ComSource

People • Technology • Possibility

K12 Solutions

STEM Curriculum for the Future

Powering hands-on learning with Drones, Robotics and more!

The commercial applications of robots and unmanned aerial vehicles (UAV) have quietly exploded across industries.

The proliferation of these devices has driven demand for workers with the education and hands-on experience using this technology - skills that will be key in a competitive job market.

Integrating this technology into STEM curriculum is crucial to the success of your students as drones and UAV's become more ubiquitous in the future. Here's how.

Steps to Success

1

Pick a Theme, Not a Device

Picking a theme with an end result that is relevant, and attainable, is crucial to getting buy-in from district administrators, and students.

2

Know the Components

Some devices come ready to use out-of-the box, while others require time to build, code, and test before using. Be practical when aligning the technology to your curriculum.

3

Set Goals Early

Ensure the project is oriented to a specific goal (or competition) early on. Students will take pride in building towards tangible results or goals similar to real-world applications.

4

Spread the Fun!

Coordinate with your colleagues or other relevant coursework to make the project widely applicable. Don't be shy about promoting the project and your students' success!

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Example Project:

Featuring the DJI Robomaster S1

ComSource introduced the Robomaster S1 at the 2019 NYSCATE Conference for K12 teachers and administrators. The Robomaster is a fantastic way to introduce robotics into K12 STEM curriculum's due to its ease of use, variety of assembly and coding options, and numerous goals and competitive challenges it offers upon completion.

ComSource likes the Robomaster S1 because it was built with STEM in mind, and requires students to pull from their understanding of math, science, physics, programming and machinery in order to have a successful outcome.

Here is a brief outline of the lifecycle of the Robomaster S1 for STEM educators and students:

Build

Out of the box, the Robomaster arrives in hundreds of individual components. With the detailed instructions inside, students can take 4-6 hours for assembling the device. The Robomaster has a variety of options to choose from, such as the "blaster" for emitting infrared beams, or the "arm" for controlled pick up-and-go movements.

Code

Before the Robomaster can move an inch, students dive in with either Scratch or Python coding to tell the device how to move and how to interact with the controllers or other components. Tapping into applied math and physics, you can have students code in specific requirements for the device's movements and automation on-the-fly.

Play

Once built and programmed, gamify the results by having students put the Robomaster to task. Race around a pre-defined track to see which team can complete the course within a given margin or error. "Battle" multiple bots using the intelligent sensing armor. Or even see who can stream the best video using the on-board camera. Possibilities are endless!

- 46 Programmable Components
- 6 Programmable AI Modules
- </> Scratch and Python Coding
- 4WD Omnidirectional Movements
- Line Path Recognition
- Vision Marker Recognition
- People Lock & Recognition
- Gesture Recognition & Control

ComSource provides school districts with leading IT solutions from the classroom to the data center, helping educators and administrators make the most of technology for their schools, students and communities.

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