**15. Renewable Energy—Hydroelectricity**

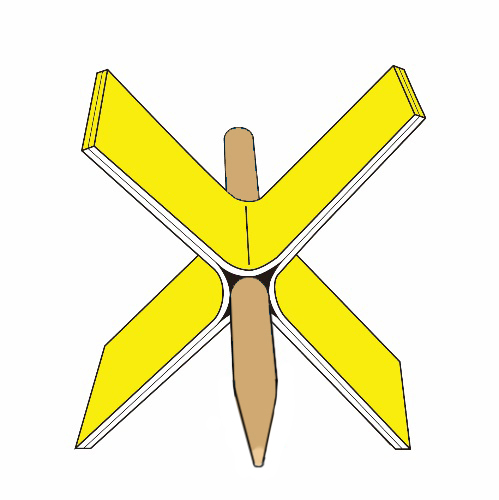
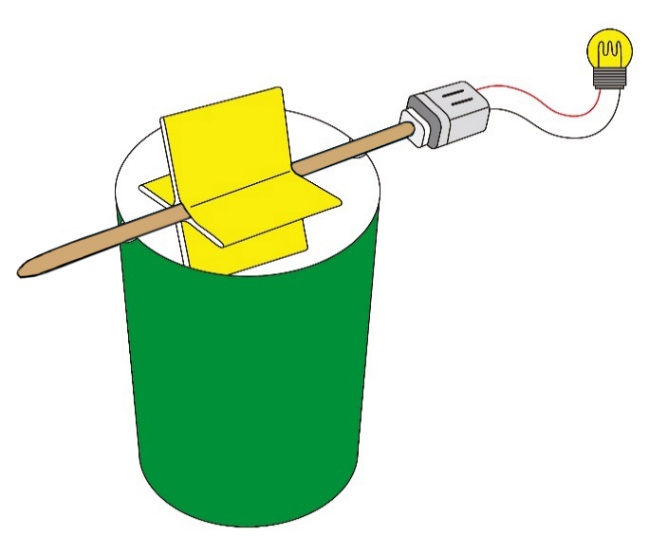
Learning objectives

* Understand that water can be used to generate electricity.
* Understand the principle of hydroelectricity and its pros and cons through experiment.



Mini hydroelectric generator

Making use of a metal can, a wooden chopstick, a large drink carton, a mini electric motor and a small light bulb, build a fan as shown in Figure 1. Then, follow the instruction in Figure 2 and put together a mini hydroelectric generator.

Metal can

Small light bulb

Electric motor

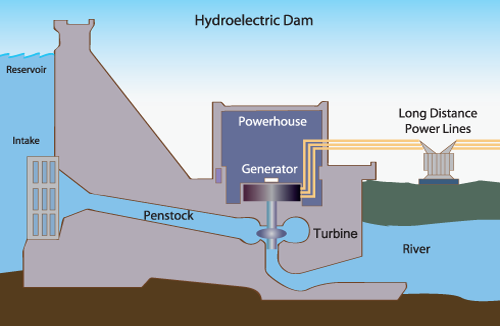
Wooden chopstick

Large drink carton

Figure 1 Figure 2

Principle of hydroelectricity

P5 - Natural Resources: Energy source

The structure of a hydroelectric power plant shown in the picture on the right is similar to that of the mini hydroelectric generator. The function of   
 is similar to that of the fan blade. Meanwhile, the function of   
 is similar to that of the mini electric motor.

As water flows from a (higher/ lower) end to a (higher/lower) end, water flow will push the and to generate electricity.

Source of picture: Electrical and Mechanical Services Department

Compared to conventional means of electricity generation, hydroelectricity produces (more/ less) pollution and the cost of it is relatively (higher/ lower). Nonetheless, development of hydroelectricity is limited due to the lack of space for building dam which also causes destruction to the natural landscape.

1