# CoreValueChesterfield County Public Schools

# Lesson Plan Guide

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| **Date:** **06/27/11** | **Subject:****Science** | **Teacher:****Stephens** |
| **SOL/CPR:** **4.1 a-e Scientific Reasoning and Logic/ Thinking Like a Scientist****4.11 Measurement**  | **Grade:** **4**  | **Estimated time:****1 hour x 2 class periods** |
| **Objectives:** **Students will learn how to use Mindstorm to program the robot travel 2 linear meters. Students will calculate the number of rotations needed to travel the distance. Students will work in cooperative groups to successfully complete this task.**  |
| **Assessments:****Students will turn in a self assessment of work done in a cooperative group. Students will turn in data collected.** |
| **Materials/Resources:****5 robots****Multiple computers programmed with Mindstorm****Stopwatches****Duct Tape (students will mark course - 2 linear meters)****Yard Sticks (students will need to convert to meters)** |
| **Check and Review:****Teacher will observe the robot travel 2 linear meters.** |
| **Anticipatory Set:** **Students will watch a preprogammed robot follow a 2 meter linear course.** |
| **Modeling:****Use the promethean board to review Mindstorm tools. Students will use netbooks to follow teacher directions in Mindstorm. Teacher will model how to calculate the rotations the robot traveled in 1 linear meter.**  |
| **Research-Based Strategies Used:** |
| [x]  Similarities and Differences[ ]  Summarizing and Note Taking[x]  Reinforcing Effort and Providing Recognition | [ ]  Homework and Practice[x]  Nonlinguistic Representations[x]  Cooperative Learning | [x]  Setting Objectives and Providing Feedback[x]  Generating and Testing Hypotheses[x]  Cues, Questions, and Advance Organizers |
| **Guided Practice/Check for Understanding:****Teacher will guide students through calculations to determine rotations of the robot for 1 linear meter. Students should record all data and calculations.** |
| **Independent Practice:****Students will use a meter stick to lay out 2 meters of tape in a straight line. Students will then notate the diameter of the wheels and the distance the wheels are apart from each other. Students will use the stopwatch to time how long it took their robot to travel 2 yards. Students will complete all calculations to determine how many rotations the robot made.** |
| **Closure:** **Groups will share data and either confirm or disprove their predictions (hypothesis).**  |
| **Reflections:****Students will complete an individual self assessment.** |

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