It is a Fact Man Can’t Fly: The Wright Brothers at Kitty Hawk and Diligence

Full Lesson Plan

COMPELLING QUESTION

How can diligence help you to achieve your goals?

VIRTUE

Diligence

DEFINITION

Diligence is intrinsic energy for completing good work.

LESSON OVERVIEW

In this lesson, students will learn from the example of the Wright brothers about how they can act diligently.

OBJECTIVES

• Students will evaluate the Wright brothers’ diligent actions.
• Students will understand ways in which they can act diligently.
• Students will apply their knowledge of diligence to their own lives.

BACKGROUND

The late nineteenth and early twentieth centuries were a time of great innovation and invention in America. Some of the most famous inventors were Thomas Alva Edison, Alexander Graham Bell, and Henry Ford, who all helped modernize American industry and life. They also sparked revolutions in communication, business, industry, and travel.

Wilbur and Orville Wright of Dayton, Ohio, were two mechanically-inclined individuals who enjoyed tinkering and owned a printing press and a bicycle shop. Inspired by the belief that humans could fly, they diligently pursued the invention of powered human flight. They were not the only ones. French-born Octave Chanute built a bi-plane glider and had discussions about powered flight with the Wright brothers. The head of the Smithsonian Institution, Samuel Pierpoint Langley, received a $50,000 grant from the War Department, but his airplanes flopped into the water when they were launched from barges on the Potomac River.

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BACKGROUND
Due to intensive study and a persevering attitude, the Wright Brothers solved the problems and were the first humans to fly an airplane.

VOCABULARY
- Tinkering
- Bi-plane
- Prostrate
- Typhoid
- Zeppelins
- Naysayers
- Pessimistically
- Zeal
- Voraciously
- Exhilarated

INTRODUCE TEXT
Have students read the background and narrative, keeping the Compelling Question in mind as they read. Then have them answer the remaining questions below.

WALK-IN-THE-SHOES QUESTIONS
- As you read, imagine you are the protagonist.
  - What challenges are you facing?
  - What fears or concerns might you have?
  - What may prevent you from acting in the way you ought?

OBSERVATION QUESTIONS
- Who were Orville and Wilbur Wright?
- What was the Wright brothers’ purpose? Why was it significant?
- Why did the Wright brothers work so diligently to become the first people to fly?

DISCUSSION QUESTIONS
Discuss the following questions with your students.
- What is the historical context of the narrative?
- What historical circumstances presented a challenge to the protagonist?
- How and why did the individual exhibit a moral and/or civic virtue in facing and overcoming the challenge?
- How did the exercise of the virtue benefit civil society?
- How might exercise of the virtue benefit the protagonist?
- What might the exercise of the virtue cost the protagonist?
- Would you react the same under similar circumstances? Why or why not?
- How can you act similarly in your own life? What obstacles must you overcome in order to do so?
ADDITIONAL RESOURCES

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printing press and now a bicycle shop and were highly skilled mechanics. They did not have the
advantages of great wealth or a college education, but their father had instilled in them good
work habits and perseverance. As they would later write, the books they read filled them with
“unquenchable enthusiasm and transformed idle curiosity into the active zeal of workers.” They
had a dream, and the dedication and discipline to achieve it.

The Wright brothers diligently studied birds and read voraciously about flight. As a result of all
of this intense study, they built a glider that would fly and allow them to acquire vast knowledge
about the mechanics necessary to fly. They were patient and diligent while they followed the
necessary series of steps toward powered flight.

The Wright brothers found a suitable location to test out their glider flights in Kitty Hawk,
North Carolina because that site had the right combination of steady, strong winds and soft
sand dunes on which to land with less threat of bodily injury. On October 19, 1900, after several
unmanned flights with a kite, Wilbur climbed aboard a glider and flew it during a clear, sunny
day. He was exhilarated to feel the rush of wind as he flew nearly 30 miles per hour for up to
400 feet. While they were there, they continued to study different birds and how they flew.
Armed with this knowledge, they made changes to the glider during the winter and returned to
Kitty Hawk the following summer.

The summer of 1901 was very successful in acquiring mounds of new data and constantly
taking test flights and tinkering more on the design. They faced countless challenges that were
overcome with constant diligence, hard work, study, and debate. The brothers certainly had
their share of doubts that they would be successful. During one low moment, Wilbur lamented
that “not in a thousand years would man ever fly.” However, they encouraged each other and
confidently returned home to continue their work. Orville stated that “there was some spirit
that carried us through.” During that winter, they built a homemade wind tunnel and continued
to re-design the glider based upon their practical discoveries in Kitty Hawk and theoretical
experiments in Dayton.

During the fall of 1902, they returned to their sparse shack and camp at Kitty Hawk, where the
brothers worked day and night. During one sleepless night, Orville lay awake thinking and came
up with the idea for a movable rear rudder for better control. They used his idea and achieved
even greater success with the glider flights with the modifications. They knew they were finally
ready for a motor and might achieve the impossible dream of humans flying through the air in
what would become an airplane.

The Wright brothers spent hundreds of hours testing motors, developing propellers, and
finding solutions to problems. Orville admitted, “Our minds became so obsessed with it that
we could do little other work.” In December 1903, they reached Kitty Hawk and unpacked their
powered glider for reassembly at their camp.

On December 17, five curious locals braved the freezing cold and came out to watch Orville and
Wilbur Wright as they prepared their flying machine. They turned away as sand blasted into
their eyes from the nearly gale force winds. Wilbur set up their camera on its wooden tripod a
short distance from the plane. Dressed in a suit, tie, and dress shoes, Orville climbed aboard
the bottom wing of the bi-plane and strapped himself in while the motor was warming up. At precisely 10:35 a.m., Orville launched down the short track while Wilbur ran besides, helping to steady the plane. Suddenly, the plane lifted into the air, and Orville became the first person to pilot a machine that flew under its own power. He flew about 120 feet for nearly twelve seconds. It was a humble yet historic flight. When Orville was later asked if he was scared, he joked, “Scared? There wasn’t time.” A half hour later, after they readied it for another flight, Wilbur joined his brother in history by flying “like a bird” for approximately 175 feet. They flew farther and farther that day, and Wilbur went nearly half a mile in 59 seconds. They sent their father a telegram sharing the news of their success, and as he read it, he turned to their sister and said, “Well, they’ve made a flight.”

One witness of the Wright Brothers’ first flight noted what made them successful. “It wasn’t luck that made them fly; it was hard work and common sense; they put their whole heart and soul and all their energy into an idea, and they had faith.” President William Howard Taft also praised the diligence of the Wright Brothers in working hard to achieve their dream. “You made this discovery,” he told them at an award ceremony “by keeping your noses right at the job until you had accomplished what you had determined to do.”