

Who Hires Math Majors? The Top 10 Employers


$$k = 2 \left\{ n \cdot \frac{\sum_{i=1}^n x_i \cdot \sigma^2(x_i)}{\sigma^2(x)} \right\} + 2 \left\{ n \cdot \frac{\sum_{i=1}^n x_i^2}{2 \sigma^2(x) [n \cdot p(x_i, x_i)]} \right\}$$
$$= 2 \left\{ n \cdot \frac{n}{n \cdot p(x_i, x_i)} \right\}$$
$$= 2 \left\{ \frac{n \cdot p(x_i, x_i)}{n \cdot p(x_i, x_i)} \right\} = 2 \cdot p(x_i, x_i)$$
$$\sigma^2(x) = \sigma^2 \left(\sum_{i=1}^n x_i \right)$$
$$= \sum_{i=1}^n \sigma^2(x_i) + \sum_{i=1}^n \sum_{j=1}^n (x_i \cdot x_j) =$$
$$= \sum_{i=1}^n \sigma^2(x_i) + \sum_{i=1}^n \sum_{j=1}^n p(x_i, x_j) = \sigma^2(x)$$

Math majors develop analytical proficiencies, knowledge of math theory and practical applications, and problem-solving skills that are highly valued by public and private companies in every industry, including finance, computer and data science, and biotechnology. And according to the National Association of Colleges and Employers 2005 salary survey, math majors make an average of almost 40 percent more than English, history, sociology, and psychology majors.

For ideas about how to channel your math degree into a fulfilling and lucrative career, check out this list of 10 large and growing U.S.-based companies that employ math majors.

1. **State Farm Insurance:** An industry-leading insurance and financial services provider for decades, the Illinois-based State Farm Insurance employs more than 60,000 people in 343 claim offices and 30 operations centers, and many of their employees have a background in math, including the bulk of actuaries. Actuaries evaluate and forecast financial risk, and they are widely employed by insurance companies to navigate property, life, health, and casualty insurance premiums as well as credit and investment profiles. State Farm has been on a hiring binge over the past year, filling positions that sat vacant during the recession and adding new positions in its Bloomington headquarters and across the country. For job opportunities at State Farm, check out their [Careers](#) site.
2. **Qualcomm:** Qualcomm is a wireless technology company headquartered in California, with more than 150 offices scattered worldwide. Technology companies like Qualcomm hire math majors for a number of positions, including advanced display technicians, information technology specialists, and engineers. Last year the company hired dozens of new software engineers, but the company is on the rise and will continue to hire new employees, particularly engineers. For more information, check out the [Qualcomm Careers](#) site.
3. **Boeing:** Engineering involves a great deal of math, and the engineers at Boeing are adept at studying and developing models that are highly math-based, such as calculated models of air flow across the surface of aircraft wings and astronomical trajectories. An employer of more than 170,000 people worldwide, Boeing hires math majors for positions in its Chicago headquarters as well as California, Washington, and a number of other locations. Check out the [Boeing Careers](#) site for more information.
4. **Google:** Named the [#1 U.S. company to work for](#) by Fortune Magazine in 2013 (and three times previously), Google is rife with opportunities for math majors. In 2012, Google went on a hiring binge for software engineers, but the company is also one of the leading employers of programmers and data scientists, ie the analysts who mine data and then innovate ways to add value to the business. Based in California, Google is notorious for its employee-friendly mission, culture, and perks like a sports complex (bocce, basketball, and horseshoe, oh my!), massages, and free food that makes your high school cafeteria look like...well, a high school cafeteria. Check out the job openings in 70 offices spread over 40 countries (with headquarters in California) on the [Google Careers](#) site.
5. **U.S. Government:** Government agencies like the Central Intelligence Agency and the National Security Agency, as well as law enforcement at every level, are a major employer of math majors as cryptographers and cryptanalysts, who

- specialize in making and breaking codes and encryptions. Math majors versed in number theory, programming, and computer science are in particularly high demand. In addition, the U.S. government employs mathematicians as engineers, accountants, statisticians, research analysts, and technicians in every department (including Defense positions in the Army, Navy, and Air Force) and every state in the union. For job opportunities in the U.S. government, check out USAjobs.gov.
6. **Intel:** Computer companies like Intel are big employers of math majors, shaping them into engineers, computer programmers, software developers, information technology designers, and network technicians. These jobs address fundamental issues in the creation of mathematical algorithms, making them perfectly designed for math majors in addition to being highly lucrative thanks to their exclusive nature and specific skill set. Headquartered in California, Intel is the world's leading producer of microprocessing chips, which are found in a large number of computers sold around the world. For job opportunities, check out the Intel Careers site.
 7. **Edward Jones:** One of the rare investment firms that survived the recession with few layoffs, Missouri-based Edward Jones has a healthy 11,000 offices around the country and a 24-hour "We're Open" sign on the recruitment door. Commission-based jobs like financial advising are not for everyone; they require an entrepreneurial attitude and a long-term commitment to building your client base through extensive personal and professional networking. But the earning potential is unlimited, and with a huge amount of the population beginning to take retirement planning more seriously, financial advising is one of the fastest-growing occupations and a great option for math majors interested in finance. Check out current job openings at the Edward Jones Careers site.
 8. **McKinsey & Company:** One of the leading employers of business analysts, McKinsey specializes in management consulting, meaning that companies hire them to come in, assess how the company is managing its employees, time, and resources, and make changes that increase profitability, capability, and efficiency. Strong candidates are able to gather and analyze data, conduct research, work with a team, and understand the implications of change. According to the *Economist*, "McKinsey has seen more of its alumni go on to be chief executives of other companies than any other firm." Check out the McKinsey Careers site for more information.
 9. **Boston Consulting Group:** The smallest major company on this list, Boston Consulting is the second-best company to work for in the U.S. according to Fortune Magazine. Each consultant is tirelessly recruited, and the starting salary is more than \$130,000 – which is a pretty fantastic income, even in high-expense Boston. The company has been hiring and growing rapidly in all practice areas of its consulting business. For practice cases and information on how to apply for a job at the Boston Consulting Group, check out the BCG Careers site.
 10. **Genentech:** Math majors interested in research should consider a career in biotechnology, the discovery and manufacturing of medicines. The field on the fast track thanks to the leaps and bounds made possible by technological advances over the past 20 years. One of the largest employers of biotechnicians, California-based Genentech is increasingly hiring more math majors thanks to the mathematical aspects of studying DNA and proteins. For job opportunities at Genentech, check out their Job Search site.