TEACHERS ACTIVITIES

Theme:

Everyone loves cars, whether imaginary or real.

Topics For Discussion:

In *Tooth-Gnasher Superflash*, the car could change shape. Ask students to imagine what shape they wish their family car could take and why. How will their car move in its new shape? What could it do that it can not do in its present shape?

Discuss different ways that people have traveled over time. How did they go from place to place in the past? What are some ways that we might travel in the future?

Discuss the function of a factory. What kinds of items, besides cars, are made in factories? What is an assembly line and how does it work?

Auto racing is a popular sport the world over. Discuss why people enjoy auto races. Ask students what purposes there might be for auto races besides sport. (The information from racing cars is applied to passenger cars, especially with regard to engine performance, tire wear, safety aspects, etc. The technological advances in racing cars will someday be a part of passenger cars.)

Curriculum Extension Activities:

Have students, working in small groups, create an advertising campaign for the Tooth-Gnasher Superflash. How would they persuade people to buy this car? Have them make posters and design television commercials. Before they begin, discuss techniques that advertisers use to sell products (e.g., a famous person might endorse a product, catchy slogans or jingles that people remember, pointing out all of a product's best features, showing how essential the product could be to the lives of people, etc.). Provide time for the groups to present their advertising campaigns.

Explore the relationship between where people live and what they do for a living and the type of transportation they use. Why are some types of transportation better suited for city life, suburban life, or the country? Make a list of careers that depend upon transportation as part of the job.

Have the class search magazines and catalogs (car dealerships usually have lots of catalogs) for pictures of different types of cars and trucks. Have students cut them out and glue them to a chart that has been divided into three columns—a picture, a word label, and a description. In the middle column, label the type of car or truck, (e.g., limousine, convertible, taxi, dump truck, pickup, etc.). Discuss ways in which the function of these vehicles differ. In the third column, have students write a brief statement about the uses of these vehicles.

Invite the students to design a car for their family and draw a picture of it. Keeping in mind the special needs and interests of their family, what unique features should it have? What would it look like? Encourage them to use their imaginations!

Tie map skills and money values together by planning fantasy class car trips. Have the students brainstorm a list of places they would like to visit. (It must be possible to get there by car.) List these places down the left side of a chart. When enough places have been mentioned that there is one for each student, assign a place to each person and have her/him write that place on a slip of paper and place it in a box. Also, have students write their names next to their place on the chart. Every morning, draw a slip from the box to see what the trip of the day is. Locate the spot on a map. Figure the number of miles to get there, using map keys and/or tables. (Explain to students that this is only a close estimate.) Figure how much the trip will cost in gas. Establish some guidelines concerning gas mileage (e.g., one tank of gas will go 400 miles; the tank holds 20 gallons; one gallon of gas costs $1.25 per gallon—consider the math skills of the students when assigning these numbers). This activity might give students practice in using a calculator. Record the distance in miles and the cost of the gas on the original chart. When all the trips have been taken, discuss which trip was the greatest distance, shortest distance, most expensive, etc. This would be a good opportunity to discuss other expenses associated with a car trip.

Have students brainstorm a list of types of land transportation. Look at different ways to categorize the list, e.g., human-powered vs. engine-powered, primarily city vs. rural, etc. (Students will have other ideas.)

Have students describe how a car runs. Give each student a sheet of paper with an outline of a car on it. Have them write their descriptions on the car and cut it out. Allow them to share their ideas and bind their descriptions into a car-shaped book.

Take a field trip to a local garage or invite someone who works on cars to come to school and talk about what he/she does. Take the students out to the parking lot so the mechanic can show different parts under the hood and explain how they work.

SUPPLEMENTARY BOOKLIST:

THE NEIGHBORHOOD TRUCKER
by Louise Borden, illus. by Sandra Speidel (Scholastic)

MR. GUMPY'S MOTOR CAR
by John Burningham (Penguin)

TRUCK
by Donald Crews (Greenwillow)

FRANK AND ERNEST ON THE ROAD
by Alexandra Day (Scholastic)

GRANDADDY'S HIGHWAY
by Harriett Diller, illus. by Henri Sorensen (Boyds Mills)

UNCLE WIZZMO'S NEW USED CAR
by Rodney Greenblatt (HarperCollins)

ABCDRIVE!
by Naomi Howland (Clarion)

AMAZING CARS
by Trevor Lord, photos by Dave King (Alfred A. Knopf)

WILLIAM THE VEHICLE KING
by Laura P. Newton, illus. by Jacqueline Rogers (Bradbury)

THE A-TO-Z BOOK OF CARS
by Angela Royston & Terry Pastor (Barron's)

TIN LIZZIE
by Peter Spier (Doubleday)

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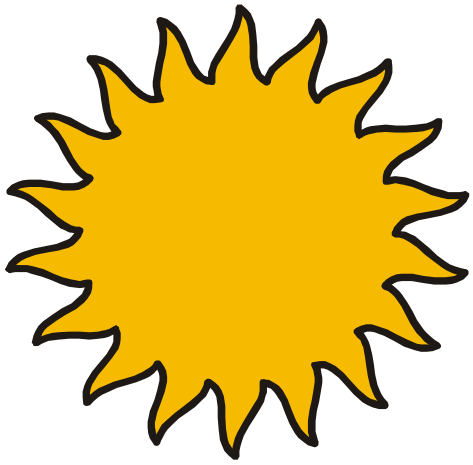
Power Of The Sun



Key Words: sunlight, energy, reflection, energy conservation

Concept: Sunlight is a source of energy.

Most cars today are powered by gasoline, but cars of the future, like those seen in this episode, may be powered by energy from the sun. All these cars need is a sunny day and they are off and running.

Materials: Black construction paper, aluminum foil, 2 child-safe thermometers, stapler, direct sunlight or 100-watt lamp, paper, pencil, stapler, tape.

1. Make a pocket out of black construction paper that is large enough to hold a thermometer. Staple the sides of the pocket. Next, make a similar pocket out of aluminum foil.

2. Record the starting temperatures on the thermometers. *(The thermometers should be at the same temperature in the beginning.)* Place a thermometer in each pocket.

3. Tape the pockets down on a flat surface in direct sunlight or under a lamp. Be sure to put them in a place where they won't be disturbed. Predict what will happen to the temperatures on each thermometer after several minutes.

4. After about 10 minutes, read and record the temperature on each thermometer. *(The temperature on the thermometer in the black paper pocket will be higher than the one in the foil pocket.)* Feel the surface of each pocket with your hand. The black paper pocket will feel warmer. The black paper absorbs a lot of light energy from the sun. When this happens the light energy changes to heat energy and causes the temperature on that thermometer to rise. The foil paper reflects most of the light energy and the temperature on its thermometer remains lower. This shows that energy from the sun can be changed into other forms of energy *(in this case, heat).* The solar cars seen in this episode were designed with solar cells that, like the black paper, absorb light energy which is converted to electricity and used to power the cars.

Buckle-up Bean

Key Words: cars, safety, inertia

Concept: Safety belts protect people from continuing to move forward when a car stops suddenly.

No matter what kind of car you dream about, safety is always an important feature of design. Cars often move fast, carrying people with them. When the car stops suddenly, a person in the car tends to keep moving, possibly hitting something and becoming hurt. This tendency for people and other things in motion to keep moving forward is called inertia. Seat belts are an inertia antidote. They help keep people from getting hurt when a fast moving car stops suddenly.

Materials: Sturdy toy cars large enough for a lima bean to fit easily into the driver seat (usually at least 2" x 4"), dry lima beans, permanent marking pen, tape, cardboard, hard cover books, miscellaneous supplies possibly including string, pipe cleaners, index cards, rubber bands, tape.

1. Use a permanent marking pen to draw faces on uncooked, dry lima beans.

2. Make a stack of books about 6" inches high. Then make a car ramp by taping one end of a piece of heavy cardboard to the top edge of the books and the opposite end down on the floor. Make a crash wall by placing a 2" stack of books about 18" from the bottom edge of the cardboard ramp.

3. Place a car on the top of the ramp with a lima bean sitting in the drivers seat. Allow the car to roll down the ramp and into the crash wall. Explain to students that as the car rolled down the ramp, both the car and the bean gained speed. When the car hit the wall, the car stopped (or changed direction), but the lima bean continued forward.

Have students design a safety belt that will hold a lima bean in a car, and keep the bean from moving when the car stops. The belts must be designed to be put on and taken off easily several times.

4. Give small groups of students a bean, a car, and miscellaneous supplies to use for making a safety belt.

5. Allow students to test drive their cars by rolling them down the ramp. Then ask students to share ideas on how they made their safety belts and why they are important.

READING RAINBOW® EPISODE #63 TOOTH-GNASHER SUPERFLASH

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