

ELECTRONICS:

In our daily lives we are surrounded by amazing electronic gadgets. Knowledge about electronics gives students an appreciation of the things they use and learn how to develop their own projects.

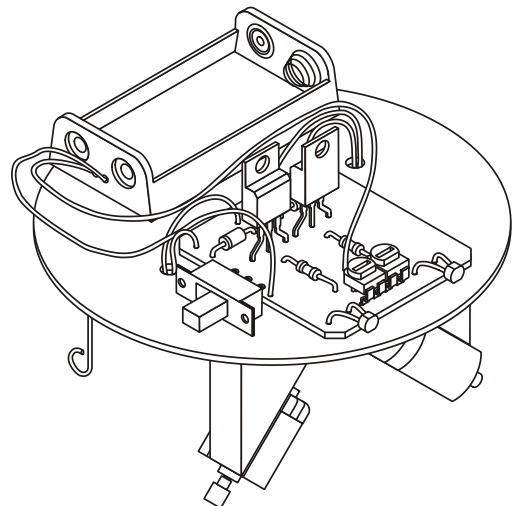
Whether your students are just starting out on their electronics journey or whether they have mastered the fundamentals and are ready to move on to more difficult projects, we can assist.

Scorpio Technology strives to develop products that promote “hands-on” learning and experiences. This has been proven to be the best way to learn.

The **ROBOBUG** is our introductory electronics kit. It has a simple PCB that requires component identification, assembly and soldering.

The **ROBOBUG** is a small light-sensing robot that can be controlled by shining a torch on to its sensors. When light is shone onto the sensors, the motor

controlled by that part of the circuit starts, causing the robot to change direction.



If light is shone onto both sensors the robot will move forward in a straight line. By using a torch as the light source the robot can be steered.

Each **ROBOBUG** provides the opportunity to:

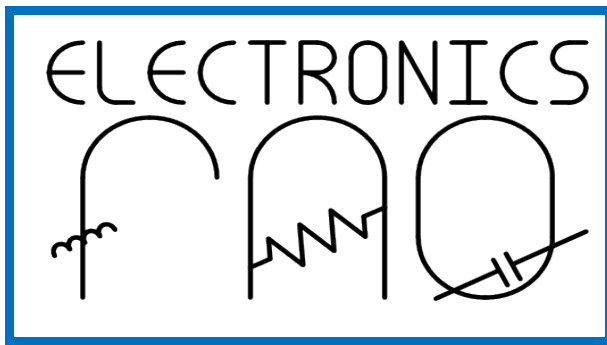
- ✓ Create new design
- ✓ Try different construction materials
- ✓ To learn the basic skills required for Electronics

Level:	Introductory kit
Type:	Mechanical, Electrical & Electronic, PCB
Hours required:	10 – 14
Cost:	1-19 \$11.79; 20+ \$10.84



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Do you have any tips, advice or suggestions for kit construction?

Our best suggestions are:

1. The teacher should always build the project before it is introduced to the students. You will get a far better understanding of the problems students face during construction and can much better inform them of the really important things before they undertake them.
2. If students aren't proficient with soldering get them to practice soldering using old PCB's.
3. You really need to prepare the students to help them assemble and construct their PCB's. It only needs one error and the PCB will not function or function correctly. Get students start assembling the things that sit lowest on the PCB (wire links, then resistors, diodes etc.) and then have them swap PCB's with other students for checking before soldering. Then solder them and go on to the next component.
4. Never ever let students copy another students PCB. If the first person makes a mistake and is then copied, everyone else makes the same mistake. Students don't learn anything by copying. If something is wrong you will have the headache sorting out the mistakes.
5. Check, check and check again before allowing students to insert batteries and turn on the power.
6. If it doesn't work straight away. Turn it off and check everything again really thoroughly (and spray the gearbox with silicon lubricant if it wasn't turning) before turning it on again.
7. Radio-control & Infra-red: Purchase a constructed set of PCBs and wire them up. When you have confirmed that they work, they can be used to test student transmitter and receiver operation. This will help narrow down whether it is the transmitter, receiver or if both aren't working properly. Make sure they are mounted on a board so they can't accidentally be put on top of something that can cause a short or be swapped for a student PCB.

