

**Workshop: Saturday**  
**July 13<sup>th</sup>, 10 AM, 2PM**

**First Baptist Church of Webster**  
**COMMUNITY**  
**PINE CAR GRAND PRIX**  
**2024**

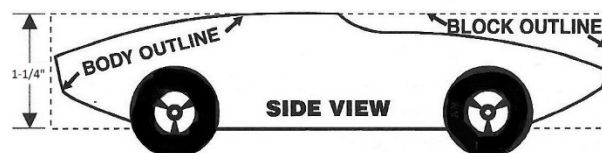
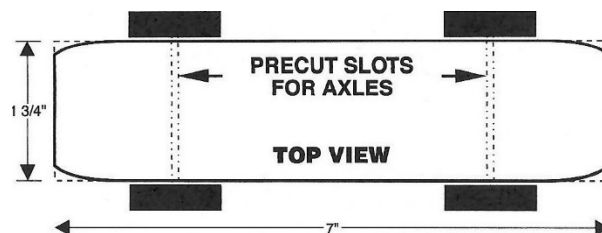
**Derby: Saturday**  
**July 27<sup>th</sup>, 1 PM**

**Please read both sides of this instruction sheet before building your Pine Car.**

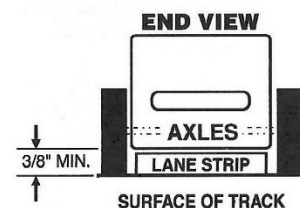
### Racing Specifications for Participants

To race, your finished Pine Car must be approved by a race inspector at check-in. Inspectors may send your Pine Car back for adjustments if there is any question about your Pine Car meeting the following derby specifications:

1. *Dimensional Limits\** (see illustrations):
  - a. Weight cannot exceed 5 ounces (on the inspector's scale)
  - b. Overall length and height cannot exceed 7 inches (block length)
  - c. Overall width (with wheels) cannot exceed 2-<sup>3</sup>/<sub>4</sub> inches
  - d. Inside distance between left-and-right wheels must be greater than 1-<sup>3</sup>/<sub>4</sub> inches (block width) to fit the lane guide
  - e. Bottom clearance of Pine Car must be greater than <sup>3</sup>/<sub>8</sub> inches
2. Car must be freewheeling and powered by gravity alone.
3. Accessories and weights must be securely attached.
4. Nothing may extend beyond the starting pin when staged.
5. Kits, wheels and axles not issued for this derby are prohibited. Previously-raced cars may not compete.
6. The following are also **prohibited**:
  - a. Affixed to the Body:
    - i. Starting devices, propulsion sources, other moving parts and/or weight-shifting mechanisms, magnets, springs, etc.
    - ii. Materials contacting the racing or stopping surfaces that might abrade or scratch, such as *metallic* guide pins (a.k.a. "pegs"), sandpaper "brakes", bottom-protruding metal (screws, weight plates), etc.
    - iii. Accessories or decorations that cause the car to exceed the Racing Specifications or interfere with other track lanes.
  - b. Wheels & axles:
    - i. Bearings, bushings, washers
    - ii. Wheel modifications, including lathing, lightening, sanding, tread alterations, etc. (polishing *is* allowed)
    - iii. **Excessive** lubrication (*e.g.*, lubricant beyond the axle contact areas). Dry lubricants—such as graphite—are preferred.



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### General Information

- Awards are given for speed and design by age groups. Younger competitors should do as much of the work as they safely can, with assistance from an adult when necessary.
- The track has lane guides to keep your Pine Car centered while racing. If your Pine Car jumps the guide and fouls another lane, then the heat may be rerun without your Pine Car while it is sent back for adjustments and re-inspection.

### Design Suggestions

- The axle slot closest to the end of the block intends to be the rear of the car (see included design templates).
- You may use a car design from any source or create your own design, if it meets the Racing Specifications above.
- Show creativity and craftsmanship. Your design need not look like a car – it can look like almost anything with wheels added.
- To help reach the finish line and for extra speed, added weight ("ballast") may be part of your design. Inserting metal inside hollowed-out cavities is optimum. Fishing weights ("sinkers") work well and come in many shapes.
  - **Caution: The dense metal Lead (Pb) is toxic if ingested or inhaled. Small children should not handle Lead (Pb). When using Lead (Pb), thoroughly clean up your work area and wash your hands with soap.**

\* Limits are needed to operate on the track and not interfere with other Pine Cars.

## Assembly Suggestions

- Outline the shape of your design on the included templates, and then transfer your design onto the wood block from the bottom and left (driver's) side. Carve, saw, or Dremel the block into the desired shape. (If you mistakenly remove a little too much wood, you can try gluing wood back in place or use wood putty or filler, or start over.) Add weight, keeping the weight within Racing Specifications. **Come to the Build-Day Workshop and you can get help cutting out and weighting your car.**
- Smooth the rough-cut wooden body with sandpaper or a sanding sponge. Paint and add accessories or decorations.
- To use the pre-cut axle slots, slip the axles into wheels, then press the axles into the slots by pushing the head of the axle against a hard surface. **An axle-guide tool is available during the Build-Day Workshop to help install the axles straight.**
  - The axle slots need not be used, and the wheelbase can be changed. But if you reposition the axles or camber the wheels, the bottom clearance must exceed 3/8 inches.\*
- Check that each wheel spins freely using your finger before affixing the axle with glue, keeping glue away from the wheels.
- Don't forget to add your race car number somewhere on the car.

## Other Tips

- Ballast (extra weight) works best when added toward the *rear* of the Pine Car.
- *Lightly* lubricate where the wheel touches the axle. Lubricant elsewhere doesn't really help, makes a mess, and may fail inspection. Too much lubricant can attract contaminants that reduce speed.
- The wheels and axles as supplied should not require extra work; however, defective wheels and axles can be traded back to the race organizers for new ones if necessary.
- Do not insert your axles too far or they will bind the wheel from spinning. Leave a small gap between the Pine Car body and wheel (shake the car and each wheel should be able to "rattle" a little side-to-side).
- Do not narrow the 1¼-inch block width between the axles or the Pine Car may not fit on the guide rails.
- Do not make the body too thin, especially near the axle slots, or it might break.
- Keep sawdust, glue and wet paint away from the wheels. They can slow the Pine Car. Add wheels and axles after painting and decorating.
- Beware of air-catching accessories such as flags, streamers, feathers, etc. that will slow the Pine Car.
- Beware of designs with a sharply pointed nose, because a point may slip off the round starting pin and disqualify your Pine Car.
- Before the race, check that your Pine Car behaves the way you want, by letting it roll down a slightly inclined surface.
- Before arriving at check-in, use a post-office scale and ruler to ensure that your finished Pine Car does not exceed Racing Specifications for weight and size. Beware that paint adds measurable weight.
- Protect your finished Pine Car until after the derby is over. Store it away in a container (such as a shoebox padded with a towel) until race day. Do not play with it before the derby; you could damage it.

## Race Procedure

1. Your Pine Car will race multiple times in different lanes. When called, you may place ("stage") your own Pine Car at the starting pin of your assigned lane as the "driver".
2. You will watch your own races from the sideline reserved for the drivers.
3. You will retrieve your own Pine Car from the stopping / braking section (after the finish line) after the race outcome is recorded.
4. After retrieving your Pine Car, return to your place in the audience (unless you are in the next race).
5. Points are assigned with every race. Pine Cars with best scores wins!

## Race Etiquette

- **No running or jumping** (you could trip and hurt yourself, your Pine Car, or someone else).
- **Do not touch others' Pine Cars, or play with the track** (you might damage something that isn't yours).
- **Be prepared** for when it is your car's turn to race (so others need not wait).
- After your Pine Car is finished racing, **be a good sport** and cheer for others.

**Register as early as possible to ensure that your kit is available in time for the race.**

To register: <https://fbcwebster.churchtrac.com/connect?ei=HSTBVK8> (or scan the QR code)

**Contact [PineCarGrandPrix@gmail.com](mailto:PineCarGrandPrix@gmail.com) for more information.**

"...and let us run with patience the race that is set before us, looking unto Jesus the author and finisher of our faith;"

Hebrews 12:1-2