LEGO Coding Fun

Innovative minds of tomorrow LEGO their way to robotics success

Coding helps students develop abstract and critical thinking skills they need to solve complex problems. Combining colorful LEGO building elements, easy-to-use hardware, and an intuitive drag-and-drop coding language based on Scratch, the LEGO® Education SPIKE™ Prime Set continuously engages students regardless of their learning level. In one activity, students work in pairs to design multiple prototypes to find the most effective way to move a robot without using wheels. Throughout the project, students define the problem clearly and devise a solution, keeping in mind certain criteria and constraints. Testing determines if their solution works. If not, students reassess, ask themselves critical questions, and apply data, evidence, and other strategies for success. With SPIKE Prime, they encounter a variety of learning experiences that relate directly back to real-life questions and observations, building their confidence and preparing them for life beyond school.

CONTACT INFORMATION

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DOWNLOAD PROJECT INFO AT EDUCATIONFUND.ORG

STANDARDS

SCIENCE

SC.K2.CS-CP.2.4 Construct a simple program using tools that do not require a textual programming language.

SC.68.CS-CS.4.4 Identify and describe the use of sensors, actuators, and control systems in an embodied system.

SC.68.CS-CS.4.5 Evaluate a hardware or software problem and construct the steps involved in diagnosing and solving the problem.

CAREER TECHNOLOGY EDUCATION

CTE-TECED.68.ENTECH.11.04 Utilize the design process involving a set of steps, which can be performed in different sequences and repeated as needed.

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> *"I realized that several of my students loved interacting with robots but were having difficulty programming because of limited English proficiency."*

WORKSHOP INSTRUCTION – WHAT TEACHERS LEARN

How to assemble and label the SPIKE Prime set
How to use the SPIKE app lesson plans and professional development resources
How to do a hands-on lesson using SPIKE PRIME

STUDENTS

Adaptation: Any grade and achievement level, can be implemented with large or small groups
Students who participated: Middle school, 25 ESE students, met 3 times a week

MATERIALS & RESOURCES

Materials: LEGO® Education SPIKE™ Prime Set, electronic devices, SPIKE instructions and lesson plans
Resources: The Internet, computer lab, the SPIKE application

ABOUT THE TEACHER

Duysevi Miyar has taught for the past 22 years as an ESOL and ESE teacher. She has presented at the TESOL conference for many years as well as at The Education Fund's Idea EXPO – The Teacher Conference. Duysevi has earned her doctorate degree in Instructional Technology and Distance Education.

To register for this workshop, visit www.educationfund.org