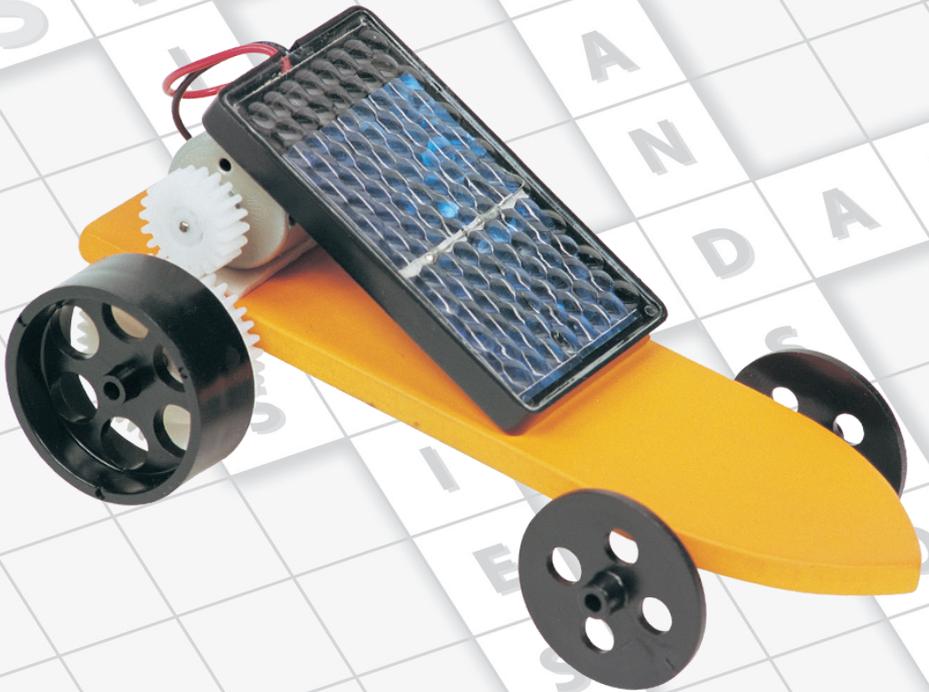


# SunZoon Lite

*User Guide*



**PITSCO**  
EDUCATION

59022 V0521

## Cautionary and Warning Statements

- This kit is designed and intended for educational purposes only.
- Use only under the direct supervision of an adult who has read and understood the instructions provided in this user guide.
- Read warnings on packaging and in manual carefully.
- Always exercise caution when using sharp tools.

## About the SunZoon Lite

The SunZoon Lite can be easily assembled without alterations, or the chassis can be shaped and painted for a unique look and to offer an opportunity to use tools such as a band saw.

Or, try experimenting with different gear combinations and wheels. The SunZoon Lite is as basic – or unique – as the builder wants it to be.

## Materials Included

- Basswood chassis board
- Gear font
- 2 rear wheels
- 2 front wheels
- 4 screw eyes
- 2 steel axles
- Motor
- Solar panel
- 4 double-sided adhesive tabs
- Plastic tubing

## Items Needed (not included)

- Ruler
- Scissors
- Hobby knife
- Band saw or sandpaper (optional)
- Paint or other wood finish (optional)

## Assembly

1. Deburr the axles by brushing the ends against sandpaper. This will make it easier to push the axles into the wheels.
2. Measure 1" from one of the ends of the chassis board. At that measurement, make a mark on both sides of the chassis board. Using the ruler, draw a straight line across the board that lines up with the two marks (Figure 1). This is where the rear axle will go.
3. From the same end, measure 4-1/2" back and make a mark on both sides of the chassis board. Again, use the ruler to draw a straight line across the board that lines up with the two marks (Figure 1). This is where the front axle will go.
4. At both ends of each axle line, measure 1/4" and make a mark intersecting with the axle line (Figure 1). These four marks will be where the screw eyes are placed.
5. If you want to shape the chassis board, do so now. Use a band saw and the template on page 7 to make a tapered body shape. Or, cut it to another shape of your choice, but take care not to cut off the marks for the axles and screw eyes. Another option is to use sandpaper to round off the edges of the chassis board.

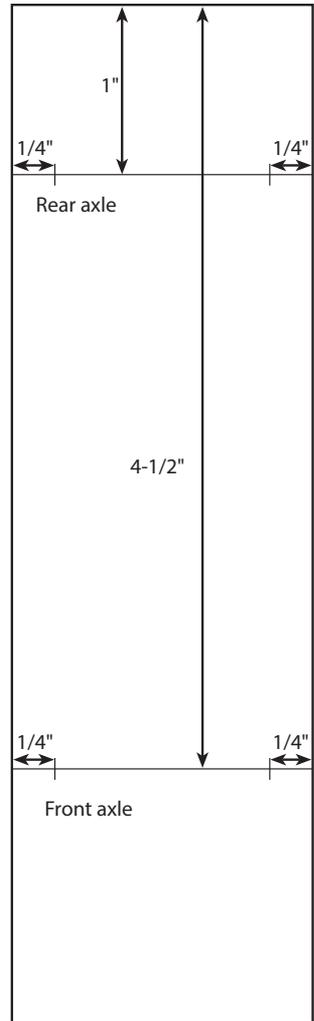


Figure 1

6. One at a time, carefully push the screw eyes where the 1/4" marks cross the axle lines. Taking care to keep them straight, twist them into the board. Make sure the flat side of the screw eye is perpendicular to the axle lines.
7. If you want to put paint or another finish on the chassis board, do so now. If you paint the underside of the chassis (the side with the screw eyes), do not get paint in the screw eye holes.
8. From the gear font, detach Gear I (40-tooth, 1/8" bore). This is the drive gear. There may be some burrs – called flashing – on the gear, which will keep the gear from running smoothly. With a hobby knife, trim off any flashing.
9. With scissors, cut four 1/4" pieces of the plastic tubing. These will be used as spacers on the axles.
10. Start an axle into the hole on one of the rear wheels.  
**Caution:** If it is difficult to push in, you can hold the wheel and, with the opposite end of the axle against a solid surface, push down on the wheel to push in the axle. The axle should not extend past the other side of the wheel.
11. Push the drive gear on the axle end until it is snug against the wheel. Add a spacer against the gear. Hold the car so the bottom of the chassis board is facing up and the back end is toward you. From the left side, push the end of the axle through the two screw eyes that are on the back axle line (Figure 2 on the next page). When you flip the car over, the wheel and gear will be on the right side.
12. Place another spacer on the end of the axle. Push the other rear wheel on the axle (Figure 2). For the wheels to turn properly, make sure the wheel and axle parts are not pushed together too tightly.
13. Place the other axle into one of the front wheels. Follow with a spacer and then push the axle through the two front screw eyes. Follow with another spacer and the other front wheel (Figure 2). Again, make sure the parts are not too tight. If any of the wheels rub against the chassis, cut slightly longer spacers and replace the old spacers.

14. Flip over the car so the wheels are on bottom. Detach Gear G or N (20-tooth, 2-millimeter bore) from the gear font. This is the pinion gear. Cut off any flashing. Push the pinion gear onto the motor shaft.

15. One of the motor connection terminals will have a small dot by it. This is the negative side. Clip the solar panel black wire to this side. Clip the red wire to the other connection terminal.

16. Place two adhesive tabs so they line up between the rear wheels and are centered over the back axle. Peel the paper backing off the tabs.

17. Hold the motor so the shaft and gear are facing the same side as the drive gear. Mesh the two gears together so they work together but are not pushed together too tightly. When the motor is positioned so the gears work together, push the motor onto the adhesive tabs.

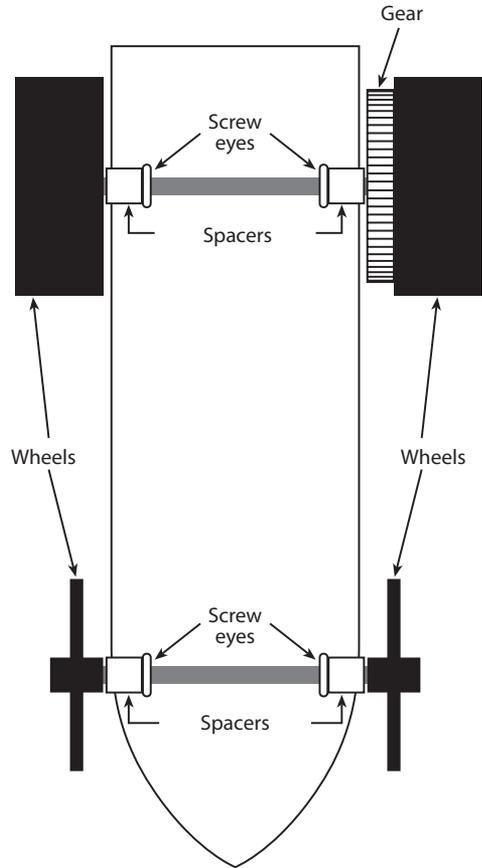


Figure 2

18. Place two adhesive tabs on back of the solar panel – one just under the wires and the other on the opposite end hanging over the edge just a little. Peel the paper backing off the adhesive tabs. Press the solar panel onto the body and motor so the wire end is near the motor and the solar panel angles toward the front of the chassis (Figure 3).

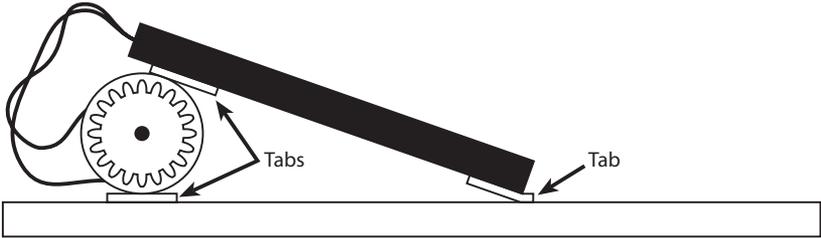


Figure 3

Your SunZoon Lite is finished! Take it outside on a bright, sunny day and race it on a smooth, level surface.

**Tip:** If the motor seems “sticky,” you need to prime it. To do this, use a nine-volt battery (not included). Unclip the wires from the motor and hold the two connection points of the battery to the two motor connection terminals (it doesn’t matter which sides of the battery touch which sides of the motor). Run the motor in this manner for no more than five seconds. Then, reclip the wires to the motor – the motor should run more smoothly.

## Template

To use this template, cut it out and place it over the basswood chassis board. Draw a line around the tapered end to mark on the board where to cut. Use a band saw to cut the shape.



*Template*



P.O. Box 1708 • Pittsburg, KS 66762

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