

## **EXAMPLE SHORT ARGUMENTATIVE THEME**

**Prompt:** Choose a science topic, and write a short multi-paragraph Argumentative Theme about it, based on your research. Be sure to have at least five paragraphs in your theme. Include in-text citations where needed and a reference list. Use the APA style.

TITLE OF PAPER: Drones: More Like Planes than Kites?

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Drones:

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### Drones: More Like Planes than Kites?

People have begun to wonder whether the owners of toy drones should be required to have a special pilot's license before they use their drones in public spaces. They ask: Are drones more like planes which require a pilot's license to operate or like kites which do not? Not surprisingly, this issue has come to the forefront of public awareness because drones have become so popular and inexpensive. Toy drones with cameras mounted on them can cost as little as \$40 (Amazon, 2016), so a lot of people are buying them. Also, more and more drones are on the market each year. In 2013, only 327 types of drones were on the market; by 2020, 30,000 types of drones are expected to be available (Ranaivo, 2015). In fact, drones own a big piece of the economy. In 2004, the drone industry earned under \$1 billion. By 2024, the drone industry is expected to earn at least \$3 billion (Ranaivo, 2015). Nevertheless, because toy drones are a danger to humans, can be destructive and invasive, and are tricky to fly, people should be licensed to use them and other regulations and restrictions should be followed, as well.

Probably the most important reason that people should have licenses to fly drones is that drones are dangerous to humans. Unexpectedly, even small drones can severely harm people. A drone that weighs only 2.2 pounds has 939 pounds of force if it falls from a height of 400 feet (Sobol, 2015). Indeed, small drones have hurt people. In one case, a woman was hit in the face by a drone, and it severely disfigured her face. In another case, a triathlete, Raija Ogden, was hit in the head by a drone, and several stitches were required to close her resulting cut (Forrest, 2015). Also, drones can crash into a crowd of people. As the people try to dodge the drone, they can fall and injure each other. Finally, researchers at Virginia Tech have shown through simulations that a small drone can bring down an

airplane (Ranaivo, 2015). If a drone were to get caught in a plane engine, the plane could crash and kill all the people on board.

Another important reason why people who own drones should have special pilot's licenses is that drones can be destructive to people's property and privacy. First, drones have been known to crash into houses and buildings and cause damage to them. They can break windows and damage walls and roofs. Moreover, drones have brought down power lines, and the electricity to hundreds of homes has been interrupted. These kinds of damage require expensive repairs and take time. Another thing that can happen is that the batteries in a drone can explode on impact when the drone crashes. This can also cause costly repairs to whatever the drone hits. Further, drones can interfere with fire fighting. Firefighters have reported that they have not been able to use planes to dump water on wild fires because drones have been flying in the area. Wild fires can cause a lot of damage to homes if they get out of control. Finally, drones have been used to invade people's privacy when photographs have been taken of people without their permission. Celebrities are often the targets of paparazzi who use camera drones to earn big paydays when they sell celebrity photos.

The final reason why people should earn licenses to fly drones is that controlling a drone is tricky. First of all, the controls on a drone are complicated. People mistakenly think that because they have operated a remote control car that they can operate a drone safely. They need to be educated about operating a drone. They need to understand the differences between operating a drone in the air versus a toy on the ground. Second, people often underestimate the power of a drone; a drone can rise up in the air faster than they expect. Relatedly, people do not expect the speed of drones, and they do not allow for it. A

drone can move out of sight within a very short period of time, and, if the operator is not familiar with the controls, it can disappear. Finally, a drone can get easily caught in a wind current; the wind can carry the drone away if the operator is not careful and prepared to prevent it. Such “flyaways” have become frequent events (Sobol, 2015).

To conclude, all of these events add up to a host of reasons why people who operate toy drones need to obtain drone licenses. Certainly, in order to get such a license, they would need to become educated about laws and rules related to operating drones and would have to demonstrate their skills. To get skilled, they would need to practice flying their drones with supervision in safe locations like large enclosed spaces or large open empty spaces (like a large field). Although current Federal Aviation Administration (FAA) regulations require people to keep their drones under the 400-foot level and to stay away from airports and stadiums (Ranaivo, 2015), these regulations are not sufficient to prevent most of the dangers to people and to property specified here. In addition, the FAA needs to require the toy drone industry to build certain functions into their drones. For example, toy drones should have a mechanism inside them that limits the height they can attain and that keeps them away from public arenas. The FAA needs to promote public education about drones and the licensing of pilots and should institute serious penalties to people who do not fly their drones safely or who do not obtain licenses. Clearly, because of the damage they can cause to humans and property and the complexities involved in using them, drones are much more like airplanes than toy kites; they need to be respected as such by requiring a license to use them.

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