

# Solar Spacecraft

Item No. 36241

Packaging materials are not toys. Please remove all packaging and packing tags/wires before giving this toy to your child.

**Warning!** Only for use by children over 8 years old. Instructions for parents are included and have to be observed. To be used solely under the strict supervision of adults that have studied the precautions given in the experimental set. Not suitable for children under 36 months due to small parts. Choking hazard. This toy contains a functional sharp point of connecting wires. Read the instructions carefully before use, then follow them and keep them for reference.



If at any time in the future you should need to dispose of this product please note that Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice. (Waste Electrical and Electronic Equipment Directive)

**Warning!** Do not short-circuit the battery terminals and motor, which may cause overheating. The wires are not to be inserted into socket outlets.

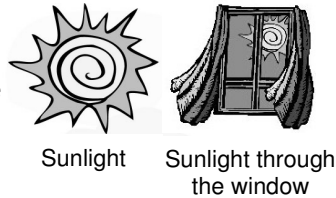
## Introduction

The Solar Science series demonstrate the use of solar energy in our daily lives. You will see sunlight provides the energy to drive different models like cars and boat. However, you need to have patience in building these models and follow the instructions step by step to make them work. Most important of all, they need to be illuminated with either strong sunlight or closely under a bright lamp. Your hard work will be compensated when you see your models finally work without batteries!

All these models make use of solar cells to provide the necessary power. Sunlight falling on the solar cells is converted into electric current. This current drives the motors to provide the mechanical power of movement or provide electricity to the radio or music box circuit boards. In commercial applications a large number of solar cells are connected together to provide enough electricity to power demanding devices like solar vehicle or street light. A rechargeable battery is often used to store the electricity in daytime and release the current at night or when required.

## What kind of light is required?

The best light source for these models are strong bright sunlight, you can take them outdoors on a sunny day or place them near the window where there is sunlight. **Caution! When playing outdoors, be careful and wear suitable protective clothing and hat to protect yourself from the sun's ultraviolet radiation. Do not put the toy under sunlight for more than 10 minutes.**



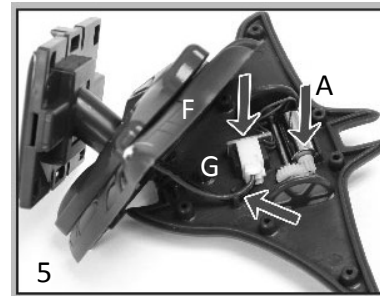
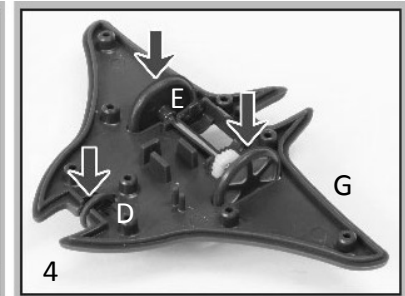
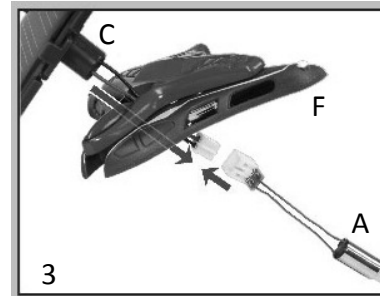
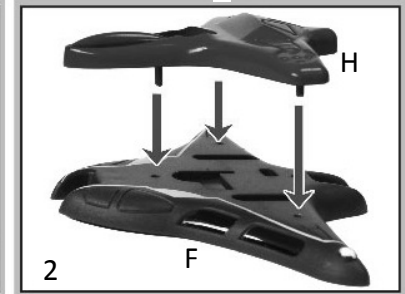
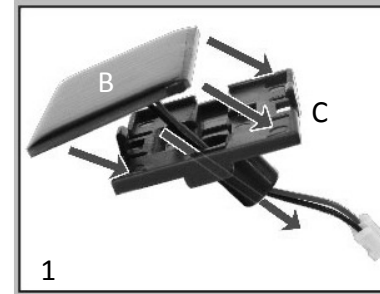
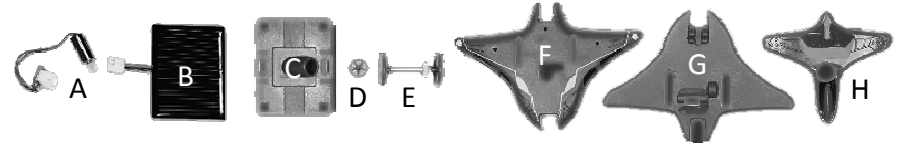
Lamp

Alternatively, these models will also work under a bright lamp of at least **60 watts**. **Warning! Adult supervision required. Do not put the model too close to the light bulb and/or for more than 2 minutes. Be very careful not to touch the bulb or you will get burnt! For safety reasons, put the solar panel and the model at a distance of at least 10cm from the light.**

You may need to push the moving part slightly (except for solar radio) to start the models when the illumination is weak. Try putting the model at different distance from the lamp, what happens? The model will move slower (or sound weaker in case of a radio model) and eventually stop working when you move it further and further away from the light because less light is falling on the solar cell. You can experiment with different types of light source to see which is the most efficient. As you will find out, those energy saving lamps and fluorescent tubes are not bright enough to power these models.

## Components:

Motor (A), Solar panel (B), Solar panel holder (C), Front wheel (D), Rear wheels (E), 3 Body parts (F,G,H)



7