



## Classroom Kit Teacher's Guide

Congratulations on bringing Ozobot into your classroom. This Teacher's Guide outlines everything you need to get started; no programming or robotics experience required!

### Introduction to Ozobot

Ozobot is a small, programmable robot that reads and responds to colors on both paper and digital surfaces. Your students will benefit from a hands-on education in robotics and programming while having fun and engaging with a variety of other subjects—from STEM/STREAM applications to history and art lessons.

Ozobot teaches K-12 students with a curriculum ranging from introductory to advanced programming. Elementary school students can start with visual color codes on a tablet using our free apps, or with markers on paper. Those same students and their older peers can also use OzoBlockly, Ozobot's web application and block-based programming language, on a computer or tablet to program Ozobot's behavior.

Ozobot's small size is a huge advantage in the classroom. Ozobot is portable and most lessons and activities can be executed within a student's desktop space. Your class can work in groups of 2-4 students per Ozobot, gathering around the robot, lesson plan and an optional tablet or computer.





### **Ozobot Bit or Evo, What's the Difference?**

Ozobots Bit and Evo are smart STEAM/STREAM robots that can be controlled with both color commands and block-based programs. As a result, they empower aspiring artists as much as future engineers, and every type of learner in between. There are some key differences between Evo and Bit, so use the breakdown below to decide which Ozobot is right for your students.

With Ozobot Bit, students start by controlling Bit with color commands. Then, they take full control of Bit's behavior with OzoBlockly, Ozobot's block-based programming language. OzoBlockly lessons guide students through introductory to advanced programming, including loops, variables, and functions. Bit is ideal for students in K-8.

Ozobot Evo does everything Bit can do, and more. Evo reads lines and color codes, can be programmed with OzoBlockly, and also responds to remote control commands. Evo has optical sensors, like Bit, but also has proximity sensors that allow it to detect obstacles like a child's hand. Other Evo features include additional LED lights and expressive sounds.

All of these features are programmable within OzoBlockly, making Evo a more advanced learning tool, ideal for students in grades 6-12.

## Teacher Support and Professional Development

We want to support you with information, materials and webinars to get you started with Ozobot. Moreover, our lessons and activities will keep your students engaged and learning. Please take a look at the following resources.

### **Ozobot Lesson Library**

Our lesson library ([ozobot.com/stem-education/stem-lessons](https://ozobot.com/stem-education/stem-lessons)) has a wide variety of lessons and activities to keep your students learning and engaged over time. You will find curricula for grades K-12 on a range of topics, from computer science, programming and math to art and history. New lessons are added monthly. Sign up at [ozobot.com/stem-education](https://ozobot.com/stem-education) for updates about new lessons as well as classroom contests and webinars. All lessons and activities are created by Ozobot curriculum experts and your fellow teachers. If you have a great Ozobot lesson idea, please send it to [ozoedu@ozobot.com](mailto:ozoedu@ozobot.com)!

### **Contests & Events**

Visit our Events page ([ozobot.com/stem-education/education-contests-and-events](https://ozobot.com/stem-education/education-contests-and-events)) to stay up-to-date about conferences Ozobot is attending and current contests. Contests give your students opportunities to win cool Ozobot prizes while advancing their programming skills.

### **Webinars & PD**

Our monthly webinars cover many different Ozobot topics. View and register for upcoming webinars on the Webinars & PD page [ozobot.com/stem-education/webinars-and-professional-development](https://ozobot.com/stem-education/webinars-and-professional-development). You can also watch past webinars on this page.

### **Classroom Kit Materials**

Need extra copies of the Ozobot classroom kit activity? Or more tip sheets? Visit the Classroom Kit page ([ozobot.com/stem-education/stem-classroom-kit](https://ozobot.com/stem-education/stem-classroom-kit)) to download and print kit materials.

## Getting Started

Try the following resources to get you and your students started with Ozobot.

- 1. Getting Started page** ([ozobot.com/stem-education/education-getting-started](https://ozobot.com/stem-education/education-getting-started))  
 Visit the Getting Started page to download help documents, many of which came with your Classroom Kit, including "Ozobot Tips", the "OzoCodes Reference" chart and the "OzoBlockly Getting Started" sheet.
- 2. Lesson Library** ([portal.ozobot.com/lessons](https://portal.ozobot.com/lessons))  
 Browse the library, beginning with the Basic Training Courses. The Ozobot Basic Training ([portal.ozobot.com/lessons/compilation/ozobot-basic-training](https://portal.ozobot.com/lessons/compilation/ozobot-basic-training)) will teach students how to program Ozobot with OzoCodes, markers and paper. OzoBlockly Basic Training ([portal.ozobot.com/lessons/compilation/ozoblockly-basic-training](https://portal.ozobot.com/lessons/compilation/ozoblockly-basic-training)) helps students program Ozobot Bit and Evo with OzoBlockly and go through the OzoBlockly Games ([games.ozoblockly.com](https://games.ozoblockly.com)). For Evo, there are Evo basic trainings.
- 3. Webinars & PD** ([ozobot.com/stem-education/webinars-and-professional-development](https://ozobot.com/stem-education/webinars-and-professional-development)).  
 Browse our webinar recordings, which walk you through all the resources available to get started. Webinars also highlight specific lessons you may want to use in your classroom.
- 4. Ozobot Basics**  
 Read the "Ozobot Basics" section at the end of this guide and check out our YouTube channel for tons of "How To" videos: <https://www.youtube.com/user/OZOBOT>.

## Classroom Checklist

Everything you need to teach an Ozobot lesson.



### Ozobot Bit or Evo

Make sure your Ozobots are fully charged before each lesson. You have a multi-port charger in your Classroom Kit. Place your Ozobots back in their container for protection when not in use.



## Tablets or Computers

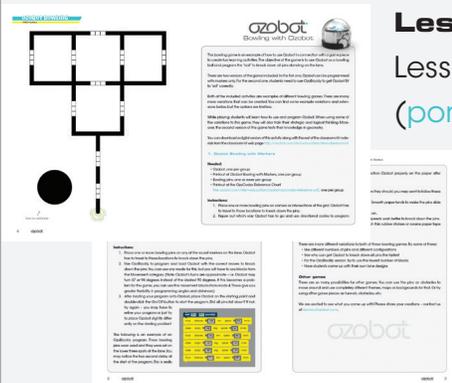
Certain lessons require tablets or computers. For these lessons, we recommend that you have as many tablets or computers as Ozobot available. Students can work in groups of up to 4 students per Ozobot/screen.



## Applications

To program with OzoBlockly, students will use the web-based OzoBlockly editor ([ozoblockly.com/editor](http://ozoblockly.com/editor)) on any computer or tablet. While other browsers also work, we recommend using Chrome. There is a great introductory video available to show your students. It can be found on the main OzoBlockly site

[ozoblockly.com](http://ozoblockly.com). Students can practice programming with the OzoBlockly Games ([games.ozoblockly.com](http://games.ozoblockly.com)). There are also the apps "Ozobot" and "OzoGroove" available for many iOS and android devices.



## Lesson Plan

Lesson plans come in PDF format and can be downloaded for free ([portal.ozobot.com/lessons](http://portal.ozobot.com/lessons)). Some lessons come with an OzoBlockly program that is either an example of a solution or is needed during the lesson in the classroom. The program can be found under "Attachments" on the individual lesson pages.

## Markers



Many lessons require black, red, light blue and light green markers. We recommend using Ozobot markers to ensure that your bot reads the colors reliably. Ozobot markers come in the Classroom Kit, or can be ordered by contacting [ozoedu@ozobot.com](mailto:ozoedu@ozobot.com). You can also use Sharpie wide chisel tips (in pastel colors for blue and green) or Crayola classic markers. One set of markers per group of students is sufficient. If you are using permanent markers, place an extra sheet of paper underneath to avoid marks on the table surface. Please note that Ozobot markers should only be used when drawing lines and OzoCodes. If the markers are used to color in pictures and images then the ink will not last as long.



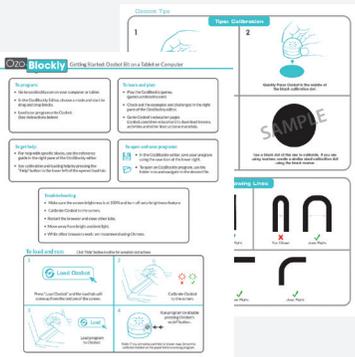
### Code Reference Chart

Have an “OzoCodes Reference” chart available for students to use whenever they are working with color codes. The chart is included in your kit and can be downloaded at [files.ozobot.com/stem-education/ozobot-ozocodes-reference.pdf](https://files.ozobot.com/stem-education/ozobot-ozocodes-reference.pdf).



### Skins

Your Classroom Kit comes with two types of skins, including customized skins (already placed on the Ozobots inside the carrying case) and clear DIY skins (packaged separately within the kit). Do not try to place DIY skins over customized skins. DIY skins allow students to customize the Ozobot and are used in some lessons to create characters for a specific setting. Extra DIY skins can be ordered by contacting [ozoedu@ozobot.com](mailto:ozoedu@ozobot.com).



### Help and Tips Sheets

We have several downloadable help and tips sheets on the Getting Started page ([ozobot.com/stem-education/education-getting-started](https://ozobot.com/stem-education/education-getting-started)). You'll find tips on calibration, color codes and OzoBlockly. Sample tip sheets come with your Classroom Kit.



### Log Sheet

Use a Log Sheet to track your Ozobots. Record which students have checked out and returned their Ozobots. Log Sheets are available for download from the Getting Started page ([files.ozobot.com/stem-education/ozobot-log-sheet.pdf](https://files.ozobot.com/stem-education/ozobot-log-sheet.pdf)) and a sample also comes with your kit.

### Help

If you have questions about how Ozobot Bit or Evo works, watch the series of “How To” videos on our YouTube channel: [youtube.com/user/OZOBOT](https://youtube.com/user/OZOBOT). You can also visit the FAQ section of our website: [ozobot.com/faq/](https://ozobot.com/faq/).

Our team is always happy to help. Please contact us with questions, feedback or lesson plan suggestions at [ozoedu@ozobot.com](mailto:ozoedu@ozobot.com).

## Ozobot Basics

### Power Button

Turn Ozobot on and off by pressing the large button on its side.

### Protecting your Ozobot

Ozobot's skins provide added protection during use. While not in use, Ozobots should be placed in their carrying case or container.

### Calibration

Calibration is extremely important! Why? Because Ozobot's infrared sensors (also known as its "eyes") are highly sensitive to surrounding light. As a result, changing paper or moving closer to a window affects Ozobot's ability to follow lines and read color codes. Calibration orients Ozobot to the surrounding light and surface. You and/or your students should calibrate Ozobot every time you begin playing, when light conditions change and whenever you change your playing surface. There are two calibration methods—one for paper and one for digital screens. Refer to the "Ozobot Calibration Tips" sheet at [files.ozobot.com/stem-education/ozobot-calibration-tips.pdf](https://files.ozobot.com/stem-education/ozobot-calibration-tips.pdf) for detailed instructions.

### Screen Brightness

When using a tablet or computer, set the screen brightness to 100% (maximum brightness) to ensure Ozobot's optimal functionality. Make sure tablets are not set to auto-dim. Remember to calibrate whenever screen brightness or external light conditions change.

### Cleaning Ozobot

Dust or grease can get into Ozobot Bit's drivetrain and affect its movement. To clean Bit's drivetrain and wheels, take a clean white sheet of paper and drag Ozobot gently back and forth on the paper. Ozobot Evo is build differently and does not need to be cleaned.

### Charge the Battery

Ozobot motor is fueled by a tiny battery. If Ozobot blinks red, then the battery needs to be charged as soon as possible. Plug the mini USB charging cable into a computer or multi-port charger and plug Ozobot into the other end. Ozobot blinks green when it is partially charged, and shows a solid green light when fully charged.

You are now ready to start playing, teaching and learning. Enjoy!



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