



## The 2010–20 job outlook in brief

It can be difficult choosing a career. When planning for the future, knowing which occupations are expected to grow—and which aren't—is valuable information.

The *Occupational Outlook Handbook (OOH)*, published every 2 years by the U.S. Bureau of Labor Statistics (BLS), features projections of job outlook and employment prospects. The 2012–13 edition of the *OOH* contains the 2010–20 employment projections and detailed information for almost 350 occupations, including each occupation's job tasks and wages, along with the education and training typically required to enter it.

This special issue of the *Occupational Outlook Quarterly (OOQ)* includes a table highlighting 2010 employment, 2010–20 projections, 2010 wage data, and education and training information so you can compare occupations at a glance. Unlike previous presentations of the “job outlook in brief,” the table in this issue provides less narrative but more data for each occupation. The guide on pages 6 and 7 explains the information available in the table.

The next few pages explain what the BLS projections mean, why employment is changing, how BLS makes its projections, and where to find more projections information.

## Understanding the employment projections

BLS projections give a broad overview of future employment conditions. The projections show expected

changes in employment over the entire 2010–20 decade, but they do not depict variation from one year to another. To understand the projections, you need to know how BLS shows projected employment change and why employment changes.

### Projected employment change

The projections show expected job growth or decline in hundreds of occupations. Usually, occupations that are gaining jobs offer more opportunities for workers than declining occupations do. Each job that is added to an occupation equals an opening for a worker trying to enter that occupation.

In the table, projected employment change over the 2010–20 decade is shown in two ways: as a number and as a percent. The number shows the actual number of jobs projected to be added or lost in an occupation. Percent change shows the rate of expected job growth or decline, whether very fast, very slow, or somewhere in between.

Sometimes, occupations with large projected changes in employment are also growing or declining at a fast rate. For example, between 2010 and 2020, employment of personal care aides is expected to grow by almost 607,000 jobs—one of the largest projected gains of any occupation. And the occupation's projected growth rate of 70 percent makes it the fastest growing one.

Other times, there is little correlation between projected numeric changes in employment and rapid growth or decline. Biomedical engineers, for example, are projected to add about 10,000 jobs over the

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decade—a relatively small gain. But that increase represents growth of 62 percent, much faster than the average. Cashiers are projected to gain 250,000 jobs but have a slower-than-average growth rate of 7 percent.

In general, occupations with the greatest numeric changes are those that already have large numbers of workers. The fastest rates of change are usually in occupations that have fewer workers (as is the case for biomedical engineers).

## Why employment changes

Occupations gain or lose jobs because of different, often conflicting, forces. Demand for goods and services drives up the number of jobs in an occupation. But a new innovation might make each worker more productive and, thus, reduce the number of workers needed to create goods or provide services. Demand and productivity can combine to change employment and affect job prospects.

**Demand for goods and services.** As the population grows, so too does demand for many goods and services. This increased demand often results in a greater need for workers who produce those goods and provide those services—and this, in turn, generates employment

growth in many occupations. For example, an increasing number of children needing education increases the demand for elementary and secondary school teachers.

In the same way, shifting tastes change the goods and services that consumers demand. These changes then lead to changes in employment. For example, demand for sophisticated electronics, such as high-definition televisions and video recorders, is expected to drive employment growth for home entertainment installers and repairers.

**Increased worker productivity.** New organizational structures, increased education and training, and labor-saving technologies, such as computers and automated machinery, might reduce the number of workers needed to produce goods and provide services, thus lowering employment. For example, employment of printing machine operators is expected to decline as increasing printer speeds and automation require fewer workers to keep up production levels.

Rising worker productivity slows job growth in many occupations. For example, the growth of loan officers will be limited by underwriting software, which allows loan officers to evaluate loans more quickly than they could previously.



## How BLS develops projections

BLS economists analyze changing conditions to create estimates of job growth and decline. How do they do it? The process involves several steps.

Economists begin by estimating the total number of available workers, based on population growth and labor force participation rates. Considering trends, economists project demand for goods and services. They next project how employment will change in the industries that provide those goods and services.

Finally, BLS economists analyze what types of workers employers in those industries need. Economists estimate how many of an industry's jobs will be in a given occupation by researching production methods, business practices, and other factors—and analyzing how these elements are changing.

When making projections, economists rely on ongoing trends. But trends can change unexpectedly because of shifts in technology, consumer preferences, or trade patterns and because of natural disasters, wars, and other unpredictable events.

For more information about the employment projections program, visit [www.bls.gov/emp](http://www.bls.gov/emp) or call (202) 691-5700.

## How the recent recession affects the projections

When developing long-term projections, BLS focuses on long-term trends in population, labor force, productivity, and output growth. The population and the labor force have been aging and their growth rates slowing. These long-term trends are expected to continue, regardless of fluctuations in the economy.

BLS prepares new projections every other year, with the base year of the projections decade being an even-numbered year. For this set of projections, the base year, 2010, follows a severe downturn in the U.S. economy. Total employment of wage and salary workers fell by nearly 7.8 million between 2007 and 2010.

The projected changes in employment between 2010 and 2020 include regaining some jobs that were lost during the downturn. For example, the recent recession had a particularly severe impact on jobs in construction. Although employment in construction is projected to grow rapidly, it is not expected to return to its pre-recession employment level by 2020. Similarly, employment in the transportation and material moving and production occupations groups is also expected to grow, but not enough to return to 2006 levels.

Individual industry and occupation groups were affected in different ways by the recession. Some were severely affected, some mildly so, and others seem not





to have been affected at all. Some industries and occupations are not expected to recover completely. Others are expected to recover and have continued growth, and still others are projected to keep on growing.

## For more information

BLS projections are used by high school students and their teachers and parents, college students, career changers, and career development and guidance specialists. In addition, other federal agencies, researchers, and academics use the projections to understand trends in the economy and labor market.

### Beyond the “Brief”

This issue of the *OOQ*, and the 2012–13 edition of the *OOH* on which it is based, are among several BLS presentations of the 2010–20 projections.

The winter 2011–12 issue of the *OOQ* includes charts that show detailed projections of occupations, the labor force, industries, and the economy. Charts include those that project the fastest growing occupations, occupations adding the most new jobs, occupations with the most job openings for workers new to the occupation,

and occupational job growth and job openings by education. This issue is available online in both PDF and HTML formats at [www.bls.gov/ooq/2011/winter/home.htm](http://www.bls.gov/ooq/2011/winter/home.htm).

The January 2012 issue of the *Monthly Labor Review* contains articles that provide more analytical and technical details of the projections. These articles are available online at [www.bls.gov/opub/mlr/2012/01/home.htm](http://www.bls.gov/opub/mlr/2012/01/home.htm).

For tables with detailed, comprehensive statistics used in preparing the projections, see [www.bls.gov/emp/tables.htm](http://www.bls.gov/emp/tables.htm). Projections methodology is available at [www.bls.gov/emp/ep\\_projections\\_methods.htm](http://www.bls.gov/emp/ep_projections_methods.htm).

### Projections by state

State workforce agencies use the BLS projections, which are national in scope, to prepare their own projections. Together, state and BLS projections are used by policymakers and education and training officials to make decisions about education and training policy, funding, and program offerings.

For state-specific projections, visit [www.projectionscentral.com](http://www.projectionscentral.com). (Current state projections feature 2008–18 data; projections based on 2010–20 data will not be available until next year.)

## A guide to the table

The table that follows is divided into sections by occupational group, with an overview for each group and detailed information for the occupations in that group.

### Occupational groups

Occupations that have similar job duties are grouped according to the tasks that the workers in them perform. The table lists these 22 occupational groups in the order they appear in the Standard Occupational Classification (SOC) system. The text introducing each group gives an overview of the group.

The table also includes a statement about employment opportunities in the U.S. Armed Forces.

### Occupations

Each of the 341 occupations profiled in the *OOH* is included in the table. The data and other information in the table give a snapshot of the occupation's important details.

**Employment data.** For each occupation, the table shows estimated employment in 2010, the projected numeric change in employment (that is, how many jobs are expected to be gained or lost) over the 2010–20 decade, and the projected percent change in employment (that is, the rate of job growth or loss). A key phrase also describes the rate of job growth as compared with other occupations. (See page 7.)

The employment data in the table come from the BLS National Employment Matrix, except where noted.

**Wages.** Median annual wage data in the table are from the BLS Occupational Employment Statistics (OES) program. The median wage is the point at which half of the workers in an occupation earned more than the amount, and half earned less.

For the occupational groups, the data box identifies which occupation in the group had the highest median annual wage in May 2010. The median annual wage for each individual occupation is provided in the table. In May 2010, the median annual wage for all workers was \$33,840. Some occupations show that their wage was greater than or equal to ( $\geq$ ) \$166,400 because the OES program does not publish wage data above \$166,400.

Wages include hourly, weekly, or annual pay that people receive for the work that they do. Sales commissions, tips, and production bonuses also are part of the wages shown in the table, but overtime and



nonproduction bonuses are not. In addition, wages in these charts are for wage and salary workers only. Self-employed workers are not included in these measurements.

**Education, experience, and training.** This set of projections introduces a new BLS system for assigning occupations to education, experience, and on-the-job training categories.

Each occupation is assigned to 1 of 8 education categories. These assignments represent the typical level of education most workers need to enter the occupation. They are shown in the table as follows: doctoral or professional degree; master's degree; bachelor's degree; associate's degree; postsecondary non-degree award; some college, no degree; high school diploma or equivalent; and less than high school.

To enter some occupations, workers typically need experience in a related one. Assignments in the table identify occupations in which such experience is required or in which related experience is a commonly accepted substitute for formal education or training. The assignments are more than 5 years, 1 to 5 years, less than 1 year, or none.

Some workers receive training on the job that helps them acquire the skills they need to become competent in the occupation. Assignments for on-the-job training typically needed to attain competency are indicated in the table as follows: internship/residency, apprenticeship, long-term, moderate-term, short-term, or none.

For additional information, see [www.bls.gov/emp/ep\\_education\\_training\\_system.htm](http://www.bls.gov/emp/ep_education_training_system.htm).

## Key phrases in the “Brief”

For descriptions about changing employment between 2010 and 2020:

If the growth adjective reads...	Employment is projected to...
Much faster than average	Increase 29 percent or more
Faster than average	Increase 20 to 28 percent
About as fast as average	Increase 10 to 19 percent
Slower than average	Increase 3 to 9 percent
Little or no change	Decrease 2 percent to increase 2 percent
Decline moderately	Decrease 3 to 9 percent
Decline rapidly	Decrease 10 percent or more



## Management occupations

Management occupations are projected to add 615,800 new jobs, growing 7 percent, from 2010 to 2020.

Although employment in most management occupations is expected to grow, in one large occupation—farmers, ranchers, and other agricultural managers—it is projected to decline. Employment of farmers, ranchers, and other agricultural managers is expected to decrease as large, productive farms continue consolidating the agriculture sector.

Management occupations are found throughout all industries in the economy and usually pay well. The median annual wage of management occupations was \$91,440—higher than that of any other occupational group. The high pay reflects, in part, the combination of formal postsecondary education and work experience that workers in these occupations typically need.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Administrative services managers	254,300	36,900	15%	About as fast as average	\$77,890	High school diploma or equivalent	1 to 5 years	None
Advertising, promotions, and marketing managers	216,800	29,400	14	About as fast as average	108,260	Bachelor's degree	1 to 5 years	None
Architectural and engineering managers	176,800	15,200	9	Slower than average	119,260	Bachelor's degree	More than 5 years	None
Compensation and benefits managers	31,800	900	3	Slower than average	89,270	Bachelor's degree	1 to 5 years	None
Computer and information systems managers	307,900	55,800	18	About as fast as average	115,780	Bachelor's degree	More than 5 years	None
Construction managers	523,100	86,600	17	About as fast as average	83,860	Associate's degree	More than 5 years	None
Elementary, middle, and high school principals	236,100	23,200	10	About as fast as average	86,970	Master's degree	1 to 5 years	None

# Management occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Farmers, ranchers, and other agricultural managers	1,202,500	-96,100	-8%	Decline moderately	\$60,750	High school diploma or equivalent	More than 5 years	None
Financial managers	527,100	46,300	9	Slower than average	103,910	Bachelor's degree	More than 5 years	None
Food service managers	320,600	-10,600	-3	Decline moderately	48,130	High school diploma or equivalent	1 to 5 years	None
Human resources managers	71,800	9,300	13	About as fast as average	99,180	Bachelor's degree	1 to 5 years	None
Industrial production managers	150,300	13,700	9	Slower than average	87,160	Bachelor's degree	1 to 5 years	None
Legislators	67,700	200	0	Little or no change	19,260	Bachelor's degree	1 to 5 years	None
Lodging managers	51,400	4,300	8	Slower than average	46,880	High school diploma or equivalent	1 to 5 years	None
Medical and health services managers	303,000	68,000	22	Faster than average	84,270	Bachelor's degree	None	None
Natural sciences managers	49,300	3,800	8	Slower than average	116,020	Bachelor's degree	More than 5 years	None
Postsecondary education administrators	146,200	27,800	19	About as fast as average	83,710	Master's degree	1 to 5 years	None
Preschool and childcare center directors	63,600	15,800	25	Faster than average	42,960	Bachelor's degree	1 to 5 years	None
Property, real estate, and community association managers	303,900	18,400	6	Slower than average	51,480	High school diploma or equivalent	1 to 5 years	None
Public relations managers and specialists	320,000	68,300	21	Faster than average	57,550	Bachelor's degree	Varies	Varies
Sales managers	342,100	40,100	12	About as fast as average	98,530	Bachelor's degree	1 to 5 years	None
Social and community service managers	134,100	35,800	27	Faster than average	57,950	Bachelor's degree	1 to 5 years	None
Top executives	2,136,900	97,000	5	Slower than average	101,250	Varies	Varies	None
Training and development managers	29,800	4,300	15	About as fast as average	89,170	Bachelor's degree	1 to 5 years	None

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.



## Business and financial operations occupations

Business and financial operations occupations are projected to add 1.2 million new jobs, growing 17 percent, from 2010 to 2020.

As a whole, business operations specialists—such as management analysts and human resources specialists—are projected to have slightly faster employment growth and to add more new jobs than financial specialists, such as loan officers and budget analysts.

Business and financial operations workers are employed in many different industries, but the largest numbers are found in government, professional and business services, and the finance and insurance industries. Meeting, convention, and event planners and market research analysts are expected to experience particularly strong job growth in these industries.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–2020*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Accountants and auditors	1,216,900	190,700	16%	About as fast as average	\$61,690	Bachelor's degree	None	None
Appraisers and assessors of real estate	77,800	5,800	7	Slower than average	48,500	High school diploma or equivalent	None	Apprenticeship
Budget analysts	62,100	6,500	10	About as fast as average	68,200	Bachelor's degree	None	None
Claims adjusters, appraisers, examiners, and investigators	290,700	7,500	3	Slower than average	58,460	Varies	None	Varies
Cost estimators	185,400	67,500	36	Much faster than average	57,860	Bachelor's degree	None	None
Financial analysts	236,000	54,200	23	Faster than average	74,350	Bachelor's degree	None	None

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

# Business and financial operations occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Financial examiners	29,300	7,900	27%	Faster than average	\$74,940	Bachelor's degree	None	Moderate-term on-the-job training
Human resources specialists	442,200	90,700	21	Faster than average	52,690	Bachelor's degree	None	None
Insurance underwriters	101,800	6,000	6	Slower than average	59,290	Bachelor's degree	None	Moderate-term on-the-job training
Loan officers	289,400	41,000	14	About as fast as average	56,490	High school diploma or equivalent	None	Moderate-term on-the-job training
Logisticians	108,900	27,800	26	Faster than average	70,800	Bachelor's degree	1 to 5 years	None
Management analysts	718,800	157,200	22	Faster than average	78,160	Bachelor's degree	1 to 5 years	None
Market research analysts	282,700	116,600	41	Much faster than average	60,570	Bachelor's degree	None	None
Meeting, convention, and event planners	71,600	31,300	44	Much faster than average	45,260	Bachelor's degree	Less than 1 year	None
Personal financial advisors	206,800	66,400	32	Much faster than average	64,750	Bachelor's degree	None	None
Purchasing managers, buyers, and purchasing agents	487,200	31,700	7	Slower than average	58,360	Varies	Varies	Varies
Tax examiners and collectors, and revenue agents	74,500	5,500	7	Slower than average	49,360	Bachelor's degree	None	Moderate-term on-the-job training

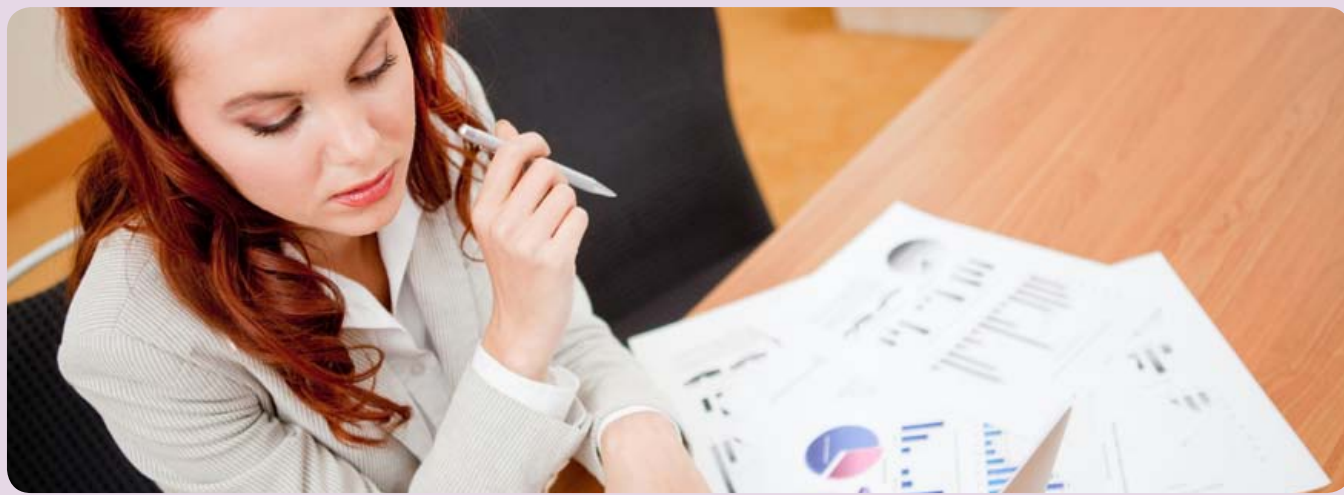


## Computer and mathematical occupations

Computer and mathematical occupations are projected to add 778,300 new jobs, growing 22 percent, from 2010 to 2020.

Most occupations in this group are computer occupations, which are expected to grow 22 percent, faster than the 17-percent growth rate of mathematical occupations. Although computer occupations are found throughout the economy, rapid increases in the computer systems design and related services industry is driving the employment growth in this group.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–2020*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
<b>Computer occupations</b>								
Computer and information research scientists	28,200	5,300	19%	About as fast as average	\$100,660	Doctoral or professional degree	None	None
Computer programmers	363,100	43,700	12	About as fast as average	71,380	Bachelor's degree	None	None
Computer support specialists	607,100	110,000	18	About as fast as average	46,260	Some college, no degree	None	Moderate-term on-the-job training
Computer systems analysts	544,400	120,400	22	Faster than average	77,740	Bachelor's degree	None	None
Database administrators	110,800	33,900	31	Much faster than average	73,490	Bachelor's degree	1 to 5 years	None
Information security analysts, web developers, and computer network architects	302,300	65,700	22	Faster than average	75,660	Bachelor's degree	1 to 5 years	None
Network and computer systems administrators	347,200	96,600	28	Faster than average	69,160	Bachelor's degree	None	None
Software developers	913,100	270,900	30	Much faster than average	90,530	Bachelor's degree	None	None

# Computer and mathematical occupations

Occupation	Employment, 2010	Projected change, 2010–2020*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
<b>Mathematical occupations</b>								
Actuaries	21,700	5,800	27%	Faster than average	\$87,650	Bachelor's degree	None	Long-term on-the-job training
Mathematicians	3,100	500	16	About as fast as average	99,380	Master's degree	None	None
Operations research analysts	64,600	9,400	15	About as fast as average	70,960	Bachelor's degree	None	None
Statisticians	25,100	3,500	14	About as fast as average	72,830	Master's degree	None	None

## Architecture and engineering occupations

Architecture and engineering occupations are projected to add 252,800 new jobs, growing 10 percent, from 2010 to 2020.

Employment growth is expected to come primarily from the architectural, engineering, and related services industry group, which accounted for almost 26 percent of jobs for architecture and engineering occupations in 2010.

However, the projected employment decline in many manufacturing industries will limit growth for this occupational group. Nearly 30 percent of jobs for architecture and engineering occupations are in manufacturing industries.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Aerospace engineering and operations technicians	8,700	-100	-2%	Little or no change	\$58,080	Associate's degree	None	None
Aerospace engineers	81,000	4,000	5	Slower than average	97,480	Bachelor's degree	None	None

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

# Architecture and engineering occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Agricultural engineers	2,700	200	9%	Slower than average	\$71,090	Bachelor's degree	None	None
Architects	113,700	27,900	24	Faster than average	72,550	Bachelor's degree	None	Internship/residency
Biomedical engineers	15,700	9,700	62	Much faster than average	81,540	Bachelor's degree	None	None
Cartographers and photogrammetrists	13,800	3,100	22	Faster than average	54,510	Bachelor's degree	None	None
Chemical engineers	30,200	1,800	6	Slower than average	90,300	Bachelor's degree	None	None
Civil engineering technicians	79,000	9,400	12	About as fast as average	46,290	Associate's degree	None	None
Civil engineers	262,800	51,100	19	About as fast as average	77,560	Bachelor's degree	None	None
Computer hardware engineers	70,000	6,300	9	Slower than average	98,810	Bachelor's degree	None	None
Drafters	205,100	11,400	6	Slower than average	47,880	Associate's degree	None	None
Electrical and electronic engineering technicians	151,100	2,900	2	Little or no change	56,040	Associate's degree	None	None
Electrical and electronics engineers	294,000	17,600	6	Slower than average	87,180	Bachelor's degree	None	None
Electro-mechanical technicians	16,400	100	1	Little or no change	49,550	Associate's degree	None	None
Environmental engineering technicians	18,800	4,600	24	Faster than average	43,390	Associate's degree	None	None
Environmental engineers	51,400	11,300	22	Faster than average	78,740	Bachelor's degree	None	None
Health and safety engineers	23,700	3,100	13	About as fast as average	75,430	Bachelor's degree	None	None
Industrial engineering technicians	62,500	2,600	4	Slower than average	48,210	Associate's degree	None	None
Industrial engineers	203,900	13,100	6	Slower than average	76,100	Bachelor's degree	None	None
Landscape architects	21,600	3,500	16	About as fast as average	62,090	Bachelor's degree	None	Internship/residency
Marine engineers and naval architects	5,900	1,000	17	About as fast as average	79,920	Bachelor's degree	None	None
Materials engineers	22,300	1,900	9	Slower than average	83,120	Bachelor's degree	None	None
Mechanical engineering technicians	44,900	1,800	4	Slower than average	50,110	Associate's degree	None	None
Mechanical engineers	243,200	21,300	9	Slower than average	78,160	Bachelor's degree	None	None

# Architecture and engineering occupations

Occupation	Employment, 2010	Projected change, 2010–2020*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Mining and geological engineers	6,400	600	10%	About as fast as average	\$82,870	Bachelor's degree	None	None
Nuclear engineers	19,100	2,000	10	About as fast as average	99,920	Bachelor's degree	None	None
Petroleum engineers	30,200	5,100	17	About as fast as average	114,080	Bachelor's degree	None	None
Surveying and mapping technicians	56,900	9,000	16	About as fast as average	37,900	High school diploma or equivalent	None	Moderate-term on-the-job training
Surveyors	51,200	13,000	25	Faster than average	54,880	Bachelor's degree	None	None

## Life, physical, and social science occupations

Life, physical, and social science occupations are projected to add 190,800 new jobs, growing 16 percent, from 2010 to 2020.

Jobs for life scientists are projected to increase by 20 percent, making it the fastest growing of these three occupational groups. Employment of social scientists and related workers is projected to grow 18 percent, and employment of physical scientists is projected to grow 13 percent.

Because workers in life, physical, and social science occupations conduct research, more than 25 percent of them are employed in scientific research and development services and in colleges, universities, and professional schools.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Agricultural and food science technicians	21,300	1,500	7%	Slower than average	\$32,760	Associate's degree	None	None

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

# Life, physical, and social science occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Agricultural and food scientists	33,500	3,500	10%	About as fast as average	\$58,450	Varies	None	None
Anthropologists and archeologists	6,100	1,300	21	Faster than average	54,230	Master's degree	None	None
Atmospheric scientists, including meteorologists	9,500	1,000	11	About as fast as average	87,780	Bachelor's degree	None	None
Biochemists and biophysicists	25,100	7,700	31	Much faster than average	79,390	Doctoral or professional degree	None	None
Biological technicians	80,200	10,900	14	About as fast as average	39,020	Bachelor's degree	None	None
Chemical technicians	61,000	4,100	7	Slower than average	42,040	Associate's degree	None	Moderate-term on-the-job training
Chemists and materials scientists	90,900	4,000	4	Slower than average	69,790	Bachelor's degree	None	None
Conservation scientists and foresters	34,900	1,700	5	Slower than average	57,420	Bachelor's degree	None	None
Economists	15,400	900	6	Slower than average	89,450	Bachelor's degree	None	None
Environmental science and protection technicians	29,600	7,000	24	Faster than average	41,380	Associate's degree	None	Moderate-term on-the-job training
Environmental scientists and specialists	89,400	16,700	19	About as fast as average	61,700	Bachelor's degree	None	None
Epidemiologists	5,000	1,200	24	Faster than average	63,010	Master's degree	None	None
Forensic science technicians	13,000	2,400	19	About as fast as average	51,570	Bachelor's degree	None	Moderate-term on-the-job training
Forest and conservation technicians	36,500	-400	-1	Little or no change	33,390	Associate's degree	None	None
Geographers	1,600	600	35	Much faster than average	72,800	Bachelor's degree	None	None
Geological and petroleum technicians	14,400	2,100	15	About as fast as average	54,020	Associate's degree	None	Moderate-term on-the-job training
Geoscientists	33,800	7,100	21	Faster than average	82,500	Bachelor's degree	None	None
Historians	4,000	700	18	About as fast as average	53,520	Master's degree	None	None
Hydrologists	7,600	1,400	18	About as fast as average	75,690	Master's degree	None	None

# Life, physical, and social science occupations

Occupation	Employment, 2010	Projected change, 2010–2020*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Medical scientists	100,000	36,400	36%	Much faster than average	\$76,700	Doctoral or professional degree	None	None
Microbiologists	20,300	2,700	13	About as fast as average	65,920	Bachelor's degree	None	None
Nuclear technicians	7,100	1,000	14	About as fast as average	68,090	Associate's degree	None	Moderate-term on-the-job training
Physicists and astronomers	20,600	2,800	14	About as fast as average	105,430	Doctoral or professional degree	None	None
Political scientists	5,600	400	8	Slower than average	107,420	Master's degree	None	None
Psychologists	174,000	37,700	22	Faster than average	68,640	Varies	None	Internship/residency
Sociologists	4,000	700	18	About as fast as average	72,360	Master's degree	None	None
Survey researchers	19,600	4,700	24	Faster than average	36,050	Bachelor's degree	None	None
Urban and regional planners	40,300	6,500	16	About as fast as average	63,040	Master's degree	None	None
Zoologists and wildlife biologists	19,800	1,500	7	Slower than average	57,430	Bachelor's degree	None	None

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.





## Community and social service occupations

This occupational group is projected to add 582,300 new jobs, growing 24 percent, from 2010 to 2020. Community and social service occupations are expected to be the fourth-fastest-growing major occupational group.

This group is unique in how uniformly fast the growth is expected to be: Each of the occupations in this group is expected to have faster employment growth than the 14-percent average growth rate for all occupations.

The individual and family services industry—despite employing 12 percent of workers in community and social service occupations—is projected to account for 27 percent of new jobs for this occupational group. This growth will provide many new opportunities for the community and social service workers in this industry, including social and human service assistants and social workers.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Health educators	63,400	23,200	37%	Much faster than average	\$45,830	Bachelor's degree	None	None
Mental health counselors and marriage and family therapists	156,300	58,500	37	Much faster than average	39,710	Master's degree	None	Internship/residency
Probation officers and correctional treatment specialists	93,200	17,100	18	About as fast as average	47,200	Bachelor's degree	None	Short-term on-the-job training
Rehabilitation counselors	129,800	36,600	28	Faster than average	32,350	Master's degree	None	None
School and career counselors	281,400	53,400	19	About as fast as average	53,380	Master's degree	None	None
Social and human service assistants	384,200	106,000	28	Faster than average	28,200	High school diploma or equivalent	None	Short-term on-the-job training
Social workers	650,500	161,200	25	Faster than average	42,480	Varies	None	None

# Community and social service occupations

Occupation	Employment, 2010	Projected change, 2010–2020*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Substance abuse and behavioral disorder counselors	85,500	23,400	27%	Faster than average	\$38,120	High school diploma or equivalent	None	Moderate-term on-the-job training

## Legal occupations

Legal occupations are projected to add 131,000 new jobs, growing 11 percent, from 2010 to 2020.

Legal occupations form the second-smallest major occupational group, but these occupations usually pay well: The median annual wage of this group was \$74,580 in May 2010.

Lawyers account for more than half of the jobs in this group, and their employment is growing at about the same rate as the group as a whole. Jobs for paralegals and legal assistants are projected to grow 18 percent—some-what faster than the group.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Court reporters	22,000	3,100	14%	About as fast as average	\$47,700	Postsecondary non-degree award	None	Short-term on-the-job training
Judges, mediators, and hearing officers	62,700	4,600	7	Slower than average	91,880	Varies	Varies	Varies
Lawyers	728,200	73,600	10	About as fast as average	112,760	Doctoral or professional degree	None	None
Paralegals and legal assistants	256,000	46,900	18	About as fast as average	46,680	Associate's degree	None	None

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

## Education, training, and library occupations

The education, training, and library occupational group is projected to add 1.4 million new jobs, growing 15 percent, from 2010 to 2020.

Employment growth in education, training, and library occupations is influenced by a rise in school enrollments. For example, enrollment in postsecondary institutions is increasing faster than population growth, as more high school graduates attend college and as members of the workforce seek additional education.

Most education, training, and library jobs are in public education. However, employment growth is expected to be faster for these occupations in private elementary and secondary schools and private colleges, universities, and professional schools.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Adult literacy and GED teachers	86,900	12,700	15%	About as fast as average	\$46,530	Bachelor's degree	None	Internship/residency
Archivists	6,100	700	12	About as fast as average	45,200	Bachelor's degree	None	None
Career and technical education teachers	103,000	2,300	2	Little or no change	53,920	Bachelor's degree	1 to 5 years	Internship/residency
Curators, museum technicians, and conservators	23,800	3,800	16	About as fast as average	42,310	Varies	None	None
High school teachers	1,037,600	71,900	7	Slower than average	53,230	Bachelor's degree	None	Internship/residency
Instructional coordinators	139,700	27,300	20	Faster than average	58,830	Master's degree	More than 5 years	None

# Education, training, and library occupations

Occupation	Employment, 2010	Projected change, 2010–2020*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Kindergarten and elementary school teachers	1,655,800	281,500	7%	About as fast as average	\$51,380	Bachelor's degree	None	Internship/residency
Librarians	156,100	10,800	17	Slower than average	54,500	Master's degree	None	None
Library technicians and assistants	231,500	22,100	10	About as fast as average	26,330	Varies	None	Varies
Middle school teachers	641,700	108,300	17	About as fast as average	51,960	Bachelor's degree	None	Internship/residency
Postsecondary teachers	1,756,000	305,700	17	About as fast as average	62,050	Doctoral or professional degree	None	None
Preschool teachers	456,800	113,600	25	Faster than average	25,700	Associate's degree	None	None
Self-enrichment teachers	252,800	52,800	21	Faster than average	36,340	High school diploma or equivalent	1 to 5 years	None
Special education teachers	459,600	77,400	17	About as fast as average	53,220	Bachelor's degree	None	Internship/residency
Teacher assistants	1,288,300	191,100	15	About as fast as average	23,220	High school diploma or equivalent	None	Short-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.



## Arts, design, entertainment, sports, and media occupations

This diverse occupational group is projected to add 342,500 new jobs, growing 13 percent, from 2010 to 2020.

The entertainers and performers, sports and related workers group is projected to grow the fastest—16 percent—and to add the most new jobs, 128,900. Jobs for media and communication workers are expected to grow by 106,100, while jobs for art and design workers will increase by 76,100.

Self-employed workers accounted for more than 30 percent of jobs in the arts, design, entertainment, sports, and media group in 2010. Jobs for the self-employed are projected to grow somewhat slower than wage and salary jobs and are projected to account for less than 20 percent of the new jobs for this occupational group.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20 <sup>1</sup>			Annual median wage, 2010 <sup>2</sup>	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
<b>Arts and design occupations</b>								
Art directors	73,900	6,700	9%	Slower than average	\$80,630	Bachelor's degree	1 to 5 years	None
Craft and fine artists	56,900	3,100	5	Slower than average	43,470	High school diploma or equivalent	None	Long-term on-the-job training
Fashion designers	21,500	0	0	Little or no change	64,530	High school diploma or equivalent	None	Long-term on-the-job training
Floral designers	66,500	-6,200	-9	Decline moderately	23,610	High school diploma or equivalent	None	Short-term on-the-job training
Graphic designers	279,200	37,300	13	About as fast as average	43,500	Bachelor's degree	None	None
Industrial designers	40,800	4,300	10	About as fast as average	58,230	Bachelor's degree	None	None

# Arts, design, entertainment, sports, and media occupations

Occupation	Employment, 2010	Projected change, 2010–2020 <sup>1</sup>			Annual median wage, 2010 <sup>2</sup>	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Interior designers	56,500	10,900	19%	About as fast as average	\$46,280	Bachelor's degree	None	None
Multimedia artists and animators	66,500	5,500	8	Slower than average	58,510	Bachelor's degree	None	Moderate-term on-the-job training
Set and exhibit designers	11,700	1,200	10	About as fast as average	46,680	Bachelor's degree	None	None
<b>Entertainment and sports occupations</b>								
Actors	66,500	2,600	4	Slower than average	17.44/hr	Some college, no degree	None	Long-term on-the-job training
Athletes and sports competitors	16,500	3,600	22	Faster than average	43,740	High school diploma or equivalent	None	Long-term on-the-job training
Coaches and scouts	242,900	71,400	29	Much faster than average	28,340	High school diploma or equivalent	None	Long-term on-the-job training
Dancers and choreographers	25,600	4,600	18	About as fast as average	15.97/hr	High school diploma or equivalent	Varies	Long-term on-the-job training
Music directors and composers	93,200	9,600	10	About as fast as average	45,970	Bachelor's degree	1 to 5 years	None
Musicians and singers	176,200	17,900	10	About as fast as average	22.39/hr	High school diploma or equivalent	None	Long-term on-the-job training
Producers and directors	122,500	13,500	11	About as fast as average	68,440	Bachelor's degree	1 to 5 years	None
Umpires, referees, and other sports officials	19,500	3,900	20	Faster than average	22,840	High school diploma or equivalent	None	Long-term on-the-job training
<b>Media and communication occupations</b>								
Announcers	61,900	4,100	7	Slower than average	27,010	Varies	None	Varies
Broadcast and sound engineering technicians	116,900	11,600	10	About as fast as average	39,870	Varies	None	Varies
Editors	127,200	800	1	Little or no change	51,470	Bachelor's degree	1 to 5 years	None
Film and video editors and camera operators	58,300	2,200	4	Slower than average	45,490	Bachelor's degree	Varies	Varies
Interpreters and translators	58,400	24,600	42	Much faster than average	43,300	Bachelor's degree	None	Long-term on-the-job training

<sup>1</sup> Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

<sup>2</sup> Wages are annual except for actors, dancers and choreographers, and musicians and singers. These occupations show hourly wages.

# Arts, design, entertainment, sports, and media occupations

Occupation	Employment, 2010	Projected change, 2010–20 <sup>1</sup>			Annual median wage, 2010 <sup>2</sup>	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Photographers	139,500	17,500	13%	About as fast as average	\$29,130	High school diploma or equivalent	None	Long-term on-the-job training
Reporters, correspondents, and broadcast news analysts	58,500	-3,200	-6	Decline moderately	36,000	Bachelor's degree	None	None
Technical writers	49,500	8,500	17	About as fast as average	63,280	Bachelor's degree	1 to 5 years	Short-term on-the-job training
Writers and authors	145,900	9,500	6	Slower than average	55,420	Bachelor's degree	None	Long-term on-the-job training

<sup>1</sup> Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

<sup>2</sup> Wages are annual except for actors, dancers and choreographers, and musicians and singers. These occupations show hourly wages.

## Healthcare practitioners and technical occupations

Healthcare practitioners and technical occupations are projected to add 2 million new jobs from 2010 to 2020, the second most of any major group. And their projected growth rate of 26 percent is the third fastest.

Employment growth of the healthcare practitioners and technical occupations group is driven by increased spending on healthcare services. Older people spend more on healthcare than do those who are younger, so healthcare spending is expected to increase as the population ages 65 and older grows.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20 <sup>*</sup>			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Athletic trainers	18,200	5,500	30%	Much faster than average	\$41,600	Bachelor's degree	None	None
Audiologists	13,000	4,800	37	Much faster than average	66,660	Doctoral or professional degree	None	None

# Healthcare practitioners and technical occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Cardiovascular technologists and technicians and vascular technologists	49,400	14,500	29%	Much faster than average	\$49,410	Associate's degree	None	None
Chiropractors	52,600	14,900	28	Faster than average	67,200	Doctoral or professional degree	None	None
Dental hygienists	181,800	68,500	38	Much faster than average	68,250	Associate's degree	None	None
Dentists	155,700	32,200	21	Faster than average	146,920	Doctoral or professional degree	None	Internship/residency
Diagnostic medical sonographers	53,700	23,400	44	Much faster than average	64,380	Associate's degree	None	None
Dietitians and nutritionists	64,400	12,700	20	Faster than average	53,250	Bachelor's degree	None	Internship/residency
EMTs and paramedics	226,500	75,400	33	Much faster than average	30,360	Postsecondary non-degree award	None	None
Licensed practical and licensed vocational nurses	752,300	168,500	22	Faster than average	40,380	Postsecondary non-degree award	None	None
Medical and clinical laboratory technologists and technicians	330,600	42,900	13	About as fast as average	46,680	Varies	None	None
Medical records and health information technicians	179,500	37,700	21	Faster than average	32,350	Postsecondary non-degree award	None	None
Nuclear medicine technologists	21,900	4,100	19	About as fast as average	68,560	Associate's degree	None	None
Occupational health and safety specialists	58,700	5,000	9	Slower than average	64,660	Bachelor's degree	None	Moderate-term on-the-job training
Occupational health and safety technicians	10,600	1,400	13	About as fast as average	45,330	High school diploma or equivalent	None	Moderate-term on-the-job training
Occupational therapists	108,800	36,400	33	Much faster than average	72,320	Master's degree	None	None
Opticians, dispensing	62,600	18,100	29	Much faster than average	32,940	High school diploma or equivalent	None	Long-term on-the-job training
Optometrists	34,200	11,300	33	Much faster than average	94,990	Doctoral or professional degree	None	None

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.



# Healthcare practitioners and technical occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Orthotists and prosthetists	6,300	800	12%	About as fast as average	\$65,060	Master's degree	None	None
Pharmacists	274,900	69,700	25	Faster than average	111,570	Doctoral or professional degree	None	None
Pharmacy technicians	334,400	108,300	32	Much faster than average	28,400	High school diploma or equivalent	None	Moderate-term on-the-job training
Physical therapists	198,600	77,400	39	Much faster than average	76,310	Doctoral or professional degree	None	None
Physician assistants	83,600	24,700	30	Much faster than average	86,410	Master's degree	None	None
Physicians and surgeons	691,000	168,300	24	Faster than average	≥166,400	Varies	Varies	Varies
Podiatrists	12,900	2,600	20	Faster than average	118,030	Doctoral or professional degree	None	Internship/residency
Psychiatric technicians and aides	142,500	21,800	15	About as fast as average	26,880	Varies	None	Short-term on-the-job training
Radiation therapists	16,900	3,400	20	Faster than average	74,980	Associate's degree	None	None
Radiologic technologists	219,900	61,000	28	Faster than average	54,340	Associate's degree	None	None
Recreational therapists	22,400	3,800	17	About as fast as average	39,410	Bachelor's degree	None	None
Registered nurses	2,737,400	711,900	26	Faster than average	64,690	Associate's degree	None	None
Respiratory therapists	112,700	31,200	28	Faster than average	54,280	Associate's degree	None	None
Speech-language pathologists	123,200	28,800	23	Faster than average	66,920	Master's degree	None	None
Surgical technologists	93,600	17,700	19	About as fast as average	39,920	Postsecondary non-degree award	None	None
Veterinarians	61,400	22,000	36	Much faster than average	82,040	Doctoral or professional degree	None	None
Veterinary technologists and technicians	80,200	41,700	52	Much faster than average	29,710	Associate's degree	None	None

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

## Healthcare support occupations

The healthcare support occupations group is projected to be the fastest growing occupational group from 2010 to 2020—increasing by 34 percent and adding 1.4 million new jobs.

About half of these new jobs will be in a single occupation, home health aides. Home health aides accounted for 24 percent of this occupational group in 2010 and are projected to account for 31 percent by 2020.

An aging population that spends more on healthcare is a major factor behind the fast growth rate for healthcare support occupations. These occupations are concentrated in the health care industry: Almost 80 percent of the jobs were in this industry in 2010.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Dental assistants	297,200	91,600	31%	Much faster than average	\$33,470	Postsecondary non-degree award	None	None
Home health aides	1,017,700	706,300	69	Much faster than average	20,560	Less than high school	None	Short-term on-the-job training
Massage therapists	153,700	30,900	20	Faster than average	34,900	Postsecondary non-degree award	None	None
Medical assistants	527,600	162,900	31	Much faster than average	28,860	High school diploma or equivalent	None	Moderate-term on-the-job training
Medical transcriptionists	95,100	5,600	6	Slower than average	32,900	Postsecondary non-degree award	None	None
Nursing aides, orderlies, and attendants	1,505,300	302,000	20	Faster than average	24,010	Postsecondary non-degree award	None	None
Occupational therapy assistants and aides	36,000	14,800	41	Much faster than average	47,490	Varies	None	Varies
Physical therapist assistants and aides	114,400	51,100	45	Much faster than average	37,710	Varies	None	Varies

# Healthcare support occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Veterinary assistants and laboratory animal caretakers	73,200	10,400	14%	About as fast as average	\$22,040	High school diploma or equivalent	None	Short-term on-the-job training

## Protective service occupations

Protective service occupations are expected to add 364,500 new jobs, growing 11 percent, from 2010 to 2020.

Most of this occupational group consists of law enforcement workers, who predominantly work for governments, and security guards, who mostly work for private companies. About one-third of the new jobs created are projected to be in government, and about 40 percent in the investigation and security services industry.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Correctional officers	493,100	26,000	5%	Slower than average	\$39,020	High school diploma or equivalent	None	Moderate-term on-the-job training
Fire inspectors and investigators	13,600	1,200	9	Slower than average	52,230	High school diploma or equivalent	More than 5 years	Moderate-term on-the-job training
Firefighters	310,400	26,600	9	Slower than average	45,250	Postsecondary non-degree award	None	Long-term on-the-job training
Police and detectives	794,300	58,700	7	Slower than average	55,010	High school diploma or equivalent	Varies	Varies
Private detectives and investigators	34,700	7,100	21	Faster than average	42,870	Some college, no degree	1 to 5 years	Moderate-term on-the-job training
Security guards and gaming surveillance officers	1,090,600	200,200	18	About as fast as average	24,380	High school diploma or equivalent	None	Varies

## Food preparation and serving related occupations

The food preparation and serving related occupational group is projected to add about 1.1 million new jobs from 2010 to 2020, with a slower-than-average growth rate of 10 percent.

More than half of the new jobs will be for food and beverage serving workers, such as waiters and waitresses. Employment of these workers is growing slightly faster than that of cooks and food preparation workers, who account for most of the other jobs in this group.

About three-fourths of jobs in the food preparation and serving related occupational group are in the food services and drinking places industry. However, growth for these jobs is faster in the health care and social assistance industry, which accounted for 5 percent of food preparation and serving related jobs in 2010.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Bartenders	503,200	45,500	9%	Slower than average	\$18,680	Less than high school	None	Short-term on-the-job training
Chefs and head cooks	100,600	-800	-1	Little or no change	40,630	High school diploma or equivalent	1 to 5 years	None
Cooks	2,050,800	161,800	8	Slower than average	20,260	Varies	Varies	Varies
Food and beverage serving and related workers	4,110,400	491,600	12	About as fast as average	18,130	Less than high school	None	Varies
Food preparation workers	813,700	84,100	10	About as fast as average	19,100	Less than high school	None	Short-term on-the-job training
Waiters and waitresses	2,260,300	195,900	9	Slower than average	18,330	Less than high school	None	Short-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

## Building & grounds cleaning & maintenance occupations

This occupational group is projected to add 664,000 new jobs, growing 12 percent, from 2010 to 2020.

Almost all of the occupations in this group typically need little to no education or training. They also usually are low-paying, with a median annual wage of \$22,490. About 14 percent of these workers were self-employed in 2010.

Jobs for grounds maintenance workers are projected to grow about twice as fast as jobs for building cleaning workers. But building cleaning workers are a larger occupation and are projected to add more jobs.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Grounds maintenance workers	1,249,700	254,600	20%	Faster than average	\$23,740	Varies	None	Varies
Janitors and building cleaners	2,310,400	246,400	11	About as fast as average	22,210	Less than high school	None	Short-term on-the-job training
Maids and housekeeping cleaners	1,427,300	111,600	8	Slower than average	19,300	Less than high school	None	Short-term on-the-job training
Pest control workers	68,400	17,900	26	Faster than average	30,340	High school diploma or equivalent	None	Moderate-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

## Personal care and service occupations

Personal care and service occupations are expected to grow 27 percent—the second fastest of all groups—adding 1.3 million new jobs from 2010 to 2020.

Driving growth in this group is personal care aides, the fastest growing occupation overall. Employment of personal care aides is projected to grow as the number of elderly who want to live in their own homes increases.

Personal care and service occupations are usually low paying, with a median annual wage of \$20,640 in May 2010.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Animal care and service workers	234,900	54,000	23%	Faster than average	\$19,780	Varies	None	Varies
Barbers, hairdressers, and cosmetologists	712,200	100,900	14	About as fast as average	22,500	Varies	None	Varies
Childcare workers	1,282,300	262,000	20	Faster than average	19,300	High school diploma or equivalent	None	Short-term on-the-job training
Fitness trainers and instructors	251,400	60,400	24	Faster than average	31,090	High school diploma or equivalent	None	Short-term on-the-job training
Funeral directors	29,300	5,300	18	About as fast as average	54,140	Associate's degree	None	Apprenticeship
Gaming services occupations	177,100	22,900	13	About as fast as average	20,260	Varies	Varies	Varies
Manicurists and pedicurists	81,700	13,600	17	About as fast as average	19,650	Postsecondary non-degree award	None	None
Personal care aides	861,000	607,000	70	Much faster than average	19,640	Less than high school	None	Short-term on-the-job training
Recreation workers	339,100	64,300	19	About as fast as average	22,260	Bachelor's degree	None	None

# Personal care and service occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Skin care specialists	47,600	11,700	25%	Faster than average	\$28,920	Postsecondary non-degree award	None	None

## Sales and related occupations

Sales and related occupations are projected to add 1.9 million new jobs, growing 13 percent, from 2010 to 2020. More than half of the new jobs projected between 2010 and 2020 will be for retail sales workers, such as cashiers, whose employment is growing at about the same rate as the group as a whole.

In 2010, about 10 percent of jobs in sales and related occupations were for the self-employed, but jobs for self-employed sales and related workers are expected to decline. Most new jobs are projected to be in the retail sales industry, where the majority of jobs in this group are currently found.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Advertising sales agents	160,400	20,900	13%	About as fast as average	\$45,350	High school diploma or equivalent	None	Moderate-term on-the-job training
Cashiers	3,362,600	250,200	7	Slower than average	18,500	Less than high school	None	Short-term on-the-job training
Demonstrators and product promoters	90,100	15,800	18	About as fast as average	23,110	High school diploma or equivalent	None	Short-term on-the-job training
Insurance sales agents	411,500	90,200	22	Faster than average	46,770	High school diploma or equivalent	None	Moderate-term on-the-job training
Models	1,400	200	14	About as fast as average	32,920	Less than high school	None	None
Real estate brokers and sales agents	466,100	52,500	11	About as fast as average	42,680	High school diploma or equivalent	Varies	Varies

# Sales and related occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Retail sales workers	4,465,500	739,400	17%	About as fast as average	\$20,990	Less than high school	None	Varies
Sales engineers	66,400	9,500	14	About as fast as average	87,390	Bachelor's degree	None	Moderate-term on-the-job training
Securities, commodities, and financial services sales agents	312,200	47,500	15	About as fast as average	70,190	Bachelor's degree	None	Moderate-term on-the-job training
Travel agents	82,800	8,300	10	About as fast as average	31,870	High school diploma or equivalent	None	Moderate-term on-the-job training
Wholesale and manufacturing sales representatives	1,830,000	288,900	16	About as fast as average	56,620	Varies	None	Moderate-term on-the-job training

## Office and administrative support occupations

The largest occupational group, office and administrative support occupations, is projected to add the most new jobs, 2.3 million from 2010 to 2020—growing 10 percent. Most of this job growth, however, represents a recovery of jobs lost during the recession: From 2006 to 2010, employment of office and administrative support workers fell by 1.7 million.

Occupations in this group have particularly varied growth rates. A number of occupations—such as desktop publishers and postal service workers—are declining as automation reduces demand for these services. But other office and administrative support occupations, such as cargo and freight agents, are growing rapidly.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Bill and account collectors	401,700	57,200	14%	About as fast as average	\$31,310	High school diploma or equivalent	None	Moderate-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.



# Office and administrative support occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Bookkeeping, accounting, and auditing clerks	1,898,300	259,000	14%	About as fast as average	\$34,030	High school diploma or equivalent	None	Moderate-term on-the-job training
Cargo and freight agents	82,200	24,100	29	Much faster than average	37,150	High school diploma or equivalent	None	Short-term on-the-job training
Couriers and messengers	116,200	14,600	13	About as fast as average	24,080	High school diploma or equivalent	None	Short-term on-the-job training
Customer service representatives	2,187,300	338,400	15	About as fast as average	30,460	High school diploma or equivalent	None	Short-term on-the-job training
Desktop publishers	22,600	-3,300	-15	Decline rapidly	36,610	Associate's degree	None	Short-term on-the-job training
Financial clerks	1,395,500	152,600	11	About as fast as average	33,710	High school diploma or equivalent	None	Varies
General office clerks	2,950,700	489,500	17	About as fast as average	26,610	High school diploma or equivalent	None	Short-term on-the-job training
Information clerks	1,605,300	108,900	7	Slower than average	29,990	Varies	None	Varies
Material recording clerks	2,812,900	48,700	2	Little or no change	24,100	Varies	None	Varies
Police, fire, and ambulance dispatchers	100,100	11,700	12	About as fast as average	35,370	High school diploma or equivalent	None	Moderate-term on-the-job training
Postal service workers	524,200	-138,600	-26	Decline rapidly	53,090	High school diploma or equivalent	None	Short-term on-the-job training
Receptionists	1,048,500	248,500	24	Faster than average	25,240	High school diploma or equivalent	None	Short-term on-the-job training
Secretaries and administrative assistants	4,010,200	492,900	12	About as fast as average	34,660	High school diploma or equivalent	Varies	Varies
Tellers	560,000	7,300	1	Little or no change	24,100	High school diploma or equivalent	None	Short-term on-the-job training

## Farming, fishing, and forestry occupations

The smallest major occupational group in 2010, farming, fishing, and forestry occupations, is also the only group with expected employment declines. It is projected to lose 19,400 jobs, declining 2 percent, through 2020.

Agricultural workers, who accounted for 85 percent of all jobs in this group in 2010, are projected to face declining employment. Fishing and hunting workers are also expected to lose jobs, but employment of forest, conservation, and logging workers is expected to increase.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Agricultural workers	757,900	-20,000	-3%	Decline moderately	\$18,970	Varies	Varies	Varies
Fishers and related fishing workers	32,000	-2,000	-6	Decline moderately	25,590	Less than high school	None	Moderate-term on-the-job training
Forest and conservation workers	13,700	100	1	Little or no change	23,900	High school diploma or equivalent	None	Moderate-term on-the-job training
Logging workers	53,200	2,300	4	Slower than average	32,870	High school diploma or equivalent	None	Moderate-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

## Construction and extraction occupations

Construction and extraction occupations are projected to add about 1.4 million new jobs, growing 22 percent, from 2010 to 2020. However, this fast growth rate will not result in a full recovery from the recent recession: From 2006 to 2010, construction occupations lost 2 million jobs.

Construction trades workers, such as carpenters and electricians, are projected to account for most of the new jobs. Employment of extraction workers, who work in the mining and oil and gas industries, is expected to grow much slower than that of construction trades.

Most workers in construction and extraction occupations typically need little formal education, but they tend to receive significant on-the-job training. The median annual wage of construction and extraction occupations in May 2010 was \$39,080, higher than the average for all occupations.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Boilermakers	19,800	4,200	21%	Faster than average	\$54,640	High school diploma or equivalent	None	Apprenticeship
Brickmasons, blockmasons, and stonemasons	104,800	41,800	40	Much faster than average	45,410	High school diploma or equivalent	None	Apprenticeship
Carpenters	1,001,700	196,000	20	Faster than average	39,530	High school diploma or equivalent	None	Apprenticeship
Carpet installers	47,500	4,900	10	About as fast as average	36,090	Less than high school	None	Short-term on-the-job training
Cement masons and terrazzo workers	148,400	50,700	34	Much faster than average	35,530	Varies	None	Varies
Construction and building inspectors	102,400	18,400	18	About as fast as average	52,360	High school diploma or equivalent	More than 5 years	Moderate-term on-the-job training
Construction equipment operators	404,900	94,800	23	Faster than average	39,460	High school diploma or equivalent	None	Moderate-term on-the-job training

# Construction and extraction occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Construction laborers and helpers	1,250,200	314,200	25%	Faster than average	\$28,410	Varies	None	Short-term on-the-job training
Drywall and ceiling tile installers, and tapers	129,600	37,300	29	Much faster than average	38,290	Less than high school	None	Moderate-term on-the-job training
Electricians	577,000	133,700	23	Faster than average	48,250	High school diploma or equivalent	None	Apprenticeship
Elevator installers and repairers	19,900	2,300	11	About as fast as average	70,910	High school diploma or equivalent	None	Apprenticeship
Glaziers	41,900	17,700	42	Much faster than average	36,640	High school diploma or equivalent	None	Apprenticeship
Hazardous materials removal workers	38,100	8,800	23	Faster than average	37,600	High school diploma or equivalent	None	Moderate-term on-the-job training
Insulation workers	51,400	14,400	28	Faster than average	35,110	Varies	None	Varies
Oil and gas workers	134,800	11,200	8	Slower than average	37,640	Less than high school	None	Varies
Painters, construction and maintenance	390,500	72,100	18	About as fast as average	34,280	Less than high school	None	Moderate-term on-the-job training
Plasterers and stucco masons	27,900	4,800	17	About as fast as average	37,210	Less than high school	None	Long-term on-the-job training
Plumbers, pipefitters, and steamfitters	419,900	107,600	26	Faster than average	46,660	High school diploma or equivalent	None	Apprenticeship
Reinforcing iron and rebar workers	19,100	9,300	49	Much faster than average	38,430	High school diploma or equivalent	None	Apprenticeship
Roofers	136,700	24,400	18	About as fast as average	34,220	Less than high school	None	Moderate-term on-the-job training
Sheet metal workers	136,100	23,900	18	About as fast as average	41,710	High school diploma or equivalent	None	Apprenticeship
Structural iron and steel workers	59,800	13,100	22	Faster than average	44,540	High school diploma or equivalent	None	Apprenticeship
Tile and marble setters	58,700	14,900	25	Faster than average	38,110	Less than high school	None	Long-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

## Installation, maintenance, and repair occupations

Installation, maintenance, and repair occupations are projected to add about 800,200 new jobs, growing 15 percent, from 2010 to 2020.

About one-third of the new jobs are projected to be for vehicle and mobile equipment mechanics, installers, and repairers, such as automotive service technicians and mechanics.

Almost 25 percent of the new jobs are expected to be in the construction industry, where employment of installation, maintenance, and repair occupations is projected to grow 41 percent. However, in the manufacturing industry, employment of installation, maintenance, and repair occupations is projected to grow only 4 percent.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Aircraft and avionics equipment mechanics and technicians	142,300	9,100	6%	Slower than average	\$53,220	Postsecondary non-degree award	None	None
Automotive body and glass repairers	170,900	32,700	19	About as fast as average	37,580	High school diploma or equivalent	None	Moderate-term on-the-job training
Automotive service technicians and mechanics	723,400	124,800	17	About as fast as average	35,790	High school diploma or equivalent	None	Long-term on-the-job training
Computer, ATM, and office machine repairers	146,200	9,500	7	Slower than average	37,280	Postsecondary non-degree award	None	None
Diesel service technicians and mechanics	242,200	35,200	15	About as fast as average	40,850	High school diploma or equivalent	None	Long-term on-the-job training

# Installation, maintenance, and repair occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Electrical and electronics installers and repairers	141,100	3,600	3%	Slower than average	\$49,170	Postsecondary non-degree award	None	Varies
General maintenance and repair workers	1,289,000	142,000	11	About as fast as average	34,730	High school diploma or equivalent	None	Moderate-term on-the-job training
Heating, air conditioning, and refrigeration mechanics and installers	267,800	90,300	34	Much faster than average	42,530	Postsecondary non-degree award	None	Long-term on-the-job training
Heavy vehicle and mobile equipment service technicians	179,200	28,200	16	About as fast as average	42,630	High school diploma or equivalent	None	Long-term on-the-job training
Home appliance repairers	47,700	3,100	7	Slower than average	34,730	High school diploma or equivalent	None	Moderate-term on-the-job training
Home entertainment equipment installers and repairers	36,800	5,100	14	About as fast as average	32,940	Postsecondary non-degree award	None	None
Industrial machinery mechanics and maintenance workers	357,000	66,400	19	About as fast as average	44,160	High school diploma or equivalent	None	Varies
Line installers and repairers	269,100	36,200	13	About as fast as average	54,290	High school diploma or equivalent	None	Long-term on-the-job training
Medical equipment repairers	37,900	11,900	31	Much faster than average	44,490	Associate's degree	None	Moderate-term on-the-job training
Millwrights	36,500	-1,800	-5	Decline moderately	48,360	High school diploma or equivalent	None	Long-term on-the-job training
Small engine mechanics	68,800	14,300	21	Faster than average	31,790	High school diploma or equivalent	None	Varies
Telecommunications equipment installers and repairers, except line installers	194,900	28,400	15	About as fast as average	54,710	Postsecondary non-degree award	None	Moderate-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

## Production occupations

Production occupations are projected to add 356,800 new jobs from 2010 to 2020, with a slower-than-average 4-percent growth rate. This growth is less than the 2.1 million jobs lost in this group from 2006 to 2010.

Although production workers are heavily concentrated in the manufacturing industry, less than 14 percent of new production jobs are projected to be in this industry. Many more new jobs are projected in the employment services industry, as manufacturers increasingly use workers from temporary help services.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Assemblers and fabricators	1,626,500	88,000	5%	Slower than average	\$28,360	High school diploma or equivalent	None	Varies
Bakers	149,800	3,500	2	Little or no change	23,450	Less than high school	None	Long-term on-the-job training
Dental laboratory technicians	40,900	300	1	Little or no change	35,140	High school diploma or equivalent	None	Moderate-term on-the-job training
Food processing occupations	311,300	37,400	12	About as fast as average	23,950	Less than high school	None	Varies
Food processing operators	131,000	2,300	2	Little or no change	24,250	High school diploma or equivalent	Less than 1 year	Short-term on-the-job training
Jewelers and precious stone and metal workers	39,200	-2,000	-5	Decline moderately	35,170	High school diploma or equivalent	None	Long-term on-the-job training
Laundry and dry-cleaning workers	225,200	1,600	1	Little or no change	19,540	Less than high school	None	Short-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

# Production occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Machinists and tool and die makers	438,100	29,900	7%	Slower than average	\$39,910	High school diploma or equivalent	None	Long-term on-the-job training
Medical appliance technicians	14,200	500	4	Slower than average	35,670	High school diploma or equivalent	None	Long-term on-the-job training
Metal and plastic machine workers	939,700	56,100	6	Slower than average	31,910	High school diploma or equivalent	None	Varies
Ophthalmic laboratory technicians	29,800	3,800	13	About as fast as average	27,970	High school diploma or equivalent	None	Moderate-term on-the-job training
Painting and coating workers	155,200	13,800	9	Slower than average	31,170	High school diploma or equivalent	None	Moderate-term on-the-job training
Power plant operators, distributors, and dispatchers	55,900	-1,100	-2	Little or no change	65,360	High school diploma or equivalent	None	Long-term on-the-job training
Printing workers	304,600	-12,600	-4	Decline moderately	33,150	Varies	None	Varies
Quality control inspectors	416,100	33,300	8	Slower than average	33,030	High school diploma or equivalent	None	Moderate-term on-the-job training
Semiconductor processors	21,100	-3,800	-18	Decline rapidly	33,130	Associate's degree	None	Moderate-term on-the-job training
Sewers and tailors	57,500	400	1	Little or no change	25,850	Less than high school	None	Moderate-term on-the-job training
Slaughterers and meat packers	89,100	7,400	8	Slower than average	23,380	Less than high school	None	Moderate-term on-the-job training
Stationary engineers and boiler operators	37,600	2,300	6	Slower than average	52,140	High school diploma or equivalent	None	Long-term on-the-job training
Upholsterers	46,900	2,000	4	Slower than average	29,960	High school diploma or equivalent	None	Moderate-term on-the-job training
Water and wastewater treatment plant and system operators	110,700	12,900	12	About as fast as average	40,770	High school diploma or equivalent	None	Long-term on-the-job training
Welders, cutters, solderers, and brazers	337,300	50,700	15	About as fast as average	35,450	High school diploma or equivalent	Less than 1 year	Moderate-term on-the-job training
Woodworkers	217,200	39,300	18	About as fast as average	28,010	High school diploma or equivalent	None	Varies



## Transportation and material moving occupations

Transportation and material moving occupations are projected to add 1.3 million new jobs, growing 15 percent, from 2010 to 2020. This growth matches the 1.3 million jobs lost from 2006 to 2010.

Nearly all of the projected new jobs in this occupational group will be for motor vehicle operators, such as heavy and tractor-trailer truck drivers, and for material moving workers, such as hand laborers and material movers.

Almost half of the new jobs for this group are expected to be in the transportation and warehousing industry, in which employment for material moving occupations is projected to grow 22 percent.

*Note: The table below excludes occupations not covered in detail, so its data may not sum to the data in the text above.*



Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Air traffic controllers	27,000	-800	-3%	Decline moderately	\$108,040	Associate's degree	None	Long-term on-the-job training
Airline and commercial pilots	103,500	11,500	11	About as fast as average	92,060	Varies	Varies	Varies
Bus drivers	647,200	83,000	13	About as fast as average	29,160	High school diploma or equivalent	None	Moderate-term on-the-job training
Delivery truck drivers and driver/sales workers	1,262,600	167,500	13	About as fast as average	27,050	High school diploma or equivalent	None	Short-term on-the-job training
Flight attendants	90,500	-200	0	Little or no change	37,740	High school diploma or equivalent	None	Moderate-term on-the-job training

\* Numeric and percent changes are rounded, but they are calculated from unrounded figures for current and projected employment.

# Transportation and material moving occupations

Occupation	Employment, 2010	Projected change, 2010–20*			Annual median wage, 2010	Education	Work experience	On-the-job training
		Numeric	Percent	Growth adjective				
Hand laborers and material movers	3,315,400	465,500	14%	About as fast as average	\$22,560	Less than high school	None	Short-term on-the-job training
Heavy and tractor-trailer truck drivers	1,604,800	330,100	21	Faster than average	37,770	High school diploma or equivalent	1 to 5 years	Short-term on-the-job training
Material moving machine operators	669,000	83,000	12	About as fast as average	30,800	Less than high school	Varies	Varies
Railroad conductors and yardmasters	40,800	1,900	5	Slower than average	49,770	High school diploma or equivalent	None	Moderate-term on-the-job training
Subway and streetcar operators	6,500	600	10	About as fast as average	56,880	High school diploma or equivalent	None	Moderate-term on-the-job training
Taxi drivers and chauffeurs	239,900	47,000	20	Faster than average	22,440	Less than high school	None	Short-term on-the-job training
Train engineers and operators	67,100	500	1	Little or no change	46,100	High school diploma or equivalent	Varies	Varies
Water transportation occupations	82,600	16,700	20	Faster than average	46,610	Varies	None	Varies

## Job opportunities in the U.S. Armed Forces



Members of the Armed Forces work in almost all occupations that are available to civilians in addition to occupations that are specific to the military. Opportunities should be excellent in all branches of the Armed Forces for applicants who meet designated standards. For U.S. military personnel statistics, see <http://siadapp.dmdc.osd.mil/personnel/MILITARY/miltop.htm>.