



Schools & Homes Energy Education Project/Solar-Active

Tell Me, I'll Forget, Show Me, I'll Remember, Let Me Do It, I'll Understand. Chinese Proverb

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Introduction: In the construction of the solar car one can gain knowledge in solar science in application of **STEM** subjects. The components [e.g. gearing, wheels, axle support] are **DESIGNED TO BE MODIFIED** to **POSITIVELY** affect performance: e.g. travelling straight and fast.

The components are designed to be imperfect and adaptive. The solar car main component is a high quality commercial grade solar cell that has significant output under diffuse light conditions.

THERE ARE 18 DESIGN CRITERIA TO CONSIDER IN BUILDING THE COMPONENTS and RACING THE CAR TO e.g. TRAVEL STRAIGHT & FAST?

1. Cutting of the mobile phone sim or credit card to make 21mm strip for front-end axle support.
2. 21mm strip – WHICH EDGE DO YOU USE TO LINE-UP WITH GUIDE WHEN INSERTING INTO HOLE PUNCH to make 1st hole?
3. Placement of the 2nd of the two holes in front axle support: Do you flip or turn when making 2nd hole?
4. After making the two holes, the placement and sharpness of bend on both sides of axle support is another criteria. Best to set-up a jig to make the bend so both sides are the same length.
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5. Placement of Velcro loop on axle support.
6. Placement of Velcro hook on PV cell.
7. Alignment of axle support on front of PV cell.
8. Play between axle and axle support.
9. Measure and placement of straws to reduce play without adding friction.
10. Track surface: rough or smooth – wet or dry.
11. Is the track level?
12. Placement of motor clip on plastic card.
13. Placement of motor assembly on Velcro of PV cell.
14. Tread of wheels: surface and width
15. In which direction in relation to the sun is the race to run?
16. Is there any shade from buildings, trees or the student?
17. Angle of sunlight hitting the solar cell.
18. Intensity of sunlight.