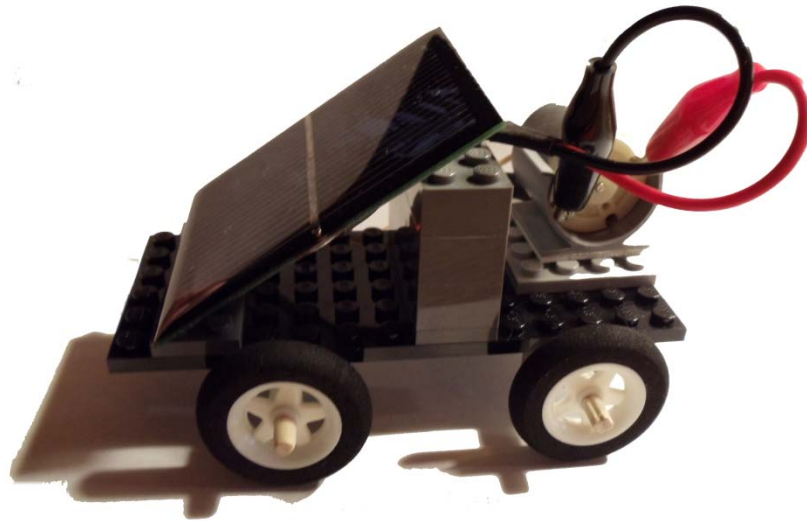


Solar Car Modifications (30 minutes)



Changing the Panel Angle

Use three 2 X 6 dark grey Lego® blocks for this.

1. Race the unmodified solar car and record the time.
2. Place one of the 2 X 6 blocks on the flat dark grey Lego® piece that doesn't have the Velcro on it.
3. Race the car and record the time with only one block affecting the angle.
4. Place another block on to increase the angle and record that time.
5. Then place the last block on and record the time.
6. Explain how the panel angle affects the solar car's speed.

Changing the Car Weight

Use four 2 X 6 grey Lego® blocks for this.

1. Record the mass of the unmodified solar car.
2. Place one of the 2 X 6 blocks on the flat grey Lego® piece that doesn't have the Velcro on it.
3. Place another one of the 2 X 6 blocks on the flat grey Lego® piece under the flat dark grey Lego® piece with the Velcro.
4. Record the solar car's new mass.
5. Race the car and record the time with these blocks affecting the weight.
6. Repeat steps 2-5 with an additional set of blocks to increase the mass.
7. Explain how the car weight affects the solar car's speed.



Changing the Axel Distance

Change the place of the wheels for this.

1. Race the unmodified solar car and record the time.
2. Remove the rubber band and move the back wheels (axel) with the red pulley attachment back a row.
3. Replace the rubber band, race, and record the time.
4. Remove the rubber band and continue moving the wheels back a row until they can't be moved back any further.
5. Replace the rubber band, race, and record the time each time you move the wheels back a row.
6. Remove the rubber band and move the wheels four rows up.
7. Replace the rubber band, race, and record the time.
8. Remove the rubber band and continue moving the wheels up until they can't move any further (they will hit the other wheels).
9. Replace the rubber band, race, and record the time each time you move the wheels up a row.
10. Explain how the axel placement affects the solar car's speed.

