

OPITEC

208.246

Functional Model Solar Car



Tools Required:

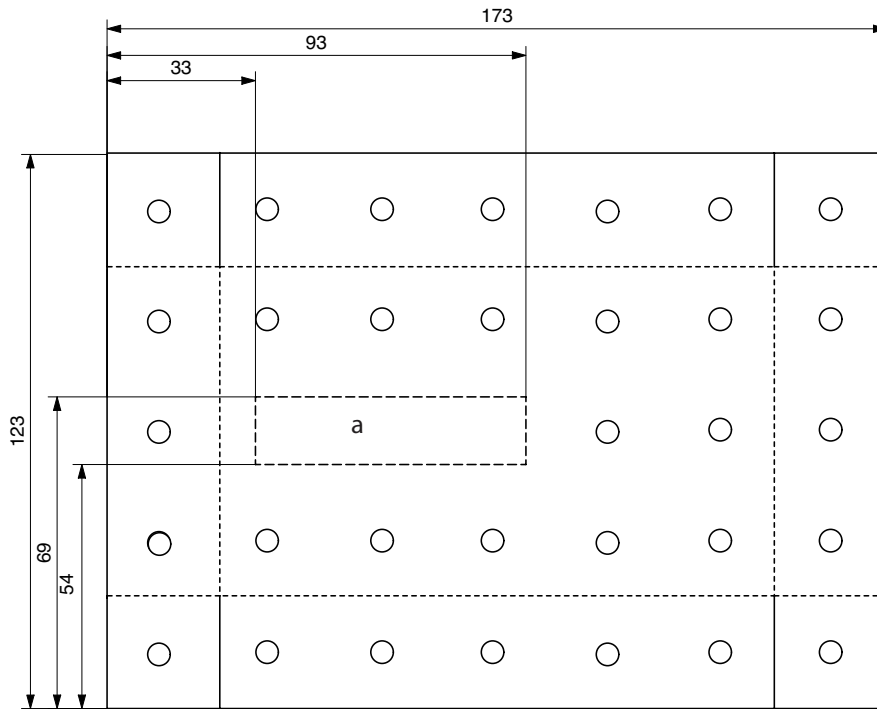
Pencil and Ruler
Scissors
All Purpose Glue
Side Cutter
Craft Knife
Insulated Wire Strippers
Hot Glue Gun
Hole Punch
Piece of Cardboard (approx.
100 x 50 mm)

Please Note!

The Opitec Range of projects is not intended as play toys for young children. They are teaching aids for young people learning the skills of craft, design and technology. These projects should only be undertaken and operated with the guidance of a fully qualified adult. The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Danger of suffocation!

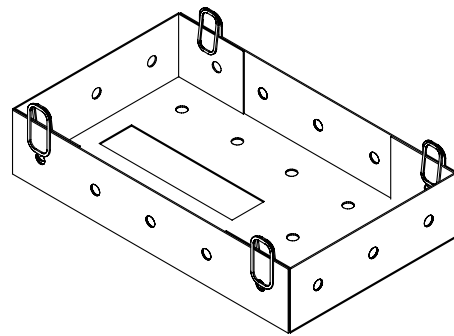
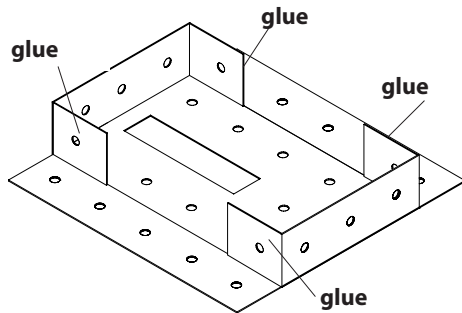
Parts List				
	Quantity	Size (mm)	Designation	Part-No.
Base Plate	1	7x5	Ground Plate	1
Wheels	4	ø 50	Wheels	2
Jumper Wire, black	1	500	Cabling	3
Solar Motor	1		Drive	4
Round Rod	2	100x4	Axis	5
Pulley	1	ø 50	Drive Wheel	6
Rubber Ring	1	ø 40	Drive	7
Reducer	1	4/2	Drive	8
PVC Hose	1	ø 6	Spacer Pieces	9
Solar Cell	1		Solar Cell	10
Jumper Wire, red	1	500	Cabling	11

Instruction



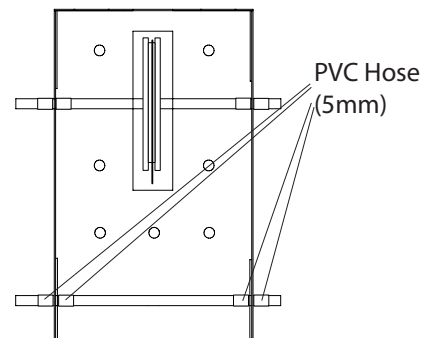
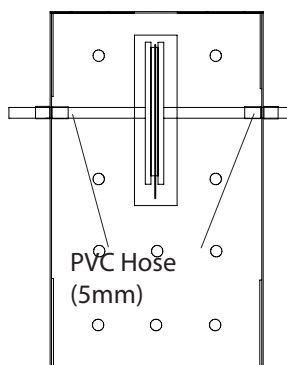
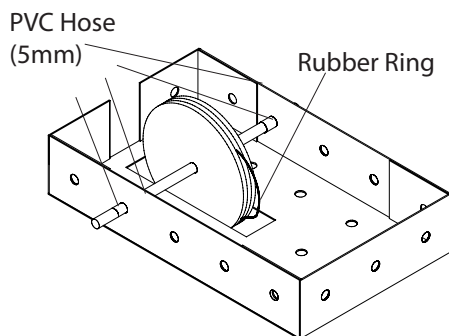
Step 1:

Cut the recess a) out of the base plate by using a craft knife.



Step 2: Cut into the ends of the base plate for one hole width as shown (solid lines). Fold the ends inwards.

Step 3: Coat the angled ends with glue, fold the sides upwards and fix them with clips.



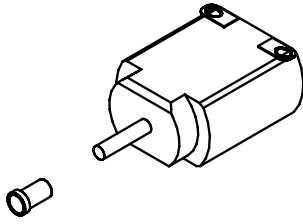
Step 4 :

Cut off four approx. 5mm long pieces from the PVC hose (9). Place the rubber ring (7) loosely on the cord wheel and place it as shown. (recess a)
Push an axle (5) through the second hole in the base plate, push it through the hole in the cord wheel and lead it out again on the opposite side. Place the hose sections on each axle from the inside as shown and adjust axle clearance. (see illustration)

Step 5:

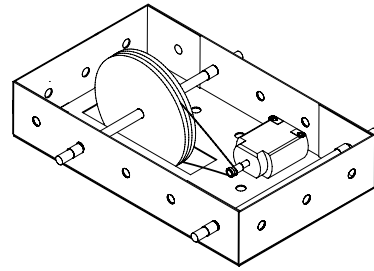
Cut off four approx. 5mm long pieces from the PVC hose. Guide the axle (5) through the holes in the base plate as shown. Place the hose sections on each end of the axle from the inside as shown and adjust axle clearance. (see illustration)

Instruction



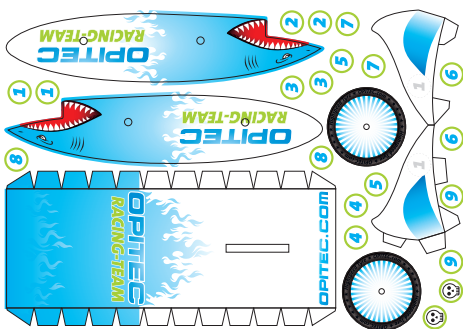
Step 6:

Put the reducer (8) onto the motor shaft as illustrated.



Step 7:

Glue the motor with hot-melt glue into the base frame in such a way that the rubber ring (7) can be clamped onto the reducer (8) of the motor shaft.



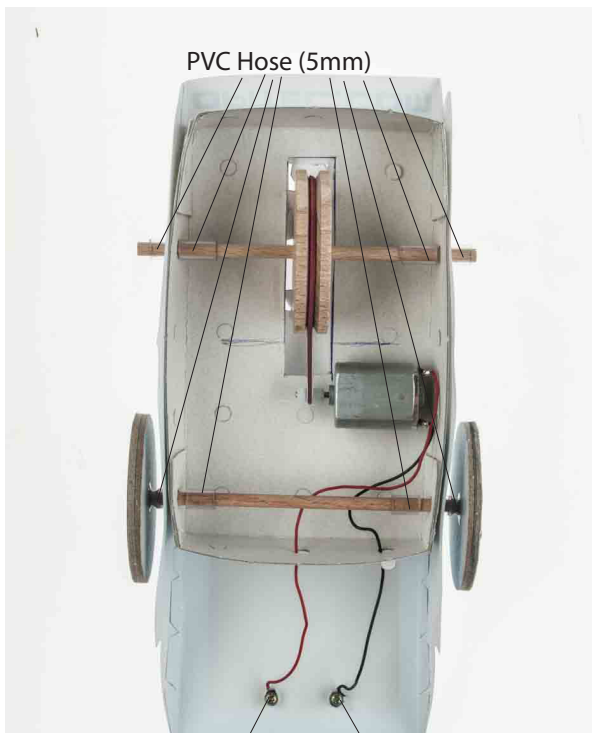
Step 8:

Cut out the individual parts from the enclosed template and glue them together on the tabs (see picture). Cut out holes for axes (see marking) with a hole punch pliers.

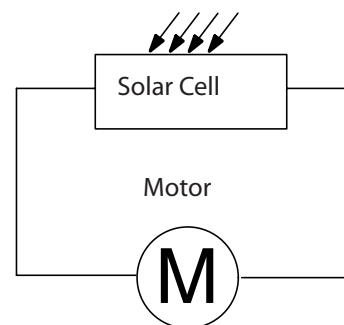


Step 9:

Mount the solar cell on the body as shown. Measure the distance between the solar cell connections. To do this, punch 2 holes in the body with a pair of pliers and insert the connections of the solar cell. Cut off protruding body parts with scissors.



solar cell (- pole) solar cell (+ pole)



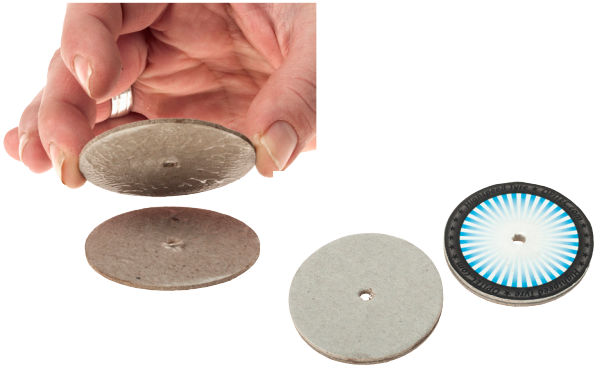
Step 10:

Wire everything according to the wiring diagram (see above). Cut an approx. 100 mm long piece of the switching wire (11) and strip it on both sides. Connect one end to the + pole (marking) of the motor (4). Pass the other end through one of the holes in the base plate and connect it to the + pole of the solar cell. Strip another 100mm long piece of switching wire (3) and connect it to the -pole of the motor (4). Pass the wire through a free hole in the base plate and connect it to the -pole of the solar cell.

Please Note:

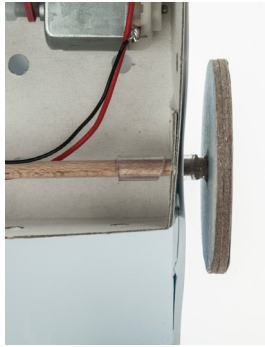
If the vehicle reverses, simply swap the solar cell connections!

Instruction



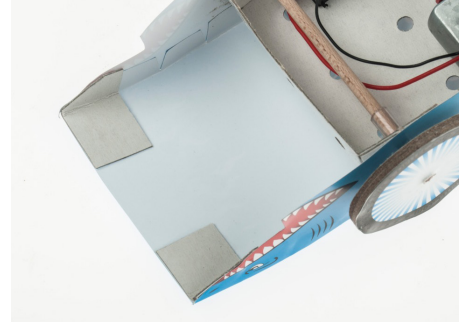
Step 11:

Glue two cardboard wheels (2) together. Then cut both wheels out of the template and punch out the openings with the punch pliers. Then glue the wheels onto the double wheels (2).



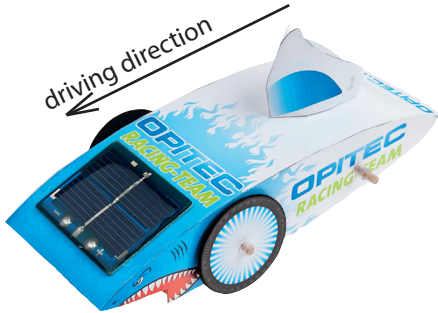
Step 12:

Fit the two wheels on both sides of the axle, align and glue them to the axle!



Step 13:

Cut out 4 pieces 25 x 50 mm each from a piece of cardboard (approx. 100 x 50 mm). Fold in the middle and glue as reinforcement from below to the "nose" and tail as shown in the illustration. Cut off excess cardboard.



Step 14:

Done! The solar vehicle starts driving when the sun is shining and it stops when you take it out of the sun!