

# THE SCENE WORKBOOK

**An Interactive Guide to Recreation and Energy,  
with 10 Pages of Cool Facts and Fun Activities  
Designed Especially for Teens**



# REC CLUB *UNPLUGGED*



The REC Club program was developed to make a positive difference in the lives of teens. The Club offers opportunities for middle and high school youth, ages 10 to 17, to grow through physical fitness, art, leadership development, community service, workforce development and educational activities while enhancing self-esteem, communication skills, problem solving and community involvement.

REC Club membership is free, membership application required. All activities including field trips are free to REC Club members. Field trip space is limited and participants are chosen based on behavior and participation in organized classes and activities.

**Energy Saving Adventures (ESA)** encourage youth to take charge of their future through resource preservation. Teens take field trips, run experiments and produce films to create change in the world around them! Call 858-966-1328 to learn more.

**Nature Explorers** is an outdoor adventure program that teaches teens about sustainability and self-sufficiency. Environmental energy education programs engage teens at all levels, from junior to explorer to mentor! Call 619-667-6839 to learn more.

ESA and Nature Explorers are part of the County of San Diego Department of Parks and Recreation REC Club program, located at:

## **Lakeside Teen Center**

9911 Vine St.  
Lakeside  
619-443-4169

## **Spring Valley Teen Center**

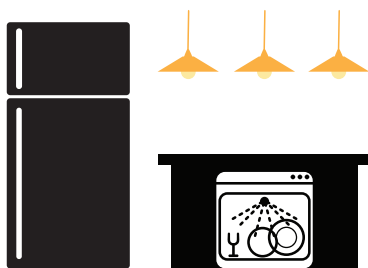
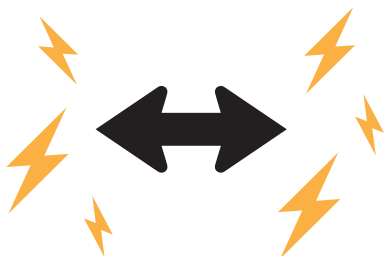
838 Kempton St.  
Spring Valley  
619-667-6835

# ENERGY USE AND SAVINGS

When you think of energy, you probably think of the lights in your house. This form of energy is called electricity. Many power plants use coal to create electricity, but wind and sun are also sources.

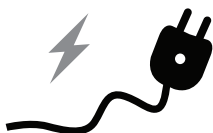
When electricity leaves the power plant and reaches our homes, that energy is measured in kilowatt hours. A **kilowatt hour** is a measure of energy that is equal to the power needed to sustain 1,000 watts for 1 hour.

**Did you know?** Energy can be defined as how things change and move. Energy can't be created or destroyed – it can only be transferred or transformed into another form.



**Did you know?** In a typical household, appliances like your refrigerator and dishwasher take up 20% of the total energy consume. Lights, alone, account for 20%.

But what about the rest of the energy used? Energy is also active when items, like our phone chargers, are idle. This is called **vampire energy**.



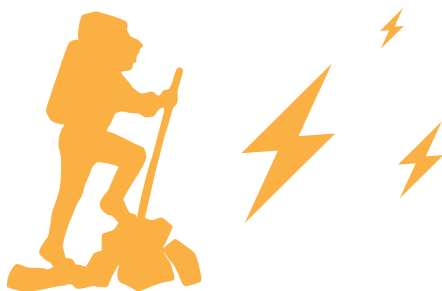
# ENERGY USE AND SAVINGS

We can save energy by decreasing our energy use. An **Energy Management System**, or EMS, describes actions we can take, and goals we can strive for, to both monitor and control our energy use. Often, we get tips in the mail from our power providers to do just that.

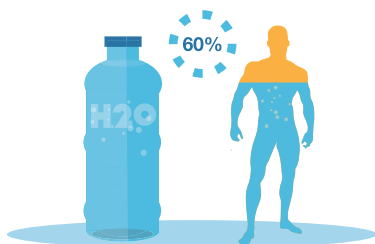
Just like having an EMS at home, trail etiquette rules help us conserve energy while hiking.

**Hikers going uphill** have the right of way on a shared trail because they are using more energy than hikers returning from the top.

Watch this cool video on trail etiquette: <https://bit.ly/39wnKX6>



When preparing for a nature outing, it's important to fuel up with the proper nutrients! Carbohydrates provide fuel for working muscles, while proteins help to build and repair muscle tissues. As you plan your meals and snacks, you should also consider calories. Calories describe the amount of energy that is needed to take on certain activities. The more calories we eat, the more energy we have to burn. It is also important to hydrate because our bodies are 60% water!



Want to learn more? **Play our Trivia Game:** <https://bit.ly/31HBXfs>

# ENERGY MATCHING

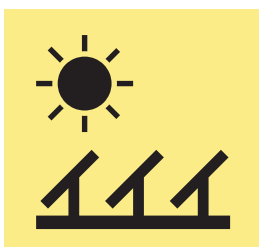
Match the following icons with their energy source:



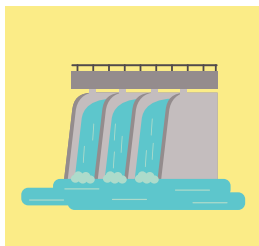
HYDRO  
power



SOLAR  
energy



WIND  
energy



RENEWABLE  
energy

# ENERGY CYCLES THROUGH

Do you use a fitness tracker watch or app? Tools like these are great for keeping track of daily steps and activities. They can also tell us how many calories we're burning, compared to how many we're taking in.

Think of food as an energy source. When you eat, your body gets the nutrients it needs to help you do the things you love – like biking, dancing or playing sports. Food also gives you energy to do things you may not enjoy as much – like doing the dishes or cleaning your room.

But the important thing to point out is that when you are active, you are using up the energy your body just ingested. The more you move, the more calories you burn and the faster your metabolism will be.

In addition to consuming and burning energy, we can create it. For example, eating healthy greens and drinking lots of water does more than help us move; it allows our internal organs to operate efficiently.

**Did you know?** On average, 1 kilogram of body weight at rest generates 3 watts of energy from the work our organs perform to keep us alive.



**Did you know?** With every 500 steps you take, you generate enough energy to charge a smartphone!



# ENERGY CYCLES THROUGH

**Let's play a game that explores how walking uses and creates energy:**

- 1. Pick a device or app to track your steps.** You can use a traditional pedometer or fitness tracker, or download a free app from your phone's app store. Some smartphones even have them already built in.
- 2. Plan a walk.** Once you know how you will be tracking steps, pick a place you want to visit – alone, with friends or family – and start exploring!
- 3. Calculate your energy use.** Write down how many steps you had before you started and after you were done. Then plug your steps taken into the calculation below.

\_\_\_\_\_ steps x 7 watts per step = \_\_\_\_\_ watts

\_\_\_\_\_ steps / 500 = \_\_\_\_\_ # of cell phones charged

- 4. Submit your work for some free swag!** Take pictures during your walk and email them with your step calculation to [Recclub.DPR@sdcounty.ca.gov](mailto:Recclub.DPR@sdcounty.ca.gov) to receive a special gift!



# ENERGY WORD SEARCH

## Can you find all of the energy terms?

- |                |                |              |
|----------------|----------------|--------------|
| ■ VAMPIRE      | ■ ENERGY       | ■ EFFICIENCY |
| ■ PRESERVATION | ■ KILOWATT     | ■ WASTE      |
| ■ RENEWABLE    | ■ CONSERVATION | ■ SOLAR      |
| ■ WIND         | ■ BIOFUEL      | ■ GEOTHERMAL |
| ■ RECYCLE      | ■ HYDROPOWER   |              |

D	U	U	S	Z	G	X	E	B	F	A	S	U	P	B
E	M	E	N	O	I	T	A	V	R	E	S	E	R	P
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O	N	E	L	B	A	W	E	N	E	R	N	A	L	G
H	Y	D	R	O	P	O	W	E	R	V	W	Y	Y	H
O	A	I	E	R	I	P	M	A	V	E	A	Q	X	R
M	U	I	S	K	I	L	O	W	A	T	T	O	J	Y

# MAKE SOLAR SWEET TEA

**Yield:** 1 serving

**Time:** 45 minutes to 1 hour

**You need:**

- 16 oz mason jar or glass
- Drinking water
- Tea bag (of your choice)
- Honey (to taste)
- Thermometer

**Directions:**

1. Fill  $\frac{3}{4}$  of your mason jar/glass with water.
2. Place the tea bag and thermometer in the water.
3. Place your mason jar/glass in an area where it is completely exposed to the sun.
4. Check your tea's temperature every 15 minutes. When the water temperature no longer rises, the tea is ready! Stir, sweeten and serve!

Note: The initial water temp and type of tea may affect brewing time.

Tried it? Share your photos of your drink by emailing them to:  
[Recclub.DPR@sdcounty.ca.gov](mailto:Recclub.DPR@sdcounty.ca.gov)



# DIY ENERGY ROBOT



Collect scrap materials at home and create your own energy robot! Draw your energy robot below. Consider these factors:

- "What type of energy does it use?"
- "How does it save energy?"
- "What is it made out of?"
- "What special powers does it have?"

**Energy Robot Name:** \_\_\_\_\_



# EARTH DAY

## EVERYDAY!

WRITE WHAT YOU LOVE ABOUT OUR PLANET!

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### Take the pledge!

I pledge to save energy and care for our planet.

Name \_\_\_\_\_

# You are now part of **THE SCENE**



ACTIVITY  
SOLUTIONS