

**E. TROUBLE SHOOTING**

**If your potato clock produces a weak display, try one of the following:**

1. Give it time, the signal is sometimes weak at the beginning, but gets stronger after a short while.
2. Examine the metal plates for rust(oxidization). Use sand paper to remove any rust.
3. Try putting the metal plates closer together(but not touching each other). Conduction will be better if the distance between the plates is shorter.
4. If there is no reaction whatsoever, check all the connection points. Make sure that the connection points are correctly and firmly placed. Also, check if the polarities are correct - make sure that the negative (black wires) and positive (red wires) terminals are connected properly.
5. Check if the metal plates/wires are touching each other, this causes short circuits.

**F. HOW IT WORKS**

1. The metal strips and potatoes make a simple battery that creates electricity to operate the clock. Each potato works as a device called an electrochemical cell. It converts the chemical energy stored in the metal strips into electrical energy. Two potatoes are needed to make electricity strong enough to run the clock.
2. A cell works because of the chemical properties of the metals inside (in this case the copper and zinc). The different properties cause tiny particles charged with electricity (called ions) to move between the two strips of metal. This flow is an electric current. The potato contains the particles that allow the current to flow, but it stops the metals touching. Electric current also flows along the wires between the zinc and copper strips and the clock. This current makes the clock work.

**G. FURTHER EXPERIMENTS**

Put some soft drink into the pots provided. Insert the copper and zinc plates into the pots, as shown in the diagram, taking care that the metal plates do not touch each other. The clock should now start to work. You may experiment with different liquids like salt water, fruit juices; or fruit like lemon, orange, tomato etc. The fun is unlimited.



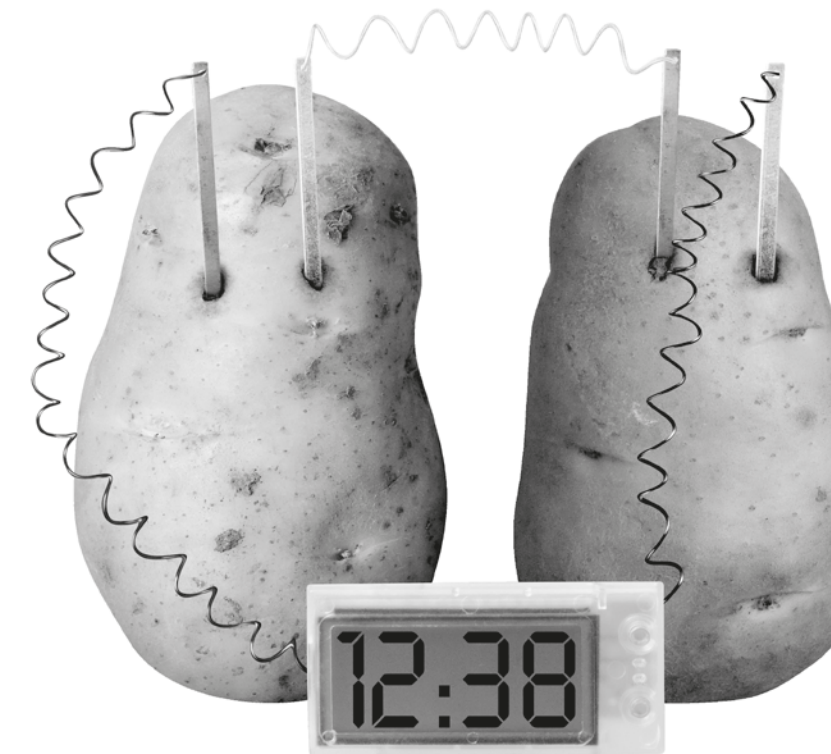
**H. QUESTION AND COMMENTS**

We treasure you as a customer and your satisfaction with this product is important to us. In case you have any comments or questions, or you find any parts of this kit missing or defective, please do not hesitate to contact our distributor in your country, whose address is printed on the package.

**GREEN SCIENCE**

**POTATO CLOCK**

**Instruction manual**

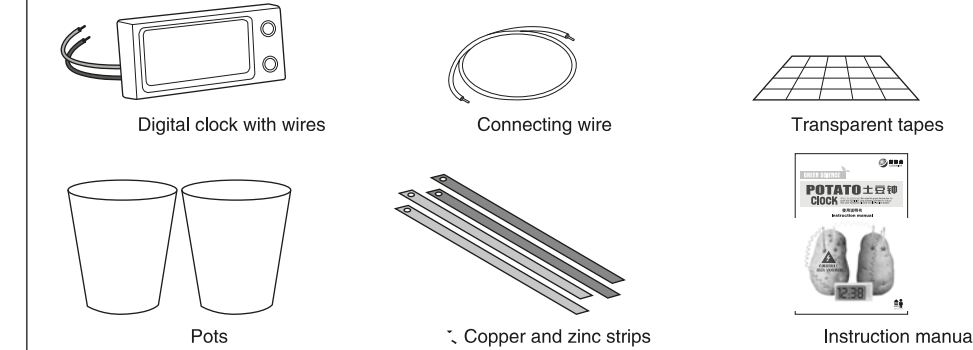


**A. SAFETY MESSAGES**

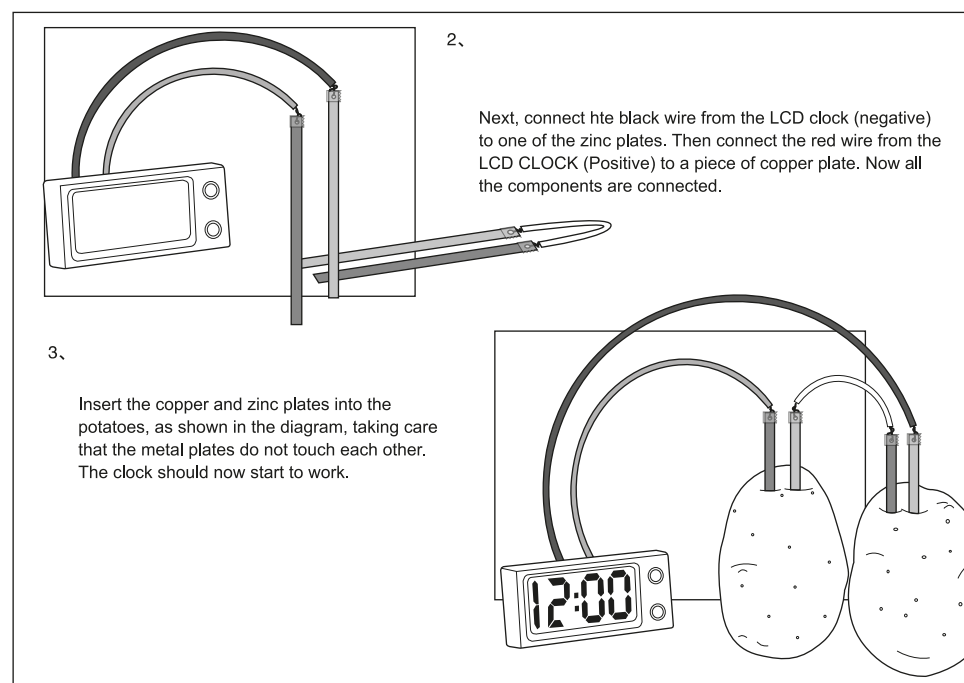
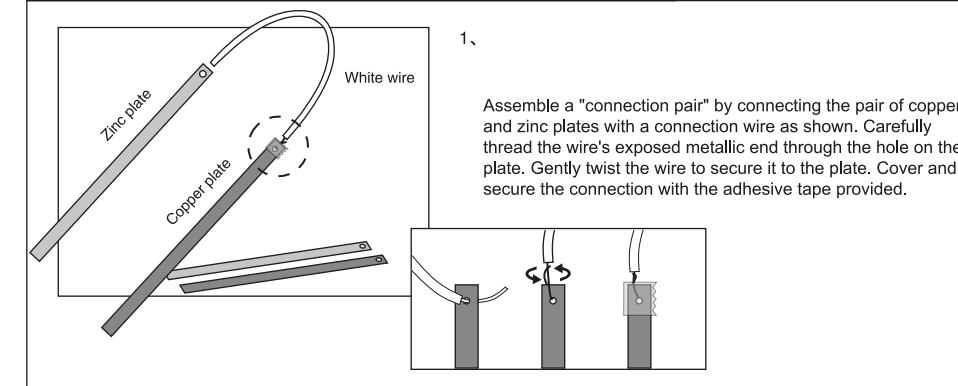
**To Parents: Read all instructions before providing guidance to your children.**

1. Please read through these instructions before you start.
2. Adult supervision and assistance are required at all times.
3. Intended for children aged 8 and upwards.
4. This kit and its finished product contain small parts which may cause choking if misused. Keep away from children under 3 years old.
5. Metal parts may have sharp edges. Adult assistance is required when assembling these parts.
6. Do not connect any of the parts provided to any AC wall socket or any batteries. This may cause electric shocks or a short circuit.
7. The digital clock with wires may temporary lose its function at electrostatic discharge environment, but normal functions are resumed when the device is reset.

**B. CONTENTS**



**C. MAKING THE POTATO CLOCK**



**D. SETTING THE CLOCK**

**1. Setting the clock**



- (1). When all the metal plates are first inserted into the potatoes, the LED screen will light up and will show a static display of "12:00".
- (2). Press A once, the clock will start working. You will see the two dots in the middle start flashing.
- (3). Press B twice to obtain the set month mode, then press A to adjust to the right month. Press B to confirm and the display will switch to the set day mode.
- (4). Press A to adjust to the right day, Press B to confirm and switch to the set hour mode.
- (5). Press A to adjust to the right hour, Press B to confirm and switch to the set minute mode.
- (6). Press A to adjust to the right minute and press B to confirm.
- (7). After the minute is confirmed, press A once. The set time will be displayed.

**2. Viewing the clock**

- (1). By default, the clock display shows the current time.
- (2). To view the Date: Press A once. The clock display will resume showing the current time after 2 seconds.
- (3). To view the seconds, press A twice. To resume the current time, Press A again.