

Vail School District
7th Grade
Benchmark 1
Informational

DIRECTIONS: Read the information and writing prompt below. Then use scratch paper for your prewriting/planning and your draft.

**Prompt: What are the pros and cons of drone use in American society?
Write an expository essay to your community in response to this question.**

Your essay should include:

- an introduction, body, and conclusion
- an explanation of your reasons with supporting details from the text
- content and selected details that are appropriate to audience

Remember to edit for spelling, grammar, punctuation, and capitalization.

**Drones can scout disaster areas or fight fires, safely and cheaply
By CQ Roll Call, adapted by Newsela staff
10-21-14**

Imagine a major earthquake has struck San Francisco, devastating the city and doing millions of dollars worth of damage. In order to begin rebuilding, people need money to help pay to repair damaged houses and cars.

This money usually comes from insurance companies, which help people deal with disasters. However, sometimes the places with the most damage can be hard for insurance workers to travel to.

Drones may help insurance workers get the information they need quicker. They might also help people get back on their feet faster.

Drones are vehicles that fly through the air without a pilot. They are small airplanes and helicopters that fly by remote control. Drones have been in the news the last few years because the U.S. military has been using drones to drop bombs on targets overseas.

Today, many different types of companies hope to use drones. In coming years, drones will be used by businesses for many new purposes.

"Imagination Is The Boundary"

"Imagination is the boundary of what we'll see in the future with drones," said Rachel Stohl, an expert on drones who works at a Washington, D.C., think tank.

The Federal Aviation Administration (FAA) is in charge of what can fly over the United States — it controls U.S. airspace. For years, it has only allowed drones for police and research groups.

Right now, it's illegal to use a drone commercially — for business — without an FAA permit. The FAA has given out almost no permits to businesses that want to use drones.

In general, regular people can use drones on their own property or someone else's property with permission, but those rules vary from state to state.

Safety And Licensing

Drones are not allowed in U.S. airspace, which means they must be kept below a certain altitude, and that they cannot go into certain areas.

In 2012, Congress gave the FAA three years to make a plan for drones to be included in the national airspace system. The FAA has been looking at drone safety. Last month, it allowed six filmmaking companies to use unmanned aircraft.

The FAA's plan is due by September 2015, although the Transportation Department says the FAA is significantly behind and may miss the deadline.

Traditional aircraft — airplanes and helicopters with pilots — come in standard shapes and sizes. They are used for common jobs. Drones, on the other hand, can be almost any size. No one is sure what they will be used for. The sky is the limit.

Eager To Experiment

"[The FAA] is having a really hard time understanding the technology," said Mary Louise Cummings, a professor at Duke University.

The FAA might not understand drones completely, but many different companies are eager to experiment with the technology.

Drones can be smaller and cheaper than traditional aircraft. They are perfect for situations that may be too dangerous for a pilot.

In rugged terrain, such as rocky mountains, drones can be useful, Stohl said. They are also helpful when ground conditions are dangerous, such as during a volcano eruption or tsunami. They can also be used for search-and-rescue operations and to fight fires, she added.

Masters Of Disasters

The USAA, a large insurance company, has used drones to take aerial photography after a disaster. However, the company will still use traditional aircraft as well, said Kathleen Swain of USAA. Drones will replace work that is now done on foot, she said.

"The delays we face are getting to the site after a catastrophe," Swain said. "Obviously, because of the damage, it's hard to get boots on the ground. This is more economical, it's more efficient, it's cheaper."

The insurance company has been working with the FAA on drone permissions since 2010. It's not alone.

"We've been talking about all these possible applications for years," Cummings said.

Drones could be used in agriculture, entertainment, surveying, wildlife conservation and mining. They could help to monitor the safety of infrastructure such as bridges and tunnels. All these industries have a need for high-quality aerial photos for relatively little money, Cummings said.

Bird's-Eye View

“Anywhere where you think you need to see something from high up, it's going to be not only cheaper but safer,” Cummings said.

The Association for Unmanned Vehicle Systems International is a lobbying group that is working to change laws to make it simpler for companies to use drones. It has made a list of industries that are using drones or considering using them.

Large oil companies such as Conoco and Shell want to use drones to search for oil off Alaska's coast. The PGA wants to use drones to film golf events, while the Washington Nationals baseball team used a small helicopter-style drone to take publicity pictures. The FAA later stopped the team, because it lacked a permit.

Clemson University uses a drone to take overhead video of its football practices and marching band formations. Fresno State's football program has a drone hang behind its quarterback during drills.

“The vantage point you get being just behind the quarterback, but still raised, I think is really helping our guys have bigger vision down the field,” coach Tim DeRuyter said.

“We've had cameras right behind the quarterback, but it does limit the vision. So having that drone up about 10 feet above their heads” gives them a unique view, said DeRuyter.

More people are buying drones for fun, but they need to think of safety too

By The Record, adapted by Newsela staff

12-15-14

HACKENSACK, N.J. — Long used by the military for secret missions, drones are now cheap enough for the average person. These remote-controlled flying machines are one of the hot presents this holiday season.

The DJI Phantom 2 Vision is a drone with four propellers and a high-definition camera. USA Today recently called this drone, which sells for \$1,200, a top holiday gift for 2014.

Want a drone for less than \$100? No problem. Radioshack is selling the Surveyor Drone for just \$60. The Surveyor is red, it shoots videos and it's easy to fly. Rob Powley of Mahwah, New Jersey, has so many drones that he forgets exactly how many. He bought some already built and built others himself.

Low-Cost Fun, Simple Cameras

“I bought them because they're cool,” Powley said. “It's amazing what you can do with a drone. And they're getting better all the time.”

For years, drones were mostly used by the military to gather information or drop bombs.

Now, drones are available to almost anyone. They offer low-cost fun and easy-to-use cameras. But more drones in the skies also bring problems for airplane pilots, tourists in national parks and even pedestrians.

Drones increasingly face concerns over safety and privacy. There are calls for more regulation of drones by states and the federal government. The fun gift you get under the tree this year may face many tight new rules in the future.

The laws surrounding drones vary by state and local government, said Wells C. Bennett, who studies national security law at the Brookings Institution.

“It’s confusing,” Bennett said. “And a lot of the laws will change over the next couple of years.”

Selling Thousands A Month

Only five years ago, drones were not for sale to the average person, said Mike Blades, who works for a company that does research on the drone business. Since then, sales of drones have skyrocketed.

Blades estimates consumers will spend \$720 million on drones this year. Next year, that will double, amounting to about 200,000 drones sold every month.

Drones are easier to fly than typical radio-controlled planes and helicopters. They have four rotors and advanced microchips to help keep them stable in mid-air. Drones also move differently — they replace an airplane’s smooth dips and arcs with the sharp turns of a robot.

Drones take off vertically, shooting straight up into the sky.

With old-fashioned radio-controlled planes, you need a lot of space, Powley said. But a small quadcopter drone can be flown inside a house. In fact, Powley does fly his drones around his house and office.

“You can fly with first-person video, so it looks like you’re inside it. That’s really cool,” Powley said.

Packed With New Technology

Many military drones were designed for stealth, made to be as quiet as possible. There’s nothing sneaky about most drones for consumers, though.

Drones’ propellers hum at different pitches, creating a noise like a hive of angry bees. If a drone runs out of batteries, it can fall out of the sky like a stone. Cheaper drones may fly for just a minute or two. More expensive models can fly for around 12 minutes.

The biggest difference between radio-controlled planes and drones is cameras. Today, small, light cameras such as GoPros can fly on drones and send photos and video instantly back to smartphones, tablets and computers.

New technologies such as LIDAR cameras work like radar, but using lasers. The cameras can make detailed 3-D models of territory from the sky. They can even spot people through trees, making them useful for military and police.

These technologies are getting lighter and cheaper, Blades said. “They will be be affordable for anyone to buy in the next 10 years,” he said.

Airports Are No-Drone Zones

In the near future, drones will fly higher, farther and faster than anything available to consumers today.

Concerns about the privacy and safety of consumer drones are growing.

The National Park Service has temporarily banned drones on all the land it manages. It received complaints about the small aircraft at Mount Rushmore, the Grand Canyon and Yosemite.

Since July, the Federal Aviation Administration (FAA), which is in charge of the nation's aviation safety, has been receiving 30 complaints a month from pilots who have had close calls with drones, or seen them flying in restricted airspace near airports.

On Sept. 8, for example, the pilots of three different passenger jets reported “a very close call” with a drone at about 1,900 feet as they flew into La Guardia Airport in New York City.

Even a small drone could bring down a jet.

Hey Drone, Leave Me Alone

Others worry that drones could be used to invade people’s privacy.

In September, Russell Percenti of Lower Township, New Jersey, became so angry at his neighbor for flying a drone over his house that he shot the drone down. Percenti was arrested and charged with criminal mischief.

“With small hobbyist drones with high-definition cameras, it’ll be easy enough to peek into your neighbors’ backyard anytime you want to,” said Jeramie Scott of the Electronic Privacy Information Center.

Drone supporters say privacy concerns are exaggerated. A good pair of binoculars is a better spying tool than a drone, which can only fly for a few minutes at a time while making a loud buzzing noise, said Michael Drobac, who works for a business group that represents drone makers.

