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Tetra Pak Solar Car

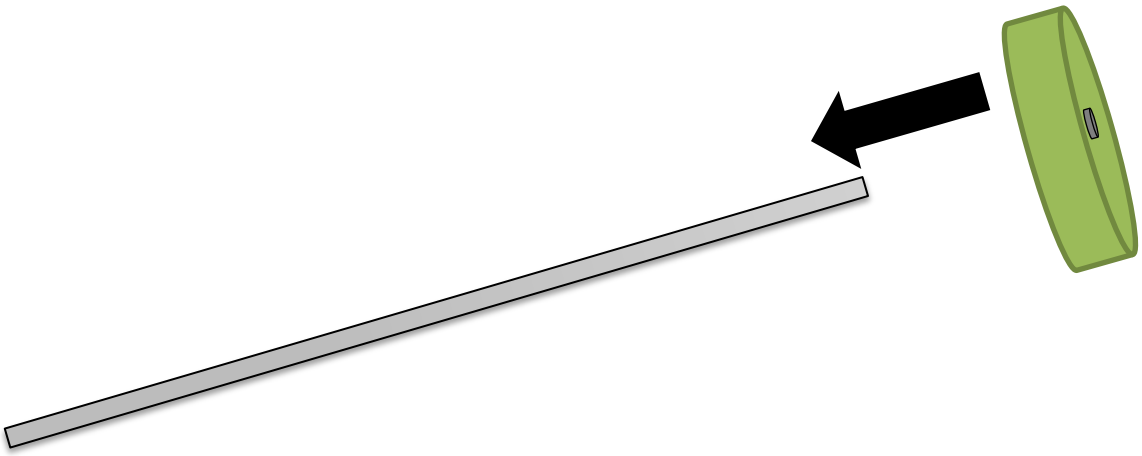
- Instructions on how to put together your solar car
- Remember to read through the all of the steps before starting each one. There are hints and tips in italics

Step 1: Place a straw through the holes at the end of the Tetra Pak

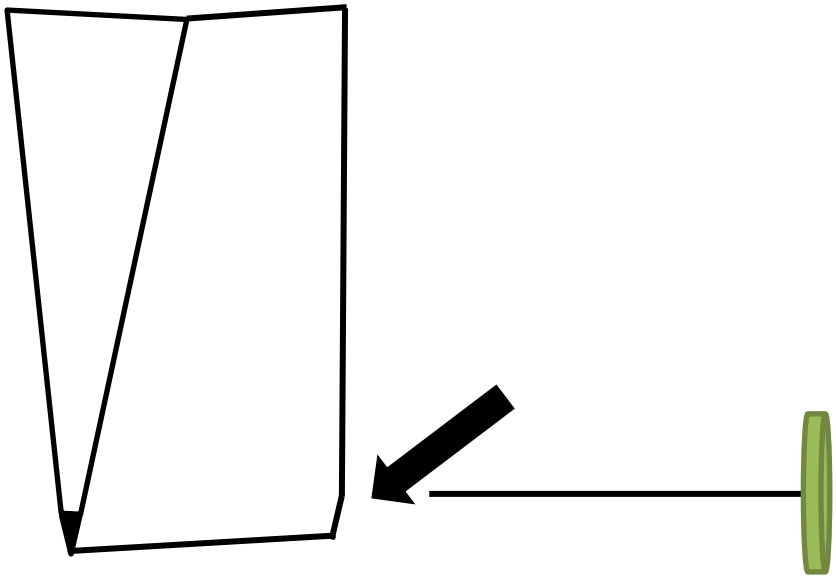
You can experiment with different thicknesses and lengths of straws to find the one that gives the car the best performance

Step 2: Take the long axel; place one of the smaller wheels on one end by applying firm pressure

You use the small wooden block provided when putting on the wheel by placing one end of the axel into the hole in the block to steady the axel and maintaining a firm grip on the axel place the wheel on the end by applying pressure



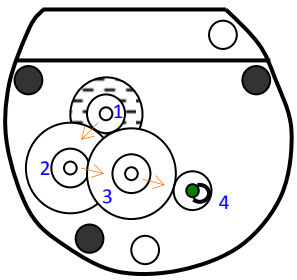
Step 3: Thread the axel through the hole and straw from one cut out end of the tetra Pak



Step 4: With the first wheel you added placed on a flat surface add the second wheel on the end of the axel applying firm pressure and then the front of the solar car is done

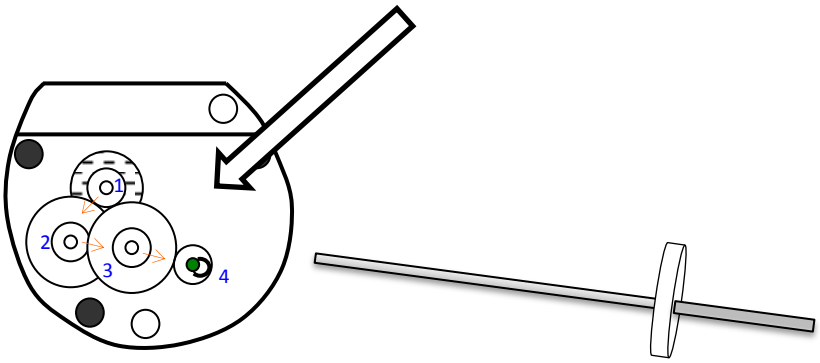
> *Place a coin under the first wheel so that the axel doesn't get pushed through to far whilst trying to attach the second wheel*

Step 5: Now you want to get the motor and the gearing together. With open end of the motor facing you and the flat edge at the top, *as seen below*, place the cogs into their places, flat side down



> *There are multiple gearing arrangements that affect the power and speed of the solar car; these can be found in the gearing work sheet*

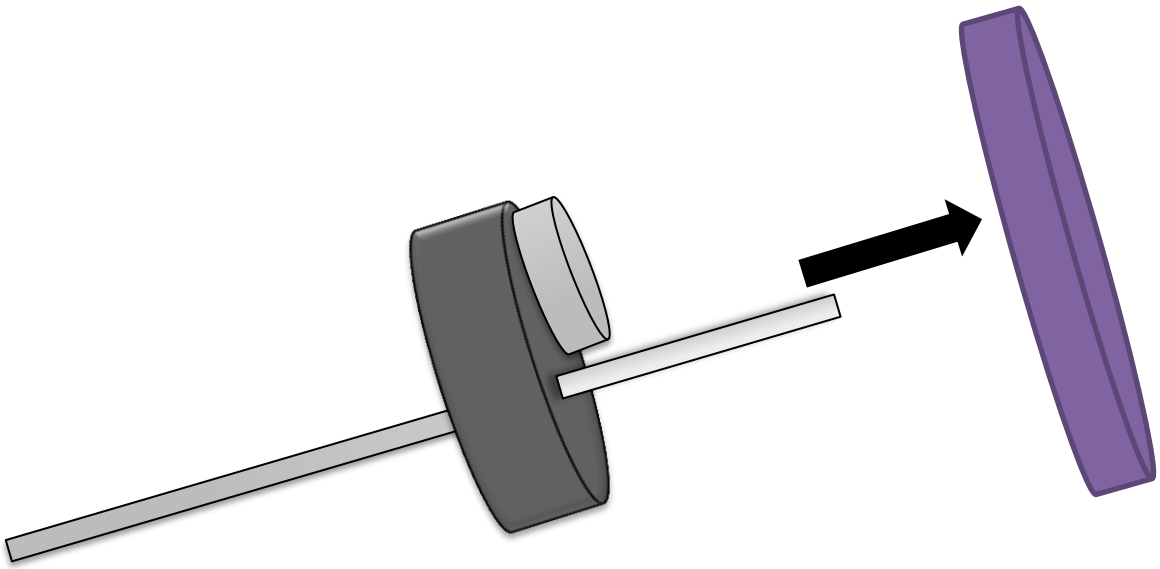
Step 6: Place the small axel with the cog flat side down through the hole on the right hand side of the central cog and snap the lid onto the base



Before placing on the cover you will need to check that the gears are running smoothly

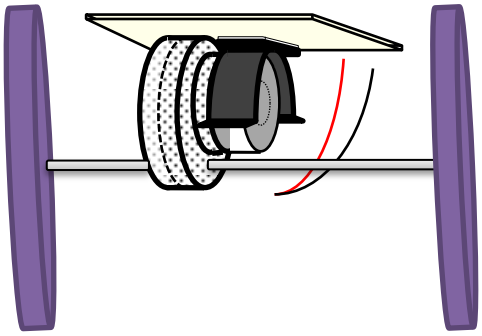
Step 7: Now place the large wheels on the gear axel

You can use the small wooden block here when putting on the wheels by placing one end of the axel into the hole in the block to steady the axel and helps prevent damage to home surfaces, remember to use a coin under the first wheel when attaching the second wheel so that the axel isn't pushed to far through the wheel



Step 8: Place the black clip on the back of the Tetra Pak onto the strip of Velcro, and then take the motor with the axel and wheels and attached them into the clip

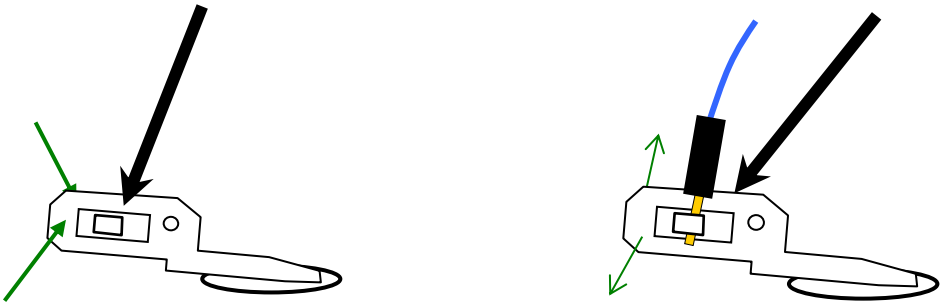
The silver part of the motor that can be seen is the bit that is placed into the holder, the motor should be place so that the flat edge faces the Tetra Pak and the wires face outwards



Step 9a: All that is left is to attach the solar cell to the motor

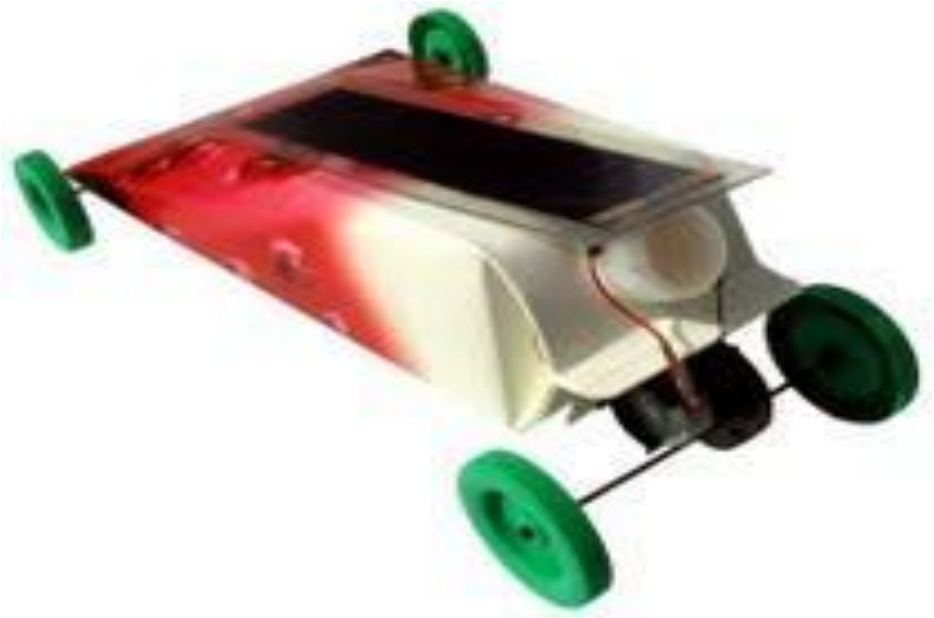
Attach the wires to the solar cell before placing the solar cell on the car

With the terminals facing you and positioned at the top of the cell, pinch the silver terminal and a hole will pop out on the side, push the gold motor plug straight down through the hole and release the pinch terminal to grip the plug



The wires are colour coded with the red wire being the positive; the solar cell has a red marker next to the positive terminal.

With the gearing shown above the positive wire connects to the positive terminal for the car to move forward. By changing the gears you change the rotation of the wheels and so the connectors can be reversed so as the car still moves forward



Step 9b: The Solar car can also work with a battery attached to the motor instead of the solar cell. Place the battery pack on the side of the Tetra Pak where the Velcro strip is placed. Connect the motor wires to the battery pack

When connecting the motor wires to the battery pack, the gold motor plugs from the motor can be inserted into the stackable plug of the battery pack. The wires from the battery pack have black connectors with a slot for the wires from the motor