

# CoderZ™

## Robotics & Coding STEM Curriculum



### Coding Robots powered by CoderZ

Introduce students to the concepts of Robots and Code with CoderZ, an online learning environment for programming real and virtual robots.

The Robotics & Coding STEM Curriculum brings your students up to speed with code and robotics in no time. This 45 hour program will teach your students to solve STEM problems through code, using math and engineering to overcome challenges. CoderZ uses engaging simulation so students will have immediate life-like feedback and can work from any computer, even from home, making sure all students get to code their robot even when time and resources are limited.

- ✔ Use visual (Blockly) or text editors and test your code with simulation
- ✔ Log into CoderZ anywhere, anytime to continue learning
- ✔ Developing the pathways to STEM
- ✔ Promote 21st century skills like computational thinking and problem solving

# Coding Robots

## Course outline and learning objectives:

### Week 1

#### What Are Robots?

Robots are problem solvers. Learn what makes up a robot and how to solve problems in industry, medicine and even at home.

### Week 2

#### Driving Lesson

Driving a robot is no simple task. We will learn how to create and control the movement of robots by controlling its motors through basic code.

### Week 3

#### Wherefore Art Thou?

Use geometry, math, encoders and loops to see how you can accurately navigate your robot and bring it home.

### Week 4

#### Look Around

Driving the robot around is great. Sensing what's around it and reacting to it is even better. We will learn about controlling distance and using optical sensors to look around.

### Week 5

#### Take Control

Two-state and proportional control are simple techniques that will help you master your robot. Learn about ultrasonic and gyro sensors and take control of your robot.

### Week 6

#### What You See

You are now ready for variables, state machines and three-state controls. With these you can use light sensors to follow lines and much more.

### Week 7

#### Watch Out

Overcome obstacles using advanced coding techniques and control best practices. Tweak and tune your code to perfection.

### Week 8

#### Reach Out

Search for objects using scan techniques and remove them using a manipulator. It's more challenging than you think.

### Week 9

#### It's A Wrap

Time to put those mad skills to the test. Face the challenge and put all you've learned into practice. You will need it.

✔ CSTA compliant and NGSS aligned

✔ PBL approach

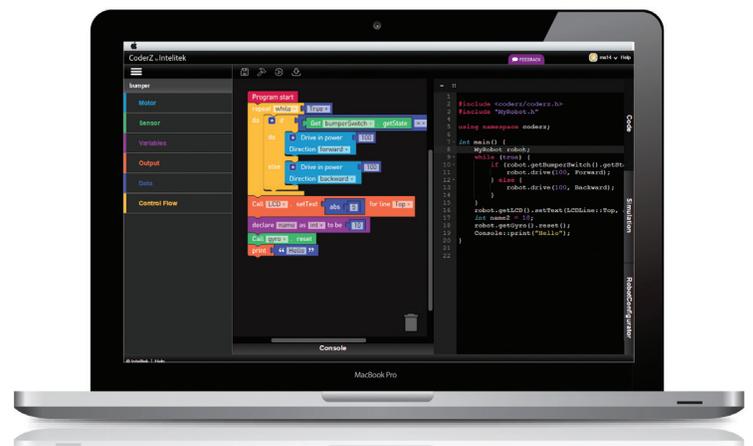
✔ Flipped classroom ready

### Start working with CoderZ now!

For more information visit [www.GoCoderZ.com](http://www.GoCoderZ.com)

or contact us: [CoderZ@intelitek.com](mailto:CoderZ@intelitek.com)

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