



*Cars: Engineering for Efficiency
Day 1*

Why do engineers want to design energy-efficient cars?



Energy-Efficient Cars



What are some special things you notice about these cars?

Efficient Cars...



- Have a sleek design so they cut through the air smoothly.
- Roll smoothly (Do not lose energy from friction in the wheels).
- Have powerful and efficient motors or use renewable energy.
- Are very small and light weight.

Aerodynamics

- Air slows cars down a lot and makes them lose energy.
- Cars were designed with smooth lines like fish to help them cut through the air.
- Engineer's test car designs in wind tunnels to see how easily they cut through the air.



This Week's Project

- **Goal:**

Design and build a car that will move the fastest (and maybe even jump the farthest)

- **Materials:**

Lifesaver[®] Mints, straws, tape, popsicle sticks, index cards, paper clips.

- **Test:**

Ramp race track.



Engineering Design Process

- **Problem**
- **Imagination**
- **Design**
- **Build**
- **Test**



Other Resources

- **Roller Coaster Design video (works similarly to the cars):**

http://pbskids.org/designsquad/profiles/chris_gray.html