



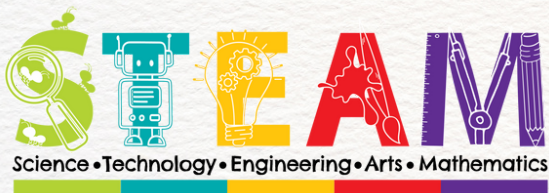
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Coding and Robotics for Kids



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





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UNIT PLANS



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



- 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.

- 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.

- 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.

- 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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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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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

