

Name \_\_\_\_\_

Pretest/Post-test

## Renewable and Non-Renewable Energy

### Matching questions

1.  fuel
  2.  Solar energy
  3.  Nuclear energy
  4.  Geothermal energy
  5.  fossil fuels
  6.  cons of oil
  7.  nuclear energy
  8.  petroleum
- a. Energy from the Sun, which provides heat and light energy for Earth.
  - b. a material that provides useful energy
  - c. Thermal energy generated and stored in the Earth.
  - d. The energy released during nuclear fission or fusion, especially when used to generate electricity.
  - e. non-renewable energy resource that forms from remains of organisms that lived long ago
  - f. spills when drilling, burning causes smog, acid rain and global warming
  - g. oil used for transportation, a liquid mixture of complex hydrocarbon compounds
  - h. energy released when the nuclei of atoms are split or combined

### Multiple choice questions

9. neutrons used for cooking
- coal
  - petroleum
  - natural gas
  - fossil fuels

10. release sulfur dioxide which makes acid rain; mining disturbs habitats, water table and pollutes water

- coal
- fossil fuels
- cons of oil
- cons of coal

11. used for electricity, the most abundant energy source

- cons of coal
- petroleum
- cons of oil
- coal

12. A form of energy generated by the conversion of free-falling water to electricity.

- Hydro-electric energy
- Nuclear energy
- Solar energy
- Geothermal energy

13. A natural resource which can replenish with the passage of time, either through biological reproduction or other naturally recurring processes.

- Renewable resource
- Nuclear energy
- Solar energy
- Geothermal energy

14. Form of energy conversion in which turbines convert the kinetic energy of wind into mechanical or electrical energy that can be used for power.

- Nuclear energy
- Solar energy
- Wind energy
- fuel

Name \_\_\_\_\_ **KEY**

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1.  B fuel
2.  A Solar energy
3.  D Nuclear energy
4.  C Geothermal energy
5.  E fossil fuels
6.  F cons of oil
7.  H nuclear energy
8.  G petroleum

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## Renewable and Non-Renewable Energy

At: <https://www.youtube.com/watch?v=UZo15vMDhe4>

So what we use fuels  
It's what people need  
We're just having fun  
We don't care who sees  
But these fuels will go out  
Supplies are limited  
Need to use renewed energy

Uh, uh, uh  
Oil, gas, and coal are used up  
Forming from plants remains of animals  
Built up in rock in layers  
Keep it trapped below  
We dig down for it  
Chemical energy released you burn on it  
People use fuels for cooking, electricity,  
lighting, cars, and heating  
And use them up but they're limited  
Supplies down demand so great we all need  
to find a better way

Yeah, uh you know what?  
Need fuels to use again  
Sun is on my face  
Solar panels in place  
Catching solar rays  
Biogas from rotting waste

Geothermal heat energy, volcanic areas  
blowing all day  
Wind turbines turning away

Water is safe flowing away  
Hydroelectric power station  
Renewable sources only used about 5%

So what we use fuels  
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Reservoir's flowin' there  
Hydroelectric power plant  
Spinning turbine activates generators  
A large dam  
Ocean's everywhere we going thermal  
energy  
Mechanical is up when tides and waves  
come

And then there's hydrogen  
One proton one electron  
Simple but no gas around  
Always combination

From the ground up organic hydrocarbons  
Separated reforming no pollution  
Fuel cells combining the two gasses really  
Hydrogen and oxygen producing electricity  
Convert the energy not losing charge  
As long as the fuel continues to be supplied

F-U-E-L, C-E-L-L, G-A-S 4 C-A-R'S,  
clean fuel see  
Natural gas methanol  
Can fuel cells fueled directly  
No reformer

So what we use fuels  
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Yea, nuclear energy  
Produced when atoms are broken apart  
Maybe best one but makes radioactive  
waste  
So, nuclear energy  
Produced when atoms are broken apart  
Maybe best one but makes radioactive  
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**Diagram: Draw a diagram to demonstrate how each of the following examples of renewable energy works.**

- 1) Label Parts of each diagram**
- 2) Write Explanation Describing Your Artwork**

**Solar Energy**

**Diagram with Labels**

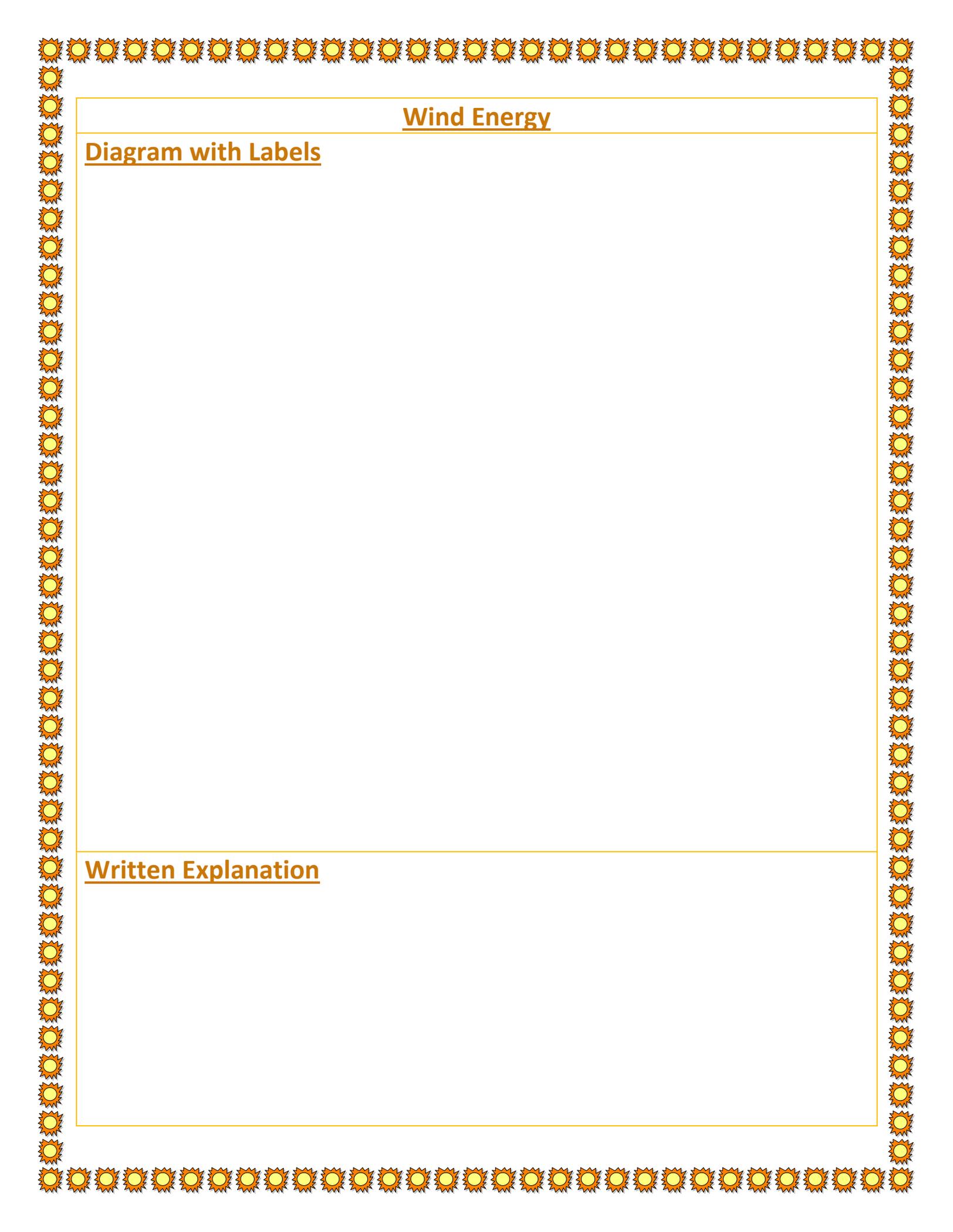
**Written Explanation**



## Hydroelectric Energy

### Diagram with Labels

### Written Explanation



## Wind Energy

### Diagram with Labels

### Written Explanation

## Creating a Solar Oven to Make Solar Smores

### Materials/Ingredients:

A Cardboard box with lid (3" depth)

Plastic wrap-clear

Aluminum foil

Black paper

Tape

Stick or Pencil

Stick or Pencil

Scissors

Graham crackers

Jumbo marshmallows

chocolate

### Create Solar Oven Procedure:

1. Line the inside of the cardboard box with black paper. A shoe box or pizza box works well because the lid stays attached.
2. With scissors, cut a three-sided flap out of the top side of the box, leaving at least a 1-inch border around the three sides.
3. On the inside of the box, cover the opening under the flap with plastic wrap and tape or glue it in place.
4. Cover the flap with aluminum foil. Make sure the foil is flat and smooth as possible to make it like a mirror.
5. Using a stick, prop the flap open. You may use tape or glue to make the stick stay put.
6. Set the oven in the direct sun, with the flap propped to reflect the light in the box. Preheat the oven for at least 30 minutes.
7. Break the graham cracker in half to make squares and place inside your solar oven with a jumbo marshmallow on top of each cracker. Don't add the chocolate yet, it will melt very quickly in the sun. Place your solar oven in direct sunlight with the flap open. Let it cook.
8. The marshmallows will take anywhere from 30 - 60 minutes to cook. Once the marshmallows are squishy, open the lid and place a piece of chocolate on top. Place another graham cracker on top of the chocolate and press down to squash the marshmallow.