - It is not possible to generate charts for all possible combinations of lanes, racers and number of runs per lane since the mathematical algorithms to create them have not yet been found. This problem increases with higher numbers of lanes and number of runs per lane.



## **Themed Car Competition**

In addition to the race this year the cars will also be judged on themes. There will be three categories that cars can be judged in. Cars can only win one category in addition to being crowned the overall Derby Champion. You do not have to choose to create a car in one of the below themes if you do not wish, but it is an option if you so choose.

**Option #1:** Most Patriotic

**Option #2:** Best Use of Imagination

**Option #3:** Most Creative use of Materials

While these themes are not required, they do add to enjoyment of the derby. If you decide to participate in one of themes please indicate which one you are wishing to compete in when you register for the derby.

## **Pinewood Derby Honor**

Because we are having a Pinewood Derby Race it only makes sense that we as Pathfinder Clubs offer our Pathfinders the opportunity to earn the Pinewood Derby Honor if they have not yet already earned it. So, for those who do not already have it, we have included the worksheet with these rules/instructions. The worksheet is below.





\_\_\_\_\_  
Pathfinder's Name

## Pinewood Derby

1. Name the four basic components of a Pinewood Derby car.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

2. Cars must meet the basic following requirements:

- a. Must be made during the current calendar year or Pathfinder club year.
- b. Width of car shall not exceed 2-3/4" or 70 mm
- c. Length of car shall not exceed 7" or 178 mm
- d. Weight of car shall not exceed 5 oz. (142 grams)
- e. Width between wheels shall be 1-3/4" or 44 mm
- f. Height from bottom of car to bottom of tires shall be 3/8" min. or 10 mm
- g. Use only axles, wheels, and wood provided in the kit you purchase.
- h. Wheel bearings, washers, and bushings are prohibited.

3. Know how to use safely the following while building your project:

- a. Saw
- b. Wood rasp
- c. Course sandpaper
- d. Fine sandpaper
- e. Wood plane
- f. Hammer
- g. Shaping stick

4. Know the basic steps in designing a car:

- a. Design
- b. Transfer of design
- c. Building the car
- d. Axles and wheels
- e. Adding weight



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f. Lubrication

5. Design and build to completion a Pinewood Derby car from a basic kit using the instructions in the kit or if no instructions, follow the directions in #2.

6. Participate in a sponsored Pinewood Derby event using the car you built in number (5).

Event \_\_\_\_\_

Date of Event \_\_\_\_\_

7. Define and practice good sportsmanship as it relates to your Christian walk.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Note:** If you are planning to participate in a conference Pinewood Derby event be sure you use the correct specifications from your conference because some use different specifications than listed above.

**Note:** Pinewood Derby cars are usually available through the Boy Scout organization.

Date completed \_\_\_\_\_ Instructor's Signature \_\_\_\_\_



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