



Career, Technical & Agricultural Education Program Handbook

APS Career Cluster Pathways



Career, Technical Student Organizations (CTSO's)





APS Mission

With a caring culture of trust and collaboration, every student will graduate ready for college and career.

APS Vision

A high-performing school district where students love to learn, educators inspire, families engage and the community trusts the system.



CTAE Philosophy

Career awareness in elementary school, career visualization in middle school and career preparation in high school are vital components of one's educational career. Atlanta Public Schools, Career, Technical and Agricultural Education (CTAE) program provides the interdisciplinary and technical skills to every student focused on attaining the knowledge and abilities that businesses and industries desire for high-demand, high-skilled, high-wage occupations.

Students who graduate from high school after successfully completing a CTAE "Career Pathway" are equipped for immediate employment, post-secondary education and to be a life-long learning. In essence, students in CTAE are "college and career ready" - prepared to compete in the global marketplace.

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Atlanta Public Schools CTAE Program Overview

CTAE Mission

The mission of CTAE is to prepare students for the 21st century global workplace by providing a sequence of rigorous career courses and real world experiences that build technical and employability skills while exposing students to a variety of career options and industry requirements.

CTAE Vision

All Atlanta Public Schools students will graduate from high school with the fundamental career skills required to succeed in college and to pursue high demand, high paying occupations. CTAE courses, in conjunction with core academics, provide a challenging curriculum to ensure that students graduate from high school ready for post-secondary options without the need for remediation.

CTAE Program Overview

CTAE is a program of study that involves a multiyear sequence of courses that integrates core academic knowledge with technical and occupational knowledge to ensure that students are college and career ready. CTAE programs prepare students for a wide range of careers requiring varying levels of education including high school, technical training, two and four year degrees, and post baccalaureate programs. CTAE courses support the academic program by providing students with opportunities to apply the academic theories and principles to real world learning experiences in a hands-on environment.

CTAE provides a gateway to lifelong learning. Through CTAE programs, students can earn college credit and/or technical certifications while still in high school. These “Credit Now” programs are offered in partnership with local technical schools and colleges. Students successfully completing these programs receive weighted credit similar to Advance Placement (AP) courses.

Rigor

The CTAE Georgia Performance Standards (GPS) separate and identify skills that are needed to problem-solve, make connections, and reason. With the adoption of these rigorous standards, teachers are allowed to create a learning environment in which students can learn, be challenged and perform at higher levels. Rigor in CTAE classrooms engages students in critical thinking, problem solving, self-reflection, peer critique and intense research.

Specific Areas of Focus / Strategic Goals

- Increasing the graduation rate
- Aligning middle and high school curriculum vertically
- Increasing the number of Professional Development workshops that focuses on improving classroom instruction (e.g. Common Core, Depth of Knowledge, Literacy Design Collaborative)
- Increasing the number of pathway completers in all CTAE programs of study
- Increasing the number of students passing the End of Pathway Assessment (EOPA)
- Promoting Career and Technical Student Organizations
- Connecting Higher Education instruction and business partnerships
- Grow the Work-Based Learning/Youth Apprenticeship programs

Nondiscrimination Clause

The Atlanta Public School System does not discriminate on the basis of race, color, religion, sex, citizenship, ethnic or national origin, age, disability, medical status, military status, veteran status, marital status, sexual orientation, gender identity or expression, genetic information, ancestry, or any legally protected status in any of its employment practices, educational programs, services or activities. For additional information about nondiscrimination provisions, please contact the Office of Internal Resolution, 130 Trinity Avenue, S.W. Avenue, Atlanta, Georgia 30303.

Career Clusters/Pathways

What are Career Clusters?

Career Clusters represent a grouping of occupations and industries based on commonalities.

Career clusters can be a powerful tool to organize instruction and career development. Students can start with a broad base of interest as well as knowledge and skills and progress to a more focused area of study. A career cluster represents the knowledge and skills, both academic and technical, that all students within the cluster should achieve regardless of their pathway. Career clusters serve as a tool for connecting academic, technical and employability skills, in conjunction with students' career planning

In its simplest sense, career clusters are just groupings of occupations. Those groupings are based on common knowledge and skills. This is not a new idea but what is new about it, is that it is not only a guidance model, but includes the instructional model as well.

- ✓ The knowledge and skills for each cluster and each pathway have been identified.
- ✓ Knowledge and Skills are specific work tasks performed on the job.
- ✓ They are a large enough task to be valued in and of themselves, and are measurable and observable.

CTAE is changing to meet the needs of our changing workforce.

The clusters provide our students an instructional framework which can help our students meet the demand of the changing workforces. It fits CTAE's mission to help Georgians succeed in the workplace, education and life. Career Clusters help Prepare students for a broad range of career options: employment, technical and postsecondary education, lifelong learning.

APS CTAE Model

- ✓ **Adapted the national career clusters framework**
 - **Offered in our district:**
 - 12 Career Clusters which include 27 Pathways
- ✓ **Adds components unique to Georgia**
 - Career majors
 - Courses
- ✓ **Allows us to become industry-focused, student-centered, and performance-driven**

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/CTAE-Georgia-Career-Clusters.aspx>

High School Career Clusters & Pathways Offered by APS



Career Cluster: Architecture & Construction
Pathway: 1. Carpentry



Career Cluster: Arts, A/V Technology & Communications
Pathway(s): 1. Audio-Video Technology & Film 2. Graphic Communication 3. Graphic Design



Career Cluster: Business Management & Administration
Pathway(s): 1. Business & Technology 2. Entrepreneurship



Career Cluster: Education & Training
Pathway(s): 1. Teaching as a Profession



Career Cluster: Finance
Pathway(s): 1. Business Accounting 2. Financial Services



Career Cluster: Government & Public Administration
Pathway: 1. JROTC - Army



Career Cluster: Health Science
Pathway(s): 1. Biotechnology Research & Development 2. Therapeutic Services-Allied Health & Medicine 3. Therapeutic Services-Emergency Medical Responder 4. Therapeutic Services-Patient Care 5. Therapeutic Services-Public Health 6. Therapeutic Services-Sports Medicine



Career Cluster: Hospitality & Tourism
Pathway(s): 1. Culinary Arts 2. Hospitality, Recreation & Tourism 3. Sports & Entertainment Marketing



Career Cluster: Information Technology
Pathway(s): 1. Web & Digital Design



Career Cluster: Law, Public Safety, Corrections & Security
Pathway(s): 1. Legal Services-Applications of Law



Career Cluster: Marketing
Pathway(s): 1. Fashion, Merchandising & Retail Management 2. Marketing & Management



Career Cluster: Science, Technology, Engineering & Mathematics
Pathway: 1. Engineering & Technology



Career Cluster: Architecture & Construction (A&C)

The Architecture and Construction Career Cluster includes careers in designing, planning, managing, and building structures. Cluster includes careers in designing, planning, managing, building and maintaining the built environment.

Pathway: Carpentry

Construction is one of the nation's largest industries with over 7 million wage and salary jobs and 1.9 million self-employed workers. Construction includes the building of new structures as well as additions and modifications to existing ones. The construction industry also includes maintenance, repair and improvements on these structures. Carpenters construct and repair building frameworks and structures— such as stairways, doorframes, partitions, and rafters—made from wood and other materials. They also may install kitchen cabinets, siding, and drywall.

Because carpenters are involved in many types of construction, from building highways and bridges to installing kitchen cabinets, they may work both indoors and out. The work is sometimes strenuous. Although most carpenters learn their trade through a formal apprenticeship, some learn on the job, starting as a helper.

Pathway Courses:

Course #	High School Course Name
46.54500	Industry Fundamentals and Occupational Safety
46.54600	Introduction to Construction
46.55000	Carpentry I

SAMPLE Pathway OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Carpenters	High School	\$35,700	730
Construction Managers	Associate's Degree	\$78,300	490
Construction Inspectors	High School	\$44,900	80

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Carpenters
- Construction Craft Laborers
- Construction Engineers
- Construction Foremen
- Construction Inspectors
- Construction Managers
- Drywall Installers
- Floor Layers
- Painters
- Paperhangers
- Project Inspectors
- Project Managers
- Roofer

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
		X											

CTSO:



Arts, A/V Technology & Communications



Career Cluster: Arts, A/V Technology & Communications (AAVT&C)

The Arts, A/V Technology, & Communications Career Cluster includes designing, producing, exhibiting, performing, writing, and publishing multimedia content. Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

Pathway: Audio-Video Technology and Film

The broadcasting and digital media industry is comprised of two major employers—radio/television broadcasting companies and movie/television production companies. Approximately 73 percent of employed persons within the industry are in television and radio broadcasting. Jobs within the industry are organized into five major areas: program production (producers, film and video editors, announcers, program directors), news-related (reporters, news analysts, news directors), technical (television/video camera operators, technicians, engineers, network systems administrators), sales (advertising/marketing managers and producers of commercials), and management.

Workers in the industry will need to continually upgrade their skills because of rapidly changing technology. Due to an increase in digital technology, skill in computer networks and software is especially important for potential employees. Other new jobs are expected to be created in the movie and cable TV industries. The number of cable TV stations is expected to grow as cable companies expand the number of channels they carry.

Pathway Courses:

Course #	High School Course Name
10.51810	Audio-Video Technology & Film I
10.51910	Audio-Video Technology & Film II
10.52010	Audio-Video Technology & Film III

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Audio & Video Equipment Techs	Some College No Degree Required	\$37,000	80
Camera Operators, Television, Video & Motion Picture Graphic Designers	Bachelor's Degree	\$47,300	30
Film & Video Editors	Bachelor's Degree	\$45,600	10

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Artists & Related Workers
- Audio & Video Equipment Techs
- Broadcast Technicians
- Camera & Photographic Equipment Repairers
- Camera Operators, Television, Video & Motion Picture
- Computer Programmers
- Graphic Designers
- Photographers
- Set & Exhibit Designers
- Sound Engineering Technicians
- Technical Directors/Managers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
				X	X	X	X	X		X			





Career Cluster: Arts, A/V Technology, & Communications (AA/VT&C)

The Arts, A/V Technology, & Communications Career Cluster includes designing, producing, exhibiting, performing, writing, and publishing multimedia content.

Pathway: Graphic Communication

Programs in printing technologies prepare people to produce printed materials such as books, magazines, brochures, and educational materials. Students learn to lay out pages, make plates, and operate printing presses. They learn to set up, maintain, and repair equipment. They also learn to work with sometimes very complex publishing software to edit digital images.

Students will take courses in print-related operations, including lithography, offset printing, and flexography. They will learn to lay out the components of a page such as text columns, graphics, and headers. With a background in this field, you may open doors for yourself to related careers in desktop publishing, graphic arts, technical writing, and web publishing. Jobs related directly to this pathway are page layout workers, prepress operators, and printing press operators. Workers in the industry will need to continually upgrade their skills because of rapidly-changing technology.

Pathway Courses:

Course #	High School Course Name
48.56100	Introduction to Graphics & Design
48.56200	Graphic Design & Production
48.57000	Advanced Graphic Output Processes

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Desktop Publishers	Associate's Degree	\$37,800	30
*Graphic Designers	Bachelor's Degree	\$44,900	380
Multimedia Artist & Animators	Bachelor's Degree	\$54,900	150

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Commercial & Industrial Designers
- Desktop Publishers
- Equipment Repairers
- Graphic Designers
- Prepress Technicians & Workers
- Print Binding & Finishing Workers
- Printing Press Operators
- Proofreaders & Copy Markers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
					X		X						



Arts, A/V Technology & Communications



Career Cluster: Arts, A/V Technology, & Communications (AA/VT&C)

The Arts, A/V Technology, & Communications Career Cluster includes designing, producing, exhibiting, performing, writing, and publishing multimedia content.

Pathway: Graphic Design

Graphic designers—or graphic artists—plan, analyze, and create visual solutions to communications problems. They find the most effective way to get messages across in print, electronic, and film media using a variety of methods such as color, type, illustration, photography, animation, and various print and layout techniques.

Graphic designers develop the overall layout and production design of magazines, newspapers, journals, corporate reports, and other publications. They also produce promotional displays, packaging, and marketing brochures for products and services, design distinctive logos for products and businesses, and develop signs and signage systems—called environmental graphics—for business and government. An increasing number of graphic designers also develop material for Internet Web pages, interactive media, and multimedia projects. Graphic designers also may produce the credits that appear before and after television programs and movies.

A bachelor's degree is required for most entry-level and advanced graphic design positions; although some entry-level technical positions may only require an associate degree. Associate degrees and certificates in graphic design also are available from 2-year and 3-year professional schools. These programs usually focus on the technical aspects of graphic design and include few liberal arts courses. Workers in the industry will need to continually upgrade their skills because of rapidly changing technology.

Pathway Courses:

Course #	High School Course Name
48.56100	Introduction to Graphics & Design
48.56200	Graphic Design & Production
48.52800	Advanced Graphic Design

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
*Graphic Designers	Bachelor's Degree	\$49,900	390
Desktop Publishers	Associate's Degree	\$37,500	30
Commercial & Industrial Designers	Bachelor's Degree	\$54,900	30

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Commercial & Industrial Designers
- Computer Programmers
- Desktop Publishers
- Equipment Repairers
- Graphic Designers
- Multimedia Artist & Animators
- Print Binding & Finishing Workers
- Printing Press Operators
- Proofreaders & Copy Markers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
								X					



Business, Management & Administration



Career Cluster: Business Management & Administration (BM&A)

The Business Management & Administration Career Cluster prepares students with computer skills for future college and career plans. Cluster skills mastered include planning, organizing, directing, and evaluating as well as owning and operating a successful business. Business Management and Administration careers encompass planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Business Management and Administration career opportunities are available in every sector of the economy.

Pathway: Business & Technology

Career opportunities in every sector of the economy include technical and business skills learned within this pathway. A strong foundation of business concepts integrated with technology skills used in business will prepare workers for every occupation. Specific relevant careers include the support service industry, which is one of the largest job providers in the US economy. Support service positions include tasks such as managing projects, scheduling, planning, organizing, directing and evaluating business functions essential to efficient and productive business operations.

Education and training for jobs in this pathway range from high school career and technical career programs to one- and two-year programs. Written, oral and verbal communication skills, flexibility, personal presentation, leadership, time management and teamwork are all skills vital to this career area.

Pathway Courses:

Course #	High School Course Name
07.44130	Introduction to Business & Technology
07.44100	Business and Technology
07.45100	Business Communications

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Administrative Services Managers	Bachelor's Degree	\$77,500	450
Supervisors of Office & Admin Support	High School	\$48,100	2,180
*Management Analysts	Bachelor's Degree	\$77,000	1,500

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Administrative Services Managers
- Budget Analysts
- Computer & Information Systems Managers
- Computer Operators
- Database Administrators
- Legal Secretaries
- Management Analysts
- Medical Secretaries
- Office Machine Operators
- Shipping & Receiving Clerks
- Stock Clerks
- Word Processor & Typists

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS



Business, Management & Administration



Career Cluster: Business Management & Administration (BM&A)

The Business Management & Administration Career Cluster prepares students with computer skills for future college and career plans. Cluster skills mastered include planning, organizing, directing, and evaluating as well as owning and operating a successful business.

Pathway: Entrepreneurship

Entrepreneurs, innovators, proprietors, and small business owners play a key role in Georgia's economy. According to the United States Small Business Administration, there are 907,068 small businesses in Georgia (<http://www.sba.gov/>). Small business owners manage their own companies. Those considering a career in business, especially entrepreneurs, should be analytical, detail-oriented, flexible, and decisive. They will be required to coordinate several activities at once, quickly analyze and solve specific problems, and cope with deadlines. Business professionals should also have good communication skills and be able to establish working relationships with many different people, from managers, supervisors and other professionals to clerks and related workers.

There are basically three types of small businesses: sole proprietorship, partnerships, and corporations. Marketing skills are critical to a small business owner. It is important for owners to know when to take a risk, adapt to the changing market conditions, improve services, promote their goods or services and hire new employees. As with any other business, owners must be competitive while keeping costs down. Owners who employ other workers must hire, train, and supervise their employees. Some run the entire business themselves.

Pathway Courses:

Course #	High School Course Name
07.44130	Introduction to Business & Technology
06.41500	Legal Environment of Business
06.41610	Entrepreneurship

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
General and Operations Managers	Associates Degree	\$90,300	1590
Marketing Research Analysis & Marketing Specialists	Bachelor's Degree	\$58,900	540
Personal Financial Advisors	Bachelor's Degree	\$68,700	150

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Since there aren't specific occupations representing this pathway, here are small business developer resources:

- FIRST STOP - www.sos.georgia.gov/firststop
- Georgia Entrepreneur & Small Business Programs – www.georgia.org/smallbusiness
- SCORE provides free, one-on-one counseling to potential entrepreneurs
- And mentoring to those who decide to start their own business. www.score.org.
- Georgia Trends Small Business Guide <http://www.madisoncountyga.org/SmallBusinessGuide2012-13.pdf>

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
X				X	X		X	X	X	X	X	X	X

CTSO's:





Career Cluster: Education and Training (E&T)

The Education and Training Career Cluster includes planning, managing, and providing education and training services as well as related learning support services.

Pathway: Teaching as a Profession (TAP)

Educational services are the second largest industry, accounting for about 13 million jobs. The educational services industry includes a variety of institutions that offer academic education, vocational or career and technical instruction and other education and training to millions of students each year. Institutions include elementary, middle and secondary schools, universities, colleges, professional schools, community or junior colleges and career and technical institutes.

School and working conditions often vary from town to town. Some schools may have few supplies and equipment while some are well equipped. Conditions at postsecondary institutions are generally very good. Many teachers spend significant time outside of school preparing for class, doing administrative tasks, conducting research, writing articles and books and pursuing advanced degrees. Kindergarten, elementary and secondary school teachers in public schools must have a bachelor's degree and must be licensed. Teachers in private elementary, middle and secondary schools do not have to be licensed. Postsecondary teachers who teach at 4-year colleges and universities generally must have a doctoral degree.

Pathway Courses:

Course #	High School Course Name
13.01100	Examining the Teaching Profession
13.01200	Contemporary Issues in Education
13.01300	Teaching as a Profession Practicum

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
*Postsecondary Business Teachers	Advanced Degree	\$64,400	120
*Middle School Teachers, except Special & Technical/ Career Education	Bachelor's Degree	\$53,300	790
*Clinical, Counseling & School Psychologists	Advanced Degree	\$63,900	140

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Adapted PE Specialists
- Graduate Teaching Assistants
- Educational Administrators
- Instructional Coordinators
- Instructors
- Librarians
- Postsecondary Instructors
- School Psychologists
- Social Workers
- Special Education Teachers, all levels
- Teaching Assistants

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
											X		

CTSO:





Career Cluster: Finance

The Finance Career Cluster focuses on money management, including planning, investing, and spending. Students will gain career development skills for the finance world with opportunities that expand beyond basic business skills into financial literacy, banking, investing, insurance, and risk management. Planning, services for financial and investment planning, banking, insurance, and business financial management.

Pathway: Business Accounting (BA)

Business Accounting applies principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction. Additionally, people in this field are involved in strategic planning and financial literacy, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Other tasks include evaluating financial reporting systems, accounting or collection procedures, or investment activities and make recommendations for changes to procedures, operating systems, budgets, or other financial control functions. At times there may be a need to evaluate networks within communities to find and attract new business, oversee the flow of cash or financial instruments, plan, direct, and coordinate risk and insurance programs of establishments to control risks and losses, and prepare financial or regulatory reports required by laws, regulations, or boards of directors.

Pathway Courses:

Course #	High School Course Name
07.44130	Introduction to Business & Technology
07.42600	Financial Literacy
07.41100	Principles of Accounting I

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Financial Managers	Bachelor Degree	\$106,600	450
*Tax Preparers	High School Diploma	\$44,600	160
*Financial Analysts	Bachelor's Degree	\$71,600	250

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Accountants
- Agents and Business Managers
- Appraisers
- Auditors
- Bill & Account Collectors
- Bookkeeping, Accounting & Auditing Clerks
- Budget Analysts
- Claims Adjusters
- Credit Counselors
- Financial Analysts
- Purchasing Managers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
								X					





Career Cluster: Finance

The Finance Career Cluster focuses on money management, including planning, investing, and spending. Students will gain career development skills for the finance world with opportunities that expand beyond basic business skills into financial literacy, banking, investing, insurance, and risk management.

Pathway: Financial Services (FS)

The Finance Career Cluster prepares students for careers in financial and investment planning, banking, insurance and business financial management. Finance career opportunities are available in every sector of the economy and require skill in organization, time management, customer service and communication. Students in finance learn and practice skills that prepare them for diverse post-high school education and training opportunities, from apprenticeships and two-year college programs to four-year college and graduate programs.

Workers in this pathway provide services to policyholders and insurance companies. Jobs in this pathway involve managing other people's money and helping other people reach their financial goals. This pathway is involved in directing companies' investment policies and preparing financial documents for regulatory authorities. Occupations in this pathway include loan officer, teller, compliance officer, credit analyst, new accounts clerk, internal auditor, bill collector, mortgage underwriter, customer service representative, and commercial loan specialist.

Pathway Courses:

Course #	High School Course Name
07.44130	Introduction to Business & Technology
07.42600	Financial Literacy
07.43100	Banking, Investing, and Insurance

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Claims Adjusters, Examiners & Investigators	Bachelor's Degree	\$60,200	400
Insurance Underwriter	Bachelor's Degree	\$62,000	300
Actuaries	Bachelor's Degree	\$97,400	90

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Accountants
- Administrative Support Specialists
- Claims Adjusters, Examiners, & Investigators
- Claims Examiners, Property & Causality Insurers
- Computer Scientists
- Health Specialists
- Insurance Appraisers, Auto Damage
- Insurance Sales Agents
- Insurance Underwriters

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
X							X				X		

CTSO:



Career Cluster: Government & Public Administration (G&PA)

The Government & Public Administration Career Cluster includes the planning and performing of government management and administrative functions at local, state, and federal levels. Careers are available in national security, Foreign Service, revenue, and regulations. Executing governmental functions to include Governance; National Security; Foreign Service; Planning; Revenue and Taxation; Regulation; and Management and Administration at the local, state, and federal levels.

Pathway: JROTC - Army

The Junior Reserve Officers' Training Corps is a leadership education program. This program will help students build a strong knowledge base of self-discovery and leadership skills applicable to many leadership and managerial situations. Mastery of the Army Junior ROTC standards through project-based learning, service learning and leadership development activities will prepare students for the 21st Century leadership responsibilities. The curriculum focus is reflected in its mission statement, "To motivate young people to be better citizens." Desired Learning Outcomes, this program intends to teach students:

- Maximize potential for success through learning, self- management and development of employability "soft skills"
- Develop leadership skills
- Incorporate principles of mental and physical wellness into behaviors and decisions with health and wellness awareness
- Build effective relationships with peers, co-workers, and community with information/communications skill development
- Apply physical and political geography to building global awareness
- Understand the importance that financial, economic, business, and entrepreneurial literacy have in the work force
- Correlate the rights and responsibilities of citizenship to the purposes of the U.S. government through civic literacy
- Relate events in U.S. history to choices and responsibilities Americans have today

Pathway Courses:

Course #	High School Course Name
28.03100	JROTC Army Leadership Education 1
28.03200	JROTC Army Leadership Education 2
28.03300	JROTC Army Leadership Education 3

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Respiratory Therapy Technicians Respiratory Therapy (Civilian)	Enlisted	N/A	N/A
Nodal Network Systems Operator-Maintainer Network & Computer Systems Administrators	Enlisted	N/A	N/A
Designated Telecommunications Systems Engineer Graphic Designers (Civilian)	Commissioned Officer	N/A	N/A

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Related JROTC-Army Occupational Examples:

Students can continue career pathways by entering the job market and receiving on-the-job training or by entering a technical, 2-year, or 4-year college/university to receive specific job training relating to a managerial/leadership position of choice. Job fields may include government, private industry, entrepreneurship, and non-profit organizations to name a few. ROTC (Reserve Officer Training Corps) programs offered at various colleges/universities in Georgia and throughout the U.S. train qualified young men and women to become officers in the military services upon graduation from college.

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
X	X		X	X	X	X	X	X	X	X	X		



Career Cluster: Health Science (HS)

The Health Science Career Cluster includes planning, managing, and providing services in therapeutics, diagnostics, health informatics, support areas, and biotechnology research and development. Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

Pathway: Biotechnology Research & Development (BR&D)

The field of biotechnology combines knowledge from a number of other areas: engineering, biology, chemistry, and medicine. Workers in biotechnology create, design, develop, and evaluate systems and products such as artificial organs, medication information systems, prostheses (artificial devices replacing missing body parts), medical equipment and instrumentation, and health management and care systems. Tasks associated with careers in biotechnology include researching new materials for biomedical equipment (such as artificial organs), evaluating the safety of such equipment, utilizing computer simulation of the body's organs and systems, designing and developing new procedures and equipment for detecting disease, and advising hospitals and other medical facilities on the use of new and existing medical equipment.

Some workers employed in the field of biotechnology have a solid background in engineering with specialized biomedical training. Careers in the Biotechnology Research and Development pathway involve bioscience research and development as it applies to human health. These scientists may study diseases to discover new treatments or invent medical devices used to directly assist patients or to improve the accuracy of diagnostic tests

Pathway Courses:

Course #	High School Course Name
25.52100	Introduction to Healthcare Science
25.57000	Essentials of Biotechnology
25.56900	Applications of Biotechnology

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Biological Scientists	Master's Degree	\$71,000	20
Biomedical Engineers	Bachelor's Degree	\$72,300	1310 <i>national projected job openings</i>
Environmental Scientist and Specialists, including Health	Bachelor's Degree	\$51,500	60

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Biological Scientists
- Biologists
- Biomedical Engineers
- Biostatisticians
- Cell Biologists
- Clinical Data Managers
- Clinical Research Coordinators
- Lab Technicians
- Microbiologists
- Nuclear Medical Technologists
- Pharmaceutical Scientists
- Quality Assurance and Control Technicians
- Research Scientists
- Radiation Therapists

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
							X						

CTSO:



Career Cluster: Health Science (HS)

The Health Science Career Cluster includes planning, managing, and providing services in therapeutics, diagnostics, health informatics, support areas, and biotechnology research and development.

Pathway: Therapeutic Services / Allied Health & Medicine (TS-AH&M)

Careers in the Therapeutic Services pathway are focused primarily on changing the health status of the patient over time. Health professionals in this pathway work directly with patients and may provide care, treatment, counseling and health education information. National labor market information indicates that eight out of the top twenty fastest-growing occupations are in the Health Science industry. (OOH) Based on an aging population and a retiring workforce, the demand for healthcare workers will remain high through 2020. As the roles change in Therapeutic Services careers, professionals in this pathway will find increased opportunities to work independently. Additionally, an increasing number of career opportunities are becoming available outside of the traditional hospital setting.

Allied health professionals are primarily involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders; dietary and nutrition services; and rehabilitation, among others. Occupations in the field include dental hygienists, surgical technologists, dietitians, pharmacists, occupational therapists, physical therapists, public health workers, respiratory therapists, and speech language pathologists. Most health-related occupations will grow much faster than the average.

Pathway Courses:

Course #	High School Course Name
25.52100	Introduction to Healthcare Science
25.44000	Essentials of Healthcare
25.43700	Allied Health and Medicine

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Medical & Health Service Managers	Bachelor's Degree	\$76,800	500
Occupational Health & Safety Specialists	Bachelor's Degree	\$63,800	20
Respiratory Therapists	Associate's Degree	\$50,200	170

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Dietetics & Nutritionists
- Direct Support Professionals (DSP)
- Epidemiologists
- Health Specialties Teachers
- Health Diagnosing & Treating Practitioners
- Informatics Nurse Specialists
- Medical Equipment Repairers
- Mental Health Counselors
- Medical & Health Service Managers
- Medical Records & Health Information Technicians
- Occupational Health & Safety Specialists
- Registered Nurses

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
					X				X		X		

Career Cluster: Health Science (HS)

The Health Science Career Cluster includes planning, managing, and providing services in therapeutics, diagnostics, health informatics, support areas, and biotechnology research and development.

Pathway: Therapeutic Services / Emergency Medical Responder (TS-EMR)

The primary focus of the Emergency Medical Responder is to initiate lifesaving care to critical patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional Emergency Medical Services (EMS) response and to assist higher level personnel at the scene and during transport. Emergency Medical Responders function as part of a comprehensive EMS response, under medical oversight. Emergency Medical Responders perform basic interventions with minimal equipment.

Emergency Medical Responders include Emergency Medical Technicians (EMTs) and paramedics that care for the sick or injured in emergency medical settings. EMTs and paramedics respond to emergency calls, perform medical services and transport patients to medical facilities. Work is performed both indoors and outdoors and in all types of weather. The work is physically strenuous and can be stressful, sometimes involving life-or-death situations and patients who are suffering. All EMTs and paramedics must complete a formal training program.

Pathway Courses:

Course #	High School Course Name
25.52100	Introduction to Healthcare Science
25.44000	Essentials of Healthcare
25.45000	Emergency Medical Responder

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Ambulance Drivers & Attendants	High School	\$22,800	20
Police, Fire, & Ambulance Dispatchers	High School	\$28,800	140
Emergency Medical Technicians & Paramedics	Associate's Degree	\$29,500	190

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Ambulance Drivers & Attendants, except EMTs
- Emergency Medical Technicians
- Medical & Health Services Managers
- Medical Equipment Preparers
- Paramedics
- Police, Fire, & Ambulance Dispatchers
- Radiologic Techs
- Registered Nurses
- Respiratory Therapists

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
	X												

CTSO:



Career Cluster: Health Science (HS)

The Health Science Career Cluster includes planning, managing, and providing services in therapeutics, diagnostics, health informatics, support areas, and biotechnology research and development.

Pathway: Therapeutic Services / Patient Care (TS-PC)

Careers in the Therapeutic Services pathway are focused primarily on changing the health status of the patient over time. Health professionals in this pathway work directly with patients and may provide care, treatment, counseling and health education information. National labor market information indicates that eight out of the top twenty fastest-growing occupations are in the Health Science industry. (OOH) Based on an aging population and a retiring workforce, the demand for health care workers will remain high through 2020. As roles of careers in Therapeutic Services change, professionals in this pathway will find increased opportunities to work independently. Additionally, an increasing number of career opportunities are becoming available outside of the traditional hospital setting.

Educational levels vary from occupation to occupation. Most Health Science occupations require additional education after high school and require that potential employees acquire the appropriate certification and/or licensing. Workers in the Health Science industry must have a solid background in math, science, communications, and technical skills, be knowledgeable in their subject area, have the ability to communicate with others, and inspire trust and confidence.

Pathway Courses:

Course #	High School Course Name
25.52100	Introduction to Healthcare Science
25.44000	Essentials of Healthcare
25.43600	Patient Care Fundamentals

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
*Registered Nurses	Associate's Degree	\$63,200	3,300
*Nurse Anesthetists	Bachelor's Degree	\$156,600	3,340
*Nurse Practitioners	Advanced Degree	\$84,700	3,340

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Anesthesiologist Assistants
- Athletic Trainers
- Certified Nursing Assistants (CNA)
- Home Health Aides
- Licensed Practical Nurses (LPN)
- Medical Assistant
- Occupational Therapist / Assistants
- Physician's Assistants
- Physical Therapist / Assistants
- Recreation Therapists
- Registered Nurses (RN)
- Respiratory Therapists
- Specialized Nurses
- Surgical Technicians

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
		X								X			

CTSO:



Career Cluster: Health Science (HS)

The Health Science Career Cluster includes planning, managing, and providing services in therapeutics, diagnostics, health informatics, support areas, and biotechnology research and development.

Pathway: Therapeutic Services / Public Health (TS-PH)

Careers in the Therapeutic Services pathway are focused primarily on changing the health status of the patient over time. Health professionals in this pathway work directly with patients and may provide care, treatment, counseling and health education information. National labor market information indicates that eight out of the top twenty fastest-growing occupations are in the Health Science industry. (OOH) Based on an aging population and a retiring workforce, the demand for health care workers will remain high through 2020. As the role of careers in Therapeutic Services change, professionals in this pathway will find increased opportunities to work independently. Additionally, an increasing number of career opportunities are becoming available outside of the traditional hospital setting.

Workers in the Health Sciences industry must have a solid background in math, science, communications, and technical skills, be knowledgeable in their subject area, have the ability to communicate with others, and inspire trust and confidence. Public Health is the science of protecting and improving the health of communities through education, promotion of healthy lifestyles, and research for disease and injury prevention. Public health professionals analyze the effect on health of genetics, personal choice and the environment in order to develop programs that protect the health of your family and community.

Pathway Courses:

Course #	High School Course Name
25.52100	Introduction to Healthcare Science
25.44000	Essentials of Healthcare
25.45200	Applications of Public Health

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Healthcare Social Workers	Bachelor's Degree	\$44,600	200
Community Health Workers	Bachelor's Degree	\$30,200	70
Epidemiologists	Advanced Degree	\$59,900	Georgia N/A

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Community Health Workers
- Environmental Science & Protection Technicians, including Health
- Epidemiologists
- Healthcare Social Workers
- Health Educators
- Physician's Assistants
- Registered Nurses

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
									X				

CTSO:



Career Cluster: Health Science (HS)

The Health Science Career Cluster includes planning, managing, and providing services in therapeutics, diagnostics, health informatics, support areas, and biotechnology research and development.

Pathway: Therapeutic Services / Sports Medicine (TS-SM)

Careers in the Therapeutic Services pathway are focused primarily on changing the health status of the patient over time. Health professionals in this pathway work directly with patients and may provide care, treatment, counseling and health education information. National labor market information indicates that eight out of the top twenty fastest-growing occupations are in the Health Science industry. (OOH) Based on an aging population and a retiring workforce, the demand for health care workers will remain high through 2020. As the roles of careers and Therapeutic Services change, professionals in this pathway will find increased opportunities to work independently. Additionally, an increasing number of career opportunities are becoming available outside of the traditional hospital setting.

Educational levels vary from occupation to occupation. Most Health Science occupations require additional education after high school and require that potential employees acquire the appropriate certification and/or licensing. Workers in the Health Science industry must have a solid background in math, science, communications, and technical skills, be knowledgeable in their subject area, have the ability to communicate with others, and inspire trust and confidence. Sports medicine is one of the fastest growing areas of health care, providing specialized help to many “regular” people, as well as athletes.

Pathway Courses:

Course #	High School Course Name
25.52100	Introduction to Healthcare Science
25.44000	Essentials of Healthcare
25.44600	Sports Medicine

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
*Physical Therapists	Advanced Degree	\$78,800	130
Exercise Physiologists	Advanced Degree	\$44,300	N/A
Athletic Trainers	Bachelor's Degree	\$43,000	10

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Athletic Trainers
- Dentists, General
- Dental Hygienists
- Exercise Physiologists
- Kinesiotherapists
- Medical & Health Services Managers
- Occupational Therapists
- Orthopedics
- Physical Therapists

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
	X										X		

CTSO:



Hospitality & Tourism



Career Cluster: Hospitality & Tourism (H&T)

The Hospitality & Tourism Career Cluster encompasses the management, marketing, and operations of restaurants, and other food services, lodging, attractions, recreation events, and travel related services. Hospitality & Tourism encompasses the management, marketing and operations of restaurants and other foodservices, lodging, attractions, recreation events and travel related services.

Pathway: Culinary Arts (CA)

A career in culinary arts involves more than simply cooking. Many job opportunities exist in this field, from executive chefs to part-time food service workers. Chefs, cooks, and food preparation workers prepare, season and cook a wide range of foods in a variety of restaurants and other food service establishments. Food service managers are responsible for the daily operations of restaurants and other establishments that prepare and serve meals and beverages to customers.

Most fast-food or short-order cooks and food preparation workers require little education or training since most skills are learned on the job. Executive chefs and head cooks who work in fine-dining restaurants require many years of training and experience. They may receive training through post-secondary vocational programs, independent cooking schools, professional culinary institutes or 2- or 4-year degree programs in hospitality or culinary arts. Important characteristics for those interested in culinary arts include working well as part of a team, working efficiently, personal cleanliness, self-discipline and initiative.

Pathway Courses:

Course #	High School Course Name
20.53100	Introduction to Culinary Arts
20.53210	Culinary Arts I
20.53310	Culinary Arts II

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Food Service Managers	Some College No Degree Required	\$48,000	340
Chefs & Head Cooks	Some College No Degree Required	\$37,900	90
*Meeting, Convention & Event Planners	Bachelor's Degree	\$45,000	170

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Bakers
- Baristas
- Chefs
- Cooks
- First-Line Supervisors of Food Prep and Serving Workers
- Food Prep Workers
- Food Service Managers
- Lodging Managers
- Meeting, Convention & Event Planners
- Waiters & Waitresses

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
		X								X	X		

CTSO:



Hospitality & Tourism



Career Cluster: Hospitality & Tourism (H&T)

The Hospitality & Tourism Career Cluster encompasses the management, marketing, and operations of restaurants, and other food services, lodging, attractions, recreation events, and travel related services.

Pathway: Hospitality, Recreation & Tourism (HS&T)

Georgia represents the 8th largest tourism economy in the country and the 2nd largest industry in Georgia. Georgia's tourism industry results in 400,000 jobs, \$6 billion in resident wages and \$25 billion in visitor spending. Atlanta is 3rd in the nation in relation to the number of hotel rooms occupied.

The Hospitality, Recreation and Tourism Industry consists of the following five sectors: (1) Lodging, Hotels and Resorts; (2) Conventions, Meetings, Trade Shows and Events; (3) Restaurants and Food Service; (4) Recreation, Attractions, Sporting Events and Parks and (5) Travel, including Air, Rail, Auto and Coach. Hospitality management jobs include executive positions from a variety of vertical areas within the industry (e.g., business, marketing, public relations, etc.). Other occupations in the pathway vary widely from travel agents in tourism, to gaming managers in recreation, to financial supervisors in lodging. Since the industry is primarily a service-oriented industry, workers will need good communication skills including both active listening and speaking skills, critical thinking and decision-making skills, and they will have to understand the importance of meeting the needs of individuals.

Pathway Courses:

Course #	High School Course Name
08.47400	Marketing Principles
08.45300	Hospitality, Recreation & Tourism Essentials
08.45400	Hospitality, Recreation & Tourism Management

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
*Meeting, Convention, Events Planners	Bachelor's Degree	\$45,000	170
Lodging Managers	Bachelor's Degree	\$45,100	60
Security Managers (national data-considered to be a new and emerging occupation because of a rapid change in knowledge and skills)	High School	\$99,540	National projected increase in job openings 3-9%

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Cruise Ship Directors
- Curators
- Ecotourism Directors
- Facilities Managers
- Food Service Managers
- Interpreters & Translators
- Multipurpose Sports Club Managers
- Reservationist & Transportation Ticket Agents
- Resort Salespersons
- Special Events Coordinators
- Tourism Advisors
- Travel Bloggers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
				X									

CTSO:



Hospitality & Tourism



Career Cluster: Hospitality & Tourism (H&T)

The Hospitality & Tourism Career Cluster encompasses the management, marketing, and operations of restaurants, and other food services, lodging, attractions, recreation events, and travel related services.

Pathway: Sports & Entertainment Marketing (S&EM)

The sports and entertainment industry has grown as a result of rising incomes and increased leisure time. Perhaps most notable on the entertainment side of the industry is the Georgia Film and TV Production sector. Film and TV production professionals know that Georgia is Camera Ready due to tax incentives, location diversity, production resources and professional support. In 2012 alone, television networks, Hollywood studios, production companies and independent producers invested nearly \$3.1 billion in Georgia.

Jobs offered by this industry can be categorized into two groups: (a) live performances or events and (b) entertainment activities. Live performances and events include professional and amateur sports, gambling or gaming establishments, physical fitness, rentals of sporting goods, and musical and theatrical productions. The entertainment activities include theme parks, movies, arcades, and casinos.

Agents and business managers of artists, performers, and athletes promote their clients to prospective employers and manage contract negotiations and other business concerns. Public relations specialists promote the sports and entertainment industry by creating favorable publicity material and utilizing various communications media to market an event, promotion, or activity.

Pathway Courses:

Course #	High School Course Name
08.47400	Marketing Principles
08.47800	Introduction to Sports & Entertainment Marketing
08.48500	Advanced Sports & Entertainment Marketing

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Sports Marketing Managers	Bachelor's Degree	\$60,000	Georgia data N/A
*Meeting, Conventions & Events Planners	Bachelor's Degree	\$45,000	170
Set and Exhibit Designers	Bachelor's Degree	\$37,000	20

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Artist Managers
- Brand Partnerships Coordinators
- Fan Communications Directors
- Gaming Managers
- Marketing Campaign Coordinators
- Media Communication & Social Network Associates
- Music Marketers & Promoters
- Publicity Assistants
- Sports Agents
- Sports Officials
- Team Sports Bloggers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
					X								

CTSO:





Career Cluster: Information Technology (IT)

The rapidly changing digital world of the Information Technology Career Cluster engages students in hands-on learning to prepare for careers that create, use, modify, and engage technology skills. Graphics, multimedia animation, web design, game and application development, networking, and computer repair are all possibilities.

Pathway: Web & Digital Design (W&DD)

Information is valuable only when it is understood and utilized. Workers in digital media design bring ideas to life through technology, whether creating a web site, a training video or designing the latest computer game or mobile application.

Careers in web and digital communications involve creating, designing and producing interactive multimedia products and services, including the development of digitally-generated or computer-enhanced media used in business, training, entertainment, communications and marketing. Sample interactive media occupations include web designer, webmaster, 3D animator, virtual reality specialist, multimedia producer and graphic artist. Organizations of all types and sizes use digital media to communicate with existing and potential customers, to track transactions and to collaborate with colleagues. Interactive media experts can find employment opportunities in organizations of all sizes and types due to the rate of technology change in business and reliance on mobile technology.

Pathway Courses:

Course #	High School Course Name
11.41500	Introduction to Digital Technology
11.45100	Digital Design
11.45200	Web Design

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Web Developers	Bachelor's Degree	\$68,200	190
*Computer System Analysts	Bachelor's Degree	\$73,800	810
Computer Programmers	Bachelor's Degree	\$75,400	230

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Computer & Information Research Scientists
- Computer & Information Systems Managers
- Computer Network Architects
- Computer Operators
- Computer Programmers
- Computer System Analysts
- Computer Systems Engineers/Architects
(national data list this occupation as new and emerging. Design and develop solutions to complex applications problems. (ONET)
- Software Developers
- Web Administrators
- Web Developers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
	X		X			X							

Law, Public Safety, Corrections & Security



Career Cluster: Law, Public Safety, Corrections, & Security (LPSC&S)

The Law, Public Safety, Corrections, & Security Career Cluster prepares individuals for employment relating to emergency and fire services, legal services, protective services, and homeland security. Planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.

Pathway: Legal Services / Applications of Law (LS-AoL)

Law, Public Safety, Corrections and Security workers plan, manage and provide legal, public safety, protection services and homeland security including professional and technical support services. Occupations are numerous and represent multiple levels of education and skills. These occupations fall into major categories based on common knowledge and skills. These occupations include the following: correction services, i.e. correctional officers and jailers; emergency and fire management services, i.e. firefighters, EMTs, paramedics, and public safety communication; security and protective services, i.e. information security IT specialists; law enforcement, i.e. criminal investigators, police officers, special agents; and legal services, i.e. court reporters or lawyers.

Those who work in the Legal Services area ensure the proper function of our nation's legal system. The legal system affects nearly every aspect of our society, from buying a home to crossing the street. Workers in the Legal Services pathway form the backbone of this vital system, linking to society in a myriad of ways. For this reason, they hold positions of great responsibility and are obligated to adhere to a strict code of ethics.

Pathway Courses:

Course #	High School Course Name
43.45000	Intro. to Law, Public Safety, Corrections, & Security
43.45400	Essentials of Legal Services
43.45500	Applications of Law

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
*Attorneys	Advanced Degree	\$137,700	690
Court Reporters	Some College No Degree Required	\$51,300	40
Paralegals & Legal Assistants	Bachelor's Degree	\$45,300	360

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Administrative Support Workers
- Attorneys
- Court Reporters
- File & Document Managers
- Immigration & Customs Inspectors
- Investigators
- Judges
- Judicial Law Clerks
- Magistrate Judges & Magistrates
- Legal Secretaries
- Paralegals & Legal Assistants

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
					X				X	X			

CTSO:





Career Cluster: Marketing

Marketing is the process of anticipating, managing, and satisfying consumers' demand for products, services, and ideas. The Marketing Career Cluster generates the strategy that underlies advertising and promotional techniques, business communication, and business development. Planning, managing, and performing marketing activities to reach organizational objectives.

Pathway: Fashion, Merchandising & Retail Management (FM&RM)

While all products have to be merchandised and managed, apparel represents a \$276 billion retail market in the U. S. Apparel also employs very large numbers of people in design and production, apparel wholesale distribution, and 3 million in apparel retailing. Almost all the clothing bought in the U. S. and around the world is designed, branded and marketed by American companies.

It is the job of merchandisers and marketers to determine how to entice customers to buy their products. Those who work in the fashion marketing and merchandising industry market fashion and all other products in wholesale and retail stores. It is the job of merchandisers and marketers to determine how to entice customers to buy their products. People in this field can work in both retail and wholesale sales. Some work as buyers, merchandise managers or purchasing agents who select and purchase apparel and accessories from designers, manufacturers or wholesalers for retail sale.

Careers in Fashion, Merchandising and Retailing are exciting, and the overall industry is one of the most vital in our economy. A number of technical colleges, fashion colleges, online schools and community colleges offer two year degrees and certificates in this area. The fastest route to upper level management positions is still through four year degree programs.

Pathway Courses:

Course #	High School Course Name
08.47400	Marketing Principles
08.42100	Fashion, Merchandising and Retailing Essentials
08.42200	Advanced Fashion, Merchandising and Retailing

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Advertising & Promotions Managers	Bachelor's Degree	\$100,300	70
Wholesale & Retail Buyers	Bachelor's Degree	\$58,800	90
Online Merchants	Bachelor's Degree	\$66,000	600

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Brand Managers
- Divisional Merchandise Managers
- Entrepreneurs/Company Owners
- Fashion Designers
- Financial Analysts
- General Merchandise Managers
- Manufacturer's Sales Representatives
- Manufacturer's Store Coordinators
- Merchandise Analysts
- Product Developers
- Resident buyers
- Visual Merchandisers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
					X								

Marketing



Career Cluster: Marketing

Marketing is the process of anticipating, managing, and satisfying consumers' demand for products, services, and ideas. The Marketing Career Cluster generates the strategy that underlies advertising and promotional techniques, business communication, and business development.

Pathway: Marketing & Management (M&M)

Marketing professionals are responsible for developing, implementing and managing a company's marketing efforts, both through traditional and digital formats, in order to stimulate customer interest and generate sales. To assess consumer demand, marketing managers evaluate the products and services offered by their own firm and its competitors. They also seek to identify new products or services and develop potential markets. Their main goal is to maximize profit and market share by satisfying customers' wants and needs. From a larger perspective, Marketing and Management involves all areas of starting and operating a business and is defined by nine functional areas: financing, risk management, selling promotion, pricing, purchasing, marketing-information management, product/service planning, and distribution.

A positive aspect of the marketing and management field is the variety of jobs this field offers. Another positive aspect is the room for advancement to higher-level jobs or other positions. Competition for marketing, sales, and management jobs is expected to be high. Anyone interested in this field should enjoy working with people, be creative and a self-starter, and should have excellent verbal and written communication skills.

Pathway Courses:

Course #	High School Course Name
08.47400	Marketing Principles
08.44100	Marketing & Entrepreneurship
08.44200	Marketing Management

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
*Marketing Managers	Bachelor's Degree	\$108,700	270
Sales Managers, Entrepreneurships	Bachelor's Degree	\$106,400	550
*Management Analyst	Bachelors' Degree	\$80,700	2,080

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Advertising & Promotions Managers
- Business Teachers, Postsecondary
- Demonstrators & Product Promoters
- Directors of Marketing
- Green Marketers
- Internal Communications Managers
- Management Analysts
- Marketing Specialists
- Market Research Analysts
- Survey Researchers
- Telemarketers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
					X								



Career Cluster: Science, Technology, Engineering, Mathematics (STEM)

The Science, Technology, Engineering, Mathematics Career Cluster means planning, managing, and providing scientific research and professional and technical services. Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

Pathway: Engineering & Technology (E&T)

Today's professionals in the engineering and technology field continue to revolutionize the way we live. They design, produce, operate, and maintain a variety of equipment and services we use in our everyday lives. The rapidly changing engineering and technology field requires a broad educational background and a lifelong commitment to learning new and specialized information.

Engineers may work in design and development, testing, production or maintenance. Almost all entry-level engineering jobs require at least a bachelor's degree, and most engineers specialize in a certain field. Those interested in an occupation in the engineering field should be creative, inquisitive, analytical and detail-oriented. They should also have excellent communication skills because working as part of a team and working with others outside the engineering field is often required. Engineering is considered a nontraditional field for women; therefore, it is important that female students investigate different engineering opportunities where salaries are higher than in many traditional occupations for females.

Pathway Courses:

Course #	High School Course Name
21.42500	Foundations of Engineering & Technology
21.47100	Engineering Concepts
21.47200	Engineering Applications

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Aerospace Engineers	Bachelor's Degree	\$105,700	170
Electrical Engineers	Bachelor's Degree	\$88,000	90
Avionics Technicians	Associate's Degree	\$54,000	40

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- All Engineers and Engineering Technologists
- Anthropologists
- Archeologists
- Architectural Drafters
- Civil Drafters
- Cost Estimators
- Electrical & Electronics Drafters
- Mapping Technicians
- Quality Control Systems Managers

*ONET Online

Pathway is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
X		X	X	X	X	X	X		X	X			



Middle Schools & Georgia Career, Technical & Agricultural Education

Designed to meet the needs of young adolescents (ages 10-15), middle schools bridge the gap between elementary and high school by providing students with an opportunity to learn in a safe, nurturing, and positive environment. According to the National Middle School Association (NMSA) characteristics of effective middle schools include courageous, collaborative leadership, a shared vision that guides decisions, high expectations for every member of the learning community, students and teachers engaged in active learning, and school community partnerships. These characteristics are also found within the Career, Technical and Agricultural Education programs in Georgia. CTAE is making giant strides to bring middle school programs to new career readiness goals. The new curriculum includes national standards, CTAE standards and Georgia Performance Standards, in addition to career development activities allowing students to make the connection between class work and workforce.

Each Middle School CTAE Program area course includes essential and relevant performance standards for math, science, language arts, and social studies. Middle school CTAE courses also reinforce Reading Across the Content, Technical Writing standards, Entrepreneurship standards, and CTAE Foundation Skills. CTAE middle school courses feature rigorous performance standards that students master to help prepare them for choosing a high school career pathway that interests them.

Middle Schools Business Communications

Career Cluster: Architecture, Construction, Communications & Transportation (ACCT)

This program facilitates basic level student led broadcast/video productions under the guidance of the instructor. Topics covered may include, but are not limited to: history of mass media, terminology, safety, basic equipment, script writing, storyboarding, production teams, planning, writing, directing, recording and editing a production, graphic communications, and professional ethics. All material and mastered skills will be utilized in subsequent courses within this program concentration.

Pathway: Business Communications (BC)

This pathway provides all middle school students with an introduction to the principles of the graphic communications and design industry. Topics covered include theories and practices to creating aesthetically pleasing designs and best methods for working with consumers. Important threads in this course include discussion of graphic communications careers, ethical issues relating to graphic communications and design, and exploration of various graphic communications software.

Pathway Courses:

Course #	Middle School Course Name
48.03100	Broadcast and Graphic Communications (Grade 6)
48.03200	Introduction to Communications (Grade 7)
48.03300	Applications of Communications (Grade 8)

Pathway offered at the following APS Middle Schools:

BEST MS	BROWN MS	CSK MS	HARPER-ARCHER MS	KING MS	LONG MS	SUTTON MS	SYLVAN HILLS MS	YOUNG MS
								X

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Audio & Video Equipment Techs	Some College No Degree Required	\$37,000	80
Camera Operators, Television, Video & Motion Picture Graphic Designers	Bachelor's Degree	\$47,300	30
Film & Video Editors	Bachelor's Degree	\$45,600	10

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Artists & Related Workers
- Audio & Video Equipment Techs
- Broadcast Technicians
- Camera & Photographic Equipment Repairers
- Camera Operators, Television, Video & Motion Picture
- Computer Programmers
- Graphic Designers
- Photographers
- Set & Exhibit Designers
- Sound Engineering Technicians
- Technical Directors/Managers

*ONET Online



Middle Schools Business Education

Career Cluster: Business Education (BE)

Using project-based instruction, students are introduced to the principles of business in the 21st century while refreshing their keyboarding skills. Business Education should also help students to use computers effectively in their lives, thus providing a connection of computer science and business careers.

Pathway: Business Education (BE)

This pathway provides all middle school students with an introduction to the principles of computer science, basic keyboarding skills, Internet safety and usage, and computer applications. Students will explore how personality traits and personal values align with career choices and will develop a career plan. Personal, professional, and ethical standards of behavior for the workplace will be examined and reinforced in the classroom.

Pathway Courses:

Course #	Middle School Course Name
07.08300	Business and Computer Science (6th Grade)
07.08400	Business and Computer Science (7th Grade)
07.08500	Business and Computer Science (8th Grade)

Pathway offered at the following APS Middle Schools:

BEST MS	BROWN MS	CSK MS	HARPER-ARCHER MS	KING MS	LONG MS	SUTTON MS	SYLVAN HILLS MS	YOUNG MS
X	X	X		X	X	X	X	

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Administrative Services Managers	Bachelor's Degree	\$77,500	450
Supervisors of Office & Admin Support	High School	\$48,100	2,180
*Management Analysts	Bachelor's Degree	\$77,000	1,500

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- Administrative Services Managers
- Budget Analysts
- Computer & Information Systems Managers
- Computer Operators
- Database Administrators
- Legal Secretaries
- Management Analysts
- Medical Secretaries
- Office Machine Operators
- Shipping & Receiving Clerks
- Stock Clerks
- Word Processor & Typists

*ONET Online

CTSO:



<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Middle-School-Performance-Standards.aspx>

Middle Schools Engineering & Technology

Career Cluster: Engineering & Technology (E&T)

Engineering and Technology (hereafter referred to as E&T) provides all students with an introduction to the principles of E&T and its place in the modern world. It will also help students to use technological systems effectively in their lives, thus providing a foundation for successfully integrating their own interests with potential careers with the resources of a technological society.

Pathway: Engineering & Technology (E&T)

Today's professionals in the engineering and technology field continue to revolutionize the way we live. They design, produce, operate, and maintain a variety of equipment and services we use in our everyday lives. The rapidly changing engineering and technology field requires a broad educational background and a lifelong commitment to learning new and specialized information. Engineers may work in design and development, testing, production or maintenance. Almost all entry-level engineering jobs require at least a bachelor's degree, and most engineers specialize in a certain field. Those interested in an occupation in the engineering field should be creative, inquisitive, analytical and detail-oriented. They should also have excellent communication skills because working as part of a team and working with others outside the engineering field is often required.

Pathway Courses:

Course #	Middle School Course Name
21.02100	Exploring Engineering and Technology (6th Grade)
21.02200	Exploring Engineering and Technology (7th Grade)
21.02300	Exploring Engineering and Technology (8th Grade)

Pathway offered at the following APS Middle Schools:

BEST MS	BROWN MS	CSK MS	HARPER-ARCHER MS	KING MS	LONG MS	SUTTON MS	SYLVAN HILLS MS	YOUNG MS
X	X	X		X	X	X	X	X

Pathway SAMPLE OCCUPATIONS:

Occupation Specialties	Entry Level of Education Needed	2012 / 2013 Annual Wage	Annual Openings 2012-2020
Aerospace Engineers	Bachelor's Degree	\$105,700	170
Electrical Engineers	Bachelor's Degree	\$88,000	90
Avionics Technicians	Associate's Degree	\$54,000	40

Source: Georgia Department of Labor/ONET. *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage & high-demand occupations.

*Other Related Pathway Occupation Examples:

- All Engineers and Engineering Technologists
- Anthropologists
- Archeologists
- Architectural Drafters
- Civil Drafters
- Cost Estimators
- Electrical & Electronics Drafters
- Mapping Technicians
- Quality Control Systems Managers

*ONET Online

CTSO:



<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Middle-School-Performance-Standards.aspx>

Georgia's Technical Skill Attainment Inventory 14-15

Georgia, like many other career and technical education programs around the nation, has worked in recent years to establish a measurement mechanism to ascertain the level of technical skill attainment on behalf of its career pathway completers. Georgia's measurement process has been derived in direct response to the Perkins IV Legislation, specifically, Core Indicator 2S1 which requires states to implement a valid and reliable assessment model linked directly to industry validated standards.

In working to identify existing assessment (or credentialing) opportunities that would not only support the mandates set forth in the Perkins IV Legislation, but would also support Georgia students in their quest to leave high school with valuable credentials, the state's technical skill attainment inventory will be comprised of several measurement components:

- industry certifications/credentials
- occupational assessments, and
- state licensures and state developed assessments

Technical Skill Attainment Inventory Assessment Information by Career Cluster and Program Concentration

NEW Career Clusters	
Agriculture, Food and Natural Resources	Hospitality and Tourism
Architecture and Construction	Human Services
Arts, A/V Technology, and Communications	Information Technology
Business, Management and Administration	Law, Public Safety, Corrections, and Security
Education and Training	Manufacturing
Energy	Marketing
Finance	Science, Technology, Engineering, Mathematics
Government and Public Administration	Transportation, Distribution, and Logistics
Health Science	

Source: <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/CTAE-Georgia-Assessments.aspx>

Work-Based Learning

Career Related Education is structured age appropriate experiences which prepare students to be college and career ready. The range of CRE experiences begin with Career Awareness and Exploration in middle school and culminate with work-based learning during the eleventh and twelfth grade. Work-Based learning provides students the opportunity to receive credit while working in an environment related to their career pathway.

Work-Based Learning Categories

Work-Based Learning placements represent the pinnacle of the Career-Related Education experience. To qualify for a WBL placement, a student must be in grades 11 or 12 and at least 16 years old. Students must also have a defined Career Pathway in order to participate in a Work-Based Learning placement. This is especially important for successful completion of a student’s pathway in that their job placement is directly related to the curriculum of the pathway classes they have completed or in which they are concurrently enrolled. There are several opportunities for students to participate in work-based learning. These opportunities include employability skill development, Cooperative Education, Internship, Youth Apprenticeship, and Clinical Experiences. A document with more information related to each opportunity can be found in the Documents & Presentation box to the right.

Teaching Employability Skills

All students need information related to employability skills in order to prepare for success in the work place. These skills are included in Georgia Performance Standards (GPS) of all CTAE pathway courses. Many supplementary curriculum resources exist to assist teachers and Work-Based Learning coordinators in assuring CTAE curricula give students the opportunity to develop work ready skills.

Who is a Work-Based Learning Coordinator?

Today, Georgia uses a “one school-wide coordinator” model to deliver Work-Based Learning. The Work-Based Learning coordinator at each school serves all students and coordinated placements related to the student’s career pathway. All categories of Work-Based Learning are administered by the coordinator with a few exceptions for Healthcare Clinical experiences and Internship courses that are part of the defined pathway. Anyone who supervises any category of Work-Based Learning placement is referred to as a WBL Coordinator.

Work-Based Learning is offered at the following APS High Schools:

BEST HS	CARVER HS	CRIM HS	CSK HS	FD HS	HWG HS	MHJ HS	BEM HS	NA HS	SA HS	DMT HS	BTW HS	WEST END	FORREST HILLS
X	X	X	X	X	X	X	X	X	X	X	X	X	X

What are CTSOs?

CTSOs are committed to the growth of students in all CTAE career pathways.

Websites: <http://www.gactso.org/about.php> and <http://www.gactso.org/our-ctsos.php#CTI>

CTSOs are co-curricular organizations with leadership programs and competitive events which reflect current curriculum standards and competencies for the instructional programs they serve. Teachers infuse the CTSO's activities into the instructional activities, thereby helping students see the real world value of their academic studies.

Career and Technical Student Organizations (CTSO) are a vital part of Career, Technical and Agricultural Education (CTAE). CTSOs play an integral role in preparing students to become college and career ready members of society who hold productive leadership roles in their communities. CTSOs are committed to the growth of students in all CTAE career pathways.

These organizations provide motivation, leadership training, and career development opportunities for students enrolled in Career, Technical and Agricultural Education programs in middle and high schools and enhance their occupational, employability and leadership skills through various activities such as conferences, award programs, service projects, and competitive events. These organizations conduct activities and events at the local, state and national levels in which students can participate and compete.

When integrated into the Career, Technical and Agricultural Education curriculum, the CTSO is a powerful instructional tool which offers organized curriculum-oriented activities that help students maximize employability, gain leadership opportunities, and develop personal skills which enable them to develop into productive members of society.

CTSOs are co-curricular organizations with leadership programs and competitive events which reflect current curriculum standards and competencies for the instructional programs they serve. Teachers infuse the CTSO's activities into the instructional activities, thereby helping students see the real world value of their academic studies.



The Goal of CTI is to provide meaningful leadership and employability experiences for students with disabilities who are enrolled in career, technical and agricultural courses. Our objectives are To provide at the high school level a career, technical and agricultural education support services for students with disabilities, provide secondary students with disabilities the opportunity to successfully participate in career, technical and agricultural education programs, and monitor secondary students with disabilities to ensure delivery of appropriate services and accommodations as they participate in career, technical and agricultural education programs.





DECA is specifically designed to provide activities for students to learn marketing, management, and entrepreneurial skills that will prepare them to pursue a career in the field of marketing. DECA members become more aware of the value of community service; participate in a local, state, and national competitive events program that showcases student skills and allows for interaction with the business community; further develop occupational skills needed for careers in marketing, management, and entrepreneurship; serve in leadership roles; and develop a greater understanding of our competitive, free-enterprise system and an appreciation of the responsibilities of citizenship.

Future Business Leaders of America (FBLA) is a student organization for all middle and high school students participating in business programs. As an integral part of the business instructional program, FBLA provides opportunities for students to develop vocational and career-supportive competencies. Participation in FBLA activities promotes civic and personal responsibility; helps students develop business leadership skills and establish career goals; and prepares them for useful citizenship and productive careers.



Family, Career and Community Leaders of America (FCCLA) is a national student organization that helps young men and women become leaders and address important personal, family, work, and social issues through family and consumer sciences education. Through cooperative and competitive programs, FCCLA members develop skills for life including character development, creative and critical thinking, interpersonal communication, practical knowledge, and career preparation. Participation in national programs and co-curricular chapter activities enables FCCLA members to learn cooperation, take responsibility, develop leadership, and give service.

HOSA is a student organization whose mission is to promote career opportunities in health care and to enhance the delivery of quality health care to all people. Through this web site, members, advisors, and guests can access a wide array of services from basic organization information to online membership services.



Georgia SkillsUSA members participate in local, state, and national activities provided through trade and industrial, technical, and health occupations courses and programs. The mission of SkillsUSA is to develop leadership skills and workplace competencies that students will need to success in a constantly changing global workplace. The organization provides many opportunities for leadership development and skills training for occupationally related leadership, trade, industrial, and technical industries.

Georgia Technology Student Association (GA TSA) is committed to providing students with opportunities to excel and advance as part of their instruction in technology education. Georgia TSA promotes technology education as a means of preparing students for a dynamic world, inviting them to become critical thinkers, problem solvers, and technologically literate leaders. The mission of GA TSA is to prepare its members to be successful leaders and responsible citizens in a technological society through co-curricular activities with the technology education program, thereby developing communication, leadership, and competitive skills.

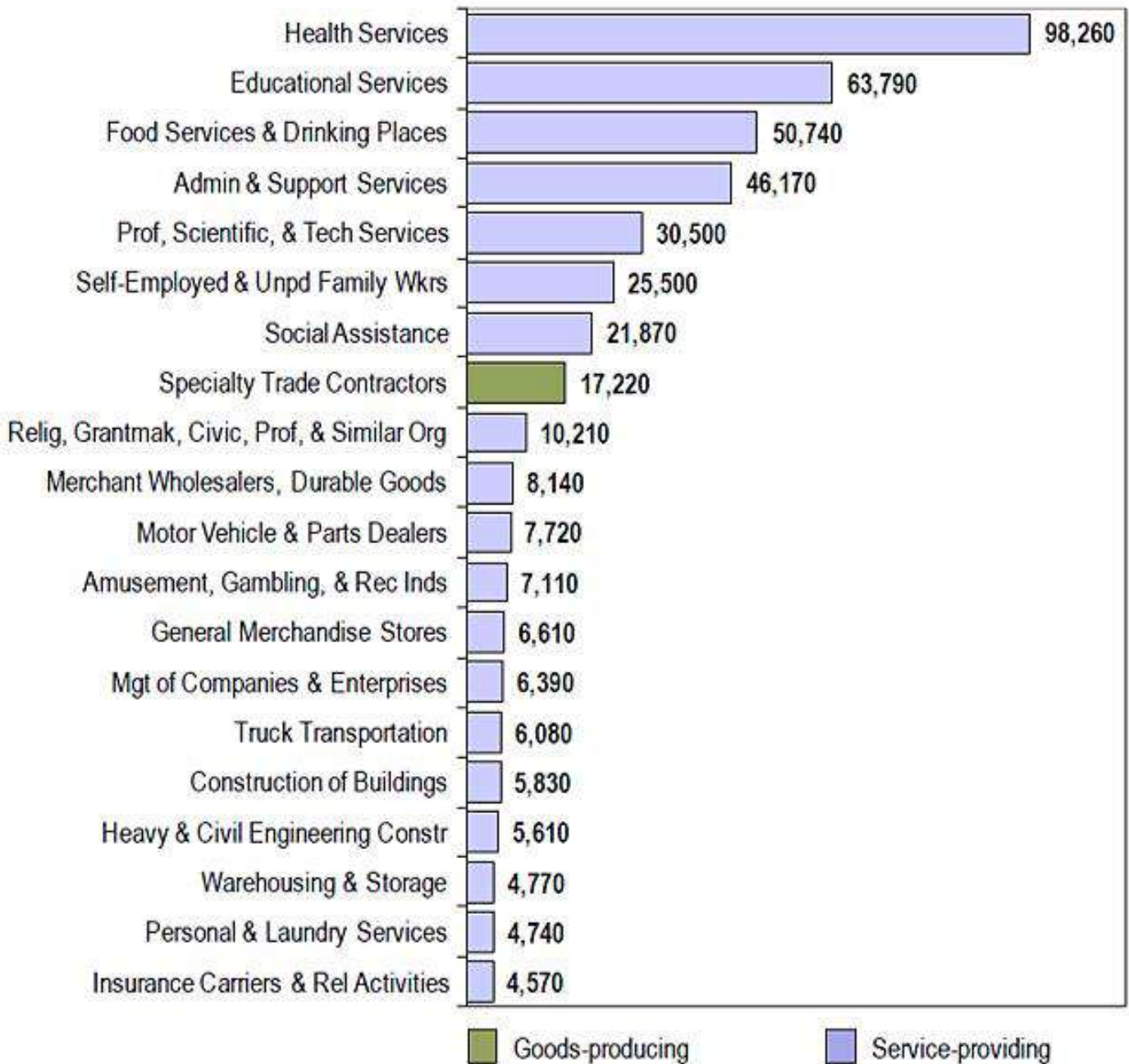


Career and Job Trends with Salary Information

Industry Subsectors with the Most Job Growth

Listed are the top twenty industry subsectors for projected growth from 2010 to 2020.

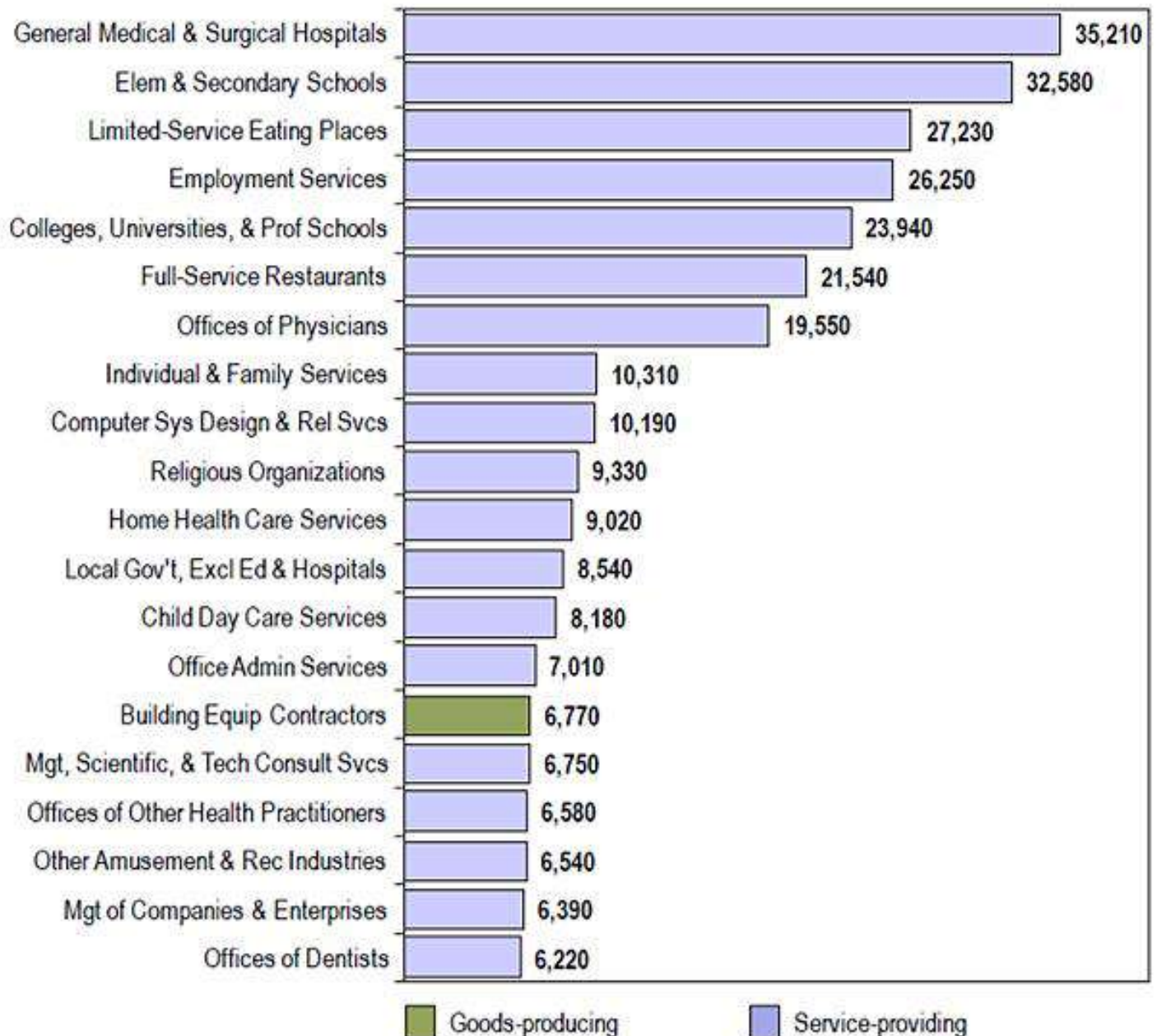
Ninety industry subsectors (components of industry sectors) were analyzed with health services projected to grow the most as it will add over 98,000 jobs over the projection period. Employment in educational services, food services and drinking places, administrative and support services, and professional and technical services round out the top five in terms of job growth.



Source: Georgia Department of Labor: Georgia Workforce Trends, An Analysis of Long-term Employment Projections to 2020: <https://explorer.dol.state.ga.us/mis/current/gaworkforcecurrent.pdf>

Most Job Growth by Detailed Industry

At the detailed industry level, industries tied to healthcare and social assistance are scattered at the top of the list of most growing. General medical and surgical hospitals will lead in employment growth in Georgia from 2010 to 2020 as over 35,000 jobs are projected to be created in the detailed industry. Elementary and secondary schools, adding 32,600 jobs, and limited-service eating places, with an additional 27,200 jobs by 2020, round out the top three. Of the top twenty detailed industries in job growth over the projection period, seven are in health care and social assistance while five are in professional and business services.

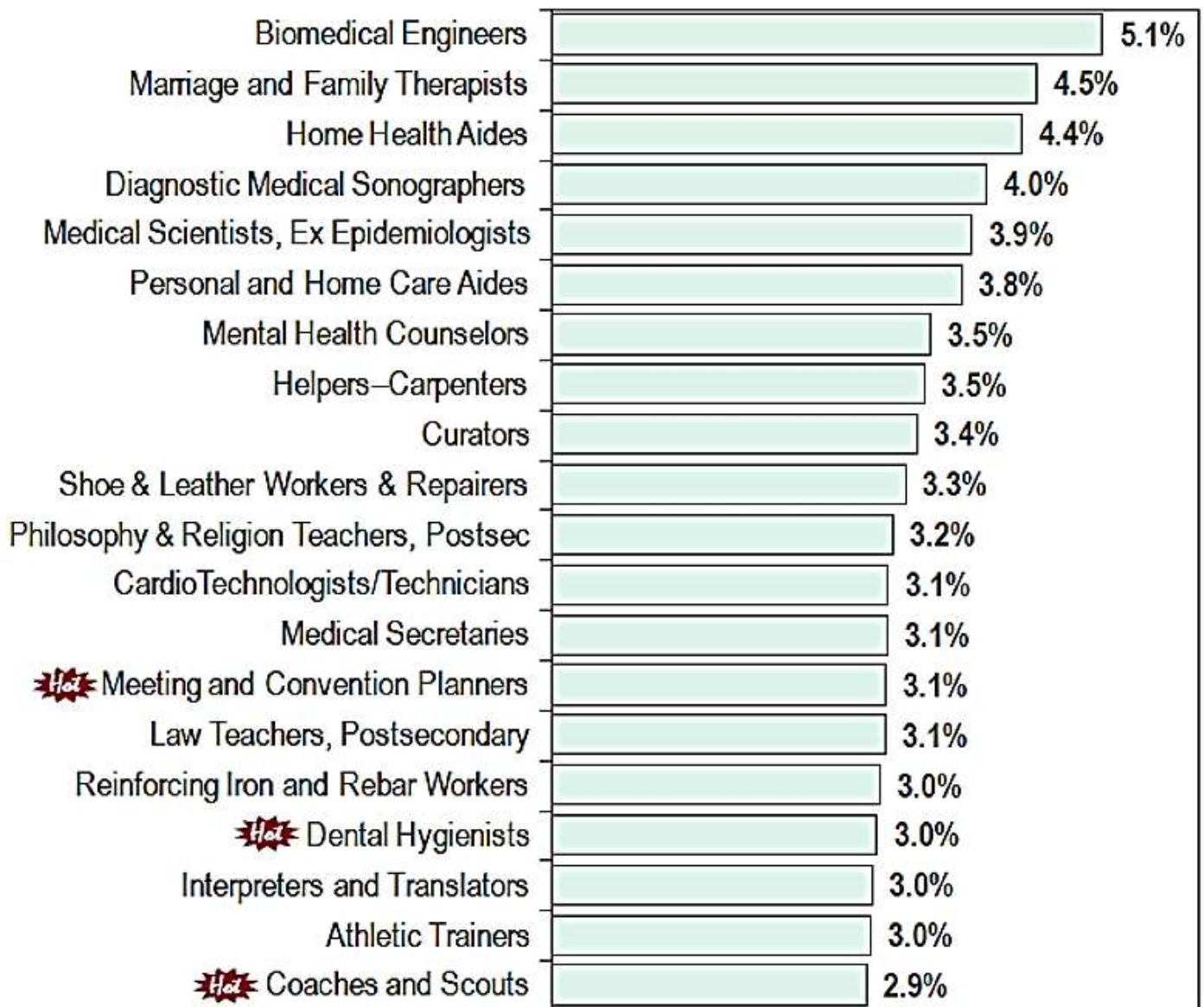


Source: Georgia Department of Labor: Georgia Workforce Trends, An Analysis of Long-term Employment Projections to 2020: <https://explorer.dol.state.ga.us/mis/current/gaworkforcecurrent.pdf>

Fastest Growing Occupations


The 20 fastest growing occupations through 2020 in Georgia in terms of annual growth rate are dominated by healthcare and health related occupations, reflective of the strong projected growth in the health services industry over the projection period. Half of the occupations generally require a bachelor's degree or higher and 15 of the occupations are white collar.

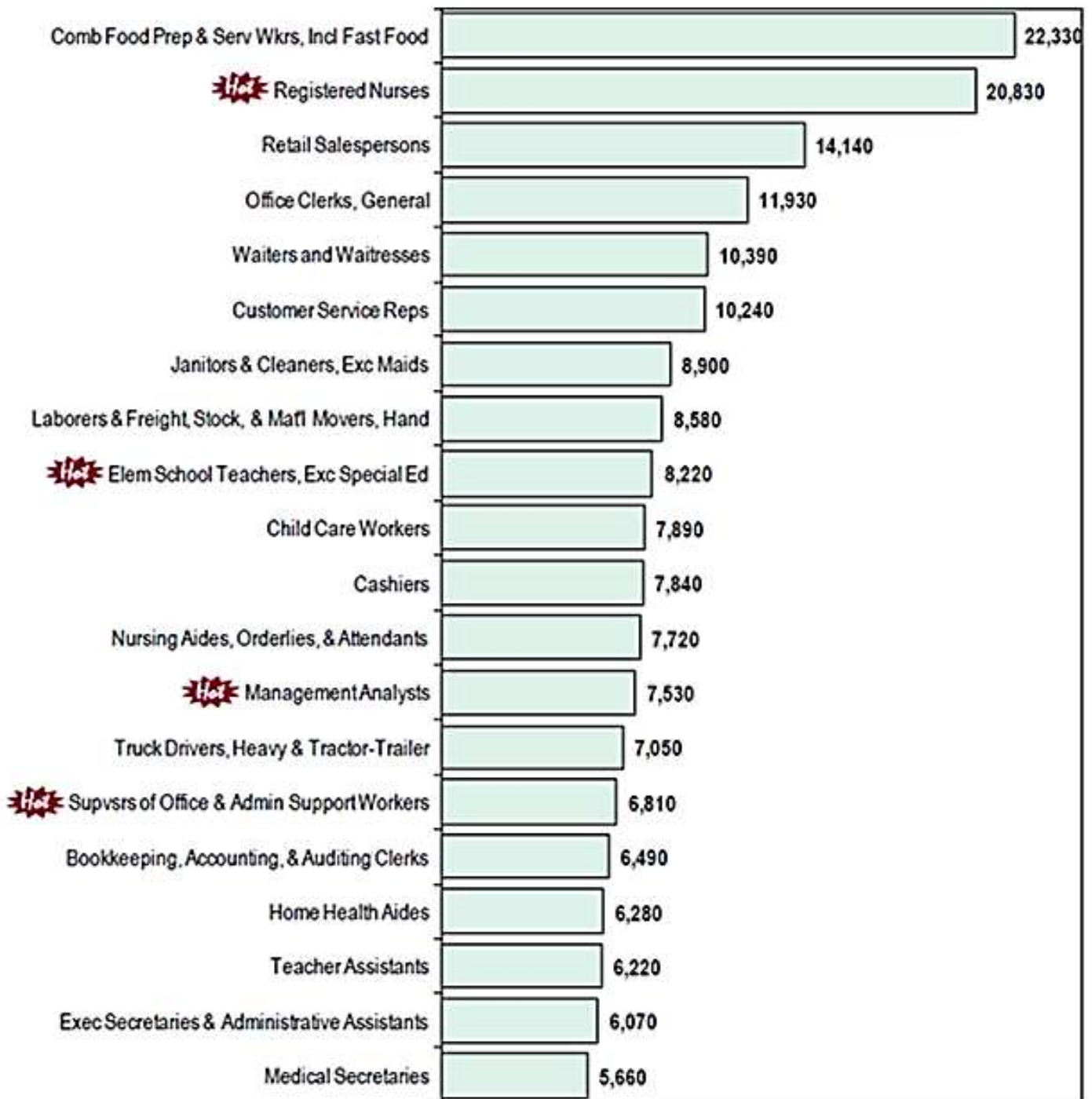
Though all the jobs listed are fast-growing, that does not always mean they have many new jobs. Biomedical Engineers, the fastest-growing occupation at 5.1 percent, is expected to grow by 110 jobs through 2020 compared to home health aides, third fastest growing occupation, which is projected to grow by 4.4 percent or nearly 6,300 jobs.



Source: Georgia Department of Labor: Georgia Workforce Trends, An Analysis of Long-term Employment Projections to 2020: <https://explorer.dol.state.ga.us/mis/current/gaworkforcecurrent.pdf>

Occupations with the Most Job Growth

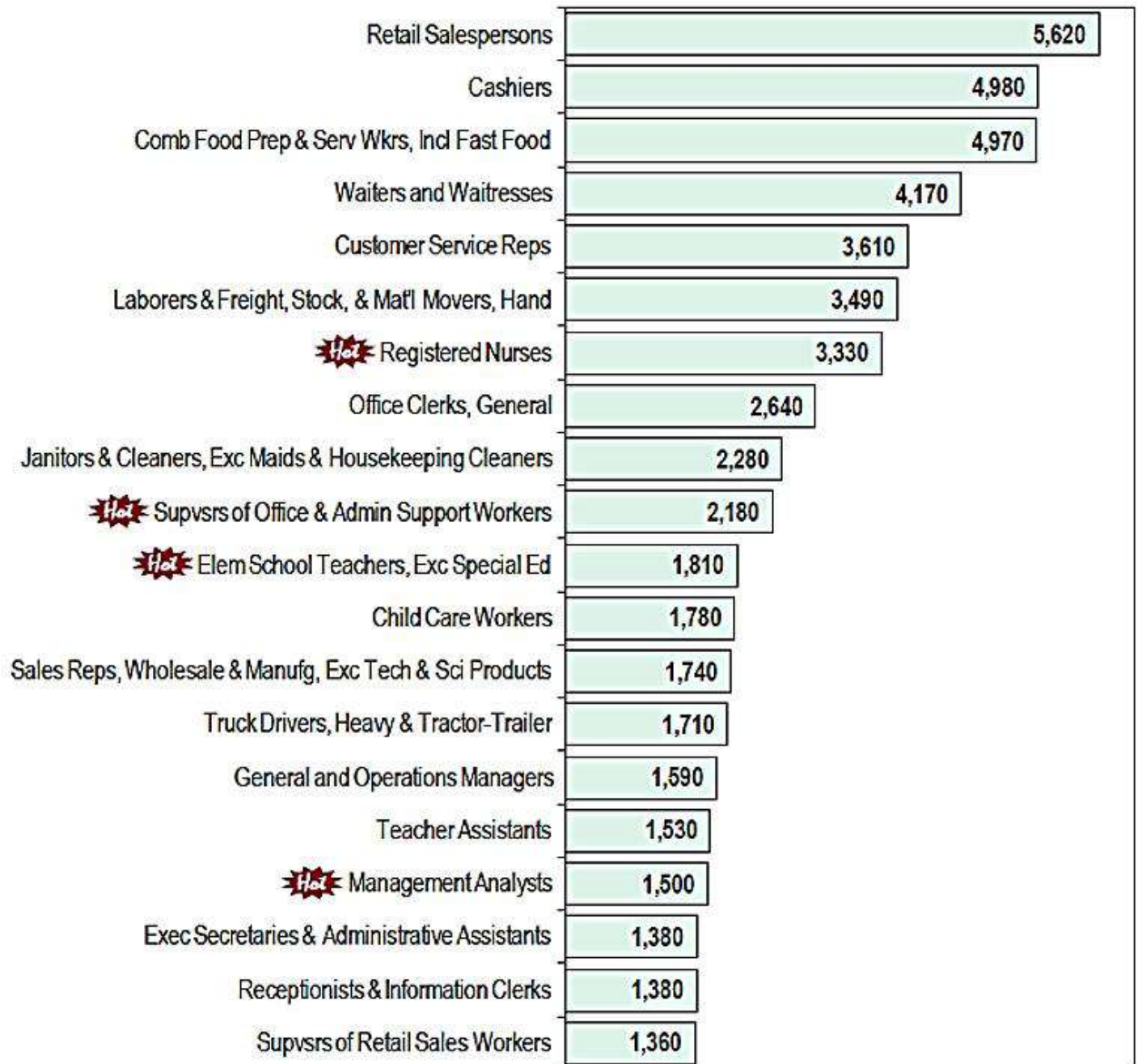
The 20 occupations with the most job growth through 2020 represent 39.6 percent of all the projected growth in the state. These occupations combine to create over 191,000 new jobs in Georgia over the projection period. Four of the occupations are  careers, 12 are white collar, two are blue collar, 16 generally require a high school diploma or less, and four generally require some form of education above high school.



Source: Georgia Department of Labor: Georgia Workforce Trends, An Analysis of Long-term Employment Projections to 2020: <https://explorer.dol.state.ga.us/mis/current/gaworkforcecurrent.pdf>

Occupations with the Most Annual Openings

The occupations with the most annual openings will be the ones most in demand over the projection period. The 20 occupations listed are projected to produce nearly 55,000 annual job openings and account for 35.7 percent of all annual openings in Georgia through 2020. For most of the occupations listed, the need to replace workers leaving an occupation is projected to create more openings than openings created by new/expanding businesses. Half of the occupations generally require a high school diploma, six require less than high school education, and four require an associate's or bachelor's degree.

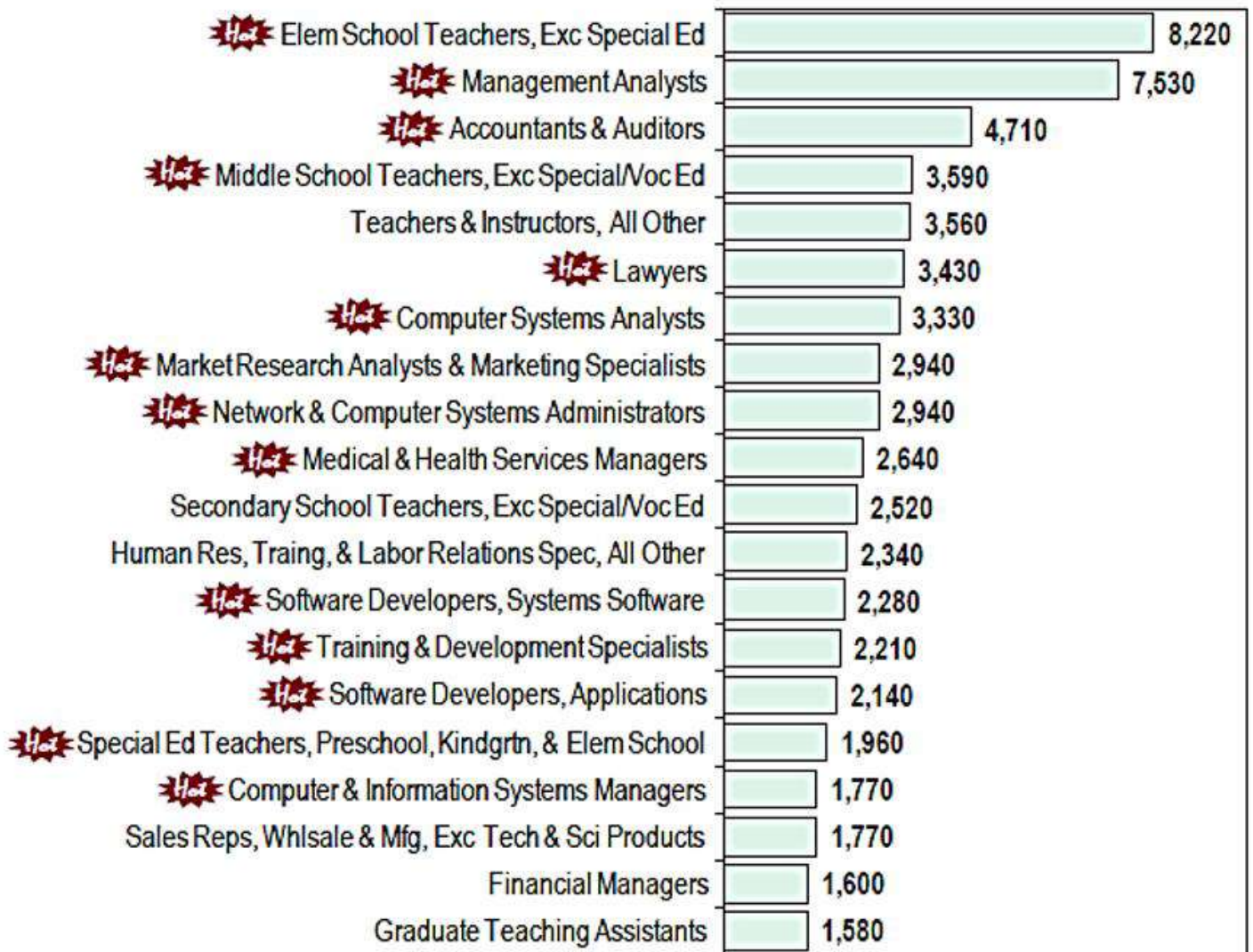


Source: Georgia Department of Labor: Georgia Workforce Trends, An Analysis of Long-term Employment Projections to 2020: <https://explorer.dol.state.ga.us/mis/current/gaworkforcecurrent.pdf>

Most Job Growth in Occupations Requiring Bachelor's Degree or More

The occupations in Georgia that generally require a bachelor's degree or more are highly concentrated in education and computer related jobs. With the population in Georgia continuing to grow and the need to educate students in grades K-12 continues to be a priority in the state, the need for new teaching positions will rise. Information technology will continue to be a high demand area for jobs as businesses will rely on investment in these types of occupations to increase efficiency and raise productivity.




Almost all of these occupations have earned the distinction of being **Hot** for the projection period. Their rapid job growth, relatively high wages, and plentiful job openings through 2020 make them extremely attractive job prospects.



Source: Georgia Department of Labor: Georgia Workforce Trends, An Analysis of Long-term Employment Projections to 2020: <https://explorer.dol.state.ga.us/mis/current/gaworkforcecurrent.pdf>

Georgia's HOT Careers to 2020

The careers in this chart have it all!

Career	Personal Skills and Abilities		Personal Skills and Abilities										Work Characteristics				Occupational Characteristics					
	● advanced skills required	○ moderate skills required	Math skills	English skills	Science skills	Computer skills	Artistic/creative skills	Persuasive/interpersonal skills	Mechanical ability	Leadership/managerial ability	Travel between work sites	Overnight travel away from home	Hazardous duties/conditions	Operates machines or equipment	Outdoor work	Irregular work schedule	-job stress/pressure	Physically demanding	Economically sensitive	Geographically concentrated	2012 Annual Wage	2010-20 Annual Openings
Doctoral or professional degree																						
Art, Drama, & Music Teachers, Postsec		○					●	○													\$61,600	120
Business Teachers, Postsec	○	○		○	○									○							\$85,200	120
Clinical, Counseling, & School Psychologists		●	○		○	●			●					○	○						\$63,500	140
Dentists, General	○	○	●	○	○		○					○	●								\$194,300	190
Family & General Practitioners	○	●	●	○		●			○		●	●		●	●	○					\$191,300	190
Health Specialties Teachers, Postsec	●	●	●	○				●													\$98,900	200
Internists, General	○	●	●	○		●			○		●	●		●	●	○					\$204,100	140
Lawyers		●	●	○	○	●	●	●	○					○	●						\$137,700	690
Pharmacists	○	●	●	○		●								●	○						\$112,400	200
Physical Therapists		●	●			●						●		○		●					\$78,800	130
Surgeons	●	●	●	●		○	●	○	○		○			●	●						\$247,100	110
Master's degree																						
Education Administrators, Postsec	○	●		○		●	●							○	○						\$97,600	230
Educational, Guidance, School, & Voc Counselors		●	○		○	●	○							○	○						\$56,600	270
Healthcare Social Workers		●	●	●		●	●	●							●		●				\$46,800	220
Instructional Coordinators	○	○		○	○	○									○						\$60,100	220
Physician Assistants	○	●	●	○		●			○		●	○		●	●	○					\$88,500	150
Bachelor's degree																						
Accountants & Auditors	●	○		○		○					○			○	○						\$71,500	1,190
Computer & Information Systems Managers	●	○	●	●			●	●	●	●	●	●	●	●	○	○					\$118,500	350
Computer Systems Analysts	●	●	●	●		○	●	○	○	○				○	○	○					\$78,000	810
Cost Estimators	●	○	○	○									○								\$57,300	210
Database Administrators	●	○		●		○		○	○					○	●			○			\$81,800	150
Dietitians & Nutritionists	●	●	●	●		●	○	○													\$52,300	110
Elementary School Teachers, Exc Spec Ed	○	●	○	○	○	●		○						○	○	○					\$54,200	1,810
Financial Analysts 	○	○		○		○									○						\$78,000	250
Graphic Designers		●		●	●	○	○								○						\$49,900	390
Health Educators	○	●	●	○		○		○						○							\$70,200	120
Kindergarten Teachers, Exc Spec Ed	○	●	○	○	○	●		○						○	○	○					\$51,800	340
Logisticians 	○	○	○	○		○	○				○					○					\$71,400	130
Management Analysts	○	●		○	○	●	●	○						○	○						\$98,300	1,500
Market Research Analysts & Marketing Spec	○	○		○	○	○									○						\$64,100	530
Marketing Managers 	○	●		○	○	●	●	●						○	●						\$118,900	290
Med & Clinical Laboratory Technologists	●	●	●	●		○					○				●						\$53,400	200

Fast job growth ✓ Above average wages ✓ At least 100 expected annual job openings








<http://explorer.dol.state.ga.us/gsipub/index.asp?docid=356>



Georgia Department of Labor • Mark Butler, Commissioner
Equal Opportunity Employer/Program • Auxiliary Aids and Services Available upon Request to Individuals with Disabilities

Georgia's HOT Careers to 2020

The careers in this chart have it all!

	Personal Skills and Abilities										Work Characteristics										Occupational Characteristics	
	Math skills	English skills	Science skills	Computer skills	Artistic/creative skills	Persuasive/interpersonal skills	Mechanical ability	Leadership/managerial skills	Travel between work sites	Overnight travel away from home	Hazardous duties/conditions	Operates machines or equipment	Outdoor work	Irregular work schedule	Job stress/pressure	Physically demanding	Economically sensitive	Geographically concentrated	2012 Annual Wage	2010-20 Annual Openings		
Bachelor's degree (Continued)																						
Medical & Health Services Managers	○	○	○	○	●	●	○											\$87,000	510			
Meeting, Convention, & Event Planners		●			●	●	●	●		○	○	●	●	●				\$45,000	170			
Middle Schl Teachers, Exc Spec & Career/Tech Edu	○	●	○	○	○	○	○					○	○	○				\$54,200	790			
Network & Computer Systems Administrators	●	○		●		○	○					○	○				○	\$77,100	470			
Personal Financial Advisors 	●			●		○								○				\$97,000	150			
Producers & Directors		●		●	●	●	●	●	○	●	●	●	●	●				\$76,500	200			
Public Relations Specialists 		●		○	●	●	●	○	●				○	○		●		\$58,500	370			
Social & Community Service Managers		○			○	○	○	○					○					\$62,300	180			
Software Developers, Applications	●			●	●				○	●	●	●	●					\$85,700	350			
Software Developers, Systems Software	●			●	●				○	●	●	●	●					\$97,900	320			
Spec Ed Teachers, Middle School	○	●	○	○	○	○	○						○	○	○			\$52,100	210			
Spec Ed Teachers, Preschl, Kndrgrtn, & Elem School	○	●	○	○	○	○	○						○	○	○			\$53,300	470			
Training & Development Specialists		○		○		●	○	○								○		\$58,100	400			
Vocational Ed Teachers, Postsec	○	●	○	○	○	○	○					○	○	○				\$47,600	200			
Associate's degree																						
Construction Managers 	○	○	○	○		●	○	●	●	○		○	○	○	○			\$68,800	250			
Dental Hygienists		○	○			○				●	●		○		○			\$65,100	350			
Paralegals & Legal Assistants		●		○	○	○		○					○	○				\$48,900	320			
Radiologic Technologists & Technicians	○	○	○	○		○				○	○	○						\$51,200	300			
Registered Nurses	○	●	●	○		●				○	○	○	○					\$63,200	3,330			
Respiratory Therapists	○	●	●		●			○	○	○	○	○						\$51,100	180			
Some college, no degree																						
Computer Support Specialists	●			●	●			○		○	○	○	○	○				\$49,200	830			
High school diploma or equivalent																						
Administrative Services Managers	●	●	●		●					○			○					\$84,100	450			
Coaches & Scouts					○	●	●	●			●	●	○		○			\$43,400	260			
Electrical Power-Line Installers & Repairers 	○		○			●	○	○	○	○	○	○	○					\$51,100	120			
Supvrs of Construction Trades & Extraction Workers 	●			●	●	●	○	○	○	○	○	○	○					\$55,300	640			
Supvrs of Helpers, Laborers, & Mat Movers, Handlers 					●	○						○	○					\$48,000	270			
Supvrs of Office & Admin Support Workers	○			●	●				○									\$51,100	2,180			
Industrial Machinery Mechanics 	●	●			●					○	○	○	○					\$45,100	330			
Legal Secretaries	○	●			●													\$44,300	190			
Loan Officers	●	●	●		●								○		●			\$72,100	300			
Plumbers, Pipefitters, & Steamfitters 	●	○	●		●		○	○	○	○	○	○	○					\$44,300	280			
Tax Preparers	●	○		●														\$44,600	160			

Fast job growth ✓ Above average wages ✓ At least 100 expected annual job openings

Contacts and Resources

Career, Technical and Agricultural Education (CTAE):

Main Office of CTAE: **Address:** 256 Clifton Street, SE, Atlanta, Georgia 30317
Tel: (404) 802-5979 **Fax:** (404) 802-5978
Web Site: <http://www.atlanta.k12.ga.us/Page/33800>

Dr. Michael Maze, *Director* **Tel:** (404) 802-5853 **Email:** mmaze@atlanta.k12.ga.us
Dr. Brenè Bradley, *Coordinator* **Tel:** (404) 802-5892 **Email:** bebradley@atlanta.k12.ga.us
Ms. Mary Shepherd, *Specialist* **Tel:** (404) 802-5832 **Email:** mshepherd@atlanta.k12.ga.us
Dr. Beverly Holyfield, *Specialist* **Tel:** (404) 802-5894 **Email:** brhollyfield@atlanta.k12.ga.us

ESOL/Translation Needs:

APS World Languages Program **Address:** 21 Thirkeld Ave. SW, Atlanta, Georgia 30315
Dr. Margaret McKenzie, *Coordinator* **Tel:** (404) 802-7583 **Email:**
mamckenzie@atlanta.k12.ga.us

Title II, Title IX and Section 504 District Contact Name and Information:

Title II: Jetarius M. Cook **Tel:** (404) 802-1798 **Email:** jercook@atlanta.k12.ga.us
Title IX: George Williams **Tel:** (404) 802-2374 **Email:** gcwilliams@atlanta.k12.ga.us
Section 504: Deanna Rogers **Tel:** (404) 802-2665 **Email:** dtrogers@atlanta.k12.ga.us

Special Education Needs:

Department of Special Education: **Address:** 130 Trinity Ave. SE, Atlanta, Georgia 30303
Vickie Cleveland, *Executive Director* **Tel:** (404) 802-2602 **Email:** vcleveland@atlanta.k12.ga.us
Web Site: <http://www.atlanta.k12.ga.us/page/180>

Georgia Department of Education, Division for Special Education Services and Supports

Address: 1870 Twin Towers East, 205 Jesse Hill Jr. Drive SE, Atlanta, Georgia 30334
Tel: (404) 656-3963 **Fax:** (404) 651-6457
Web Site: www.doe.k12.ga.us

The Atlanta Public School System does not discriminate on the basis of race, color, religion, sex, citizenship, ethnic or national origin, age, disability, medical status, military status, veteran status, marital status, sexual orientation, gender identity or expression, genetic information, ancestry, or any legally protected status in any of its employment practices, educational programs, services or activities.

For additional information about nondiscrimination provisions, please contact the Office of Internal Resolution, 130 Trinity Avenue, S.W. Avenue, Atlanta, Georgia 30303.

Grievance Procedure

Nondiscrimination Policy

The Atlanta Public School System does not discriminate on the basis of race, color, religion, sex, citizenship, ethnic or national origin, age, disability, medical status, military status, veteran status, marital status, sexual orientation, gender identity or expression, genetic information, ancestry, or any legally protected status in any of its employment practices, educational programs, services or activities.

For additional information about nondiscrimination provisions, please contact the Office of Internal Resolution, 130 Trinity Avenue, S.W., Atlanta, Georgia 30303.

Grievance Procedure

Complaints must be submitted in writing within 90 days from the date of alleged act(s), unless the time for filing is extended by the Office of Internal Resolution/Employee Relations for good cause (to be determined by the Director of the Office of Internal Resolution/Employee Relations). All inquiries and discrimination complaints filed with the Office of Internal Resolution/Employee Relations (except in extenuating circumstances) are confidential to the extent possible as described below. Confidentiality also applies to the investigative process of all investigations conducted by the Office of Internal Resolution/Employee Relations.

Measures shall be taken independent of receipt of a complaint shall include but not be limited to:

1. Discussing the circumstances with the alleged victim;
2. Maintaining the anonymity of the alleged victim; if requested or deemed to be in the best interest of the involved parties;
3. Conducting an informal investigation to determine the validity of the allegations;
4. Advising the alleged offender of the complaint and directing him/her to cease the alleged objectionable behavior and any other behavior that may constitute discrimination;
5. Restricting contact between the alleged victim and the alleged offender. Any school personnel who have knowledge of the occurrence of discrimination shall immediately make an appropriate report of the alleged misconduct to the appropriate Principal or Assistant Principal or to the Office of Internal Resolution/Employee Relations.

For more information see the following Board Policies:

GAE – Complaints and Grievances

<http://www.boarddocs.com/ga/aps/Board.nsf/goto?open&id-9DGK564F8144#>

GAEB – Discrimination, Harassment, and Retaliation

<http://www.boarddocs.com/ga/aps/Board.nsf/Public?open&id=policies#>

JCAC - Harassment

<http://www.boarddocs.com/ga/aps/Board.nsf/goto?open&id=9CKTPF685ACF>



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