AMERICA 250

SILICON VALLEY

Silicon Valley and Creative Risk
Lesson Length: 45 Minutes
Grade Levels: Recommended for high school grades, though elementary and middle school teachers may be able to incorporate concepts from this lesson plan into their teaching

Overview

In this lesson, students examine how Silicon Valley emerged as a global center of innovation, beginning with Hewlett and Packard's garage start-up in 1939. Students analyze how geography, universities, government contracts, and venture capital combined to create a distinctive ecosystem for entrepreneurship. They evaluate how creative risk shaped technological development and consider how innovation carries both opportunity and responsibility.

Objectives

Students will:

- Analyze how geography, universities, institutions, and federal policy contributed to Silicon Valley's growth.
- Evaluate how creative risk influenced technological innovation and entrepreneurial decisions.
- Explain how government investment and private capital interact in regional economic development.
- Evaluate a primary source within its historical and economic context.
- Apply the concept of creative risk to personal and civic decision-making.

Historical Background

In 1939, Stanford University graduates William Hewlett and David Packard began part-time operations in a small one-car garage behind a house at 367 Addison Avenue in Palo Alto, California. Their early work on electronic test equipment, including audio oscillators, helped launch what later became Hewlett-Packard. The site was eventually designated a California Historical Landmark known as the "Birthplace of Silicon Valley."

Stanford engineering dean Frederick Terman encouraged students and colleagues to start companies locally rather than leave California. He promoted collaboration between the university and nearby firms, helping create a network of research, talent, and industry. As a result, a cluster of technology companies founded by Stanford graduates grew up in what was then largely agricultural Santa Clara Valley.

During and after World War II, defense and space contracts provided early markets for microwave electronics, radar, and other emerging technologies. Stanford and local firms received substantial military research funding. The development of the silicon transistor and later integrated circuits in the 1950s and 1960s made smaller, faster, and more affordable electronics possible, laying the technological foundation for personal computing.

By the 1970s and 1980s, specialized venture capital firms began financing high-risk start-ups in exchange for ownership shares. Unlike traditional bank loans, venture capital succeeds only if a company grows significantly. Investors accept that many ventures will fail in order to support breakthrough successes. Companies such as Apple, Intel, and later Google and Facebook emerged from this ecosystem, often starting in garages, rented offices, or dorm rooms before scaling globally. Silicon Valley's growth reflected institutional support, calculated risk, collaboration, and rapid scaling rather than accident.

Primary Source

Adapted from Hewlett-Packard historical materials:

"In 1939, Bill Hewlett and David Packard began part-time operations out of a one-car garage at 367 Addison Avenue in Palo Alto, later designated a California Historical Landmark known as the 'Birthplace of Silicon Valley.'"

Teacher Note: This description is adapted from HP corporate heritage publications and California historical documentation. It offers an opportunity to discuss how institutions frame and preserve their own origin stories.

AMERICA 250

SILICON VALLEY

Lesson Flow (45 Minutes)

Warm-Up (5 minutes)

Prompt: "Would you rather take a stable job or start a risky company with uncertain income? Why?"

Historical Context (10 minutes)

Teacher presentation covering:

- HP garage origins at 367 Addison Avenue
- Stanford's role and Frederick Terman's support for local entrepreneurship
- Defense and Cold War research funding
- Semiconductor breakthroughs (transistor and integrated circuits)
- Venture capital model in the 1970s–1980s
- Expansion into computing and internet technologies

Students note key terms: ecosystem, research and development, venture capital, risk.

Primary Source Analysis (10 minutes)

Students examine the HP garage description and, if possible, a photo or landmark plaque. They identify:

- Why this location matters historically
- What the image of a modest garage symbolizes
- Who produced the description and how institutional memory may shape it
- How symbolism differs from the economic realities of building a successful company

Small Group Discussion (10 minutes)

Groups discuss:

- What separates creative risk from recklessness
- When innovation may create unintended consequences
- One example of a "good risk" and one example of a "reckless risk"

Whole-Class Discussion (10 minutes)

Discussion focuses on:

- Ecosystems of innovation
- Risk and reward—who bears risks and who gains benefits
- Government and private sector interaction
- Responsibility in scalable technology
- Long-term economic and social change driven by innovation

Keep discussion principle-centered and historically grounded while allowing thoughtful comparison to modern contexts.

Guiding Questions

Walk-In-The-Shoes

You are William Hewlett in 1939.

- What pressures might push you toward a stable job instead of starting a small company in a rented garage?
- Who might doubt your decision, and why?
- How do you weigh financial security against long-term opportunity and the chance to build something new?

You are a venture capitalist in the 1970s.

- Why would you invest in companies that might fail?
- What level of risk is reasonable when investing other people's money?
- How many failures might you accept in order to support one breakthrough success?

Observation

- What role did Stanford University and leaders like Frederick Terman play in Silicon Valley's development?
- How did Cold War defense and space contracts influence early technology firms in the region?
- What is venture capital, and how does it differ from traditional bank lending?
- Why do so many Silicon Valley stories begin in garages or dorm rooms? What do these spaces symbolize?

Discussion

- How does geography—proximity to a major university, research labs, and government buyers—influence economic growth?
- Is some degree of failure necessary for innovation? Why or why not?
- Who benefits most from technological breakthroughs—founders, investors, workers, consumers, or communities—and does this change over time?
- How does government investment in research differ from government control of private companies, and why might that distinction matter?
- What responsibilities do innovators have when their products reshape society—for example, communication, privacy, or work?
- What calculated risks are appropriate at your stage of life, and which would be reckless?

Research Base and Source Documentation

HP Garage and Early History

- HP Museum, "The Garage" - https://www.hpmuseum.org/garage/garage.htm
- Palo Alto Heritage, 367 Addison Avenue - https://www.pastheritage.org/inv/invA/Addison/Addison367.html
- HP Corporate History Publication - https://www.hp.com/hpinfo/abouthp/histnfacts/publications/garage/garage_2010-06.pdf
- California Historical Resources Listing - https://ohp.parks.ca.gov/ListedResources/Detail/976

Frederick Terman and Stanford

- Berkeley iSchool paper on Terman - https://people.ischool.berkeley.edu/~anno/Papers/terman.html
- Engineering & Technology History Wiki, Frederick Terman - https://ethw.org/Frederick_Terman

Defense Funding and R&D

- Heinrich paper (FIU) - https://faculty.fiu.edu/~revellk/pad2011/heinrich.pdf
- Working Capital Review, Pentagon and Innovation - https://workingcapitalreview.com/2015/03/how-the-pentagon-has-shaped-innovation/
- National Academies, R&D and Innovation - https://www.nationalacademies.org/read/18364/chapter/17

Critical Perspectives

- Responsible Statecraft, Silicon Valley - https://responsiblestatecraft.org/silicon-valley/