Task 1　Electricity

Vocabulary

Picture Dictionary

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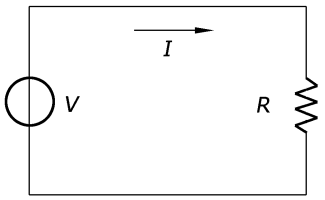

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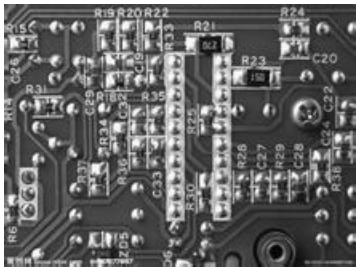

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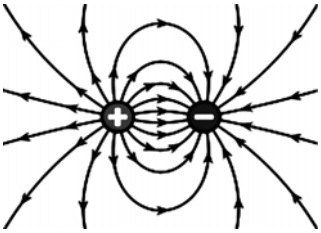

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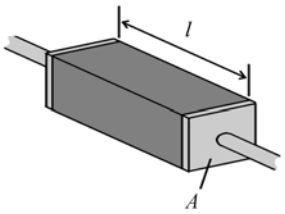

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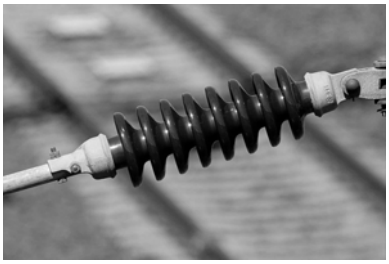

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Listen and Write

① lightning 闪电　② transmission lines 输电线路　③ circuit 电路
④ electric current 电流　⑤ franklinism 静电　⑥ electric charge 电荷
⑦ battery 电池　⑧ electrical conductor 电导体　⑨ insulator 绝缘子

Conversation

Energy Resources List

Water
Sun and Wind
Fossil Fuels
Earth's Heat
Nuclear Fission
Biofuel

Dialogue

A: Hello, I just read an article about electricity, there is something I don't understand.

B: Really? Let me see.

A: Here, how is electricity produced?

B: The electricity is derived from the energy of nature.

A: So it means generator convert the energy of nature to electricity?

B: Yes. You're right! After that, power plants transmit the electricity to the users.

A: Oh, I know. Thank you very much!

Complete This Dialogue

A: Hello, I just read an article about electricity, there is something I don't understand.

B: Really? Let me see.

A: Here, how is electricity produced?

B: The electricity is derived from the_____.

A: So it means generator _____ the energy of nature _____ electricity?

B: Yes. You're right! After that, _____ transmit the electricity to the users.

A: Oh, I know. Thank you very much!

Exercise and Repeat

Learning and Comprehension

Electricity is a set of physical phenomena associated with the presence and flow of electric charge. It gives a variety of well-known effects, such as lightning, franklinism, electromagnetic induction and the flow of electrical current. In addition, electricity permits the creation and reception of electromagnetic radiation such as radio waves.

Electricity is a form of energy associated with the atomic particles called electrons and protons. In particular, electricity involves the movement or accumulation of negatively charged electrons in relation to positively charged protons.

New Words

electricity [iˌlekˈtrisəti] *n.* 电，电气；电流；电荷；电学；(照明、供暖等)用电；电力供应

lightning [ˈlaitniŋ] *adj.* 闪电的；快速的
n. 闪电
vi. 闪电

electric charge [iˈlektrik tʃɑːdʒ] 电荷

franklinism [ˈfræŋklinizm] 静电

electromagnetic induction[ilektrəʊmægˈnetik inˈdʌkʃən] 电磁感应

electrical current 电流

electromagnetic radiation [iˌlektrəʊmægˈnetik ˈreidiˈeiʃn] 电磁辐射

radio waves[ˈreidiəu weivs] 无线电波

electron [iˈlektrɑn] *n.* 电子

proton [ˈprəuˌtɔn] *n.* 质子

Notes

1. Electricity is a set of physical phenomena associated with the presence and flow of electric charge.

电是基于电荷存在与流动的一系列物理现象。

2. Electricity gives a variety of well-known effects, such as lightning, static electricity, electromagnetic induction and the flow of electrical current.

电带来各种众所周知的效果，如闪电、静电、电磁感应和电流的流动。

Exercises

1. Fill in the blanks with the words in the text.

(1) Electricity gives a wide variety of well-known effects, such as _____, _____, and _____.

(2) Electricity is a form of _____ associated with the atomic particles called and _____.

2. Answer the questions.

(1) What is electricity?

(2) What effect does electricity give?

Extensive Reading

How to Make Electricity with Water

Instructions:

Step 1. Find a source of water. A stream, a rain gutter or anywhere else water flows can be used freely. Although a huge amount of potential energy is available in the ocean tides, it requires a lot of heavy equipment to mount turbines in the ocean, so this method is not recommended for hobbyists.

Step 2. Get some type of propeller, paddle wheel or turbine. Anything that turns on an axle as water moves past it will work to generate electricity with water.

Step 3. Attach your propeller, turbine and paddle wheel to a small electric generator. You need a small generator so it can work with the energy come from a small stream or drain pipe. Surf the internet for more information on how to make an electric generator.

Step 4. Mount the propeller in the water source without getting the generator wet. Attach the generator to a light bulb, or whatever else can work with the electricity which generated by your generator.

New Words

stream [stri:m] *n.* 溪流；流动；潮流；光线

vi. 流；涌进；飘扬

potential [pə'tenʃl] *n.* 潜能；可能性；[电] 电势

adj. 潜在的；可能的

turbine [ˈtə:bain] *n.* [动力] 涡轮；[动力] 涡轮机

equipment [iˈkwipmənt] *n.* 设备，装备；器材

propeller [prəˈpelə] *n.* [航][船] 螺旋桨；推进器

axle [ˈæksl] *n.* 车轴；[车辆] 轮轴

link [liŋk] *n.* [计] 链环，环节；联系，关系

vt. 连接，联结；联合，结合

vi. 连接起来；联系在一起；将人或物连接或联系起来

resource [ˈrisɔ:s] *n.* 资源，财力；办法；智谋

paddle wheel [机] 桨轮；明轮

drain pipe 排泄管；[水运] 疏水管

electric generator 发电机

Notes

1. Find a source of water.

找到一个水源。

2. Get some type of propeller, paddle wheel or turbine.

取些不同类型的螺旋桨、桨轮或涡轮。

3. Attach your propeller, turbine and paddle wheel to a small electric generator.

在小型发电机上安装螺旋桨、涡轮和桨轮。

4. Mount the propeller in the water source without getting the generator wet.

在水中安装螺旋桨，并避免发动机被沾湿。

Exercises

1. Fill in the blanks with the words in the text.

(1) Although a huge amount of _____ energy is available in the ocean tides, it requires a lot of heavy equipment to mount _____ in the ocean, so this method is not recommended for hobbyists.

(2) Anything that turns on an _____ as water moves past it will work to generate _____ with water.

(3) You need a _____ generator so it can work with the _____ come from a small stream or drain pipe.

2. Answer the questions.

(1) What is the first step to make electricity with water?

(2) What is the small electric generator used for?

(3) If you don’t want the generator to get wet, what can you do?