



## Leonardo 500

### Leo's Rules for the mini kinetic vehicle race

To race, you must follow these very simple rules. And, be sure to have fun, show good sportsmanship, and enjoy the spirit of competition.

**1.00: Power up.** Sculptures must be powered by an electric motor (**Rule 1.02**). Other stored energy sources are allowed to power your vehicle for the first time this year (think solar). It is legal to get an assist from water, wind, sun, gravity, and friendly extra-terrestrials if they are introduced to the judges prior to the race.

**1.01: Into the 3<sup>rd</sup> Dimension.** Each sculpture must measure no more than 25 cm long, 25 cm high, and 25 cm wide at the start and end of each race. Only during the race can it exceed these dimensions. Sculptures exceeding these dimensions while at rest may, at the discretion of the judges, be ruled ineligible for art and engineering awards.

**1.02: It's in the Volts.** A sculpture can use only one (1) Radio Shack DC motor, part #273-256, powered by a maximum of two (2) 9 volt batteries. The motor and batteries cannot be modified.

**1.03: Names Ahoy.** The name of your sculpture must be visible to the average human eye from 5 meters away. It may be on each side of your sculpture or on a sign or banner displayed next to the course during your race time.

**1.04: Danger, Danger, No!** Sculptures or teams must not carry or act like weapons. That means no sharp, flying, or burning parts on your sculpture or as part of your pageantry.

**2.00: It Must Be There.** All sculptures must carry these essentials on board at all times when racing on the course:

- a flag, prominently waving in the breeze at all times, which symbolizes an important aspect of your team's philosophy of life, the universe, and everything.
- an on-sculpture mascot such as a comforting beanie baby, action figure, or other cherished inanimate object.

**2.01: Don't Blush, It's Fun.** An awe-inspiring introduction of your sculpture in song, dance, eye-catching graphic, or combination of all three must accompany your sculpture. Failure to comply hurts your pageantry score and gives your sculpture an unfinished look.

**2.03: Your Festival Dues.** Each team member must wear an official da Vinci Days admission bracelet.

**2.04: Jump This Hoop First.** At check-in, there will be a safety and compliance inspection to insure that all rules are followed. Teams who do not cheerfully comply will be deported to other Festival events. Teams may put sculptures through a practice run on the real race course only after registration and completion of pre-race inspection.

**3.00: Get Official to Race.** You may not start the race until you have passed the Race Inspection (**Rule 2.04**).

**3.01: On the Stop Watch.** Your time will begin when the starter says "**GO**". If you wish to have your time begin at your prompt or cue, you must notify the judges and timekeeper prior to the race.

**3.02: We Haven't Lost Yet.** If a sculpture gets stuck for a full 5 seconds in the sand or water or on the course rails, a member of the team may move it to the end of the water or sand, or off the rail, provided that **Rule 3.03** is followed to the letter.

**3.03: One Pinky to the Rescue.** A team member invoking **Rule 3.02** can only use one pinky finger to help the sculpture. More than one pinky is allowed only under the following exceptions:

- If the sculpture is stuck on the railing, it is permissible to lift the sculpture and place it in the center of the track.
- If the center of the track happens to be in the middle of sand or water, then only a single pinky is allowed to then move the sculpture out of the sand or water.

**3.04: Battery Power, Yes!** Sculptures must travel unassisted into, through, and out of the sand and water except as allowed in **Rules 3.02-3.03**.

**3.05-3.98: Blank Rule Estate.** Reserved for future rule development.

**3.99: Time Travel.** The maximum time a sculpture can spend on the course is one (1) minute. When 1 minute is reached, the clock will stop. Teams must remove their sculpture from the course and await the judge's ruling on time and race completion. If your sculpture has not reached the finish line, do not remove it until a judge has marked its location.

**4.00: My Pet Chimp Can't Help?** Team members must be human. There must be fewer than 4.35 humans on a team.

**4.01: Do You Make the Grade?** Teams compete in one of four school divisions:

- Elementary School
- Middle School
- High School
- Old School (teams with a member over 18 years)

**4.02: No Help From Aliens or Other Outside Powers.** No radio control, remote control, psychic control, extraterrestrial control, or other external means to guide the sculpture will be allowed.

**4.03: May the force be with you.** No one can touch your vehicle between start and finish except as allowed in **Rules 3.02, 3.03, and 5.00**.

**5.00: When the Course Looks Better Over the Rail.** If a sculpture unintentionally leaves the course, a member of the team can return it to its point of departure. Ten (10) seconds will be added to the time for each such occurrence. If the departure occurs in a way that makes the art judges laugh, points may be added to the art score. On the other hand, if it makes the engineering judges cry, points may be deducted from the engineering score.

**6.00: Sculpture Parking.** In case you need it, use this space to park your sculpture.

**6.01: Does It Really Rain in July?** In case of rain, the race shall be run on a wet course. Sculptures designed with umbrellas may have an advantage.

**7.00: It's Okay To Be Crafty.** Artistry is rewarded. So plan your design, pick good colors, think fun-functionally. But don't make a boo-boo and violate **Rules 1.04 or 9.00**. That would be terrible!

**7.01: Shoot for the Moon.** Sculptures are judged on three things—artistry, engineering, and speed. Teams can win up to 10 points in each category with a possible maximum of 30 points.

**7.02: Leo's Riches.** Four prize awards are given in each competition division:

- **da Vinci's Choice:** Highest combined artistry, engineering, & speed scores
- **Mona Lisa:** Best artistry
- **Leonardo's Dream:** Best engineering
- **Blazing Sculpture:** Best speed

**7.03: Share the Wealth.** No team can receive more than one award, and each team receives the highest award for which it qualifies. For example, the team winning **da Vinci's Choice**, may not also win **Leonardo's Dream**. In this case, the engineering award goes to the 2nd place score. For ties, team spirit determines the 1st-place winner. Pageantry does pay!

**8.00: It's a No-No.** It's not nice to argue with the judges or timekeeper. Be polite or expect a 10-minute penalty. Overly argumentative teams or team members risk getting sent to the Principal's Office.

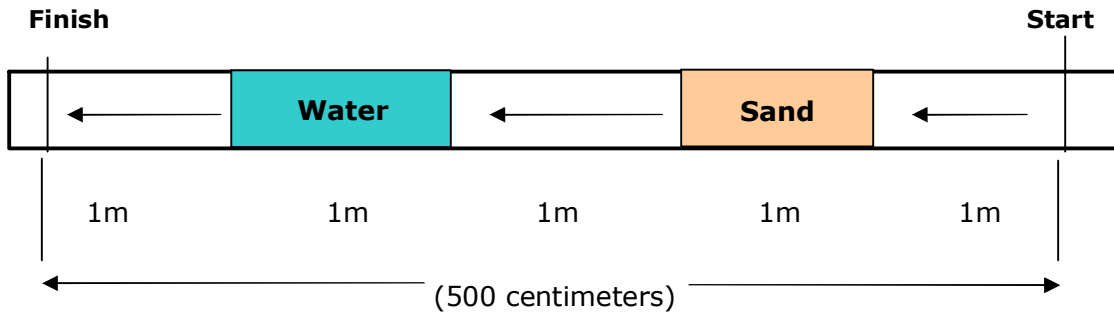
**8.01: Can You Believe Someone Would Do This?** Team members, officials, and spectators who engage in name-calling, jeering, unfriendly physical contact, or any other offensive behavior will be convicted of poor sportsmanship and expelled from the race.

**9.00: We Do Have Standards.** Obscene or offensive sculptures or pageantry are not allowed. And it's the judges who decide.

**10.00: We're Not Your Mother, But...** A judge's word is final.

### The Leonardo 500 Racecourse

The 500-cm racecourse consists of flat sections, which are separated by water and sand obstacles. These top and side views illustrate the course layout.



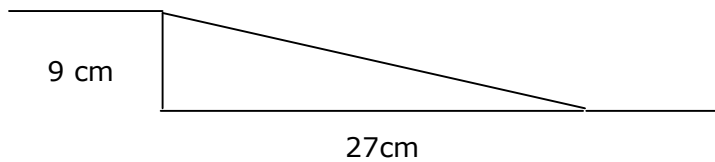
**Top view**



**Side view in Section**

### The Racetrack

The Leonardo 500 track is wood-sealed with a urethane coat. Its top surface is approximately 50 cm above the ground. The track is 60-cm wide with 5-cm rails located along the edges. These rails may not be used for guidance or as a surface from which to propel the sculpture. Water and sand obstacles are 9-cm deep. Sloping ramps are located at the *Start* and *Finish*.



**Start & Finish Ramps**