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Coding and Robotics for Kids

LEGO SPIKE PRIME

- STEAM Learning Tool
- Limitless Creative Design
- Fun Learning Activities
- 40+ Robotic Models
- Easy-to-use Hardware
- Drag and Drop Coding
- Guided Lesson Plans
- Scientific Concepts

STEAM

Science • Technology • Engineering • Arts • Mathematics

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Coding and Robotics for Kids

UNIT PLANS

Invention Squad
Kickstart a Business
Life Hacks
Training Trackers
Guided Missions
Open-Ended Activities

LEGO ROBOTICS

- HELP - Define a Problem by observing a scenario.
- HOPPER RACE - Design multiple prototypes to find the most effective way to move a robot without using wheels.
- SUPER CLEANUP - Test the efficiency of two different grabber designs and determine the best design based on specific test criteria.
- BROKEN - Figure out why something isn't working and fix it
- DESIGN FOR SOMEONE - Use the complete design process to solve a real-world problem linked to prostheses.

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LEGO ROBOTICS

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- PLACE YOUR ORDER - Replicate the actions of a quality check robot
- OUT OF ORDER - Find and fix mistakes in a program to make a Delivery Cart work as intended.
- TRACK PACKAGES - Remix programming stacks to use an X-Y tracking device to follow a path on a piece of paper.
- KEEP IT SAFE - Use conditions to lock or unlock the door of a safe-deposit box.
- AUTOMATE IT - Create and program an automated helper that can identify and ship the correct package based on color.

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LEGO ROBOTICS

LEGO education SPIKE Prime

- BREAK DANCE - Synchronize motor movements of a "break dancer" to keep in rhythm with light and beats.
- REPEAT 5 TIMES - Use variables to count the number of sit-ups and calories burned during a workout.
- RAIN OR SHINE - Create a way of displaying a weather forecast using qualitative cloud data.
- WIND SPEED - Create a way to display wind speed using quantitative cloud data.
- VEGGIE LOVE - Use live forecast data to decide whether tomato plants will need to be watered this week.

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LEGO ROBOTICS

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- WARM UP - Practice graphing virtual energy values.
- STRETCH WITH DATA - Match graph values and explore margins of error qualitatively.
- UPHILL - Graph energy consumption to gain potential energy.
- SQUAT JUMPS - Graph potential energy at the maximum height of a jump.
- WATCH YOUR STEPS - Explore kinetic energy during a movement at constant speed.
- AIM FOR IT - Explore kinetic energy during a movement using variable speed.

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Coding and Robotics for Kids

CONCEPTS

- Motors & Sensors
- Variables & Lists
- Cloud Data & Graphs
- Design Process
- Product Prototype
- Distance, Time & Speed
- Potential & Kinetic Energy
- Angles, Yaw, Pitch & Roll

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Coding and Robotics for Kids

KEY LEARNING VALUES

- Modelling and designing solutions
- Engage pupils in science by making it real
- Basic computing skills
- Enhances Curiosity
- Boosts Creativity
- Collaboration and presentation skills
- Critical thinking and problem-solving