

Lesson 6 – Motors, Batteries and Solar Panels

Reading 6.1 – What do I need to finish my car?

MOTOR

The motor converts the electrical energy of the battery and the solar panel and converts it into mechanical energy that can turn the gear.

Positioning of the motor is very important. If the gears are too close there will be a lot of extra **FRICTION**. If they are too far apart they will make a very loud noise and your car will go nowhere.

You can change the distance between the gears by moving the motor slightly. **Start with less glue on the motor and a weak battery.**

BATTERY

You need to create space for a battery holder and an on/off switch. It must be easily accessible and close to motor.

We will use the battery pack for most of our trials.

You will start with a single battery pack to keep the speed down on your car. We will use a double battery pack when we have the tracks set up.

SOLAR PANEL SUPPORTS

Solar panels are your power source. The more energy they produce the faster your car will go.

Theoretically, you want to have your solar panel pointing directly towards the sun to get the most energy from the sun. In Oregon, that is nearly a 45 degree angle!

A solar panel at 45 degrees is a very high angle. The trade off is air **FRICTION** or wind resistance. It also makes your car more top heavy.

You will have to decide if you value the extra energy you get from a steep angle vs. a more aerodynamic car.

NO GLUE may be used to attach your solar panel to the solar panel supports. You must use velcro.

You can use mylar to reflect more light on the solar panel. The trade off is that you will have more wind resistance.

Reading Questions:

MOTOR

1. What is the motor and what is it for?

