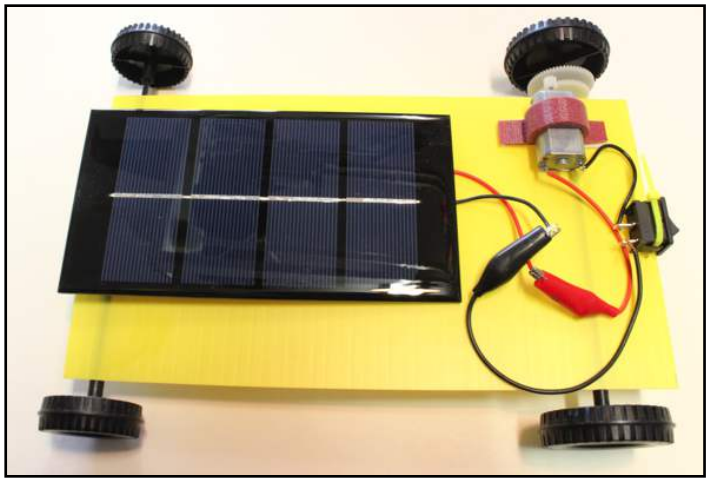
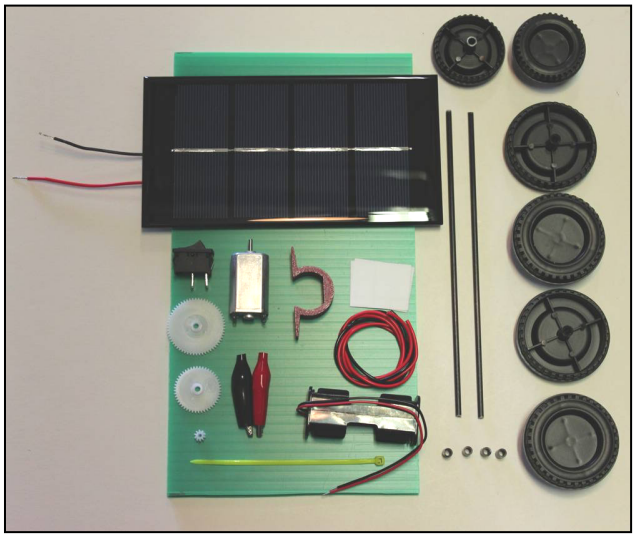
Advanced Kit

Model Solar Cars



Each Kit includes



1 Solar Panel
6 Wheels, 4 x 50mm, 2x40mm
2 Axels - fibreglass
4 Axel Collars (small black tube)
1 Motor - F18 + ABS Plastic Mount
2 Large Spur Gear 60T & 48T
1 Small Pinion Gear 10T
2 Alligator Clips
3 Pieces of wire – 2 long one short
1 Chassis(Coloured Corflute 130mm x 240mm)
1 Battery pack 2 x AA
1 Rocker switch plus 2 connectors
2 Long White tapes to hold panel & battery pack
1 Double sided tape to hold motor mount
1 Cable Tie

Take care with fibreglass axles. You can get small splinters of f/glass if you touch the ends with your hands. Please use the block sets provided.

Comments and tips

- Along with the kits you will have received a square block of wood and a round dowel. These will be used to help put the kit together. You will also need a pair of pliers. Although not necessary a soldering iron can make connections more permanent and secure.
- These kits are designed to be push fit and don't require glue.
- We have provided 6 wheels even though it is a 4 wheeled car. We hope you will experiment with different wheel sizes and of course the "look"!
- We hope you will experiment with gear ratio, wheel size, battery and solar and explore different ways of putting this kit together. Maybe you can come up with different uses for the kit.

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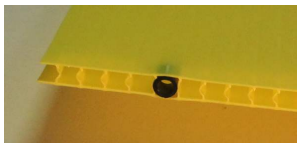
Steps to put your Model Car Together

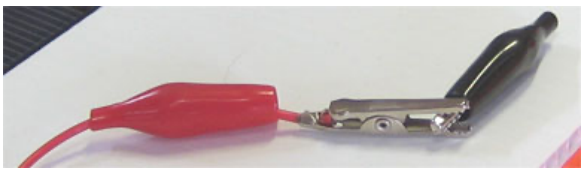
1. First, lets set up the chassis. We will need to put together the front and rear axels and place these through the corflute chassis. The front axel consists of two wheels, an axel and two axel collars. Place the round wooden dowel over the end of the axel and use this to push the axel into the wheel. Place a wheel on the bench and push the axel into it. Now push an axel collar into the side of the corflute near the front, follow the channel across and place another collar on the opposite side. Slide the axel through the collars and push the other wheel onto the end of the axel. It should now spin easily and look like the picture below.



The back axel is similar but you need to put the two large spur gears in place. This time you will need to also use the square block. Place the smaller 48 tooth gear on the block where the hole has been drilled. Now push the axel through the gear using the round dowel "pusher". Now place the larger 60 tooth spur gear on the block and push the axel through both. See the photo to the right. Now push the axel end with the two gears into a wheel. Place the two axel collars into the corflute at the other end of the chassis in the same way you did for the front axel. Slide this axel through the collars and push a wheel on the other end. This rear axel should spin freely but not wobble from side to side.

2. Now we need to put the switch in place. The best position for the switch is on the very back of the chassis. To hold it in place we have supplied a small cable tie. It will require two holes in the corflute. Either drill, poke or burn these two holes and then use the cable tie to hold it firmly in place. See the photo to the right.

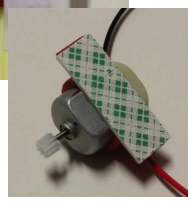
3. The next step is to put the two long wires on each alligator clip. Take the plastic cover off the two alligator clips. Twist the end of the red or black wire and place it through the hole at the rear of the alligator clip. Wrap it around the two spiky teeth and then use a pair of pliers to clamp the teeth over the wire, which will hold it in place. To slide the red cover over the red wire and alligator clip simply place the other black clip in the jaws of the red alligator clip and it should go over easily. The picture should help. Do the same with the Black one.



4. One alligator clip and wire will be attached to the motor and the other to the switch. We then need to join the switch and motor with the third short wire. This should complete the circuit except for the power connection. Use the short wire for this connection.

5. Now push the small white Pinion Gear onto the end of the motor shaft.

6. To place the motor on the chassis you will need the plastic motor mount. Place the mount over the motor and it should stay in place. With the car on the bench now place the motor so it lines up with the large(60T) or small(48T) spur gear. Roll the cars backwards and forwards to ensure the pinion gear rotates on the motor. If it is in the right position place a piece of tape over each tab of the mount. Having the two spur gears on the axel allows you to change the gearing, which will impact the acceleration and final speed. To change the gear ratio you need to move the motor, it can only line up with one of the spur gears at a time.You can also use double sided tape which is not included and it may allow you to change gear ration more easily.



7. At this stage you can connect the solar panel and with a little bit of sunlight you should get some action – make sure the switch is on. If the car goes in reverse, just reverse the connections (alligator clips) on the solar panel and it will go the other way. One alligator clip will go from one side of the motor and the other will come from the switch.

8. Now it is time to add your style to your car. You can use all sort of materials to make the body but remember to keep it light. More weight will slow your car down.

9. Solar power is a renewable energy; as long as the sun shines the panel will power your car. We have included a battery pack so you can have some fun with the car at any time, day or night, sun or no sun. Connect it the same way you do the solar panel. The solar produces 2.2 volts in full sun, how much does the battery pack deliver? What impact does it have on the car?

Have Fun.

If we can help in any way please call or email, Michael