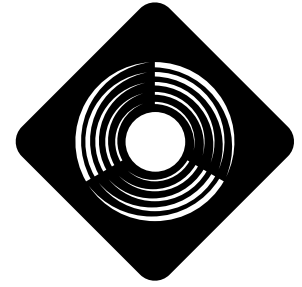


HEAT FROM THE SUN



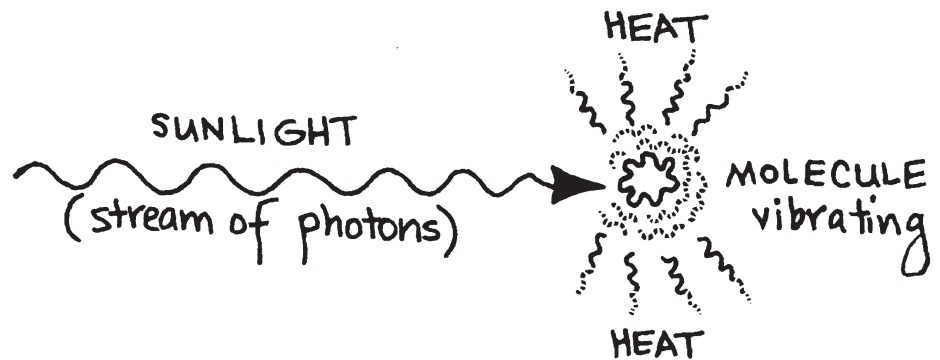
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FACT SHEET 5 A RESOURCE FOR CLASSROOMS AND TEACHERS

Highlights

What can the sun do for you?

- ◆ heat your house
- ◆ cook your food
- ◆ make the plants grow
- ◆ dry your clothes
- ◆ what else can you think of?



HEAT FROM THE SUN The sun's rays warm things by making molecules move around faster.

Photons and Molecules

The sun's rays are made up of photons. They are the smallest pieces of light that exist. Photons travel from the sun across space at a little over 186,000 miles a second. They keep moving until they hit something. If there is nothing in the way, they hit things on earth.

Everything in the universe – you, your school, the food you eat – is made up of tiny molecules.

When a photon hits a molecule, it gives it a shove. The molecule moves faster and heat is produced. The faster molecules move, the more heat they produce.

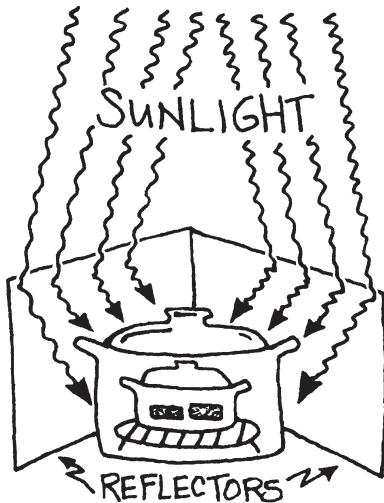
Fun in the Sun: Projects you can do

Be safe: With any project involving the sun, be careful not to burn yourself. Wear sunscreen, sunglasses and a cap. Use pot holders for handling hot objects. Ask an adult to help you.

MAKE A REFLECTOR

Materials: a piece of notebook paper; a piece of aluminum foil; scissors; white glue

Cut a piece of notebook paper and a piece of aluminum foil the same size. Brush white glue onto the back of the foil. Smooth it carefully



SOLAR COOKER

Cook for yourself and your friends with the sun.

over the paper. Let it dry. Point the reflector at the sun.

Try curving it around. Feel the heat reflected onto your hands.

COOKING WITH A SOLAR OVEN

Materials: large cooking pot with clear glass lid; smaller black pot with glass lid; rack; reflectors; brownie mix; pot holders

This works best if you do your cooking at noon.

Make two reflectors on stiff cardboard with foil and white glue. (See *Make a Reflector* activity) Set large pot in front of reflectors. Angle the reflectors so they focus the sun's rays on the large pot. Put rack in large pot.

Mix the brownies according to the instructions. Put them into the small cooking pot. Set the

small pot on the rack inside the large pot. Put the lid on the small pot and then the lid on the large pot.

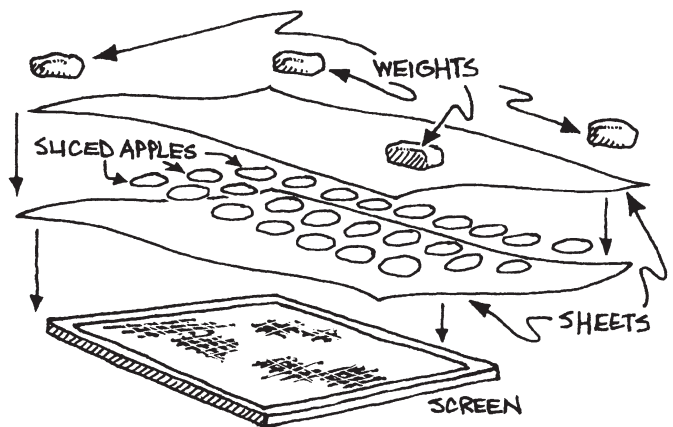
Cook the brownies one and one-half times the cooking time listed on the package.

Try making nachos by melting cheese on tortilla chips this way. Remember to use pot holders and start with food that is as close to room temperature as possible. It will take less time to cook.

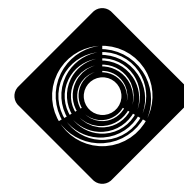
DRYING FRUIT WITH THE SUN'S HELP

Materials: a window screen; a clean, dry bed sheet, cut into pieces; one dozen apples

Wash and peel about one dozen apples. Remove the seeds and slice thinly. Sprinkle Fruit Fresh® or powdered vitamin C on both sides so your fruit won't turn brown. Lay one piece of the bed sheet on the screen. Lay the apple slices in a single layer on the bed sheet,



SUN DRIED FRUIT Dry fruit for snacks, just like your grandparents did.



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making sure the pieces don't touch. Cover with the other piece of bed sheet.

Put this in a safe place where animals cannot get to it, like on a table outdoors. Weigh the cloth down with something heavy and clean.

Check the apples every day. When they are dehydrated and light brown, put them in an airtight container. They will keep for a long time and make a great snack.

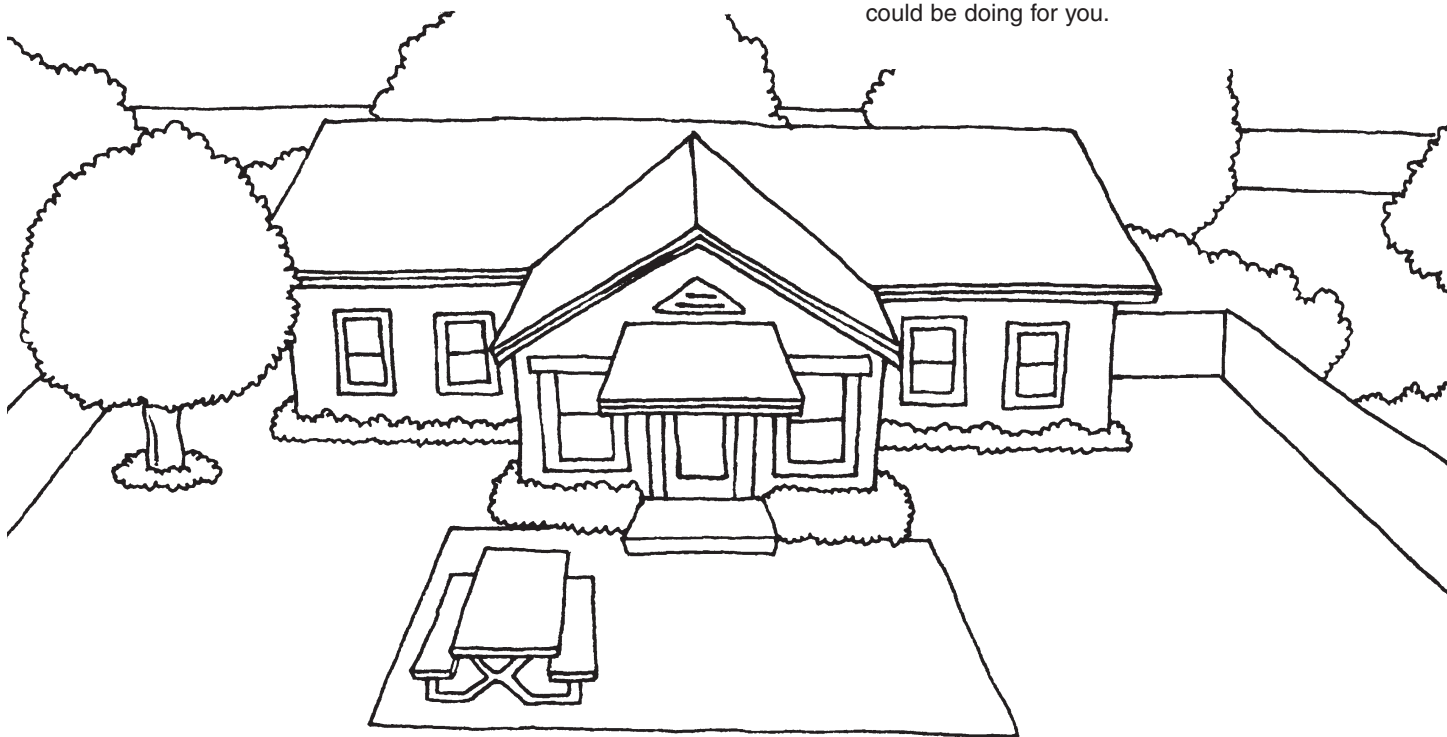
HEAT FROM CONCENTRATED SUNLIGHT

Materials: a soft lead pencil; a scrap of soft wood (like a 2-inch by 4-inch piece of lumber); and a magnifying glass

Use the pencil to draw a picture on the wood with dark lines. Go outdoors. Hold the design so that it faces the sun. With your pencil drawing as a guide, hold the magnifying glass in front of the drawing so that it focuses the light on the lines you have drawn.

Watch carefully and the wood will start to smoke. Move the magnifying glass around so that the point of light burns a line over your pencil line.

WHAT CAN THE SUN DO FOR YOU? This could be your house and backyard. Draw yourself in your backyard and draw all the things the sun could be doing for you.





Helpful Organizations

Renewable energy education:

TEXAS SOLAR ENERGY SOCIETY

P.O. Box 1447

Austin, TX 78767-1447

(512) 326-3391 or (800) 465-5049

www.txses.org

Sources of inexpensive solar cookers and how to use them:

SOLAR COOKERS INTERNATIONAL

1919 21st Street, #101

Sacramento, California 95814

(916) 455-4499

www.solarcooking.org

Global education in various appropriate technology methods:

SOLAR ENERGY INTERNATIONAL

P.O. Box 715

Carbondale, Colorado 81623

(970) 963-8855

www.solarenergy.org

Research and education on uses of solar energy and energy efficiency:

ENERGY CENTER

University of Texas, El Paso

P.O. Box 68-660

El Paso, Texas 79968

(888) 879-2887

www.wattwatchers.utep.edu

AMERICAN SOLAR ENERGY SOCIETY

2400 Central Avenue, Ste. G-1

Boulder, Colorado 80301

(303) 443-3130

www.ases.org

Resources

FREE TEXAS RENEWABLE ENERGY INFORMATION

For more information on how you can put Texas' abundant renewable energy resources to use in your home or business, visit our website at

www.InfinitePower.org or call us at 1-800-531-5441 ext 31796.

Ask about our free lesson plans and videos available to teachers and home schoolers.

ON THE WORLD WIDE WEB:

El Paso Solar Energy Society:

www.epsea.org/cook.html

Fun things to do with solar power:

www.sunwindsolar.com/solar/solar_energy_uses.html

The solar cooking archive:

www.solarcooking.org

PUBLICATIONS: HOME POWER MAGAZINE

P.O. Box 520, Ashland, Oregon 97520 USA

(800) 707-6585 www.homepower.com

SAVING ENERGY. Jacqueline Dineen, Raintree Steck-Vaughn, 1995.

HOW DO WE KNOW ENERGY EXISTS?

Terry Jennings, Raintree Steck-Vaughn, 1995.

EARTH WORDS/ A DICTIONARY OF THE ENVIRONMENT.

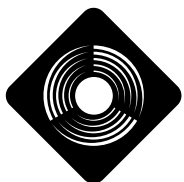
Seymour Simon, Harper Collins, 1995.

ENERGY: SIMPLE EXPERIMENTS FOR YOUR SCIENTISTS.

Larry White, Millbrook Press, 1995.

OUR ENDANGERED PLANET. AIR.

Lisa Yount, Lerner Publications Company, 1995.



RENEWABLE ENERGY
THE INFINITE POWER
OF TEXAS

STATE ENERGY CONSERVATION OFFICE

111 EAST 17TH STREET, ROOM 1114

AUSTIN, TEXAS 78774

PH. 800.531.5441 ext 31796

www.InfinitePower.org