

Robots Shopping List

eCamp Electric Lab

This is a Bonus Lab, which means that the experiments in this section require materials which are more expensive and hard to find than the average grocery store. Use the experiments in this section for kids wanting to go even further and deeper into the subject. Since these are more involved, be sure to browse through the videos for these experiments first before purchasing materials for these additional labs.

This lab builds on the ideas from the Electric Lab, and actually reuses a number of components from it. You'll want to cross off the items you already purchased from the Electricity Shopping List so you don't duplicate.

- [AA battery pack](#) (RS #270-408) – If you are planning to make *all* the robots, you'll need 20 battery holders and 40 batteries. However, you can get by with only 2 battery packs if you reuse these from one robot project to the next, or by not attaching the pack to the robot and simply connecting the power to your circuit.
- [3VDC motors](#) (RS #273-223) – If you don't want to rip apart one robot to build another, you'll need 22 motors to build all 18 robots. Otherwise, you can get by with about four and reuse the motors with each new project.
- [Alligator clip leads](#) (RS #278-1157) – If you don't want to reuse these with each robot, you'll need 46 clip leads. Otherwise, you can get by with a set of 10 wires.
- [SPST](#) push-button switch (RS #275-646) or similar
- Enough AA batteries for your battery cases (Cheap dollar-store "heavy duty" type are perfect. Do NOT use alkaline batteries like Duracell or Energizer!)
- 19 wheels (tops from film canisters, small yogurt containers, milk jugs, orange juice, etc. Only two of these can be big ones like old CDs.)
- 12 straws
- 4 old brushes (at least 3 are old toothbrushes and one can be an old scrubbing brush)
- 3 tacks
- Scrap of cardboard
- 2 large paperclips
- 4 brass fasteners
- Cork from wine bottle
- Long bolt with hexnut (at least 3" long)
- 2 index cards
- 8-12 empty plastic water or soda bottles
- 4-6 markers or pens and a big piece of paper (like posterboard)
- 2 blocks of foam (2" x 4" x 6" or larger). You can use different shapes of foam blocks. The packing material from boxes work great, and they are cheap!
- 3 wooden spring-type clothespins
- 25 wooden skewers
- Film canister (or similar candy tube)
- 9 propellers to make all 7 robots that use propellers. However, you can reuse these simply by pulling them off one robot and sticking them on another. You can rip these off old toys, cheap fans, or

get them from your local hobby store – make sure they fit onto your motor shaft!

- 1 tiny gear that fits onto your motor shaft, and one larger gear that slides onto a skewer (you can rip these out of an old toy, printer, etc.). There's only one robot that requires a gear set.
- Plastic soap container (optional for if you want to make a remote-control for your robots)
- 50 popsicle sticks (at least one is the smaller size, the rest can be tongue-depressor size)

Tools

- Tape
- Scissors
- Hot glue gun
- Optional: Drill with drill bits