



Family Activity

GRADE LEVELS: K-2, 3-5, 6-8

ROAD TRIP: RIDE-AND-SEEK

How many vehicles using alternative fuels can you spot on the road today?

Introduction

Everything needs energy to work, run, or move. Flashlights need batteries. Plants need sunlight. Microwaves need electricity. People need food. Cars need gasoline – or maybe something else. This activity will focus on the “something else” as a way of encouraging you and your child to become aware of the growing use of alternative fuels in vehicles today. This activity centers around a game you and your family can play as you make a road trip, go for an extended drive, or run everyday errands.

Preparation

It will help to get your family geared up for this activity by challenging them to think about the different types of fuel they use to get and keep their engines/bodies running each day. Why do experts stress the importance of a good breakfast each morning? (Our bodies need proper nutrition and energy input in order to maintain good health and provide energy to function throughout the day.) What is in food that enables our bodies to keep warm, grow, and move? (Besides nutrients for maintenance and growth, food provides us with energy to properly function.) What are the calories in food we read so much about? (Calories are a measure of the energy content in food, among other things.)

Make a list with your family of foods they particularly like to eat that they think are good sources of energy (cereals, milk, meats, vegetables, pasta, fish, nuts, pizza, etc.). Encourage a search of food labels to find the caloric value of foods found in the kitchen.

Alternative Fuel Vehicles

Just as there is a variety of foods that can provide energy for your family, there is a variety of fuels than can provide energy for vehicles. Although gasoline is the most

common fuel for cars and other vehicles nowadays, a growing assortment of alternative fuels are being used to power vehicles. The chart below lists some of the more common alternative fuels that might be seen in use on the roads and highways in your community.

Alternative Fuel Vehicles

Vehicle Type or Fuel Source	Description	Likely to be found in
diesel	a petroleum-based fuel similar to gasoline	car, pickup, truck, bus
hybrid electric	has a gasoline engine in addition to an electric motor	car, SUV, bus
flexible fuel	can combine the use of E85 and gasoline	car, minivan, pickup
ethanol (E85)	ethanol is produced from corn and other crops	car, minivan, pickup
bio-diesel	a fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases	pickup, truck, bus
propane	liquefied petroleum gas	pickup, bus, truck
CNG (compressed natural gas)	natural gas under high pressure	car, pickup, truck, bus
all electric	vehicle runs on an electric motor	car, subway, golf cart
liquefied natural gas	natural gas purified and condensed into liquid	SUV, bus, pickup, truck
hydrogen	may be used in combination with a fuel cell (an alternative to a battery)	car

Discuss each of these types of fuels and the vehicles that might use them with your family. You or your children may also identify other vehicles that would fit on this list.

Tell them that the next time they take a trip by car, they can play a game of trying to identify vehicles they see that use any of these alternative fuels.

The Ride-and-Seek Game

Give each member of the family who is playing the game the checklist found at the end of this activity. Different types of alternative fuel vehicles are worth more than others; higher points are assigned to vehicles fueled by less common sources; lower points are assigned to alternative fuel vehicles available in large quantities on the market today. The point system is based on data from the U.S. Department of Energy's [Alternative Fuels and Advanced Vehicles Data Center](#). Each player should make a tally of the number of vehicles seen. Many vehicles using alternative fuels will have some kind of identifier – a sticker, a logo or seal, or even large text that describes how the vehicle is fueled.

At the end of a set time period, players should multiply their tally number times the point value of each vehicle or fuel type and arrive at a “points” calculation. Add the number of points for a “Total Score.” Players can either keep their finds a secret and tally their points individually, or the game can be played as a group – with the first person to spot an alternatively fueled vehicle to receive the points. Creatively capitalize on these scores (with a prize for the winner or other special reward, perhaps) as appropriate to make this a fun family activity.

Analysis

Following the Ride-and-Seek Game, discuss with your child(ren) what their scores may mean about the popularity or availability of vehicles powered by certain alternative fuels. What did they think about the alternative fuel vehicles? How do they look, sound or smell compared to similar vehicles that use gasoline? Thinking back to the introduction and how everything needs energy to run or move, what else might be used to fuel a vehicle one day? Let imagination rule and see what creative ideas blossom!

For more information, check out these links:

<http://www.fueleconomy.gov/Feg/current.shtml>

A Web site from the U.S. Department of Energy describing in detail some of the major alternate fuels with additional links to filling stations for these fuels, gas mileage tips, and other resources related to vehicle fuels.

<http://planetgreen.discovery.com/go-green/green-cars/index.html>

This Web site from Planet Green™ provides a great deal of information about automobiles going green and what the future holds for moving to a greener transportation system.

<http://www.energyquest.ca.gov/transportation/index.html>

This Web site is a student's guide to alternative fuel vehicles from the state of California.

<http://auto.howstuffworks.com/fuel-efficiency/alternative-fuels/alternative-fuel-roundup.htm>

This Web site explains with text, links, and video how vehicles use alternative fuels.



For more resources, visit www.FuelOurFutureNow.com.



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RIDE-AND-SEEK SCORECARD

Vehicle Type or Fuel Source	Point for Each Vehicle Seen	Number Seen (tally)	Points
diesel	5		
hybrid electric	10		
flexible fuel	10		
ethanol (E85)	15		
bio-diesel	15		
propane	20		
CNG (compressed natural gas)	20		
all electric	20		
liquefied natural gas	25		
hydrogen	25		

Name _____

Total Score _____

