

# An Innovation Journey



## Collaborate

Orville, Wilbur and their sister Katharine lived, played and worked together.



## Stay Curious

Their father bought them a rubber-band-powered flying toy, which stimulated their first interest in flying machines.



## Define / Challenge the Rules / Take Risks

The Wrights recognized that successful flight required three things: wings for lift, an engine for propulsion and – the key problem – a way to control flight.

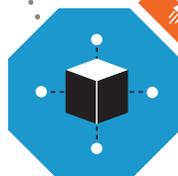


## Design / Take Risks

In 1896, the world leader in glider flight died when his glider plunged to the ground. This reawakened the Wrights' interest in aviation, so they searched local libraries for anything related to aeronautics and even penned a letter to the Smithsonian requesting information about "mechanical and human flight."

## Stay Curious

Observing birds in flight led to their breakthrough moment when Wilbur twisted a bicycle inner-tube box and discovered "wing warping," the key concept to controlling flight.



## Design / Take Risks

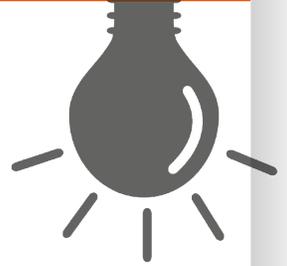
In 1900, they tested their glider at Kitty Hawk, but the wings failed to produce enough lift.

Chart out the rest of the Wright brothers' journey at [thehenryford.org/explore/storiesof-innovation/what-if/wright-brothers/](http://thehenryford.org/explore/storiesof-innovation/what-if/wright-brothers/)

# Activity 4: Innovation Journey

**Driving Question:** Can we identify the Actions and Habits used to solve problems?

**Learning Objective:** Identify Actions and Habits within an innovation journey, and explain how they lead to a solution for a problem. The Wright brothers' innovation journey is the foundation for this activity. Students will see that the Wright brothers' journey to solving the problem of human flight started in their youth and required a great deal of learning and persistence. The hands-on component gets students to analyze an innovation experience of their choosing and illustrate it as a journey.



(Note: The following story on the Wright brothers produced by The Henry Ford was used to develop the innovation journey. Refer to it if you would like more context: "[What If Bicycles Held the Secret to Human Flight?](#)")

## Supplies:

- Sheets of paper
- Markers in different colors
- Optional: Computer/tablet access for creating journeys with digital apps

## Process:

Go over the Wright brothers' innovation journey. Reiterate that innovation journeys can go in many directions and can take place over different time frames. A journey can apply to a specific project, such as the paper aircraft activity, or a lifetime of discovery and practice. Furthermore, Habits and Actions can be linked, but they can also stand alone.

Then, have students map out an innovation journey of their choosing, either with markers and paper or by using digital presentation apps like Microsoft PowerPoint or Keynote. You can give them one or both of the following options:

- Create an innovation journey based on a time they solved or overcame a problem.
- Represent the innovation journey of someone they know who solved or overcame a problem. This person does not have to be famous but can be.

Once the journeys are done, get students to do the following:

- Present what they created.
- Explain how the Actions and Habits in their journey led to a solution.
- Share ideas on how they can continue to use the Actions and practice the Habits.



Despite any formal training in physics or engineering, Wilbur and Orville Wright brought an utterly original and successful approach to the problem of human flight.



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