

# LABOR MARKET ANALYSIS

FOR PROGRAM RECOMMENDATION



**C·O·E**

CENTERS OF EXCELLENCE  
FOR LABOR MARKET RESEARCH

## EARLY CHILDHOOD AND ELEMENTARY EDUCATION IN THE GREATER SACRAMENTO REGION

North (Greater Sacramento)  
Center of Excellence

**SEPTEMBER 2022**

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## SUMMARY

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The North (Greater Sacramento) of Excellence for Labor Market Research prepared this report to provide a labor market analysis of educational supply and occupational demand for middle-skilled career pathways in the North (Greater Sacramento) subregion. This report aims to determine if demand in the local labor market is unmet by the supply from existing community college programs and other postsecondary training providers.

This report primarily focuses on training that leads to jobs in middle-skilled occupations - jobs that typically require education beyond a high school diploma but less than a bachelor's degree - but may include higher-skilled occupations for training pathways that lead to a bachelor's degree. Lowered skilled occupations are rarely considered in this analysis due to the lessened barriers for entry-level work, such as no formal education and on-the-job training requirements.

Key findings include:

- The North (Greater Sacramento) subregion held more than 24,000 early and elementary education jobs in 2021. These jobs are projected to increase by 1% over the next five years, adding 264 new jobs to the subregion by 2026.
- The Greater Sacramento area is projected to have more than 2,200 annual openings for early and elementary educators over the next five years.
- Wage data shows that early and elementary educators earn entry-level wages above the single adult living wage of \$14.53 per hour.
- Analysis of the supply-demand gap shows that the gap is vast for early and elementary teachers in the Greater Sacramento region. There are nearly twice as many job openings for early and elementary teachers as there are awards in the area.
- Teacher preparation is an area of opportunity for Greater Sacramento's community colleges.

# INTRODUCTION

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## Background

The implementation of universal transitional kindergarten in fall 2022 and the potential creation of a new statewide PK-3 teaching credential have the potential to increase demand for early education and elementary teachers in the Greater Sacramento area. This report aims to assess the need for childhood and elementary educators in the Sacramento region and to estimate the impact of existing and proposed legislation on the early and elementary education workforce across the state.

### *Early Education in California*

In 2018, researchers from Stanford University's Policy Analysis for California Education (or PACE) group highlighted the importance of expanding low-income families' access to subsidized childcare and preschool. The authors noted that while the state's low-income students are learning at similar rates to their peers across the U.S., low-income children are starting at a disadvantage. They found that "California's lag in academic achievement starts before children even enter the school."<sup>1</sup>

In 2021, Governor Gavin Newsom signed [legislation](#) into state law requiring any local educational agency (LEA) operating kindergarten programs to provide transitional kindergarten programming to all four-year-old children by the 2025-26 academic year.

### *What is TK?*

Transitional kindergarten, or TK, is a stepping-stone between preschool and kindergarten. In California, the [Kindergarten Readiness Act of 2010](#) established transitional kindergarten as the first year of a two-year kindergarten program. Transitional kindergarten is designed so that more children will have access to an additional year of early learning (at age 4) and, as a result, be ready to succeed in kindergarten at age 5.

The 2021 legislation made transitional kindergarten universally available and free of cost to all of California's families (regardless of income level) through its public education system. State lawmakers have agreed to invest \$2.7 billion in the new universal transitional kindergarten program, which will eventually serve 400,000 young children across California.<sup>2</sup> There were nearly 500,000 four-year-olds in California in 2020.<sup>3</sup>

Universal TK is expected to be available beginning in the 2022-2023 school year and to expand

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<sup>1</sup> Susanna Loeb, et al., "[Current Conditions and Paths Forward for California Schools](#)," Policy Analysis for California Education (PACE), September 2018, accessed 09/22/2022.

<sup>2</sup> Karen D'Souza, "[Universal Transitional Kindergarten Quick Guide](#)," Ed Source, October 2021, accessed 09/22/2022.

<sup>3</sup> [Population Estimates and Projections](#), California Department of Finance, accessed 09/30/2022.

annually until it is open to most of the state's four-year-olds by 2025-2026.<sup>4</sup>

Currently, TK and kindergarten are optional, and children are only required to attend school in California beginning at age 6. Until that age, it is up to parents to decide whether to enroll their children in preschool or transitional kindergarten, make other childcare arrangements, or keep them at home.

### *What is UPK, and how is it related to TK?*

According to the California Department of Education, UPK, or Universal Pre-Kindergarten, is an umbrella term that includes the California State Preschool Program (CSPP), TK at the California Department of Education, Head Start, district and local community-based preschool programs, early learning services for students with disabilities, private pay preschool, and expanded learning services to support parental access to a full day of services.

Familial participation in a UPK program of choice is optional. However, through California's public school system, TK is the only option within the broad UPK framework that is universally available and free of cost to all four-year-old children.

### *What are the potential impacts of established and proposed legislation on the early education workforce?*

Staffing will be one of the biggest challenges facing California's school districts and educational agencies as they begin the rollout of universal TK programs. As transitional kindergarten expands, California will need to hire 11,000 new teachers and 25,000 new teaching assistants.<sup>5</sup> According to an EdSource article, the classroom size ratio for TK programs is expected to start at 12 students to one teacher or teaching assistant and then transition to 10 students to one teacher or teaching assistant by the 2025-2026 school year. The new ratio is about half the size of current TK classes.

Transitional kindergarten uses a modified kindergarten curriculum developed for younger students. Since transitional kindergarten is the first year of a two-year kindergarten experience, the credentialing requirements for TK teachers are the same as those for kindergarten teachers - a multiple subject credential. By 2022, TK teachers will also need to complete an additional 24 units of early childhood education coursework or the equivalent (as determined by their employer), or they will need to hold a child-development permit.

### *What is the P-3 initiative?*

The P-3 initiative through the California Department of Education is focused on systemic alignment to improve the coordination of policies and practices so that young students

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<sup>4</sup> Karen D'Souza, "[Universal Transitional Kindergarten Quick Guide](#)," EdSource, October 2021, accessed 09/22/2022.

<sup>5</sup> Elizabeth Aguilera, "[Will there be enough teachers for California's ambitious plans for its youngest students?](#)," CalMatters, March 2022, accessed 09/30/2022.

experience high-quality, rigorous, and inclusive learning experiences from preschool through third grade. The P-3 initiative and its framework have also presented an opportunity for the California Commission on Teacher Credentialing (or CTC) to explore a new potential credential offering: the PK-3 Early Childhood Education (ECE) Specialist credential.

California currently offers multiple levels of Child Development Permits that authorize its holder to provide services in the care, development, and education of young children in various settings. The Child Development Permit structure is established as a career ladder so permit holders can progress towards higher levels of the permit throughout their career in early childhood education.

The proposed PK-3 ECE Specialist Credential would authorize qualified ECE teachers to serve children from age three through third grade. The credential would provide accelerated pathways for current multiple subject credential holders and Child Development Teacher Permit Holders with a bachelor's degree. Potential candidates for the proposed credential include current ECE educators who want to work in TK classrooms and current and future teachers who want to teach preschool to grade 3 in public schools.

Multiple subject credential holders are already authorized to teach in grades PK-3. Still, the PK-3 credential would be available to help them meet the requirement of completing 24 units of child development or ECE coursework needed to teach TK. The proposed credential is also an option for Child Development Teacher Permit holders and others interested in an ECE teaching career in grades PK-3

The PK-3 ECE Specialist credential is still in development. It must be approved by both the CTC and the Office of Administrative Law before its requirements are finalized and made available. Additional information about the PK-3 credential can be found [here](#).

## Request

The North (Greater Sacramento) Center of Excellence (COE) was asked to provide labor market information for a proposed program at a regional community college. This report focuses on the following Standard Occupational Classification (SOC) occupations and codes:

- These middle-skill occupations require more education and training beyond a high school diploma but less than a four-year degree:
  - Teaching Assistants, Except Postsecondary (25-9045)
  - Preschool Teachers, Except Special Education (25-2011)
- Students who transfer and earn a four-year degree could pursue the following high-skill occupations:
  - Kindergarten Teachers, Except Special Education (25-2012)
  - Elementary Teachers, Except Special Education (25-2021)

- Special Education Teachers, Preschool (25-2051)
- Special Education Teachers, Kindergarten and Elementary School (25-2052)

A review of related programs revealed the following Taxonomy of Programs (TOP) title(s) and code(s) are appropriate for inclusion in this report:

- Education, General (0801.00)
- Educational Aide (Teacher Assistant) (0802.00)
- Educational Aide (Teacher Assistant), Bilingual (0802.10)
- Special Education (0809.00)
- Child Development/Early Care and Education (1305.00)
- Children with Special Needs (1305.20)
- Preschool Age Children (1305.40)
- The School Age Child (1305.50)
- Liberal Studies (4901.20)

The corresponding Classification of Instructional Program (CIP) title(s) and code(s) are:

- Education, General (13.0101)
- Bilingual and Multilingual Education (13.0201)
- Special Education and Teaching, General (13.1001)
- Education/Teaching of Individuals with Autism (13.1013)
- Education/Teaching of Individuals in Early Childhood Special Education Programs (13.1015)
- Education/Teaching of Individuals in Elementary Special Education Programs (13.1017)
- Elementary Education and Teacher (13.1202)
- Teacher Education, Multiple Levels (13.1206)
- Kindergarten/Preschool Education and Teaching (13.1209)
- Early Childhood Education and Teacher (13.1210)
- Teacher Assistant/Aide (13.1501)

# OCCUPATIONAL DEMAND

Exhibit 1 summarizes the five-year projected job growth for middle-skill and high-skill occupations in the North, North/Far North, and California.

**Exhibit 1. Employment and projected demand, 2021-2026**

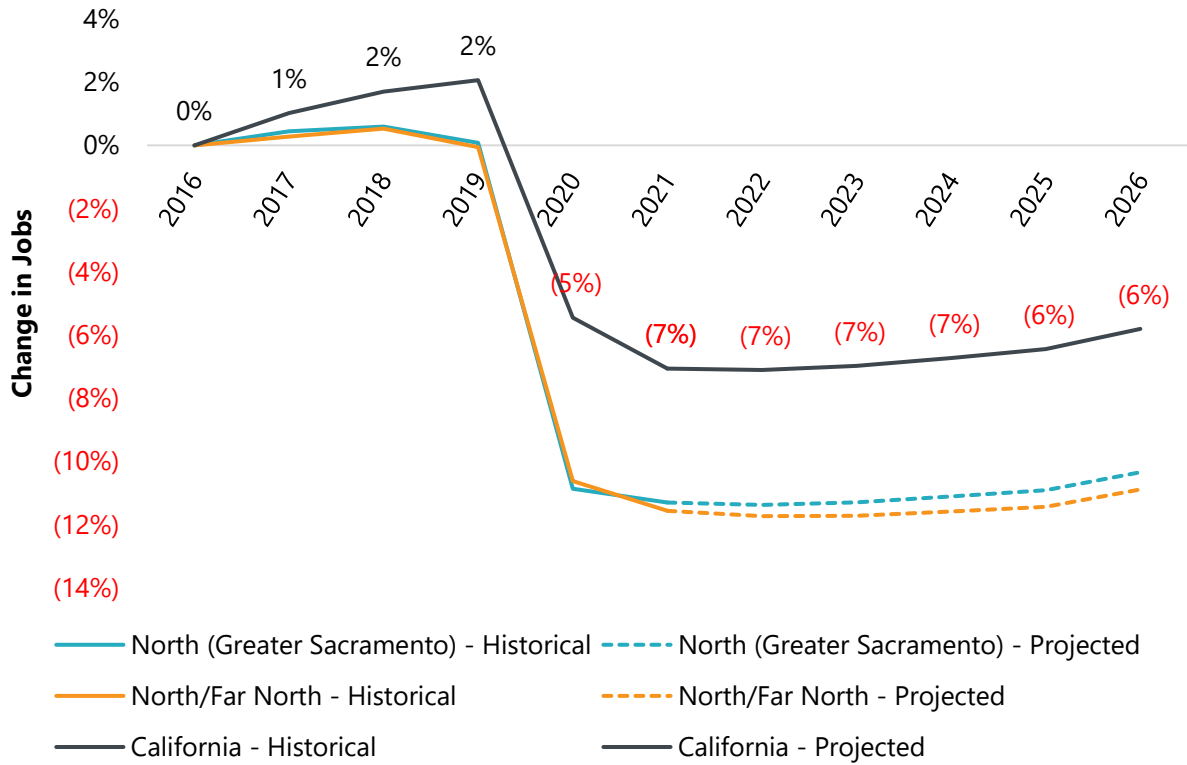
Occupation	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	2021-2026 Annual Openings
Teaching Assistants, Except Postsecondary	8,612	8,667	55	1%	827
Preschool Teachers, Except Special Education	4,493	4,667	174	4%	493
Kindergarten Teachers, Except Special Education	830	835	5	1%	87
Elementary School Teachers, Except Special Education	9,554	9,564	10	0%	725
Special Education Teachers, Preschool	249	256	7	3%	20
Special Education Teachers, Kindergarten and Elementary School	713	725	12	2%	56
<b>North (Greater Sacramento)</b>	<b>24,451</b>	<b>24,714</b>	<b>264</b>	<b>1%</b>	<b>2,209</b>
Teaching Assistants, Except Postsecondary	12,386	12,424	38	0%	1,187
Preschool Teachers, Except Special Education	5,911	6,165	254	4%	658
Kindergarten Teachers, Except Special Education	1,106	1,111	4	0%	116
Elementary School Teachers, Except Special Education	14,073	14,022	(51)	(0%)	1,064
Special Education Teachers,	288	298	10	3%	23



Occupation	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	2021-2026 Annual Openings
Preschool					
Special Education Teachers, Kindergarten and Elementary School	1,119	1,130	12	1%	88
<b>North/Far North</b>	<b>34,883</b>	<b>35,149</b>	<b>266</b>	<b>1%</b>	<b>3,136</b>
Teaching Assistants, Except Postsecondary	135,512	137,007	1,495	1%	12,990
Preschool Teachers, Except Special Education	60,359	62,921	2,562	4%	6,694
Kindergarten Teachers, Except Special Education	10,894	11,044	151	1%	1,142
Elementary School Teachers, Except Special Education	153,623	154,221	598	0%	11,545
Special Education Teachers, Preschool	1,542	1,702	160	10%	149
Special Education Teachers, Kindergarten and Elementary School	17,021	17,173	152	1%	1,305
<b>California</b>	<b>378,951</b>	<b>384,068</b>	<b>5,117</b>	<b>1%</b>	<b>33,825</b>

Exhibit 2 compares the percent change in jobs between 2016 through 2021 and the projected changes through 2026. The rate of change is indexed to the total number of jobs in 2016.

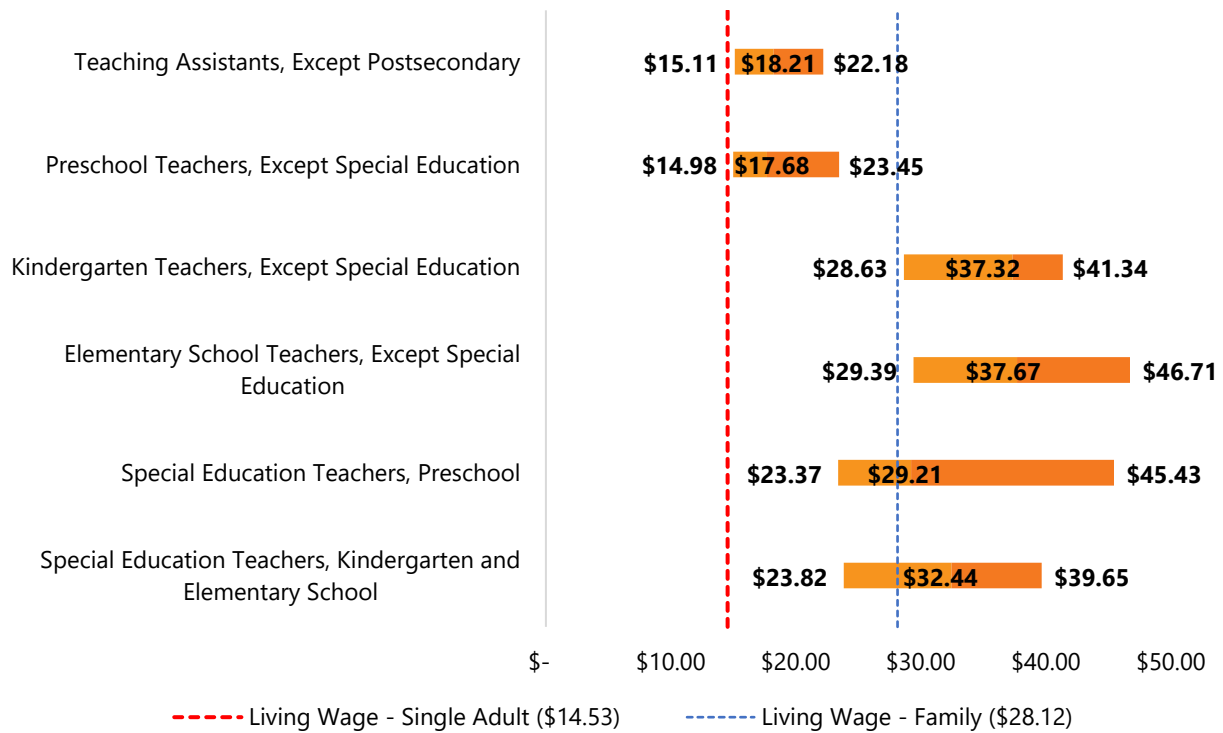
**Exhibit 2. Changes in employment, 2016-2026**



# WAGES

Exhibit 3 compares the entry-level, median, and experienced wages for the selected occupations to the North (Greater Sacramento) living wage<sup>6</sup> for a single adult (\$14.53 per hour) and a small family<sup>7</sup> (\$28.12 per hour).

**Exhibit 3. Comparison of wages by occupation, 2021**



<sup>6</sup> Living wage is defined as the level of income a single adult with no children must earn to meet basic needs, including food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs. Please note that the 25th-percentile and 75th-percentile hourly wages are used as proxy for entry-level and experienced-level wages.

<sup>7</sup> A small family is defined as a single adult and one school aged child (between the ages of 5 and 12 years).

# JOB POSTINGS

This section analyzes recent data from online job postings (real-time LMI). Online job postings may provide additional insight into recent changes in the labor market that are not captured by historical trends.

The North COE identified 4,660 online job postings for the selected occupations in the Greater Sacramento subregion. Job posting data comes from Lightcast (formerly EMSI Burning Glass ) and represents new listings posted online within the last year, from September 1, 2021, to August 31, 2022.

## Occupations and Job Titles

Exhibit 4 details the number of online job postings for the selected occupations.

### Exhibit 4. Number of job postings by occupation

Occupation	Job Postings	Share of Job Postings
Preschool Teachers, Except Special Education	2,415	52%
Teaching Assistants, Except Postsecondary	1,574	34%
Elementary School Teachers, Except Special Education	510	11%
Kindergarten Teachers, Except Special Education	92	2%
Special Education Teachers, Kindergarten and Elementary School	35	1%
Special Education Teachers, Preschool	34	1%
<b>Total Job Postings</b>	<b>4,660</b>	<b>100%</b>

Exhibit 5 shows the top 10 job titles with the most job postings and the share. All job postings included a job title.

### Exhibit 5. Top jobs titles

Job Title	Job Postings	Share of Job Postings
Preschool Teachers	640	14%
Infant/Toddler Teachers	202	4%

Job Title	Job Postings	Share of Job Postings
Teachers	168	4%
School Age Teachers	155	3%
Preschool Teacher Assistants	140	3%
Paraprofessionals	133	3%
Instructional Assistants	122	3%
Paraeducators	121	3%
Assistant Teachers	101	2%
Elementary School Teachers	78	2%

## Employers

Exhibit 6 shows the top 10 employers with the most job postings for the selected occupations.

### Exhibit 6. Employers with the most job postings

Employer	Job Postings	Share of Job Postings
KinderCare	327	7%
San Juan Unified School District	167	4%
Center For Autism & Related Disorders	165	4%
Learning Care	146	3%
La Petite Academy	115	2%
Nobel Learning Communities	114	2%
Childtime Learning Centers	109	2%
Merryhill School	104	2%
Catalyst Family	103	2%
Twin Rivers Unified School District	84	2%

## Certifications, Skills, and Experience

Exhibit 7 shows the most relevant certifications requested by employers for the selected occupations.

### Exhibit 7. Most in-demand certifications

Certification	Job Postings	Share of Job Postings
No Child Left Behind Act (NCLB) Standards	162	3%
English Learner Authorization	89	2%

Exhibit 8 shows the top 10 skills across three categories for the studied occupations: specialized, human-centered, and technical skills.

### Exhibit 8. Most in-demand specialized skills

Top 10 Specialized Skills	Top 10 Human-Centered Skills	Top 10 Technical Skills
Preschool Education	Teaching	Microsoft Office
Child Development	Communications	Microsoft Excel
Early Childhood Education	First Aid	Google Workspace
Cardiopulmonary Resuscitation (CPR)	Planning	Microsoft Outlook
Working With Children	Leadership	Productivity Software
Lesson Planning	Patience	Microsoft Word
Classroom Management	Customer Service	Zoom (Video Conferencing Tool)
Autism Spectrum Disorders	Valid Driver's License	Microsoft PowerPoint
Interactive Learning	Problem Solving	Database Application
Special Education	Lifting Ability	Database Systems

Exhibit 9 shows employers' minimum level of education for job postings for the selected occupations.

**Exhibit 9. Employer-preferred minimum education levels**

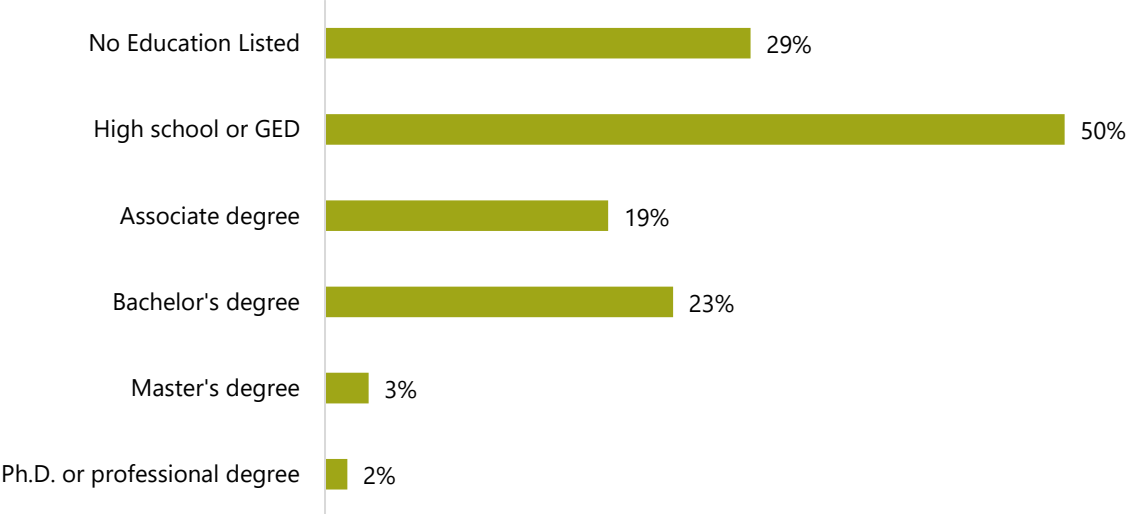
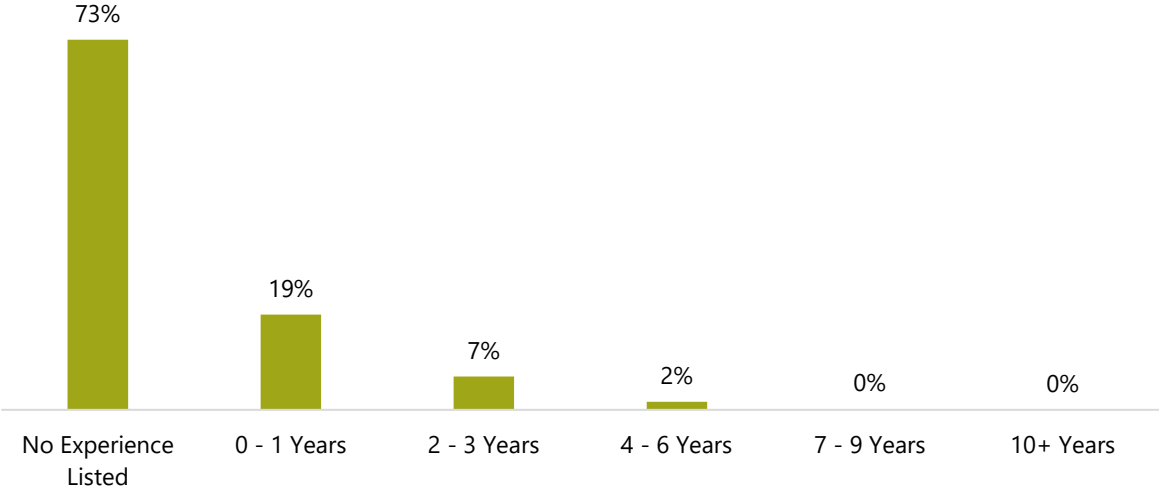


Exhibit 10 shows the experience levels required by employers for job postings for the selected occupations.

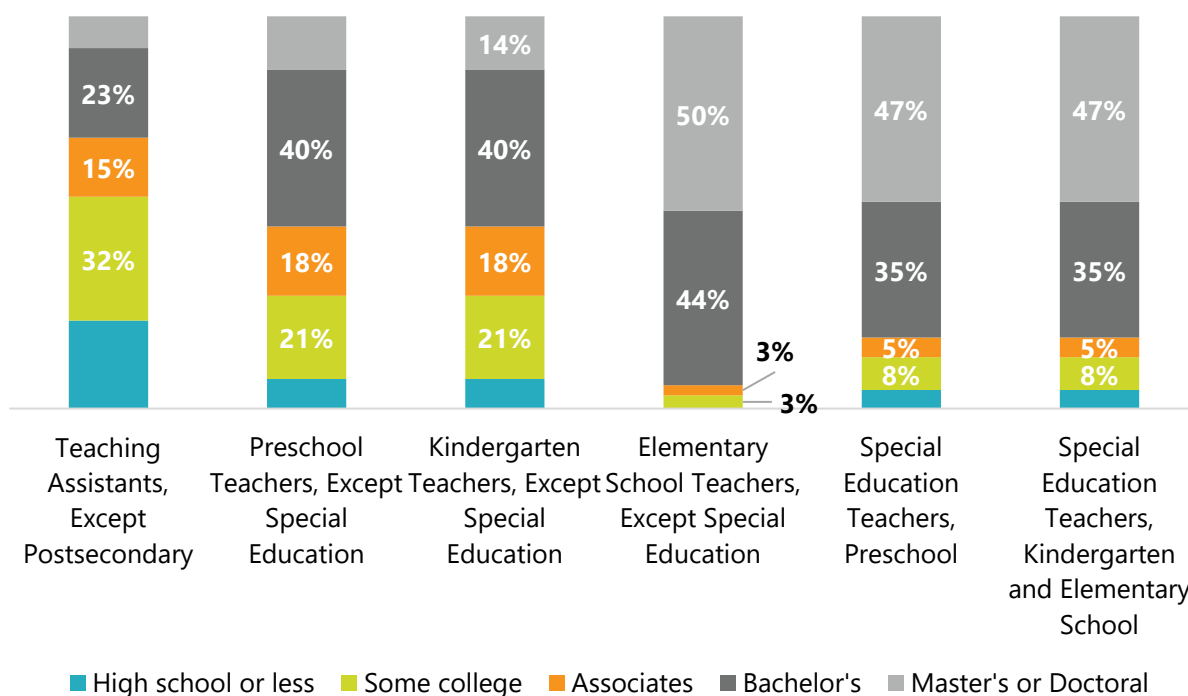
**Exhibit 10. Employer-preferred experience levels**



## EDUCATION AND TRAINING

The U.S. Census Bureau collects data on education achieved by workers employed in occupations. Exhibit 11 shows the state-level educational attainment of the current workforce in the selected occupations.

**Exhibit 11. California worker educational attainment for selected occupations, 2019**



The Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which the BLS publishes projections data. Exhibit 12 shows the selected occupations' entry-level job requirements.

**Exhibit 12. Typical education, work experience, and on-the-job training requirements**

Occupation	Typical Entry-level Education	Work Experience Required	On-the-job Training Required
Teaching Assistants, Except Postsecondary	Some college, no degree	None	None
Preschool Teachers, Except Special Education	Associate degree	None	None



Occupation	Typical Entry-level Education	Work Experience Required	On-the-job Training Required
Kindergarten Teachers, Except Special Education	Bachelor's degree	None	None
Elementary School Teachers, Except Special Education	Bachelor's degree	None	None
Special Education Teachers, Preschool	Bachelor's degree	None	None
Special Education Teachers, Kindergarten and Elementary School	Bachelor's degree	None	None

### Occupational Licensing

Most teachers in California are required by law to hold a teaching credential or permit which authorizes the holder to teach the specified age groups and topics listed on the credential. There are multiple teaching credentials issued in California, including Child Development Permits for early childhood educators, a Multiple Subject Teaching Credential for teachers in self-contained classrooms in grades 12 and below (including preschool), and Single Subject Teaching Credentials for departmentalized classes in grades 12 and below (including preschool). In California, most multiple subject teachers teach in grades K-6, and most single subject teachers teach in grades 7-12.

The [California Commission on Teacher Credentialing](#) issues teaching credentials to teachers prepared in and out of the state. Exhibit 13 summarizes the requirements for three teaching credentials and permits for teachers prepared in California. Additional credential pathways exist for individuals trained outside California's teacher preparation programs.

#### Exhibit 13. California-prepared teaching credentials and permits

Authorizations	Requirements
<a href="#">Child Development Permits</a> (CL-797)	
<p><b>Assistant Permit</b></p> <p>Authorizes the holder to care for and assist in the development and instruction of children in a child care and development program under the supervision of a Child Development Permit (CDP) Associate Teacher, CDP Teacher, CDP Master Teacher, CDP Site Supervisor, or CDP Program Director.</p>	<p>Option 1</p> <ul style="list-style-type: none"> <li>Complete six semester units of early childhood education or child development coursework.</li> <li>School-Age Emphasis under this option requires that three of the six semester units in early childhood education/child</li> </ul>

Authorizations	Requirements
	<p>development be completed in school-age coursework.</p> <p>Option 2</p> <ul style="list-style-type: none"> <li>• Complete an approved Home Economics and Related Occupations (HERO) or Regional Occupation Program (ROP) in Child Development Related Occupations.</li> <li>•</li> </ul>
<p><b>Associate Teacher Permit</b></p> <p>Authorizes the holder to provide service in the care, development, and instruction of children in a child care and development program, and to supervise a CDP Assistant, and an aide</p>	<p>Option 1</p> <ul style="list-style-type: none"> <li>• Complete a minimum of 12 semester units of course work in early childhood education or child development (excluding fieldwork), including at least one course of at least three semester units in each of the following core areas: Child/human growth and development; child, family, and community, or child and family relations; and, programs/curriculum.</li> <li>• Complete at least 50 days of experience in an instructional capacity in a childcare and development program, working at least three hours per day within the last two years. This experience must be verified by submitting an original letter from the employer on official letterhead.</li> <li>• School-Age Emphasis under this option requires that 6 of the 12 semester units in early childhood/child development be in school-age coursework.</li> </ul> <p>Option 2</p> <ul style="list-style-type: none"> <li>• Possess a Child Development Associate (CDA) Credential.</li> </ul>
<p><b>Teacher Permit</b></p> <p>Authorizes the holder to provide service in the care, development, and instruction of children in a childcare and development program and supervise a CDP Associate Teacher, a CDP Assistant, and an aide.</p>	<p>Option 1</p> <ul style="list-style-type: none"> <li>• Complete all General Requirements.</li> <li>• Complete 16 semester units in general education, including at least one course in each of the following areas: humanities and/or fine arts, social sciences, math</li> </ul>

Authorizations	Requirements
	<p>and/or science, and English and/or language arts.</p> <ul style="list-style-type: none"> <li>• Complete 175 days of experience in an instructional capacity in a childcare and development program, working at least three hours per day within the last four years. This experience must be verified by submitting an original letter from the employer on official letterhead.</li> <li>• School-Age Emphasis under this option requires that 12 of the 24-semester units of early childhood education/child development be in school-age coursework.</li> </ul> <p>Option 2</p> <ul style="list-style-type: none"> <li>• Complete an associate degree or higher in early childhood education, child development, or a related field.</li> <li>• Complete three-semester units or four quarter units of supervised field experience in an early childhood education setting</li> <li>• School-Age Emphasis under this option may be obtained by completing an associate degree or higher in school-age education, including three-semester units of supervised field experience in an early childhood education setting.</li> </ul>
<p><b>Master Teacher Permit</b></p> <p>Authorizes the holder to provide service in the care, development, and instruction of children in a childcare and development program and supervise a CDP Teacher, CDP Associate Teacher, CDP Assistant, and an aide.</p> <p>The permit also authorizes the holder to serve as a childcare and development program's curriculum and staff development coordinator.</p>	<p>Option 1</p> <ul style="list-style-type: none"> <li>• Complete all General Requirements.</li> <li>• Complete 16 semester units in general education, including at least one course in each of the following areas: humanities and/or fine arts, social sciences, math and/or science, and English and/or language arts.</li> <li>• Complete six additional units in one area of specialization, which may include, but are not limited to the following: Infant and toddler care, Bilingual and bicultural development, Children with exceptional needs, Preschool programming, Parent/teacher relations, Child health, and</li> </ul>

Authorizations	Requirements
	<p>Specific areas of developmentally appropriate curriculum.</p> <ul style="list-style-type: none"> <li>• Complete an additional two semester units of adult supervision course work.</li> <li>• Complete 350 days of experience in an instructional capacity in a childcare and development program, working at least three hours per day within the last four years (this experience must be verified by submitting an original letter from the employer on official letterhead).</li> <li>• School-Age Emphasis under this option requires 12 of the 24 semester units of early childhood education or child development to be in school-age coursework.</li> </ul> <p>Option 2</p> <ul style="list-style-type: none"> <li>• Complete a baccalaureate degree or higher.</li> <li>• Complete 12 semester units of early childhood education or child development coursework.</li> <li>• Complete three semester or four quarter units of supervised field experience in an early childhood education setting.</li> <li>• School-Age Emphasis under this option requires that six of the 12 semester units in early childhood education or child development be in school-age course work.</li> </ul>
<p><b>Site Supervisor Permit</b></p> <p>Authorizes the holder to supervise a childcare and development program operating at a single site; provide service in the care, development, and instruction of children in a child care and development program; and serve as a coordinator of curriculum and staff development in a child care and development program.</p>	<p>Option 1</p> <ul style="list-style-type: none"> <li>• Complete all General Requirements</li> <li>• Complete an associate degree or 60 semester units.</li> <li>• Complete six additional semester units of coursework in administration and supervision of childcare and development programs. These units must comprise two courses: one introductory course and one</li> </ul>

Authorizations	Requirements
	<p>advanced course or two courses of different topical content.</p> <ul style="list-style-type: none"> <li>• Complete an additional two semester units of adult supervision course work.</li> <li>• Complete 350 days of experience in an instructional capacity in a childcare and development program, working at least three hours per day within the last four years. This experience must include at least 100 days of supervising adults in a childcare and development program and must be verified by submitting an original letter from the employer on official letterhead.</li> <li>• School-Age Emphasis under this option requires 12 of the 24 semester units in early childhood education or child development to be in school-age coursework.</li> </ul> <p>Option 2</p> <ul style="list-style-type: none"> <li>• Complete a baccalaureate degree or higher.</li> <li>• Complete 12 or more semester units of early childhood education or child development coursework.</li> <li>• Complete three semester units of supervised field experience in an early childhood education setting.</li> <li>• School-Age Emphasis under this option requires that six of the 12 semester units in early childhood education or child development be in school-age coursework.</li> </ul> <p>Option 3</p> <ul style="list-style-type: none"> <li>• Possess a valid Administrative Services Credential authorizing service in California public schools.</li> <li>• Complete 12 or more semester units of early childhood education or child development coursework.</li> </ul>

Authorizations	Requirements
	<ul style="list-style-type: none"> <li>• Complete three semester or four quarter units of supervised field experience in an early childhood education setting.</li> <li>• School-Age Emphasis under this option requires that six of the 12 semester units in early childhood education or child development be in school-age course work.</li> </ul> <p>Option 4</p> <ul style="list-style-type: none"> <li>• Possess a valid Multiple Subjects Teaching Credential or a Single Subject Teaching Credential in Home Economics.</li> <li>• Complete 12 semester units of early childhood education or child development coursework.</li> <li>• Complete three semester or four quarter units of supervised field experience in an early childhood education setting.</li> <li>• School-Age Emphasis under this option requires that six of the 12 semester units in early childhood education or child development be in school-age course work.</li> </ul>
<p><b>Program Director Permit</b></p> <p>Authorizes the holder to supervise a childcare and development program operated in a single site or multiple sites; provide service in the care, development, and instruction of children in a child care and development program; and serve as coordinator of curriculum and staff development in a child care and development program.</p>	<p>Option 1</p> <ul style="list-style-type: none"> <li>• Complete all General Requirements.</li> <li>• Complete a baccalaureate degree or higher.</li> <li>• Complete six additional semester units of coursework in administration and supervision of childcare and development programs. These units must comprise two courses: one introductory course and one advanced course or two courses of different topical content.</li> <li>• Complete two additional semester units in adult supervision coursework.</li> <li>• Verify one year of site supervisor experience. This experience must be verified by submitting an original letter from the employer on official letterhead.</li> </ul>

Authorizations	Requirements
	<ul style="list-style-type: none"> <li>• School-Age Emphasis under this option requires 12 of the 24 semester units of early childhood education or child development to be in school-age coursework.</li> </ul> <p>Option 2</p> <ul style="list-style-type: none"> <li>• Obtain a valid Administrative Services Credential authorizing service in California public schools.</li> <li>• Complete 12 semester units in early childhood education or child development coursework.</li> <li>• Complete three semester or four quarter units in supervised field experience in an early childhood education setting.</li> <li>• School-Age Emphasis under this option requires that six of the 12 semester units of early childhood education or child development be in school-age coursework.</li> </ul> <p>Option 3</p> <ul style="list-style-type: none"> <li>• Obtain a valid Multiple Subjects Teaching Credential or a Single Subject Teaching Credential in Home Economics.</li> <li>• Complete 12 semester units of early childhood education or child development coursework.</li> <li>• Complete three semester or four quarter units of supervised field experience in an early childhood education setting.</li> <li>• Complete six additional semester units of coursework in administration and supervision of childcare and development programs. These units must comprise two courses: one introductory course and one advanced course or two courses of different topical content.</li> <li>• School-Age Emphasis under this option requires that six of the 12 semester units of early childhood education or child</li> </ul>

Authorizations	Requirements
	<p>development be in school-age course work.</p> <p>Option 4</p> <ul style="list-style-type: none"> <li>Complete a master's degree or higher in early childhood education, child/human development, or a closely related field.</li> </ul>
<p>The <b>School-Age Emphasis</b> authorization may be added to any level of the Child Development Permits and authorizes the holder to provide services in the care, development, and instruction of children in before-school, after-school, and other school-age childcare programs.</p>	<ul style="list-style-type: none"> <li>See the above sections.</li> </ul>
<p><a href="#">Multiple Subject Teaching Credential for Teachers Prepared in California</a> (CL-561C)</p>	
<p>The <b>Multiple Subject Teaching Credential</b> authorizes the holder to offer academic instruction in English within the subject area and grade level listed on the credential</p> <p>The credential also authorizes the holder to teach English Learners for English language development</p>	<ul style="list-style-type: none"> <li>Completion of a bachelor's degree or higher from a regionally accredited college or university</li> <li>Satisfy the basic skills requirement</li> <li>Verify subject matter competence by exam or through a commission-approved elementary subject matter program</li> <li>Pass the Reading Instruction Competence Assessment (RICA)</li> <li>Complete a course or pass an exam on the provisions and principles of the U.S. Constitution</li> <li>Complete an approved multiple subject teacher preparation program</li> <li>Obtain a formal recommendation for the credential from a teacher preparation program sponsor</li> </ul>
<p><a href="#">Single Subject Teaching Credential for Teachers Prepared in California</a> (CL-560C)</p>	
<p>The <b>Single Subject Teaching Credential</b> authorizes the holder to offer academic instruction in English within the subject area and grade level authorization of the credential<sup>8</sup></p>	<ul style="list-style-type: none"> <li>Completion of a bachelor's degree or higher from a regionally accredited college or university</li> </ul>

<sup>8</sup> For a list of credentialing subject areas, please visit: [https://www.ctc.ca.gov/credentials/leaflets/Single-Multiple-Subject-Credentials-\(CL-560C\)](https://www.ctc.ca.gov/credentials/leaflets/Single-Multiple-Subject-Credentials-(CL-560C))



Authorizations	Requirements
<p>The credential also authorizes the teaching of English Learners for English language development</p>	<ul style="list-style-type: none"> <li>• Satisfy the basic skills requirement</li> <li>• Verify subject matter competence by exam or program/coursework completion</li> <li>• Complete a course or pass an exam on the provisions and principles of the U.S. Constitution</li> <li>• Complete an approved teacher preparation program</li> <li>• Obtain a formal recommendation for the credential from a teacher preparation program sponsor</li> </ul>

The California Commission on Teacher Credentialing also oversees a two-level (preliminary and cleared) special education teaching credential. Exhibit 14 summarizes the requirements for special education teaching credentials for teachers prepared in California. Additional credential pathways exist for individuals trained outside California's teacher preparation programs.

**Exhibit 14. California-prepared Special Education teaching credentials**

Authorizations	Requirements
<p><a href="#">Preliminary Education Specialist Instruction Credential</a> (CL-808CA)</p>	
<p><b>Preliminary Education Specialist Credential</b></p> <p>Conduct educational assessment related to student's success in academic core curriculum and progress toward meeting academic instructional goals</p> <p>Provide instruction and special education support to individuals in the areas of specialization listed on the credential in various settings<sup>9</sup></p> <p>Specialties include Autism Spectrum Disorders, Mild to Moderate Support Needs, Extensive Support Needs, Deaf and Hard of Hearing, Visual Impairments, and Early Childhood Special Education</p>	<ul style="list-style-type: none"> <li>• Completion of a bachelor's degree or higher from a regionally accredited college or university</li> <li>• Satisfy the basic skills requirement</li> <li>• Verify subject matter competence</li> <li>• Pass the Reading Instruction Competence Assessment (RICA)</li> <li>• Complete a course or pass an exam on the provisions and principles of the U.S. Constitution</li> <li>• Complete an approved education specialist credential program in an education specialty area</li> </ul>

<sup>9</sup> For a list of settings, please visit [https://www.ctc.ca.gov/credentials/leaflets/Ed-Specialist-Instruction-Cred-\(CL-808CA\)](https://www.ctc.ca.gov/credentials/leaflets/Ed-Specialist-Instruction-Cred-(CL-808CA))

Authorizations	Requirements
	<ul style="list-style-type: none"> <li>Obtain a formal recommendation for the credential from the program sponsor</li> </ul>

## EDUCATIONAL SUPPLY

Educational supply for an occupation can be estimated by analyzing the number of awards issued in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. Exhibit 15 shows the TOP and CIP codes for educational programs related to the selected occupations.

### Exhibit 15. TOP and CIP codes for training programs related to the selected occupations

TOP Programs and Codes	Aligned CIP Programs and Codes
Education, General (0801.00)	Education, General (13.0101) Elementary Education and Teacher (13.1202) Teacher Education, Multiple Levels (13.1206) Kindergarten/Preschool Education and Teaching (13.1209)
Educational Aide (Teacher Assistant) (0802.00)	Teacher Assistant/Aide. (13.1501)
Educational Aide (Teacher Assistant), Bilingual (0802.10)	Bilingual and Multilingual Education (13.0201)
Special Education (0809.00)	Special Education and Teaching, General (13.1001) Education/Teaching of Individuals in Elementary Special Education Programs (13.1017)
Child Development/Early Care and Education (1305.00)	Early Childhood Education and Teacher (13.1210)
Children with Special Needs (1305.20)	Special Education and Teaching, General (13.1001) Education/Teaching of Individuals with Autism (13.1013) Education/Teaching of Individuals in Early Childhood Special Education Programs (13.1015)

Preschool Age Children (1305.40)	Early Childhood Education and Teacher (13.1210)
The School Age Child (1305.50)	Early Childhood Education and Teacher (13.1210)
Liberal Studies (4901.20)	Early Childhood Education and Teacher (13.1210)

## Community College Programs

Exhibit 16 shows the variety of active community college certificate and degree programs associated with elementary and early education occupations in the North (Greater Sacramento) subregion.<sup>10</sup> Most of Greater Sacramento's community college teacher training programs are devoted to Early Childhood Education (ECE).

### Exhibit 16. Active community college programs, as of Fall 2022

TOP Code	College	Program Title	Award Offered
Education, General (0801.00)	Lake Tahoe	CSU General Education Certification (CSUGE)	Certificate
		Intersegmental General Education Transfer Curriculum for Transfer to CSU (IGETC/CSU)	Certificate
		Intersegmental General Education Transfer Curriculum for Transfer to UC (IGETC/UC)	Certificate
		CSU General Education "Golden Four"	Certificate
	Sierra	Child Development Pre-Service Elementary Education	A.A. Degree
	Woodland	College Success	Certificate
Child Development/Early Care and Education (1305.00)	American River	Associate Teacher	Certificate
		ECE: Culture and Diversity Specialist	Certificate
		Early Childhood Education	A.A. Degree A.S. T Degree
		Master Teacher	Certificate

<sup>10</sup> Source: The Chancellor's Office Curriculum Inventory System (COCI), <https://coci2.ccctechcenter.org/>, accessed September 20, 2022.

TOP Code	College	Program Title	Award Offered
		Teacher	Certificate
	Cosumnes Lake	Early Childhood Education - Master Teacher	Certificate
		Early Childhood Education - Teacher	Certificate
		ECE, Early Childhood Education	A.A. Degree
		Early Childhood Education	A.S. T Degree
		ECE, Associate Teacher	Certificate
		Folsom Lake	Early Childhood Education
	ECE-Master Teacher		Certificate
	Early Childhood Education Teacher		Certificate
	Lake Tahoe	Early Childhood Education	Certificate A.A. Degree A.S. T Degree
	Sacramento City	Family Child Care	Certificate
		Early Childhood Education Teacher	A.A. Degree
		Early Childhood Education	A.S. T Degree
		Child Development with ECE Emphasis	A.A. Degree
	Sierra	Early Childhood Education	A.A. Degree A.S. Degree A.S. T Degree
	Woodland	Child Development Teacher	Certificate
		Early Childhood Education	A.S. Degree A.S. T Degree
		Child Development Associate Teacher	Certificate
		Child Development Master Teacher	Certificate

TOP Code	College	Program Title	Award Offered
	Yuba	Diversity in ECE	Certificate
		Early Childhood Education	A.S. Degree A.S. T Degree
		Site Supervisor	Certificate
		Child Development Teacher	Certificate
		Transitional Kindergarten and Early Education	Certificate
		Arts Specialization	Certificate
		Language and Literacy Specialization	Certificate
		Teacher/Family Relationships Specialization	Certificate
Children with Special Needs (1305.20)	American River	Children with Disabilities and Developmental Differences Specialist	Certificate
	Yuba	Children with Special Needs Specialization	Certificate
The School Age Child (1305.50)	Cosumnes River	ECE: School Age Child Care and Education	Certificate
	Sacramento City	School-Age Care and Education Teacher	Certificate
	Yuba	School Age Children	Certificate
Liberal Studies (4901.20)	American River	Elementary Teacher Education	A.A. T Degree
	Cosumnes River	Education/Teaching- Liberal Studies for Elementary Education	A.A. Degree
	Folsom Lake	Liberal Studies for Elementary Education	A.A. Degree
	Lake Tahoe	Elementary Teacher Education	A.A. -T Degree
	Sacramento City	Teacher Education	A.A. Degree
		Elementary Teacher Education	A.A. -T Degree
	Sierra	Elementary Teacher Education	A.A. -T Degree
Liberal Studies: Elementary Education		A.A. Degree	

TOP Code	College	Program Title	Award Offered
	Yuba	Elementary Teacher Education	A.A. -T Degree

### Community College Supply

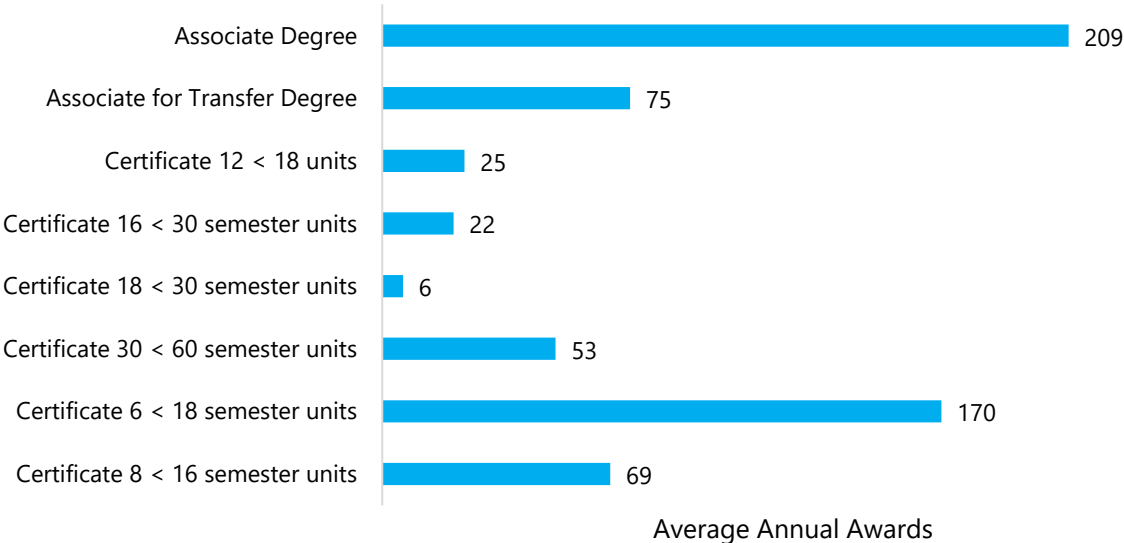
Exhibits 17 through 19 compare the average number of certificates and degrees from community college programs over the last three academic years. Most early and elementary education awards from Greater Sacramento community colleges - nearly 90% - come from child development and early education programs. Please note that the awards listed under the Liberal Arts (4901.20) TOP code are all related to elementary education.

#### Exhibit 17. Community college awards by program and college, 2018-19 through 2020-21

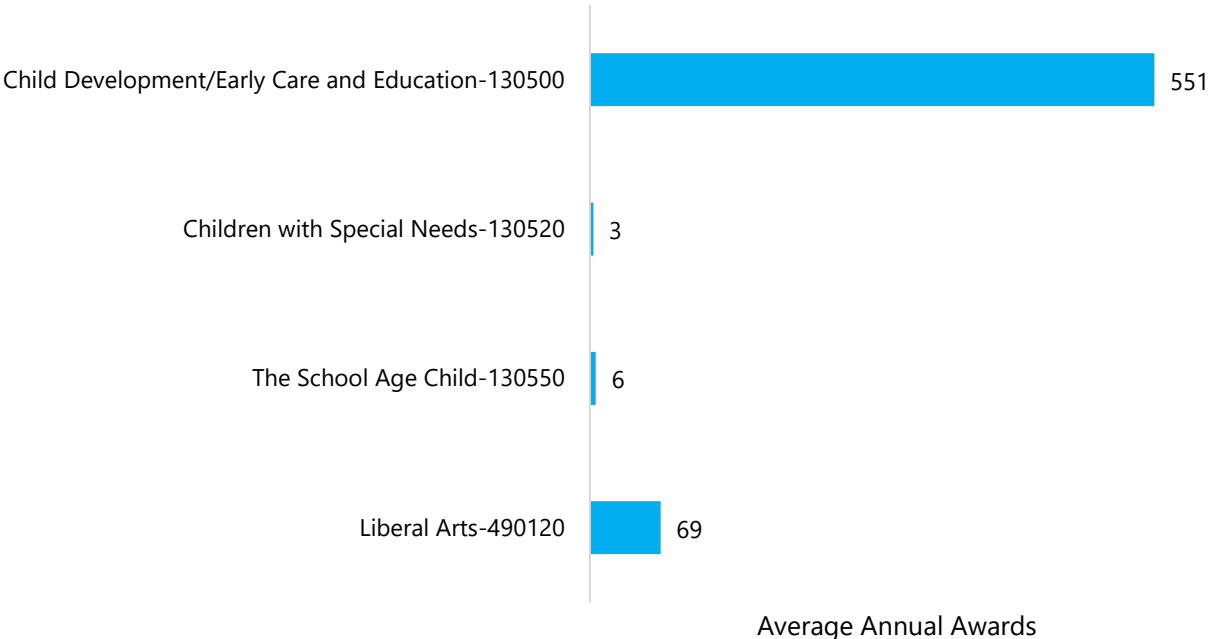
Program - TOP Code	College	Annual Awards 2018-19	Annual Awards 2019-20	Annual Awards 2020-21	3-Yr Annual Awards Average
Child Development/Early Care and Education (1305.00)	American River	185	83	151	156
	Cosumnes River	48	23	74	53
	Folsom Lake	131	115	76	107
	Lake Tahoe	8	4	4	5
	Sacramento City	50	38	27	40
	Sierra	51	39	68	53
	Woodland	84	58	63	68
	Yuba	105	84	84	91
	<b>Subtotal</b>	<b>662</b>	<b>444</b>	<b>547</b>	<b>573</b>
Children with Special Needs (1305.20)	American River	3	1	5	4
	Yuba	1	0	0	0
	<b>Subtotal</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>4</b>
The School Age Child	Cosumnes River	4	0	3	4

Program - TOP Code	College	Annual Awards 2018-19	Annual Awards 2019-20	Annual Awards 2020-21	3-Yr Annual Awards Average
(1305.50)	Folsom Lake	1	0	0	0
	Sacramento City	3	0	0	1
	Woodland	2	1	2	2
	Yuba	--	1	0	1
	<b>Subtotal</b>	<b>10</b>	<b>2</b>	<b>5</b>	<b>8</b>
Liberal Arts (4901.20)	American River (A.A.-T)	--	1	0	0
	Cosumnes River (A.A.)	3	0	2	2
	Folsom Lake (A.A.)	2	5	12	6
	Lake Tahoe (A.A. -T)	--	--	1	1
	Sacramento City (A.A. and A.A. -T)	4	0	0	1
	Sierra (A.A. and A.A. -T)	45	68	64	59
		<b>Subtotal</b>	<b>54</b>	<b>74</b>	<b>79</b>
	<b>Grand Total</b>	<b>730</b>	<b>521</b>	<b>636</b>	<b>655</b>

**Exhibit 18. Community college awards by type, 2018-19 through 2020-21**



**Exhibit 19. Community college awards by program, 2018-19 through 2020-21**





## Other Postsecondary Supply

Exhibit 20 compares the average number of bachelor's degrees conferred by other postsecondary training providers in the North (Greater Sacramento) subregion over the last three academic years. Please note that non-community college data lags by one year.

**Exhibit 20. Other postsecondary awards by program, 2017-18 through 2019-20**

Program - CIP Code	College	Annual Awards 2017-18	Annual Awards 2018-19	Annual Awards 2019-20	3-Yr Annual Awards Average
Early Childhood Education and Teaching (13.1210)	CSU Sacramento	377	498	479	451
	<b>Subtotal</b>	<b>377</b>	<b>498</b>	<b>479</b>	<b>451</b>
Elementary Education and Teaching (13.1202)	William Jessup University	28	34	38	33
	<b>Subtotal</b>	<b>28</b>	<b>34</b>	<b>38</b>	<b>33</b>
	<b>Grand Total</b>	<b>405</b>	<b>532</b>	<b>517</b>	<b>484</b>

The Commission on Teacher Credentialing (CTC) accredits educational institutions and approves programs that meet its standards for quality and effectiveness.<sup>11</sup> Exhibit 21 shows approved preliminary teacher credentialing programs in the North (Greater Sacramento) subregion.

Local universities and colleges typically offer a combination of a bachelor's or master's degree and teaching credentials through CTC-approved educator preparation programs. Local education agencies sometimes offer both preliminary credential programs and induction credential programs. Preliminary credential programs are distinct from induction programs in that they provide a pathway to the initial teaching credential, while induction programs assist new teachers in transitioning from a preliminary to a clear credential.

Several institutions also offer an alternative pathway to teacher credentialing through a district internship. District internships include pre-service coursework and one to two years of in-the-classroom teacher preparation training. During this time, district interns hold a District Intern credential, which allows them to be full-time teachers of records while participating in teacher training.

<sup>11</sup> Source: CTC Approved Educator Preparation Programs tool, <https://www.ctc.ca.gov/commission/reports/data/approved-institutions-and-programs>, accessed September 21, 2022

**Exhibit 21. CTC Approved educator preparation programs in Greater Sacramento**

Institution Type	Institution	Programs Offered
College or University	<a href="#">California State University, Sacramento</a>	<ul style="list-style-type: none"> <li>• Multiple Subject Credential</li> <li>• Single Subject Credential</li> <li>• Master of Arts in Teaching with Education Specialist Credential</li> </ul>
	<a href="#">University of California, Davis</a>	<ul style="list-style-type: none"> <li>• Master's degree with Multiple Subject Credential</li> <li>• Master's degree with Single Subject Credential</li> <li>• Teaching Credential with Bilingual Authorization</li> </ul>
	<a href="#">William Jessup University</a>	<ul style="list-style-type: none"> <li>• Bachelor's Degree with Multiple Subject Credential</li> <li>• Master of Arts in Teaching with Multiple Subject Credential</li> <li>• Master of Arts in Teaching with Single Subject Credential</li> </ul>
Local Education Agency (LEA)	<a href="#">Davis Joint Unified School District</a>	<ul style="list-style-type: none"> <li>• CTE Credential</li> <li>• District Intern Program</li> </ul>
	<a href="#">Fortune School of Education</a>	<ul style="list-style-type: none"> <li>• Teacher Pre-service</li> <li>• District Intern Program</li> </ul>
	<a href="#">Placer County Office of Education</a>	<ul style="list-style-type: none"> <li>• Education Specialist Mild/Moderate Internship</li> <li>• Education Specialist Moderate/Severe Internship</li> </ul>
	<a href="#">Sacramento City Unified School District</a>	<ul style="list-style-type: none"> <li>• District Intern Program</li> </ul>
	<a href="#">Sutter County Superintendent of Schools</a>	<ul style="list-style-type: none"> <li>• CTE Credential</li> </ul>

## FINDINGS

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- This report focuses on several early and elementary education occupations in the Greater Sacramento region, including preschool teachers, kindergarten teachers, elementary school teachers, special education teachers, and teaching assistants.
- The North (Greater Sacramento) subregion held more than 24,000 early and elementary education jobs in 2021. These jobs are projected to increase by 1% over the next five years, adding 264 new jobs to the subregion by 2026. Most new job growth will be for preschool teachers.
- Early and elementary education jobs are projected to grow at the same rate in the Greater Sacramento subregion as in California.
- The Greater Sacramento area is projected to have more than 2,200 annual openings for early and elementary educators over the next five years. Job openings are particularly concentrated among teaching assistants (n = 827), elementary school teachers (n = 725), and preschool teachers (n = 493).
- Wage data shows that early and elementary educators earn entry-level wages above the single adult living wage of \$14.53 per hour. Entry-level wages range from just under \$15 per hour for preschool teachers to \$29 per hour for elementary school teachers. Furthermore, kindergarten, elementary and special education teachers tend to earn entry- and median-level wages capable of sustaining a small family.
- According to real-time labor market information, there were 4,660 online job postings for early and elementary educators between September 1, 2021, and August 31, 2021. Slightly more than half of the job postings were for preschool teachers, while 34% of job postings were for teaching assistants.
- The educational attainment of early and elementary educators varies according to their job roles and duties. The educational attainment mostly aligns with the level of education required for an entry-level job. For instance, 47% of teaching assistants in California have an educational attainment level consistent with community college offerings (i.e., some college or an associate degree). Teaching assistant positions typically require only some college coursework but not a degree.
- Preschool teachers typically need an associate degree for entry-level work, and 21% of incumbent preschool teachers in California have educational attainment levels consistent with community college offerings. Another 40% of preschool teachers hold a bachelor's degree.
- Among the occupations that typically require a bachelor's degree for entry-level work – kindergarten, elementary, and special education teachers – between 35% and 44% hold a

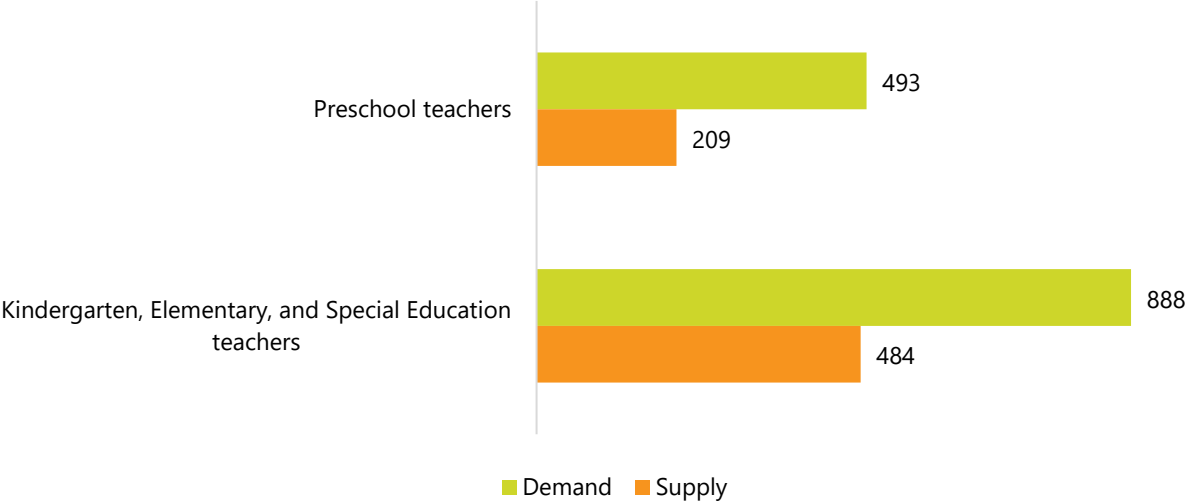
bachelor's degree. In comparison, another 14% to 50% of these teachers have graduate degrees.

- Early and elementary teachers (kindergarten, elementary, and special education) are required by the State of California to hold a teaching credential or permit to teach in a California K-12 public school.
- All eight North (Greater Sacramento) community colleges offer a combination of degrees and certificates in programs related to early and elementary education. Most community college teacher preparation programs are focused on Early Childhood Education – which prepares students for careers in preschool and daycare programs.
- Most of Greater Sacramento's community college teacher preparation awards come from its ECE programs. Greater Sacramento's ECE programs conferred an average of 573 awards (certificates and associate degrees) over the last three academic years (2018-19 through 2020-21).
- Sacramento's community colleges also offer elementary teacher transfer programs and pathways under its Liberal Studies TOP code programs. These programs conferred an average of 69 associate degrees for transfer over the last three academic years (2018-19 through 2020-21).
- Both CSU Sacramento and William Jessup University also offer elementary teacher training programs. Between 2018-19 and 2020-21, CSU Sacramento and William Jessup conferred an average of 484 awards in elementary education programs over the last three years. Please note that non-community college awards data often lags by one year.

# RECOMMENDATIONS

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- Based on a three-year average of annual awards in Greater Sacramento's subregion early and elementary education programs and projected yearly openings, the supply gap analysis shows that the region seems to have room for additional training.
  - Community colleges and other postsecondary training providers issued an average of 1,100 awards over the last three years.
  - There are 2,200 projected annual openings for early and elementary educators.
- The supply-demand gap is vast for early and elementary teachers in the Greater Sacramento region. There are nearly twice as many job openings for early and elementary teachers as there are awards in the area.



## APPENDIX A. METHODOLOGY AND SOURCES

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This report identified Occupations using the Center of Excellence TOP-to-CIP-to-SOC crosswalk and O\*Net OnLine. This report's findings were determined using labor market data from the Bureau of Labor Statistics (BLS), U.S. Census Bureau data from Emsi, and jobs posting data from Burning Glass.

Lightcast (Formerly EMSI/Burning Glass) 2022.3; QCEW Employees, Non-QCEW Employees, and Self-Employed. <https://www.economicmodeling.com/>. *Note: EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors).*

Integrated Postsecondary Education Data System (IPEDS). National Center for Education Statistics. U.S. Department of Education. <https://nces.ed.gov/ipeds/>.

Labor Market Information Division. California Employment Development Department. <https://labormarketinfo.edd.ca.gov/>.

Management Information Systems (MIS) Data Mart. California Community Colleges Chancellor's Office. <https://datamart.cccco.edu/>.

O\*NET OnLine. U.S. Department of Labor/Employment and Training Administration (DOL ETA). <https://www.onetonline.org/>.

Public Use Microdata Sample (PUMS). U.S. Census Bureau American Community Survey (ACS). <https://www.census.gov/programs-surveys/acs/microdata.html>

Self-Sufficiency Standard Tool for California. The University of Washington. <http://www.selfsufficiencystandard.org/>

"Taxonomy of Programs." California Community Colleges Chancellor's Office. June 2012, 6<sup>th</sup> Edition. <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Educational-Services-and-Support/Academic-Affairs/What-we-do/Curriculum-and-Instruction-Unit/Files/TOPmanual6200909corrected12513pdf.ashx>

"TOP-CIP-SOC Crosswalk." Centers of Excellence for Labor Market Research. June 2021 Edition. <http://coecc.net/>

## APPENDIX B. GLOSSARY OF KEY TERMS

Key Terms	Definition
<b>Occupation</b>	Occupation refers to professions, or careers, in the workforce. Occupations differ from jobs in that jobs show the number of positions held in a given occupation.
<b>Jobs</b>	<p>A job is any position where a worker provides labor for monetary compensation.</p> <p>Job numbers include employees (those who work for businesses) and proprietors (those who work for themselves). Full- and part-time jobs are included and counted equally (i.e., not adjusted to full-time equivalents). Data for jobs, or employment, are annual averages.</p>
<b>Job Change</b>	Job change is the net increase or decrease of jobs over a given timeframe.
<b>Job Openings</b>	<p>Job openings are the projected number of positions available for workers entering an occupation.</p> <p>Openings include growth and replacement jobs. Growth jobs are the positive change in the total number of workers employed. Replacement jobs are the estimates of new workers needed to replace workers permanently leaving the occupation.</p>
<b>Wages</b>	Wages, or compensation, show workers' percentile and average earnings in a given occupation. The 25th-percentile and 75th-percentile hourly wages are used as a proxy for entry-level and experienced-level wages.
<b>Living Wage</b>	The living wage is the level of income a single adult with no children must earn to meet basic needs. The living wage is calculated using basic levels of allowances for food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs.
<b>Educational Attainment</b>	Educational attainment is the level of education achieved by workers in a given occupation. The data includes workers aged 25 years and older.
<b>Typical Entry-level Education</b>	The education level generally required for employment in an occupation. It may differ from the actual educational levels attained by workers in any given occupation.
<b>Work Experience Required</b>	The level of prior experience a worker needs to enter a job in a given occupation.
<b>On-the-job Training Required</b>	The level of on-the-job training a worker needs to obtain competency in a given occupation.
<b>Awards</b>	Awards are the number of certificates and degrees conferred for a specific course of study in a given year. Awards counts "papers" and, as a result, may be greater than the actual number of students who complete a program.

**COVID-19 Statement:** This report includes employment projection data by EMSI. EMSI's projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

**Important Disclaimer:** All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon components or recommendations contained in this study.

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Centers of Excellence for Labor Market Research, Economic and  
Workforce Development Program



CENTERS OF EXCELLENCE  
FOR LABOR MARKET RESEARCH

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