

# Speed Secrets of the Pinewood Derby

## GENERAL GUIDELINES FOR PINEWOOD DERBY CAR DESIGN

The possibilities are endless when it comes to picking a shape for your pinewood derby car. Before you begin, consider the following guidelines:

Choose a design that allows the air to move over and around the pinewood derby car body in a smooth manner. Pinewood derby cars with aerodynamic profiles go faster.

## DESIGNING THE ULTIMATE PINEWOOD DERBY CAR

You don't have to strive for the "ultimate pinewood derby car" to build a fast car and have fun competing in your pinewood derby.

**Make a Three-Wheeler:** Raise one wheel about 1/16 inch higher so it never actually touches the track. Less friction = more speed.

**Extend the Wheelbase:** The front and rear wheels should be as far apart as possible.

**Determine Weight Placement:** A heavier rear increases speed. Add weight to the rear of your pinewood derby car.

**Create Glue Holes:** Glue the axles firmly in their holes to ensure that they stay perfectly placed.

**Sand the Pinewood Derby Car:** Make it smooth to reduce friction.

**Lubricate the Wheel Well:** The less friction between the body and wheel, the better.

## CHOOSING YOUR AXLES

Not all axles are created equal. Here's a tip on choosing the straightest out of your bunch.

Can you tell the difference between the axles in the top row and the ones on the bottom? The ones on the bottom aren't straight and will slow your car.

