

Pinewood Derby

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This event goes by several names: pinewood derby, pinewood cars, pine racers, RA Racers®, wood car derby, etc. But basically they are all the same. The boys build miniature cars from wood blocks and race them down an inclined track (about 16') then flat for about 16'. Different clubs have different specifications, but generally, the cars cannot weigh more than 5 oz. This is probably the most popular event for boys clubs. It can get to be too competitive. I recall a case where a church club special ordered 'razor' wheels from California to compete with boys clubs in other churches in the city. They used the wheels one year and then removed them for use the next and following years. Finally I got the churches in that association to agree to use only one kind of wheel for all cars and to use new wheels each year. So the competition became fairer and the controversy subsided. However, the poorest case of sportsmanship involved a father who put washers between the wheels and the car body (forbidden). The boy



Most Unusual Car - Utah/Idaho 1992

won first place in his division, but a judge noticed the washers before the awards and called the boy and his dad over to tell them privately that the car would be disqualified. Of course, because the timing was all electronic, one had only to scratch his time and use the next three fastest times for 1st, 2nd and 3rd. So no public announcement was made and the boy and dad were very gracious in the private meeting. However, two days later I had to go to my trophy store and was visiting with the owner about the pinewood derby. He mentioned, 'That reminds me, a fellow came in yesterday and ordered one trophy for your competition. He said there was a mix-up and his boy really won 1st place'. One can only imagine the negative impact of this on the boy in the future. 'Win any way you can'. We must be very careful to try to keep these competitions as fair as possible and promote good sportsmanship.

Running the event:

Hint: if you put the pinewood derby up on top of four 8" folding tables, both the boys (who crowd in close) and the families can see the action.

You will need a step stool for the starter, unless starter, unless you have a pro-basketball player as the starter.



Most Unusual Car - Texas, 1983

Registration boys and check in cars. You need to have one person that checks each car to be sure it meets the specifications. You will need a list of the boy's cars and little Avery® ½ " x 1" stickers to attach numbers to the cars that correspond with the numbered list of boys on your registration sheet. It is a good idea to divide the clubs into divisions of about 8 - 12 boys. You can have 'Division A' (ex. 1-2nd graders) labeled A1, A2, A3, etc.; Division B (ex. 3-4th graders), labeled B1, B2, B3, etc. Making divisions by consolidating grades gives more equal

competition. For example, if you have 3 - 1st grade boys and 10 - 2nd grade boys and compete by grade, then all 3 of the 1st graders will get trophies, but only 3 of the 10 2nd graders will get trophies! Make the divisions large enough so there is some real competition, but not so large that there is little chance of winning.

Pre-Race cars:

Run the cars down the track to see if they will get to the end of the track (timers are not needed for this step).

Have a 'pit stop' table. Have someone handy with tools to make minor repairs to fix crooked axle mounts, sticky wheels, etc. Some boys will get no help at home, so their car may need some repairs. Keep the 'pit stop' table open during the races to repair any accidents. Be sure to have some instant glue!



Best Modeling Utah/Idaho 1991

Racing:

The boys/dads should lubricate (graphite) and tune their cars, then turn in their cars. Have the boys sit behind a rope, and let the adults pick up the cars and run the competition. This will be faster, safer and a lot less headaches. Have the boys pick up their cars after the awards. No using of graphite after the cars have been submitted for competition and judging.

Cars are so fast that it may be difficult to use the old "I will catch #1 and you catch #2, and we'll put a mark on the bottom of #2, then 2 (or 3) marks and the car is eliminated" method. Electronic times take the arguments out of this (see Where To Get It section).

By running the cars in order of numbering, you can easily enter their times on the sheet next to the number (ex. A1, A2, A3, etc. for one division, B1, B2, B3, etc. for another division). Let them race 3 times if possible. Then use their best time to rank their final standing in the competition. Although you can race the winner of one division against another (for dramatic effect), you already know the fastest over-all car, just from your data sheets (and you may prevent a controversy in case the 'fastest' car happens to post a slow time in a one-one-race). Very odd things happen when you are in front of lots of parents!

By all means, be sure to keep the competition in perspective. I try to brag just as much on the Best Modeling as the fastest car!

Here is a sample sheet I have used:

Pinewood derby sheet Gruver Boys Clubs

1-3rd grades boys club

Boys	time 1	time 2	time 3	best time	rank (1, 2, 3)
Jacob Miller					
Favian Ortiz					
Jade Red					
Luis Trejo					

4-6th grades boys club

Boys	time 1	time 2	time 3	best time	rank (1, 2, 3)
Braxton Crane					
Blaise Davis					
Trenton Finley					
Zack Pierce					

Supplies needed:

I have found it is great to meet at someone's shop, a barn or gym to cut out the cars with the dads, big brothers, granddads, etc.

Week 1: Cut out cars with dads.

Need: 3 band saws, 2-3 bench sanders, scale (sensitive to 0.01 oz.), propane torch and cup, lead weight, drill press with 1 1/8" Forsner bit, + another drill press with various bits, sand paper, vinyl spackling, pencils, list of boys names (to check off so you will know who is missing), Ziplock® bag w/wheels, axles, instruction sheets, Sharpie® pens for putting boys names on the plastic bags, car kits, glue.

Tables for registration; band saws; sanders; drill presses; scale; propane torch + some old wood to cover the table where lead is being melted!!

Then allow 2 weeks for boys/dads to work on cars (and to contact boys that missed the 'car building meeting'. You may need to arrange a special time for them.

Week 3 (race night)

Materials needed:

2 sets of boys' names (one for recording times, one for announcing the boy's cars).

Judging sheet for each judge (see below for a suggested judging sheet).

Trophies: Speed x number of divisions, Most Unusual (division), Best Modeling (division).

Pinewood Derby patches (for 1st year boy participants and any boys that did not get the patches).

Scale - sensitive to 0.05 oz. (5 oz = 141.75 g = max wt.).

Car Checking Box.

Drill press w/1/2" bit to drill out the lead in the heavy cars.

2 Drop Cloths (tarps) - put one on table under the drill and one on the table where the graphite is put on the wheels.

Extension cords, two triple plug connectors for scale, drill press, and clocks.

Tables: 3 for track, 1 for cars (2 rows of 32/row), 1 for clock, 1 for drilling & graphite, 1 for scale and weighing in cars, total = 7 tables.

Sharpie® blue or black pen, Pencils 3-5

Avery® Labels (1/2" x 1", 2 /car), label these A1, A1, A2, A2...and B1, B1, B2, B2, ...

Put one sticker on top-rear of car as boys cars are certified for weight, etc.

Leave the other sticker (A1) on sheet for use in keeping track of which clock goes with which car during the race.

Ex. Running cars A1, A2, A3, put labels A1, A2, and A3 above clocks 1, 2, 3. After heat 1, move labels to the order of 3, 1, 2, then for heat 3, move labels to the order of 2, 3, 1. For next race use labels 4, 5, 6, etc.

Graphite - for wheels, extra wheels and axles.

4 or 5 - 1 x 2s x 8 ft. to put on table to keep cars from rolling off.

Duct tape to tape 1 x 2s on table

Instant glue for repairs

Screwdrivers - flat & Phillips, Hammer, Vice grips - to remove pins in hinges on track

PA System to announce the car races

Best Modeling and Most Unusual Car Judging

Judging sheet (suggested)

Unusual Car Awards (points to consider in order of importance).

Creativity, originality (it usually won't look like a car!).

Uniqueness (some idea that strikes you as 'most unusual!').

Workmanship.

*Wood parts will be judged **higher** than glued on plastic.*

Painting will be judged about equal to pin striping, decals, etc.

Car must meet rules as to size.

NOTE: This award complements the Best Modeling Award and is designed to promote and reward the creative thinking and/or engineering aspect.

Modeling Awards (points to consider, listed in order of importance).

Paint work, shiny, smooth, glossy finish (ignore bottom of car).

Must show evidence of workmanship in construction.

*Wood parts will be judged **much** higher than plastic.*

*Painted details will be judged **much higher** than stick-ons.*

Car will be judged as to the aerodynamics as a real race car.

These cars should resemble some kind of car, truck, jeep, etc.

that a person could ride in. A 'slab' car, although most aerodynamic, has no room for a driver!

So a slab car should be considered in the 'most unusual' category.

Cars must meet rules as to size.

NOTE: This award is primarily to reward the individual who is into the modeling aspect of the competition instead of the racing competition.

Cars should be judged in either the Most Unusual or Best Modeling category, not both, in order to spread out the awards.

Procedure: (as an example)

Pick 4 or 5 cars that for Unusual and set these aside.

Pick 4 or 5 cars that for Modeling and set these aside.

Division A (1-3rd grades)

Unusual Models:

Rank the cars (4 or 5 selected) for 1st, 2nd, and 3rd.

Write the car code (ex. A6, A3, etc.) below:

1st _____ 2nd _____ 3rd _____

Outstanding Models:

Rank the cars (4 or 5 selected) for 1st, 2nd, and 3rd.

Write the car code (ex. A1, A8, etc.) below:

1st _____ 2nd _____ 3rd _____ **Note: For both Unusual and Modeling, give 3 identical trophies and label each 'Outstanding Modeling'. It is often very difficult to determine 1st, 2nd, 3rd!!**

Division B (4-6th grades):

Unusual Models:

Rank the cars (4 or 5 selected) for 1st, 2nd, and 3rd.

Write the car code (ex. B3, B9, etc.) below:

1st _____ 2nd _____ 3rd _____

Outstanding Models:

Rank the cars (4 or 5 selected) for 1st, 2nd, and 3rd.

Write the car code (ex. B2, B10, etc.) below:

1st _____ 2nd _____ 3rd _____