



NATIONAL SCIENCE BOARD  
Science & Engineering Indicators



Labor Force

# STEM Talent: Education, Training, and Workforce

## Supplemental Tables

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The National Science Board (Board) is required under the National Science Foundation (NSF) Act, 42 U.S.C. § 1863 (j) (1) to prepare and transmit the biennial *Science and Engineering Indicators (Indicators)* report to the President and Congress every even-numbered year. The report is prepared by the National Center for Science and Engineering Statistics (NCSES) within NSF under the guidance of the Board. It is subject to extensive review.

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**Table STAL-1. Workers, by occupational group, race and ethnicity, educational attainment, geography, and major industries: 2023**

(Number)

Characteristic	All workers	S&E occupations	S&E-related occupations	STEM middle-skill occupations	Non-STEM occupations
<b>Race and ethnicity</b>					
Total	141,687,112	9,647,441	13,208,930	13,073,955	105,756,786
White	83,193,262	5,680,260	8,450,782	7,923,252	61,138,968
Black or African American	16,048,410	727,879	1,352,434	1,038,474	12,929,623
Hispanic or Latino	25,985,960	930,313	1,385,361	3,038,467	20,631,819
Asian	9,677,877	1,827,483	1,386,073	479,809	5,984,512
AIAN	601,159	16,499	45,869	61,016	477,775
NHOPI	241,326	9,679	15,609	22,401	193,637
Other race alone or more than one race	5,939,118	455,328	572,802	510,536	4,400,452
<b>Educational attainment</b>					
Total	141,687,112	9,647,441	13,208,930	13,073,955	105,756,786
Without a bachelor's degree	81,816,977	2,058,752	4,597,102	11,233,878	63,927,245
Up to a high school degree	42,209,264	500,746	999,827	6,687,544	34,021,147
Some college, no degree	26,184,939	936,237	1,522,687	3,054,969	20,671,046
Associate's degree	13,422,774	621,769	2,074,588	1,491,365	9,235,052
Bachelor's or advanced degree	59,870,135	7,588,689	8,611,828	1,840,077	41,829,541
Bachelor's degree	35,980,674	4,373,253	4,161,624	1,459,245	25,986,552
Master's or professional degree	20,952,020	2,544,816	3,705,251	353,617	14,348,336
Doctoral degree	2,937,441	670,620	744,953	27,215	1,494,653
<b>World area of birth</b>					
Total	141,687,112	9,647,441	13,208,930	13,073,955	105,756,786
United States	111,755,702	6,980,627	10,730,611	10,225,737	83,818,727
Puerto Rico and U.S. Island Areas	908,883	48,982	67,535	90,762	701,604
Latin America	14,559,058	402,327	620,351	1,919,226	11,617,154
Asia	8,788,439	1,644,145	1,155,644	459,522	5,529,128
Europe	3,175,896	347,240	306,750	233,274	2,288,632
Africa	1,821,853	151,113	251,194	102,214	1,317,332
Northern America	502,988	59,141	63,743	29,973	350,131
Oceania and at Sea	174,293	13,866	13,102	13,247	134,078
<b>NAICS major industries</b>					
Total	141,687,112	9,647,441	13,208,930	13,073,955	105,756,786
Agriculture, forestry, fishing and hunting	1,666,297	38,374	26,966	579,801	1,021,156
Mining, quarrying, and oil and gas extraction	584,842	54,846	24,258	163,103	342,635
Construction	10,134,690	196,968	101,662	3,751,060	6,085,000
Manufacturing	14,746,078	1,816,426	660,698	3,192,523	9,076,431
Wholesale trade	3,065,471	103,208	40,311	172,629	2,749,323
Retail trade	13,251,840	301,992	560,945	716,077	11,672,826
Transportation and warehousing	7,579,153	160,347	42,158	429,476	6,947,172
Utilities	1,336,871	183,639	70,997	356,460	725,775
Information	2,745,149	476,055	125,829	342,052	1,801,213
Finance and insurance	7,415,855	698,428	259,207	54,381	6,403,839
Real estate and rental and leasing	2,726,849	49,353	19,812	237,611	2,420,073
Professional, scientific, and technical services	12,719,816	3,317,010	1,168,967	338,236	7,895,603
Management of companies and enterprises	159,490	21,135	8,075	4,534	125,746
Administrative and support and waste management services	6,204,219	165,214	194,235	333,560	5,511,210
Educational services	13,668,402	514,198	565,471	179,293	12,409,440
Health care and social assistance	20,589,400	601,709	8,818,548	185,649	10,983,494

**Table STAL-1. Workers, by occupational group, race and ethnicity, educational attainment, geography, and major industries: 2023**

(Number)

Characteristic	All workers	S&E occupations	S&E-related occupations	STEM middle-skill occupations	Non-STEM occupations
Arts, entertainment, and recreation	2,647,605	55,072	32,108	138,016	2,422,409
Accommodation and food services	6,525,274	31,305	21,330	434,708	6,037,931
Other services, except public administration	6,709,138	95,699	67,927	843,533	5,701,979
Public administration	7,210,673	766,463	399,426	621,253	5,423,531

AIAN = American Indian or Alaska Native; NAICS = North American Industry Classification System; NHOPI = Native Hawaiian or Other Pacific Islander; STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the employed, civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the data. Hispanic or Latino may be any race; race categories exclude Hispanic origin. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Census Bureau, American Community Survey (ACS), 2023.

*Science and Engineering Indicators*

**Table STAL-2. Working-age individuals, by occupational group and employment status: 2013–23**

(Number)

Occupational group and employment status	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
S&E occupations											
Employed	5,914,203	6,124,521	6,400,969	6,698,995	6,968,513	7,274,871	7,951,262	NA	8,820,194	9,250,614	9,647,441
Unemployed	187,997	172,383	165,266	150,618	155,374	153,921	158,485	NA	222,423	146,305	196,090
S&E-related occupations											
Employed	10,383,818	10,959,834	11,091,266	11,440,888	11,745,296	12,129,826	12,253,149	NA	12,707,771	13,089,698	13,208,930
Unemployed	276,558	265,483	211,238	203,122	190,914	188,053	185,328	NA	272,311	193,253	184,633
STEM middle-skill occupations											
Employed	12,229,201	12,295,341	12,598,889	12,549,644	12,820,836	12,723,737	12,984,663	NA	12,598,894	12,946,727	13,073,955
Unemployed	892,785	711,682	627,174	542,856	482,506	416,302	405,442	NA	691,901	417,729	408,624
Non-STEM occupations											
Employed	96,705,952	98,086,960	99,598,168	100,749,699	102,201,782	103,368,462	103,785,336	NA	101,168,470	104,402,154	105,756,786
Unemployed	6,668,484	5,645,676	4,887,715	4,500,980	4,170,738	3,949,374	3,678,197	NA	6,095,575	3,667,666	3,654,765

NA = not available; data for 2020 are not available due to the impact of the COVID-19 pandemic on American Community Survey (ACS) data collection for the survey year.

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the workforce data. Coding of occupations into STEM categories reflects changes to ACS occupation codes following the 2018 update to the Standard Occupational Classification implemented by the Bureau of Labor Statistics. Data from 2013 to 2017 use occupations from the 2010 occupation list, whereas data from 2018 to 2023 use occupations from the 2018 occupation list. Data for 2020 are not available due to the impact of the COVID-19 pandemic on ACS data collection for the survey year. Additional information is available at <https://www.census.gov/programs-surveys/acs/data/experimental-data/2020-1-year-pums.html>. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Census Bureau, ACS, 2013–19, 2021–23.

*Science and Engineering Indicators*

**Table STAL-3. Representation of STEM workers, by occupational group, across states: 2023**

(Percent)

State	Working-age population	All workers	STEM occupations	S&E occupations	S&E-related occupations	STEM middle-skill occupations	Non-STEM occupations
Alabama	1.5	1.4	1.5	1.2	1.5	1.7	1.4
Alaska	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Arizona	2.2	2.1	2.1	2.0	2.1	2.0	2.1
Arkansas	0.9	0.8	0.8	0.5	0.8	1.0	0.8
California	11.7	11.8	11.4	14.0	10.6	10.2	11.9
Colorado	1.8	1.9	2.1	2.7	2.0	1.8	1.9
Connecticut	1.1	1.1	1.2	1.2	1.3	1.1	1.1
Delaware	0.3	0.3	0.3	0.3	0.3	0.3	0.3
District of Columbia	0.2	0.2	0.2	0.5	0.2	0.1	0.3
Florida	6.9	6.6	6.0	5.1	6.6	6.0	6.8
Georgia	3.2	3.3	3.1	3.2	2.9	3.3	3.3
Hawaii	0.4	0.4	0.4	0.3	0.4	0.4	0.4
Idaho	0.6	0.6	0.5	0.4	0.5	0.6	0.6
Illinois	3.8	3.8	3.7	3.7	3.7	3.7	3.9
Indiana	2.0	2.0	2.2	1.6	2.1	2.7	1.9
Iowa	0.9	1.0	1.0	0.8	0.9	1.4	0.9
Kansas	0.8	0.9	0.9	0.8	0.9	1.0	0.9
Kentucky	1.3	1.2	1.3	0.8	1.4	1.5	1.2
Louisiana	1.3	1.2	1.2	0.7	1.4	1.5	1.2
Maine	0.4	0.4	0.4	0.3	0.4	0.5	0.4
Maryland	1.9	2.0	2.1	3.2	2.0	1.6	1.9
Massachusetts	2.2	2.3	2.5	3.2	2.6	1.9	2.2
Michigan	3.0	2.9	3.1	3.0	3.0	3.3	2.8
Minnesota	1.7	1.8	2.0	2.1	2.1	1.9	1.8
Mississippi	0.8	0.8	0.8	0.3	0.9	0.9	0.8
Missouri	1.8	1.8	1.8	1.6	1.9	1.9	1.8
Montana	0.3	0.3	0.4	0.3	0.3	0.4	0.3
Nebraska	0.6	0.6	0.7	0.5	0.7	0.8	0.6
Nevada	1.0	1.0	0.8	0.6	0.7	0.9	1.0
New Hampshire	0.4	0.5	0.5	0.6	0.5	0.6	0.4
New Jersey	2.8	3.0	2.9	3.3	2.9	2.4	3.0
New Mexico	0.6	0.6	0.6	0.6	0.5	0.6	0.6
New York	6.0	6.0	5.2	5.0	6.0	4.7	6.2
North Carolina	3.2	3.2	3.3	3.1	3.3	3.3	3.1
North Dakota	0.2	0.2	0.3	0.2	0.3	0.3	0.2
Ohio	3.5	3.5	3.7	3.1	3.9	4.0	3.4
Oklahoma	1.2	1.1	1.1	0.8	1.2	1.3	1.1
Oregon	1.3	1.3	1.4	1.5	1.3	1.3	1.3
Pennsylvania	3.9	3.9	4.0	3.7	4.3	3.9	3.9
Rhode Island	0.3	0.3	0.3	0.3	0.4	0.3	0.3
South Carolina	1.6	1.5	1.5	1.2	1.5	1.6	1.5
South Dakota	0.3	0.3	0.3	0.1	0.3	0.4	0.3
Tennessee	2.1	2.1	2.0	1.5	2.2	2.3	2.1
Texas	8.8	9.0	8.8	8.7	8.2	9.4	9.1
Utah	0.9	1.0	1.0	1.2	0.9	1.0	1.0
Vermont	0.2	0.2	0.2	0.2	0.2	0.3	0.2
Virginia	2.6	2.7	2.8	3.9	2.5	2.3	2.6
Washington	2.4	2.4	2.8	4.0	2.3	2.4	2.3
West Virginia	0.5	0.5	0.5	0.3	0.5	0.6	0.5
Wisconsin	1.8	1.8	2.0	1.7	1.9	2.3	1.8
Wyoming	0.2	0.2	0.2	0.1	0.2	0.3	0.2

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Working-age population includes the civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Workforce data include the employed working-age population. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the workforce data. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Census Bureau, American Community Survey (ACS), 2023.

*Science and Engineering Indicators*

Table STAL-4. Workers, by state, occupational group, and educational attainment: 2023

(Number)

State	Working-age population	All occupations	S&E occupations	S&E-related occupations	STEM middle-skill occupations	Non-STEM occupations	STEM occupations, without a bachelor's degree	STEM occupations, with a bachelor's or an advanced degree
Alabama	3,096,986	1,960,938	112,479	195,858	217,157	1,435,444	309,563	215,931
Alaska	445,920	298,975	16,766	32,372	30,304	219,533	40,609	38,833
Arizona	4,507,645	2,967,641	196,870	282,994	261,141	2,226,636	388,580	352,425
Arkansas	1,837,436	1,164,160	47,573	106,336	136,531	873,720	183,280	107,160
California	24,227,876	16,676,248	1,353,503	1,403,334	1,331,500	12,587,911	1,793,549	2,294,788
Colorado	3,752,346	2,730,815	260,665	269,516	231,283	1,969,351	318,397	443,067
Connecticut	2,268,534	1,620,012	112,114	165,621	142,402	1,199,875	194,335	225,802
Delaware	642,626	434,187	30,564	41,078	39,875	322,670	58,725	52,792
District of Columbia	441,690	341,804	45,101	23,680	8,363	264,660	9,594	67,550
Florida	14,176,112	9,384,043	492,068	869,603	780,772	7,241,600	1,112,167	1,030,276
Georgia	6,705,209	4,610,133	305,694	388,034	427,393	3,489,012	587,176	533,945
Hawaii	864,817	586,906	26,712	56,212	54,449	449,533	64,603	72,770
Idaho	1,166,052	780,609	40,303	66,799	80,887	592,620	104,482	83,507
Illinois	7,777,981	5,440,662	354,993	495,287	484,167	4,106,215	626,563	707,884
Indiana	4,119,579	2,844,647	153,221	280,184	352,077	2,059,165	460,569	324,913
Iowa	1,925,317	1,380,840	73,106	123,156	180,412	1,004,166	218,606	158,068
Kansas	1,726,679	1,225,879	73,367	116,742	132,931	902,839	167,655	155,385
Kentucky	2,760,494	1,763,003	76,531	186,025	189,601	1,310,846	272,357	179,800
Louisiana	2,750,221	1,752,523	66,981	179,965	191,072	1,314,505	265,265	172,753
Maine	913,048	612,337	32,604	58,064	65,070	456,599	83,850	71,888
Maryland	3,837,685	2,797,135	304,036	261,540	205,578	2,025,981	316,291	454,863
Massachusetts	4,450,630	3,227,649	311,254	340,447	244,872	2,331,076	326,313	570,260
Michigan	6,254,860	4,097,003	288,701	394,764	437,388	2,976,150	598,158	522,695
Minnesota	3,539,683	2,597,488	198,525	273,852	248,749	1,876,362	347,122	374,004
Mississippi	1,754,298	1,097,401	32,804	116,760	120,885	826,952	174,375	96,074
Missouri	3,780,083	2,597,171	157,751	255,905	248,076	1,935,439	353,811	307,921
Montana	711,305	480,816	28,514	46,133	56,336	349,833	65,755	65,228
Nebraska	1,163,526	870,219	45,250	86,710	107,972	630,287	133,177	106,755
Nevada	2,021,829	1,354,096	60,852	90,044	123,504	1,079,696	163,247	111,153
New Hampshire	921,859	659,333	57,849	65,429	73,777	462,278	97,912	99,143
New Jersey	5,834,772	4,220,705	320,432	386,867	319,821	3,193,585	408,967	618,153
New Mexico	1,291,680	807,348	54,192	70,474	74,402	608,280	103,967	95,101
New York	12,381,802	8,472,972	478,171	789,793	614,330	6,590,678	803,893	1,078,401
North Carolina	6,664,945	4,499,927	303,181	440,935	430,573	3,325,238	599,475	575,214
North Dakota	456,546	336,323	22,600	35,649	43,116	234,958	55,121	46,244
Ohio	7,263,475	4,970,439	300,373	510,874	521,594	3,637,598	731,755	601,086
Oklahoma	2,378,243	1,555,615	73,706	155,371	167,661	1,158,877	243,346	153,392
Oregon	2,720,041	1,809,886	144,717	170,179	172,793	1,322,197	228,445	259,244
Pennsylvania	8,078,278	5,513,408	357,779	573,317	506,744	4,075,568	711,501	726,339
Rhode Island	696,789	484,177	31,958	46,388	43,700	362,131	62,507	59,539
South Carolina	3,318,350	2,165,719	113,741	200,757	214,247	1,636,974	312,438	216,307
South Dakota	550,893	403,440	14,196	43,251	53,770	292,223	65,903	45,314
Tennessee	4,432,792	2,942,371	148,971	291,306	295,304	2,206,790	418,156	317,425
Texas	18,206,269	12,813,344	838,481	1,089,298	1,223,427	9,662,138	1,672,891	1,478,315
Utah	1,924,587	1,408,779	111,233	123,075	136,209	1,038,262	185,412	185,105
Vermont	416,518	291,777	16,044	27,813	33,514	214,406	38,369	39,002
Virginia	5,332,807	3,757,194	372,376	336,307	296,585	2,751,926	437,086	568,182
Washington	4,959,931	3,401,170	385,159	302,947	307,666	2,405,398	425,062	570,710

**Table STAL-4. Workers, by state, occupational group, and educational attainment: 2023**

(Number)

State	Working-age population	All occupations	S&E occupations	S&E-related occupations	STEM middle-skill occupations	Non-STEM occupations	STEM occupations, without a bachelor's degree	STEM occupations, with a bachelor's or an advanced degree
West Virginia	1,095,424	648,263	28,212	68,398	72,834	478,819	105,815	63,629
Wisconsin	3,678,817	2,586,946	164,535	251,732	307,061	1,863,618	403,706	319,622
Wyoming	357,954	242,636	10,633	21,755	34,080	176,168	39,831	26,637

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Working-age population includes the civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Workforce data include the employed working-age population. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the workforce data. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Census Bureau, American Community Survey (ACS), 2023.

*Science and Engineering Indicators*

**Table STAL-5. Participation in the workforce, by state and occupational group: 2023**

(Percent)

State	Share of STEM occupations in workforce	Share of S&E occupations in STEM workforce	Share of S&E-related occupations in STEM workforce	Share of STEM middle-skill occupations in STEM workforce	Non-STEM occupations in workforce
Total	25.4	26.9	36.8	36.4	74.6
Alabama	26.8	21.4	37.3	41.3	73.2
Alaska	26.6	21.1	40.7	38.1	73.4
Arizona	25.0	26.6	38.2	35.2	75.0
Arkansas	24.9	16.4	36.6	47.0	75.1
California	24.5	33.1	34.3	32.6	75.5
Colorado	27.9	34.2	35.4	30.4	72.1
Connecticut	25.9	26.7	39.4	33.9	74.1
Delaware	25.7	27.4	36.8	35.8	74.3
District of Columbia	22.6	58.5	30.7	10.8	77.4
Florida	22.8	23.0	40.6	36.4	77.2
Georgia	24.3	27.3	34.6	38.1	75.7
Hawaii	23.4	19.4	40.9	39.6	76.6
Idaho	24.1	21.4	35.5	43.0	75.9
Illinois	24.5	26.6	37.1	36.3	75.5
Indiana	27.6	19.5	35.7	44.8	72.4
Iowa	27.3	19.4	32.7	47.9	72.7
Kansas	26.4	22.7	36.1	41.2	73.6
Kentucky	25.6	16.9	41.1	41.9	74.4
Louisiana	25.0	15.3	41.1	43.6	75.0
Maine	25.4	20.9	37.3	41.8	74.6
Maryland	27.6	39.4	33.9	26.7	72.4
Massachusetts	27.8	34.7	38.0	27.3	72.2
Michigan	27.4	25.8	35.2	39.0	72.6
Minnesota	27.8	27.5	38.0	34.5	72.2
Mississippi	24.6	12.1	43.2	44.7	75.4
Missouri	25.5	23.8	38.7	37.5	74.5
Montana	27.2	21.8	35.2	43.0	72.8
Nebraska	27.6	18.9	36.1	45.0	72.4
Nevada	20.3	22.2	32.8	45.0	79.7
New Hampshire	29.9	29.4	33.2	37.4	70.1
New Jersey	24.3	31.2	37.7	31.1	75.7
New Mexico	24.7	27.2	35.4	37.4	75.3
New York	22.2	25.4	42.0	32.6	77.8
North Carolina	26.1	25.8	37.5	36.7	73.9
North Dakota	30.1	22.3	35.2	42.5	69.9
Ohio	26.8	22.5	38.3	39.1	73.2
Oklahoma	25.5	18.6	39.2	42.3	74.5
Oregon	26.9	29.7	34.9	35.4	73.1
Pennsylvania	26.1	24.9	39.9	35.2	73.9
Rhode Island	25.2	26.2	38.0	35.8	74.8
South Carolina	24.4	21.5	38.0	40.5	75.6
South Dakota	27.6	12.8	38.9	48.3	72.4
Tennessee	25.0	20.3	39.6	40.1	75.0
Texas	24.6	26.6	34.6	38.8	75.4
Utah	26.3	30.0	33.2	36.8	73.7
Vermont	26.5	20.7	35.9	43.3	73.5
Virginia	26.8	37.0	33.5	29.5	73.2
Washington	29.3	38.7	30.4	30.9	70.7
West Virginia	26.1	16.6	40.4	43.0	73.9
Wisconsin	28.0	22.7	34.8	42.5	72.0

**Table STAL-5. Participation in the workforce, by state and occupational group: 2023**

(Percent)

State	Share of STEM occupations in workforce	Share of S&E occupations in STEM workforce	Share of S&E-related occupations in STEM workforce	Share of STEM middle-skill occupations in STEM workforce	Non-STEM occupations in workforce
Wyoming	27.4	16.0	32.7	51.3	72.6

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the employed, civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the workforce data. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Census Bureau, American Community Survey (ACS), 2023.

*Science and Engineering Indicators*

**Table STAL-6. STEM workforce, by state, occupational group, and education level: 2023**

(Percent)

State	STEM without a bachelor's degree	STEM with a bachelor's or an advanced degree
Alabama	58.9	41.1
Alaska	51.1	48.9
Arizona	52.4	47.6
Arkansas	63.1	36.9
California	43.9	56.1
Colorado	41.8	58.2
Connecticut	46.3	53.7
Delaware	52.7	47.3
District of Columbia	12.4	87.6
Florida	51.9	48.1
Georgia	52.4	47.6
Hawaii	47.0	53.0
Idaho	55.6	44.4
Illinois	47.0	53.0
Indiana	58.6	41.4
Iowa	58.0	42.0
Kansas	51.9	48.1
Kentucky	60.2	39.8
Louisiana	60.6	39.4
Maine	53.8	46.2
Maryland	41.0	59.0
Massachusetts	36.4	63.6
Michigan	53.4	46.6
Minnesota	48.1	51.9
Mississippi	64.5	35.5
Missouri	53.5	46.5
Montana	50.2	49.8
Nebraska	55.5	44.5
Nevada	59.5	40.5
New Hampshire	49.7	50.3
New Jersey	39.8	60.2
New Mexico	52.2	47.8
New York	42.7	57.3
North Carolina	51.0	49.0
North Dakota	54.4	45.6
Ohio	54.9	45.1
Oklahoma	61.3	38.7
Oregon	46.8	53.2
Pennsylvania	49.5	50.5
Rhode Island	51.2	48.8
South Carolina	59.1	40.9
South Dakota	59.3	40.7
Tennessee	56.8	43.2
Texas	53.1	46.9
Utah	50.0	50.0
Vermont	49.6	50.4
Virginia	43.5	56.5
Washington	42.7	57.3
West Virginia	62.4	37.6
Wisconsin	55.8	44.2
Wyoming	59.9	40.1

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the employed, civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the workforce data. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Census Bureau, American Community Survey (ACS), 2023.

*Science and Engineering Indicators*

**Table STAL-7. Workers, by rural-urban classification, occupational group, and educational attainment: Five-year sample, 2019–23**

(Number)

Occupational group and educational attainment	All areas	Rural	Urban	Mixed/ indeterminable
All workers	137,953,078	9,583,563	113,657,942	14,711,573
Without a bachelor's degree	81,295,390	6,961,594	63,794,348	10,539,448
With a bachelor's or an advanced degree	56,657,688	2,621,969	49,863,594	4,172,125
S&E occupations	8,839,114	290,183	8,033,980	514,951
Without a bachelor's degree	1,919,813	99,866	1,642,558	177,389
With a bachelor's or an advanced degree	6,919,301	190,317	6,391,422	337,562
S&E-related occupations	12,690,514	816,162	10,577,781	1,296,571
Without a bachelor's degree	4,571,428	418,891	3,494,077	658,460
With a bachelor's or an advanced degree	8,119,086	397,271	7,083,704	638,111
STEM middle-skill occupations	12,921,715	1,289,245	9,704,062	1,928,408
Without a bachelor's degree	11,175,516	1,156,041	8,286,436	1,733,039
With a bachelor's or an advanced degree	1,746,199	133,204	1,417,626	195,369
Non-STEM occupations	103,501,735	7,187,973	85,342,119	10,971,643
Without a bachelor's degree	63,628,633	5,286,796	50,371,277	7,970,560
With a bachelor's or an advanced degree	39,873,102	1,901,177	34,970,842	3,001,083

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the employed, civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the data. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Ruggles S, Flood S, Sobek M, Backman D, Cooper G, Rivera Drew JA, Richards S, Rodgers R, Schroeder J, Williams KCW, 2025, *IPUMS USA: Version 16.0 American Community Survey Five-Year Estimates (2019–23)*, <https://doi.org/10.18128/D010.V16.0>.

*Science and Engineering Indicators*

Table STAL-8. Workers, by state and occupational group: 2013–23

(Number)

State	2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023	
	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations
Alabama	415,576	1,312,330	414,918	1,329,957	433,140	1,324,345	438,193	1,347,705	432,758	1,329,924	452,261	1,348,173	462,718	1,377,553	NA	NA	490,328	1,387,714	507,583	1,425,076	525,494	1,435,444
Alaska	68,263	236,044	74,500	229,180	66,159	224,538	79,058	225,813	70,887	229,407	72,039	231,900	76,316	215,709	NA	NA	73,354	213,443	76,638	221,047	79,442	219,533
Arizona	534,830	1,850,473	536,981	1,891,615	549,684	1,943,064	568,583	1,989,923	576,627	2,076,606	618,634	2,113,037	642,759	2,163,664	NA	NA	698,625	2,117,140	704,262	2,195,347	741,005	2,226,636
Arkansas	251,190	814,007	262,810	818,518	261,739	824,430	252,020	851,149	265,820	838,410	267,820	853,140	265,604	874,877	NA	NA	285,628	843,920	279,895	847,514	290,440	873,720
California	3,192,250	11,717,405	3,305,637	12,025,270	3,420,725	12,322,124	3,526,290	12,451,580	3,651,017	12,717,862	3,716,050	12,841,784	3,885,681	12,829,941	NA	NA	3,934,367	12,071,087	3,983,466	12,552,877	4,088,337	12,587,911
Colorado	539,007	1,717,722	566,390	1,746,740	591,565	1,787,624	590,102	1,838,637	628,231	1,873,138	648,927	1,914,424	685,377	1,930,635	NA	NA	700,121	1,895,363	728,556	1,968,014	761,464	1,969,351
Connecticut	352,729	1,191,860	373,375	1,180,664	365,733	1,189,805	373,471	1,187,556	368,070	1,193,869	378,837	1,199,469	380,156	1,195,514	NA	NA	394,070	1,165,583	415,202	1,195,131	420,137	1,199,875
Delaware	87,579	281,375	89,690	289,544	94,661	297,977	97,354	298,057	88,833	298,738	95,125	307,034	101,924	301,142	NA	NA	102,139	307,215	108,908	321,186	111,517	322,670
District of Columbia	53,064	240,018	54,523	253,337	59,321	261,660	61,008	262,584	65,468	272,388	67,938	272,284	72,477	274,218	NA	NA	66,105	254,088	73,150	259,354	77,144	264,660
Florida	1,476,883	5,920,610	1,549,003	6,083,097	1,619,083	6,234,853	1,685,597	6,348,494	1,757,830	6,527,078	1,829,609	6,681,368	1,898,534	6,816,732	NA	NA	1,973,533	6,779,850	2,081,717	7,042,687	2,142,443	7,241,600
Georgia	837,326	2,961,733	878,989	2,993,002	905,919	3,095,244	925,144	3,152,981	951,697	3,233,069	980,354	3,297,533	988,826	3,324,507	NA	NA	1,050,859	3,285,696	1,120,875	3,418,792	1,121,121	3,489,012
Hawaii	112,752	455,843	123,216	459,762	124,939	462,966	124,558	477,603	117,926	480,982	127,991	474,583	126,617	466,191	NA	NA	126,323	438,860	133,588	452,590	137,373	449,533
Idaho	135,446	468,380	145,061	463,417	145,903	491,923	155,762	479,386	157,898	500,530	161,599	515,995	171,464	535,935	NA	NA	189,186	570,075	199,340	565,565	187,989	592,620
Illinois	1,175,134	4,090,571	1,197,661	4,119,589	1,219,736	4,132,525	1,217,422	4,165,021	1,228,049	4,186,772	1,241,019	4,199,916	1,308,945	4,139,992	NA	NA	1,295,976	3,969,655	1,334,869	4,086,847	1,334,447	4,106,215
Indiana	629,641	1,951,487	624,710	1,980,461	644,650	1,973,408	643,195	2,036,731	694,401	2,001,356	683,364	2,051,022	707,802	2,056,561	NA	NA	739,557	2,007,578	766,164	2,055,562	785,482	2,059,165
Iowa	324,797	977,937	334,133	993,759	333,672	1,000,361	337,964	1,002,499	346,972	1,001,892	336,911	1,025,815	350,526	1,004,508	NA	NA	351,014	993,969	368,213	1,009,530	376,674	1,004,166
Kansas	294,485	880,227	289,898	878,970	308,916	890,481	300,401	899,200	315,455	882,460	312,508	892,704	312,518	889,381	NA	NA	321,058	885,278	312,262	895,079	323,040	902,839
Kentucky	374,256	1,235,140	381,136	1,236,361	397,787	1,236,429	415,415	1,245,110	390,960	1,282,213	408,798	1,278,889	439,103	1,249,662	NA	NA	425,223	1,263,368	449,180	1,292,338	452,157	1,310,846
Louisiana	418,825	1,321,613	410,656	1,329,386	417,281	1,334,034	420,954	1,327,159	413,340	1,338,072	436,007	1,318,588	421,631	1,331,939	NA	NA	423,497	1,265,194	438,141	1,305,833	438,018	1,314,505
Maine	130,694	428,248	128,623	428,866	135,437	426,323	136,142	434,609	131,568	444,148	143,239	445,340	148,546	434,289	NA	NA	146,318	442,249	158,645	446,685	155,738	456,599
Maryland	651,630	1,967,445	681,360	1,955,523	677,457	1,983,224	692,803	2,011,306	712,681	2,006,570	704,547	2,010,668	735,656	1,983,950	NA	NA	752,752	1,959,997	776,107	2,003,292	771,154	2,025,981
Massachusetts	726,536	2,199,053	759,777	2,202,342	746,781	2,270,221	788,744	2,270,526	795,332	2,297,398	818,527	2,313,466	835,636	2,345,311	NA	NA	851,614	2,279,699	886,056	2,309,841	896,573	2,331,076
Michigan	903,308	2,809,521	927,339	2,820,899	960,914	2,853,759	998,247	2,904,131	1,010,852	2,916,081	1,020,570	2,969,775	1,058,394	2,967,073	NA	NA	1,067,904	2,851,945	1,106,480	2,941,073	1,120,853	2,976,150
Minnesota	594,472	1,817,047	599,934	1,850,202	617,788	1,856,942	630,662	1,867,060	656,384	1,864,938	650,379	1,884,666	686,407	1,873,004	NA	NA	693,159	1,837,380	696,771	1,859,907	721,126	1,876,362
Mississippi	224,292	810,382	245,121	800,716	243,189	797,019	251,283	807,988	264,385	797,349	260,604	801,620	262,684	811,725	NA	NA	251,762	797,418	255,308	819,544	270,449	826,952
Missouri	538,926	1,848,247	571,135	1,816,977	575,021	1,863,842	585,844	1,872,233	594,351	1,879,208	599,422	1,892,118	631,904	1,877,708	NA	NA	647,433	1,876,022	662,886	1,889,382	661,732	1,935,439
Montana	99,165	300,450	101,061	309,604	107,399	314,368	101,223	318,532	104,455	334,072	110,901	338,230	122,507	321,286	NA	NA	115,326	324,870	124,624	341,157	130,983	349,833
Nebraska	205,277	604,856	213,211	615,009	202,362	617,159	208,473	623,001	214,908	630,233	209,420	634,494	223,554	625,668	NA	NA	242,555	618,931	240,875	614,962	239,932	630,287
Nevada	193,153	900,052	189,887	929,949	200,596	945,894	213,600	980,719	217,219	1,025,928	226,998	1,026,471	234,045	1,048,968	NA	NA	263,011	972,413	266,406	1,057,444	274,400	1,079,696
New Hampshire	159,871	439,414	156,615	447,411	168,344	443,055	164,040	457,087	168,282	454,802	174,632	450,057	180,298	449,462	NA	NA	187,605	449,572	179,146	472,174	197,055	462,278
New Jersey	839,516	2,910,117	873,208	2,986,975	869,749	3,021,655	889,808	3,008,975	915,445	3,058,442	936,825	3,044,526	928,882	3,039,700	NA	NA	978,228	3,024,054	1,034,277	3,107,199	1,027,120	3,193,585
New Mexico	167,785	565,910	166,240	572,493	168,045	575,576	171,227	579,113	172,480	566,681	175,061	574,713	200,901	576,172	NA	NA	191,903	559,443	205,433	589,696	199,068	608,280
New York	1,603,877	6,457,091	1,646,902	6,568,782	1,697,182	6,631,856	1,714,701	6,606,460	1,729,668	6,726,063	1,737,246	6,650,437	1,812,543	6,654,711	NA	NA	1,844,100	6,335,449	1,883,257	6,556,149	1,882,294	6,590,678
North Carolina	894,437	2,866,814	911,563	2,937,584	960,898	2,972,878	974,503	3,035,207	1,009,774	3,128,509	1,036,824	3,187,965	1,056,990	3,204,388	NA	NA	1,113,306	3,108,078	1,128,623	3,267,419	1,174,689	3,325,238

**Table STAL-8. Workers, by state and occupational group: 2013–23**

(Number)

State	2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023	
	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations	STEM occupations	Non-STEM occupations
North Dakota	79,050	237,642	87,752	226,578	88,758	236,059	88,312	246,253	87,204	249,178	88,868	245,457	92,710	249,239	NA	NA	91,467	238,654	90,740	246,137	101,365	234,958
Ohio	1,087,250	3,490,736	1,138,118	3,507,195	1,142,750	3,540,805	1,161,230	3,566,252	1,158,750	3,612,058	1,198,614	3,627,118	1,234,911	3,609,856	NA	NA	1,241,814	3,550,121	1,291,037	3,622,334	1,332,841	3,637,598
Oklahoma	352,626	1,119,897	349,818	1,120,760	336,101	1,141,338	349,425	1,121,857	354,458	1,130,675	359,508	1,162,843	376,795	1,144,515	NA	NA	373,584	1,114,950	393,584	1,148,185	396,738	1,158,877
Oregon	358,961	1,189,913	350,484	1,219,390	379,959	1,248,555	389,661	1,283,764	411,896	1,314,776	432,111	1,319,773	433,917	1,348,810	NA	NA	456,997	1,288,569	472,552	1,341,401	487,689	1,322,197
Pennsylvania	1,235,595	3,933,533	1,262,082	3,976,370	1,268,481	3,995,190	1,277,499	3,999,737	1,316,778	4,010,965	1,319,231	4,093,383	1,370,374	4,041,857	NA	NA	1,404,987	3,992,248	1,437,529	4,053,102	1,437,840	4,075,568
Rhode Island	103,187	338,909	102,851	338,078	101,367	350,041	108,357	334,819	106,874	354,621	102,994	348,113	115,823	351,986	NA	NA	118,627	351,203	126,934	355,809	122,046	362,131
South Carolina	397,086	1,388,121	425,600	1,401,902	438,752	1,420,863	442,013	1,479,489	462,557	1,490,065	474,713	1,517,906	491,258	1,538,954	NA	NA	509,731	1,492,141	528,736	1,567,856	528,745	1,636,974
South Dakota	89,990	272,204	89,704	277,256	87,411	274,986	102,262	267,103	96,833	283,851	97,069	278,156	99,438	281,350	NA	NA	104,159	269,445	105,295	275,234	111,217	292,223
Tennessee	570,125	1,903,209	602,165	1,897,382	611,853	1,944,548	613,423	1,977,849	638,112	2,047,715	641,190	2,053,575	662,176	2,076,865	NA	NA	687,898	2,104,537	740,486	2,157,679	735,581	2,206,790
Texas	2,374,101	7,980,012	2,462,515	8,166,377	2,521,133	8,357,379	2,551,373	8,558,903	2,708,365	8,655,658	2,743,800	8,888,837	2,758,805	9,126,454	NA	NA	2,924,971	8,965,178	3,071,477	9,400,674	3,151,206	9,662,138
Utah	256,789	804,668	263,779	842,848	272,869	855,355	276,407	876,853	295,918	912,033	310,484	920,021	326,746	955,585	NA	NA	336,815	978,664	350,489	1,020,917	370,517	1,038,262
Vermont	65,122	211,171	67,606	209,160	71,194	208,163	67,386	212,186	74,945	201,949	70,257	215,421	66,332	218,816	NA	NA	78,013	203,528	83,657	209,439	77,371	214,406
Virginia	840,341	2,626,979	864,133	2,640,378	874,414	2,666,778	896,919	2,676,377	930,155	2,686,562	933,198	2,707,856	970,706	2,703,149	NA	NA	987,832	2,662,032	1,005,284	2,712,353	1,005,268	2,751,926
Washington	695,887	2,131,625	712,514	2,180,300	740,930	2,216,678	781,034	2,256,092	817,982	2,322,607	828,703	2,397,605	888,743	2,387,490	NA	NA	918,127	2,312,634	968,114	2,403,658	995,772	2,405,398
West Virginia	157,669	503,128	150,686	496,596	166,928	484,736	147,993	494,125	155,370	468,754	157,209	483,225	161,764	486,193	NA	NA	157,160	462,197	161,629	466,484	169,444	478,819
Wisconsin	594,695	1,836,173	604,030	1,845,343	636,642	1,864,944	641,207	1,853,787	641,198	1,879,145	665,337	1,883,083	659,686	1,893,289	NA	NA	682,677	1,853,692	707,207	1,851,905	723,328	1,863,618
Wyoming	61,776	188,610	60,596	195,086	59,807	190,188	61,235	180,118	57,227	185,982	64,162	183,886	60,965	178,852	NA	NA	64,061	176,081	65,386	182,694	66,468	176,168

NA = not available; data for 2020 are not available due to the impact of the COVID-19 pandemic on American Community Survey (ACS) data collection for the survey year.

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the employed, civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the data. Coding of occupations into STEM categories reflects changes to ACS occupation codes following the 2018 update to the Standard Occupational Classification implemented by the Bureau of Labor Statistics. Data from 2013 to 2017 use occupations from the 2010 occupation list, while data from 2018 to 2023 use occupations from the 2018 occupation list. Additional information is available at <https://www.census.gov/programs-surveys/acs/data/experimental-data/2020-1-year-pums.html>. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Census Bureau, ACS, 2013–19, 2021–23.

*Science and Engineering Indicators*

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Chief executives	Non-STEM	309.4	322.7
General and operations managers	Non-STEM	3,712.9	3,876.80
Legislators	Non-STEM	27.7	28.6
Advertising and promotions managers	Non-STEM	27.0	26.4
Marketing managers	Non-STEM	407.0	433.7
Sales managers	Non-STEM	619.5	648.5
Public relations managers	Non-STEM	83.2	87.3
Fundraising managers	Non-STEM	45.7	47.6
Administrative services managers	Non-STEM	271.2	283.8
Facilities managers	Non-STEM	151.4	157.1
Computer and information systems managers	S&E-R	667.1	768.7
Financial managers	Non-STEM	868.6	997.4
Industrial production managers	STEM middle-skill occupations	241.9	246.5
Purchasing managers	Non-STEM	83.5	86.1
Transportation, storage, and distribution managers	Non-STEM	216.7	229.8
Compensation and benefits managers	Non-STEM	20.9	20.9
Human resources managers	Non-STEM	221.9	233
Training and development managers	Non-STEM	46.4	49.2
Farmers, ranchers, and other agricultural managers	STEM middle-skill occupations	836.1	825
Construction managers	Non-STEM	550.3	598.4
Education and childcare administrators, preschool and daycare	Non-STEM	90.2	87.9
Education administrators, kindergarten through secondary	Non-STEM	333.3	328.1
Education administrators, postsecondary	Non-STEM	226.6	230.5
Education administrators, all other	Non-STEM	60.2	61.7
Architectural and engineering managers	S&E-R	212.5	220.5
Food service managers	Non-STEM	352.8	375.3
Gambling managers	Non-STEM	5.1	5.2
Entertainment and recreation managers, except gambling	Non-STEM	43.2	46.5
Lodging managers	Non-STEM	52.0	53.8
Medical and health services managers	S&E-R	616.2	759.1
Natural sciences managers	S&E-R	104.3	108.2
Postmasters and mail superintendents	Non-STEM	13.1	12.7
Property, real estate, and community association managers	Non-STEM	466.1	483.1
Social and community service managers	Non-STEM	219.8	233.9
Emergency management directors	Non-STEM	13.2	13.6
Funeral home managers	Non-STEM	32.1	33.4
Personal service managers, all other	Non-STEM	25.1	26.7
Managers, all other	Non-STEM	1,333.7	1,393.50
Agents and business managers of artists, performers, and athletes	Non-STEM	21.4	23.2
Buyers and purchasing agents	Non-STEM	522.2	552.3
Claims adjusters, examiners, and investigators	Non-STEM	356.1	337.9
Insurance appraisers, auto damage	Non-STEM	9.2	8.4
Compliance officers	Non-STEM	418.0	430.3
Cost estimators	Non-STEM	221.4	212.1
Human resources specialists	Non-STEM	944.3	1,002.70
Farm labor contractors	Non-STEM	3.9	4.2
Labor relations specialists	Non-STEM	65.4	65.4
Logisticians	S&E	241.0	281.3
Project management specialists	Non-STEM	1,046.3	1,105.00
Management analysts	Non-STEM	1,075.1	1,169.70
Meeting, convention, and event planners	Non-STEM	155.8	163.3

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Fundraisers	Non-STEM	134.4	140.2
Compensation, benefits, and job analysis specialists	Non-STEM	107.0	112.7
Training and development specialists	Non-STEM	452.3	501
Market research analysts and marketing specialists	Non-STEM	941.7	1,004.70
Business operations specialists, all other	Non-STEM	1,205.7	1,242.00
Accountants and auditors	Non-STEM	1,579.8	1,652.60
Property appraisers and assessors	STEM middle-skill occupations	77.3	80.2
Budget analysts	Non-STEM	50.4	51
Credit analysts	Non-STEM	67.8	64.8
Financial and investment analysts	Non-STEM	368.5	389.6
Personal financial advisors	Non-STEM	326.0	357.2
Insurance underwriters	Non-STEM	127.0	123.7
Financial risk specialists	Non-STEM	60.5	64.4
Financial examiners	Non-STEM	65.1	77.2
Credit counselors	Non-STEM	31.8	32.9
Loan officers	Non-STEM	301.4	306.5
Tax examiners and collectors, and revenue agents	STEM middle-skill occupations	57.6	56.5
Tax preparers	Non-STEM	90.6	94.7
Financial specialists, all other	Non-STEM	137.1	141.4
Computer systems analysts	S&E	521.1	566.5
Information security analysts	S&E	182.8	234.9
Computer and information research scientists	S&E	40.3	48.3
Computer network support specialists	S&E	152.7	155.5
Computer user support specialists	S&E	729.5	702.5
Computer network architects	S&E	179.2	200.6
Database administrators	S&E	78.0	77.5
Database architects	S&E	66.9	72.7
Network and computer systems administrators	S&E	331.5	317.7
Computer programmers	S&E-R	121.2	113.9
Software developers	S&E	1,693.8	1,961.40
Software quality assurance analysts and testers	S&E	201.7	221.9
Web developers	S&E	86.0	92.5
Web and digital interface designers	S&E	128.9	137.9
Computer occupations, all other	S&E	472.0	510.5
Actuaries	S&E-R	33.6	40.9
Mathematicians	S&E	2.4	2.4
Operations research analysts	S&E	112.1	136.2
Statisticians	S&E	32.2	34.9
Data scientists	S&E	245.9	328.3
Mathematical science occupations, all other	S&E	5.0	5.2
Architects, except landscape and naval	S&E-R	123.6	128.4
Landscape architects	S&E-R	21.8	22.6
Cartographers and photogrammetrists	S&E-R	13.4	14.3
Surveyors	S&E-R	56.1	58.6
Aerospace engineers	S&E	71.6	75.9
Agricultural engineers	S&E	1.7	1.8
Bioengineers and biomedical engineers	S&E	22.2	23.3
Chemical engineers	S&E	21.6	22.1
Civil engineers	S&E	368.9	387.5
Computer hardware engineers	S&E	76.8	82.4
Electrical engineers	S&E	192.0	205.7

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Electronics engineers, except computer	S&E	95.9	101.8
Environmental engineers	S&E	39.4	41
Health and safety engineers, except mining safety engineers and inspectors	S&E	23.8	24.9
Industrial engineers	S&E	351.1	389.6
Marine engineers and naval architects	S&E	8.5	9
Materials engineers	S&E	23.0	24.3
Mechanical engineers	S&E	293.1	319.6
Mining and geological engineers, including mining safety engineers	S&E	7.0	7
Nuclear engineers	S&E	15.4	15.3
Petroleum engineers	S&E	19.6	19.8
Engineers, all other	S&E	158.8	162.1
Architectural and civil drafters	S&E-R	110.5	115.1
Electrical and electronics drafters	S&E-R	21.6	20.4
Mechanical drafters	S&E-R	42.9	40.1
Drafters, all other	S&E-R	17.1	15.9
Aerospace engineering and operations technologists and technicians	S&E-R	9.3	10.1
Civil engineering technologists and technicians	S&E-R	64.9	66.2
Electrical and electronic engineering technologists and technicians	S&E-R	93.7	94.3
Electro-mechanical and mechatronics technologists and technicians	S&E-R	15.0	15.1
Environmental engineering technologists and technicians	S&E-R	12.9	13
Industrial engineering technologists and technicians	S&E-R	74.6	75.9
Mechanical engineering technologists and technicians	S&E-R	38.3	38.3
Calibration technologists and technicians	S&E-R	15.8	16.5
Engineering technologists and technicians, except drafters, all other	S&E-R	67.3	68.3
Surveying and mapping technicians	S&E-R	59.4	62.1
Animal scientists	S&E	2.8	2.9
Food scientists and technologists	S&E	15.2	16.2
Soil and plant scientists	S&E	20.7	21.8
Biochemists and biophysicists	S&E	35.6	37.6
Microbiologists	S&E	20.7	21.6
Zoologists and wildlife biologists	S&E	18.2	18.5
Biological scientists, all other	S&E	63.7	64.5
Conservation scientists	S&E	28.5	29.5
Foresters	S&E	13.8	14
Epidemiologists	S&E	12.3	14.3
Medical scientists, except epidemiologists	S&E	165.3	179.6
Life scientists, all other	S&E	7.8	8.1
Astronomers	S&E	1.8	1.8
Physicists	S&E	24.6	25.6
Atmospheric and space scientists	S&E	9.4	9.5
Chemists	S&E	86.8	91
Materials scientists	S&E	8.7	9.1
Environmental scientists and specialists, including health	S&E	90.3	94.3
Geoscientists, except hydrologists and geographers	S&E	25.1	26
Hydrologists	S&E	6.3	6.3
Physical scientists, all other	S&E	31.9	32.1
Economists	S&E	17.6	17.8
Survey researchers	S&E	8.8	8.3
Industrial-organizational psychologists	S&E	5.6	5.9
Clinical and counseling psychologists	S&E	76.3	84.8
School psychologists	S&E	67.2	67.7
Psychologists, all other	S&E	55.3	57.7

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Sociologists	S&E	3.4	3.6
Urban and regional planners	S&E	44.7	46.2
Anthropologists and archeologists	S&E	8.8	9.2
Geographers	S&E	1.5	1.5
Historians	S&E	3.4	3.5
Political scientists	S&E	6.5	6.3
Social scientists and related workers, all other	S&E	40.8	40.1
Agricultural technicians	S&E-R	18.6	19.4
Food science technicians	S&E-R	20.4	21.3
Biological technicians	S&E-R	82.7	85.6
Chemical technicians	S&E-R	57.0	59
Environmental science and protection technicians, including health	S&E-R	40.4	42.1
Geological technicians, except hydrologic technicians	S&E-R	9.8	10
Hydrologic technicians	S&E-R	3.1	3
Nuclear technicians	S&E-R	6.0	5.5
Social science research assistants	S&E-R	40.6	42.3
Forest and conservation technicians	S&E-R	33.8	32.7
Forensic science technicians	S&E-R	20.7	23.3
Life, physical, and social science technicians, all other	S&E-R	83.2	86.2
Occupational health and safety specialists	S&E-R	131.9	148.4
Occupational health and safety technicians	S&E-R	31.9	34.6
Educational, guidance, and career counselors and advisors	Non-STEM	376.3	389.6
Marriage and family therapists	Non-STEM	77.8	87.7
Rehabilitation counselors	Non-STEM	91.9	93.2
Substance abuse, behavioral disorder, and mental health counselors	Non-STEM	483.5	564.6
Counselors, all other	Non-STEM	69.1	77.8
Child, family, and school social workers	Non-STEM	399.9	413.3
Healthcare social workers	Non-STEM	193.2	208.1
Mental health and substance abuse social workers	Non-STEM	136.8	150.1
Social workers, all other	Non-STEM	81.0	84.1
Health education specialists	Non-STEM	71.8	75
Probation officers and correctional treatment specialists	Non-STEM	92.3	94.8
Social and human service assistants	Non-STEM	449.6	478.5
Community health workers	Non-STEM	65.1	72.5
Community and social service specialists, all other	Non-STEM	119.2	124.7
Clergy	Non-STEM	262.0	264.6
Directors, religious activities and education	Non-STEM	138.9	141.8
Religious workers, all other	Non-STEM	88.4	89
Lawyers	Non-STEM	864.8	900.7
Judicial law clerks	Non-STEM	14.5	14.9
Administrative law judges, adjudicators, and hearing officers	Non-STEM	17.5	17.4
Arbitrators, mediators, and conciliators	Non-STEM	9.1	9.5
Judges, magistrate judges, and magistrates	Non-STEM	27.3	28
Paralegals and legal assistants	Non-STEM	376.2	376.8
Title examiners, abstractors, and searchers	Non-STEM	57.4	58.5
Legal support workers, all other	Non-STEM	51.3	50.7
Business teachers, postsecondary	Non-STEM	103.1	109
Computer science teachers, postsecondary	S&E	44.8	47.2
Mathematical science teachers, postsecondary	S&E	58.9	60.2
Architecture teachers, postsecondary	S&E-R	11.6	11.9
Engineering teachers, postsecondary	S&E	50.3	54.4
Agricultural sciences teachers, postsecondary	S&E	10.7	11.2

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Biological science teachers, postsecondary	S&E	66.0	70.8
Forestry and conservation science teachers, postsecondary	S&E	1.6	1.7
Atmospheric, earth, marine, and space sciences teachers, postsecondary	S&E	14.0	14.4
Chemistry teachers, postsecondary	S&E	25.4	26
Environmental science teachers, postsecondary	S&E	9.0	9.3
Physics teachers, postsecondary	S&E	17.1	17.5
Anthropology and archeology teachers, postsecondary	S&E	6.5	6.7
Area, ethnic, and cultural studies teachers, postsecondary	Non-STEM	14.5	14.8
Economics teachers, postsecondary	S&E	15.8	16.1
Geography teachers, postsecondary	S&E	4.0	4.2
Political science teachers, postsecondary	S&E	21.8	22.2
Psychology teachers, postsecondary	S&E	52.5	54.4
Sociology teachers, postsecondary	S&E	15.4	15.7
Social sciences teachers, postsecondary, all other	S&E	20.7	21.1
Health specialties teachers, postsecondary	S&E-R	289.6	339.7
Nursing instructors and teachers, postsecondary	S&E-R	91.6	106.9
Education teachers, postsecondary	Non-STEM	74.9	76.5
Library science teachers, postsecondary	Non-STEM	5.1	5.3
Criminal justice and law enforcement teachers, postsecondary	Non-STEM	16.2	16.5
Law teachers, postsecondary	Non-STEM	29.5	30.2
Social work teachers, postsecondary	Non-STEM	17.1	17.5
Art, drama, and music teachers, postsecondary	Non-STEM	122.8	124.8
Communications teachers, postsecondary	Non-STEM	35.8	36.6
English language and literature teachers, postsecondary	Non-STEM	72.2	72.2
Foreign language and literature teachers, postsecondary	Non-STEM	26.4	26.4
History teachers, postsecondary	Non-STEM	24.6	24.6
Philosophy and religion teachers, postsecondary	Non-STEM	27.3	27.5
Family and consumer sciences teachers, postsecondary	Non-STEM	3.2	3.3
Recreation and fitness studies teachers, postsecondary	Non-STEM	15.4	15.7
Career/technical education teachers, postsecondary	Non-STEM	122.2	123
Postsecondary teachers, all other	Non-STEM	183.4	186.8
Preschool teachers, except special education	Non-STEM	555.1	578.1
Kindergarten teachers, except special education	Non-STEM	117.2	115.2
Elementary school teachers, except special education	Non-STEM	1,422.7	1,394.80
Middle school teachers, except special and career/technical education	Non-STEM	633.7	621.3
Career/technical education teachers, middle school	Non-STEM	14.0	13.8
Secondary school teachers, except special and career/technical education	Non-STEM	1,094.5	1,076.70
Career/technical education teachers, secondary school	Non-STEM	103.4	101.5
Special education teachers, preschool	Non-STEM	29.3	29.7
Special education teachers, kindergarten and elementary school	Non-STEM	230.2	226.1
Special education teachers, middle school	Non-STEM	94.8	93
Special education teachers, secondary school	Non-STEM	164.2	161.5
Special education teachers, all other	Non-STEM	41.0	41.5
Adult basic education, adult secondary education, and English as a second language instructors	Non-STEM	40.9	35.3
Self-enrichment teachers	Non-STEM	417.5	433
Substitute teachers, short-term	Non-STEM	510.1	518.5
Tutors	Non-STEM	215.5	216.8
Teachers and instructors, all other	Non-STEM	153.8	153.5
Archivists	Non-STEM	9.3	9.7
Curators	Non-STEM	15.1	16.2
Museum technicians and conservators	Non-STEM	15.7	16.5

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Librarians and media collections specialists	Non-STEM	142.1	144.5
Library technicians	Non-STEM	78.6	73.2
Farm and home management educators	Non-STEM	12.4	12.1
Instructional coordinators	Non-STEM	232.6	235.5
Teaching assistants, postsecondary	Non-STEM	193.6	199.6
Teaching assistants, except postsecondary	Non-STEM	1,422.8	1,401.70
Educational instruction and library workers, all other	Non-STEM	132.0	134
Art directors	Non-STEM	135.0	140.7
Craft artists	Non-STEM	11.6	11.9
Fine artists, including painters, sculptors, and illustrators	Non-STEM	26.5	26.2
Special effects artists and animators	Non-STEM	57.1	58
Artists and related workers, all other	Non-STEM	13.9	14
Commercial and industrial designers	Non-STEM	30.6	31.6
Fashion designers	Non-STEM	25.7	26.2
Floral designers	Non-STEM	43.8	41.2
Graphic designers	Non-STEM	265.9	271.5
Interior designers	Non-STEM	87.1	89.9
Merchandise displayers and window trimmers	Non-STEM	193.0	199.3
Set and exhibit designers	Non-STEM	31.3	32
Designers, all other	Non-STEM	28.6	29.2
Actors	Non-STEM	57.0	57.1
Producers and directors	Non-STEM	167.0	175.2
Athletes and sports competitors	Non-STEM	19.1	20.2
Coaches and scouts	Non-STEM	306.5	326
Umpires, referees, and other sports officials	Non-STEM	19.3	20.4
Dancers	Non-STEM	12.3	12.9
Choreographers	Non-STEM	4.6	4.9
Music directors and composers	Non-STEM	47.3	47.2
Musicians and singers	Non-STEM	169.8	171.6
Disc jockeys, except radio	Non-STEM	15.4	16
Entertainers and performers, sports and related workers, all other	Non-STEM	35.8	38
Broadcast announcers and radio disc jockeys	Non-STEM	24.1	22.8
News analysts, reporters, and journalists	Non-STEM	49.3	47.4
Public relations specialists	Non-STEM	315.9	331
Editors	Non-STEM	115.8	116.5
Technical writers	STEM middle-skill occupations	56.4	56.9
Writers and authors	Non-STEM	135.4	140.3
Interpreters and translators	Non-STEM	75.3	76.6
Court reporters and simultaneous captioners	Non-STEM	17.7	17.7
Media and communication workers, all other	Non-STEM	34.3	35.3
Audio and video technicians	STEM middle-skill occupations	92.3	95.4
Broadcast technicians	STEM middle-skill occupations	24.8	24.2
Sound engineering technicians	STEM middle-skill occupations	16.9	16.6
Lighting technicians	STEM middle-skill occupations	12.1	11.5
Photographers	STEM middle-skill occupations	151.2	154
Camera operators, television, video, and film	STEM middle-skill occupations	36.4	36.9

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Film and video editors	STEM middle-skill occupations	43.5	45.2
Media and communication equipment workers, all other	STEM middle-skill occupations	15.1	15.2
Chiropractors	S&E-R	57.2	62.6
Dentists, general	S&E-R	129.8	135.2
Oral and maxillofacial surgeons	S&E-R	6.1	6.4
Orthodontists	S&E-R	5.9	6.2
Prosthodontists	S&E-R	0.9	0.9
Dentists, all other specialists	S&E-R	6.6	6.6
Dietitians and nutritionists	S&E-R	90.9	95.9
Optometrists	S&E-R	47.8	51.6
Pharmacists	S&E-R	335.1	350.5
Physician assistants	S&E-R	162.7	195.8
Podiatrists	S&E-R	9.7	9.9
Occupational therapists	S&E-R	160.0	182.1
Physical therapists	S&E-R	267.2	296.4
Radiation therapists	S&E-R	19.2	19.6
Recreational therapists	S&E-R	16.1	16.6
Respiratory therapists	S&E-R	139.6	156.4
Speech-language pathologists	S&E-R	187.4	215.5
Exercise physiologists	S&E-R	23.9	26.1
Therapists, all other	S&E-R	56.1	62.5
Veterinarians	S&E-R	86.4	94.7
Registered nurses	S&E-R	3,391.0	3,557.10
Nurse anesthetists	S&E-R	53.8	58.5
Nurse midwives	S&E-R	8.6	9.5
Nurse practitioners	S&E-R	320.4	448.8
Audiologists	S&E-R	15.8	17.3
Anesthesiologists	S&E-R	45.3	46.7
Cardiologists	S&E-R	19.4	20.2
Dermatologists	S&E-R	10.9	11.6
Emergency medicine physicians	S&E-R	36.1	37.1
Family medicine physicians	S&E-R	116.0	119.1
General internal medicine physicians	S&E-R	73.2	75.6
Neurologists	S&E-R	8.3	8.8
Obstetricians and gynecologists	S&E-R	21.5	21.7
Pediatricians, general	S&E-R	46.4	46.8
Physicians, pathologists	S&E-R	12.6	13.1
Psychiatrists	S&E-R	27.1	28.8
Radiologists	S&E-R	28.2	29
Physicians, all other	S&E-R	340.7	349.3
Ophthalmologists, except pediatric	S&E-R	12.5	13.1
Orthopedic surgeons, except pediatric	S&E-R	14.7	15.3
Pediatric surgeons	S&E-R	1.1	1.1
Surgeons, all other	S&E-R	25.1	26
Acupuncturists	S&E-R	15.3	16.4
Dental hygienists	S&E-R	221.6	237.2
Healthcare diagnosing or treating practitioners, all other	S&E-R	41.3	42.2
Clinical laboratory technologists and technicians	S&E-R	351.2	357.2
Cardiovascular technologists and technicians	S&E-R	64.7	66.6
Diagnostic medical sonographers	S&E-R	90.0	101.7
Nuclear medicine technologists	S&E-R	20.0	20.6

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Radiologic technologists and technicians	S&E-R	228.0	237.8
Magnetic resonance imaging technologists	S&E-R	44.1	47.2
Medical dosimetrists	S&E-R	4.8	4.9
Emergency medical technicians	S&E-R	181.0	190.2
Paramedics	S&E-R	101.9	107
Dietetic technicians	S&E-R	30.9	31.7
Pharmacy technicians	S&E-R	490.4	521.8
Psychiatric technicians	S&E-R	144.5	173.3
Surgical technologists	S&E-R	115.6	120.8
Veterinary technologists and technicians	S&E-R	134.2	146.4
Ophthalmic medical technicians	S&E-R	78.8	94.4
Licensed practical and licensed vocational nurses	S&E-R	651.4	668.5
Medical records specialists	S&E-R	194.8	208.6
Opticians, dispensing	S&E-R	79.9	82.2
Orthotists and prosthetists	S&E-R	10.1	11.5
Hearing aid specialists	S&E-R	10.7	12.6
Health technologists and technicians, all other	S&E-R	178.8	188.1
Health information technologists and medical registrars	S&E-R	41.9	48.1
Athletic trainers	S&E-R	33.9	37.6
Genetic counselors	S&E-R	4.0	4.3
Surgical assistants	S&E-R	25.3	26.6
Healthcare practitioners and technical workers, all other	S&E-R	41.7	43.1
Home health and personal care aides	Non-STEM	4,347.7	5,087.50
Nursing assistants	Non-STEM	1,441.5	1,474.00
Orderlies	Non-STEM	54.0	55.8
Psychiatric aides	Non-STEM	38.5	38.3
Occupational therapy assistants	Non-STEM	49.2	58.7
Occupational therapy aides	Non-STEM	5.2	5.3
Physical therapist assistants	Non-STEM	111.5	136
Physical therapist aides	Non-STEM	45.6	46.9
Massage therapists	Non-STEM	168.0	193.9
Dental assistants	Non-STEM	381.9	406.3
Medical assistants	Non-STEM	811.0	912.2
Medical equipment preparers	Non-STEM	76.5	84.2
Medical transcriptionists	Non-STEM	43.9	41.8
Pharmacy aides	Non-STEM	41.1	41.1
Veterinary assistants and laboratory animal caretakers	Non-STEM	117.8	128.1
Phlebotomists	Non-STEM	139.7	147.5
Healthcare support workers, all other	Non-STEM	109.7	113.5
First-line supervisors of correctional officers	Non-STEM	57.1	55.5
First-line supervisors of police and detectives	Non-STEM	160.8	165.4
First-line supervisors of firefighting and prevention workers	Non-STEM	97.2	100.5
First-line supervisors of security workers	Non-STEM	71.9	73.8
First-line supervisors of protective service workers, all other	Non-STEM	21.5	21.8
Firefighters	STEM middle-skill occupations	344.9	356.7
Fire inspectors and investigators	Non-STEM	14.7	15.2
Forest fire inspectors and prevention specialists	Non-STEM	2.9	3.3
Bailiffs	Non-STEM	19.0	18.6
Correctional officers and jailers	Non-STEM	387.5	357.4
Detectives and criminal investigators	Non-STEM	117.9	117.1
Fish and game wardens	Non-STEM	7.0	6.6

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Parking enforcement workers	Non-STEM	8.4	8.2
Police and sheriff's patrol officers	Non-STEM	698.8	720.8
Transit and railroad police	Non-STEM	3.1	3.2
Animal control workers	Non-STEM	12.2	12.7
Private detectives and investigators	Non-STEM	43.6	46.2
Gambling surveillance officers and gambling investigators	Non-STEM	10.3	10.3
Security guards	Non-STEM	1,262.1	1,267.10
Crossing guards and flaggers	Non-STEM	91.4	94.7
Lifeguards, ski patrol, and other recreational protective service workers	Non-STEM	149.7	158.4
Transportation security screeners	Non-STEM	50.1	47.1
School bus monitors	Non-STEM	71.4	69.5
Protective service workers, all other	Non-STEM	84.0	86.1
Chefs and head cooks	STEM middle-skill occupations	197.3	211.3
First-line supervisors of food preparation and serving workers	Non-STEM	1,215.0	1,288.00
Cooks, fast food	Non-STEM	669.5	579.2
Cooks, institution and cafeteria	Non-STEM	466.1	475.4
Cooks, private household	Non-STEM	34.2	36
Cooks, restaurant	Non-STEM	1,460.2	1,677.20
Cooks, short order	Non-STEM	151.1	142.7
Cooks, all other	Non-STEM	24.0	25.3
Food preparation workers	Non-STEM	902.7	871.8
Bartenders	Non-STEM	756.7	801.5
Fast food and counter workers	Non-STEM	3,796.0	4,029.20
Waiters and waitresses	Non-STEM	2,329.7	2,313.50
Food servers, nonrestaurant	Non-STEM	277.2	285.3
Dining room and cafeteria attendants and bartender helpers	Non-STEM	527.4	560.6
Dishwashers	Non-STEM	477.7	478.6
Hosts and hostesses, restaurant, lounge, and coffee shop	Non-STEM	429.9	423.5
Food preparation and serving related workers, all other	Non-STEM	90.5	96.3
First-line supervisors of housekeeping and janitorial workers	Non-STEM	269.8	276.4
First-line supervisors of landscaping, lawn service, and groundskeeping workers	Non-STEM	224.7	230
Janitors and cleaners, except maids and housekeeping cleaners	Non-STEM	2,447.7	2,495.50
Maids and housekeeping cleaners	Non-STEM	1,356.8	1,362.80
Building cleaning workers, all other	Non-STEM	18.1	18.5
Pest control workers	Non-STEM	102.4	107.5
Landscaping and groundskeeping workers	Non-STEM	1,192.5	1,235.00
Pesticide handlers, sprayers, and applicators, vegetation	Non-STEM	29.6	30.7
Tree trimmers and pruners	Non-STEM	60.1	62.1
Grounds maintenance workers, all other	Non-STEM	14.1	14.5
First-line supervisors of gambling services workers	Non-STEM	32.5	33.1
First-line supervisors of entertainment and recreation workers, except gambling services	Non-STEM	123.3	131.1
First-line supervisors of personal service workers	Non-STEM	149.1	159.1
Animal trainers	Non-STEM	47.3	49.8
Animal caretakers	Non-STEM	392.1	439.6
Gambling dealers	Non-STEM	88.7	88.1
Gambling and sports book writers and runners	Non-STEM	8.2	7.7
Gambling service workers, all other	Non-STEM	16.1	16
Motion picture projectionists	Non-STEM	2.0	2
Ushers, lobby attendants, and ticket takers	Non-STEM	121.7	123.1
Amusement and recreation attendants	Non-STEM	392.3	405.5

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Costume attendants	Non-STEM	6.7	7.1
Locker room, coatroom, and dressing room attendants	Non-STEM	15.6	16.6
Entertainment attendants and related workers, all other	Non-STEM	8.5	8.8
Embalmers	Non-STEM	3.6	3.7
Crematory operators	Non-STEM	3.1	3.2
Funeral attendants	Non-STEM	32.5	33.5
Morticians, undertakers, and funeral arrangers	Non-STEM	27.5	28.4
Barbers	Non-STEM	76.0	79.2
Hairdressers, hairstylists, and cosmetologists	Non-STEM	575.2	607.4
Makeup artists, theatrical and performance	Non-STEM	7.0	7.6
Manicurists and pedicurists	Non-STEM	210.1	224.8
Shampooers	Non-STEM	18.5	19.6
Skincare specialists	Non-STEM	97.4	103.9
Baggage porters and bellhops	Non-STEM	32.5	32
Concierges	Non-STEM	45.6	46.7
Tour and travel guides	Non-STEM	55.8	60.3
Childcare workers	Non-STEM	991.6	962.4
Exercise trainers and group fitness instructors	Non-STEM	370.1	414.2
Recreation workers	Non-STEM	327.7	341.1
Residential advisors	Non-STEM	91.2	94.7
Personal care and service workers, all other	Non-STEM	94.4	100.4
First-line supervisors of retail sales workers	Non-STEM	1,432.6	1,360.30
First-line supervisors of non-retail sales workers	Non-STEM	320.0	320
Cashiers	Non-STEM	3,157.2	2,843.60
Gambling change persons and booth cashiers	Non-STEM	22.6	21.1
Counter and rental clerks	Non-STEM	408.2	421.3
Parts salespersons	Non-STEM	272.1	280.6
Retail salespersons	Non-STEM	3,936.7	3,917.10
Advertising sales agents	Non-STEM	103.7	97.1
Insurance sales agents	Non-STEM	568.8	589.8
Securities, commodities, and financial services sales agents	Non-STEM	514.5	531.6
Travel agents	Non-STEM	65.7	67.2
Sales representatives of services, except advertising, insurance, financial services, and travel	Non-STEM	1,226.7	1,264.70
Sales representatives, wholesale and manufacturing, technical and scientific products	Non-STEM	303.2	308.9
Sales representatives, wholesale and manufacturing, except technical and scientific products	Non-STEM	1,310.5	1,314.90
Demonstrators and product promoters	Non-STEM	79.2	79.1
Models	Non-STEM	6.7	6.7
Real estate brokers	Non-STEM	111.3	115
Real estate sales agents	Non-STEM	420.9	433.7
Sales engineers	Non-STEM	56.8	59.9
Telemarketers	Non-STEM	67.4	52.5
Door-to-door sales workers, news and street vendors, and related workers	Non-STEM	25.3	22.8
Sales and related workers, all other	Non-STEM	122.6	127.1
First-line supervisors of office and administrative support workers	Non-STEM	1,558.4	1,554.40
Switchboard operators, including answering service	Non-STEM	36.6	27
Telephone operators	Non-STEM	4.0	2.9
Communications equipment operators, all other	Non-STEM	1.4	1.5
Bill and account collectors	Non-STEM	166.9	149.4
Billing and posting clerks	Non-STEM	429.8	427.9
Bookkeeping, accounting, and auditing clerks	Non-STEM	1,613.4	1,519.10

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Gambling cage workers	Non-STEM	14.1	13.4
Payroll and timekeeping clerks	Non-STEM	161.1	134.2
Procurement clerks	Non-STEM	61.9	56.6
Tellers	Non-STEM	347.4	302.5
Financial clerks, all other	Non-STEM	38.9	39.4
Brokerage clerks	Non-STEM	40.8	36.9
Correspondence clerks	Non-STEM	6.9	6.5
Court, municipal, and license clerks	Non-STEM	180.4	185.9
Credit authorizers, checkers, and clerks	Non-STEM	12.0	11.3
Customer service representatives	Non-STEM	2,814.0	2,660.30
Eligibility interviewers, government programs	Non-STEM	166.8	168.5
File clerks	Non-STEM	84.3	70.9
Hotel, motel, and resort desk clerks	Non-STEM	264.2	274
Interviewers, except eligibility and loan	Non-STEM	164.3	145.1
Library assistants, clerical	Non-STEM	84.5	78.9
Loan interviewers and clerks	Non-STEM	177.6	173.5
New accounts clerks	Non-STEM	38.9	33.8
Order clerks	Non-STEM	89.5	74.1
Human resources assistants, except payroll and timekeeping	Non-STEM	95.2	88.4
Receptionists and information clerks	Non-STEM	1,007.2	1,007.60
Reservation and transportation ticket agents and travel clerks	Non-STEM	131.9	135.6
Information and record clerks, all other	Non-STEM	153.3	153
Cargo and freight agents	Non-STEM	100.6	109.2
Couriers and messengers	Non-STEM	247.2	267.6
Public safety telecommunicators	Non-STEM	105.2	108.9
Dispatchers, except police, fire, and ambulance	Non-STEM	218.7	216.7
Meter readers, utilities	Non-STEM	20.1	17.7
Postal service clerks	Non-STEM	74.2	71.6
Postal service mail carriers	Non-STEM	319.4	308.1
Postal service mail sorters, processors, and processing machine operators	Non-STEM	106.4	97.5
Production, planning, and expediting clerks	Non-STEM	388.8	381.7
Shipping, receiving, and inventory clerks	Non-STEM	862.2	795.8
Weighers, measurers, checkers, and samplers, recordkeeping	Non-STEM	49.8	47.4
Executive secretaries and executive administrative assistants	Non-STEM	502.8	494.9
Legal secretaries and administrative assistants	Non-STEM	156.3	147.3
Medical secretaries and administrative assistants	Non-STEM	850.0	885.3
Secretaries and administrative assistants, except legal, medical, and executive	Non-STEM	1,944.0	1,913.20
Data entry keyers	Non-STEM	141.6	104.9
Word processors and typists	Non-STEM	40.0	25.6
Desktop publishers	Non-STEM	5.0	4.4
Insurance claims and policy processing clerks	Non-STEM	256.7	247.2
Mail clerks and mail machine operators, except postal service	Non-STEM	67.4	62.9
Office clerks, general	Non-STEM	2,646.0	2,468.20
Office machine operators, except computer	Non-STEM	25.5	21.6
Proofreaders and copy markers	Non-STEM	12.0	11.9
Statistical assistants	Non-STEM	6.5	6.3
Office and administrative support workers, all other	Non-STEM	232.9	214.8
First-line supervisors of farming, fishing, and forestry workers	Non-STEM	65.4	67
Agricultural inspectors	Non-STEM	14.7	14.9
Animal breeders	Non-STEM	7.9	8.1
Graders and sorters, agricultural products	Non-STEM	38.9	36.8

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Agricultural equipment operators	Non-STEM	65.2	70.3
Farmworkers and laborers, crop, nursery, and greenhouse	Non-STEM	504.8	488.1
Farmworkers, farm, ranch, and aquacultural animals	Non-STEM	224.6	213.4
Agricultural workers, all other	Non-STEM	10.1	10.3
Fishing and hunting workers	Non-STEM	21.9	20.9
Forest and conservation workers	Non-STEM	10.8	10.3
Fallers	Non-STEM	5.6	5.2
Logging equipment operators	Non-STEM	30.9	30.5
Log graders and scalers	Non-STEM	4.6	4.6
Logging workers, all other	Non-STEM	3.1	3
First-line supervisors of construction trades and extraction workers	STEM middle-skill occupations	921.6	970.6
Boilermakers	STEM middle-skill occupations	10.4	10.1
Brickmasons and blockmasons	STEM middle-skill occupations	74.1	76.4
Stonemasons	STEM middle-skill occupations	12.1	11.8
Carpenters	STEM middle-skill occupations	959.0	1,002.10
Carpet installers	Non-STEM	20.3	18.3
Floor layers, except carpet, wood, and hard tiles	Non-STEM	33.7	36.9
Floor sanders and finishers	Non-STEM	5.6	5.8
Tile and stone setters	Non-STEM	52.6	58
Cement masons and concrete finishers	Non-STEM	206.7	210.4
Terrazzo workers and finishers	Non-STEM	1.5	1.3
Construction laborers	Non-STEM	1,457.0	1,563.40
Paving, surfacing, and tamping equipment operators	Non-STEM	47.0	48.6
Pile driver operators	Non-STEM	3.2	3.3
Operating engineers and other construction equipment operators	Non-STEM	489.3	507.1
Drywall and ceiling tile installers	STEM middle-skill occupations	103.1	107.4
Tapers	STEM middle-skill occupations	15.6	15.6
Electricians	STEM middle-skill occupations	818.7	896.1
Glaziers	STEM middle-skill occupations	60.5	62.5
Insulation workers, floor, ceiling, and wall	Non-STEM	40.2	41.7
Insulation workers, mechanical	Non-STEM	27.2	28.5
Painters, construction and maintenance	Non-STEM	342.2	355.2
Paperhangers	Non-STEM	2.3	2.5
Pipelayers	STEM middle-skill occupations	34.4	32.9
Plumbers, pipefitters, and steamfitters	STEM middle-skill occupations	504.5	527.2
Plasterers and stucco masons	Non-STEM	24.2	25.2
Reinforcing iron and rebar workers	STEM middle-skill occupations	19.4	20.3
Roofers	STEM middle-skill occupations	166.7	176.5
Sheet metal workers	Non-STEM	127.0	130.1
Structural iron and steel workers	STEM middle-skill occupations	65.7	68.6

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Solar photovoltaic installers	STEM middle-skill occupations	28.6	40.6
Helpers—brickmasons, blockmasons, stonemasons, and tile and marble setters	Non-STEM	16.1	14.4
Helpers—carpenters	Non-STEM	25.2	26.4
Helpers—electricians	Non-STEM	66.6	66.7
Helpers—painters, paperhangers, plasterers, and stucco masons	Non-STEM	7.4	7.6
Helpers—pipelayers, plumbers, pipefitters, and steamfitters	Non-STEM	45.3	47.5
Helpers—roofers	Non-STEM	5.2	5.5
Helpers, construction trades, all other	Non-STEM	26.3	27.4
Construction and building inspectors	STEM middle-skill occupations	147.6	146.5
Elevator and escalator installers and repairers	STEM middle-skill occupations	24.2	25.4
Fence erectors	Non-STEM	26.4	27.6
Hazardous materials removal workers	Non-STEM	51.3	51.8
Highway maintenance workers	Non-STEM	159.1	163.9
Rail-track laying and maintenance equipment operators	Non-STEM	15.0	15.3
Septic tank servicers and sewer pipe cleaners	Non-STEM	30.4	32.7
Miscellaneous construction and related workers	Non-STEM	35.0	36.2
Derrick operators, oil and gas	STEM middle-skill occupations	11.3	11.3
Rotary drill operators, oil and gas	STEM middle-skill occupations	13.3	13.4
Service unit operators, oil and gas	STEM middle-skill occupations	45.2	45.4
Excavating and loading machine and dragline operators, surface mining	STEM middle-skill occupations	35.8	35.6
Earth drillers, except oil and gas	STEM middle-skill occupations	18.3	18.8
Explosives workers, ordnance handling experts, and blasters	Non-STEM	5.8	5.8
Continuous mining machine operators	Non-STEM	14.9	15
Roof bolters, mining	Non-STEM	2.3	1.5
Loading and moving machine operators, underground mining	Non-STEM	6.4	5
Underground mining machine operators, all other	Non-STEM	3.6	3.4
Rock splitters, quarry	Non-STEM	3.2	3.4
Roustabouts, oil and gas	STEM middle-skill occupations	46.0	47.1
Helpers—extraction workers	Non-STEM	7.0	6.9
Extraction workers, all other	Non-STEM	6.3	6.4
First-line supervisors of mechanics, installers, and repairers	STEM middle-skill occupations	617.5	636.5
Computer, automated teller, and office machine repairers	STEM middle-skill occupations	79.1	78.4
Radio, cellular, and tower equipment installers and repairers	STEM middle-skill occupations	11.7	12.7
Telecommunications equipment installers and repairers, except line installers	STEM middle-skill occupations	156.9	150.4
Avionics technicians	STEM middle-skill occupations	21.4	23.1
Electric motor, power tool, and related repairers	STEM middle-skill occupations	17.1	17.7
Electrical and electronics installers and repairers, transportation equipment	STEM middle-skill occupations	7.0	7.4

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Electrical and electronics repairers, commercial and industrial equipment	STEM middle-skill occupations	61.1	60.7
Electrical and electronics repairers, powerhouse, substation, and relay	STEM middle-skill occupations	23.4	24.7
Electronic equipment installers and repairers, motor vehicles	STEM middle-skill occupations	10.3	8.9
Audiovisual equipment installers and repairers	STEM middle-skill occupations	24.6	26.3
Security and fire alarm systems installers	STEM middle-skill occupations	85.9	94.9
Aircraft mechanics and service technicians	STEM middle-skill occupations	139.4	145
Automotive body and related repairers	Non-STEM	172.6	175.4
Automotive glass installers and repairers	Non-STEM	20.4	21.1
Automotive service technicians and mechanics	STEM middle-skill occupations	805.6	839.2
Bus and truck mechanics and diesel engine specialists	STEM middle-skill occupations	319.9	327.7
Farm equipment mechanics and service technicians	STEM middle-skill occupations	39.0	43.3
Mobile heavy equipment mechanics, except engines	STEM middle-skill occupations	188.7	199.6
Rail car repairers	STEM middle-skill occupations	17.9	18.4
Motorboat mechanics and service technicians	STEM middle-skill occupations	26.2	27.8
Motorcycle mechanics	STEM middle-skill occupations	14.9	15.7
Outdoor power equipment and other small engine mechanics	STEM middle-skill occupations	36.9	37.8
Bicycle repairers	Non-STEM	13.2	12.9
Recreational vehicle service technicians	Non-STEM	19.5	21.7
Tire repairers and changers	Non-STEM	113.4	119.9
Mechanical door repairers	STEM middle-skill occupations	28.4	31.7
Control and valve installers and repairers, except mechanical door	STEM middle-skill occupations	47.7	48.3
Heating, air conditioning, and refrigeration mechanics and installers	STEM middle-skill occupations	425.2	459.7
Home appliance repairers	Non-STEM	37.3	38.3
Industrial machinery mechanics	STEM middle-skill occupations	439.6	510.3
Maintenance workers, machinery	STEM middle-skill occupations	57.5	55.9
Millwrights	STEM middle-skill occupations	41.3	41.3
Refractory materials repairers, except brickmasons	STEM middle-skill occupations	1.1	0.9
Electrical power-line installers and repairers	Non-STEM	127.4	135.8
Telecommunications line installers and repairers	STEM middle-skill occupations	99.9	96.8
Camera and photographic equipment repairers	STEM middle-skill occupations	2.3	1.9
Medical equipment repairers	STEM middle-skill occupations	68.0	76.8
Musical instrument repairers and tuners	STEM middle-skill occupations	6.2	6.3

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Watch and clock repairers	STEM middle-skill occupations	1.4	1.4
Precision instrument and equipment repairers, all other	STEM middle-skill occupations	10.8	11
Maintenance and repair workers, general	STEM middle-skill occupations	1,629.7	1,692.10
Wind turbine service technicians	STEM middle-skill occupations	13.6	20.5
Coin, vending, and amusement machine servicers and repairers	Non-STEM	32.5	31.6
Commercial divers	STEM middle-skill occupations	4.2	4.5
Locksmiths and safe repairers	STEM middle-skill occupations	18.8	17.2
Manufactured building and mobile home installers	STEM middle-skill occupations	3.1	3.3
Riggers	STEM middle-skill occupations	24.6	25.4
Signal and track switch repairers	STEM middle-skill occupations	8.7	8.8
Helpers—installation, maintenance, and repair workers	Non-STEM	98.7	101
Installation, maintenance, and repair workers, all other	STEM middle-skill occupations	221.2	226.5
First-line supervisors of production and operating workers	STEM middle-skill occupations	698.6	706.9
Aircraft structure, surfaces, rigging, and systems assemblers	Non-STEM	33.6	28.7
Coil winders, tapers, and finishers	Non-STEM	12.2	11.5
Electrical, electronic, and electromechanical assemblers, except coil winders, tapers, and finishers	Non-STEM	261.4	273.3
Engine and other machine assemblers	STEM middle-skill occupations	38.4	30.3
Structural metal fabricators and fitters	STEM middle-skill occupations	53.8	45
Fiberglass laminators and fabricators	Non-STEM	18.6	19.4
Timing device assemblers and adjusters	Non-STEM	0.2	0.2
Miscellaneous assemblers and fabricators	Non-STEM	1,467.1	1,465.90
Bakers	Non-STEM	249.1	263.2
Butchers and meat cutters	STEM middle-skill occupations	143.1	144.5
Meat, poultry, and fish cutters and trimmers	STEM middle-skill occupations	146.8	154.9
Slaughterers and meat packers	STEM middle-skill occupations	69.6	71.2
Food and tobacco roasting, baking, and drying machine operators and tenders	Non-STEM	20.7	20.8
Food batchmakers	Non-STEM	173.5	185.4
Food cooking machine operators and tenders	Non-STEM	29.7	29.9
Food processing workers, all other	Non-STEM	58.7	61.8
Extruding and drawing machine setters, operators, and tenders, metal and plastic	Non-STEM	66.0	66.8
Forging machine setters, operators, and tenders, metal and plastic	Non-STEM	8.8	7.2
Rolling machine setters, operators, and tenders, metal and plastic	Non-STEM	22.5	20.6
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	Non-STEM	174.7	153.6
Drilling and boring machine tool setters, operators, and tenders, metal and plastic	Non-STEM	5.3	4.3

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic	Non-STEM	70.1	61.7
Lathe and turning machine tool setters, operators, and tenders, metal and plastic	Non-STEM	18.9	16.4
Milling and planing machine setters, operators, and tenders, metal and plastic	Non-STEM	13.8	11.8
Machinists	STEM middle-skill occupations	299.5	299.6
Metal-refining furnace operators and tenders	Non-STEM	20.8	20.3
Pourers and casters, metal	Non-STEM	5.9	5.7
Model makers, metal and plastic	Non-STEM	3.2	2.6
Patternmakers, metal and plastic	Non-STEM	1.6	1.2
Foundry mold and coremakers	Non-STEM	12.7	9.4
Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	Non-STEM	154.6	148.8
Multiple machine tool setters, operators, and tenders, metal and plastic	Non-STEM	131.0	130.3
Tool and die makers	STEM middle-skill occupations	55.2	49.3
Welders, cutters, solderers, and brazers	Non-STEM	457.3	467.2
Welding, soldering, and brazing machine setters, operators, and tenders	Non-STEM	38.9	35.4
Heat treating equipment setters, operators, and tenders, metal and plastic	Non-STEM	14.8	12.9
Layout workers, metal and plastic	Non-STEM	5.7	5.4
Plating machine setters, operators, and tenders, metal and plastic	Non-STEM	31.7	27.4
Tool grinders, filers, and sharpeners	Non-STEM	5.8	5.4
Metal workers and plastic workers, all other	Non-STEM	20.4	18.5
Prepress technicians and workers	STEM middle-skill occupations	26.2	22.3
Printing press operators	Non-STEM	150.2	138
Print binding and finishing workers	Non-STEM	35.8	30
Laundry and dry-cleaning workers	Non-STEM	202.6	213.5
Pressers, textile, garment, and related materials	Non-STEM	28.4	24.6
Sewing machine operators	Non-STEM	124.0	110.7
Shoe and leather workers and repairers	Non-STEM	9.5	9.1
Shoe machine operators and tenders	Non-STEM	4.1	3.9
Sewers, hand	Non-STEM	5.4	5
Tailors, dressmakers, and custom sewers	Non-STEM	38.8	37.1
Textile bleaching and dyeing machine operators and tenders	Non-STEM	6.2	5.5
Textile cutting machine setters, operators, and tenders	Non-STEM	9.3	8.2
Textile knitting and weaving machine setters, operators, and tenders	Non-STEM	15.3	13.6
Textile winding, twisting, and drawing out machine setters, operators, and tenders	Non-STEM	21.7	19.8
Extruding and forming machine setters, operators, and tenders, synthetic and glass fibers	Non-STEM	15.2	15
Fabric and apparel patternmakers	Non-STEM	2.8	2.5
Upholsterers	Non-STEM	22.7	22.3
Textile, apparel, and furnishings workers, all other	Non-STEM	14.7	13.3
Cabinetmakers and bench carpenters	Non-STEM	86.0	84.7
Furniture finishers	Non-STEM	20.5	19.8
Model makers, wood	Non-STEM	0.9	0.9
Patternmakers, wood	Non-STEM	0.5	0.4
Sawing machine setters, operators, and tenders, wood	Non-STEM	45.0	44.7
Woodworking machine setters, operators, and tenders, except sawing	Non-STEM	63.1	61.9
Woodworkers, all other	Non-STEM	17.6	16.8
Nuclear power reactor operators	Non-STEM	5.7	4.9

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Power distributors and dispatchers	Non-STEM	9.3	9
Power plant operators	Non-STEM	31.6	28
Stationary engineers and boiler operators	STEM middle-skill occupations	33.3	34
Water and wastewater treatment plant and system operators	STEM middle-skill occupations	132.4	123.8
Chemical plant and system operators	Non-STEM	18.1	17
Gas plant operators	Non-STEM	16.2	14.8
Petroleum pump system operators, refinery operators, and gaugers	Non-STEM	34.9	34
Plant and system operators, all other	Non-STEM	16.3	16.6
Chemical equipment operators and tenders	STEM middle-skill occupations	128.9	133.1
Separating, filtering, clarifying, precipitating, and still machine setters, operators, and tenders	STEM middle-skill occupations	54.4	52
Crushing, grinding, and polishing machine setters, operators, and tenders	Non-STEM	28.7	27.9
Grinding and polishing workers, hand	Non-STEM	11.8	9.3
Mixing and blending machine setters, operators, and tenders	Non-STEM	101.1	94.3
Cutters and trimmers, hand	Non-STEM	7.0	5.7
Cutting and slicing machine setters, operators, and tenders	Non-STEM	49.0	47.9
Extruding, forming, pressing, and compacting machine setters, operators, and tenders	Non-STEM	57.3	58.4
Furnace, kiln, oven, drier, and kettle operators and tenders	Non-STEM	16.5	17
Inspectors, testers, sorters, samplers, and weighers	Non-STEM	598.0	598.1
Jewelers and precious stone and metal workers	Non-STEM	35.1	33.2
Dental laboratory technicians	Non-STEM	35.2	33.6
Medical appliance technicians	Non-STEM	12.0	12.4
Ophthalmic laboratory technicians	Non-STEM	19.6	20
Packaging and filling machine operators and tenders	Non-STEM	381.2	398.2
Painting, coating, and decorating workers	Non-STEM	8.8	8.9
Coating, painting, and spraying machine setters, operators, and tenders	Non-STEM	165.5	166.7
Semiconductor processing technicians	STEM middle-skill occupations	31.9	35.4
Photographic process workers and processing machine operators	Non-STEM	11.2	10.9
Computer numerically controlled tool operators	STEM middle-skill occupations	177.1	158.1
Computer numerically controlled tool programmers	STEM middle-skill occupations	28.3	31.9
Adhesive bonding machine operators and tenders	Non-STEM	12.2	12.3
Cleaning, washing, and metal pickling equipment operators and tenders	STEM middle-skill occupations	14.6	15.2
Cooling and freezing equipment operators and tenders	STEM middle-skill occupations	7.1	7.6
Etchers and engravers	STEM middle-skill occupations	8.6	8.6
Molders, shapers, and casters, except metal and plastic	Non-STEM	41.7	44.3
Paper goods machine setters, operators, and tenders	Non-STEM	97.5	91.4
Tire builders	Non-STEM	20.9	21.4
Helpers—production workers	Non-STEM	168.5	153.5
Production workers, all other	STEM middle-skill occupations	292.8	294.3
Aircraft cargo handling supervisors	Non-STEM	10.3	10.8
First-line supervisors of transportation and material moving workers, except aircraft cargo handling supervisors	Non-STEM	609.6	632.2
Airline pilots, copilots, and flight engineers	Non-STEM	100.0	103.9
Commercial pilots	Non-STEM	55.4	58.3

**Table STAL-9. Employment projections: 2024–34**

(Number in thousands)

2024 National Employment Matrix title	Assignment	Employment, 2024	Employment, 2034
Air traffic controllers	Non-STEM	24.1	24.4
Airfield operations specialists	Non-STEM	16.9	17.6
Flight attendants	Non-STEM	130.8	142.9
Ambulance drivers and attendants, except emergency medical technicians	Non-STEM	12.3	12.1
Driver/sales workers	Non-STEM	451.5	491.3
Heavy and tractor-trailer truck drivers	Non-STEM	2,235.1	2,324.40
Light truck drivers	Non-STEM	1,079.8	1,158.60
Bus drivers, school	Non-STEM	387.3	388.2
Bus drivers, transit and intercity	Non-STEM	158.8	165.6
Shuttle drivers and chauffeurs	Non-STEM	243.9	260.3
Taxi drivers	Non-STEM	204.0	226.6
Motor vehicle operators, all other	Non-STEM	79.3	84
Locomotive engineers	Non-STEM	27.0	27.2
Rail yard engineers, dinkey operators, and hostlers	Non-STEM	3.1	3.1
Railroad brake, signal, and switch operators and locomotive firers	Non-STEM	11.0	11.1
Railroad conductors and yardmasters	Non-STEM	36.8	37.2
Subway and streetcar operators	Non-STEM	9.6	9.9
Rail transportation workers, all other	Non-STEM	1.6	1.6
Sailors and marine oilers	Non-STEM	32.1	32.8
Captains, mates, and pilots of water vessels	Non-STEM	40.7	40.9
Motorboat operators	Non-STEM	2.7	2.8
Ship engineers	Non-STEM	8.8	9
Bridge and lock tenders	Non-STEM	2.9	2.8
Parking attendants	Non-STEM	135.7	139.8
Automotive and watercraft service attendants	Non-STEM	100.0	99
Aircraft service attendants	Non-STEM	28.0	29.5
Traffic technicians	Non-STEM	7.9	8.2
Transportation inspectors	STEM middle-skill occupations	25.7	26.1
Passenger attendants	Non-STEM	25.6	26.8
Transportation workers, all other	Non-STEM	11.5	11.9
Conveyor operators and tenders	Non-STEM	29.1	28.1
Crane and tower operators	Non-STEM	42.3	43.5
Dredge operators	Non-STEM	1.1	1.2
Hoist and winch operators	Non-STEM	2.7	2.7
Industrial truck and tractor operators	Non-STEM	792.5	801.6
Cleaners of vehicles and equipment	Non-STEM	410.1	426.2
Laborers and freight, stock, and material movers, hand	Non-STEM	2,988.9	3,033.10
Machine feeders and offbearers	Non-STEM	46.5	40.4
Packers and packagers, hand	Non-STEM	591.8	559.7
Stockers and order fillers	Non-STEM	2,764.8	2,999.80
Gas compressor and gas pumping station operators	STEM middle-skill occupations	5.4	5.3
Pump operators, except wellhead pumpers	STEM middle-skill occupations	13.1	13.5
Wellhead pumpers	STEM middle-skill occupations	18.8	17.9
Refuse and recyclable material collectors	Non-STEM	147.9	149.2
Tank car, truck, and ship loaders	Non-STEM	12.0	12.5
Material moving workers, all other	Non-STEM	27.7	28.9

S&E = science and engineering; S&E-R = science and engineering-related; STEM = science, technology, engineering, and mathematics.

**Note(s):**

Estimates of current and projected employment for 2024–34 are from the Bureau of Labor Statistics (BLS) National Employment Matrix; estimates in the matrix are developed using data from the Occupational Employment and Wage Statistics (OEWS) program and the Current Population Survey (CPS). Together, these sources cover paid workers and self-employed workers in all industries, agriculture, and private households. Because data are derived from multiple sources, they can often differ from employment data provided by OEWS, CPS, or other employment surveys alone. BLS does not make projections for S&E occupations as a group, nor does it do so for some of the S&E and S&E-related occupational categories as defined by the National Center for Science and Engineering Statistics (NCSES); numbers in the figure are based on the sum of BLS projections for occupations that NCSES includes in the respective categories. The STEM classifications used here differ slightly from those used in the American Community Survey due to additional occupation detail in the projections tabulations. A crosswalk will be provided upon request.

**Source(s):**

BLS, special tabulations (2025) of the 2024–34 Employment Projections.

*Science and Engineering Indicators*

**Table STAL-10. STEM workers, by occupational group, credential type, credential attainment, and educational attainment: 2024**

(Number)

Credential type and occupational group	All degrees		Without a bachelor's degree		With a bachelor's or an advanced degree	
	Has credential type	Does not have credential type	Has credential type	Does not have credential type	Has credential type	Does not have credential type
Any credential						
All STEM occupations	15,856,761	19,894,893	6,891,802	8,383,760	8,964,960	11,511,132
S&E occupations	3,423,390	8,708,831	800,357	1,638,554	2,623,033	7,070,277
S&E-related occupations	8,162,919	4,265,919	2,585,337	1,417,613	5,577,583	2,848,307
STEM middle-skill occupations	4,270,452	6,920,142	3,506,108	5,327,593	764,344	1,592,549
Professional certification or license						
All STEM occupations	13,412,470	22,339,184	5,390,752	9,884,810	8,021,717	12,454,375
S&E occupations	2,751,495	9,380,727	630,903	1,808,009	2,120,592	7,572,718
S&E-related occupations	7,678,042	4,750,797	2,316,790	1,686,159	5,361,251	3,064,638
STEM middle-skill occupations	2,982,934	8,207,660	2,443,059	6,390,642	539,874	1,817,018
Educational certificate						
All STEM occupations	6,414,598	29,337,057	3,835,035	11,440,527	2,579,563	17,896,529
S&E occupations	1,225,691	10,906,531	386,715	2,052,197	838,976	8,854,334
S&E-related occupations	2,667,891	9,760,948	1,344,700	2,658,249	1,323,191	7,102,699
STEM middle-skill occupations	2,521,016	8,669,578	2,103,620	6,730,081	417,396	1,939,496

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the employed, civilian, noninstitutionalized population ages 25–75 with at least a high school diploma or GED employed in the 12th month of 2023 and exclude those with only military occupations, those missing occupation data or who have not worked in the last 5 years, and those currently enrolled in primary or secondary school. Non-STEM occupations are not shown.

**Source(s):**

Census Bureau, Survey of Income and Program Participation (SIPP), Public-Use File, 2024.

**Table STAL-11. Measures of population with a bachelor's or an advanced degree, by field of study, race and ethnicity, and sex: 2023**

(Number and percent)

Characteristics	All highest degrees	Highest degree in a STEM field	Highest degree in an S&E field	Computer and mathematical sciences	Biological, agricultural, and environmental life sciences	Physical and related sciences	Social and related sciences	Engineering	Highest degree in an S&E-related field	Highest degree in a non-STEM field
All college-educated individuals	67,495,000	30,710,912	20,554,878	4,009,041	3,253,087	1,097,592	7,432,855	4,762,304	10,156,033	36,784,089
Sex										
Women	36,677,458	15,117,279	8,545,503	1,210,071	1,724,566	336,487	4,451,352	823,027	6,571,776	21,560,179
Men	30,817,542	15,593,633	12,009,376	2,798,969	1,528,522	761,105	2,981,502	3,939,278	3,584,257	15,223,909
Race and ethnicity										
Asian	7,187,079	4,544,985	3,180,577	1,005,926	414,616	141,551	523,257	1,095,227	1,364,408	2,642,094
American Indian or Alaska Native	146,230	60,229	40,666	2,104	7,246	1,564	22,660	7,092	19,563	86,001
Black or African American	5,326,009	2,138,204	1,328,468	287,830	164,778	40,440	652,011	183,410	809,735	3,187,805
Hispanic or Latino	6,767,786	2,967,809	2,077,348	387,423	317,145	78,630	824,377	469,773	890,461	3,799,977
White	46,340,100	20,154,302	13,330,972	2,224,065	2,249,695	807,926	5,148,880	2,900,406	6,823,330	26,185,798
Native Hawaiian or Other Pacific Islander	59,220	37,186	21,481	2,857	1,015	1,051	11,528	5,031	15,705	22,034
More than one race	1,668,577	808,197	575,366	98,836	98,593	26,429	250,142	101,365	232,831	860,380

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include civilians 25–75 years old. Hispanic or Latino may be any race; race categories exclude Hispanic origin.

**Source(s):**

National Center for Science and Engineering Statistics, National Survey of College Graduates (NSCG), 2023.

*Science and Engineering Indicators*

**Table STAL-12. Workforce, STEM workforce by place of birth, and the educational attainment and citizenship status of the foreign-born STEM workforce, by major industry: 2023**

(Number)

Major industries	All workers	STEM workers	U.S.-born of STEM workers	Foreign-born of STEM workers	Educational attainment		Citizenship		
					Without a bachelor's degree among foreign-born STEM workers	With a bachelor's or an advanced degree among foreign-born STEM workers	U.S. citizens among foreign-born STEM workers	Naturalized U.S. citizens among foreign-born STEM workers	Noncitizens among foreign-born STEM workers
Agriculture, forestry, fishing and hunting	1,666,297	645,141	569,160	75,981	61,320	14,661	3,911	26,629	45,441
Mining, quarrying, and oil and gas extraction	584,842	242,207	207,134	35,073	19,676	15,397	2,712	14,714	17,647
Construction	10,134,690	4,049,690	2,969,510	1,080,180	956,267	123,913	34,378	334,223	711,579
Manufacturing	14,746,078	5,669,647	4,448,063	1,221,584	611,346	610,238	58,989	637,027	525,568
Wholesale trade	3,065,471	316,148	239,386	76,762	46,752	30,010	4,126	33,486	39,150
Retail trade	13,251,840	1,579,014	1,243,543	335,471	152,852	182,619	14,912	174,277	146,282
Transportation and warehousing	7,579,153	631,981	493,392	138,589	83,642	54,947	8,359	78,099	52,131
Utilities	1,336,871	611,096	530,440	80,656	36,825	43,831	5,995	46,259	28,402
Information	2,745,149	943,936	704,398	239,538	55,934	183,604	12,133	109,662	117,743
Finance and insurance	7,415,855	1,012,016	712,818	299,198	36,110	263,088	11,275	166,161	121,762
Real estate and rental and leasing	2,726,849	306,776	239,506	67,270	46,651	20,619	4,590	36,837	25,843
Professional, scientific, and technical services	12,719,816	4,824,213	3,541,697	1,282,516	170,273	1,112,243	73,979	615,951	592,586
Management of companies and enterprises	159,490	33,744	25,159	8,585	495	8,090	775	3,440	4,370
Administrative and support and waste management services	6,204,219	693,009	532,715	160,294	86,282	74,012	10,060	72,186	78,048
Educational services	13,668,402	1,258,962	1,010,474	248,488	45,073	203,415	14,376	125,971	108,141
Health care and social assistance	20,589,400	9,605,906	7,869,830	1,736,076	453,055	1,283,021	121,786	1,225,254	389,036
Arts, entertainment, and recreation	2,647,605	225,196	190,887	34,309	18,759	15,550	3,683	20,138	10,488
Accommodation and food services	6,525,274	487,343	281,395	205,948	172,793	33,155	4,966	87,775	113,207
Other services, except public administration	6,709,138	1,007,159	779,146	228,013	186,064	41,949	9,951	97,974	120,088
Public administration	7,210,673	1,787,142	1,555,601	231,541	59,659	171,882	24,245	166,132	41,164

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the employed, civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the workforce data. STEM includes S&E, S&E-related, and STEM middle-skill occupations.

**Source(s):**

Census Bureau, American Community Survey (ACS), 2023.

*Science and Engineering Indicators*

**Table STAL-13. Industries with R&D intensity higher than the average across industries: 2022**

(Percent and code)

Industry	Percentage of domestic sales of R&D performers or funders	2017 NAICS codes	Modified NAICS codes	Modified NAICS labels
All industries	4.9	21–23, 31–33, 42–81		
Pharmaceuticals and medicines	16.9	3254	3254	Pharmaceutical and medicine manufacturing
Semiconductor machinery	16.5	333242	333MS	Machinery manufacturing, nec or not specified
Communications equipment	12.4	3342	334M1	Communications, audio, and video equipment manufacturing
Semiconductor and other electronic components	23.5	3344	334M2	Electronic component and product manufacturing, nec
Navigational, measuring, electromedical, and control instruments	10.5	3345	3345	Navigational, measuring, electromedical, and control instruments manufacturing
Electromedical, electrotherapeutic, and irradiation apparatus	13.2	334510, 334517	3345	Navigational, measuring, electromedical, and control instruments manufacturing
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	16.4	334511	3345	Navigational, measuring, electromedical, and control instruments manufacturing
Other measuring and controlling devices	6.6	other 3345	3345	Navigational, measuring, electromedical, and control instruments manufacturing
Other computer and electronic products	10.0	Other 334 (3341, 3343, 3346)	3341	Computer and peripheral equipment manufacturing
			334M1	Communications, audio, and video equipment manufacturing
			334M2	Electronic component and product manufacturing, nec
Aerospace products and parts	9.9	3364		
Aircraft, aircraft engine, and aircraft parts	9.7	336411–13	33641M1	Aircraft and parts manufacturing
Guided missile, space vehicle, and related parts	10.5	336414–15, 336419	33641M2	Aerospace products and parts manufacturing
Software publishers	13.7	5112	5112	Software publishers
Data processing, hosting, and related services	7.7	518	5182	Data processing, hosting, and related services
Other information (excluding newspaper, periodical, book, and directory publishers, and telecommunications)	21.0	Other 51 (5121, 5122, 515, 51913, 51912, 5191 excluding 51912, 51913)	5121	Motion pictures and video industries
			5122	Sound recording industries
			515	Broadcasting (except internet)
			51913	Internet publishing and broadcasting and web search portals
			51912	Libraries and archives
			5191ZM	Other information services, except libraries and archives, and internet publishing and broadcasting and web search portals
Computer systems design and related services	12.1	5415	5415	Computer systems design and related services
Scientific research and development services	29.0	5417	5417	Scientific research and development services
Research and development in nanotechnology	30.2	541713	5417	Scientific research and development services
Research and development in biotechnology (except nanobiotechnology)	37.1	541714	5417	Scientific research and development services

**Table STAL-13. Industries with R&D intensity higher than the average across industries: 2022**

(Percent and code)

Industry	Percentage of domestic sales of R&D performers or funders	2017 NAICS codes	Modified NAICS codes	Modified NAICS labels
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	26.7	541715	5417	Scientific research and development services
Research and development in the social sciences and humanities	44.9	541720	5417	Scientific research and development services
Other professional, scientific, and technical services (except architectural, engineering, and related services)	6.6	Other 54 (5411, 5412, 5414, 5416, 5418, 54194, 5419 excluding 54194)	5411	Legal services
				Accounting, tax preparation, bookkeeping, and payroll services
				Specialized design services
				Management, scientific, and technical consulting services
				Advertising, public relations, and related services
				Veterinary services
				Other professional, scientific, and technical services

NAICS = North American Industry Classification System; nec = not elsewhere classified.

**Note(s):**

See the Business Enterprise Research and Development (BERD) 2022 data table for the universe of industries: <https://nces.nsf.gov/pubs/nsf24335/table/17>. Data in the BERD table withheld to avoid disclosing operations of individual companies are not included in the analysis. For the correspondence of NAICS codes to modified NAICS codes (NAICSP), see <https://www.census.gov/programs-surveys/acs/microdata/documentation.html>. As a result of these conversions, the list of industries used in this report may not be identical to the industries listed in the BERD table. Data from 2022 use codes from the 2017 version of NAICS industries. Conversion from NAICS to modified NAICS codes may not be a one-to-one match and may include additional components.

**Source(s):**

Census Bureau, American Community Survey (ACS), 2022.

**Table STAL-14. Workers, by occupational group, educational level, and industry: 2017 and 2022**

(Number)

Year and occupational group	All industries	R&D-intensive industries	Non-R&D intensive industries
2017			
S&E occupations	6,968,513	2,682,945	4,285,568
Without a bachelor's degree	1,657,221	590,477	1,066,744
With a bachelor's or an advanced degree	5,311,292	2,092,468	3,218,824
S&E-related occupations	11,745,296	971,916	10,773,380
Without a bachelor's degree	4,627,026	324,637	4,302,389
With a bachelor's or an advanced degree	7,118,270	647,279	6,470,991
STEM middle-skill occupations	12,820,836	887,191	11,933,645
Without a bachelor's degree	11,198,981	614,726	10,584,255
With a bachelor's or an advanced degree	1,621,855	272,465	1,349,390
Non-STEM occupations	102,201,782	8,736,249	93,465,533
Without a bachelor's degree	65,545,161	3,218,952	62,326,209
With a bachelor's or an advanced degree	36,656,621	5,517,297	31,139,324
2022			
S&E occupations	9,250,614	3,702,656	5,547,958
Without a bachelor's degree	1,990,484	737,882	1,252,602
With a bachelor's or an advanced degree	7,260,130	2,964,774	4,295,356
S&E-related occupations	13,089,698	1,130,945	11,958,753
Without a bachelor's degree	4,638,381	411,393	4,226,988
With a bachelor's or an advanced degree	8,451,317	719,552	7,731,765
STEM middle-skill occupations	12,946,727	910,992	12,035,735
Without a bachelor's degree	11,164,031	629,962	10,534,069
With a bachelor's or an advanced degree	1,782,696	281,030	1,501,666
Non-STEM occupations	104,402,154	10,171,854	94,230,300
Without a bachelor's degree	63,559,229	3,416,000	60,143,229
With a bachelor's or an advanced degree	40,842,925	6,755,854	34,087,071

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Data include the employed, civilian, noninstitutionalized population ages 25–75 not currently in primary or secondary school. Missing occupations and those who have not worked in the past 5 years or have never worked are not included in the workforce data. STEM includes S&E, S&E-related, and STEM middle-skill occupations. See the Business Enterprise Research and Development (BERD) 2022 data table for the list of industries in 2022: <https://nces.nsf.gov/pubs/nsf24335/table/17>. See the Business Research and Development Survey (BRDS) 2017 data table for the list of industries in 2017: <https://nces.nsf.gov/pubs/nsf20311/table/17>. Data in the BERD table withheld to avoid disclosing operations of individual companies are not included in the analysis. For the correspondence of NAICS codes to modified NAICS codes (NAICSP), see <https://www.census.gov/programs-surveys/acs/microdata/documentation.html>. As a result of these conversions, the list of industries used in this report may not be identical to the industries listed in the BERD table. Data from 2022 use codes from the 2017 version of NAICS industries; data from 2017 use codes from the 2012 version of NAICS industries. Conversion from NAICS to modified NAICS codes may not be a one-to-one match and may include additional components.

**Source(s):**

Census Bureau, American Community Survey (ACS), 2017 and 2022.

*Science and Engineering Indicators*



**Table STAL-15. Average scores of students in grades 4 and 8 on the NAEP mathematics assessment, by student grade and characteristic: 1990–2024**

(Average score)

Student grade and characteristic	1990	1992	1996	2000	2003	2005	2007	2009	2011	2013	2015	2017	2019	2022	2024
Did not finish high school	242	249	250	253	257	259	263	265	265	267	265	265	264	257	252
Graduated from high school	255	257	260	261	267	267	270	270	271	270	268	267	265	258	256
Some education after high school	267	271	277	277	280	280	283	284	285	285	282	281	280	271	270
Graduated from college	274	281	281	286	288	290	292	295	295	296	294	294	293	286	287
Unknown	241	252	252	254	259	260	263	264	265	266	263	264	263	257	255
Eligibility for free or reduced-price lunch <sup>d</sup>															
Eligible for free or reduced-price lunch	NA	NA	250	253	259	262	265	266	269	270	268	267	266	260	257
Not eligible for free or reduced-price lunch	NA	NA	277	283	287	288	291	294	296	297	296	296	296	287	288
Student disability status <sup>e</sup>															
Identified as student with a disability	NA	NA	231	230	242	245	246	249	250	249	247	247	247	243	239
Not identified as student with a disability	NA	NA	273	276	282	283	285	287	288	289	287	288	287	279	279
English language learner status <sup>e</sup>															
English language learner	NA	NA	226	234	242	244	246	243	244	246	246	246	243	241	238
Not English language learner	NA	NA	272	274	279	281	283	285	286	287	284	285	285	277	278

NA = not available; s = suppressed for reasons of confidentiality or reliability.

NAEP = National Assessment of Educational Progress.

<sup>a</sup> Other racial and ethnic groups are included in the rows for all students in grade 4 and all students in grade 8 but are not shown separately in the table.<sup>b</sup> Before 2011, students in the two or more races category were categorized as unclassified and data for Asian and Native Hawaiian or Other Pacific Islander students were combined into the Asian or Pacific Islander category. Additional information was collected beginning in 2011 so that results could be reported separately for Asian students, Native Hawaiian or Other Pacific Islander students, and students identifying with two or more races.<sup>c</sup> Hispanic or Latino may be any race; race categories exclude Hispanic origin.<sup>d</sup> From 1996 to 2022, NAEP used eligibility for the federal National School Lunch Program (NSLP) as a proxy variable of socioeconomic status. NSLP is a federally assisted meal program that provides low-cost or free lunches to eligible students. It is often referred to as the "free or reduced-price lunch program." Information on students' eligibility for free or reduced-price lunch was first collected in 1996. In 2024, NAEP developed a composite measure of socioeconomic status (SES), an SES index. Refer to Figure TAL-15 for data on the composite SES.<sup>e</sup> From 1996 to 2024, students with a disability and English language learners were allowed to use testing accommodations (e.g., extended time, one-on-one testing, bilingual dictionary). More information about testing accommodations is available at <https://nces.ed.gov/nationsreportcard/about/inclusion.asp>.<sup>f</sup> Parents' highest education level is defined by the highest level reported by 8th graders for either parent. Fourth graders were not asked to indicate their parents' highest level of education because their responses in previous studies were highly variable, and a large percentage of them chose the "I don't know" option.**Note(s):**

The scale for NAEP mathematics assessment scores is 0–500 for grades 4 and 8. From 1996 to 2024, data shown are for students allowed to use testing accommodations

**Source(s):**

National Center for Science and Engineering Statistics, special tabulations (2024) of the 1990, 1992, 1996, 2000, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, 2019, 2022, and 2024 NAEP mathematics assessments, National Center for Education Statistics.

*Science and Engineering Indicators*

**Table STAL-16. Percentile scores of students in grades 4, 8, and 12 on the NAEP mathematics assessment: 1990–2024**

(Score)

Student grade and characteristic	1990	1992	1996	2000	2003	2005	2007	2009	2011	2013	2015	2017	2019	2022	2024
All students in grade 4	213	220	224	226	235	238	240	240	241	242	240	240	241	236	237
10th percentile	171	177	182	184	197	200	202	202	203	203	202	198	199	192	191
25th percentile	193	199	203	205	216	220	222	221	222	222	221	219	220	214	215
50th percentile	214	221	225	227	236	239	242	241	242	243	242	241	242	238	240
75th percentile	235	242	245	248	255	258	260	260	261	262	261	262	262	259	262
90th percentile	253	259	262	265	270	273	275	275	276	278	277	279	280	278	280
All students in grade 8	263	268	270	273	278	279	281	283	284	285	282	283	282	274	274
10th percentile	215	221	221	223	230	231	235	236	237	237	235	233	231	224	219
25th percentile	239	243	245	249	254	255	258	259	260	261	258	256	255	247	245
50th percentile	264	269	273	275	279	280	283	284	285	286	283	283	282	274	274
75th percentile	288	294	297	300	303	304	306	308	309	310	308	310	309	301	303
90th percentile	307	315	316	320	323	324	327	329	329	331	329	333	333	325	328
All students in grade 12	NA	NA	NA	NA	NA	150	NA	153	NA	153	152	NA	150	NA	147
10th percentile	NA	NA	NA	NA	NA	105	NA	110	NA	111	107	NA	104	NA	100
25th percentile	NA	NA	NA	NA	NA	127	NA	130	NA	131	128	NA	125	NA	120
50th percentile	NA	NA	NA	NA	NA	151	NA	154	NA	154	152	NA	150	NA	146
75th percentile	NA	NA	NA	NA	NA	174	NA	177	NA	177	175	NA	175	NA	172
90th percentile	NA	NA	NA	NA	NA	194	NA	197	NA	197	196	NA	196	NA	196

NA = not available..

NAEP = National Assessment of Educational Progress.

**Note(s):**

A percentile is a score location below which a specified percentage of the population falls. For example, in 2024, the 25th percentile of 4th grade mathematics scores was 215. This means that 25% of 4th graders in 2024 had NAEP mathematics scores below 215, while 75% of 4th graders scored at or above 215. The scale for NAEP mathematics assessment scores is 0–500 for grades 4 and 8 and 0–300 for grade 12. From 1996 to 2024, data shown are for students allowed to use testing accommodations. Grade 12 mathematics data are for 2005, 2009, 2013, 2015, 2019, and 2024 only because the mathematics framework was substantially revised in 2005, making prior assessment results not comparable with those in or after 2005.

**Source(s):**

National Center for Science and Engineering Statistics, special tabulations (2024) of the 1990, 1992, 1996, 2000, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, 2019, 2022, and 2024 NAEP mathematics assessments, National Center for Education Statistics.

*Science and Engineering Indicators*

**Table STAL-17. Average scores of students in grade 8 on the main NAEP mathematics assessment, by school enrichment offerings: 2024**

(Average score)

Activity	Average score
Mathematics clubs	
Yes	282
No	271
Mathematics competitions	
Yes	280
No	270

NAEP = National Assessment of Educational Progress.

**Note(s):**

The scale for NAEP mathematics assessment scores is 0–500 for grade 8. Data shown are for students allowed to use testing accommodations.

**Source(s):**

National Center for Science and Engineering Statistics, special tabulations (2024) of the 2024 NAEP mathematics assessment, National Center for Education Statistics.

*Science and Engineering Indicators*

**Table STAL-18. Average scores of students in grades 4 and 8 on the NAEP mathematics assessment, by region and school location: 2003–24**

(Average score)

Student grade and characteristic	2003	2005	2007	2009	2011	2013	2015	2017	2019	2022	2024
All students in grade 4	235	238	240	240	241	242	240	240	241	236	237
U.S. region											
Midwest	238	240	243	242	242	244	242	242	241	239	238
Northeast	238	241	245	244	244	244	242	242	243	235	238
South	234	238	239	239	240	241	241	240	241	237	238
West	231	234	234	235	238	238	236	236	237	233	235
School location <sup>a</sup>											
City	NA	NA	235	235	236	237	237	235	236	231	233
Rural	NA	NA	240	241	243	243	241	240	240	238	240
Suburb	NA	NA	244	243	244	245	243	244	245	240	240
Town	NA	NA	238	238	237	241	238	237	237	233	236
All students in grade 8	278	279	281	283	284	285	282	283	282	274	274
U.S. region											
Midwest	283	283	284	287	287	288	285	286	286	277	279
Northeast	282	283	287	289	288	290	287	288	287	278	278
South	275	277	280	282	283	283	280	280	280	272	271
West	273	275	276	277	279	281	280	281	279	273	272
School location <sup>a</sup>											
City	NA	NA	275	279	279	280	278	278	277	270	269
Rural	NA	NA	282	284	286	286	282	282	283	275	275
Suburb	NA	NA	286	287	287	289	286	288	287	279	278
Town	NA	NA	280	279	282	282	279	278	277	269	270

NA = not available.

NAEP = National Assessment of Educational Progress.

<sup>a</sup> The urban-centric locale code system classifies territory into four mutually exclusive categories of school location: city, suburban, town, and rural. The categories are based on standard definitions established by the federal Office of Management and Budget using population and geographic information from the Census Bureau. Schools are assigned to these categories in the National Center for Education Statistics (NCES) Common Core of Data based on their physical address. In 2007, the classification system was revised; therefore, trend comparisons to previous years are not available.

**Note(s):**

The scale for NAEP mathematics assessment scores is 0–500 for grades 4 and 8. From 2003 to 2024, data shown are for students allowed to use testing accommodations

**Source(s):**

National Center for Science and Engineering Statistics, special tabulations (2024) of the 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, 2019, 2022, and 2024 NAEP mathematics assessments, NCES.

*Science and Engineering Indicators*

**Table STAL-19. Average scores of students in grade 12 on the NAEP mathematics assessment, by student characteristic: 2005–24**

(Average score)

Student characteristic	2005	2009	2013	2015	2019	2024
All students in grade 12	150	153	153	152	150	147
Sex						
Female	149	152	152	150	149	144
Male	151	155	155	153	152	149
Race or ethnicity <sup>a</sup>						
American Indian or Alaska Native	134	144	142	138	136	131
Asian	NA	NA	174	171	175	177
Asian or Pacific Islander <sup>b</sup>	163	175	172	170	173	176
Black or African American	127	131	132	130	128	125
Hispanic or Latino <sup>c</sup>	133	138	141	139	138	133
Native Hawaiian or Other Pacific Islander	NA	NA	151	s	135	s
Two or more races <sup>b</sup>	142	158	155	157	157	152
White	157	161	162	160	159	157
Parents' highest education level <sup>d</sup>						
Did not finish high school	130	135	137	133	133	130
Graduated from high school	138	142	139	139	136	132
Some education after high school	148	150	152	149	147	141
Graduated from college	161	164	164	163	161	159
Unknown	123	129	127	125	125	120
Eligibility for free or reduced-price lunch <sup>e</sup>						
Eligible for free or reduced-price lunch	132	137	139	137	136	132
Not eligible for free or reduced-price lunch	155	160	162	160	160	157
Student disability status <sup>f</sup>						
Identified as student with a disability	114	120	119	118	119	120
Not identified as student with a disability	153	156	157	155	154	150
English language learner status <sup>f</sup>						
English language learner	120	117	109	115	111	112
Not English language learner	151	154	155	153	152	149

NA = not available; s = suppressed for reasons of confidentiality or reliability.

NAEP = National Assessment of Educational Progress.

<sup>a</sup> Other racial and ethnic groups are included in the rows for all students in grade 12 but are not shown separately in the table.

<sup>b</sup> Before 2011, students in the two or more races category were categorized as unclassified, and data for Asian and Native Hawaiian or Other Pacific Islander students were combined into the Asian or Pacific Islander category. Additional information was collected beginning in 2011 so that results could be reported separately for Asian students, Native Hawaiian or Other Pacific Islander students, and students identifying with two or more races.

<sup>c</sup> Hispanic or Latino may be any race; race categories exclude Hispanic origin.

<sup>d</sup> Parents' highest education level is defined by the highest level reported by 12th graders for either parent.

<sup>e</sup> From 2005 to 2022, NAEP used eligibility for the federal National School Lunch Program (NSLP) as a proxy variable of socioeconomic status. NSLP is a federally assisted meal program that provides low-cost or free lunches to eligible students. It is often referred to as the "free or reduced-price lunch program." Information on students' eligibility for free or reduced-price lunch was first collected in 1996. In 2024, NAEP developed a composite measure of socioeconomic status (SES), an SES index. Refer to Figure TAL-15 for data on the composite SES.

<sup>f</sup> From 2005 to 2024, students with a disability and English language learners were allowed to use testing accommodations (e.g., extended time, one-on-one testing, bilingual dictionary). More information about testing accommodations is available at <https://nces.ed.gov/nationsreportcard/about/inclusion.asp>.

**Note(s):**

The scale for NAEP mathematics assessment scores is 0–300 for grade 12. From 1996 to 2024, data shown are for students allowed to use testing accommodations. Grade 12 mathematics data are presented from only 2005, 2009, 2013, 2015, 2019, and 2024 because the mathematics framework was substantially revised in 2005, making prior assessment results not comparable with those in or after 2005.

**Source(s):**

National Center for Science and Engineering Statistics, special tabulations (2024) of the 2005, 2009, 2013, 2015, 2019, and 2024 NAEP mathematics assessments, National Center for Education Statistics.

*Science and Engineering Indicators*

**Table STAL-20. Degrees awarded, by degree level, citizenship status, and field: 2023**

(Number and percent)

Degree level and field	All (number)	U.S. citizens and residents <sup>a</sup>	Temporary visa holders	All (%)	U.S. citizens and residents <sup>a</sup>	Temporary visa holders
Associate's degrees	965,384	948,760	16,624	100.0	98.3	1.7
S&E fields	145,187	142,440	2,747	100.0	98.1	1.9
Agricultural sciences and natural resources	12,110	12,060	50	100.0	99.6	0.4
Biological and biomedical sciences	8,538	8,315	223	100.0	97.4	2.6
Computer and information sciences	34,712	33,788	924	100.0	97.3	2.7
Engineering	5,714	5,487	227	100.0	96.0	4.0
Geosciences, atmospheric sciences, and ocean sciences	201	201	0	100.0	100.0	0.0
Mathematics and statistics	3,874	3,735	139	100.0	96.4	3.6
Multidisciplinary/ interdisciplinary sciences	25,670	25,343	327	100.0	98.7	1.3
Physical sciences	4,703	4,459	244	100.0	94.8	5.2
Psychology	19,300	19,101	199	100.0	99.0	1.0
Social sciences	30,365	29,951	414	100.0	98.6	1.4
S&E-related fields	249,738	247,400	2,338	100.0	99.1	0.9
Health professions and related programs	181,562	179,960	1,602	100.0	99.1	0.9
Homeland security and fire protection	4,487	4,477	10	100.0	99.8	0.2
Science and mathematics education	33	32	1	100.0	97.0	3.0
Technology and technical fields	22,448	22,135	313	100.0	98.6	1.4
Other S&E-related fields	41,208	40,796	412	100.0	99.0	1.0
Non-S&E fields	570,459	558,920	11,539	100.0	98.0	2.0
Bachelor's degrees	1,981,895	1,894,365	87,530	100.0	95.6	4.4
S&E fields	796,772	748,842	47,930	100.0	94.0	6.0
Agricultural sciences and natural resources	39,780	38,956	824	100.0	97.9	2.1
Biological and biomedical sciences	130,637	126,401	4,236	100.0	96.8	3.2
Computer and information sciences	114,078	103,611	10,467	100.0	90.8	9.2
Engineering	120,208	110,694	9,514	100.0	92.1	7.9
Geosciences, atmospheric sciences, and ocean sciences	7,832	7,618	214	100.0	97.3	2.7
Mathematics and statistics	26,539	21,286	5,253	100.0	80.2	19.8
Multidisciplinary/ interdisciplinary sciences	25,630	23,416	2,214	100.0	91.4	8.6
Physical sciences	21,155	19,517	1,638	100.0	92.3	7.7
Psychology	142,565	138,677	3,888	100.0	97.3	2.7
Social sciences	168,348	158,666	9,682	100.0	94.2	5.8
S&E-related fields	314,852	309,908	4,944	100.0	98.4	1.6
Health professions and related programs	280,661	277,255	3,406	100.0	98.8	1.2
Homeland security and fire protection	5,254	5,176	78	100.0	98.5	1.5
Science and mathematics education	3,306	3,282	24	100.0	99.3	0.7
Technology and technical fields	22,305	21,029	1,276	100.0	94.3	5.7
Other S&E-related fields	3,326	3,166	160	100.0	95.2	4.8
Non-S&E fields	870,271	835,615	34,656	100.0	96.0	4.0
Master's degrees	938,150	770,568	167,582	100.0	82.1	17.9
S&E fields	270,133	168,700	101,433	100.0	62.5	37.5
Agricultural sciences and natural resources	8,320	7,151	1,169	100.0	85.9	14.1
Biological and biomedical sciences	22,939	19,078	3,861	100.0	83.2	16.8
Computer and information sciences	77,223	31,080	46,143	100.0	40.2	59.8
Engineering	53,706	27,808	25,898	100.0	51.8	48.2

**Table STAL-20. Degrees awarded, by degree level, citizenship status, and field: 2023**

(Number and percent)

Degree level and field	All (number)	U.S. citizens and residents <sup>a</sup>	Temporary visa holders	All (%)	U.S. citizens and residents <sup>a</sup>	Temporary visa holders
Geosciences, atmospheric sciences, and ocean sciences	2,444	2,154	290	100.0	88.1	11.9
Mathematics and statistics	13,390	6,061	7,329	100.0	45.3	54.7
Multidisciplinary/ interdisciplinary sciences	17,931	11,406	6,525	100.0	63.6	36.4
Physical sciences	5,277	3,692	1,585	100.0	70.0	30.0
Psychology	38,901	37,217	1,684	100.0	95.7	4.3
Social sciences	30,002	23,053	6,949	100.0	76.8	23.2
S&E-related fields	168,460	159,097	9,363	100.0	94.4	5.6
Health professions and related programs	152,483	147,382	5,101	100.0	96.7	3.3
Homeland security and fire protection	2,810	2,755	55	100.0	98.0	2.0
Science and mathematics education	3,508	3,440	68	100.0	98.1	1.9
Technology and technical fields	9,402	5,299	4,103	100.0	56.4	43.6
Other S&E-related fields	257	221	36	100.0	86.0	14.0
Non-S&E fields	499,557	442,771	56,786	100.0	88.6	11.4
Doctoral degrees <sup>b</sup>	57,862	19,393	35,566	100.0	33.5	61.5
S&E fields	43,817	27,010	16,807	100.0	61.6	38.4
Agricultural sciences and natural resources	1,232	778	454	100.0	63.1	36.9
Biological and biomedical sciences	9,356	7,004	2,352	100.0	74.9	25.1
Computer and information sciences	2,157	820	1,337	100.0	38.0	62.0
Engineering	10,188	4,542	5,646	100.0	44.6	55.4
Geosciences, atmospheric sciences, and ocean sciences	1,162	773	389	100.0	66.5	33.5
Health sciences	2,576	1,953	623	100.0	75.8	24.2
Mathematics and statistics	1,978	929	1,049	100.0	47.0	53.0
Multidisciplinary/ interdisciplinary sciences	1,639	826	813	100.0	50.4	49.6
Physical sciences	5,235	3,142	2,093	100.0	60.0	40.0
Psychology	3,513	3,178	335	100.0	90.5	9.5
Social sciences	4,781	3,065	1,716	100.0	64.1	35.9
Non-S&E fields	11,142	8,556	2,586	100.0	76.8	23.2

<sup>a</sup> Data at the associate's, bachelor's, and master's levels represent U.S. citizens and residents. Doctoral degree data represent U.S. citizens and permanent residents.

<sup>b</sup> The total excludes doctorate recipients who did not report citizenship.

**Note(s):**

Data at the associate's, bachelor's, and master's degree levels are based on institutions eligible to participate in Title IV federal financial aid programs. Doctoral degree data correspond to research doctorates as collected in the Survey of Earned Doctorates (SED). The SED survey data collection for field of study changed in 2021, which may affect the data comparability across years. The survey data collection for field of study changed in 2021 which may affect the data comparison across years. This figure uses the Classification of Instructional Programs–based field taxonomy which is used for reporting single year data from 2021 to the present; the data may not match the data based on the trend field taxonomy. For more information about the 2021 field taxonomy changes, see the "Technical Notes" in <https://nces.nsf.gov/surveys/earned-doctorates/2023>.

**Source(s):**

National Center for Science and Engineering Statistics (NCSES), special tabulations (2025) of the National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Completions Survey, provisional release data, and NCSES, SED, 2023.

**Table STAL-21. Among fall 2009 ninth graders who enrolled in a postsecondary major by December 2017, number who completed a STEM degree, non-STEM degree or no degree: June 2021**

(Number)

Postsecondary major	Completed a STEM degree	Completed a non-STEM degree	Did not complete a degree	Total
First enrolled in STEM major	385,000	109,000	202,000	695,000
First enrolled in non-STEM major	169,000	520,000	453,000	1,140,000
Total	554,000	629,000	655,000	1,840,000

STEM = science, technology, engineering, and mathematics.

**Note(s):**

Estimates pertain to fall 2009 ninth graders who had known postsecondary enrollment through 2017 and degree completion status through June 2021. First postsecondary major refers to the major associated with students' primary first postsecondary record after high school. In most cases, the primary first postsecondary record is the institution and associated academic year with the earliest start date after high school. Completed a STEM degree includes any undergraduate certificate, associate's degree, and bachelor's degree earned in the fields of science technologies or technicians; psychology and other social sciences; and health and medicine. Estimates are weighted using W6W5STU.

**Source(s):**

Department of Education, National Center for Education Statistics, High School Longitudinal Study of 2009 (HSL:09).

*Science and Engineering Indicators*

**Table STAL-22. Average scores of 15-year-old students on the PISA mathematics and science literacy scales, by OECD education system: 2022**

(Average score)

Education system	Mathematics		Science	
Japan	536	*	547	*
South Korea	527	*	528	*
Estonia	510	*	526	*
Switzerland	508	*	503	
Canada	497	*	515	*
Netherlands	493	*	488	*
Ireland	492	*	504	
Belgium	489	*	491	*
Denmark	489	*	494	*
United Kingdom	489	*	500	
Poland	489	*	499	*
Austria	487	*	491	*
Australia	487	*	507	
Czechia	487	*	498	*
Slovenia	485	*	500	
Finland	484	*	511	*
Latvia	483	*	494	*
Sweden	482	*	494	*
New Zealand	479	*	504	
Lithuania	475	*	484	*
Germany	475	*	492	*
France	474		487	*
Spain	473		485	*
Hungary	473		486	*
OECD average	472		485	*
Portugal	472		484	*
Italy	471		477	*
Norway	468		478	*
United States	465		499	
Slovakia	464		462	*
Iceland	459		447	*
Israel	458		465	*
Turkey	453	*	476	*
Greece	430	*	441	*
Chile	412	*	444	*
Mexico	395	*	410	*
Costa Rica	385	*	411	*
Colombia	383	*	411	*

\*  $p < 0.05$ ; significantly different from the U.S. estimate at the 0.05 level of statistical significance.

OECD = Organisation for Economic Co-operation and Development; PISA = Program for International Student Assessment.

**Note(s):**

The scale for mathematics and science scores is 0–1,000. The OECD average is calculated by taking the national averages of OECD member countries, with each country weighted equally. For Colombia, Mexico, and Turkey, at least 50% but less than 75% of the 15-year-old population is covered by the PISA sample.

**Source(s):**

OECD, PISA, 2022, <https://nces.ed.gov/surveys/pisa/pisa2022/index.asp#/math/intlcompare>.

*Science and Engineering Indicators*

**Table STAL-23. Average CIL and CT scores of students in grade 8 on the ICILS computer science assessment, by education system: 2023**

(Average score)

Education system	Computer and information literacy		Computational thinking	
South Korea	540	*	537	*
Czechia	525	*	527	*
Denmark	518	*	504	*
Taiwan	515	*	548	*
Belgium	511	*	509	*
Portugal	510	*	484	*
Latvia	509	*	495	*
Finland	507	*	502	*
Austria	506	*	476	
Hungary	505	*	NA	
Sweden	504	*	486	*
Norway	502	*	485	*
Germany	502	*	479	*
Slovakia	499	*	498	*
France	498	*	499	*
Spain	495	*	NA	
Luxembourg	494		476	
Italy	491		482	*
Croatia	487		429	*
<i>North Rhine–Westphalia</i>	485		461	
Slovenia	483		448	
United States	482		461	
ICILS 2023 average	476		483	*
Malta	475		438	*
Cyprus	460	*	NA	
Greece	460	*	NA	
Uruguay	447	*	421	*
Serbia	443	*	422	*
Bosnia and Herzegovina	440	*	NA	
Romania	418	*	NA	
Kazakhstan	407	*	NA	
Oman	379	*	NA	
Kosovo	356	*	NA	
Azerbaijan	319	*	NA	

\*  $p < 0.05$ ; significantly different from the U.S. estimate at the 0.05 level of statistical significance. NA = not available.

CIL = computer and information literacy; CT = computational thinking; ICILS = International Computer and Information Literacy Study.

**Note(s):**

The scale for CIL and CT scores is 100–700. The ICILS 2023 average is the average of all participating education systems meeting international technical standards, with each education system weighted equally. The United States did not meet the guidelines for a sample participation rate of 85% and was not included in the international average. North Rhine–Westphalia is included as a benchmarking participant.

**Source(s):**

International Association for the Evaluation of Educational Achievement (IEA), ICILS, 2023. <https://nces.ed.gov/surveys/icils/icils2023/international.asp>.

*Science and Engineering Indicators*

**Table STAL-24. Average scores of students in grade 8 on the TIMSS mathematics and science scales among participating economies, by education system: 2023**

(Average score)

Education system	Average mathematics score		Education system	Average science score	
Singapore	605	*	Singapore	606	*
Taiwan	602	*	Taiwan	572	*
South Korea	596	*	South Korea	545	*
Japan	595	*	Japan	557	*
Hong Kong	575	*	Hong Kong	528	*
England	525	*	England	531	*
Ireland	522	*	Ireland	525	*
Czechia	518	*	Czechia	527	*
Sweden	517	*	Sweden	521	
Lithuania	514	*	Lithuania	519	
Austria	512	*	Austria	512	
Australia	509	*	Australia	520	
Turkey	509	*	Turkey	530	*
Hungary	506	*	Hungary	522	*
Finland	504	*	Finland	531	*
Norway	501	*	Norway	488	*
Italy	501	*	Italy	501	*
Malta	499	*	Malta	501	
Romania	496		Romania	466	*
Cyprus	494		Cyprus	464	*
United Arab Emirates	489		United Arab Emirates	486	*
United States	488		United States	513	
Israel	487		Israel	481	*
France	479		France	486	*
Azerbaijan	479		Azerbaijan	411	*
<b>TIMSS average</b>	478	*	<b>TIMSS average</b>	478	*
Portugal	475	*	Portugal	506	
Georgia	467	*	Georgia	448	*
Kazakhstan	454	*	Kazakhstan	443	*
Qatar	451	*	Qatar	481	*
Bahrain	426	*	Bahrain	452	*
Iran	423	*	Iran	419	*
Uzbekistan	421	*	Uzbekistan	396	*
Chile	416	*	Chile	455	*
Oman	411	*	Oman	456	*
Malaysia	411	*	Malaysia	426	*
Kuwait	399	*	Kuwait	420	*
Saudi Arabia	397	*	Saudi Arabia	419	*
South Africa	397	*	South Africa	362	*
Jordan	388	*	Jordan	413	*
Palestine	382	*	Palestine	393	*
Brazil	378	*	Brazil	420	*
Morocco	378	*	Morocco	327	*

\*  $p < 0.05$ ; significantly different from the U.S. estimate at the 0.05 level of statistical significance.

TIMSS = Trends in International Mathematics and Science Study.

**Note(s):**

TIMSS participants include countries, which are complete, independent political entities, and non-national entities (e.g., Hong Kong). Advanced economies are based on the International Monetary Fund (IMF) designation of advanced economies (IMF 2022). IMF does not classify Russia as an advanced economy, but it is included in this analysis because it is a large economy with high levels of student achievement. Education systems are ordered by average mathematics score.

**Source(s):**

International Association for the Evaluation of Educational Achievement, TIMSS, 2023.

*Science and Engineering Indicators*