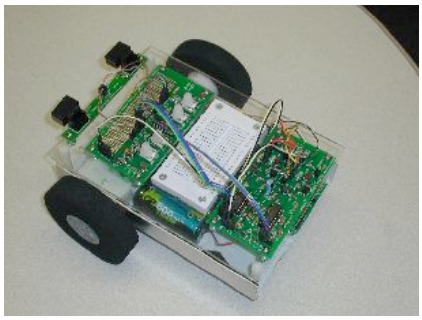

The SPIRIT Project

Educational Robotics

Lesson Building Block Template

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Grade Level: _7-8__ Date: __Aug 1, 2006__

Directions: Directions: Definition of a Lesson Building Block: This is a "Lesson Building Block" from the SPIRIT educational robotics institute. A 'lesson building block' is in essence an educational activity that might be later turned into a more formal classroom lesson by a creative teacher. The SPIRIT Institute is striving to put a variety of "lesson building blocks" up on the web for the potential use of teachers as they try to prepare more formal educational lessons using the TekBot robotics platform.
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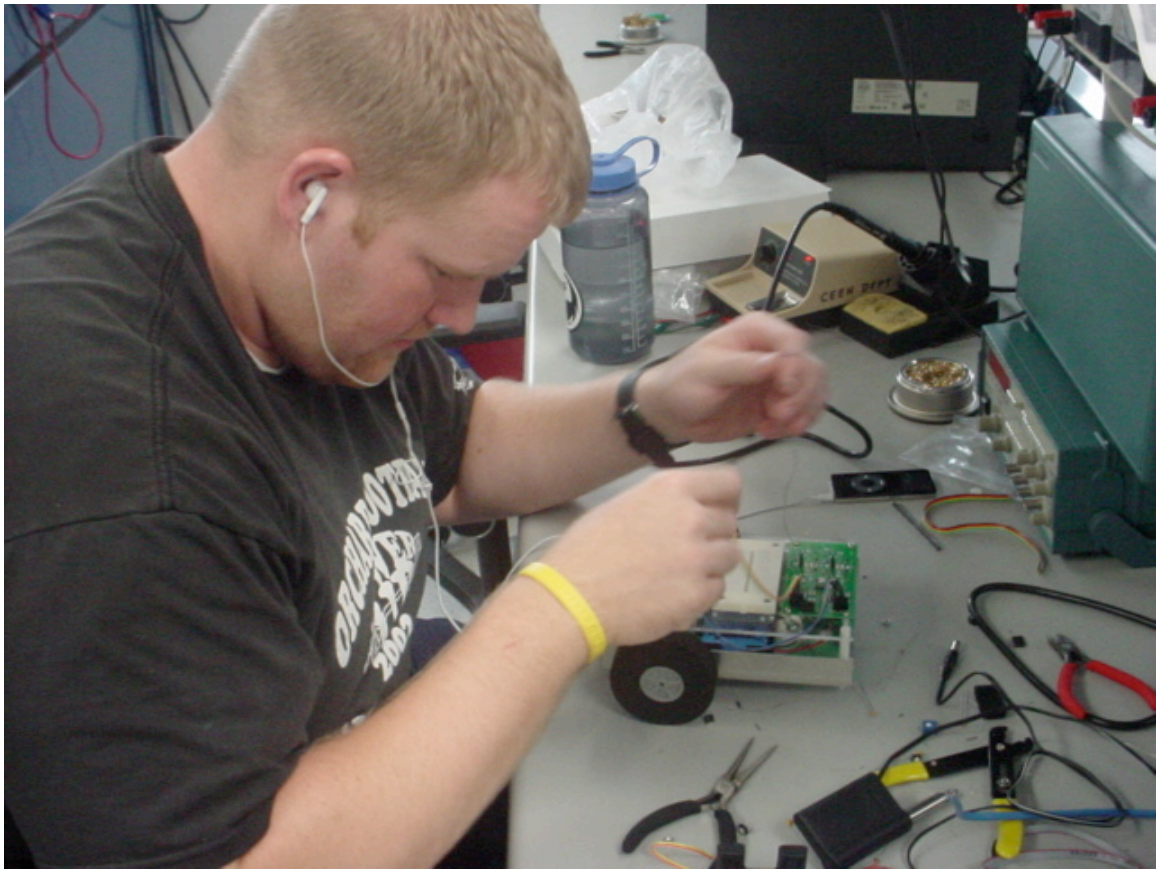

I. Concepts *(Give a list of one or more concepts that might be taught using this activity)*

1. Systems- Mechanical & Electrical
2. Circuits- components, series & parallel, & identification
3. Schematic application.

II. Standards: *(Standards for Technological Literacy)*

- Standard 3- Interaction of Systems
- Standard 9- Engineering Design (Modeling, Testing, evaluating, & modifying)
- Standard 11- Apply the Design Process
- Standard 16- Energy can be used to do work using many processes.

III. Learning Activity Context (Describe the overall context for the learning activity)
Moving TekBot, Building a TekBot, & Engineering/Notebook

- Students will disassemble a flashlight to discover the basic components. They will identify the system(s) it uses to make it work. Finally, they will decide if the flashlight is in series or parallel and draw the schematic of the circuit.
- Extension…Students can recreate the flashlight circuit using the "popsicle stick" method.

IV. Teacher and Student Suggestions/Tips

1. What are the systems of your TekBot? Does it have subsystems?
2. How many systems do you see? Name and explain them.
3. What are the basic components of the flashlight?
4. Where else might you find these same systems used?
5. Is the flashlight in series of parallel?
6. What are some other applications of this type of circuit system?

V. Teacher Questions

(Give a list of questions that teachers might ask students during the activity)

7. What are the systems of your TekBot? Does it have subsystems?
8. How many systems do you see? Name and explain them.
9. What are the basic components of the flashlight?
10. Where else might you find these same systems used?
11. Is the flashlight in series of parallel?
12. What are some other applications of this type of circuit system?

VI. Assessment Ideas

(Give an idea or two about how the lesson activity might be assessed)

- Can the student put the flashlight back together? Does it work properly?

VII. Other Information

(Give any other information that might be useful or a visual or two)

VIII. A materials list