

Premium Engine-eering

Navigating the Cars of the State Fair

CARS, CRAFTS
AND COMMERCE

QUEST 10
PHYSICS

STATE FAIR OF TEXAS
CURRICULUM

The car shows make up a huge portion of the stuff for sale at the Fair. There are so many, that sometimes it can be overwhelming to choose the best one! Use your knowledge of physics to find the fastest and most efficient vehicles out there.



During this Cars, Crafts, & Commerce Quest, you will:

- ★ Investigate the attributes people look for when purchasing a vehicle.
- ★ Collect data from many cars currently on the market.
- ★ Make recommendations for consumers, based on the data you found.
- ★ Design the “best” vehicle, according to criteria you select, based on your research.
- ★ Create a multimedia presentation for your new vehicle.



Standards

- ★ Physics TEKS: 2J, 2K, 2L, 3B, 3C, 3E, 4A, 6A
- ★ Art TEKS: Art I: 1.2.B, 1.2.C; Art II: 2.2.A, 2.2.B, 2.2.C
- ★ ELAR TEKS: E3(15)(D), E3(23)(B), E3(26)
- ★ Career Development TEKS: CP2.4.A, CP2.4.C, CP2.4.E, CP2.4.F



Before You Go

- ★ Review the concept of motion and work.
- ★ Define speed, velocity, and acceleration.
- ★ Introduce and practice the formulas for each of the above-defined words.

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STATE FAIR MAP



Optional Materials to Bring

- ★ Writing utensil and something to write on
- OR
- ★ A way to digitally take notes



While You're There

The objective of your visit is to collect data on the acceleration rates, power, and gas mileage of various vehicles.

- ★ **PREMIUM ENGINE-EERING:** Investigate the various makes and models of vehicles in the car shows
 - o Use window stickers or talk to the vendors to collect data, including acceleration, horsepower, gas mileage, and engine size for at least 5 vehicles.



Invitation

- ★ Invite students to bring the listed materials and follow the route, and perform the tasks below at the State Fair of Texas:



Plan Your Route

- ★ Make your way to the Auto Show in the Centennial Building and the Automobile Building
- ★ Then, if you'd like, go to the Truck Zone as well, behind the Automobile Building.



After the Fair

When you return to class following your State Fair visit, your class will compile data for the vehicles you observed.

- ★ Use a chart maker to graph the different aspects of the vehicles.
- ★ Break into groups and write out reviews and recommendations for the following specialties:
 - o Best fuel-efficient vehicle for a commuter
 - o Best vehicle if you have the "need for speed"
 - o Best vehicle if you want to win a race off the line
- ★ As a group, design a vehicle that incorporates all of the above.
 - o Find means and averages for fuel efficiency, horsepower, engine size and acceleration.



ENGLISH PORTION

Share your vehicle with the class. As a group use PowerPoint or Google Docs to design a presentation that sells your vehicle to the class. Your presentation should include:

1. An image of your vehicle
2. Key statistics regarding your vehicle (horse power, acceleration, engine size, gas mileage, etc.).
3. Add-on features included with your vehicle (colors, satellite radio, etc.)
4. Top five reasons why your classmates should buy your vehicle.
 - a. Use persuasive techniques to convince your class that your vehicle is better than all of the others.



Source: <http://www.autoconception.com/exa-tata-and-rca-collaborate-on-automotive-design/>