

Basics of Model Solar Car Design

Objective

Students will become familiar with the basic components of a model solar car and understand how the different components affect the car's performance.

Materials

- Chassis handout
- Wheels, Axles, and Bearings handout
- Transmission handout
- Body/Shell handout

Procedure

1. Ask students to brainstorm the main parts of a solar car, writing their answers on the board as they call them out. Ask questions to guide them to a list that includes:

- solar panel
- chassis
- wheels
- axles and bearings
- motor
- gears/transmission
- body

2. Use the handouts for each part of the car to discuss with students the factors they need to consider when designing their model cars. As you go through the handouts, ask students to record thoughts and questions they have about how they will design their car.

3. Discuss the design criteria students should strive for in designing their cars:

- Lightweight
- Sturdy
- Good acceleration
- High top speed
- Aerodynamic

- Low friction
- Steers straight
- Can accommodate guide wire
- Easy to build
- Aesthetics

4. Have students get into small work groups to begin brainstorming their car design. Points to consider include:

- The overall dimensions and shape of the car
- How much weight the chassis will need to support (body, motor and solar panel)
- Materials they will use for each part of the car

5. Ask each group to create a sketch of their preliminary solar car design with each component labeled.