The sky's the limit

Level: Intermediate +

Time: 90 minutes +

Summary: This lesson is about drones and their current and potential uses, especially in the field of logistics and goods delivery. In this lesson, students:
1. share what they already know about drones;
2. study a text about the potential uses of drones;
3. take part in an information exchange;
4. discuss their views on the use of drones;
5. watch an ad for Amazon's drone service.

Materials: One copy of the worksheet per student; one information exchange text per student

Group size: Any

Note: This lesson plan is for both pre-experience and in-work business students based on an original article first published in *Business Spotlight* issue 2/2016. This is a shortened version.

Warmer

This short task introduces the topic and encourages students to talk about what they already know about drones.

Key words

Students read the definitions and scan the article to find the key words. The paragraph numbers are given to help them. Higher level groups could try to work out the answers from the definitions before scanning the article to check their answers. If they need extra clues, you could provide the first letter of each word, the number of letters and the number of syllables.

Key:
1. bureaucrats
2. technocratic
3. surveillance
4. payloads
5. scenarios

6. serious players
7. cargo
8. initiative
9. consortium
10. infrastructure
11. ubiquitous
12. foresaw

Find the information

Before reading the article at their own pace, students quickly scan the article to find the information.

Key:
1. Spectre, Star Trek, Back to the Future
2. Google (Project Wing service), Amazon (Prime Air service), Alibaba, Deutsche Post (DHL service)
3. Red Line; in Switzerland
4. Lord Norman Foster

Understanding the article

First, get the students to discuss and answer the questions in pairs or small groups. After they have done this, they can check their answers by scanning or reading the article again.

Key:
1. logistics, especially parcel delivery services
2. because, as there is a lack of roads and good transport systems and Africa does not have the money needed to improve its infrastructure, drones could soon take over the delivery of parcels and packages
3. ten kilos
4. medicine, blood, batteries and other essential goods
5. He says that "the sum total of all these droneports in Africa will be bigger than the biggest airport in the world" (Beijing, China, which Norman Foster designed).

Information exchange

Give one information exchange text to each student. The students read the text they are given and answer the questions that apply to that text. When they have done this, put them in groups with students who read the other texts. They then exchange information on their texts so that all the students know the answers to all the questions in task 5.

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Key:

Text 1: Dronestagram is a platform for photographs and videos taken by drones. It has more than 30,000 users worldwide.; Some people are scared of drones because they don't know a lot about them and they just repeat what they hear from other people or the media.

Text 2: Politicians on both sides of the Atlantic want to have drones registered to stop people from misusing them.; Geofencing is location-tracking technology that could stop drones from getting too close to buildings or planes.

Text 3: Drones for Good is an international competition, sponsored by the government of the United Arab Emirates, to encourage the positive use of drone technology.; Gimball is a search-and-rescue drone that can safely fly close to people, which makes it particularly useful for rescue operations in dangerous areas.

Discussion

Students discuss the questions relating to the article.

Webquest

Students watch the advertisement for Amazon's Prime Air and discuss what they see. This task can be set for homework and discussed at the start of the next lesson.

Vocabulary record

Here, students should be encouraged to record all of the new and useful vocabulary they have learnt during the lesson, not only in the form presented in the article but also in related forms.

Related topics on onestopenglish

The following set of onestopenglish news lessons also deals with the topic of technology revolutionizing the transportation industry. Among other developments, it discusses the advent of driverless cars.

www.onestopenglish.com/skills/news-lessons/monthly-topical-news-lessons/monthly-news-lesson-still-no-flying-cars-the-future-promises-something-better/554949.article

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1 Warmer

Complete the sentence. Then, compare your sentences.

A drone is ... _____

_____

_____

_____

2 Key words

Read the definitions and find the key words in the article.

1. people who are employed to help run an office or government department, who may have too much power and care too much about rules and systems _____ (para 1)
2. used to describe someone who is a technical expert _____ (para 1)
3. the process of carefully watching a person or place that may be involved in a criminal activity _____ (para 1)
4. the amounts that aircraft or other flying machines are able to carry _____ (para 4)
5. situations that could possibly happen _____ (para 7)
6. important and leading companies in an industry _____ (two words, para 7)
7. things that are being sent by ship, plane, train or lorry _____ (para 8)
8. an important action that is intended to solve a problem _____ (para 8)
9. a group of companies or people with similar interests or aims who have agreed to work together _____ (para 8)
10. the set of systems within a place or organization that affect how well it operates, for example the telephone and transport systems in a country _____ (para 11)
11. present everywhere _____ (para 12)
12. knew something that would happen in the future _____ (para 13)

3 Find the information

Scan the article to find the information.

1. Which films and TV series are mentioned in the article?

    _____

2. Which four companies (and which of their departments) are mentioned to provide examples of the potential uses of drones?

    _____

    _____

3. What is the name of the consortium that manages Afrotech and where are they based?

    _____

4. What is the name of the architect who has been asked to design droneports?

    _____

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by Eamonn Fitzgerald

Drones are no longer science fiction. The military are already using them. And the military are not the only ones to realize the truth behind the old saying "all good things come from above" – logistics companies also plan to use drones. Eamonn Fitzgerald reports.

1 The latest James Bond film, *Spectre*, begins spectacularly on a sunny afternoon in Mexico City. The action continues in a series of dramatic scenes but when 007 returns to rainy London, he finds out that he no longer has a job. The bureaucrats have decided that from now on, drones will do Bond's secret-agent work. "007 is prehistoric," says C, his technocratic young boss, who wants to create a global surveillance network using algorithms and drones.

2 Sometimes, it is hard to tell the difference between the worlds of fact and film when drones are involved but one thing is certain: we are going to hear a lot more about drones in the near future.

3 Four examples: Google says its drone service, Project Wing, will start delivering to consumers in 2017. Amazon says its Prime Air service will deliver goods to customers within 30 minutes of an order being placed. Alibaba has tested drone delivery near its offices in Shanghai and Guangzhou. Deutsche Post's DHL service has explored the logistics of package delivery using drones.

4 So what exactly are drones? Simply put, they are unmanned aircraft that use technologies such as avionics and GPS. Drones can carry payloads from A to B and monitor almost anything anywhere with their cameras and sensors. Do you need to check if an oil pipeline is damaged? There's a drone for that. Drones can fly into storms and study hurricane formation. They are used for aerial inspection of crops and bridges, and they can take high-resolution photos of animals for wildlife research.

5 Drones are managed by operators using platforms that combine hardware and software; a user can upload the details of a "mission" with an ordinary smartphone, press start and the drone takes off. If it all sounds like science fiction, we should remember that for most people a decade ago, a smartphone was as futuristic as the communicator device used by Captain Kirk in *Star Trek*; a decade from now, the following scenario will not be science fiction.

6 A friend visits you for dinner. After she goes home, you find her handbag on the sofa and want to give it back to her. Problem: her home is 60 kilometres away. Solution: you put the handbag into a box and place it on the balcony of your flat. You then order a drone by phone. It arrives five minutes later, picks up the box and flies to the drone landing pad outside your friend's home, where it leaves it and sends her a text message that the handbag has arrived.

7 Those who smile at such scenarios should consider the moment in the 1985 film *Back to the Future* when Dr Emmett Brown turns to Marty McFly and says, "Roads? Where we're going, we don't need roads." It is a famously optimistic statement about the potential of technology and it could yet happen that the lack of roads in the developing world will help establish Europe and Africa as serious players in the drone industry.

8 Africa does not have modern roads so some kind of alternative transportation network is needed, according to J M Ledgard. He believes that it will be in the sky and that Africa will be the first continent to develop a drone cargo service on a large scale. Ledgard was born on the Shetland Islands in Scotland and has spent the last decade as the Africa correspondent for *The Economist* magazine. He is also the director of Afrotech, an advanced technologies initiative at the École Polytechnique Fédérale de Lausanne in Switzerland. Thanks to the work of Afrotech, the world's first commercial cargo drone route will begin operating in 2016, says Ledgard. "We plan to be on the ground in Rwanda in the autumn with experimental fixed-wing airframes that will be able to fly 100 kilometres safely and rapidly," he told *Business Spotlight*. The project is being managed by Red Line, a Swiss consortium of entrepreneurs, programmers, lawyers and designers who are working on the logistics and on a simple legal code for using the technology.

9 Speaking about that technology, Ledgard says: "The brains of our Red Line cargo drones will cost less than $30. We believe it is possible to bring in an airframe at production at less than $600. These should be able to fly cargo weighing ten kilos over 100 kilometres." Those ten kilos will consist of medicine, blood, batteries and other essential goods.

10 Red Line asked the star British architect Lord Norman Foster to design "droneports" for their drones. Ledgard said, "Look, Norman, you've built the biggest airport

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in the world in Beijing; now, could you build the smallest?" Foster agreed to do the work, making it the very first project of the Norman Foster Foundation. "The strange thing is that in ten years' time, the sum total of all these droneports in Africa will be bigger than the biggest airport in the world," Foster says now.

11 J M Ledgard says that Africa's population will double to 2.2 billion before 2050. "The continent has only half of the $93 billion it needs to spend each year on infrastructure," he adds.

12 "At the same time, smartphones will be ubiquitous – so there is a massive opportunity for cargo drones in the middle mile – droneport to droneport, town to town – to extend sharing by moving goods around more cheaply, rapidly and accurately than any other available transport system," Ledgard comments.

13 "The empires of the future are the empires of the mind," said Winston Churchill in 1943 during a speech at Harvard University. Churchill foresaw an era of ideas and innovation, and a world in which those who look at the sky and dream would one day build roads in the air.

Eamonn Fitzgerald writes daily at www.eamonn.com. *He uses social media to build relationships for organizations.*

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4 **Understanding the article**

Answer the questions without looking back at the article, if possible.

1. Which field of business is already testing drones and plans to use them in the near future?

   _____

   _____

2. Why is it likely that Africa will be a 'serious player' when it comes to using drones?

   _____

   _____

3. What weight does Red Line say a $600 drone will be able to carry over 100km?

   _____

   _____

4. What is likely to be in packages transported by drones in Rwanda?

   _____

   _____

5. What does Lord Norman Foster say about droneports in Africa ten years from now?

   _____

   _____

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5 Information exchange

Read the text you are given. Answer the questions that apply to your text. Then, talk to other students to get the answers to the remaining questions.

Text 1
What is Dronestagram? How many users does it have? Why are some people scared of drones?

_____

_____

_____

Text 2
Who wants drones to be registered and why? What is geofencing? Why is it necessary?

_____

_____

_____

Text 3
What is Drones for Good? What is Gimball and what could it be used for?

_____

_____

_____

6 Discussion

- **What other things – good or bad – might drones be used for?**

- **What dangerous or annoying scenarios might occur if drones are not regulated?**

- **Would you consider buying or using a drone? Why? Why not?**

7 Webquest

Watch and discuss the two-minute ad for Amazon Prime Air.
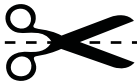
youtu.be/MXo_d6tNWuY

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Text 1: New perspectives in photography

Based in Lyons, France, Dronestagram is a platform for photographs and videos taken by drones. Eric Dupin, the founder, says that despite the military and surveillance controversies associated with drones, they offer photographers exciting new opportunities. "Some people are scared of these flying machines because they don't know a lot about them and they just repeat what they hear from other people or the media," Dupin told CNN. "But most people I know and meet are fascinated by drones – particularly if they see a demo of what we can do in terms of photography." Dronestagram has more than 30,000 users worldwide. www.dronestagr.am

Text 2: Geofencing

Drone technology has reached a tipping point and it is possible that 2016 will be for drones what 2007, the year of the iPhone, was for smartphones. From Berlin to Boston, drone makers are opening their platforms to developers, while multinational companies are exploring ways to make money from what are, fundamentally, flying computers. All this is very exciting but how can drones be integrated safely into national and international airspace? Politicians on both sides of the Atlantic want to have drones registered to stop people from misusing them. The drone industry, however, would prefer to use location-tracking technology, called geofencing, which could stop drones from getting too close to buildings or planes.

Text 3: Drones for Good

Drones for Good is an international competition, sponsored by the government of the United Arab Emirates, to encourage the positive use of drone technology. The first competition, with more than 800 entries from 57 countries, was won in 2015 by the Swiss company Flyability. Flyability took home the $1 million prize for Gimball, a search-and-rescue drone that can safely fly close to people, which makes it particularly useful for rescue operations in dangerous areas. CEO Patrick Thévoz said the prize money was "game-changing" for his company. www.dronesforgood.ae

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Vocabulary record: The sky's the limit

verb	noun	adjective	adverb
operate			
	lack		
		experimental	
			rapidly