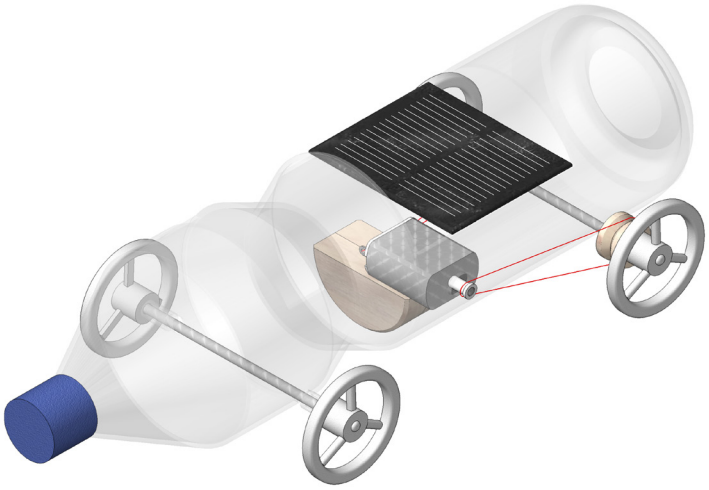
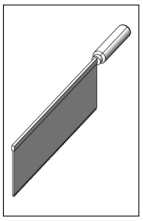
117.569

Recycling Solar Vehicle



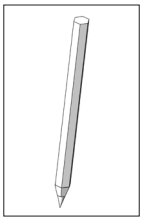
Tools required:



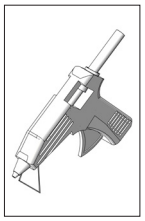
Dovetail Saw

Silhouette Scissors

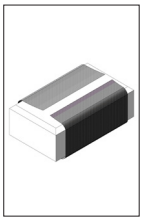
Craft Knife



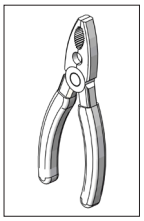
Pencil
Edding Marker



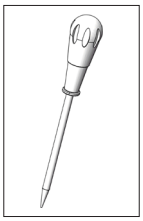
Hot Glue Gun



Sandpaper



Wire Stripper



Pricking Awl

Please note:

The OPITEC handicraft packs are not toys in a typical off-the-shelf sense, but rather additional teaching and learning material for educational purposes. This craft pack may only be constructed by children and adolescents under the guidance and supervision of experienced adults. Not suitable for children under 36 months. Choking hazard!

Adhesive Tape

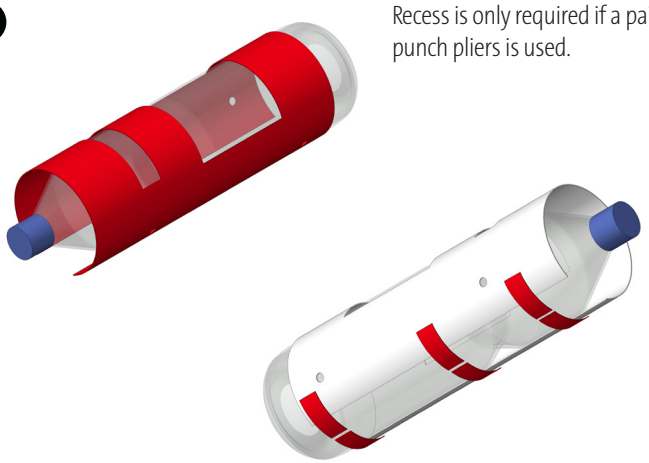
Wood Glue

Plastic Bottle
0,5l

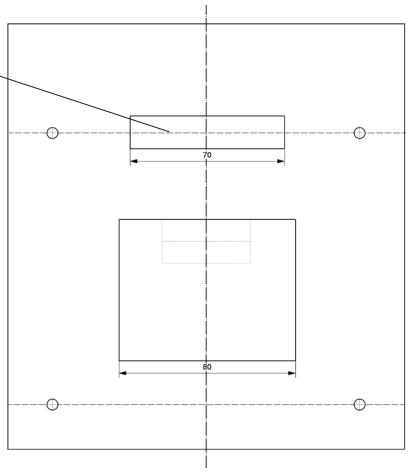
Stocklist	Quantity	Size (mm):	Description	Part-No.
Motor	1		Propulsion	1
Solar Cell 1V/250mA	1		Power Source	2
Jumper Wire, red	1	500	Wiring	3
Metal Axle	2	95x3	Axle	4
Rubber Ring	1	ø40	Belt Drive	5
Wooden Wheel	1	ø40	Motor Mount	6
Wheel	1	ø15	Propulsion	7
Reducer	1	3/2	Propulsion	8
Reducer	1	4/3	Reduction for Wheel	9
Steering Wheel	4	ø37	Wheels	10
PVC Tube	1	4/6	Axle Positioning	11

OPITEC

1

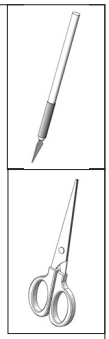


Recess is only required if a pair of punch pliers is used.



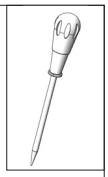
Copy the template (page 7) to a 0,5l plastic bottle. Put the template to the neck of the bootle, right beneath the screw top and fix it with glue. Mark the recesses and holes for the axles with a pen.
Please note: Template only works for a 0,5l bottle. If you use other bottles, please make sure to adjust the height of the axles.

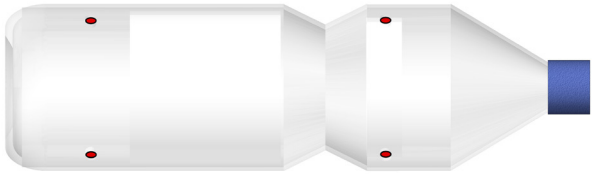
2



Cut the recesses with silhouette-scissors or craft knife as illustrated.

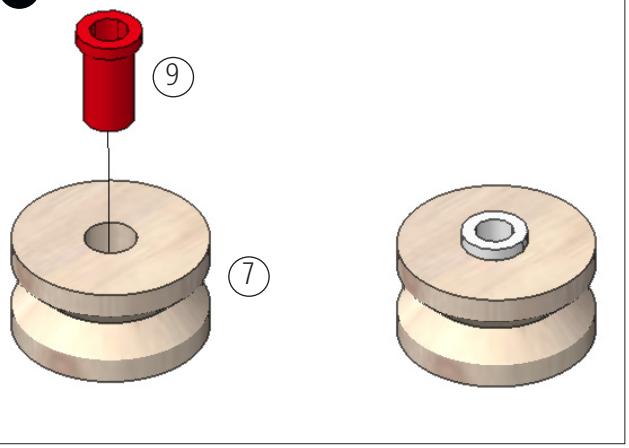
3





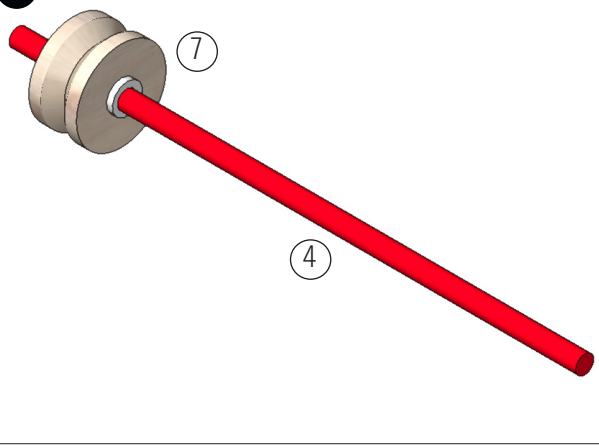
Prick the holes for the axle at the marks with a pricking awl or use punch pliers.

4

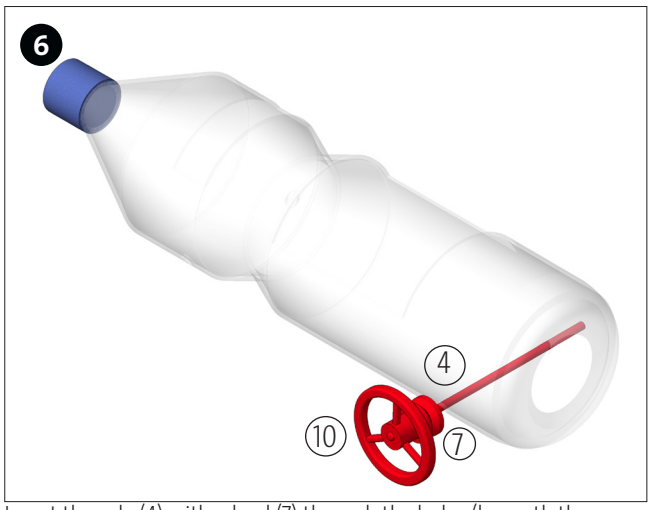


Insert the reducer (9) into the hole of the wheel (7) as illustrated.

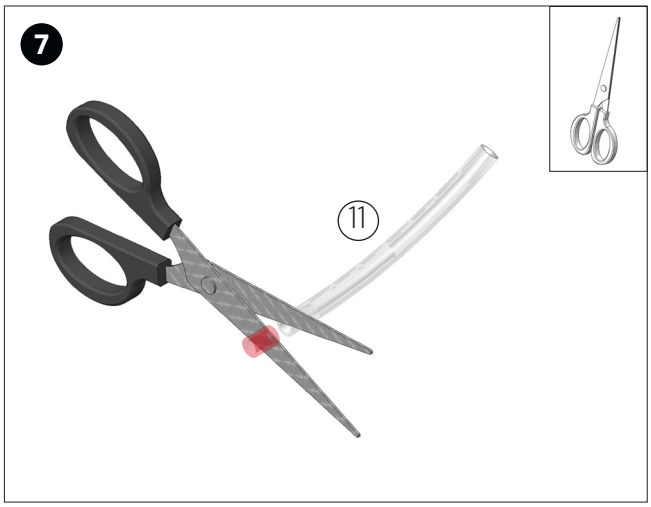
5



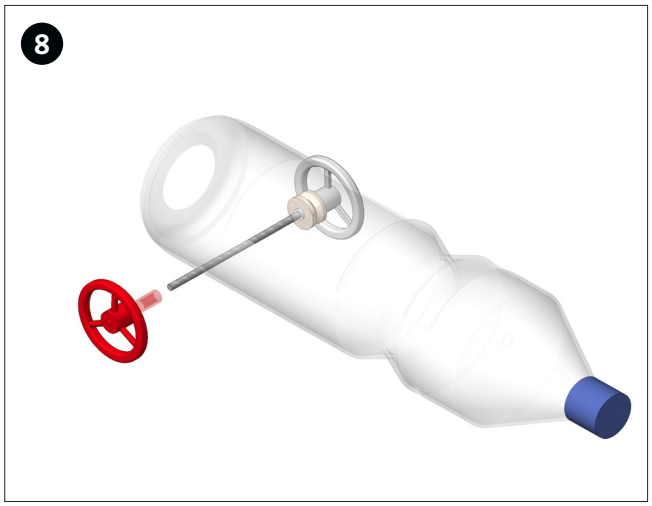
Put the wheel (7) onto one of the axles (4). See illustration!



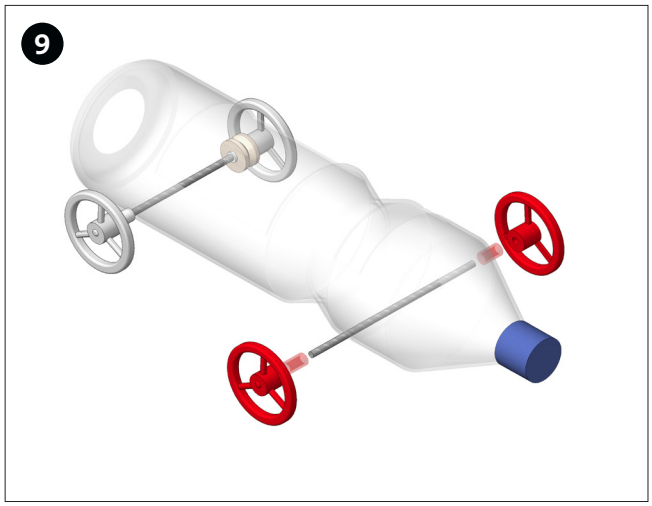
Insert the axle (4) with wheel (7) through the holes (beneath the recesses) and fit the second steering wheel (10) from the other side.



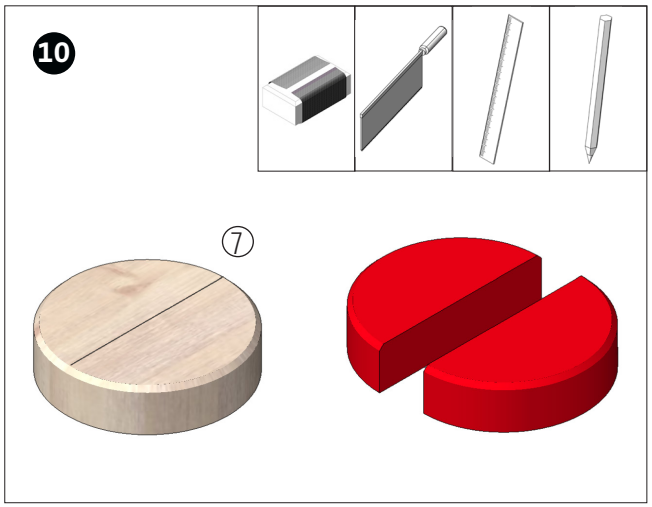
Cut the PVC tube (11) to 3 pieces of approx. 6mm of length.
If you use different bottles, adjust the pieces.



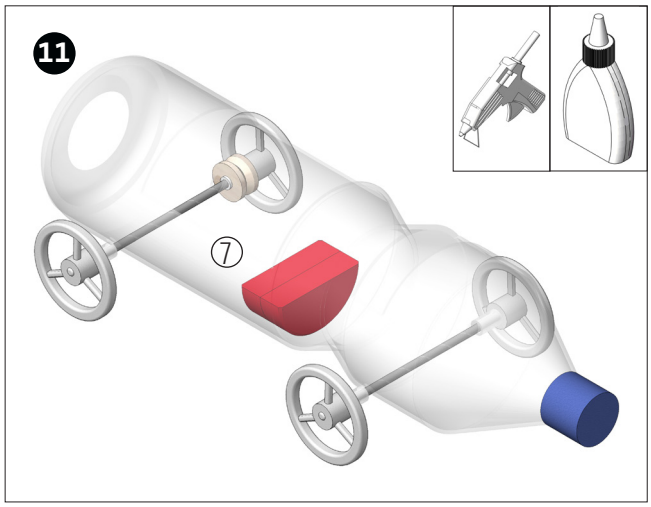
Place a piece of PVC tube on the free end of the axle and fix the steering wheel (10) on top. Axle has to rotate freely.



Insert the front axle (4) through the appropriate holes and put a PVC tube piece (11) along with a steering wheel (10) onto both ends.

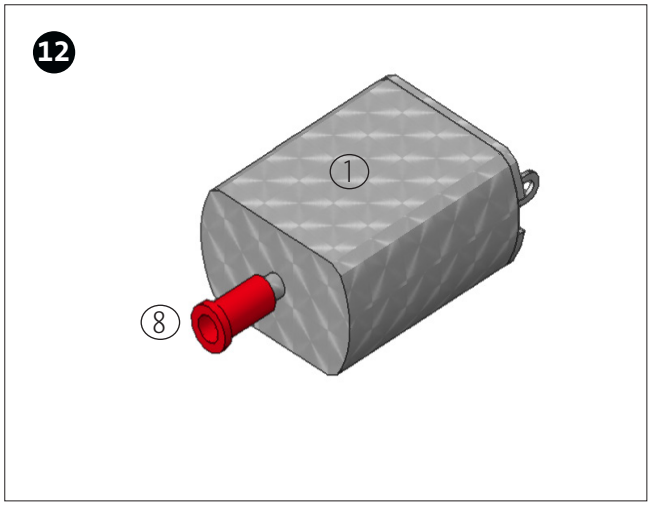


Mark the centre of the wooden wheel (7) and divide it in half with a dovetail saw (see illustration).

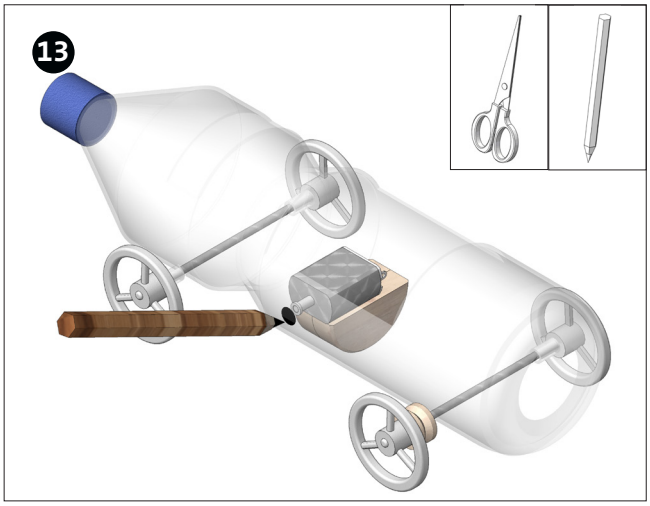


Use wood glue to stick the two wooden parts together and hot-glue it to the bootom through the opening as illustrated.
Position as per template.

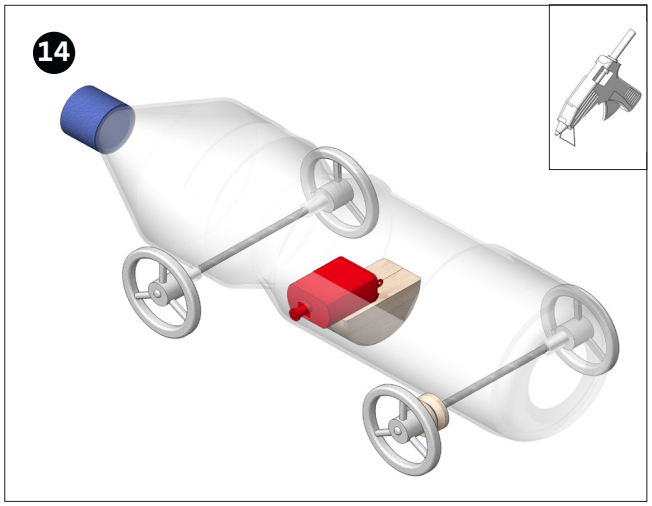
OPITEC



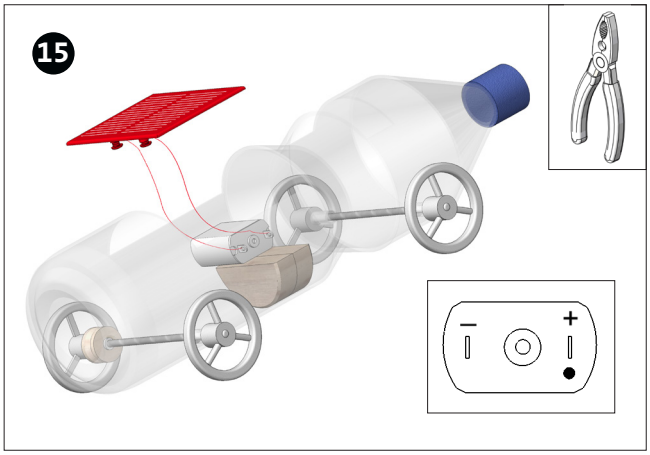
Put the reducer (8) on the motor axle (1) with the big ring pointing outwards (see illustration!).



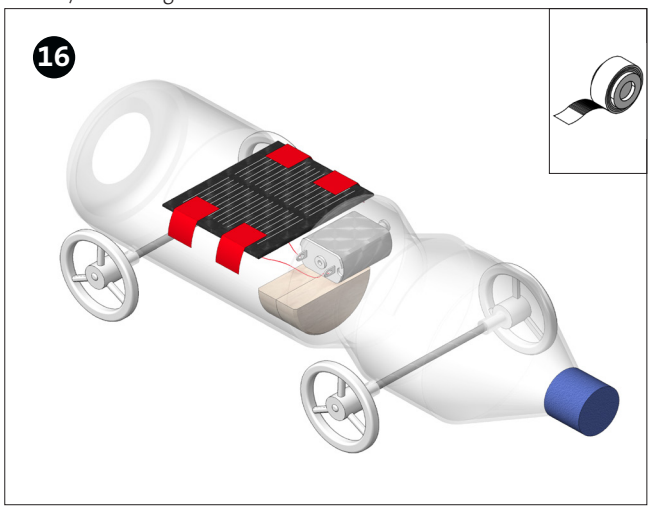
Fix the motor (1) to the motor holder and mark its position on the axle from outside with Edding. Cut out an approx. ø 8mm circle at this location.



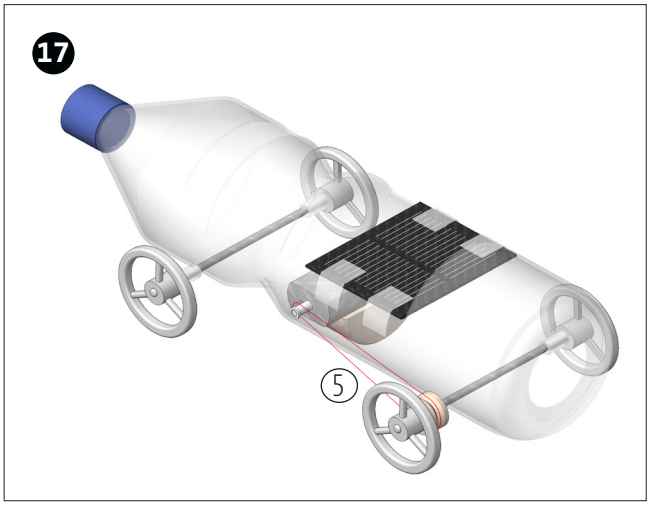
Insert the motor axle along with reducer (8) through the opening. Keep the motor in that position and fix it to the motor holder (wooden wheels) with hot glue.



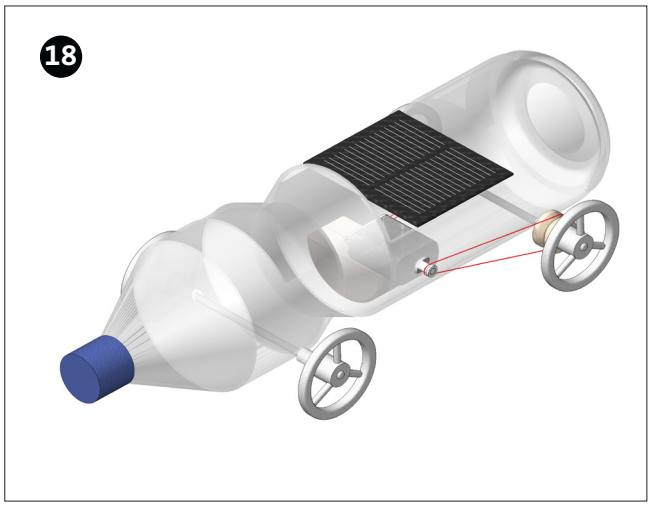
Cut a 100mm long piece off the jumper wire (3) and and strip the insulation at both ends. Connect one end of the wire to the positive pole of the solar cell (2) and the other end to the marked pole of the motor (dot). Then connect or solder the other wire to the negative pole of the solar cell and the free pole of the motor.



Stick the solar cell with tape on the bottle as illustrated.



Fix the rubber ring (5) to the motor axle and the groove of the wheel (7) as illustrated.



Bei Sonneneinstrahlung wird durch den Gummiriemen die Hinterachse angetrieben.

Hinweis:
Fährt das Fahrzeug rückwärts einfach die Kabel an der Solarzelle umpolen!

Template S 1:1
(for 0,5 litre plastic bottle)