

CoderZ™

by intelitek▶▶®

An Online Learning Environment for Students to Learn STEM and Coding with Virtual Cyber Robots



CoderZ™ is a powerful, scalable and fun platform for teaching in-demand, real-world STEM technologies such as object-oriented programming, robotics and physical computing.

With CoderZ, you can offer a unique learning experience that engages students with STEM while promoting 21st Century skills. With CoderZ your students will learn how to code virtual robots accompanied by a step-by-step curriculum and gamified missions completely online. No need for expensive hardware or specialized training.

- ✔ Computational thinking
- ✔ Self-learning
- ✔ Creative Problem Solving
- ✔ Teamwork
- ✔ Digital Literacy

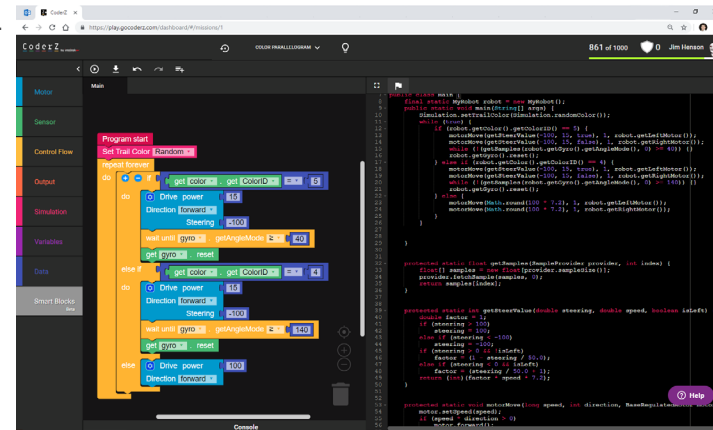
“May the code be with you”

intelitek▶▶®

Comprehensive STEM Education Solution

Built to integrate and enhance STEM education, CoderZ by Intelitek combines curriculum, an interactive coding platform that engages students, and tools for educators into a powerful learning solution that promotes tech literacy and STEM careers.

- introduces novices and experts to coding and robotics.
- accessible and online, in class or at home, every student gets their own robot.
- easy to deploy, maintain, manage and expand from class, to school to district.
- teacher guides, professional development, student tracking, progress tracking, heatmaps
- simulated robot with option to integrate with robotic hardware kits.
- STEM curricula - computer science, engineering, science and math through coding and robotics.



Designed to Engage

CoderZ enables STEM education program success by engaging students in exciting activities, supporting teachers with content, training and classroom management and reinforcing educational leaders with a scalable, inclusive and accessible solution that reaches all levels of the student community.

Cyber Competitions

CoderZ is the platform for the Cyber Robotics Coding Competitions (CRCC). CRCC virtual competitions that have been run worldwide for tens of thousands of participants. Because the competitions is virtual - all students can participate, not just a handful.

From Blocks to Java

Newbies start with our Blockly, Scratch-like programming while more advanced users can go right to Java in the object-oriented code editor. Combined with curriculum for coding novices through to advanced engineering problem solving, CoderZ fits all levels at all types of schools.

Gamified Simulation

Simulated missions give students immediate feedback as they test their code and see live results. Students collect points, complete levels, improve times and increase their code efficiency.

Accessible and Scalable

CoderZ is a cloud based online tool that runs in a Chrome web browser. Students can access their CoderZ account whenever they want, wherever they are.

Whether you want to enhance your robotics programs with cool robot simulations, upgrade your computer science classes with robotics and physical computing or increase student engagement in STEM through engaging on-line learning, robotics competitions, after school activities, flipped classrooms and more, CoderZ is the platform for you.



A Learning Environment that is Engaging and Interdisciplinary

Features:

- Platform to teach coding in middle or high school
- STEM education solution for class, district or state
- Cloud based access from any browser at school or at home
- Scalable, cost saving virtual robots with simulation
- Real robot integration with LEGO® MINDSTORMS® EV3
- Low floor, high ceiling - Blockly for beginners, Java for advanced
- Standards aligned curriculum for middle school and high school
- Interactive online robotics competitions



Solution Benefits:

- For administrators: Easy to deploy and scale cost effectively in a school, a district or state wide.
- For teachers: High-level of student interaction and the ability to offer an enriched learning experience.
- For curriculum advisors: Integrates with curriculum for STEM and Computer Science.
- For teachers: Classroom management, assessments and professional development.
- For students: Engages all ages with exciting, gamified interface.

Measurable Outcomes:

- Unlike hardware robotics, each student has their own robot and individual assessment
- Teachers can track progress, skills achievements, code level capabilities and perform formative assessments
- Track engagement, activity level, and success rate on a student or class level
- Student, classroom, school and district level reporting
- Real time information





Cloud Based Platform that is Accessible and Scalable

Realistic Simulations

CoderZ features life-like and real-time 3-D simulation of robotic code in action. The stunning simulation lets students test their code and solve problems from the real world.

Real-Time Feedback

The simulation offers a Heads-Up Display (HUD) that shows students data from their robot's various sensors. Students can manually drive the robot, trace their route by leaving a trail and quickly update and re-run the program. HUD information helps student examine and improve their work.

Visual Editor

The visual programming interface allows students to use drag-and-drop Blockly programming to learn the basics and at the same time see the Java code behind the blocks. This helps beginners start learning programming syntax while experienced students can program directly in Java.

Dynamic Challenges

Game like challenges can be set up or be part of the curriculum to progressively present students with more stimulating exercises to test and expand their programming and problem solving skills.

Interactive

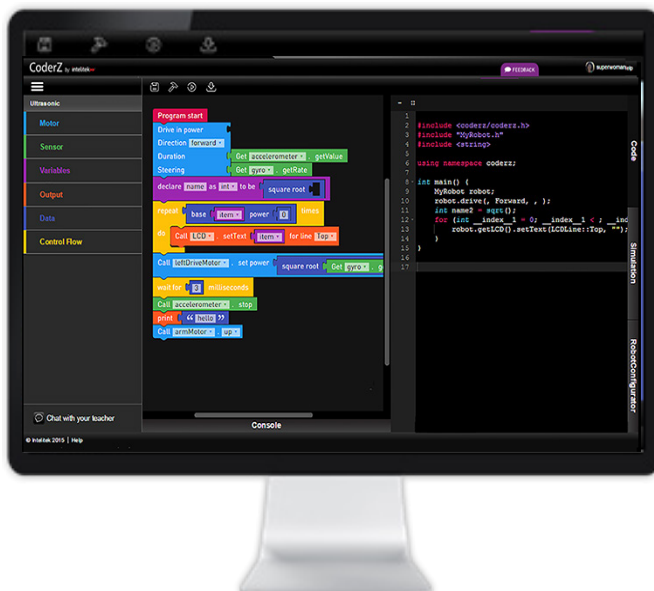
Collaborative platform can enable online robotics competitions as well as student-teacher and student-student cooperation.

Educator Friendly

Linked with teacher tools, curriculum, challenges, and online help capabilities, CoderZ is a comprehensive 21st century approach to learning STEM from Intelitek.

Project Based Learning

Mission/challenge based structure of curriculum, sandbox and competition support PBL - Learning by doing, on a a team or individual basis. Students can collaborate or work alone promoting out-of-the-box thinking skills and job ready soft skills.



Engaging

With CoderZ, students can engage in fun real world challenges and get immediate feedback. CoderZ encourages students to progress at their own pace by creating reachable goals. With CoderZ students learn STEM and have fun at the same time.

Accessible

CoderZ can be cost effectively deployed to a classroom, school or district. Cloud based and internet accessible, every student can code his or her own virtual robot in minutes.

Interdisciplinary

To succeed in the 21st century jobs, students need knowledge of science, technology, engineering, math and strong problem-solving skills. CoderZ integrates the STEM disciplines into one project-based learning environment preparing students for the real world.

- Engage Students in Computer Science Education (CSEd)
- Provide Exciting STEM Electives
- Introduce Robotics and Coding
- Integrate Computing in Career & Technical Education (CTE)

Curriculum: Coding Robots

Length: 45 hrs of curriculum and practice

Description: Coding Robots introduces students to the concepts of Robots and Code. This comprehensive STEM program will teach your students the basics of mobile robots and how to operate them by programming.

Students learn to solve STEM problems through code, using math and engineering to overcome challenges.

Skills Covered

- Week 1 - What Are Robots?
What makes up a robot and basic operation using code.
- Week 2 - Driving Lesson
Learn how to create and control the movement of robots by controlling its motors through basic code.
- Week 3 - Navigation
Use geometry, math, encoders and loops to see how you can accurately navigate your robot and bring it home.
- Week 4 - Sensors
Sensing what's around the robot and how to use this. Learn about controlling distance using optical sensors.
- Week 5 - Control
Use two-state and proportional control to master your robot. Learn about ultrasonic and gyro sensors.
- Week 6 - Visual sensors
Ready for variables, state machines and three-state controls. Use light sensors to follow lines and more.
- Week 7 - Advanced Control
Overcome obstacles using advanced coding techniques and best practices. Tweak and tune code to perfection.
- Week 8 - Advanced Sensing
Search for objects using scan techniques and remove them using a manipulator.
- Week 9 - Conclusion
Put the skills learned to the test with tough challenges.

Standards Alignment:

- Career Readiness Standard
- Computer Science Teachers Association (CSTA)
- Next Generation Science Standards (NGSS)
- Common Core Standards for Math Practice

Curriculum: Cyber Robotics 101

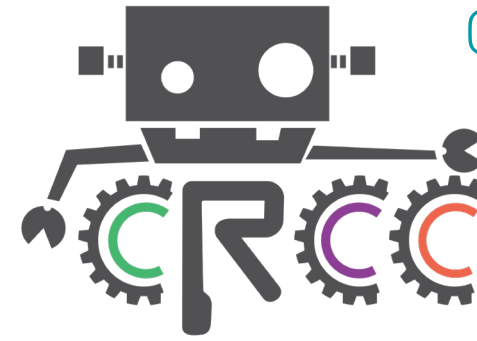
Length: 15 hrs of curriculum and practice

Description: Cyber Robotics 101 is a flexible learning program for educators to introduce students to the core concepts of code development and robotics.

Students will learn mechanics, navigation, sensors and more while being introduced to programming components like commands, variables, conditional logic, loops, smart blocks (functions) and more.

Skills Covered

- Session 1 - Intro to STEM and CoderZ
Overview of STEM and the CoderZ learning environment.
- Session 2 - Basic Navigation I
Learn about drive systems and how to navigate your robot using computer code.
- Session 3 - Basic Navigation II
More advanced navigation using computer code.
- Session 4 - Object Detection I
Learn how to use the Robot's touch sensor for autonomous navigation using basic coding blocks.
- Session 5 - Repeat Loops
Learn how to code more efficiently with the Repeat loop.
- Session 6 - Gyro Turns
Make accurate turns using data from the Gyroscopic sensor.
- Session 7 - Gyro Reset
Advanced Gyroscopic sensor use and use of reset gyro.
- Session 8 - Domino Creations
Use all your creativity and imagination with all you've learned and take on a fun challenge that puts your skills to the test.
- Session 9 - Challenge Missions I
Apply all you've learned so far and take on an advanced challenge that puts your skills to the test.
- Session 10 - Object Detection II
Learn how to avoid obstacles by sensing them from afar using the Ultrasonic sensor.
- Session 11 - Color Detection Sensor
The robot can detect colors on the floor and use them to make better decisions.
- Session 12 - Challenge Missions II
More advanced challenges put students' skills to the test.
- Session 13 - Object Manipulation
Control the robot's arm to interact with objects in the scene and solve complex challenges
- Session 14 - Decision Making
Use the sensors so your robot can take informed decisions.
- Session 15 - The Ultimate Challenge
Implement all you've learned in a series of complex challenges



Cyber Robotics Coding Competition

Cyber Robotics Coding Competitions sponsored by Intelitek are online coding competitions run at the district, state or regional level where students and schools compete online or in person to showcase their coding skills

The competitions are an example of how to use CoderZ to provide all middle school-aged students and educators with the opportunity to learn how robots work, build coding skills using real or virtual 3D robots and expand their knowledge of STEM in an interactive, fun, and exciting online event.

The flexible, low-barrier, high-impact education model provides key stakeholders in workforce development with the opportunity to help all youth nationwide acquire STEM skills and the confidence to envision a STEM career.

Computational Thinking

Self-Directed Learning

Creative Problem Solving

Time Management

Digital Literacy

Teamwork



What's in it for Educators?

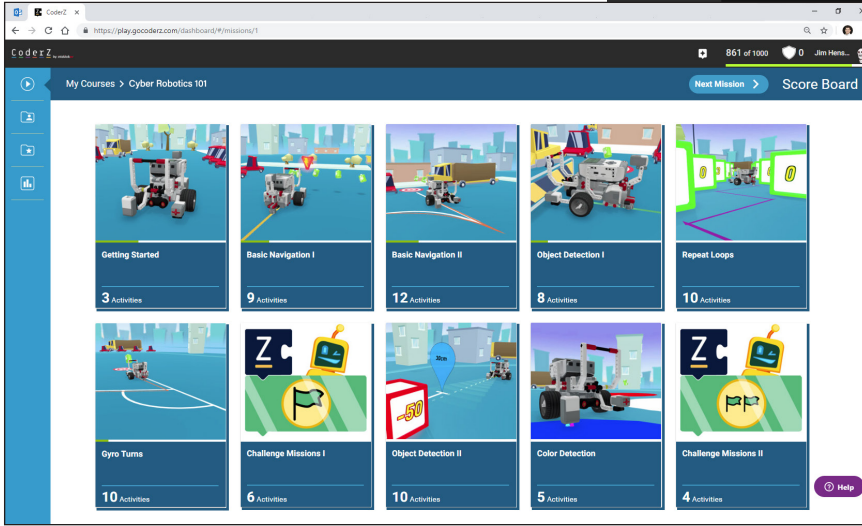
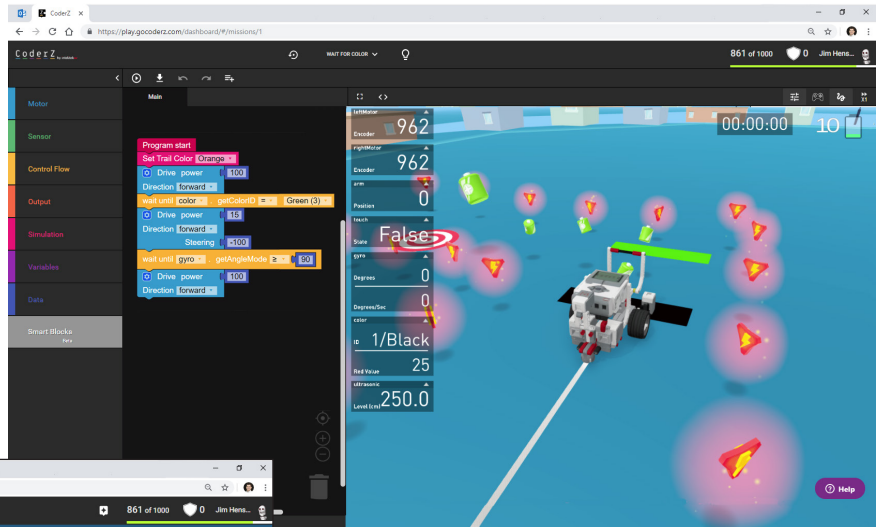
- Motivational STEM program
- Promotes diversity - accessible, gender friendly, inclusive,
- Develops soft skills like Creative Problem Solving and teamwork
- Promotes in-demand career skills
- Student, School, Teacher, Administrator and Partner recognition opportunities



The 2018 CRCC competitions enrolled **79,166** students worldwide

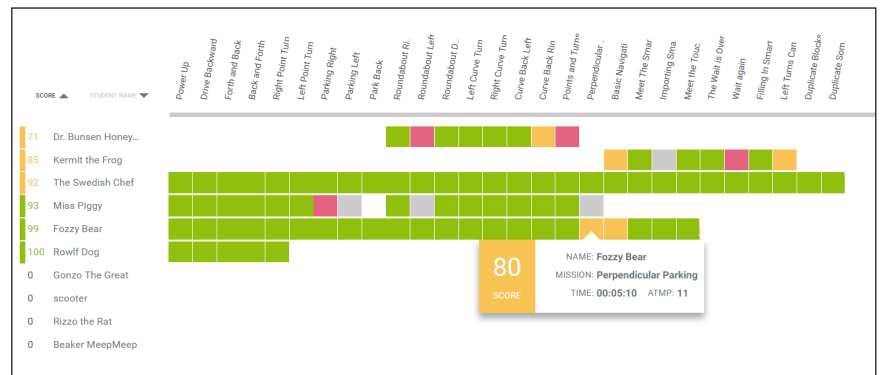


CoderZ has an interactive live programming interface that engages the imagination of students to solve gamelike missions.



CoderZ Curriculum packs are competency and skills based and align with challenging and fun activities.

CoderZ Teacher interface offers class management, curriculum control, educator tools, classroom guides, as well as assessments and real-time student tracking



Start Working with CoderZ Now!

For more information visit our website www.GoCoderZ.com or contact us: CoderZ@intelitek.com

About Intelitek

Intelitek transforms education across the globe through innovative learning solutions that empower instructors and inspire students. We understand the changing needs of STEM and CTE classrooms, and design flexible solutions that meet those needs within the framework of any budget. By helping to deliver the skills needed for in-demand careers, we are producing results for students and teachers.

Contact Us:



Toll Free: 800-221-2763

Phone: 603-413-2600

Fax: 603-437-2137

Email:

info@intelitek.com

www.intelitek.com