Robotics in the K-4 Classroom

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Overview

- Introductions
- Why Classroom Robotics?
- Advantages of Robots in the Classroom
- Examples of Robots
- EIU: Central Illinois Classroom Robotics Consortium
- Resources
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Robots in the Classroom: Why?

- **Academics**
  Interdisciplinary: STEM and Language Arts

- **Motivational**
  Entertaining, captures imagination, immediate feedback

- **Learning**
  Hands-on, exploration

- **Technological Fluency**
  Provides a positive experience

- **Standards**
Robots in the Classroom: Student Advantages

- **Engineering** — building the robots
- **Tech / Computer Science** — programming
- **Math** — critical thinking & problem solving skills
- **Science** — data logging & analysis
- **Language Arts** — storytelling
Flow
• According to Mihalyi Csikszentmihalyi
Low threshold
Wide walls
High ceiling
In the same experience

Anxiety
Challenge
Skills
Boredom

“Flow”

*According to Mihalyi Csikszentmihalyi*
Examples of Robots: B9 & Robby
Examples of Robots: The Invaders (Twilight Zone)
Examples of Robots: Model Robot
Examples of Robots: Pico Cricket

Meet the PicoCricket
Plug in the parts, program, and play

- Motor & Motor Board
  Make the motor move.

- Display
  Display numbers.

- Beamer
  Send programs from your computer to your PicoCricket.

- Resistance Sensor
  How much resistance is there between the alligator clips?

- Sound Sensor
  How loud is the sound?

- Colored Lights
  Light up any color.

- Sound Box
  Make a melody or rhythm.

- PicoCricket
  Program it to control your creations.

- Touch Sensor
  When is the button touched?

- Light Sensor
  How bright is the light?
Examples of Robots: Lego WeDo
Getting Started
Projects
Amazing Mechanisms
Wild Animals
Play Soccer
Adventure Stories
Examples of Robots: Lego Mindstorms-NXT
CRS - July ’09 - Ken & Vince, EIU Alums
EIU Classroom Robotics Consortium — Our Goals

- Provide **training** in using robots in your classroom
- Provide **robotics kits** to check out – as early as Spring 2010
- Provide a **repository** of information and lesson plans; a web site is in place
- Provide EIU **students** to help in your classroom
- Provide a place and means of sharing information and support through **(summer) symposiums**
Resources Through: www.eiu.edu/~robots

- links to other sites of interest: organizations
- links to robotic kit homepages
- academic resources
- book lists
- competitions
- girls and engineering
- contact information
Time for Some Hands-on Activity

Get Out of Your Seats
and
Check Out Some Robots!
Thank you for attending our talk... Keep in Touch!

Rick Anderson
Nancy Van Cleave