About Parrot

Founded in 1994 by Henri Seydoux, Parrot creates, develops and markets advanced technology wireless products for consumers and professionals, from automotive to drones.

Headquartered in Paris, Parrot currently employs more than 900 people worldwide and generates the majority of its sales overseas.

With the incredible growth in the drone industry, Parrot is positioning itself for continued leadership in the market.

Parrot is investing more than $300M to help accelerate its development and consolidate its leadership position in the drone market. Parrot is recruiting top talent in order to develop new innovations, streamline the product-to-market process, and provide unmatched personal customer support.
Welcome To Parrot Education!

A few years ago no one imagined that ‘Drones 101’ would be listed as a course on the books. Now drone programs are springing up in schools, community colleges, and universities across the globe, offering students a whole new perspective on learning. Similarly, researchers are taking to the skies for data collection, analysis, and publication, improving the resolution, frequency and ease of how the Earth is studied.

Parrot launched this education program with two core goals: (1) encourage students, educators, and researchers to learn, teach, and innovate using drones; and (2) help prepare a new generation for the commercial UAV industry.

PROGRAM BENEFITS

Parrot Education supports both accredited academic and non-profit institutions to enable the adoption of drones. Resources available to our edu partners include:

- Educational discounts
- Multi-drone teaching bundles
- Software applications
- Curriculum partners for instructional resources
- Educational news
- Sponsorships
- Industry insight and advice
Meet Bebop 2

Bebop 2 combines aerodynamics, style and durability in a lightweight, compact drone. This is the first drone in the 500g category with a 25 minute battery life. Designed to fly both indoors and outdoors, Bebop 2 has many applications.

Bebop 2 is capable of flying in a range of conditions. It combines high flight performance and excellent stability, both at altitude and facing powerful winds. The stability of the Bebop Drone 2 is ensured by the simultaneous use of seven sensors.

Why Parrot?

Product line
Parrot offers the most diverse lineup of products for the academic setting. From primary to PhD, we have the hardware you need. We also have a range of software offerings and access to partnerships with other companies, including a SDK for development.

Experience
Parrot is not an untested drone start-up. We’ve been in the consumer electronic business for several decades. You can be confident that we can and will continue to support your drone program with hardware and customer service for years to come. This can’t be said for other drone companies.
Disco

Are you looking for a fixed wing?

We are really excited about Disco, our affordable, off-the-shelf plane that we’re launching soon. Disco will have the same software interface and camera as the Bebop 2, will work with the same Parrot Skycontroller, and will be an ideal complementary vehicle to multi-rotor study.

We expect Disco will be a real game changer in drone education.

Minidrones

Parrot minidrones are ultra-compact and easy-to-pilot vehicles you control with your smartphone or tablet via Bluetooth. These are affordable options that are great for all ages!

Airborne Cargo weighs 1.9 ounces and boasts superior flight stability because of its 3-axis gyroscope and accelerometer. It flips forward or backward and makes agile turns on a dime. It’s designed for safety, so you can fly it indoors or outdoors thanks to its propeller circuit breaker which automatically shuts things down in case of a collision.

Jumping Sumo is a responsive bot with a strong personality which rolls, rushes, zig-zags, circles, takes turns at 90°. In a flash, it leaps up to 80 cm in height. With its embedded camera, it plunges you into the heart of the action!
Educational divisions

We’ve created four general educational categories that correspond with different age groups, hardware/software solutions, and our growing curriculum partnerships. (Note that these divisions are informal and your interests likely cut across some or all of them.)

For K - 12

Flying robots: Few things get young students more excited about learning.

Perhaps you’re a public school teacher or work for a STEM organization. Maybe you’re worried about the safety factor of the drones on the market. Or maybe you have a smaller budget for your program and don’t know where to start. Parrot Education is here to assist you with personal resources and documentation about where to begin and how to continue.
K-12 Products

For younger ages, have a look at the following affordable and safe options, such as Airborne Cargo for a flying vehicle and Jumping Sumo for the ground. For high school and college-level classrooms, consider the Bebop 2. It has fully autonomous capabilities, an open source autopilot option, holds up to wind in outdoor flight, and allows for teaching photography, cinema, mapping, and advanced programming.

We offer a range of software options that easily pair with your phone or tablet (iOS, Android).

**Free Flight** - Super intuitive; features rich software that gives you real time flight information, allows for acrobatic maneuvers, and in-flight camera controls for both photo and video capture.

**Flight Plan** - An in-app purchase within Free Flight that helps students explore more about autonomous mission planning, such as flying through waypoints or around points of interest. This is what autonomous flight is all about!

**Tynker** - Uses block coding as a simple interface accessible enough for early elementary students, but is extensible enough to challenge middle school students and beyond. Programs can be written and tested in the app and then directly uploaded to the Parrot minidrone, where things get really exciting!

**Tickle** - Another great free coding app that enables students to create programs to control Parrot minidrones. So much fun!
K-12 Activities

Example Activity: Minidrone Obstacle Course

Create an obstacle course using a set of constraints and then program your drone to complete the course.

Supplies: Parrot minidrone, iPhone, iPad or Android Tablet with Bluetooth 4.0, objects to use for obstacles (boxes, books, bottles, tables, chairs)

Let’s create a obstacle course for your minidrone to navigate. Your obstacle course should have each of these elements:

- Two objects that your drone must go around
- An object to jump or fly over
- An area to jump across (if you have a jumping or racing drone)
- Either a wall to push through or a bridge to go under
Henri Seydoux was watching his kids spending hours playing video games, immersed in these virtual worlds, mostly indoors and with very little actual movement. He had the idea to create gaming that might encourage them to get engaged with the outside world using the very devices that had captured so much of their focus: their smartphones. And so, the consumer drone industry was born.

Bebop 2 meets all of the requirements for the ideal off-the-shelf educational vehicle:

- Affordable
- High safety factor
- Survives minor crashes and repairable
- Compatible with mobile devices (Android or iOS)
- Flown manually with Parrot Skycontroller
- Indoor flight (sonar/optical stabilization)
- Outdoor flight (GPS stabilization)
- Long flight duration (25 min battery)
- Stabilized camera for video and photography
- Geotagging for mapping applications
- Autonomous mission planning
- SDK for custom programming and development
What kind of software options are available for colleges?

The major opportunities in the drone industry, in our opinion, will be in software development and data capture and management as it relates to mapping, monitoring, construction, videography, and inspection.

The best advice we can give you in preparing students for the workforce is that drones are essentially flying smart phones. And just like apps are more valuable than the phone they are on, the data that drones collect will be much more valuable to commercial users than the drones are themselves. Focus students on the software and the data at least as much as (if not more than) the drone hardware.

For Bebop 2, minidrones, and soon Disco, we have an open SDK for app development (see the Developers section for more detail). Freeflight, Tynker, and Tickle all use this SDK. You can also load open source software like ROS or Ardupilot on Bebop 2. Together, this creates endless opportunities for drone software development courses.

Bebop 2 is also supported by the Pix4D Capture App. Pix4D is the global leader in photogrammetry. With this simple app, students can begin to understand the power of aerial mapping, geospatial data analysis, and time series change detection.

Turn Bebop 2 into a professional mapping tool. With it, you can easily define flight missions around your area of interest, as well as customize your altitude, image overlap, and camera angle for optimal results. After your mission, just transfer the project from your phone to computer, either directly from the drone or via Pix4D Cloud.
Developers

For software developers (academic or otherwise), the Parrot SDK provides a set of tools so you can develop on our drones. The SDK is free, comes with full documentation, and provides the foundation you need for your drone programming class or after-school club.

The Parrot SDK will help you connect, pilot, receive, stream, save and download media (photo and video), send and play flight plans, and update your drone.

Go to developer.parrot.com for more information.

APM or Ardupilot: a full-featured, open-source UAV controller that was created by a team of developers from around the globe. The Aurdupilot team has created instructions and documentation for Bebop 2. (Note that making the changes described will void your warranty and technical support will not help you recover your original software).

ROS (Robot Operating System): An open-source operating system for robots, including drones like Bebop 2. Their Bebop_autonomy is a driver based on Parrot's official ARDroneSDK3.

Dronecode: The Dronecode Project is an open source, collaborative project that brings together existing and future open source drone projects under a nonprofit structure governed by The Linux Foundation. The result will be a common, shared open source platform for UAVs.

Parrot joined The Dronecode project in 2015.
Field Researchers

Almost overnight drones have significantly improved our ability to collect high-resolution geospatial data at repeated time intervals. They have eliminated the need (at least at smaller spatial scales) for costly over-flights by manned aircraft and multiplied the efficiency of traditional observation conducted on foot.

From archeological digs of ancient temples to zoological expeditions in the far reaches of the globe, we are seeing drone technology transform field research. Parrot Education is excited to support faculty, postdocs, graduate students, technicians, and undergraduate field assistants in all of their efforts.
What research hardware does Parrot offer?

**Sensefly eBee**

Parrot is the parent company of Sensefly, the creator of eBee. The eBee is an ultra-light vehicle (just 700 g or 1.5 lb) that leads the professional industry in ease of use. eBee has a simple and intuitive mission planning software (eMotion). To launch the drone, you just shake it to start the motors and throw the vehicle into the air. eBee automatically captures the images you need and lands itself.

You can also swap out payloads for RGB, thermal, or even multispectral sensors with the new Parrot Sequoia.

Go to www.sensefly.com for more details.

**Parrot Sequoia**

Sequoia is the smallest, lightest multispectral sensor ever released. In just one flight the Sequoia captures images across four defined, visible and non-visible spectral bands, plus RGB imagery. Sequoia is immediately compatible with senseFly’s eBee Integration Kit. It can also fit on just about any other drone using a standard GoPro-size mount.
Sequoia comes with an external irradiance sensor. During flight, the sensor will continuously sense and record the light conditions in the same spectral bands as the multispectral sensor. The light data allows correction for differences in light conditions over time.

The irradiance sensor also has a built-in GPS, allowing you to trigger the camera by time (intervalometer) or by distance flown.

NDVI (Normalized Difference Vegetation Index) correlates with plant health or productivity throughout the growth cycle in many plant species. It’s calculated as the ratio of the NIR - Visible bands / NIR + Visible bands. NDVI is one of many plant indices, but probably the most common.
Pix4D

In addition to hardware, it’s crucial you think about photogrammetric stitching in your research. Your data are only as good as the engine that stitches them.

At Parrot Education, we find that Pix4D is the most powerful photogrammetric engine in the world. The software provides fantastic measurement tools at your fingertips and the ability to export standard data files to other GIS platforms.

Pix4D offers considerable discounts off their full professional licenses for education, as well as offers a 25-seat classroom license.

https://pix4d.com/education
Drone technology changes so quickly, shouldn’t I wait?

If your goal is to prepare your students for an emerging industry, then know you are not alone. More schools are adopting drone technology every day, some with substantial funding from grants and forward-thinking administrators.

The longer you wait for the dust to settle in drone technology, which all indications suggest won’t happen soon, the further behind you will be. Our advice is to start with a basic platform like Parrot minidrones or the Bebop 2 and begin to understand what the technology is capable of today.

Then, plan to pivot. You know the technology is changing quickly, so create a plan to adapt over time as new vehicles come out with new sensors and software.

How do I keep up with such a rapidly moving industry?

The best thing you can do is partner with those of us firmly embedded in the space. We will let you know how to stay a step ahead. Let us follow the industry for you and keep you posted while you focus on instruction and innovation in the classroom or field.
Why go with a single drone company for courses?

We hear from folks who are excited to introduce students to all the different drones on the market. Certainly you can do this, but it’s expensive and not scalable for an entire program.

For an introductory computer class, instructors typically don’t buy every Mac, PC, Linux, Rasperry Pi, desktop, laptop, mobile, etc...to teach with. Similarly, photography teachers often recommend one camera as a standard learning platform.

Drones are both flying computers and cameras. Keep in mind, they also need accessories (controllers, batteries, propellers, cases, charging cables). They have evolving software that needs to be updated occasionally. If your budget goes to all the different drones, with different interfaces, accessories, and capabilities, then you will spend a lot of course time managing your hardware and software and not on drone applications.

We recommend you ensure you have enough vehicles of a single, affordable platform, like Bebop 2, before you start purchasing a range of other drones for comparison learning. Start simple and build from there.
Teaching Bundles

We have created convenient hardware bundles for your classroom that include multiple drones, batteries, propellers, and other accessories. Everything you need to get started (aside from a phone or tablet).

Teaching bundles are also meant to smooth educational purchasing logistics, as discounts are already built into the pricing and you are only buying a single item, instead of many. For up-to-date bundles, please reach out to Parrot Education at edu.parrot.com.