Mathematicians and Statisticians

SOC: 15-2021 • Career Profile Report

■ Key Facts

$104,350	**34,600**	**+8.0%**
Median Salary	Employment	Growth Rate

■ Requirements & Salary Range

Education: Master's degree

■ Automation Risk Assessment

Low Risk - 12.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

■■ Work-Life Balance

7.8/10 - Good work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	7.4/10	Investigative	9.2/10
Artistic	4.6/10	Social	5.4/10
Enterprising	5.6/10	Conventional	6.8/10

■ Top Skills Required

Analytical skills, Communication skills, Logical-thinking skills, Math skills, Problem-solving skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Mathematicians and Statisticians analyze and interpret **data, develop mathematical models, and apply statistical techniques to solve problems in science, business, and government**. They design experiments, evaluate data, and provide insights that inform decision-making and research. Their work is critical in research, finance, healthcare, technology, and policy analysis.

This career is well suited for individuals who enjoy mathematics, data analysis, and problem-solving in applied or theoretical contexts.

What Do Mathematicians and Statisticians Do?

These professionals collect, analyze, and interpret numerical data, develop models, and provide actionable insights.

Common responsibilities include:

- Designing surveys, experiments, or studies to collect data
- Analyzing data using statistical methods and software
- Developing mathematical models to describe or predict phenomena
- Interpreting results and preparing reports for stakeholders
- Collaborating with researchers, scientists, or business analysts
- Applying statistical techniques to decision-making, risk assessment, or forecasting
- Ensuring accuracy, validity, and reproducibility of analyses

Key Areas of Mathematics and Statistics

Mathematicians and statisticians may focus on specific industries, methods, or applications:

- Data Analysis and Statistical Modeling: Identifying patterns, trends, and predictions
- Theoretical Mathematics: Developing new mathematical theories or proofs
- Applied Statistics: Supporting research, business, or policy decisions
- Quality Control and Risk Assessment: Evaluating processes and minimizing errors
- Computational and Analytical Methods: Using software and programming to model complex systems

Skills and Abilities Needed

These professionals combine quantitative, analytical, and problem-solving skills.

Core Professional Skills

Personal Qualities That Matter

Education and Career Pathway

This role typically requires formal education and advanced training:

- Bachelor's Degree (minimum): Mathematics, statistics, or related field
- Master's or Doctoral Degree (common): Advanced studies in mathematics, statistics, or applied fields
- Research or Practical Experience: Internships, assistantships, or applied projects
- Professional Development: Training in computational methods, software, and statistical techniques
- Continuing Education: Staying current with advances in mathematics, statistics, and data science

Where Do Mathematicians and Statisticians Work?

They are employed in organizations that rely on data analysis, research, and quantitative problem-solving:

- Government Agencies and Research Institutions
- Universities and Academic Research
- Financial, Insurance, and Business Firms
- Healthcare and Pharmaceutical Companies

- Technology and Consulting Companies

Work environments include offices, laboratories, research centers, and academic facilities.

Is This Career Difficult?

This career requires advanced mathematical knowledge, analytical thinking, and precision. Professionals must handle complex data, develop models, and provide accurate insights.

Who Should Consider This Career?

This career may be a strong fit if you:

- Enjoy mathematics, statistics, and data analysis
- Have strong analytical and problem-solving skills
- Can work independently or collaboratively on complex problems
- Are detail-oriented and precise
- Want a career contributing to research, policy, or data-driven decision-making

How to Prepare Early

- Take advanced courses in mathematics, statistics, and data analysis
- Participate in research projects, competitions, or internships
- Develop skills in statistical software, programming, and computational tools
- Explore undergraduate and graduate programs in mathematics or statistics
- Gain experience applying mathematical and statistical methods to real-world problems

Mathematicians and statisticians analyze data, develop models, and apply quantitative techniques to solve complex problems, supporting research, decision-making, and innovation across industries.