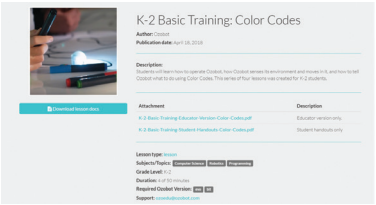
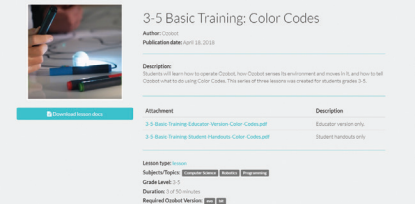
ozobot edu
CURRICULUM **PLANNER**

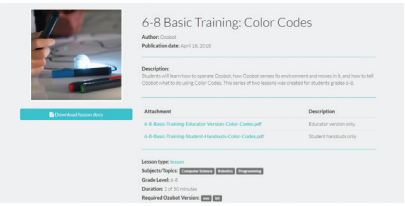
Plan curriculum for any grade or subject with these recommended Ozobot lessons. Over 150 lessons are available in our Lesson Library, and more lessons are added monthly, so check ozo.bot/lessons or search using our lesson filter ozo.bot/lessons-filter.

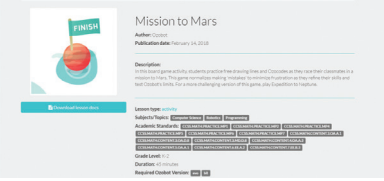
BASIC TRAINING

Color Codes — Screen-Free Coding: with markers on paper



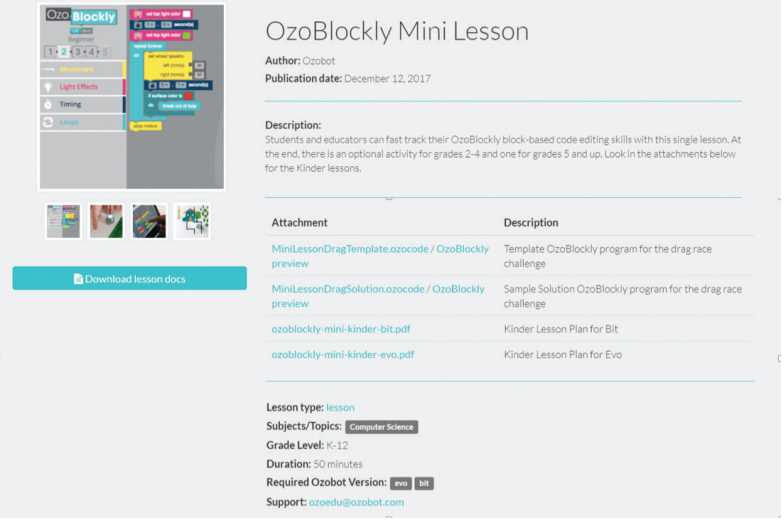






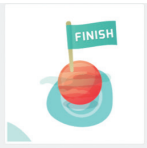
Link: ozo.bot/training-colorcodes

OzoBlockly: Visual block-based programming on computers or tablets



Link: ozo.bot/training-ozoblockly

K-1 RECOMMENDED STEAM INTEGRATED LESSONS



Mission to Mars

Author: Ozobot
Publication date: February 14, 2018

Description:
In this board game activity, students practice free drawing lines and Ozocodes as they race their classmates in a mission to Mars. This game normalizes making 'mistakes' to minimize frustration as they refine their skills and test Ozobot's limits. For a more challenging version of this game, play Expedition to Neptune.

Download lesson docs

Lesson type: activity
Subjects/Topics: Computer Science, Robotics, Programming
Academic Standards: CCSS.MATH.PRACTICE.MP1, CCSS.MATH.PRACTICE.MP2, CCSS.MATH.PRACTICE.MP4, CCSS.MATH.PRACTICE.MP5, CCSS.MATH.PRACTICE.MP6, CCSS.MATH.PRACTICE.MP7, CCSS.MATH.CONTENT.3.OA.A.1, CCSS.MATH.CONTENT.3.OA.D.8, CCSS.MATH.CONTENT.3.MD.D.8, CCSS.MATH.CONTENT.4.OA.A.3, CCSS.MATH.CONTENT.5.OA.A.1, CCSS.MATH.CONTENT.6.EE.A.2, CCSS.MATH.CONTENT.7.EE.B.3
Grade Level: K-2
Duration: 45 minutes
Required Ozobot Version: evo, bit
Support: ozoedu@ozobot.com

Write Your Name with OzoCodes

Author: Ozobot
Publication date: October 21, 2017

Description:
This lesson helps Pre-readers get in on the Ozobot programming fun by having them write their names large and clear, then program it with OzoCodes for their bot to walk from the first letter to the last. Each student must first draft their name with lines their bot can see, then plan where is best to place OzoCodes, and which codes. Iterate their drawing and debug any problems along the way. Even the youngest of coders can develop valuable programming skills as well as fine motor skills, art-making and logical thinking with this simple lesson.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Computer Science, Robotics, Programming, Art
Grade Level: K-2
Duration: 60 minutes
Required Ozobot Version: bit, evo
Support: ozoedu@ozobot.com

Hungry, Hungry Ozobot!

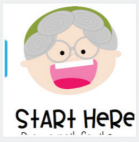
Author: Ozobot
Publication date: February 4, 2018

Description:
Collect as much food as you can for your Hungry, Hungry Ozobot! In this cooperative game, students will draw two number cards and work together to 1) identify the numbers on the cards, 2) count out the appropriate number of food props, and 3) compare numbers to determine which amount is greater. At the end of the game, they will count all the food to see how much they collected for their Hungry Hungry Ozobot!

Download lesson docs

Attachment	Description
HungryHungryLineNavigation.ozocode / OzoBlockly preview	For Evo: OzoBlockly program for line navigation to turn off Evo's proximity sensors while line following.

Lesson type: classroom application
Subjects/Topics: Mathematics



Code a Story - Coding with There Was a Cold Lady Who Swallowed Some Snow and Ozobot

Author: Jennifer Mellina
Publication date: March 7, 2017

Description:
Follow the instructions in the handout to guide Ozobot through the story. There will be cutouts and other visuals to help depict the story.

Download lesson docs

Lesson type: activity
Subjects/Topics: Programming, Technology, Literature
Grade Level: K-2
Duration: 45 minutes
Required Ozobot Version: bit, evo
Support: barnhart@clarke.k12.ga.us

100 Centimeter Ozo-Dash

Author: Ozobot
Publication date: July 10, 2017

Description:
Students must design a race track that measures at least 100 centimeters. Once they have incorporated all of the rules/challenges, they can race against a classmate to see who created the fastest race track.

Download lesson docs

Lesson type: activity
Subjects/Topics: Computer Science, Math
Grade Level: K-12
Duration: 30-60 minutes
Required Ozobot Version: bit, evo
Support: ozoEdu@ozobot.com

Create!

Author: Joslyn Buhler
Publication date: October 6, 2016

Description:
The students bring in materials from home that they would like to use to create an Ozobot creation. They sketch out their ideas and talk about what they are planning. They then work together to build their ideas. They then test out their design to see what the outcome will be. Then they journal on the outcome and talk to their peers about what was accomplish and what could be done differently.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Computer Science, Technology, Science
Grade Level: 1
Duration: several class sessions
Required Ozobot Version: bit, bit, evo
Support: jbuhler@dsdmail.net

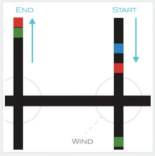
I See, Ozobot Sees

Author: Jodi Goff
Publication date: August 22, 2016

Description:
Students explore how Ozobot understands its environment and how this system compares to ours. They observe the cause and effect relationship of how Ozobot responds to its environment. Students process and reflect on this experience by recording observations in a journal. To experiment with what they have learned and to demonstrate understanding, they will create an environment that Ozobot can understand.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Robotics, Technology, Biology
Academic Standards: NGSS.K-ESS3-2, K-ESS3-3, K-ESS3-1, K-ESS3-2, CCSS.SL.K.1
Grade Level: K-1
Duration: 45 minutes
Required Ozobot Version: bit, bit
Support: goff.edu@gmail.com



Clean Energy Cruise

Author: Ozobot
Publication date: April 16, 2017

Description:
This Earth Day activity allows students to learn about different forms of energy, while brushing up on their Ozobot programming skills! Students should travel to the clean energy stops while avoiding the 'dirty' energy.

Download lesson docs

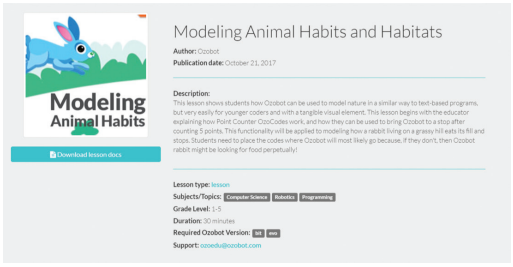
Lesson type: activity
Subjects/Topics: Earth Science, Programming
Grade Level: K-12
Duration: 30-45 minutes
Required Ozobot Version: bit, evo
Support: ozoEdu@ozobot.com

Creative Prompts:

Build A School
Animal Habitats
Build A Leprechaun Trap
Ozobot Races

Link: ozo.bot/lessons-steam-k-1

GRADES 2-3 RECOMMENDED STEAM INTEGRATED LESSONS



Modeling Animal Habits and Habitats

Author: Ozobot
Publication date: October 21, 2017

Description:
This lesson shows students how Ozobot can be used to model nature in a similar way to text-based programs, but very easily for younger coders and with a tangible visual element. This lesson begins with the educator explaining how Point Counter CozoCodes work, and how they can be used to bring Ozobot to a stop after counting 5 points. This functionality will be applied to modeling how a rabbit living on a grassy hill eats its fill and stops. Students need to place the codes where Ozobot will most likely go because, if they don't, then Ozobot rabbit might be looking for food perpetually!

Download lesson docs

Lesson type: lesson
Subjects/Topics: Computer Science, Robotics, Programming
Grade Level: 1-5
Duration: 30 minutes
Required Ozobot Version: bit, evo
Support: ozoedu@ozobot.com

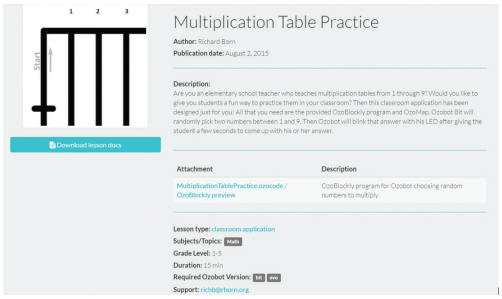
Ozobot's Fairytale, Lesson I

Author: Ozobot, Linda McClure
Publication date: July 23, 2015

Description:
This lesson connects writing and programming. Students "act out" a fairytale using Ozobot as the main character. Part of the story will require programming the Ozobot to complete a task or engage in a behavior related to the story.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Programming, Literature
Grade Level: 2-12
Duration: 110 min up to multiple class settings
Required Ozobot Version: bit, evo
Support: ozoEdu@ozobot.com



Multiplication Table Practice

Author: Richard Born
Publication date: August 2, 2015

Description:
Are you an elementary school teacher who teaches multiplication tables from 1 through 9? Would you like to give you students a fun way to practice them in your classroom? Then this classroom application has been designed just for you! All that you need are the provided OzoBlockly program and OzoMap. Ozobot Bit will randomly pick two numbers between 1 and 9. Then Ozobot will blink that answer with his LED after giving the student a few seconds to come up with his or her answer.

Attachment	Description
MultiplicationTablePractice.ozocode / OzoBlockly preview	OzoBlockly program for Ozobot choosing random numbers to multiply

Download lesson docs

Lesson type: classroom application
Subjects/Topics: Math
Grade Level: 1-5
Duration: 15 min
Required Ozobot Version: bit, evo
Support: richb@rborn.org

Ozobot Challenge in Chronological Thinking

Author: Ozobot, Mark Dzula, Ardina Greco
Publication date: June 23, 2015

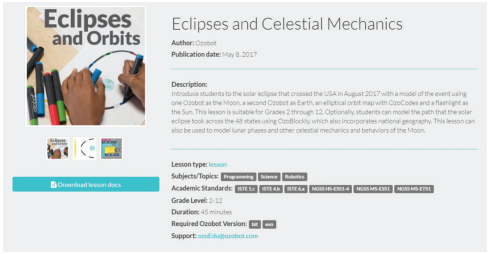
Summary
Take the Ozobot on a journey through within a particular region!

Groups of students will explore plottin regional context. The final activity will gridded geographical map. Then usir that will allow Ozobot to visit each histo events onto a geographical map hel context and individual events to larger region.

Description:
Take the Ozobot on a journey through time and teach it historical events that occurred within a particular region! Groups of students will explore plotting timelines, first in a linear context and then in a regional context. The final activity will challenge groups to plot historical events on a gridded geographical map. Then using the map as a reference they will draw a track that will allow Ozobot to visit each historical event in chronological order.

Download lesson docs

Lesson type: lesson
Subjects/Topics: History, Robotics, Programming
Academic Standards: CCSS.ELA-LITERACY.RI.3.7
Grade Level: 3
Duration: 1 or multiple class meetings
Required Ozobot Version: bit, bit, evo
Support: ozoEdu@ozobot.com



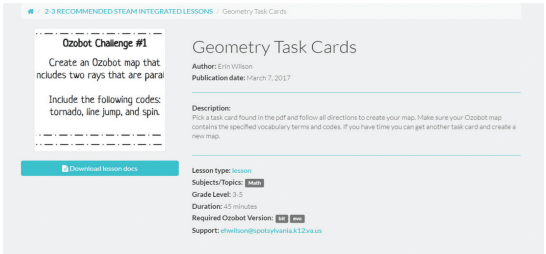
Eclipses and Celestial Mechanics

Author: Ozobot
Publication date: May 8, 2017

Description:
Introduce students to the solar eclipse that crossed the USA in August 2017 with a model of the event using one Ozobot as the Moon, a second Ozobot as Earth, an elliptical orbit map with CozoCodes and a flashlight as the Sun. This lesson is suitable for Grades 2 through 12. Optionally, students can model the path that the solar eclipse took across the 48 states using OzoBlockly, which also incorporates national geography. This lesson can also be used to model lunar phases and other celestial mechanics and behaviors of the Moon.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Programming, Science, Robotics
Academic Standards: ISTE 1c, ISTE 4.b, ISTE 6.a, NGSS HS-ESS1-4, NGSS MS-ESS1, NGSS MS-ETS1
Grade Level: 2-12
Duration: 45 minutes
Required Ozobot Version: bit, evo
Support: ozoEdu@ozobot.com



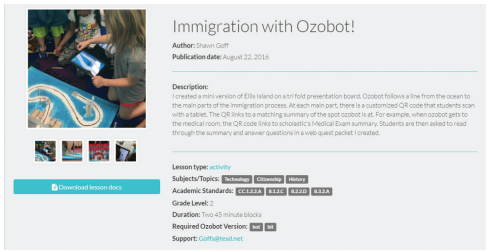
Geometry Task Cards

Author: Erin Wilson
Publication date: March 7, 2017

Description:
Pick a task card found in the pdf and follow all directions to create your map. Make sure your Ozobot map contains the specified vocabulary terms and codes. If you have time you can get another task card and create a new map.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Math
Grade Level: 3-5
Duration: 45 minutes
Required Ozobot Version: bit, evo
Support: ehwilson@spotsylvania.k12.va.us



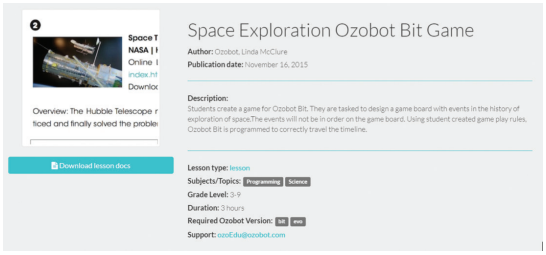
Immigration with Ozobot!

Author: Shawn Goff
Publication date: August 22, 2016

Description:
I created a mini version of Ellis Island on a tri fold presentation board. Ozobot follows a line from the ocean to the main parts of the immigration process. At each main part, there is a customized QR code that students scan with a tablet. The QR links to a matching summary of the spot ozobot is at. For example, when ozobot gets to the medical room, the QR code links to scholastic's Medical Exam summary. Students are then asked to read through the summary and answer questions in a web quest packet I created.

Download lesson docs

Lesson type: activity
Subjects/Topics: Technology, Citizenship, History
Academic Standards: CC.1.3.2.A, 8.1.2.C, 8.2.2.D, 8.3.2.A
Grade Level: 2
Duration: Two 45 minute blocks
Required Ozobot Version: bit, bit
Support: Goffs@tesd.net



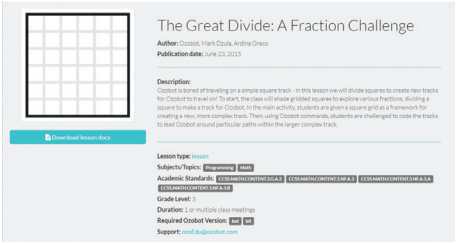
Space Exploration Ozobot Bit Game

Author: Ozobot, Linda McClure
Publication date: November 16, 2015

Description:
Students create a game for Ozobot Bit. They are tasked to design a game board with events in the history of exploration of space.The events will not be in order on the game board. Using student created game play rules, Ozobot Bit is programmed to correctly travel the timeline.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Programming, Science
Grade Level: 3-9
Duration: 3 hours
Required Ozobot Version: bit, evo
Support: ozoEdu@ozobot.com



The Great Divide: A Fraction Challenge

Author: Ozobot, Mark Dzula, Ardina Greco
Publication date: June 23, 2015

Description:
Ozobot is bored of traveling on a simple square track - in this lesson we will divide squares to create new tracks for Ozobot to travel on! To start, the class will shade gridded squares to explore various fractions, dividing a square to make a track for Ozobot. In the main activity, students are given a square grid as a framework for creating a new, more complex track. Then, using Ozobot commands, students are challenged to code the tracks to lead Ozobot around particular paths within the larger complex track.

Download lesson docs

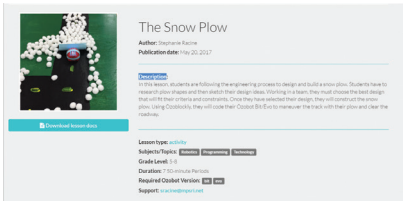
Lesson type: lesson
Subjects/Topics: Programming, Math
Academic Standards: CCSS.MATH.CONTENT.3.G.A.1, CCSS.MATH.CONTENT.3.MP.A.5, CCSS.MATH.CONTENT.3.MP.A.1.A, CCSS.MATH.CONTENT.3.MP.A.1.B
Grade Level: 3
Duration: 1 or multiple class meetings
Required Ozobot Version: bit, bit
Support: ozoEdu@ozobot.com

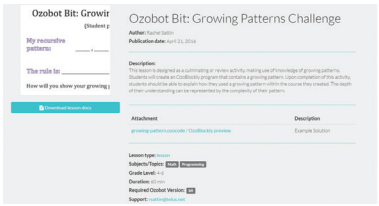
Creative Prompts:

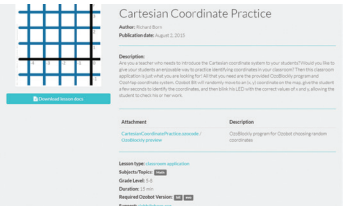
Build A Bridge | Solar System | The Food Chain | The Water Cycle

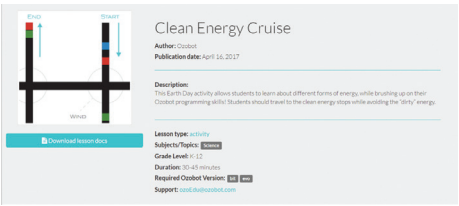
Link: ozo.bot/lessons-steam-2-3

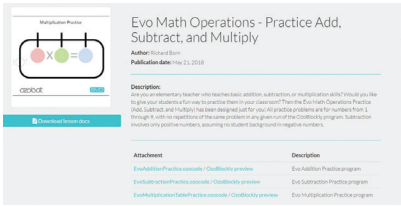
GRADES 4-5 RECOMMENDED STEAM INTEGRATED LESSONS

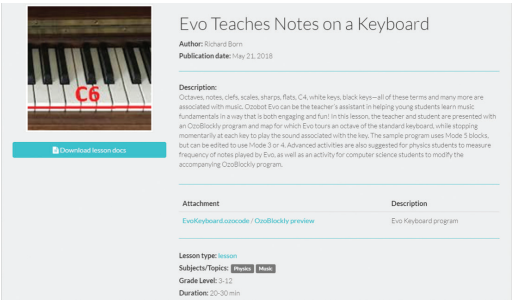


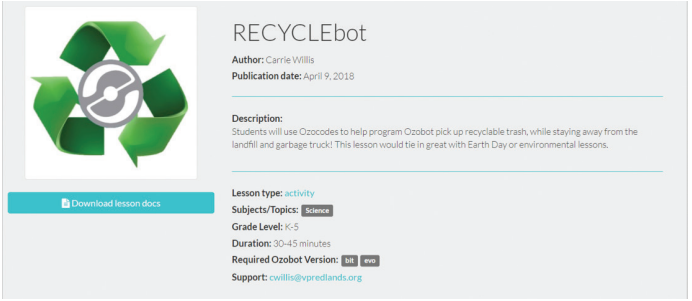










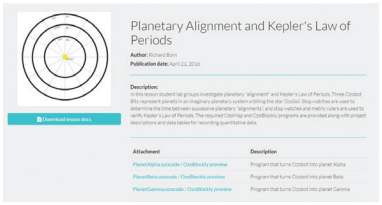


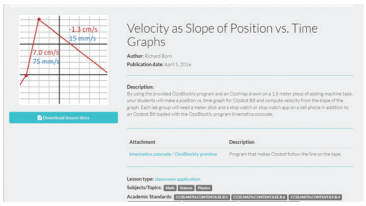
Creative Prompts:

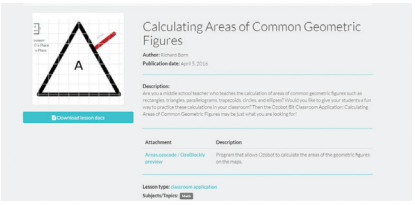
Sports Challenge Circulatory System Digestive System Photosynthesis and Respiration

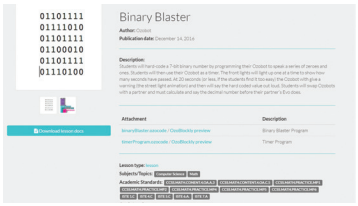
Link: ozo.bot/lessons-steam-4-5

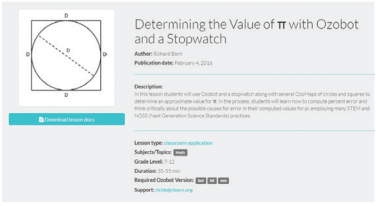
GRADES 6-8 RECOMMENDED STEAM INTEGRATED LESSONS

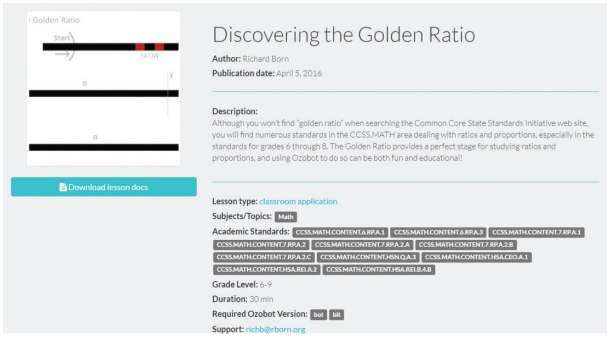


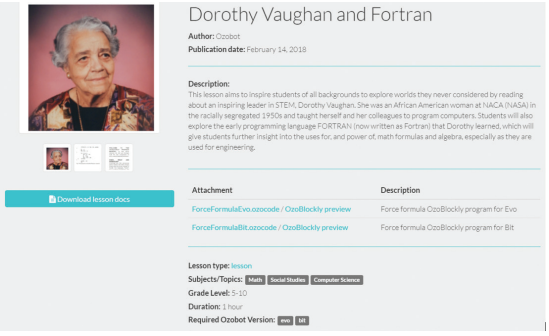


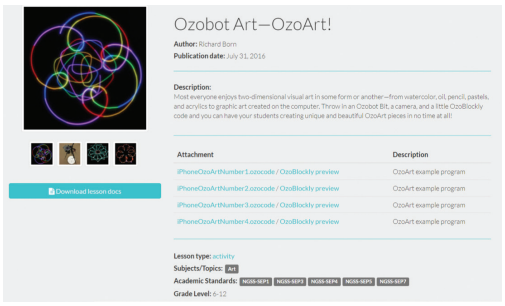












Creative Prompts:

Create a Board game Ozobot City with 3D printed objects Ozobot Roller Coaster

Link: ozo.bot/lessons-steam-6-8

GRADES 9-12 RECOMMENDED STEAM INTEGRATED LESSONS

Simulation of a Robotic Warehouse

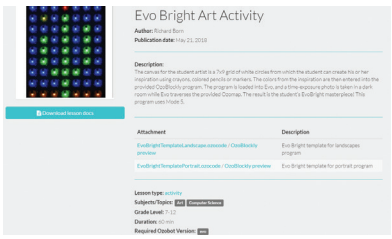
Author: Richard Born
Publication date: May 21, 2018

Description:
Students will study an OzoBlockly program, which uses Mode 5, in which Ozobot traverses a warehouse floor while stopping to "pick" items from shelves in order to fulfill customer orders. Students will compare picking rates for two layouts for shelves, an existing layout and a new proposed layout. Customer orders will be simulated by the use of random numbers in OzoBlockly, and students will learn how the use of a seed number allows comparing the two shelf layouts by controlling the random input variables. An experiment is used to accomplish a desired goal.

Download lesson docs

Attachment	Description
SimulationRobotic Warehouse.ozocode / OzoBlockly preview	Simulation of a Robotic Warehouse program

Lesson type: lesson
Subjects/Topics: Computer Science
Grade Level: 7-12
Duration: 60 min
Required Ozobot Version: bit evo



Evo Bright Art Activity

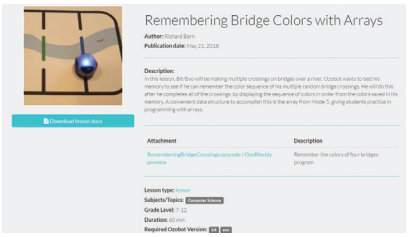
Author: Richard Born
Publication date: May 21, 2018

Description:
The canvas for the student artist is a 7x9 grid of white circles from which the student can create his or her inspiration using crayons, colored pencils or markers. The colors from the inspiration are then entered into the provided OzoBlockly program. The program is loaded into Evo, and a time-exposure photo is taken in a dark room while Evo traverses the provided Cosmac. The result is the student's EvoBright masterpiece! This program uses Mode 5.

Download lesson docs

Attachment	Description
EvoBrightTemplateLandscape.ozocode / OzoBlockly preview	Evo Bright template for landscapes program
EvoBrightTemplatePortrait.ozocode / OzoBlockly preview	Evo Bright template for portrait program

Lesson type: activity
Subjects/Topics: Art Computer Science
Grade Level: 7-12
Duration: 60 min
Required Ozobot Version: evo



Remembering Bridge Colors with Arrays

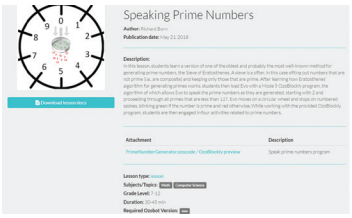
Author: Richard Born
Publication date: May 21, 2018

Description:
In this lesson, Bit/Evo will be making multiple crossings on bridges over a river. Ozobot wants to test his memory to see if he can remember the color sequence of his multiple random bridge crossings. He will do this after he completes all of the crossings, by displaying the sequence of colors in order from the colors saved in his memory. A convenient data structure to accomplish this is the array from Mode 5, giving students practice in programming with arrays.

Download lesson docs

Attachment	Description
RememberingBridgeCrossings.ozocode / OzoBlockly preview	Remember the colors of four bridges program

Lesson type: lesson
Subjects/Topics: Computer Science
Grade Level: 7-12
Duration: 60 min
Required Ozobot Version: bit evo



Speaking Prime Numbers

Author: Richard Born
Publication date: May 21, 2018

Description:
In this lesson, students learn a version of one of the oldest and probably the most well-known method for generating prime numbers, the Sieve of Eratosthenes. A sieve is a filter, in this case sifting out numbers that are not prime (i.e., are composite) and keeping only those that are prime. After learning how Eratosthenes' algorithm for generating primes works, students then load Evo with a Mode 5 OzoBlockly program, the algorithm of which allows Evo to speak the prime numbers as they are generated, starting with 2 and proceeding through all primes that are less than 127. Evo moves on a circular wheel and stops on numbered spokes, blinking green if the number is prime and red otherwise. While working with the provided OzoBlockly program, students are then engaged in four activities related to prime numbers.

Download lesson docs

Attachment	Description
PrimeNumberGenerator.ozocode / OzoBlockly preview	Speak prime numbers program

Lesson type: lesson
Subjects/Topics: Math Computer Science
Grade Level: 7-12
Duration: 30-45 min
Required Ozobot Version: evo

Ozobot Odyssey

Author: Jane Gonzalez
Publication date: May 5, 2017

Description:
This lesson uses coding to connect a literary element, point of view, with the impact it has on the reader. By changing the point of view and traveling through the eyes of a different character, students realize first hand how information is enhanced, withheld and how that in turn impacts characterization. By coding the Ozobot through a journey through a specific point of view of a selected character, the students sees how fiction is shaped by narrator's point of view and feels concretely the function of non-linear plot development.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Language Arts
Grade Level: 9-12
Duration: 2 hours
Required Ozobot Version: bit evo
Support: jagonzalez@fcisd.net

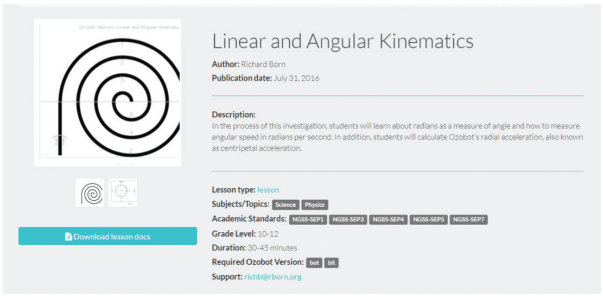
Future Burger

Author: Laryna Yakolev
Publication date: March 7, 2017

Description:
You are a production engineer at Future Burger, a chain hamburger restaurant that prides itself on innovation and speed. You came up with the great idea of using robots to prepare the burgers of the future. In order to test out the robots in one of the stores, you need to provide the store with a layout of the hamburger production line.

Download lesson docs

Lesson type: activity
Subjects/Topics: Engineering Computer Science
Grade Level: 9-12
Duration: 2 hours
Required Ozobot Version: bit evo
Support: lmakolmy@ustate.edu



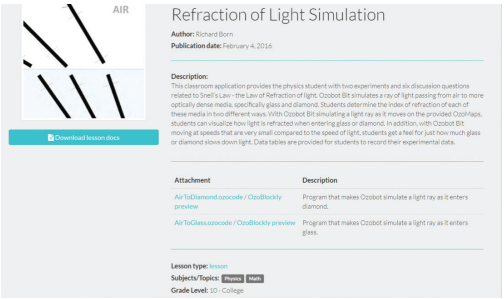
Linear and Angular Kinematics

Author: Richard Born
Publication date: July 31, 2016

Description:
In the process of this investigation, students will learn about radians as a measure of angle and how to measure angular speed in radians per second. In addition, students will calculate Ozobot's radial acceleration, also known as centripetal acceleration.

Download lesson docs

Lesson type: lesson
Subjects/Topics: Science Physics
Academic Standards: NGSS-SEP1 NGSS-SEP3 NGSS-SEP4 NGSS-SEP5 NGSS-SEP7
Grade Level: 10-12
Duration: 30-45 minutes
Required Ozobot Version: bit bit
Support: richb@rborn.org



Refraction of Light Simulation

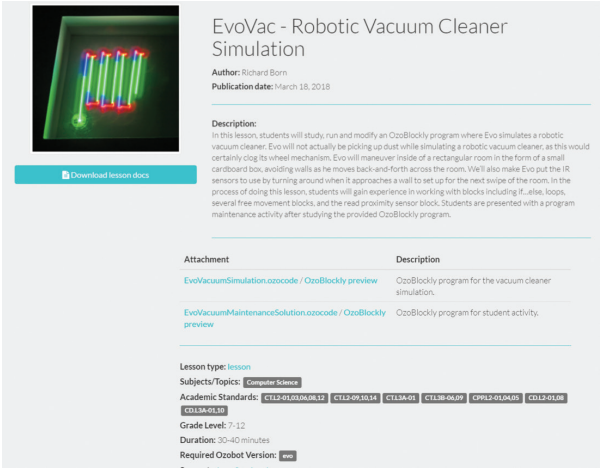
Author: Richard Born
Publication date: February 4, 2016

Description:
This classroom application provides the physics student with two experiments and six discussion questions related to Snell's Law - the Law of Refraction of light. Ozobot Bit simulates a ray of light passing from air to more optically dense media, specifically glass and diamond. Students determine the index of refraction of each of these media in two different ways. With Ozobot Bit simulating a light ray as it moves on the provided OzoMaps, students can visualize how light is refracted when entering glass or diamond. In addition, with Ozobot Bit moving at speeds that are very small compared to the speed of light, students get a feel for just how much glass or diamond slows down light. Data tables are provided for students to record their experimental data.

Download lesson docs

Attachment	Description
AirToDiamond.ozocode / OzoBlockly preview	Program that makes Ozobot simulate a light ray as it enters diamond.
AirToGlass.ozocode / OzoBlockly preview	Program that makes Ozobot simulate a light ray as it enters glass.

Lesson type: lesson
Subjects/Topics: Physics Math
Grade Level: 10 - College



EvoVac - Robotic Vacuum Cleaner Simulation

Author: Richard Born
Publication date: March 18, 2018

Description:
In this lesson, students will study, run and modify an OzoBlockly program where Evo simulates a robotic vacuum cleaner. Evo will not actually be picking up dust while simulating a robotic vacuum cleaner, as this would certainly clog its wheel mechanism. Evo will maneuver inside of a rectangular room in the form of a small cardboard box, avoiding walls as he moves back-and-forth across the room. We'll also make Evo put the IR sensors to use by turning around when it approaches a wall to set up for the next swipe of the room. In the process of doing this lesson, students will gain experience in working with blocks including if...else, loops, several free movement blocks, and the read proximity sensor block. Students are presented with a program maintenance activity after studying the provided OzoBlockly program.

Download lesson docs

Attachment	Description
EvoVacuumSimulation.ozocode / OzoBlockly preview	OzoBlockly program for the vacuum cleaner simulation.
EvoVacuumMaintenanceSolution.ozocode / OzoBlockly preview	OzoBlockly program for student activity.

Lesson type: lesson
Subjects/Topics: Computer Science
Academic Standards: CT.L2-01,03,04,08,12 CT.L2-09,10,14 CT.L3A-01 CT.L3B-06,09 CPP.L2-01,04,05 CD.L2-01,08 CD.L3A-01,10
Grade Level: 7-12
Duration: 30-40 minutes
Required Ozobot Version: evo

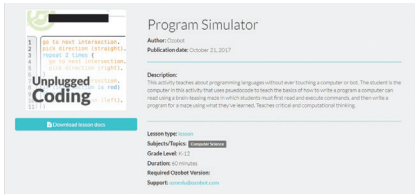
Creative Prompts:

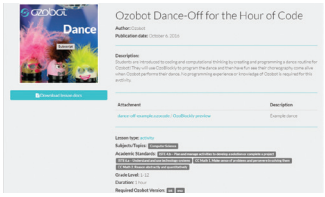
Self-driving Cars Create 3D-printed Accessories Ozobot Amusement Park

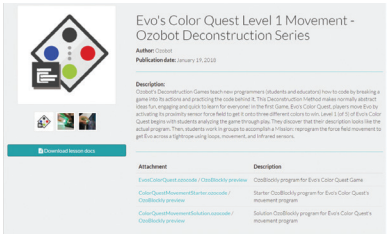
Link: ozo.bot/lessons-steam-9-12

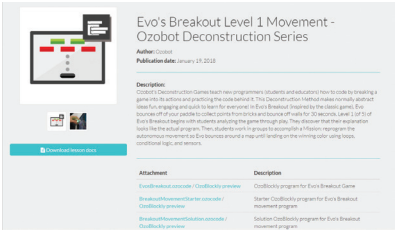
RECOMMENDED **CODING** AND **COMPUTER SCIENCE** LESSONS

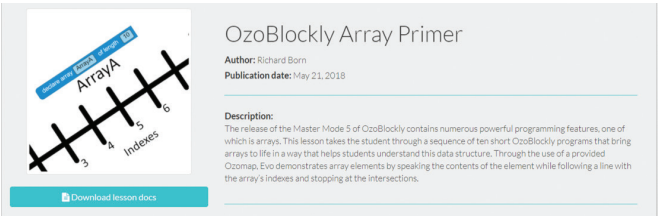
Practice coding and learn computer science

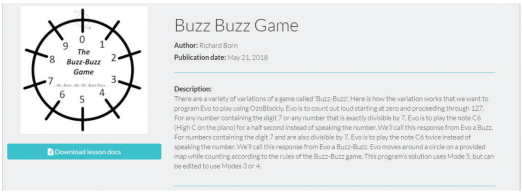


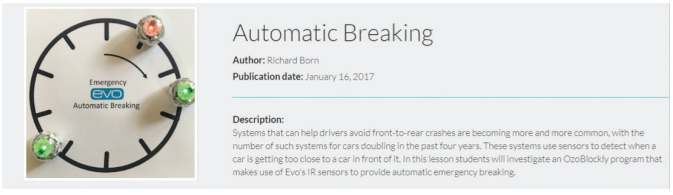


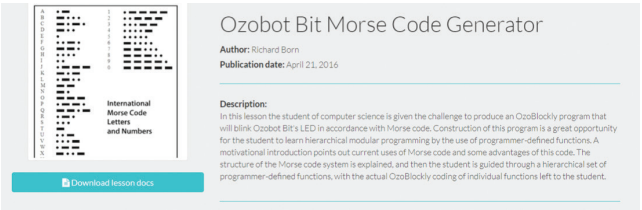












Link: ozo.bot/lessons-computer-science