



Pack 800 Space Derby Rules

All rockets must pass the following inspection to qualify for the race:

- Only basic materials supplied in the kit may be used.
- The rocket body may be no longer than 7 inches, not including the propeller and fins.
- There are no restrictions on the weight or design of the rocket.

Space Derby Procedure

1. Every boy brings his rocket to the inspection table to have his entry checked.
2. Contestants report to the gatekeepers, who line them up in the order in which they will compete. At this point, each boy starts to wind the rubber-band motor on his ship.
3. As his name is called, the boy hooks his rocket on the guideline assigned to him, centering the rocket between the vertical dowels and locking the propeller behind the horizontal dowel on the starting gate.
4. The gatekeeper starts the countdown and fires at zero by lifting the starting gate frame, which releases the rockets.
5. The race is run in heats, up to four contestants at a time. Each boy gets to try at least twice instead of being eliminated from competition after the first race. For example, in a six boy den, try heats of three boys each. The winner of each heat goes into the den finals. Then race the other four again with the winner competing with the other heat winners for the den championship and entry into the pack finals.
6. The winner takes his rocket to the registration table for recording, then to the awards platform for recognition. He then returns to the spectator area to wait until his name is called again.
7. As ships are eliminated, make sure the contestants are applauded for their efforts.

Tips for Rocket Builders

- Reduce air friction “drag” by making all surfaces as smooth as possible. A blunt, rounded nose causes less drag than a sharp nose. A good design has all leading edges rounded and trailing edges tapered to reduce the drag.
- Rubber bands should be lubricated before the race. They are the “motor” and must be strong and flexible.
- Use a sharp knife for cutting the grooves for the hanger fitting and fins. A dull knife will crush and splinter the balsa wood.
- When you start to carve, remember that the end with the small hole is the rocket nose.
- A potato peeler is good for carving the shape.
- To help increase the rocket’s speed reduce the wall thickness to a minimum of 1/8 inch. Do not weaken the area around the hanger (carrier) or carve away the nose button circle.
- Do not apply too much paint to the outside unless you sand between each coat of paint.
- Be careful not to get glue on the plastic carrier, especially in the holes through which the monofilament line runs. Glue can interfere with smooth operation.
- Make the propeller shaft as short as possible by bending it close to the propeller. Cut off the excess wire with wire cutters.
- Test the rocket’s balance by hanging it from a string through the hole of the hanger fitting. If the rocket is nose-heavy, carve or sand a little wood off of the end. If it is tail-heavy, remove wood from the tail area.