

The SPIRIT Project

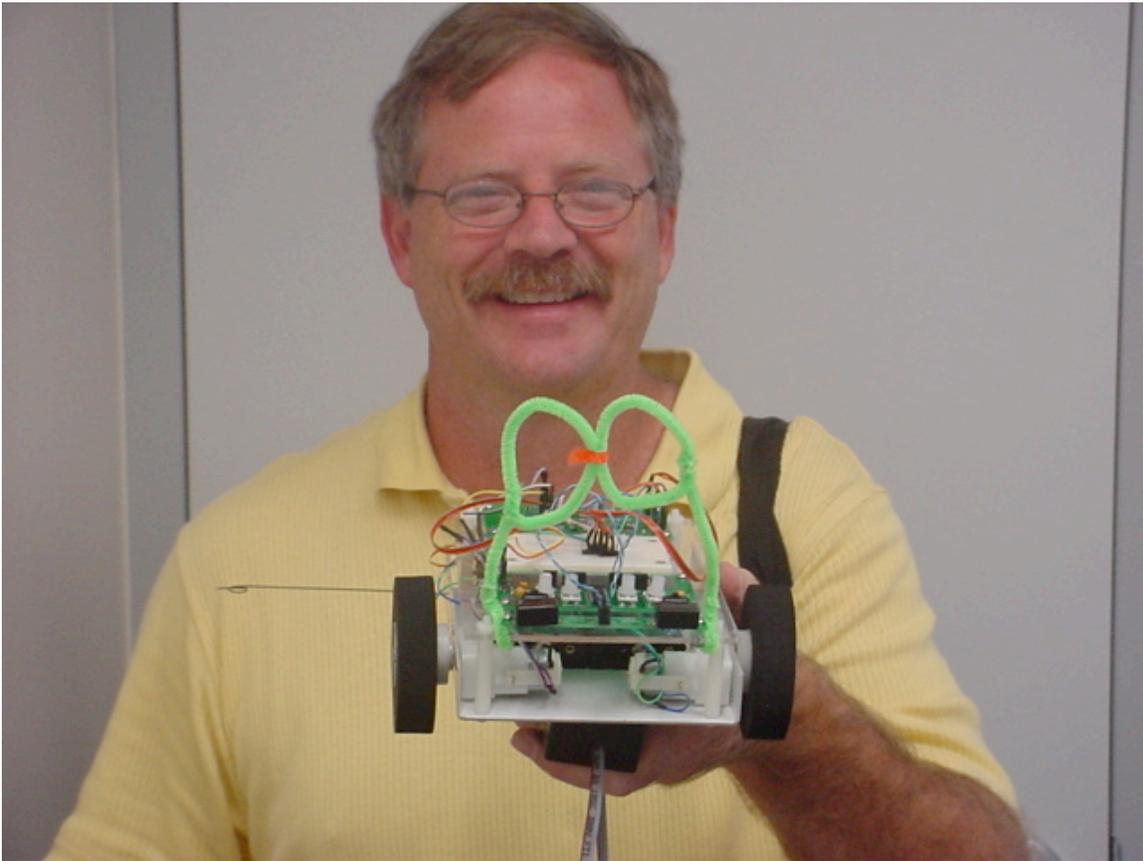
Educational Robotics

Lesson Building Block Template

Author: Tim Stednitz _____

Grade Level: 1__ **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.



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

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

III. Learning Activity Context (Describe the overall context for the learning activity)

Abstract : After an introduction to the concept, and opportunity for students to practice using the TekBot remote control, students will work in teams (5 to a team) with each student taking the TekBot through a maze while the teacher times how long it takes. The students record these times. What time occurred the most frequently? Record that time as the Mode. Listing the times from shortest to longest and eliminate from each end. The time left, if there is an odd number, is the Median. Add all the numbers together, using a calculator, and divide by the number of times. That is the Mean. Now after a week of practice and exploration running the maze repeat the trial.

IV. Teacher and Student Suggestions/Tips

Make sure you have had ample lessons using the terms and giving students opportunity to practice showing results. While the teacher is timing each group have activities going in the classroom with either Para support or any adult support available.

V. Teacher Questions

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

I ask several questions to each group about the running of the TekBot and how each time might be effected. Ask comparison questions regarding the times for each trial.

VI. Assessment Ideas

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

- I will do some formal assessments with written answers about each term, but mostly I will do visual and oral assessment asking individual students questions.

VII. Other Information

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

This is a difficult concept for first graders to get a firm grasp of and I am hopeful that this activity will engage the students and show them that doing a fun activity like using the TekBot can make math FUN!

VIII. A materials list

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Grade Level: First Grade

Concepts: Social studies Goods and Services (Transportation)

Standard: MPS Enabler 1-12-5

Learning Activity context

Context : Moving TekBot

Abstract : After lessons about what are goods and what are services we will use the TekBot to transport goods from one location to another. Students will work in groups of 3-4. They will have different routes that can be taken and the object will be to get the goods to their location the quickest way, which would translate to a cheaper cost. The students will be responsible for determining the route and the driver.

Teacher and Student Suggestions/Tips: For some students you could also have them design a method of towing the items. They could build their trailer and decide how they could connect the trailer to the TekBot.

Teacher Questions ?

Assessment Ideas: ?

Other Information ?

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Grade Level: First Grade

Concepts: Science: Identify what makes an object alive. Identify parts of animals that allow them to perform certain functions in their habitats.

Standard: MPS Enabler 1-10-4

Learning Activity context

Context : Moving TekBot

Abstract : Using the TekBot: Discuss with students what would be needed to be considered alive. How could we adapt the TekBot to meet that criteria? How would these adaptations fit into the concept of performing functions?

Teacher and Student Suggestions/Tips

Teacher Questions: What does an animal need to be considered living? Why isn't the TekBot alive?

Assessment Ideas

Other Information