ORS Collection Manual

Office of Compensation and
Working Conditions (OCWC)

U.S. Department of Labor
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Preface

The Occupational Requirements Survey (ORS) Collection Manual is the primary document providing instructions on survey procedures, data collection, and coding for the Occupational Requirements Survey. This document provides broad collection and coding instructions applicable across all ORS collection activities and includes detailed data element definitions, explanations, and examples.

This Manual reflects current concepts, definitions, and practices. It will be updated periodically and supplemented by Technical Memoranda and Procedures Alerts issued from the Office of Compensation Levels and Trends (OCLT). See specific changes listed in the Major Changes Table.

Introduction

The Social Security Administration (SSA) administers large national programs that provide disability benefits to individuals who cannot work due to mental or physical disabilities. SSA uses an adjudication process to determine if individuals meet eligibility requirements to receive benefits. To support this adjudication process, SSA needs information about job requirements in the national economy.

In 2012, SSA and the Bureau of Labor Statistics (BLS) signed an interagency agreement to collect and publish job requirements data. As a result, the BLS established the Occupational Requirements Survey (ORS). This manual outlines the concepts and technical procedures to collect ORS data elements, including: critical job function, critical job task list, physical demands, environmental conditions, education, training, and experience (specific vocational preparation), as well as cognitive and mental requirements.

For additional information about the Occupational Requirements Survey, see https://www.bls.gov/ors.

Information Reference Guide

Useful references are shown below.

- To view the ORS homepage on the BLS Public Website: https://www.bls.gov/ors/
- To view the Standard Occupational Classification: https://www.bls.gov/soc/
- To view the O*NET SOC Crosswalk: https://www.onetonline.org/crosswalk/SOC/
- To view information on SSA's Occupational Information System Project: https://www.ssa.gov/disabilityresearch/occupational_info_systems.html
- For definitions of numerous ORS terms, see the Glossary.
- For system reference information, see the CIERA User Guide.

Formatting Key

The formatting in this manual is designed to improve conceptual understanding and promote clarity.

Table Manual Design-1: Formatting Key

Style	Purpose
Regular Text	Regular text is in Tahoma, font size 11.
Chapter Header	Chapter headers are in Century Schoolbook, font size 28, with underline and navy font.
Section	Section headers are in Century Schoolbook, font size 18, with underline and bolded navy font.
Subsection 1	First-level subsection headers are in Tahoma, font size 12, with underline and bolded navy font.
Subsection 2	Second-level subsection headers are in Tahoma, font size 11, with bolded blue font.
Subsection 3	Third-level subsection headers are in Tahoma, font size 11, with underline and bolded gray font.
Glossary Terms	Glossary terms are in Tahoma, font size 11 with bolded navy font. They are key concepts with definitions and included in the glossary.
`Systems Labels`	System labels are in Consolas, font size 12 with bolded blue font. This marker represents a label name in any system when used for instruction.
Table Titles	Table titles are in Tahoma, font size 11, with underline and gray font. Table titles are assigned to each table. They include the chapter number and the table number within the chapter and the table name. Example: Table 1-1: Critical/Incidental Tasks Examples
Figure Titles	Figure titles are in Tahoma, font size 11, with underline and gray font. Figure titles are assigned to each figure. They include the chapter number and figure letter (in alphabetical order) within the chapter and the figure name. Example: Figure 1-A: Comparison of Occupation, Job, and Worker

Chapter 1: Key Concepts

The purpose of the Occupational Requirements Survey (ORS) is to provide the Social Security Administration (SSA) with data about the requirements of work as it is performed in the national economy.

Jobs are performed differently from one establishment to another. ORS collects information from establishments about job demands related to the critical tasks of selected jobs within the establishment. These individual data are combined to represent the job demands for the occupations in the national economy.

This chapter outlines key concepts and definitions associated with ORS collection:

1_01 Task, Worker, Job, Occupation

The terms Task, Worker, Job, and Occupation are defined below.

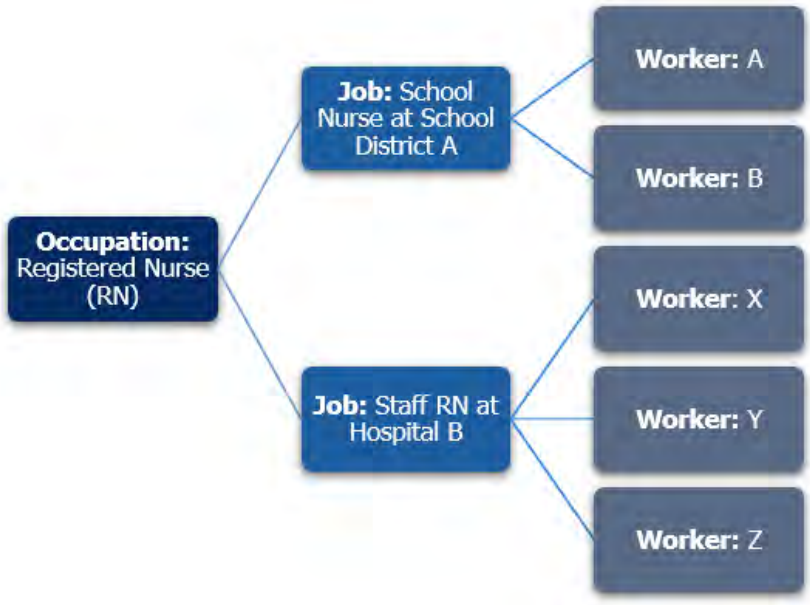
Task – A **task** is a distinct activity assigned to, or performed by, workers who are carrying out job duties that result in a specific outcome.

Worker – A **worker** is an employee who is assigned a specific set of tasks. The term worker is equivalent to the term position, historically used in the Department of Labor's *Dictionary of Occupational Titles* and the *Revised Handbook for Analyzing Jobs*.

Job – A **job** represents all workers in an establishment with the same or similar tasks such that they may be analyzed collectively. In ORS, a sampled quote represents a job.

Occupation – An **occupation** is a broad term representing a defined set of responsibilities, skills, and tasks common across establishments rather than specific to an individual company. In ORS, all sampled jobs are assigned to an occupation defined in the Standard Occupation Classification (SOC) system. Federal statistical agencies are mandated to use the SOC system for the purpose of collecting, calculating, or disseminating occupational or labor market data. For more information about SOC classifications, see the Fundamentals of NCS and ORS manual, Chapter 4 Occupational Classification found on the NCS-ORS Procedure Library.

Figure 1-A: Comparison of Occupation, Job, and Worker



1_02 Critical Job Function, Critical and Incidental Tasks

Establishments may assign tasks to a job that are necessary for establishment operations but are not typically performed by the occupation. As outlined in this section, ORS applies the concepts of critical job function(s) and critical tasks to define the scope of tasks included for incidence and duration coding at the establishment.

Critical Job Function

The **critical job function** is the main purpose of the job. It consists of critical tasks that are integral to the job. The job would not exist without the critical job function(s), which is the primary pay factor for the job.

A job's critical function is broad and often corresponds to the detailed SOC occupational definition. Some basic examples of critical job functions include:

- Janitors clean the building and grounds.
- Teachers prepare and present lessons and monitor students.
- Nurses provide medical care.

Most jobs have one or a very limited number of critical job functions. An example of a job with multiple critical job functions is a combination job. While combination jobs are typically assigned the SOC code associated with the highest skill level required by the job, all critical job functions and the critical tasks supporting those functions are included for ORS collection.

Critical Tasks

A **critical task** is an activity workers must perform to carry out their critical job function(s). A task is considered critical when it is a primary and required component of the critical job function(s). Critical tasks are:

- Tasks that workers are evaluated and rated on
- Tasks that are necessary to carry out the critical job function(s), despite the frequency they are performed
- Tasks that are expected, usual, and performed 10% or more of the work time, regardless of their relation to critical job function

All critical tasks are required, but not all required tasks are critical. This means not every task a respondent indicates workers perform is in scope for ORS collection. While jobs may be expected to perform a variety of tasks, any required task must meet at least one of the criteria noted above to be considered a critical task.

The same occupation in different establishments may be expected to perform different critical tasks depending on the size and nature of the establishment.

Collect and code ORS elements based on how workers perform **all** critical tasks of a job, even if those tasks or functions relate to more than one SOC detailed occupation.

A **task list** outlines the critical job function(s) and itemizes the critical tasks performed within a job. For more information on how to collect and document critical job function(s) and critical tasks in ORS, see Chapter 2: Collection Strategies and Task Lists.

Incidental Tasks

An **incidental task** does not support and is not a primary or required component of the job's critical function(s). Incidental tasks are excluded from ORS collection. Incidental tasks are performed less than 10% of the work time and meet at least one of the following conditions:

- Are not tasks the job is evaluated and rated on
- Are not required to carry out the critical job function(s)
- May be carried out by workers in any job at the establishment (these tasks may be important but are not a function of any one job at the establishment)

Exclude, regardless of the time workers spend performing them, incidental tasks that:

× Are voluntary
× Occur by chance (includes response to unusual or emergency situations unless a critical function of the job is emergency response)
× Are specific to only one or a few workers in a job whenever a job has multiple workers

Note: Annual or one-time events workers must attend (e.g., field trips, tradeshows, conferences, award ceremonies) are typically excluded unless the employer indicates these are critical tasks on which the job is rated and evaluated, or the tasks take more than 10% of the workers' time over the course of work year.

Table 1-1: Critical/Incidental Tasks Examples

#	Tasks Example	Type	Reason
1	Retail sales workers in a small store are responsible for selling store merchandise. The establishment evaluates retail sales workers on the following tasks: running register, answering customer questions, stocking merchandise, and cleaning duties to maintain store appearance during their shift.	Critical	All would be critical tasks for the retail sales workers at this establishment because they are primary tasks retail sales workers are evaluated on.
2	Accountants in a real estate leasing office carry out accounting tasks as their critical job function. Accountants in this establishment are also expected to spend 10% or more of their time inspecting and showing potential tenants rental properties.	Critical	Inspecting and showing rental properties to potential tenants is an assigned task for accountants at this establishment. This task would not usually support the critical job function of accountants, but since workers spend 10% or more of their work time doing this task, it is included as a critical task for this job.
3	Firefighters climb ladders infrequently but must be able to perform this task in order to fight fires.	Critical	Tasks that are necessary to carry out the critical job function(s) are critical, despite the frequency they are performed.

4	In a multiple person landscaping crew, all workers rotate and must be able to drive the company truck to the various job locations.	Critical	All workers in the job are expected to drive to locations where work is performed and the task is necessary to carry out the critical job function.
5	Teachers must escort younger students between their classroom and other areas of the building.	Critical	Escorting students is a critical task necessary to carry out the critical job function of maintaining order and ensuring students' safety.
6	Teachers walk between their classroom and other areas of the building but are not expected to escort or monitor students while they are in hallways.	Incidental	Moving between areas where the worker will perform critical tasks within the same location is not a critical task.
7	Accountants in a real estate leasing office carry out accounting tasks as their critical job function. When rental agents are on vacation, accountants inspect and show potential tenants rental properties. Accountants cover for rental agents a few days per year (less than 2% of their work time).	Incidental	Inspecting and showing rental properties to potential clients to back up rental agents is an assigned task for accountants at this establishment. This task does not support the critical job function of accountants and workers do not spend 10% or more of their time doing this work.
8	All plant personnel at a food processing plant are required to help wash and sanitize equipment one day per month.	Incidental	Important, required task but not specific to any single establishment job and does not meet 10% threshold, so this is not a critical task for this job.
9	All employees in a hotel are instructed to smile and greet customers when they enter the establishment or in passing.	Incidental	Important, expected task but not specific to any single establishment job. Include only for jobs where workers spend 10% or more time greeting customers.
10	When the copier is out of paper, any staff member refills the machine.	Incidental	Important task but not specific to any single establishment job.
11	In a two-person landscaping crew, at least one worker must be able to drive the company truck to the various job locations. A driver's license is not required for the job, but at least one worker of the pair must be able and needs to perform the intra-day commuting for the crew.	Incidental	Important task specific to only one or a few workers in a job whenever a job has multiple workers.
12	All workers in a factory spend a few minutes entering their timesheets using a computer each week.	Incidental	Required task that is not specific to any one job, does not support the critical job function of factory jobs, and does not meet the 10% threshold.

1_03 Job Demands

Job demands are the knowledge, cognitive abilities, and physical actions required to perform critical tasks, as well as environmental conditions experienced while completing critical job tasks.

Job demands include observable and unobservable behaviors:

- Observable behaviors: typing, driving, standing, lifting, reaching, etc.
- Unobservable behaviors: learning and applying knowledge, perception, problem solving, etc.

ORS captures a variety of job demands organized into four broad areas:

- Specific Vocational Preparation
- Cognitive and Mental Requirements
- Physical Demands
- Environmental Conditions

While ORS captures over 50 distinct job demands, not every job demand needed to perform critical tasks is in-scope for ORS collection. Job demands included in ORS are those that have been identified as important for determining whether individuals with mental or physical disabilities can work. Some examples of demands ORS does not capture include: bending or twisting movements, the need to have depth perception, and exposure to environmental conditions such as radiation or biohazards.

1_04 Thresholds

A **threshold** is a magnitude or intensity that must be met or exceeded for a certain demand to be considered for ORS collection.

Overall Collection Threshold for All ORS Elements – Only the knowledge, cognitive abilities, physical actions, and environmental conditions needed to perform a job's critical tasks are in-scope for ORS.

For more information about collecting the presence of ORS elements associated with critical tasks, see Collecting Task Lists.

Thresholds for Individual ORS Elements – Many individual ORS data elements must also meet additional thresholds, conditions, or have unique guidelines before the element presence and duration is collected and coded. Thresholds exist for the following individual ORS elements:

Physical Demands

- Sitting/Standing/Walking
- Lifting/Carrying
- Pushing and Pulling
- Reaching
- Low Postures-Stooping

Environmental Conditions

- Outdoors
- Extreme Cold
- Extreme Heat
- Wetness
- Humidity
- Hazardous Contaminants
- Proximity to Moving Mechanical Parts
- Heavy Vibration
- High, Exposed Places

Refer to the section on each element for a description of the relevant threshold.

1_05 Frequency and Duration

Frequency is the number of times a worker experiences a demand while performing critical tasks. Some cognitive and mental requirements for ORS are measured using frequencies, for example, the frequency work is checked by a supervisor or lead worker (e.g., a supervisor checks work once per day). Cognitive demands measured by frequency use the following scale:

- Every few minutes
- At least once per hour
- At least once per day
- At least once per week
- Less than once per week, including never

Duration is the total time a worker performs critical tasks using certain physical demands or is exposed to an environmental condition. Most physical demands and environmental conditions for ORS are measured using duration ranges, for example, the amount of time workers spend speaking (e.g., workers spend one hour of an 8-hour day speaking which is coded as Occasional 2% up to 1/3).

When a respondent states that an element is not performed or experienced as part of the critical tasks, duration is coded **`Not Present`** .

Additionally, when a data element does not meet an associated threshold, it is out-of-scope, and duration is coded **`Not Present`** **.**

When an element is present and the associated threshold (if applicable) is met, capture the amount of time a worker actively performs a physical demand or is exposed to an environmental condition. Percent of time is based on the full work day and captured according to the following duration scale:

Table 1-2: Duration Scales

Duration	Percent of Time	Daily*	Weekly*	Annually*
Seldom	Up to 2%	Less than 10 minutes	Less than 45 minutes	Less than 1 week
Occasional	2% up to 1/3	10 minutes up to 2½ hours	45 minutes up to 13 hours	1 week up to 4 months
Frequent	1/3 up to 2/3	2½ hours up to 5½ hours	13 hours up to 3½ days	4 months up to 8 months
Constant	2/3 or more	5½ hours or more	3½ days or more	8 months or more

*Times are approximate and have been rounded for collection purposes based on 8 hours daily, 40 hours weekly, 2080 hours annually work schedule. Different work schedules may have different associated hours.

Duration ranges include the percent of time up to but not including the upper bound. For example, Seldom includes all durations up to 2%, but does not include 2%.

Duration is different than frequency. For example, workers may have many conversations throughout a typical day (frequency), but may actually only be speaking to others for two hours

of an eight hour day work day (duration). The other time is spent listening or using the computer. Using the duration scale, the amount of time described on a daily basis fall into the Occasional category (10 minutes up to 2 ½ hours). The duration for speaking in this example is coded **2% up to 1/3**.

Duration for Critical Tasks that Occur Less than Daily

While most critical tasks occur daily, some critical tasks are performed regularly, but not every day. If a physical demand or environmental condition associated with critical tasks occurs weekly, monthly, annually, or seasonally, collect and code the duration a worker experiences over the broader range of time. The examples in Table 1-3 below illustrate how to capture duration for non-daily critical tasks.

Use the duration scale as a guide with respondents and request they provide the duration a worker experiences over the broader range of time. Calculations are not necessary if the correct ORS duration range can be determined without them because:

- The appropriate range is obvious based on the information provided by the respondent, or
- The respondent is able to select a range based on an estimated average of all critical tasks and job demands performed and the field economist verifies the range is reasonable based on the other data reported.

Table 1-3: Duration Coding Examples

Example 1 – Teachers
Description: Teachers rotate playground and drop-off/pick-up duties as part of their critical tasks. When they perform playground and drop-off/pick-up duties, they are outside 1 hour of a 7.5 hour day. They perform these duties 1 out of every 10 work days.
Duration Coding: Code **Up to 2%** for duration for Outdoors. Using the duration scale, 1 hour biweekly falls into the Seldom category (Less than 45 minutes per week).

Example 2 – Industrial Engineer
Description: An engineer typically works in an office but is required to inspect a plant and its machinery weekly for four hours. The respondent indicates that the engineer is exposed to moving mechanical parts where bodily injury is possible for most of the inspection. The respondent also indicates that PPE is provided to protect the engineer, but risk of bodily injury still exists.
Duration Coding: Code **2% up to 1/3** for duration for Proximity to Moving Mechanical Parts. Using the duration scale, the amount of time described on a weekly basis falls into the Occasional category (45 minutes up to 13 hours). Code **Yes** for PPE.

Example 3 – Fast Food Crew Members
Description: A fast food crew worker is expected to rotate through different critical tasks such as working at the cash register, serving food, working at the drive through, cleaning tables or taking out trash. During a typical shift, only 1 of multiple crew workers has to take out the trash weighing 20 pounds for approximately 10% of their shift. However, on a weekly basis, the respondent estimates that a typical crew worker would only spend up to 10 minutes per week taking out the trash. This is the most weight crew workers would lift.

Example 3 – Fast Food Crew Members

Duration Coding: Code Lifting/Carrying weight range **`11-25 lbs.`** for the Up to 2% frequency. Using the duration scale, the amount of time described on a weekly basis falls into the Seldom category (Less than 45 minutes per week).

Example 4 – Potato Chip Factory

Description: At a potato chip factory, workers hired as "packers" are expected to perform and rotate through three distinct functions: packing, picking, and trimming.

- **Function 1** – Packing: Takes bags of chips off the line and packs them into boxes. They also assemble the boxes.
- **Function 2** – Picking: Watches the chips go by on a conveyer belt, moves them around with hands, pulls out and throws away the burnt ones.
- **Function 3** – Trimming: Watches potatoes that have come out of the peeling machine move down a belt, pulls out bad ones and either trims them with a knife or throws them away depending on the overall condition

In a typical shift, 16 workers are packing, 2 workers are picking, and 2 workers are trimming. When performing picking, workers can sit all day, but when assigned to the other two functions they must stand all day.

Duration Coding: Code Sitting = **`10`**% and Standing/Walking = **`90`**%
Calculation:

- Function 1 Packing = 80% (16 workers / 20 total)
- Function 2 Picking = 10% (2 workers / 20 total)
- Function 3 Trimming = 10% (2 workers / 20 total)

1_06 Accommodations

Accommodations are adjustments to tasks or the work environment, enabling a person with a disability to compete equally or perform critical tasks. Not all employers can offer the same accommodations.

Collect job demands based on how most workers perform critical tasks without accommodation. When an adjustment is available to all workers in the job, it is not considered an accommodation.

Table 1-4: Accommodation Determination

#	Accommodations Examples	Accommodation?	Reason
1	Allowing a worker to avoid/ reassigning **critical tasks** to other workers in the job	Yes	Employer modification for one worker to perform critical tasks
2	Allowing a worker to avoid/reassigning **incidental tasks** to other workers in the job	Not Applicable	Accommodations apply to critical tasks only and all incidental tasks are excluded from ORS collection
3	Allowing a worker to stand for a job normally performed sitting or sit for a job normally performed standing	Yes	Employer modification for one worker
4	Screen reader software that is not available to everyone is provided to a visually impaired worker.	Yes	Employer modification for one worker
5	Video conferencing software with an option to caption conversations is available to all workers.	No	Offered to all workers
6	Allowing all workers in the job the option to stand for a job normally performed sitting or sit for a job normally performed standing	No	Offered to all workers
7	Buildings with ADA (Americans with Disabilities Act)-compliant ramps and other unrestricted ADA-compliant equipment	No	Employer does not provide or restrict their use
8	Tools such as eyeglasses, contacts, and hearing aids	No	Employer does not provide or restrict their use

1_07 Other Job Characteristics

Jobs in ORS are further distinguished by additional characteristics like full-time/part-time status and supervisory duties. For more information about classifying these characteristics, see the following selected procedures in the Fundamentals of NCS and ORS manual found on the NCS-ORS Procedure Library:

- Full-time/part-time status: Section 3_01 Worker Characteristics
- Work level including supervisory duties: Chapter 5 Leveling
- Work schedules: Chapter 6 Work Schedule
- Other variations: Section 3_08 Most Narrowly Defined Job

Chapter 2: Collection Strategies and Task Lists

The goal of ORS is to describe how work is performed in the U.S. economy by collecting as much quality data as possible in an efficient manner. Field economists collect high quality data by obtaining cooperation from a large portion of sampled establishments and ensuring the respondents at these establishments provide complete and accurate data.

Task lists connect the critical tasks performed to the job demands required. Therefore, coding of task lists is itself a required ORS element.

This chapter outlines the strategies to facilitate successful collection and the procedures for using task lists:

2_01 Respondents

Respondents are the primary source of ORS information. Seek respondents with direct knowledge of the job. More than one individual may provide information to maximize the quality of data collected. Try to discuss jobs with as many knowledgeable respondents as may be available such as:

- First-line supervisors
- Occupational safety managers
- Risk managers
- Lead workers
- Recruiters
- Workers in the job

2_02 Job Observations

ORS is collected by interviewing respondents who understand their establishment's job demands. Take advantage of opportunities to observe workers on jobs when possible. Observations of workers can also be helpful in understanding how work is performed. Direct observations enable a better understanding of the physical actions and tools workers use as well as the environmental conditions in which they perform critical tasks.

- Notice workers and what they are doing while walking to and from the respondent's office.
- Accept offers for a company tour, especially for unfamiliar industries and jobs.
- Ask to observe jobs.
- Probe respondent while on a company tour to clarify what you observe to determine whether it is usual and associated with critical tasks.
- Document how your observations affect coding selections.

2_03 Collecting Task Lists

Task lists reflect and record the detailed activities workers perform to accomplish critical functions. Task lists support SOC coding. Task lists also serve as a bridge between the critical job function(s) and ORS element coding. There are many strategies for obtaining this information from respondents. Possible ways to start the conversation include:

- ✓ What are the most important things this job does for your organization?
- ✓ What is the purpose of this job?
- ✓ What do workers in this job do in a regular day?

Critical tasks are not always obvious. When they are not, you must ask additional questions. Verify any unusual tasks for the occupation that are required, primary, and in support of the critical job function(s) of the job. Exclude incidental tasks.

Several questions that may help determine whether to include/exclude a task are:

- ✓ If workers could not do this, could the main purpose of the job still be accomplished?
- ✓ If no one in this job could perform this task, would the job still be useful to your organization?
- ✓ Are workers rated or evaluated on how well they perform this task?
- ✓ Is this task assigned to a specific job or something that everyone in the organization is expected to do?

Table 2-1: Task List Examples

Example 1 – Court Room Clerk
Critical Job Function: Performs clerical and courtroom duties in support of the municipal court. **Critical Tasks:** • Prepares docket or calendar of cases to be called • Assigns new court dates • Prepares legal forms, prepares, and corrects convictions on computer • Reviews and research documents online and in law library • Answers phone inquiries from attorneys, court personnel and the public • Accompanies judge with files into the courtroom on docket day • Pushes cart with files and hands judge files as requested
Excluded Tasks*: × Crawls under desk to plug in new equipment (Critical job function consists of clerical and courtroom duties. Plugging in equipment is not related to either. Task is infrequent, occurs by chance, and would not meet the 10% threshold for coding.) × Voluntarily carries heavy packages delivered to reception area on the way into the office (Task is optional, voluntary, and could be performed by other workers.) × Walks across the street from the office to the courts building, climbing stairs to get into the building (Exclude climbing steps to enter and exit public buildings and non-residential structures from both work and structure related climbing.)

*Documenting excluded tasks is optional and shown for purposes of this example.

Example 2 – Middle School Teacher

Critical Job Functions: Plans and provides classroom instruction to students in grades 6-8 in accordance with district and school policies and monitors students while on school premises.

Critical Tasks:

- Prepares, plans, and delivers instruction to students
- Meets with assigned team to develop lesson plans
- Uses smartboard in classroom teaching
- Grades assignments and enters scores into computers
- Monitors students getting on and off buses in the parking lot and during recess to ensure safety

Excluded Tasks*:

× Goes on annual field trip to a local water sanitation plant with students (The field trip is not a primary component of instructing and monitoring students and is not a regular part of the job. See incidental tasks.)

× Decorates classroom with posters (This task does not involve actual instruction or monitoring of students. Additionally, a teacher can decide whether to decorate the classroom or not, so it is optional.)

*Documenting excluded tasks is optional and shown for purposes of this example.

Example 3 – Hairdresser

Critical Job Function: Provides beauty services relating to clients' requests.

Critical Tasks:

- Shampoos, cuts, colors, blow dries hair for men, women, and children
- Recommends styling products
- Perms hair
- Waxes eyebrows and facial hair
- Creates up-dos for special occasions like weddings or prom

Excluded Tasks*:

× Answers phone when receptionist is at lunch (It is not related to providing beauty services and is generally done by another job.)

× Helps delivery person to offload shipment of beauty supplies for 30 minutes per week (It is not a critical task associated with providing beauty services and is performed less than 10% of time.)

*Documenting excluded tasks is optional and shown for purposes of this example.

2_04 Documenting Task Lists

Document the critical job function(s) and the critical tasks performed in support of the critical job function(s) for every usable quote. **Task lists must be complete, concise, and relevant.** Include the following factors in task list documentation:

- ✓ How tasks are performed
- ✓ Where tasks are performed
- ✓ What materials are used (e.g., types of data, tools, and equipment, etc.)
- ✓ What are the origination and destination of materials or information used
- ✓ Who are the people with whom the job interacts

Using a simple approach similar to the one used by O*NET makes comparisons more straightforward:

- Start with a verb to state the action.
- State the object of the action (if any) and, when relevant, the frequency.
- State the purpose of the action (if relevant).
- Keep bulleted items brief and uniformly formatted.
- Enter task lists in the Task List screen in CIERA. Each quote must have a minimum of two critical tasks.
- Mark the 10% task checkbox when tasks that are otherwise incidental are included as critical tasks because they are performed 10% or more of the time.

Do not copy/paste entire job descriptions, O*NET items (task list or O*NET definitions), or the SOC Manual definition. Information copied directly without analysis does not meet task list documentation requirements.

For more information about documenting task lists, see Chapter 8 Documentation Requirements in the Fundamentals of NCS and ORS manual found on the NCS-ORS Procedure Library.

Documenting Task Lists Example

Using the approach above as a guide, a field economist discusses with a respondent the tasks of a janitor in an elementary school.

Respondent says: "The janitor cleans all of the classrooms and public spaces such as hallways, restrooms, and some outside areas. He reports to the Maintenance Supervisor. One of the biggest jobs is emptying the waste receptacles throughout the building. This includes emptying all of the classroom trash cans as well as the large cans in the hallways and cafeteria daily.

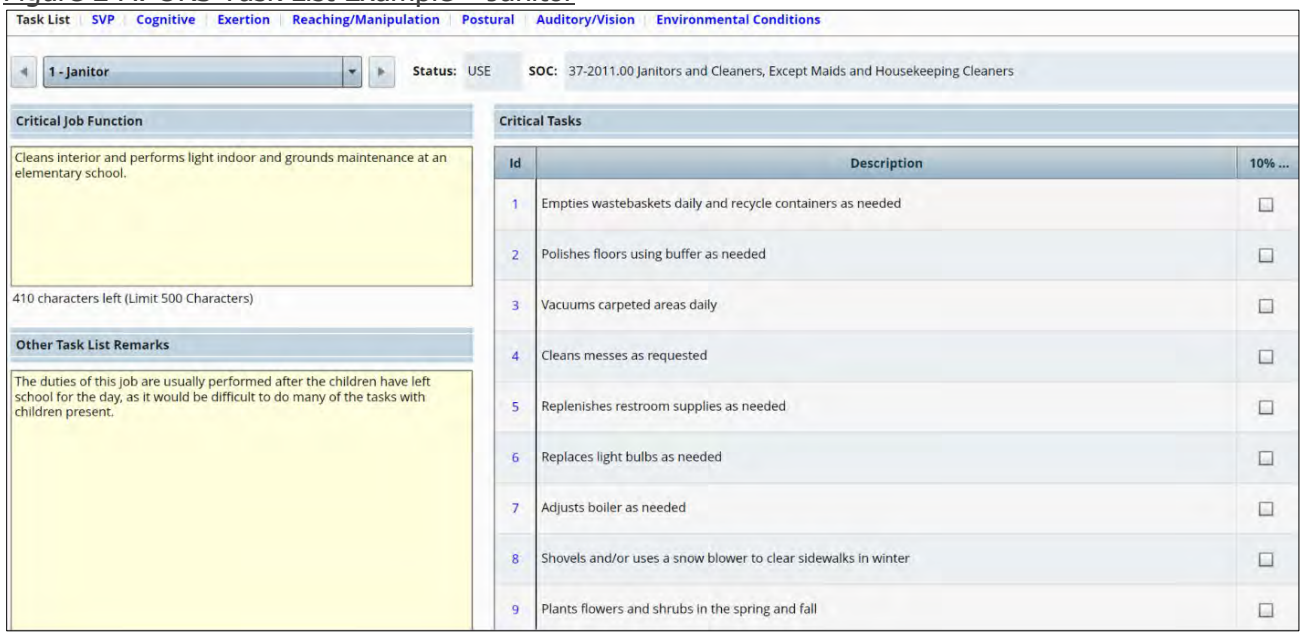
Additionally, he has to empty recycle containers throughout the building as needed. He routinely uses a commercial vacuum to clean floors in classrooms and public areas, and waxes floors using a buffer as needed. Since the building is full of children, there are many spills requiring spot cleaning. He uses a small snow blower and/or a shovel to clear the entryway into the building, so the children may safely enter and exit the building. He also plants flowers and shrubs in spring and fall. He maintains and makes minor repairs to the boiler system as needed and does other simple maintenance such as replacing light bulbs or restroom supplies. The duties of this job are usually performed after the children have left school for the day, as it would be difficult to do many of the tasks with children present."

Table 2-2: Example – Janitor Task List

Example – Janitor Task List
Critical Job Function: Cleans interior and performs light indoor and grounds maintenance at an elementary school.
Task List: • Empties wastebaskets daily and recycle containers as needed • Polishes floors using buffer as needed • Vacuums carpeted areas daily • Cleans messes as requested • Replenishes restroom supplies as needed • Replaces light bulbs as needed • Adjusts boiler as needed • Shovels and/or uses a snow blower to clear sidewalks in winter • Plants flowers and shrubs in the spring and fall

The following screenshot shows the critical job function and critical tasks entered in CIERA.

Figure 2-A: ORS Task List Example – Janitor



2_05 Task List and Relationship to Job Requirements

A job's task list clearly and concisely summarizes job duties. Element coding represents the movements and exposures experienced as a result of the worker performing these duties.

Cognitive, physical, and environmental coding must be documented with examples relating to and consistent with the task list. Include details that validate element coding, such as examples of items lifted/carried, examples of items pushed/pulled, presence of driving and vehicle type, and how environmental condition exposures meet thresholds.

The tasks documented on the task list should provide a picture of how the job is performed on a daily (or in some cases weekly, monthly, or annual) basis. Use the task list as a means of validating the reasonableness of individual element duration coding. Compare task lists, work schedules, and element duration coding to ensure the durations coded are collectively reasonable, based on the length of the workday.

If the respondent indicates job demands are present that are not related to the critical tasks included in the task list, determine whether a task related to the critical job function(s) was missed. If yes, add it to the task list. If no, unless the duration meets the 10% threshold, the ORS elements related to the task should not be coded, as they do not meet the overall threshold for determining presence.

Unless a job's critical function(s) is to respond in emergency or unusual situations, exclude tasks resulting from such situations. There are situations in which tasks may be critical but occur infrequently. Critical tasks do not include tasks that occur because of unusual events, including emergency situations.

Proceeding When Respondent Answers are Incomplete

Use the task list as a reference to probe and confirm respondent answers. If the respondent can confirm that an element exists and the threshold is met, but is unable to provide associated duration, code the element **`Present, Duration Unknown (PDU)`**. Only use **`PDU`** after exhausting all other methods to establish duration, including requesting to contact a different respondent.

If a respondent is unable to confirm that an element is present, code **`Unknown (UNK)`**.

Table 2-3: Task Lists and Element Coding Inconsistency Examples

Example 1 – LAN Techs
Critical Job Function: Maintains company software and hardware for all employees.
Task List: • Assists company employees with technical problems by phone and in person • Configures new employee computers • Maintains company servers • Installs new software on employee computers • Runs software updates as needed

Possible Element Coding Inconsistency with Task List:
Respondent indicates Extreme Heat is present for less than 2% of time because if the HVAC system happens to malfunction, at least one LAN Tech must stay in the server room until the system is repaired.

Resolution:
Do not code for Extreme Heat. This exposure is not experienced by most of the workers in the job but rather is the result of a chance event, an unusual or emergency situation.

Example 2 – Preschool Instructor

Critical Job Function: Provides classroom instruction and recreational activities to preschool age children.

Task List:

- Teaches lessons to children using toys and other learning tools
- Monitors recess and playtime
- Reports progress to parents
- Develops lesson plans

Possible Element Coding Inconsistency with Task List:
Respondent indicates that overhead reaching is present. All toys and learning tools are located on a high shelf so that the children cannot reach them. Even when standing, instructors must reach overhead to take these items off of the shelf to use during lessons and at playtime and then return them to the shelf upon completion.

Resolution:
Code for Overhead Reaching. Coding is consistent with the task list, as it is done in support of teaching lessons and monitoring playtime.

Example 3 – Dental Assistant

Critical Job Function: Provides assistance to the dentist during surgeries and other treatments

Task List:

- Assists dentist performing dental treatments
- Takes impressions of teeth
- Performs x-rays
- Explains treatment plan to patients

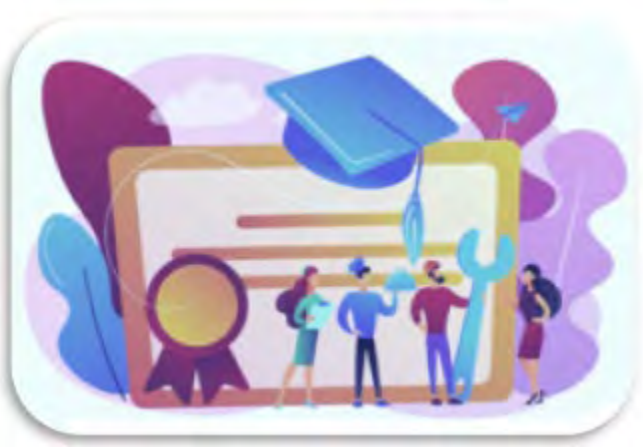
Possible Element Coding Inconsistency with Task List:
Respondent indicates that the dental assistant cleans the dental office which takes about an hour per 8-hour day. Dental assistants also sometimes drive in order to drop off/pick up mail at the nearby post office when others in the office are unavailable.

Resolution:
Include the cleaning duties on the critical task list and select the 10% task checkbox. While this task is not associated with the critical job function, the dental assistant spends more than 10% of work time performing this task. Exclude driving for ad hoc postal deliveries from the task list. Dropping off mail is not specific to the job – anyone in the establishment can do it and it doesn't take more than 10% of work time to perform it.

Chapter 3: Specific Vocational Preparation (SVP)

Specific Vocational Preparation (SVP) is the minimum amount of preparation time required by a typical worker to learn the techniques, acquire the information, and develop the aptitude needed for performance in a specific job.

This chapter includes procedures for collecting the SVP elements:



3_01 Collecting SVP

SVP measures the **minimum** vocational preparation time needed for a job. Traditionally, SSA has used SVP as a proxy to quantify skill required by a job. SVP includes only vocationally relevant preparation time. Therefore, SVP excludes time spent completing **general education** requirements, non-vocationally relevant credentials, general experience, and probationary periods where workers aren't actively receiving on the job training.
× Exclude any establishment hiring requirements that do not relate to the job's critical tasks.

SVP consists of four components:

- Minimum Education
- Non-Degree Credentials
- Experience
- On the Job Training

The amount of vocational preparation time for each component is added to derive an overall SVP level.

Understanding SVP Levels

There are nine SVP levels structured to cluster occupations that require similar amounts of vocation preparation time. The time between SVP levels is not uniform and increases as the level of preparation time required increases.

At lower SVP levels, there tends to be minimal vocational preparation required prior to hire, [i.e., minimal education (high school or less) or prior experience requirements]. The key distinction between lower levels of SVP tends to be the amount of on the job training required once workers are hired. Conversely, higher SVP levels typically require significant vocational preparation prior to hire such as increasingly higher levels of education, prior work experience, or non-degree credentials, e.g., multi-year apprenticeships.

Table 3-1: SVP Levels and Associated Vocational Preparation Time

SVP Level	Preparation Time
1	Short Demonstration Only (4 hours or less)
2	Anything beyond short demonstration up to and including 1 month
3	Over 1 month up to and including 3 months
4	Over 3 months up to and including 6 months
5	Over 6 months up to and including 1 year
6	Over 1 year up to and including 2 years
7	Over 2 years up to and including 4 years
8	Over 4 years up to and including 10 years
9	Over 10 years

Computing SVP Level

Enter the presence and amount of vocational preparation time required for each component. The overall SVP level is calculated in CIERA by summing the time entered for each of the four individual SVP components.

SVP coding reflects the lowest combination of education, training, and experience required by the establishment for average performance in a specific job.

Coding Guidance

- If a company provides a range of time or several combinations of education, training, or experience, code the combination the establishment accepts that results in the lowest overall SVP level.
- When multiple combinations of education, training, and experience will result in the **same** SVP level, code the combination the establishment accepts that requires the least formal education.
- When the establishment provides ranges of minimum qualifications as a result of grandfathered or foreign degree requirements, code the current minimum vocational preparation time required for applicants.
- If an establishment provides ranges of minimum qualifications based on the existence of alternative requirements used to fill jobs in unusual or extenuating circumstances, code the minimum vocational preparation time required in normal circumstances.

Ensure that the information coded and the resulting SVP level make sense for the job. In the event the SVP level seems incorrect, considering the critical job function(s) and skills required, ask follow-up questions to ensure accurate coding of SVP time components.

The following examples illustrate variations of what is included and excluded from SVP and how overall SVP level is calculated.

Table 3-2: SVP Coding Variation Examples

Example 1 – Bookkeeper SVP Coding – Basic SVP
Job Description Requirements: Requires a minimum of 6 months experience in bookkeeping. **Additional Information Provided by Respondent:** • Verified accuracy of job description requirements • Needs a high school diploma or GED • Works with an assistant who demonstrates what to do for about 3 weeks • 90 day probationary period
SVP Formula: SVP = Minimum Education + Non-Degree Credentials + Experience + On the Job Training

Example 1 – Bookkeeper SVP Coding – Basic SVP

Coding and Time Counted as SVP:

SVP Type	Code	Time Counted as SVP
Minimum Education	High School	0
Non-Degree Credentials	No, not required	0
Experience	6 months	6 months
On the Job Training	3 weeks	3 weeks
Total Preparation Time		**Over 6 months up to and including 1 year**

SVP Level and Explanation:

SVP Level = 5
Probationary periods are not counted as on the job training. Time spent completing general education does not count toward SVP.

Example 2 – Bookkeeper SVP Coding – Combinations Result in Different SVP

Job Description Requirements: Either a minimum of 6 months experience in bookkeeping or an Associate's degree.
Additional Information Provided by Respondent:

- Verified accuracy of job description requirements
- Needs a high school diploma or GED.
- Works with an assistant who demonstrates what to do for about 3 weeks.
- 90 day probationary period

SVP Formula:
SVP = Minimum Education + Non-Degree Credentials + Experience + On the Job Training

SPV Level Comparison	
Time counted as SVP:	**Time counted as SVP:**
Min Education (High School): 0	Min Education (Associates): 1 year
Non-Degree Credential (none): 0	Non-Degree Credential (none): 0
Experience: 6 months	Experience: 0
On the Job Training: +3 weeks	On the Job Training: +3 weeks
Total Preparation Time = Over 6 Months up to and including 1 year	Total Preparation Time = Over 1 year up to and including 2 years
SPV Level = 5	**SVP Level = 6**

SVP Coding and Explanation:

- Minimum Education: High School
- Non-Degree Credentials: No, not required
- Experience: 6 months
- On the Job Training: 3 weeks

SVP Level = 5
When either education, training, or experience will meet requirements, code the one that results in the lowest SVP.

Note: Probationary periods are not counted as on the job training. Time spent completing general education portions of required degrees is also excluded.

Example 3 – Bookkeeper SVP Coding – Combinations Result in Same SVP

Job Description Requirements: Either a minimum of 18 months experience in bookkeeping or an Associate's degree.

Additional Information Provided by Respondent:

- Verified accuracy of job description requirements
- Needs a high school diploma or GED.
- Works with an assistant who demonstrates what to do for about 3 weeks.
- 90 day probationary period

SVP Formula:

SVP = Minimum Education + Non-Degree Credentials + Experience + On the Job Training

SPV Level Comparison

Time counted as SVP:		**Time counted as SVP:**	
Min Education (High School):	0	Min Education (Associates):	1 year
Non-Degree Credential (none):	0	Non-Degree Credential (none):	0
Experience:	18 months	Experience:	0
On the Job Training:	+3 weeks	On the Job Training:	+3 weeks
Total Prep Time = 18 months + 3 weeks (over 1 year up to and including 2 years)		Total Prep Time = 1 year, 3 weeks (over 1 year up to and including 2 years)	
SPV Level = 6		**SVP Level = 6**	

SVP Coding and Explanation:

- Minimum Education: High School
- Non-Degree Credentials: No, not required
- Experience: 18 months
- On the Job Training: 3 weeks

SVP Level = 6

When multiple combinations of education, training, and experience will result in the **same SVP level**, code the combination the establishment accepts that requires the least formal education. Even though the 'experience' combination results in more total time, since the overall SVP level is the same, choose the combination that requires the least formal education.

Note: Probationary periods are not counted as on the job training. Time spent completing general education portions of required degrees is also excluded.

Collecting Concurrent SVP Time

Count overlapping time between SVP components once to avoid overstating the SVP requirements of the job.

Concurrent SVP often occurs whenever licenses, certifications, or other non-degree credentials needed for the job also require degrees or experience time as part of the credentialing requirement. Include all overlapping time required between non-degree credentials and other SVP components in the applicable category: minimum education, experience, or on the job training. Code the presence of any required credential and select **Concurrent** for duration.

Table 3-3: Concurrent SVP Time Examples

#	Concurrent SVP Time Examples	Code	Reason
1	A pharmacist is required to have a Doctor of Pharmacy degree, and must be licensed by the state they practice in. There is no additional preparation time for the license beyond the degree required.	Code **Professional** degree for Minimum Education. Code **Yes, required** and **Concurrent** for Non-Degree Credentials, License/Certification.	Concurrent minimum education and license. The time required for the license is already reflected in Minimum Education.
2	Estheticians are required to complete a 600 hour program and obtain a state license. Completion of the program and passage of a test is required to obtain a license.	Code Non-Degree Credentials **Yes, required**, Educational Certificate – **600 hours**, and License/Certification – **Concurrent**.	Concurrent educational certificate and license. The time required to obtain the license is already reflected in Educational Certificate.
3	A project manager needs a minimum of five years prior experience in project management and a Project Management Professional (PMP) certification. Certification requires at least 3 years prior experience, 35 hours of training, and an exam.	Code **5 years** for Experience. Code **Yes, required** and **Concurrent** for Non-Degree Credentials, License/Certification.	Concurrent experience and certification. The time required for certification is already reflected in Experience.
4	A BLS field economist spends 3 months completing on-the-job training and completes 3 weeks of National Office collection training during those 3 months.	Code **3 months** for On the Job Training	Concurrent on the job training and classroom training post-hire. All time is coded as on the job training, as there is no separation of OJT types.

Not Required vs. Unknown

An SVP component that cannot be determined is different from an SVP component that is not required.

- Code **No, not required** when an SVP component is not present or needed for the job.
- Code **Unknown** when an SVP component cannot be determined or is unavailable.

Coding **No, not required** for an SVP component when presence or duration is unavailable may understate the actual SVP.

When any SVP component used to calculate required vocational preparation time cannot be determined or is unavailable, the job is unusable. Likewise, when the presence of any Non-Degree Credentials subcomponent is unknown, the job is unusable. The one exception is the requirement to read and write, which may be coded **Unknown**.

Table 3-4: SVP Not Required vs. Unknown Examples

#	Not Required vs. Unknown Examples	Code As:
1	Respondent confirms prior experience is preferred but not required.	Experience – **Not Required**
2	Respondent does not know if the job requires prior experience.	Experience – **Unknown**
3	Respondent does not know if the job requires any non-degree credentials, but can confirm one of the critical tasks is operating a passenger vehicle requiring a standard drivers' license.	Non-Degree Credentials – **Unknown**. Do not code presence of driver's license when other subcomponents of Non-Degree Credentials are unknown.

Coding a Non-Levelable Job

Non-levelable jobs are occupations where the skills are not necessarily obtained by education as they may be natural skills. Some non-levelable occupations are elected positions. It may be difficult to collect formal training requirements for these jobs. See the Fundamentals of NCS and ORS manual, section 5_07 Non-Levelable Jobs found on the NCS-ORS Procedure Library for a complete list of non-levelable jobs.

If a job is non-levelable and it is not possible to collect an SVP component accurately, code the SVP component as **Unknown**.

Table 3-5: Non-Levelable Job Example

#	Non-Levelable Job Example-Lead Actor in a Theatre Company-Preparation Required:	Code As:
1	The respondent would not provide specific information, but states that they would not cast someone without some prior acting experience as the lead actor.	Experience – **Unknown** Reason: Experience is required, time is unknown.
2	Four year drama degree. Five years prior acting experience to be hired into company as an actor and 2 yrs. Experience as an actor with the company to move up to lead actor.	Bachelor's degree – **2 years**; Experience – **7 years**

3_02 Minimum Education

Minimum Education measures the minimum level of formal coursework resulting in a degree required as a condition of hire for a job, excluding general education.

Collecting Minimum Education

If an establishment requires a diploma or degree, regardless of academic discipline, collect:

- Type of degree required
- Vocationally relevant portion of time required for completion of degree

When coding minimum education, use the list of degrees and associated vocational time in the Minimum Education SVP Chart.

Table 3-6: Minimum Education SVP Chart*

Degree	Vocational Time Included	Reason
4 years of High School	None	All time is general education
2 years Associate's Degree	Usually 1-2 years	Up to 1 year may be general education. The amount of education directly related to vocational preparation will vary based on the specific course of study.
4 year Bachelor's	2 of 4 years	2 years are general education
5-Year Bachelor's/Master's	3 of 5 years (2 as Bachelor's, 1 as Master's)	2 years are general education
Master's	All post-grad. years (usually 1-2 years) plus 2 years of Bachelor's	All post-grad. time is vocational.
Professional	All post-grad. years (usually 2-4 years) plus 2 years of Bachelor's	All post-grad. time is vocational
Doctorate	6 years (4 years post-grad plus 2 years of Bachelor's)	All post-grad. time is vocational

*Modified from *The Revised Handbook for Analyzing Jobs,* U.S. Department of Labor, Employment and Training Administration, 1991, Chapter 8.

Select the collected minimum education option from the degree dropdown in CIERA. Only one option may be selected. Once a degree is selected, CIERA will display the default amount of the vocationally relevant time required. Code all vocationally relevant education time required, even if the time is different from the default time provided. Exclude the portion of time that counts as general education.

For example, a job requires a minimum of a Master's degree. Select the Master's degree option from the dropdown. CIERA defaults to **`4.00 years`** of vocationally relevant education time – all post-graduate time (two years) plus the vocationally relevant portion of Bachelor's (two years).

Coding When No Formal Degree Is Required

When no minimum degree is required, collect whether workers must read and write (in any language) to perform critical tasks. Do not assume the presence of reading and writing requirements. Always ask the respondent. For example, even when a job requires driving and a valid state driver's license, do not assume the job requires reading and writing because workers may have needed to take a written test to get their license.

When some college coursework not resulting in a formal degree is required, include any vocationally relevant time required under Other Non-Degree Credentials.

Coding Graduate Degrees

Graduate degrees are typically earned after completion of a Bachelor's degree and are generally distinguished by the levels of coursework and research involved. Classify graduate degrees into one of three categories:

- Master's
- Professional
- Doctorate

Ensure that jobs requiring a graduate degree include both the time required to earn the graduate degree program (generally 1-4 years) in addition to the vocationally relevant time needed to complete the Bachelor's degree (2 years).

Example: History professors require a Ph.D. in History. The minimum time required to complete a doctoral program is four years (three years of coursework and one year completing a dissertation). To enter the doctoral program, candidates must have completed undergraduate studies.

✓ Select **`Doctorate degree`** and enter **`6 years`** as the duration. This entry includes the four years required to complete the doctoral program plus two years for the undergraduate degree (Bachelor's).

Use the following information to distinguish between professional and doctorate degrees.

Professional degrees are graduate degrees required to work in a specific career/profession. Professional degrees do not require a Master's degree, and typically fall into three main fields (medical, law, and religion).

It is common for the title of the professional degree to include "Doctor," but they are awarded based on classwork and do not require a dissertation. When gathering education requirements remember that the phrase "doctor of" does not always indicate the presence of a Doctorate.

Examples of Professional degrees:

- Doctor of Dental Medicine (D.M.D.)
- Doctor of Medicine (M.D.)
- Doctor of Optometry (O.D.)
- Doctor of Jurisprudence or Juris Doctor (J.D.)
- Doctor of Psychology (Psy.D. or D. Psych)

Physicians typically must complete a residency in their specific branch of medicine following the completion of medical school and obtaining their doctorate. Residency is often a training requirement in order to obtain a license to practice medicine and therefore the time to complete a residency should be coded as **`License/Certification`**. See Classifying Non-Degree Credentials for more information.

Doctorate degrees are graduate degrees that are research-oriented and require a dissertation or similar independent research effort.

The Doctor of Philosophy (Ph.D.) and research doctorate are equivalent in title and focus almost exclusively on research or advanced studies.

Examples of Doctorate degrees:

- Doctor of Business Administration (D.B.A.)
- Doctor of Education (Ed.D.)
- Doctor of Philosophy (Ph.D.)
- Doctor of Social Work (D.S.W.)
- Doctor of Theology (Th.D.)

See Appendix 3 for additional examples of Professional and Doctorate degrees.

Coding Minimum Education Required at Hire

Sometimes an employer will hire workers for jobs that require formal degrees with the expectation the worker will obtain a higher degree as a condition of hire. When a formal degree is required as a condition of hire, code it under the minimum education required, even when it can be completed post-hire.

× Exclude formal degrees not required as a condition of hire but required later to maintain ongoing employment, licensure, or certification (i.e., continuing education).

Coding Vocational Training

Some jobs require specialized vocational training obtained through a trade or technical school. Some high schools offer specialized vocational training similar to training that can be acquired through a vocational program following high school.

When a job requires a high school diploma and completion of specialized vocational training not resulting in a post-secondary degree, regardless of whether the program is through a high school vocational program, trade or technical school, or community college, code the minimum education required as **`High School`**. Code any time associated with the vocational program regardless of whether it was completed during or after high school with Non-Degree Credentials as either:

- **`Educational Certificate`** – if a certificate of program completion is required.
- **`Other`** – if only coursework but no formal degree or educational certificate is required.

Table 3-7: Minimum Education Examples

#	Minimum Education Examples	Action	Reason
1	An accountant at a manufacturing facility is required to have a 4-year Bachelor's degree in Accounting.	Select **Bachelor's** from degree options, **Years** and enter **2**.	This counts as 2 yrs. of time. Exclude 2 years of general education.
2	A research biologist is required to have a PhD in the biological sciences. The respondent says that after a Bachelor's degree, a PhD typically requires 3 years of coursework and between 1 to 5 years to complete a dissertation. Average time to complete a dissertation is 3 years.	Select **Doctorate** from degree options, **Years**, and enter **6**.	2 years Bachelor's; 3 years Doctorate, plus 1 year for dissertation. Count only the minimum time required.
3	An economist is required to obtain a Master's degree within one year as a condition of hire.	Select **Masters** from degree options, **Years**, and enter **3.**	2 years Bachelor's, 1 year Master's. Obtaining a Master's within one year is a condition of hire.
4	A teacher requires a current state license as a condition of hire. To obtain a license in the state, a teacher must complete a Bachelor's degree and pass a test. To maintain the license, a teacher must obtain a Master's degree within five years of hire.	Select **Bachelor's** from degree options, **Years** and enter **2** and **License/Certification – Yes** and **Concurrent**.	This counts as 2 yrs. of time. Exclude 2 years of general education. The Master's degree is an ongoing education requirement to maintain the license, not a hiring requirement and should not be included.
5	A chef requires high school and a restaurant trades certificate. Workers can obtain this certificate in a high school vocational program or a non-degree program through a community college. In both cases, it takes 1 year to earn the certificate.	Select **High School** from degree options and select **Educational Certificate** from **Non-Degree Credentials** and enter **1 year**.	Count the minimum degree required as High School and capture any vocational training not resulting in a formal degree under Non-Degree Credentials.

3_03 Non-Degree Credentials

Non-degree credentials include training time required as a condition of hire which often results in a license/certification, educational certificate, or apprenticeship.

Licenses, certifications, and educational certificates are defined based on guidelines established by the Interagency Working Group on Expanded Measures of Enrollment and Attainment (GEMEnA). Use of these definitions allows for consistency within federal statistical data. Training time that does not result in a license/certification, apprenticeship, or educational certificate (as defined for ORS) is captured in a separate category within non-degree credentials (Other).

Include:
- ✓ Licenses/Certifications.
- ✓ Educational Certificates.
- ✓ Apprenticeships.
- ✓ Vocational training.
- ✓ Non-credit courses.
- ✓ Credit courses that do not result in a degree.

Exclude:
- × Non-degree credentials that may be desirable but are not a job requirement.
- × Non-degree credentials not associated with any critical job tasks or only a hiring criteria requirement.
- × Non-degree credentials used as a background check requirement only with no vocationally relevant training or skills testing required.
- × Certificates of attendance or participation for training that is not vocationally relevant.

Collecting Non-Degree Credentials

Capture the presence of any required non-degree credentials along with the minimum associated training or classroom time.

When a non-degree credential involves training that is provided after hire, first clarify that the non-degree credential is a requirement for the job that was selected.

Example – Cadet vs. Firefighter: The respondent indicates a cadet receives training and, after credentialing, becomes a firefighter.
- ✓ If the cadet is the selected job, then a credential should not be coded, because it is not a condition of hire for a cadet. However, if the firefighter is the selected job, then a credential is coded because it is required as a condition of hire for a firefighter.

Sometimes a company will hire workers for jobs that require non-degree credentials with the expectation the worker will obtain the credential as a condition of hire. When a non-degree credential or non-degree related coursework is a condition of hire, code it under non-degree credentials, even when it can be completed post-hire.
- × Exclude non-degree credentials not required as a condition of hire but required later to maintain ongoing employment, or time spent in continuing education to maintain non-degree credentials.

Example – Lawyer: Associate attorneys at a law firm must have successfully completed law school and received their J.D. Hiring is contingent upon successful completion of the bar examination and receiving a law license within 6 months of hire.

✓ Code the presence of a license, even though attorneys at this establishment may not have their license at the time of hire.

Classifying Non-Degree Credentials

Classify non-degree credentials into one of four categories based on the purpose, issuing body, and duration – not by their title. There are four categories:

- License/Certification
- Educational Certificate
- Apprenticeship
- Other

The purpose of many non-degree credentials is to certify that workers have satisfactorily completed a set of occupationally specific qualifications, which may include education, training, and experience.

Occupation specific credentials mean that the credential only applies to a specific occupation (or small group of occupations). Occupation specific credentials may be the same for a broad occupation group (digits 4 and 5 of the SOC code) but would rarely cross major SOC groups.

Only non-degree credentials related to critical tasks are included in any credential category. If a credential is not in support of critical tasks, do not code it. Credentials that meet the definition of occupation specific are coded as a **`License/Certification`**, **`Educational Certificate`**, or **`Apprenticeship`**. Credentials that are not occupation specific are coded **`Other`**.

Code the same non-degree credential in the same category, regardless of the occupation. For example, if a job requires a commercial driver's license (CDL) for critical tasks, classify a CDL as a **`License/Certification`**, whether the job is a heavy truck driver or a truck mechanic.

License / Certification

A **license** is a non-degree credential awarded by a government agency that conveys a legal authority to perform a specific occupation. Licenses are based on some combination of degree or certificate attainment, certifications, educational certificates, assessments (including state-administered exams), apprenticeship programs, or work experience. A license is time-limited (i.e., expires if not renewed) and must be renewed periodically.

A **certification** is a non-degree credential awarded by a non-governmental certification body (i.e., industry/professional association) based on an individual demonstrating through an examination process that he or she has acquired the designated knowledge, skills, and abilities to perform a specific occupation. The examination can be written, oral, or performance-based. A certification is a time-limited credential (i.e., expires if not renewed) that is renewed through a recertification process.

Examples – License/Certification:

- Securities Broker must possess both a Series 7 and a Series 63 license issued by the Financial Industry Regulatory Authority, Inc. (FINRA). FINRA is not a government agency but is authorized by Congress to issue Series licenses. The Series 7 (general securities representation) and Series 63 (securities agent) licenses are occupation specific and sanctioned by the government.
- Personal financial advisors at an establishment are required to have a Certified Financial Planner (CFP) certification. CFP is a professional certification conferred by the Certified Financial Planner Board of Standards, Inc., a non-profit professional association.

Note:

- Many states require casino workers to have special permits, often called "licenses" (e.g., gaming licenses, casino licenses, and key worker licenses). While states may call these permits licenses, only code them as **`License/Certification`** if they meet the ORS definition of a license. Exclude permits issued by states where the only requirement is payment of a fee and undergoing a background check. Background checks, while required in many situations, are not vocationally relevant and do not support a job's critical function and tasks.
- Most physicians must complete a residency prior to obtaining state licensure and/or board certification through specific medical associations. The time associated with a residency should be coded as **`License/Certification`**.
- A commercial drivers' license (CDL) is a common license, with different classes and endorsements legally required to allow the holder to operate specific types of vehicles. CDLs are considered occupation-specific licenses. Exclude standard passenger vehicle licenses from the **`License/Certification`** category even when there is a class endorsement requirement. See Other Non-Degree Credentials for more information on coding standard passenger vehicle licenses.

Educational Certificates

An **educational certificate** is a non-degree credential awarded by an educational institution (such as a community or on-line college, a 4-year college or university, high school, or a trade school) based on completion of all requirements for a program of study, including coursework and test(s) or other performance evaluations. Educational certificates are typically awarded for life (like a degree). Certificates of attendance or participation in a short-term training (e.g., one day) are not in-scope for educational certificates. Educational certificates can be awarded for a variety of clerical and service occupations in areas such as healthcare, business, legal, restaurant trades, and personal care, as well as some blue-collar occupations. When an employer requires a formal certificate of completion from a high school vocational program, code this as an **`Educational Certificate`** with the associated vocational preparation time.

Examples – Educational Certificate:

- An establishment requires its paralegals to have obtained paralegal certificates, most commonly from the nine-month paralegal course at the local community college.
- A repair shop requires an automotive service technician to obtain an educational certificate. This certificate can be obtained in a high school vocational program or a community college program.

Note: The credential earned upon completion of a protective service academy (e.g., police, fire, correctional academy) is classified as an **Educational Certificate**.

- If the establishment accepts multiple combinations of education, training, or experience for the job, code the combination that results in the lowest overall SVP level. When multiple combinations result in the same SVP level, code the combination that includes the least amount of formal education, even if it does not include completion of an academy.
- If licenses or certifications are present in addition to the educational certificate, code the time for completion of the academy as an **Educational Certificate** and **License/Certification** time **Concurrent**.
- If the time spent at a protective service academy overlaps experience requirements, then the time should be coded as **Experience** and the **Educational Certificate** time should be coded **Concurrent**.

Apprenticeships

Apprenticeships are multi-year formal training programs designed to develop individuals from no-skills to full proficiency in a skilled trade under the supervision of journey-level or master level craftsmen. They are a combination of on-the-job training and formal study such as classroom work and reading. Individuals must be accepted and registered as apprentices, which are often further separated into "years" based on the number of hours completed. Many states offer information about apprenticeship programs on their Department of Labor and Industry websites.

Code any time required as part of an apprenticeship with **Apprenticeship**. Report the amount of training time associated with the level of apprenticeship required for the selected job, not the amount of training that will be received over the entire apprenticeship. For example, a second-year apprentice would have 1 year of training completed. The upcoming year of training is not to develop skills to be a second-year apprentice, but to attain the next level of proficiency. Only journey-level craftsmen would have the full amount of time for attaining the journey certificate via apprenticeship and testing coded.

Often, completion of apprenticeships may result in another non-degree credential, such a license or certification. Code any required Licenses/Certifications – **Yes** and **Concurrent**.

Example – Apprenticeship: An establishment requires electricians to complete a five-year apprenticeship program and be licensed through the State of Maryland.

- ✓ Code **Apprenticeship - 5 years**, and **License/Certification - Yes** and **Concurrent**.

Other Non-Degree Credentials

Other non-degree credentials include any non-degree credential which may be relevant for a wide variety of jobs and occupations and may expire or be valid for life. This category includes time spent in vocationally relevant credit and non-credit courses, as well as training classes, that do not result in a degree, license/certification, educational certificate, or are part of a formal apprenticeship program.

Other non-degree credentials coding is only required if the credential:

- Is in support of the job's critical job function and critical tasks, and

- Changes the job's overall SVP level.

When the establishment requires some college coursework that doesn't result in degree as a condition of hire, code the presence and time associated with vocationally relevant coursework as **Other**. If the establishment doesn't specify that the college coursework must be in a vocationally relevant subject, consider this coursework as general education and do not code the presence or time associated with it. Likewise, code the presence and time associated with required vocationally relevant coursework in a high school or post-secondary vocational trade program that is not part of a formal apprenticeship and does not result in an educational certificate as **Other**.

Many 'other' non-degree credentials do not require any formal time, or the formal time required is concurrent with other required SVP components, such as minimum education or on the job training. When no formal time is required or the required time is concurrent with another SVP component, the SVP level remains the same so coding of the credential is not required.

Some credentials may require minimal additional time (a few hours) and will not affect the overall SVP level. While not required, it is acceptable to code these other non-degree credentials in support of critical tasks, even if they don't change the overall SVP level.

Some common types of credentials that are classified as other non-degree credentials but frequently do not change overall SVP are:

- CPR, Basic Life Support (BLS), and first aid certifications (only for occupations where these certifications support critical job function(s), such as emergency response and clinical healthcare working with patients). CPR, BLS, and/or first aid certifications are required as a part of many healthcare occupations' educational/training curriculums and should, therefore, often be coded **Concurrent**.
- Drivers' License for standard passenger vehicles where driving supports the critical tasks.
- Food service safety and sanitation certifications such as food handling permits.
- Forklift operator certifications (awarded and renewed by individual establishments and operated by a variety of occupations). While OSHA provides guidelines regarding forklift operations, each establishment certifies their workers based on the type of industrial truck used and the work environment.

Table 3-8: Credentials Summary and Examples

Credential	Duration	Awarded by	Nature	Examples
License / Certification	Time-limited	Governmental licensing agency or Non-governmental certification body	Occupation specific	Cosmetology licenses, teacher's certificates, information technology certifications; project management professional certifications
Educational Certificate	Lifetime	Educational Institution	Occupation specific	Digital arts certificate from online university, motorcycle mechanic's diploma from a community college, restaurant trades certificate from a high school vocational program

Credential	Duration	Awarded by	Nature	Examples
Apprentice-ship	Varies	Varies	Occupation specific	Automobile manufacturer offering in-house formal apprenticeship program, plumber and pipefitters local union apprenticeship program, software developer apprenticeship program through state.
Other	Varies	Varies	Vocationally relevant but not specific to an occupation or specific to an establishment	College or vocational school coursework (no degree/educational certificate), forklift certifications, OSHA 30 certifications, CPR certifications (only when in support of critical job function), food safety certifications, standard driver's licenses (only when in support of critical tasks)

Coding Duration for Non-Degree Credentials

Collect only the time needed to earn the initial credential, not any ongoing education or development time needed to maintain the credential.

× Exclude independent preparation time, time spent on optional exam prep classes, or time spent taking an exam when determining duration.

Consult government or certifying body websites or literature to confirm/verify/determine the length of time it takes to acquire a license or certification if the respondent does not know or seems unsure.

Concurrent Non-Degree Credential Time

Some occupations may require combinations of formal coursework and time-limited licenses or certifications. It is common for formal coursework to be a requirement for applying for a certification. And it is not uncommon for a state to require a professional certification as the requirement for a license.

When a job requires completion of both a set of formal coursework, and a license/certification, code the presence of each in the appropriate element. Include the time in the category that must be completed first, and code **`Concurrent`** for the other category.

Example – Concurrent License/Certification and Educational Certificate: Cosmetologists require a state license. Requirements for the license include completion of a cosmetology program from an accredited cosmetology school or community college culminating in an educational certificate (1.5 years to complete).

✓ Code **`License/Certification`** and enter **`Concurrent`** and **`Educational Certificate`** and enter **`1.5 years`**.

Example – Concurrent License/Certification and Degree: Teachers must be licensed by the state to teach. In addition to obtaining a passing score on a standardized test, a Bachelor's degree that included hands-on student teaching time is a pre-requisite to obtaining a teaching license.

✓ Code **License/Certification** and enter **Concurrent** and **Bachelor's degree-2 years**.

Concurrent vs. No Formal Time

There are situations where a non-degree credential(s) is required and the presence of it must be captured, but no training duration should be added. This occurs when:

- Required training time is already reflected in other SVP components such as minimum education, prior experience, or even other credentials. Capture the presence of the credential and code **Concurrent** for duration.
- No formal training time is required. There is an application and/or test only. Individuals may study for the test on their own. Capture the presence of the credential and code **No formal time** for duration.

Coding Duration for Coursework Not Resulting in a Degree

When collecting coursework not resulting in a degree, include only vocationally relevant time. For required training that does not result in a degree, and time is provided as course credits, use the following information to calculate duration:

- A semester unit is equivalent to one credit hour. Three credit hours equals one class and nine credit hours equals a full course load for one semester.
- A semester is one-half of an academic year and is equal to 15 weeks.

Apply this method carefully since it can overstate SVP time. Count all credits that are vocationally relevant. Subtract any required credit hours that are time spent toward general education. Distinguish between classes that can be taken concurrently and those that must be taken consecutively to avoid overstatement.

Example – Bookkeepers must have a minimum of four classes in general accounting principles.

- 4 classes x 3 credit hours/class = 12 credit hours
- 12 credit hours /9 credit hours = 1.33 of a semester
- 1.33 x 15 weeks (1 semester) = 20 weeks

Ensure the overall SVP level accurately reflects the actual amount of time needed to initially obtain a non-degree credential, particularly when time is stated in hours or course credits. Avoid understating/overstating duration associated with non-degree credentials.

There may be constraints on the training that change the actual amount of time needed to obtain a non-degree credential. These constraints may be required prerequisites that prevent courses from being taken simultaneously, or limits on the amount of credits or training that can be completed in a particular time period. The duration entered for credentials is standardized by the system using an 8/40/52 work schedule.

Example: A commercial pilot license requires 1500 hours of flight time. If 1500 hours is entered in CIERA, the system will calculate less than one year of time necessary to receive the license. This understates the length of time and related SVP, since FAA regulations restrict the amount of flight hours allowed in a year to 1200. These restrictions require a pilot's license to take more than one year of time to earn. In this situation, the training hours need to be divided by the maximum allowed hours per year to yield a realistic approximation of the calendar time required (i.e., 1500 hours/1200 hours allowed per year = 1.25 years coded under License).

Table 3-9: Non-Degree Credential Examples

#	Non-Degree Credential Examples	Action
1	Journey-level welders must complete 3-months of classroom training, a 4-year apprenticeship, and pass a test to receive a state-issued journeyman certificate before working.	For apprenticeship and journeyman certification: Code **Apprenticeship – Yes** and **51 months** duration **and License/Certification – Yes** and **Concurrent**. State-issued, occupation specific, formal program.
2	Elementary teachers are required to have a Bachelor's degree and must take a Praxis exam to obtain their teaching certification issued by the state. Time needed for license/certification is concurrent with Bachelor's degree. The district also requires all teachers to have CPR certification (4-hour Red Cross training)	For teaching certification: Code **License/Certification – Yes** and **Concurrent**. Do not include any time associated with the Praxis exam. State-issued, occupation specific, and time-limited. For CPR certification: Do not count. This certification is related to an unexpected emergency-response task for this occupation; not relevant to the critical job function of a teacher.
3	Certified medical assistants require a certification through AAMA. The certification requires completion of a medical assisting program with a certificate from an accredited school in medical assisting. Additionally, they are required to hold a state-issued x-ray license. Coursework takes 7 months to complete and includes training in x-ray equipment and prep for both state licensing exams.	For certificate from accredited school: Code **Educational Certificate – Yes** and **7 months**. Coursework results in certificate from accredited education provider, occupation specific, and doesn't expire. For medical assisting certification: Code **License**/**Certification** and **Concurrent**. Occupation specific and time-limited. Time toward medical assisting certification is concurrent with educational certificate. For the state issued x-ray license: Coding this credential is optional as it is an other non-degree credential and its inclusion would not change the overall SVP. If coding, select **Other – Yes** and **Concurrent**. The X-ray license is not occupation specific. Time toward x-ray license is concurrent with educational certificate.

#	Non-Degree Credential Examples	Action
4	Board certified dermatologists require a medical license issued from the state as well as board certification from the American Board of Dermatology. Can receive medical license after 1 year of residency and board certification after a minimum of 4 years of residency.	For medical license: Code **License/Certificate – Yes** and **Concurrent**. State-issued, occupation specific, and time-limited. Time is concurrent with time spent toward certification. For board certification: Code **License /Certification – Yes** and **4 years**. Certification body, occupation specific.
5	Truck drivers at a shipping company must have commercial driver's licenses that do not require classroom training.	For CDL: Code **License/Certificate – Yes** and **No formal time**. State-issued, occupation specific, and time-limited credential giving the legal authority to operate a commercial vehicle based on examination. No time is required; application or test only.
6	Pizza delivery drivers need standard state-issued driver's license	For the standard driver's license: Coding this credential is optional as it is an other non-degree credential and its inclusion would not change the overall SVP. If coding, select **Other – Yes** – **No Formal Time**. Not occupation specific, but is legally required and related to critical job function. No time is required; application or test only.
7	Team Members handling food at a convenience store must complete 4 hours OJT and a 2-hour online food safety training course and pass an exam to be certified by the state in safe food handling practices.	For the food safety certification: Code **Other – Yes** and **2 hours**. Not occupation-specific but related to critical job function. This time is included because it changes the overall SVP from 1 (up to and including 4 hours) to 2 (over 4 hours up to and including 1 month).
8	Kitchen staff at a family restaurant must shadow experienced staff for one week and have a food handler card (approximately two-hour online course).	For food handler card: Coding this credential is optional as it is an other non-degree credential and its inclusion would not change the overall SVP (SVP 2 is over 4 hours up to and including 1 month). If coding, select **Other – Yes** and **2 hours**.
9	Bartenders take classes and get a certificate from bartending school. Their employer and the state do not require the certificate.	For the bartending school certificate: Code **No, not required**. Certification is not required.
10	Pastry chefs at a resort restaurant must possess a certificate of pastry arts and a food handler's safety permit. The pastry arts' certificate takes six months to obtain, and the permit is exam only.	For the certificate of pastry arts: Code **Educational Certificate – Yes** – **6 months**. For the food handler's safety permit: Coding this credential is optional as it is an other non-degree credential and its inclusion would not change the overall SVP. If coding, select **Other – Yes** – **No Formal Time**. Not occupation specific, but related to critical job function. No time is required; application or test only.

#	Non-Degree Credential Examples	Action
11	Patrol officer is required to attend a state-approved police academy. In this state, the policy academy takes 10 weeks. This state also requires that police officers be licensed, have a driver's license, and be CPR certified.	For police academy: Code **Educational Certificate – Yes** – **10 weeks**. For license: Code **License/Certificate – Concurrent**. For driver's license and CPR: Coding these credentials is optional as they are other non-degree credentials, and their inclusion would not change the overall SVP. If coding, select **Other – No formal time**. CPR is included because patrol officers are emergency responders and the respondent has indicated CPR is in support of their critical job function.
12	Secretaries are required to have a typing certificate verifying they can type 45 words per minute.	For the typing certificate: Coding this credential is optional as it is an other non-degree credential and its inclusion would not change the overall SVP. If coding, select **Other – No formal time**. Not occupation specific but related to the critical job function.
13	Paraprofessionals in schools, at a minimum, must get a passing score on the ParaPro assessment exam administered by ETS. Exam covers general knowledge only.	For ParaPro exam: Code credentials as **No, Not Required**. Exam content is not vocationally specific, ETS does not provide a certificate at the end of testing process.
14	LPNs are required to have a certificate from an approved practical nursing program (one year) and one week OJT. The respondent does not mention a CPR requirement.	For CPR: Do not code other non-degree credentials. It is not necessary to search online to identify if a CPR requirement exists as it would not change the overall SVP (SVP 6 is more than 1 year up to and including 2 years so CPR time would have to be more than 51 weeks to impact overall SVP).
15	Dealers at a casino must complete a 6-week program that results in a lifetime certificate.	For the dealer program: Code **Educational Certificate – Yes** – **6 weeks**. The program is specific formal training that does not expire.
16	Dealers at a casino must obtain a certification that requires 3 weeks of training and renews annually.	For the dealer certification: **Code License/Certification – Yes** – **3 weeks**. The certification must be renewed.

3_04 Experience

Experience measures the minimum amount of prior relevant work activity.

Include:
- ✓ Skills are acquired or used in a similar job
- ✓ Progressively responsible levels of work
- ✓ Broad, yet related, vocational capabilities

- × Exclude non-vocational experience requirements, such as attendance history or a general requirement of previous employment.

Collecting Experience

Capture the presence of any required vocationally relevant experience along with the minimum duration. If the respondent provides a range, document the range and code the least amount of time required.

If a company requires either education, training, or experience, collect the option that results in the lowest SVP level and code under the appropriate component. Do not code both minimum education and minimum experience unless the company requires that combination.

If there is an overlap of experience and non-degree credential requirements, code time under experience. Code the presence of a non-degree credential and select **`Concurrent`** for the duration. See Collecting Concurrent SVP Time for examples of coding overlapping SVP time.

Table 3-10: Experience Examples

#	Experience Examples	Action	Reason
1	An office requires that secretaries have at least one year of prior clerical experience.	Collect one year	Skills acquired at a similar job prior to being hired.
2	A police captain must have one-year of experience as a sergeant and one year of experience as a patrol officer.	Collect two years	Skills acquired through progressively responsible levels of work.
3	A fast food worker must have a history of good work attendance.	Do not collect	Non-vocational experience.
4	A cashier must have one year of general work experience to demonstrate reliability.	Do not collect	Non-vocational experience.

3_05 On the Job Training

On the Job Training (OJT) measures the minimum amount of training time occurring after a worker has been hired.

Include:
- ✓ Time workers take to learn basic job tasks while being actively taught by a supervisor or a more experienced worker
- ✓ On the job training with verbal and written instruction, demonstration and observation, hands-on practice, or imitation
- ✓ Vocationally relevant classes or training needed to do the job, including in-plant or internal company training
- ✓ Time spent shadowing

Exclude:
- × Continuing education
- × Time spent learning tasks that are beyond the basic requirements of the job
- × Orientation on topics such as company policies, workplace rules, or company benefits
- × Time during the probationary period that does not overlap active training
- × Coaching for job development

Collecting On the Job Training

Capture the presence of any required OJT along with the minimum associated training time. If the respondent provides a range of training time, document the range and code the least amount of time required.

Consider the skill level needed for the job when determining the amount of on-the-job training (OJT) time coded. Low skilled jobs are unlikely to require OJT time that is more than a month. Higher skilled jobs with significant prior experience are unlikely to need additional significant training after hire. It is unusual for a job to require more than a year of OJT. If a respondent indicates a year or more is required, this may represent probationary periods or coaching for long-term development rather than hands-on training to acquire basic job skills.

Tips for Collecting On the Job Training

Use terms familiar to the respondent. Ask about training new workers receive using terms such as "on-the-job-training", "OJT", "coaching" and "active shadowing."

Do not use probationary periods as a proxy for OJT. Probationary periods are usually much longer than the amount of time that workers actively spend learning critical tasks needed for average performance. However, probationary periods may be used to help narrow the range for OJT.

Use SVP thresholds to estimate OJT. If the respondent cannot provide a specific amount of time, attempt to collect an estimate using thresholds based on the amount of time most likely to change the overall SVP level.

To use thresholds as a fallback method, ask the following questions. Start at any point and go higher or lower based on your evaluation of the overall job and the time already provided for other education, experience, and credentials components:

- "Is OJT more than half a day?"
- "Is OJT more than a month?"
- "Is OJT more than 'X' months?"

Use the 'X' in the last question above for any number of months up to seven (7).
When OJT exceeds seven (7) months, the job has a minimum SVP level of five (5). At this point, begin measuring SVP levels in years and ask the respondent a final follow-up question:

- "Is OJT more than a year?"

Once OJT is greater than a year, it takes at least an additional year to affect SVP further. By asking this final question (if necessary), you will have covered all SVP levels that change with lower thresholds.

When using the fallback thresholds, add a 0.9 to any time the respondent provides.

Example: The respondent says there is no minimum education, training, or prior experience required for the housekeeping position. The respondent indicates that OJT for the housekeeping position is less than half a day.
✓ Code **0.49** days.

Table 3-11: Examples of Fallback Coding for OJT

If OJT is less than….	Code Duration
Half a day	**0.49 days**
One month	**0.9 months**
Two months	**1.9 months**
Three months	**2.9 months**
Four months	**3.9 months**
Five months	**4.9 months**
Six months	**5.9 months**
Seven months	**6.9 months**
One year	**0.9 years**

The fallback procedure is not intended to eliminate all missing OJT times. The respondent may not have the information and may not be able or willing to contact a supervisor or other knowledgeable source to clarify specific data. If, after employing these strategies, you still are not able to collect a reliable estimate, code OJT **Unknown**.

Table 3-12: OJT Examples

#	OJT Examples	Action	Reason
1	A meat cutter working an eight-hour shift five days per week is required to take a one-week food safety course during the first month of employment.	Code as **1 week**	Vocationally relevant training
2	A newly hired custodian working an 8/40/52 schedule shadows a lead worker for one day to learn how to operate a buffing/waxing machine and use chemicals.	Code as **1 day**	This is a standard FT work schedule; Vocationally relevant training
3	Funeral attendants require between two hours to eight hours of on the job training.	Code as **2 hours**	Document the range and code the least amount of time required.
4	New teachers are assigned an experienced teacher as a mentor that provides guidance throughout the new teacher's first year.	Do not collect	Coaching for job development
5	New and experienced firefighters are required to do 3 hours of training per shift on an ongoing basis.	Do not collect	Continuing education

Chapter 4: Cognitive and Mental Requirements

Cognitive and mental requirements measure selected cognitive demands needed to perform critical tasks. Some key cognitive demands of occupations are the need to accept feedback through work review, adapt to changes in the pace of work, the frequency of verbal interactions, the people skills required, and the work setting where critical tasks are performed.

This chapter includes procedures for collecting the cognitive and mental requirements elements:

4_01 Collecting Cognitive and Mental Requirements

Determine the best response for each cognitive and mental requirements element by considering only those cognitive demands needed to perform the job's critical tasks. Cognitive demands may vary depending on critical tasks performed and fluctuating job expectations. For example, pace may vary dramatically during the day or over a period of days or months.

Table 4-1 displays the recommended question and response options. Some elements include optional text in italics which can be included if needed.

Table 4-1: Questions and Response Options for Cognitive Demands

Cognitive Requirements	Questions and Response Options
Work Review – Presence of Supervisor	Are supervisors or lead workers generally present in the same physical work area as workers? • Yes • No
Work Review – Frequency of Work Being Checked	What is the most often this job's work is routinely checked by a supervisor or lead worker? • Every few minutes • At least once per hour • At least once per day • At least once per week • Less than once per week, including never
Control of Workload	What **most** controls the workload of this job? (Select one) • Machinery, equipment, or software • Numerical performance targets (company determined) • People (such as customers, supervisor, etc.) • Self-paced by worker • Other (specify)
Work Pace	How would you describe the pace of work for this job? Would you say that in a typical day or week … • The pace is consistent, and generally fast • The pace is consistent, and generally slow • The pace varies
Pause Control	Can workers step away from their work area easily outside of scheduled breaks? • Yes • No
Internal Verbal Interactions	What is the **most often** that workers in this job **typically** initiate, or respond to new, verbal **work-related** interactions with people who work for [Insert employer name/company/organization/establishment]? • Every few minutes • At least once per hour • At least once per day • At least once per week • Less than once per week, including never

Cognitive Requirements	Questions and Response Options
External Verbal Interactions	What is the **most often** that workers in this job **typically** initiate, or respond to new, verbal **work-related** interactions with people who **do not** work for [Insert employer name/company/organization/ establishment]? • Every few minutes • At least once per hour • At least once per day • At least once per week • Less than once per week, including never
Personal Contacts-People Skills	The next question is about "people skills." We define people skills as the ability to listen, communicate, and relate to others. In a job where basic people skills are required, workers often work alone, or usually are only expected to engage in simple, brief work-related communication and to treat others with respect. Does this job require basic or more than basic people skills? • Basic • More than basic
Work Schedule Variability	Does the employer change the work schedule, **requiring** workers to report on different days or times, or work a different number of hours, from week-to-week? • Yes • No
Public Work Area	Does this job require working in an area where people who do **not** work for [Insert employer name/company/organization/establishment] can **physically** approach or communicate with the worker? • Yes • No
Crowds	Are workers in this job required to **work around crowds** in a way that restricts their movement? (We define a crowd as a temporary situation in which a lot of unfamiliar people are present considering the unseparated space available, movement is restricted, and a certain level of disorganization is present.) • Yes • No
Telework	Are workers in this job permitted to work from home or telework? • Yes • No

Use the following guidance to accurately capture the cognitive demands of jobs:

- Code all cognitive demands based on critical tasks except for Telework which should be coded based on whether the job is allowed to telework and whether the critical job function can be performed remotely.
- Code the highest frequency typically experienced or required when performing critical tasks for these cognitive elements: Work Review-Frequency of Work Being Checked and Personal Contacts-Internal and External Verbal Interactions.
- Refer to element-specific coding guidance for the following cognitive demands: Work Review: Presence of Supervisor, Pace: Control of Workload, Work Pace, and Pause

Control, Personal Contacts: People Skills, Adaptability: Work Schedule Variability, and Work Setting: Public Work Area and Working Around Crowds.

- Consider how or if the cognitive demands relate to other ORS elements, including leveling, when making coding selections. For more information about the relationships between cognitive elements and leveling, see the Fundamentals of NCS and ORS manual, section 5_14: ORS and Leveling found on the NCS-ORS Procedure Library.
- There is no fixed relationship between responses for Control of Workload and Work Pace. Control of Workload measures who/what most determines the amount of work to be completed in a set period of time, while Work Pace measures the rate itself.
- Code elements based on an assessment of both the respondent's selection as well as the other information the respondent has provided about the job.

Note: All cognitive elements must include documentation and examples to illustrate why coding choices were made if not evident from the task list. Simply documenting which cognitive option was chosen is insufficient.

Table 4-2: Cognitive Documentation Examples

#	Cognitive Documentation Examples	Elements Coded
1	Receptionist works in a busy office with a steady stream of incoming phone calls to answer and visitors to sign in and out. Quiet periods are infrequent.	Control of Workload – **People**, Work Pace – **Consistent, and generally fast**, Public Work Area – **Yes**
2	Chemist is assigned by the supervisor projects, experiments, and reports to complete within a broad period of time; however, she may choose when to work on each.	Control of Workload – **Self-paced**
3	Janitor works throughout a multi-story building alone during office hours. The supervisor is present in the building but usually stays in an office on the first floor.	Presence of Supervisor – **No**

4_02 Work Review: Presence of Supervisor and Frequency of Work Being Checked

Work Review addresses how often work is checked and whether workers have immediate access to a supervisor if necessary.

Work Review consists of two elements:

- Presence of Supervisor
- Frequency of Work Being Checked

Together these elements provide insight into a job's proximity to a supervisor and a measure of the amount of supervision received.

Presence of Supervisor

Presence of Supervisor answers the question: Are supervisors or lead workers generally present in the same physical work area as workers?

- Yes
- No

The intent of this element is to capture the physical proximity of direct (first-line) supervisors or lead workers to workers in the job. The reason physical proximity is important is because direct supervisors or lead workers in the same physical vicinity can choose to monitor workers to ensure they stay on task and are generally available to provide immediate assistance when needed.

Collecting Presence of Supervisor

Collect the presence (yes/no) of a direct supervisor or lead worker in the same physical work area with workers supervised. The presence of a direct supervisor/lead worker must be in person. Do not consider the presence of a job's indirect or higher level (second- or third-line) supervisors, as they are not typically expected to provide direct support.

Include when the supervisor or lead worker is nearby on the same floor, regardless of the existence of walls and doors separating the space.

Exclude supervisor offices that are on a different floor or in a different building, even if camera coverage is provided. While the supervisor or lead worker could monitor workers using a camera, they could not provide immediate in-person assistance. Likewise, if workers perform their work in different locations, the supervisor must be physically present for the majority of time to be considered as being in the same physical work area.

Table 4-3: Presence of Supervisor Examples

#	Presence of Supervisor Examples	Code	Reason
1	A dishwasher works in the back kitchen of a busy restaurant. Either the restaurant manager or assistant manager is available to monitor and assist when needed.	**Yes**	Supervisor/lead worker physically present and available to intervene.
2	A machinist, producing parts in a production shop, is supervised by the production supervisor. The supervisor's office is located in the production shop area.	**Yes**	Supervisor/lead worker physically present and available to intervene.
3	Drafters work in individual offices with the lead drafter in a nearby office and the engineering supervisor on a different floor.	**Yes**	Supervisor is not physically present in vicinity, but a lead worker is.
4	An accountant teleworks two days a week and works in the office three days a week. Her supervisor works in the same cubicle area when she is in the office.	**Yes**	Worker is in the office for the majority of the time and the supervisor is physically present.
5	A pharmaceutical sales rep's regional manager comes to town once per week to ride along on calls, but mostly the sales rep works alone.	**No**	Supervisor/lead worker is not physically present the majority of the time.
6	A school bus driver operates a school bus. Both children and a bus monitor are also present. The supervisor is located at the bus garage and is available via walkie-talkie.	**No**	While the supervisor is available to assist, she is not physically present with the worker.
7	A data processor enters and validates policy information for a large insurance firm. His supervisor works on a different floor and is available via email and telephone.	**No**	While the supervisor is available to assist, he is not physically present with the worker.

Frequency of Work Being Checked

Frequency of Work Being Checked answers the question: What is the most often this job's work is routinely checked by a supervisor or lead worker?

Use the following frequency categories:

- Every few minutes
- At least once per hour
- At least once per day
- At least once per week
- Less than once per week, including never

The intent of this element is to capture routine and more frequent inspections and assessments (e.g., hourly, daily, or weekly) by a supervisor or lead worker for the purpose of ensuring performance standards are being met rather than completion of infrequent (e.g., semi-annual or annual) performance reviews. This element measures how closely supervised the job is and provides the frequency work is actively monitored or reviewed.

Collecting Frequency of Work Being Checked

Collect the highest frequency of checks that a worker receives while performing critical tasks under normal circumstances. The checking of work can occur in person or remotely. Code the frequency the supervisor or lead worker checks the work, even if feedback is not always communicated to workers at the same frequency.

Include routine inspections, assessments, and monitoring by a supervisor or lead worker intended to ensure performance standards are being met such as regularly soliciting feedback from customers or coworkers through direct contacts. Frequency of work checked and presence of supervisor are two related, but separate cognitive elements. Do not assume the presence of a supervisor or lead worker in the work area means that the supervisor/lead worker is actively checking workers' performance. However, when the supervisor or lead worker is present in the same area as the workers supervised, in order to actively monitor and ensure the work is being performed correctly, it is reasonable to expect a higher frequency of work being checked. Include machine checking when a supervisor or lead worker uses results to assess workers' performance, regardless of whether workers are aware of these checks. Code the frequency with which the machine metrics are checked by the supervisor.

Exclude:

- × The highest frequency of checking the supervisor or lead worker would perform on a worker with known or suspected unsatisfactory performance.
- × Routine checking by fellow or lower-level workers.
- × Supervisor/lead worker checks occurring as the result of feedback initiated by customers, including ad hoc customer complaints (e.g., negative customer posts on social media)
- × Supervisor/lead worker checks occurring as the result of feedback initiated by coworkers.
- × Supervisor/lead worker passive or ad hoc observations due to being in the same area as workers.
- × Machine checking that is used as a worker support or aid while completing work tasks, such as spell check and basic edits, and does not provide metrics used by a supervisor or lead worker to assess workers' performance.
- × Automated recorders such as cameras that serve only as security measures.

Note: Meetings between workers and supervisors do not always involve checking of work. When meetings are meant to check, monitor, review and/or provide feedback on an employee's individual performance they should be included. When meetings are to exchange information to keep aware of current/upcoming issues or work priorities, they should not be included.

Table 4-4: Frequency of Work Being Checked Examples

Collect as:	Frequency of Work Being Checked Examples
Every few minutes	• A fast-food crew worker works beside a crew leader for the entire shift. The crew leader actively monitors the crew's customer interactions and work quality throughout the entire shift. • A construction worker works all day in close vicinity on a construction site with team members, including a team lead. The team lead supervises all work and provides individual instruction and correction when needed.

Collect as:	Frequency of Work Being Checked Examples
At least once per hour	• A machinist producing parts has finished work pulled once per hour for inspection by quality control staff. Results are recorded and reported to the supervisor. • A telemarketer makes outbound calls to generate and follow up on sales leads. Work is randomly monitored throughout each day to ensure adherence to law and policy. The telemarketer is told by the supervisor that calls may be monitored a maximum of twice per hour and will be notified when performance does not meet expectations.
At least once per day	• A data processor enters and validates policy information for a large insurance firm. Systems constantly monitor the number of errors and corrections made, speed of work and time away from the desk. Lead workers use this information to give feedback on the quality and quantity of work several times per day, but not hourly. • A canvasser receives instruction and a new list of contacts at the beginning of the day. Results are evaluated at the end of each day and workers are provided feedback from the supervisor. • A convenience store cashier counts the till before their mid-shift break and at the end of every shift and must balance within $1 or the shift supervisor records an infraction. • A construction worker hangs drywall in residential construction. The worker receives a review daily from the site manager and is told when performance does not meet expectations.
At least once per week	• A junior sales representative sells color imaging equipment and manages customer prospect profiles. The supervisor ensures objectives are met and provides performance feedback weekly. • A pharmaceutical sales rep's regional manager comes to town once per week to ride along on calls. Staff are told when performance does not meet expectations. • A waiter sells food and drink at a busy restaurant. The manager and assistant manager monitor wait staff sales amounts and customer service a few times a week. Staff are told when performance does not meet expectations.
Less than once per week, including never	• A factory plant director has full plant responsibilities. Work is only assessed on efficiency and achievement of company objectives during annual performance reviews. • A senior sales representative is responsible for generating new accounts and growing the revenue stream for the establishment. Performance is reviewed quarterly with the supervisor based on new customer rates and overall dollar volume achieved. • A building cleaning worker removes trash from tenant cubicles and cleans common areas such as hallways and restrooms in a commercial office building. The supervisor performs biweekly inspections to ensure spaces were cleaned properly. The supervisor does provide more frequent checks, but only when a tenant complains.

4_03 Pace: Control of Workload, Work Pace, and Pause Control

Pace refers to the cognitive speed needed to perform critical tasks.

This category consists of three elements related to pace:

- Control of Workload
- Work Pace
- Pause Control

These elements measure what/who determines the workload, the consistency and rate of the work, and whether workers have the ability to control when they can pause and take a brief break.

Control of Workload

Control of Workload answers the question: What most controls the workload of this job?

Select **one** of the following options:

- Machinery, equipment or software
- Numerical performance targets (company determined)
- People (such as customers, supervisor, etc.)
- Self-paced by worker
- Other (specify)

Workload is defined as the amount of work expected to be performed in a set amount of time. The intent of this element is to identify who or what most determines how much work a worker must perform on a daily or weekly basis. Control of workload measures the discretion workers have in handling their assignments and whether someone or something other than the workers themselves dictates the timing and order of task completion. This provides insight into the manner in which a worker must process new or incoming information, or to take action based on new information to handle the workload.

Collecting Control of Workload

Determine whether the amount of workload is set by technology, strict organizational rules, other people, or the worker. Narrowing the response down to a single factor can be challenging for a job since there is often more than one influencing factor. It is important to identify the factor that **most** controls the workload because this provides the best insight into the flexibility or predictability of the drivers requiring the workers to react to new information.

Apply the following criteria to choose **one** of the following options:

Table 4-5: Collecting Control of Workload

Workload controlled by:	Select when the following criteria apply:	Consider when:	Examples
Machinery, equipment, or software	• The worker must adapt to or keep up with the workload controlled by machinery, equipment used, or software, **and**, • The work is **pushed to the worker** by the machinery, equipment, or software such as an automated assembly line.	The amount of work completed is due to the speed of machinery, equipment, or software workers must use which **pushes them work**.	• Quality inspector sorts products on conveyor belt. • Machine tenders offload work from continuously operating machine. • Telemarketer makes outbound calls to generate sales. Calling software automatically dials the next number as soon as the prior call has ended.
Numerical performance targets (company determined)	• The workload is set by other sources within the organization, by clear output or performance targets, such as piece work and work quotas, **and** • The worker's performance is monitored closely at intervals, in some cases controlling pay levels, such as commissions and book hours, **and** • Performance targets are on an hourly, daily, or weekly basis. If the job has targets with longer completion windows than a week, select self-paced by worker.	Company policy dictates how much a job must accomplish **in a day or week** (and workers' pay may change because of it).	• Quality inspector checks a certain number of widgets per hour each shift. • Outside salesperson receives commissions based on number of weekly items sold. • Mechanic is scheduled and paid to perform repairs based on book hours, which also acts as a form of incentive pay. • Newspaper reporter has a 5pm daily column deadline.

Workload controlled by:	Select when the following criteria apply:	Consider when:	Examples
People (such as customers, supervisor, etc.)	The workload is set externally by fluctuating demands of supervisors, coworkers, public, or flow of customers. Rush periods (if they exist) may be predictable or unpredictable.	The amount of work changes frequently based on other people's needs	• Security guard screens visitors entering secure building. • Pharmacy techs receive electronic prescriptions requests directly from doctor's offices. • Car wash attendant puts customer's car through machine and dries car off when it comes out. • Executive assistant answers phones, schedules meetings, maintains calendar, makes travel arrangements, and answers correspondence as needed and requested by company president.
Self-paced by worker	The workload is mostly self-directed within general performance guidelines, allowing the worker significant discretion to vary timing of tasks within certain limits, rather than having control of workload set externally.	Workers can plan and spread their work out over longer periods of time (i.e., **greater than a week**)	• Senior sales rep generates new accounts with quarterly sales targets based on new customer rates and overall dollar volume achieved. • Construction foreperson supervises workers, sets schedule, determines work priorities and assigns projects based on overall parameters set by project manager.

Workload controlled by:	Select when the following criteria apply:	Consider when:	Examples
Other (specify)	The workload is set by another external factor not listed above. Do not select **Other** when multiple factors are present. Enter a description of the factor when this option is selected.	An external factor not listed determines the amount of work (e.g., nature, animals, emergencies, etc.).	• Fish processor workload varies based on amount of fish caught by incoming ships. • Firefighters respond to brush fires, structure fires, automobile accidents, and other hazardous situations.

Coding Self-Paced

First, determine whether workers have some control over the amount of work completed during the course of their day or week. Workers that are self-paced have the ability to prioritize work tasks or adjust the amount of time needed to complete them. Even when a job has deadlines and limits, as long as they are generally longer than a week, code **Self-paced**.

Managers, supervisors, and professionals are often self-paced due to the nature of their work. They often have the ability to determine and control how and when they complete their critical tasks within general performance guidelines even when they manage demands of their subordinates or report to others.

Self-paced control is not limited to supervisory, management and professional occupations. Code **Self-paced** for any job that has the latitude to vary the timing of their critical tasks rather than having the timing of their critical tasks dictated by other external factors.

Although rare, workers can be self-paced while their work is being checked by a supervisor more frequently than weekly. Document situations where workers are self-paced but still have their work checked by a supervisor daily or at least weekly.

Coding External Factors

When a job is not able to control the timing of when critical tasks are completed, determine which external factor most controls when the work must be performed: **Machinery, equipment, software**, **People**, **Numerical performance targets**, or **Other**.

Do not select **Other** when multiple factors control the workload. Determine which factor most controls the workload.

Different Factors May Apply for the Same Occupation

Control of workload may vary for the same occupation at different establishments based on the industry, size, and specific duties of jobs. Consider the following examples:

Table 4-6: Different Factors Related to Control of Workload

Factor	Assembler	Janitor	Machinery Maintenance Mechanic	Veterinarian
Machinery, equipment, or software	Conveyor belt pushes units out to assembler who inserts a plastic piece. Conveyor dictates workload by delivering the product to be assembled.	Uncommon coding (works with machinery to complete tasks, but machinery does not determine how much work needs to be performed in a set period).	Ticketing system automatically assigns the work.	Uncommon coding (works with equipment to complete tasks but equipment does not determine how much work needs to be performed in a set period).
Numerical performance targets	Works in a factory that requires completion of 50 units per hour per worker.	Cleans individual suites in office building. Required to follow strict schedule that dictates which office gets cleaned at which time, what to clean in each office each day, and the amount of time to be spent in each office.	Must maintain at least seven machines per day.	Works for a branch of a corporate-owned animal hospital. Corporate requires vets to see 20 cases (animals) per day. Portion of pay is determined by a formula including number of cases seen and outcomes.
People	Works as member of a team responsible for assembling engines. Each team member is responsible for assembling one piece of the engine. Supervisors determine the number of engines to produce each day based on customer demands.	Schedule for performing cleaning tasks set by supervisor daily. Workload is set externally by fluctuating demands of supervisor.	Supervisor is directing each repair and controlling timing and order repairs must be done.	Employed by practice consisting of one other vet (the owner). Provides medical care to small animals. Schedule is determined by number of pet owners scheduling appointments and procedures they request for their pets.

Factor	Assembler	Janitor	Machinery Maintenance Mechanic	Veterinarian
Self-paced	Works for small company that pays based entirely on a piece rate. Company requires a minimum of 500 units assembled per quarter. Assemblers may choose how much and how fast they wish to work as long as they assemble the quarterly minimum.	Assigned a part of production facility to maintain. Can determine how/what to clean in assigned building area as long as areas are maintained within general guidelines. Allowed significant discretion to vary timing of tasks within certain limits, rather than having control of workload set externally.	Determines when machine maintenance is performed over the course of monthly maintenance schedule.	Works at animal shelter providing vaccinations, preventative care, and spaying/neutering of cats and dogs. Care must be provided within a month of intake but otherwise vet determines what procedures to do when and the amount of time needed to do them.
Other	Uncommon coding	Uncommon coding	Must repair machinery as soon as it malfunctions without needing any supervisory directive because any equipment downtime means production downtime.	Regularly monitors the health of zoo's animals and provides treatment or preventative care as medically necessary. Workload most determined by medical needs of zoo animals. Zoo vet differs from other vets because people are not acting as a go-between to procure medical care for animals.

Work Pace

Work Pace answers the questions: How would you describe the pace of work for this job? Would you say that in a typical day or week:

- The pace is consistent, and generally fast? (i.e., little or no downtime)
- The pace is consistent, and generally slow? (i.e., periods of waiting and downtime)
- The pace varies? (i.e., changes between slow and fast pace)

The intent of this element is to identify the consistency of the work pace and the rate at which work is performed. Work pace specifically refers to the speed needed to perform critical tasks. Work pace can be the rate required of workers to complete repetitious tasks, or the rate at which workers are expected to respond to a variety of incoming tasks.

Consistent, and generally fast pace means the work is continuous and steady with little or no waiting or few periods of downtime. Workers maintaining this pace have few, if any, slack periods.

Consistent, and generally slow pace means the work is generally unhurried with periods of waiting and downtime. Workers maintaining this pace have few, if any, rush periods or large build ups of work.

Varies means the work pace changes throughout the work period with fluctuations on a daily, weekly, or seasonal basis. Capture only variation between slow and fast pace, do not code varies when the pace changes but would still fall within the same category.

Collecting Work Pace

First, determine whether the work pace is consistent or varies. Code **`Varies`** when:

- The work pace changes multiple times throughout the work period, with fluctuations or rush periods (or large build-ups of work) and slow periods on a daily or weekly basis.
- The work pace is consistent on a daily or weekly basis, but varies seasonally (e.g., an accountant during tax season or human resources personnel during calendar year re-enrollment periods).

When the work pace is consistent, determine the rate (speed) that applies on a daily or weekly basis. Consistent, and generally fast pace includes steady or moderate rates of work with no waiting or few periods of downtime.

If pace builds up but then remains generally consistent for most of the work period, code this as consistent along with the general rate. For example, if a worker spends most of the day working at a fast pace with no waiting but works at a slower pace at the beginning and end of the workday, code this as the pace is **`Consistent, and generally fast`**.

Work pace captures the steadiness of work and the presence or absence of downtime, from a mental processing perspective. Therefore, jobs that are typically performed from a seated position but have cognitive demands that require work to be completed at a steady pace with little or no downtime would be coded **`Consistent, and generally fast`**.

Do not confuse control of workload and work pace. Control of workload identifies the factor that most controls the amount of work expected to be performed in a set amount of time, while work pace relates to the **actual speed** (cognitive and/or physical) at which work is typically performed.

Table 4-7: Collecting Work Pace

Collect as:	Work Pace Examples
Consistent, and generally fast	• A building security guard at a large facility open to the general public screens both employees and visitors as they enter, and the stream of people is continual. • Floor nurses at a hospital make rounds to monitor patients as well as respond to patient requests. When not monitoring patients, they must chart patients' progress and confer with other medical staff. The pace is steady and continuous with little downtime. • Computer programmers create, test, and debug code for various software applications. They typically have a few on-going projects assigned and complete work at moderate pace. • A customer service representative answers incoming calls from an automated queue. Calls are constant. • Restaurant servers at a reservations-only fine dining restaurant are generally busy. If there are few reservations, they aren't scheduled to work.
Consistent, and generally slow	• A front-desk security guard for a condominium watches over property or people. Large portions of time are spent waiting and monitoring from a stationary location. • Occupational health nurse works on-site at a manufacturing facility and provides wellness classes and trainings about safe worker practices. Work is typically unhurried with periods of waiting and downtime. • A lab technician monitors experiments and tests, assists in running equipment and endures long pauses while testing proceeds. • Restaurant servers work the midnight shift at a small truck stop restaurant, which is open 24 hours.
Varies	• A parking lot security guard takes payment and monitors parking lot for suspicious activities. Lot is busy during high peak commute hours and slow the remaining time. • School nurse provides first aid to students as well as providing mandated health screenings. The pace varies from hour to hour depending on the needs of the students. • LAN technician experiences fast and slow periods depending on help desk calls fielded or when updates and upgrades are deployed. • Cashiers at a large grocery store experience fast and slow periods depending on the volume of customers. • Restaurant servers at a large chain restaurant are generally busy during lunch and dinner hours and slower in between. They perform light cleaning and resupplying duties in between rush periods.

Pause Control

Pause control answers the question: Can workers step away from their work area easily outside of scheduled breaks?

- Yes
- No

The intent of this element is to capture jobs that have the flexibility to choose or control how and when they can take short, unscheduled breaks. When collecting for this element, consult the job's documented task list to determine whether any of the critical tasks assigned would preclude the ability to step away from the work area or to briefly stop working to attend to personal issues (e.g., make a personal phone call, gather one's thoughts when feeling overwhelmed, or go to the breakroom to get a beverage).

Collecting Pause Control

Collect the presence (yes/no) of a worker's ability, for a personal reason, to easily step away from work for short periods of time.

Code **Yes** when any of the following conditions are met:

- Workers typically have the flexibility to choose when to take short breaks throughout the day, outside of scheduled breaks such as lunch or morning/afternoon break periods.
- There is an overall time limit for breaks, but such breaks are allowed.

Code **No** when any of the following conditions are met:

- If the worker would need to find someone to cover his or her responsibilities.
- When breaks are usually allowed, but not during certain busy periods in the performance of a critical job task (for example, when work is exceedingly heavy, when a line of customers is building, etc.).
- Workers are required to be present at a workstation for a defined period of time.

Pause control can be present even when there are specific critical tasks that could make taking an unscheduled break difficult. If workers have the control and autonomy to take breaks when needed, then code **Yes** to pause control. Many professional jobs have the ability to control when the worker can step away. For example, even a trial lawyer in the middle of a court appearance can request a quick recess. Document when a professional job does not have the flexibility to easily step away.

Both pause control and sit/stand at will measure job flexibilities. While there are similarities between these elements, there is not a one-to-one relationship. It is possible for a worker to be able to easily take a break, but be unable to sit/stand at will and vice versa. When control of workload is coded self-paced, the job likely has pause control. However, if a job does not have a self-paced control of workload, it may still have pause control.

Table 4-8: Pause Control Examples

Collect as:	Pause Control Examples
Yes	• Office workers can pause and take a quick walk down the hall when they need a mental break. Even when they have group meetings with coworkers or clients, they have the ability to step away quickly, if needed. • A high school teacher teaches classes. In the middle of a lesson, the teacher can ask students to work quietly while she steps out into the hall for a few minutes when feeling overwhelmed. • Landscapers mow lawns, prune trees and plants, and weed flower beds. Landscapers may briefly step away from their duties to take medication or attend to other medical needs without notifying a supervisor. • An outside sales representative solicits business from clients via telephone, email, and in-person. Reps have the ability to schedule client appointments at their convenience. Even in the middle of a call or appointment, the rep has the ability to politely request to step away briefly.
No	• A building security guard at a secure facility screens employees and visitors entering the facility; and walks standard patrols on a rotating basis with other guards. They are not able to leave their station without asking someone else to cover for them. • A kindergarten teacher must call to the principal's office to have another adult keep an eye on the students when he leaves the classroom. • Cashiers are able to take a break when there are no customers but cannot leave their station when there is a line. • A surgeon would not be able to step away easily while performing surgery.

4_04 Personal Contacts: Verbal Interactions and People Skills

Personal contacts measures how often workers must engage in verbal interactions with others and the kind of interpersonal skills required for critical tasks.

Personal Contacts consists of three elements:

- Internal Verbal Interactions
- External Verbal Interactions
- People Skills

Verbal Interactions

Verbal Interactions answers the question: What is the **most often** that workers in this job **typically** initiate or respond to new, verbal **work-related** interactions with (two types of contacts):

- **Internal**: People who work for the same employer, company, organization, or establishment as the job.
- **External**: People who do not work for the same employer, company, organization, or establishment as the job, including the general public, vendors, students, contractors, or delivery people.

Capture separate frequencies for internal and external verbal interactions. Use the following frequency categories:

- Every few minutes
- At least once per hour
- At least once per day
- At least once per week
- Less than once per week, including never

The intent of this element is to measure how often workers must begin verbally interacting with others while performing critical tasks. This element serves as an indicator of whether occupations require workers to have tolerance for numerous live interactions, the possibility of isolation, or something in between. Verbal interaction includes the ability to participate in exchanges that include both speaking and listening components: the ability to determine what to say in order to speak and the ability to listen in order to respond appropriately to others.

Collecting Verbal Interactions

Follow the guidance in the table below when coding work-related verbal interactions.

Table 4-9: Verbal Interactions Coding Guidance and Examples

Guidance	Example of Work-Related Verbal Interactions
Collect the most often verbal interactions are typically required for critical tasks.	Office clerks must verbally interact with each other a few times per hour in the morning and work independently in the afternoon. Code Internal Verbal Interactions **`At least once per hour`**.
Exclude one time or unusual situations when determining the highest typical frequency.	A county medical examiner verbally interacts with state medical examiners and independent morgue operators a few times per day. The sheriff's department normally handles press conferences; however, the county medical examiner has participated to answer technical questions for a very high profile case. Participating in press conferences is not part of the standard duties. Code External Verbal Interactions **`At least once per day.`**
Base coding decisions on how often the job is required to verbally interact overall. Do not attempt to parse out each verbal interaction with respondents.	Architects must interact with engineers and project managers outside of their company in addition to clients. The respondent doesn't know how often architects have live interactions with each group. She says they need to make a few phone calls per day, but most exchanges happen via email. Code External Verbal Interactions **`At least once per day.`**
If you are able to establish that the job would require new back-to-back verbal interactions every few minutes with different people, or different groups of people, the job should be coded `Every few minutes`.	Teachers have a 20 minute question-and-answer (Q&A) session at the end of each class period. Because teachers would already be coded External Verbal Interactions **`Every few minutes`** for the Q&A session, it does not matter how many classes teachers have each day.

While the presence of speaking would signal the presence of verbal interactions, do not code the frequency of verbal interactions based on the duration a job requires that a worker speaks. An occurrence of verbal interactions is measured based on the initiation of a work-related, verbal interaction, not the number of exchanges back and forth within one conversation. For example, a project manager spends several hours per day speaking during a single meeting and collaborating at length with colleagues, however, the frequency these verbal interactions start is not every few minutes, but at least once per day.

Table 4-10: New Interactions and Examples

Count as New Interaction When:	Examples
A worker starts interacting with a different person or group of people.	• A new customer transaction • A new call • A new workplace meeting • A therapist begins a group counseling session. • A new class convenes.
A live interaction stops and the same person or group resumes the interaction later.	• A refreshment break in the middle of a single, long meeting • A worker hangs up from a work-related conversation to look up information over lunch and returns to the discussion after lunch. • Following the conclusion of math instruction, a teacher breaks to gather materials for the next subject and then resumes with language arts instruction. • A worker walks over to discuss an issue with a colleague, walks away to check on something, and returns later to resume interacting with the same colleague.
Separate one-on-one exchanges occur, even when in the vicinity of a group.	• A shift supervisor moves throughout a work area interacting with different crew members. • A lecturer answers separate individual questions throughout a class period.

Include interactions that occur in-person, or via telephone, video conferencing, or any other real-time, live interaction.

Exclude:

× One-time or unusual situations when determining the maximum number of interactions.
× Passive listening with no interaction required, such as:
  - In person listening to announcements or instructions only,
  - Non-live interactions (e.g., recordings or videos on demand), or
  - Listening to conference calls during which no speaking is required.
× Non-verbal exchanges such as email, online chat/instant messaging, head nods, and gestures.
× Interactions that are not work-related such as optional social contacts that are not required for critical tasks.

Notes – Group Setting: Determining the beginning of a new interaction depends on the group setting:

- If it is a **collaborative group setting**, such as workplace meetings or group counseling, the exchanges between the worker and other group participants are not considered separate interactions.
- If it is a **non-collaborative (i.e., typically one-sided) group setting**, such as classrooms/presentations/lectures, guided tours, or press conferences, any questions and answers between the worker and the participants are considered separate one-on-one exchanges.

Collecting Internal Verbal Interactions

Collect the frequency that workers in the job must verbally interact with people internal to the workers' organization including co-workers and supervisors, regardless of whether the individual is familiar or unfamiliar to the worker. Routine visitors, vendors, couriers, delivery personnel (e.g., UPS, FedEx), students, or frequent clients of the business are considered external to the worker's organization. External contacts are excluded from the frequency of internal verbal interactions but included with the frequency of external verbal interactions.

Table 4-11: Frequency of Internal Verbal Interactions Examples

Frequency	Internal Verbal Interactions Examples
Every few minutes	A cook working in a kitchen receiving verbal food orders, or questions about the status of food order from wait staff.
At least once per hour	A shop foreman will talk with skilled workers to review work, or get progress updates several times per hour. During emergencies only, the foreman would talk with the workers every few minutes.
At least once per day	A factory plant director has full plant responsibilities. Generally, she has a few in-person meetings with coworkers a week, takes some calls and face-to-face meetings from staff or supervisors throughout the day, but handles a lot of interaction with other workers through email and her executive assistant.
At least once per week	Research statistician attends weekly meetings either in-person or by videoconference, but largely works independently on research projects.
Less than once per week, including never	A book or publication editor who works from home receives all work to be edited electronically and submits comments, edits, or feedback in writing or electronically.

Collecting External Verbal Interactions

External contacts include any individual outside of the workers' organization including customers and clients, regardless of whether the individual is familiar or unfamiliar to the worker. This includes routine visitors, vendors, couriers, delivery personnel (e.g., UPS, FedEx), students, or frequent clients of the business as they are not considered internal to the workers' organization and should be considered as members of the general public.

Table 4-12: Frequency of External Verbal Interactions Examples

Frequency	External Verbal Interactions Examples
Every few minutes	• A tollbooth worker tells drivers the tolls that are due, takes payment, and makes change for more than 500 drivers passing through the toll lanes during an eight-hour shift. • A barista waits on an average of 20 customers per hour at a busy coffee shop. • Teachers interact with students every few minutes during question-and-answer periods following a lesson.
At least once per hour	• Nail salon technicians generally assist one or two customers each hour. • A junior sales representative sells printing services and manages customer prospect profiles.

At least once per day	• An insurance office assistant answers customers' questions from occasional customer calls and walk-in clients. • A security guard at a loading dock of an office building receives and processes third party visitors and deliveries a couple times per day.
At least once per week	• A cafeteria attendant at a college is required to work with delivery personnel to confirm delivery contents a few times per week.
Less than once per week, including never	• A customer service representative receives all requests or complaints from customers over electronic chat or email.

People Skills

People skills are the ability to listen, communicate, and relate to others. It answers the question: Does this job require basic or more than basic people skills?

- Basic
- More than basic

In a job where basic people skills are required, workers often work alone, or usually are only expected to engage in simple, brief work-related communication and to treat others in a non-offensive manner.

People skills includes both verbal and written exchanges.

Collecting People Skills

Collect whether a job requires basic or more than basic people skills.

Basic people skills may include:
- ✓ Work consisting of mostly silent or solitary activity.
- ✓ Exchanges involving only simple greetings, exchanging of written or simple verbal information.
- ✓ Infrequent job-relevant conversations lasting 10 minutes or more.
- ✓ Regular meetings in which the worker is seldom expected to contribute.

A worker expected to engage in anything more than simple communication with others should be coded as more than basic people skills.

Critical tasks involving instructing, mentoring, or supervising others always require more than basic people skills. Likewise, regularly engaging in persuasion or negotiation for critical tasks is considered more than basic people skills.

Note: For Service Jobs exclude the ability to remain calm with difficult customers if critical tasks performed otherwise meet the definition of basic people skills. The ability to remain calm with a difficult customer is not being measured by this element and does not affect basic/more than basic responses. Additionally, required upselling does not automatically raise a job to **`More than basic`** people skills. A job that is expected to routinely ask simple questions to try to increase purchases (e.g., "Would you like to get a large for one dollar extra?" may still be **`Basic`**).

Table 4-13: People Skills Examples

Collect as:	People Skills Examples
Basic	• A cashier who has to greet and check out customers would need only basic people skills since the work only involves exchanging simple greetings and verbal information. If an issue arises with a customer, the cashier is expected to remain calm and polite and contact a supervisor if the issue escalates. • Line cooks listen to supervisor/chef's instructions to prepare menu items. • Telemarketers follow a script and are instructed to transfer the call to their supervisor if problems arise. • Servers at a casual restaurant take customer orders. Servers may upsell based on a script asking questions such as, "Would you like a side salad with your meal?" or "Would you like dessert? We have delicious chocolate cake." Routine customer questions and complaints are calmly handled by the server. Difficult customer questions and complaints are referred to the manager. • Delivery drivers work alone and deliver packages to consumers. They may have routine exchanges and pleasantries with customers to have them sign for packages. Critical tasks consist of mostly solitary activity and only involves simple greetings and exchange of verbal information.
More than basic	• A correctional officer who must control and give instructions and respond to unpredictable situations. • Customer service representatives must answer and appropriately respond to resolve a variety of complaints and issues. • Servers at a five star restaurant explain menu options, answer customer questions about preparation and ingredients, make menu recommendations, suggest menu modifications to meet customer dietary concerns when needed, take customer orders, and address customer complaints appropriately. Servers are expected to upsell menu items but are not given a specific script to follow. • A lead electrical line technician who is responsible for overseeing an apprentice would have more than basic people skills since he/she instructs and gives directions to others.

4_05 Adaptability: Work Schedule Variability

Work Schedule Variability refers to changes in a worker's job schedule from week to week.

Adaptability: Work Schedule Variability

Work Schedule Variability answers the question: Does the employer change the work schedule, **requiring** workers to report on different days or times, or work a different number of hours, from week to week?

- Yes
- No

The intent of this element is to measure whether work schedule variability is present for the job. A work schedule is the number of hours, time of day, and days worked by the employee, within the work week set by the employer.

Collecting Work Schedule Variability

Collect whether work schedule variability is required for the job by determining if there are any work schedule changes from week to week. This includes requiring workers in the job to report for work on a different day, different time, or for a different number of hours than the week prior. Work schedule variability includes rotating work schedules, mandatory overtime, early release from work, cancelled workdays, on-call status, or being called-in for work on a day not scheduled. Jobs with a set, unchanging, schedule one week to the next are not considered to have work schedule variability. Work schedule variability can apply to any job, regardless of work status. For example, both hourly and salaried jobs can have work schedule variability.

Include schedule changes whether or not they are planned or known in advance. Advance notice of a change in the work schedule does not change the fact that work schedule variability is present.

Jobs do not need weekly schedule changes to be considered to have work schedule variability. Include jobs where schedule changes are seasonal or affected by more than incidental external factors. Include:

- ✓ Work schedule changes related to critical tasks only.
- ✓ Jobs that require seasonal work changes in work schedule, which is an exception to the week-to-week requirement. For example, accountants are required to work additional hours during tax season.
- ✓ Jobs with regular rotating shifts that change less often than weekly, such as production jobs that rotate between day and night shifts every three weeks.
- ✓ Jobs routinely affected by changes due to weather, environmental hazards, or other emergencies. For example, work schedule changes due to weather for jobs that routinely work outdoors.
- ✓ Required early arrivals and dismissals.

Exclude the following incidental or optional work schedule changes:

- × Annual or one-time changes related to performing incidental tasks (e.g., field trips, conferences, etc.).

- × Changes in work schedule attributed to discrete instances of situational weather emergencies (e.g., delayed start due to a snowstorm), environmental hazard emergencies (e.g., gas leak in a building), or other emergencies.
- × Jobs with optional flexibility at the worker's discretion, as opposed to employer mandated changes in work schedule. This includes changes that are chosen, implemented, or under the control of the worker. These are optional and not a requirement of the job.
- × Sick days, early release or time-off due to vacation or holidays.

Work schedule variability only applies to a job's regular, on-going work schedule. Exclude time periods that are not part of the regular work schedule, such as jobs that do not work year-round. For example, teachers typically do not work during the summer months and beach lifeguards do not work during the winter.

Table 4-14: Work Schedule Variability Examples

Work Schedule Variability	Examples
Yes	• A worker at a car wash who is dismissed early whenever there is rain. • A police officer who works a rotating schedule from days one week, to nights another week. • An emergency room surgeon who is on call and required to go in to work at a hospital for emergencies. • A nurse has a consistent rotating schedule working twelve-hour days for four days, then taking three days off. Work continues with three days on and then four days off. The schedule then rotates back to working for four days. • A fast food worker who works different days or hours based on a weekly posted schedule. • A sales representative scheduled to work eight hours daily Monday-Friday, however, the employer routinely requires the worker to work evenings and weekends, depending on clients' needs.
No	• An office worker who is able to choose his or her start time each day. • Teachers work weekdays from 7:30am to 3:30pm nine months of the year but do not work three months of the year. • Teachers may grade papers in the evenings as a personal choice. • Office workers may work extra hours to complete a task, but the worker could also decide to leave. • A warehouse worker who works a consistent week to week schedule but is required to evacuate a building because of a chemical spill inside the warehouse. • A manufacturing plant has a two-week plant shut-down annually but otherwise works a fixed non-rotating schedule.

4_06 Work Setting: Public Work Area, Crowds, and Telework

The **work setting** is the area or environment where workers perform their critical job function(s) and critical tasks and consists of three elements:

- Public Work Area
- Working Around Crowds
- Telework

Public Work Area

Public Work Area answers the question: Does this job require working in an area where people who do not work for the employer, company, organization, or establishment can physically approach or communicate with the worker?

- Yes
- No

Collecting Public Work Area

Collect whether workers are required to perform critical tasks in a setting that is open to the **general public** and where people who do not work for the organization could physically approach, contact, or communicate with them. Members of the general public include any individual outside of the worker's organization, including customers and clients, regardless of whether the individual is familiar or unfamiliar to the worker. This includes routine visitors, vendors, students, contractors, or delivery persons, as they are not considered internal to the worker's organization and should be considered members of the general public.

Include:

✓ In-person contact only.
✓ Work settings where there is the potential for contact or interactions, even if it may not actually occur.
✓ Any time a worker must perform a critical task in a public work area even if it is not a majority of the time.
✓ Any time a worker must perform a critical task in-person with a member of the general public even if it is not a majority of the time.
✓ Contact may include non-verbal exchanges such head nods and gestures.

Exclude:

× Telephone, videoconferencing, texting, and email contact.

Table 4-15: Public Work Area Examples

Collect as:	Public Work Area Examples
Yes	• Residential neighborhood route for a garbage collector. • Dining room where an attendant is responsible for bussing tables. • Building with general public access where a worker is responsible for building maintenance. • Nurses working in-person with patients. • Fast food worker taking orders through drive through windows or at a walk-up counter. • Construction flaggers working along public roadways. • Firefighters work at a fire station that is not open to the general public but must respond to emergency calls in a variety of public settings. • Classroom in which teachers are physically present with students.
No	• Food processing or manufacturing plant that does not admit members of the general public. • Warehouse that does not admit members of the general public. • Laboratory that does not admit members of the general public. • Construction workers working at sites closed to the general public. • Cafeteria or restaurant setting where the general public is present but a dishwasher performs critical tasks in a part of the facility not accessible to the general public.

Working Around Crowds

Working Around Crowds answers the question: Are workers in this job required to work around crowds in a way that restricts their movement?

- Yes
- No

A **crowd** is a situation in which **all** of the following conditions must be met:

- Many unfamiliar people are present considering the space available, **and**
- Movement is restricted, **and**
- Any given arrangement of the crowd is temporary, **and**
- A certain level of disorganization is present, **and**
- Workers are not separated from unfamiliar people by counters, dividers or other objects.

The intent of this element is to capture the need for a job to work around large gatherings of unfamiliar people in locations like convention halls, public malls, large public beaches, airports or on airplanes, as well as mass entertainment venues like movie theatres, auditoriums, sporting events, night clubs, etc. Movement is mainly restricted by people, not objects. A certain level of disorganization is mainly present due to the temporary arrangement of people.

Collecting Working Around Crowds

When determining if the conditions are met, consider the following factors:

Critical Tasks

Collect the presence (**yes**/**no**) of any critical tasks performed that involve **working around** a crowd. If any critical task requires working around crowds as defined above, code **Yes** and document how all the above crowd conditions are met.

Workers must perform any critical task among a crowd to be considered. For example, elementary school teachers leading students down a hallway from their classroom to other areas is part of their critical tasks and, therefore, may meet the Working Around Crowds threshold, if all the other designated conditions are met.

Workers moving through crowded hallways simply to get to the location at which critical tasks are performed, does not meet the Working Around Crowds threshold. For example, high school teachers walking between classrooms down a crowded hallway are not Working Around Crowds even if the designated conditions are met because they are not performing a critical task while walking in the hallways.

Optional Exposure

If a worker can control the presence of a crowd, they are not considered to be working around crowds. Some workers may be able to control how many people are present in their workspace or where they work. If they can move away from the crowd or remove people from their workspace so a crowd is not present, the threshold for Working Around Crowds is not met. For example, medical personnel, such as nurses, may work with patients in their hospital rooms. These rooms are often small, and many visitors may be present which could restrict their movement. However, if medical personnel have the authority to ask others in the room to leave, these workers would not be working around crowds as they can control who is in the room and prevent the restriction of movement. Conversely, paramedics called to treat a medical emergency of an attendee at a sold-out concert would likely meet the parameters of Working Around Crowds during at least a portion of the call.

Unfamiliar People vs. the General Public

Workers must be present among many unfamiliar people to be considered. Determine whether people are unfamiliar to workers based on the circumstances of the specific job at the specific establishment.

Do not confuse the concept of unfamiliar people with the concept of the general public. Unfamiliar people are individuals that are not known to workers in the job, regardless of their relationship to the workers. Coworkers are anyone who works for the same organization as the workers in a job. Coworkers can be known to the workers in the job, or unfamiliar to them, depending on circumstances. The general public is defined as anyone other than coworkers. General public can also be known to the workers in the job, or unfamiliar to them, depending on circumstances.

Some members of the general public (i.e., students, customers, clients) may be familiar to workers and therefore would not meet the crowd condition of many unfamiliar people present. Similarly, coworkers at the same large establishment may not be familiar. For example, workers at a small boutique likely all would be familiar with each other while workers at a location of a big box store or large hospital system may not all be familiar with each other.

Same Occupation, Different Circumstances – Do not assume that the same occupation at different establishments will always have the same level of familiarity with those around them when evaluating Working Around Crowds. For example, teachers at a small high school may be familiar with the entire student body, while teachers at a large high school may not be familiar with many of the school's students.

Exclude from this element situations where many unfamiliar people may be present but are organized via lines or separated from the worker by objects like counters, booths, dividers, etc.

Table 4-16: Crowds Examples

#	Crowds Examples	Code	Reason
1	Politicians greeting throngs of supporters at a rally.	**Yes**	Meets all conditions.
2	Security guards at a rock concert must patrol through crowds of people in both open areas and seated areas.	**Yes**	Meets all conditions.
3	Bussers in a busy restaurant with small aisles must clear and reset tables as customers come and go.	**Yes**	Meets all conditions.
4	Transit police monitor commuters and investigate suspicious behavior in packed subway cars during rush hour.	**Yes**	Meets all conditions.
5	RNs at a hospital provide care to patients in their rooms.	**No**	Doesn't meet disorganization or restricted movement condition. RNs are not performing critical tasks while moving between different patients' rooms through crowded hallways. RN's also have the authority to ask others to leave the hospital room.
6	A transportation security screener must screen individuals as they come through security lines.	**No**	Doesn't meet disorganization condition.
7	Cashiers work with general public but usually remain behind counter and register.	**No**	Doesn't meet separation from unfamiliar people condition.
8	Bus drivers experience crowds of people, but remain separated from commuters in their driver's seat.	**No**	Doesn't meet restricted movement condition.

#	Crowds Examples	Code	Reason
9	Call center workers in large call center work in small cubicles and have weekly stand-up team meetings in crowded conference room with their coworkers.	**No**	Doesn't meet unfamiliar people condition.
10	Elementary school teachers in a small school lead students down a hallway full of familiar students in a line from the classroom to the auditorium for a presentation.	**No**	Doesn't meet unfamiliar people or disorganization conditions.

Telework

Telework answers the question: Are workers in this job permitted to work from home or telework?

- Yes
- No

The intent of this element is to identify jobs where workers have the flexibility to regularly perform their critical job function off premises of the employer in the privacy of the workers' homes for an agreed-upon portion of their work schedule. This flexibility impacts the need to have regular in-person contacts. It captures information about work location and arrangements, flexibility, work review, supervision, etc.

Collecting Telework

Collect the presence (**yes**/**no**) of workers who are able and permitted to telework while performing their critical job function.

Code telework as **Yes** when the critical job function can be performed at home, even if some critical tasks must be performed outside the worker's home. For example, a lawyer represents clients through email, telephone, in person, and in court. Even though appearances in court and in person meetings cannot take place while teleworking, email and telephone representation can.

Code telework as **No** if the critical job function must **always** be performed from some place other than the worker's home during the regular workday (even if some tasks could be performed from home outside of regular work hours), such as:

- An employer's worksite (e.g., public school teachers)
- Somewhere offsite (e.g., construction workers).

Exclude the presence of telework when it is only permitted after standard hours or allowed during emergencies. Similarly, code **No** when the establishment allows telework on an ad hoc basis, but does not routinely permit telework otherwise.

Table 4-17: Telework Examples

Collect as:	Telework Examples
Yes	• Call center employees work 100% remotely (all calls routed to their designated phone number). • LAN tech works from home two days per week assisting end-users remotely from work-issued laptop. • Traveling salespeople visit clients in-person. When not visiting customers, they are permitted to work off-site and connect with clients using email and telephone. • A cyber school teacher provides classes via videoconferencing and assists students remotely.
No	• Public school teachers instruct students in the classroom. • Pizza delivery drivers must pick up pizzas and deliver them to customers. • Fast food crewmembers must work at restaurant. • Nursing assistants at senior care facility must work at facility during assigned shift. • Visiting nurses visit clients in their homes, but manage paperwork and make appointments from home. • Residence hall directors at a university live on campus. Although they technically work from home, they cannot perform their critical job function off-premises of the establishment.

Chapter 5: Physical Demands

Physical Demands are the physical activities workers perform to carry out critical tasks.

This chapter includes procedures for collecting the physical demands elements:

5_01 Collecting Physical Demands

Accurately capture the physical requirements expected of jobs by using knowledge of ORS-specific element definitions and procedures to assess the information provided by respondents. Use the following guidance to avoid overstating or understating the physical demands of jobs.

1. Determine the physical demands needed to perform the job's critical function(s) and critical tasks. Exclude accommodations and any physical demands associated with incidental tasks. See Overall Coding Threshold for All ORS Elements.

2. Most physical demands require collection of duration. See Duration for details on coding duration. If workers do not experience a physical demand element while performing their critical tasks, code **Not Present**. Provide additional documentation when the presence or duration of a physical demand seems unusual for the occupation and cannot be concluded based only on the critical tasks listed.

3. Certain elements have unique collection guidelines:
   - Lifting/Carrying has unique collection guidelines. See 5_03 Collecting Lifting/Carrying.
   - Climbing Ramps/Stairs – Structure has unique collection guidelines. See 5_08 Collecting Climbing Ramps or Stairs.

4. Several ORS elements have specific thresholds associated with them and respondents may define them differently. Apply thresholds to Pushing/Pulling, Overhead Reaching, and Stooping.

5. Do not assume the presence of physical demands based on license or periodic recertification requirements. Code physical demands that the establishment specifies are required to perform critical tasks.

6. Exclude physical demands related to a worker's commute or clocking in or out.

7. Collect the presence of **One** or **Both** hand/arm (foot/leg) for the following physical demand data elements:
   - Pushing/Pulling – Hand/Arm and Foot/Leg
   - Manipulation – Gross, Fine, and Foot/Leg Controls
   - Reaching – At/Below Shoulder and Overhead

   If any of the critical tasks performed requires both hands/arms (feet/legs), code as **Both**.

   If all the critical tasks performed can be completed using one hand/arm (foot/leg), code as **One**.

   Do not assume both hands/arms (feet/legs) are required based on how job tasks may be typically performed. Workers that have use of both extremities may use both, even if using both is not required by the tasks. Consider whether a job can choose how tasks are completed. If workers choose to use both extremities when they could easily use one to do the same tasks, code **One**. For example, some workers may choose to grasp

paperwork and light office supplies with both hands, but since this task could reasonably be done using one hand, code **One**.

However, if using only one hand/arm (foot/leg) presents a safety risk, would adversely affect productivity, or requires an accommodation, code **Both**. Keep tasks and maximum weight lifted in mind when coding manipulation/reaching/etc. as one or both hands. If it seems like a task or weight amount would require the use two hands/arms to maintain safety, code **Both**. For example, if some workers choose to lift heavy packages with one hand even though safety guidelines instruct them to use both, code **Both**. Likewise, if workers could use one hand to grasp or manipulate items but doing so would cause an unreasonable loss of efficiency such as requiring two workers to do what can normally be handled by one, code **Both**.

Example: While it may be possible to use one hand for some portions of driving, making tight turns to park or otherwise maneuver a vehicle safely requires both hands.

8. To avoid overstatement, do not count time spent Crawling, or Climbing Ropes, Ladders, and Scaffolds in other physical demand elements.

   Example: Code time associated with ascending or descending ladders, ropes or scaffolds as Climbing Ropes, Ladders, or Scaffolds only and do not include this time in Pushing/Pulling, Gross Manipulation, and Reaching.

Concurrent Physical Demands

There are many situations where critical tasks performed include the presence of multiple physical demand elements **concurrently**. For these elements, the duration of time spent performing each element collectively can exceed the daily work hours.

Writing involves both:
- Gross Manipulation – **One** hand
- Fine Manipulation – **One** hand

Pushing a heavy cart while standing/walking includes:
- Pushing with hands/arms – **Both**
- Pushing with feet/legs – **Both**
- Gross manipulation – **Both**
- Standing/walking

Making a phone call may include:
- Gross Manipulation – **One** hand (holding the receiver with one hand)
- Fine Manipulation – **One** hand (dialing the phone with the other hand)
- Speaking
- Hearing – Telephone (listening to speech via telephone)

Some physical demand elements should not be coded concurrently for ORS.
- × Sitting and Standing/Walking cannot be performed at the same time.
- × Stooping, Crouching, Kneeling, Crawling, and Climbing cannot be performed at the same time, nor while workers are Sitting.

Review each physical demand element's section for more detailed information on element relationships.

Job Demands When Traveling Is Involved

Some jobs require travel as part of the critical job function(s). Work-related travel outside of normal commuting may be local or long distance. Collect the presence and duration for physical demands associated with travel when it is a critical task. Include any time sitting or standing/walking if travel is part of the typical workday.

Include:
- ✓ Driving and traveling between locations where critical tasks are performed
- ✓ Lifting/carrying or pushing/pulling work-related displays, sales materials, or equipment
- ✓ The transportation mode(s) (e.g., personal vehicle, public transit, etc.) most workers in the job normally use to perform work-related travel

Exclude:
- × Driving and travel and their associated demands that are part of a regular commute
- × Lifting or pushing/pulling personal luggage
- × Outdoors exposure from travel unless the worker is performing critical tasks between the transportation mode and other work sites such as making deliveries

For more information on how to collect the physical demands associated with driving in ORS, see 5_09 Driving.

Table 5-1: Job Demands When Traveling Examples

#	Job Demands When Traveling Examples	Include:	Exclude:
1	A college professor must drive between campuses during a regular workday.	Work-related intra-day driving	When a professor commutes to one campus on one day and teaches at a different campus on a different day (excluded because this driving is part of a normal commute)
2	Computer consultants travel by car to the airport and then plane to client sites, carrying a laptop in a shoulder bag and wheeled personal luggage.	• Sitting while flying • Walking between airport and car, client sites and car, and around airport • Driving elements – sitting, gross manipulation, far visual acuity, peripheral vision, foot/leg controls • Lifting/carrying work laptop	• Pushing/pulling personal luggage (excluded because the worker can choose what to bring) • Outdoor exposure between client sites, car and airport (does not meet Outdoors condition of performing critical tasks outdoors)

#	Job Demands When Traveling Examples	Include:	Exclude:
3	Pharmaceutical sales reps drive to doctors' offices carrying sample cases.	• Driving elements – sitting, gross manipulation, far visual acuity, peripheral vision, foot/leg controls • Walking to and from the car while working • Lifting/carrying sample cases	• Traveling to and returning from a work office or residence as part of a commute • Outdoor exposure between car and doctors' offices (does not meet Outdoors condition of performing critical tasks outdoors)

5_02 Sitting vs. Standing/Walking

There are three components to this element:

- Sitting
- Standing/Walking
- Sitting/Standing at Will

Collecting Sitting vs. Standing / Walking

Sitting is present when any of the following conditions exists:

- Workers remain in a seated position. This includes active sitting. For example, bicyclists sit but push/pull with their feet/legs.
- Workers are lying down. This includes active lying down. For example, a mechanic lying on a dolly working underneath a vehicle is sitting.
- Workers may choose between sitting and standing for a given task. For example, office workers can choose a standing desk.

Standing / walking is present whenever workers are not sitting or lying down. Include time spent stooping, crawling, kneeling, crouching, or climbing.

A worker is always either sitting or standing/walking. Any time spent during paid breaks should be coded based on the way workers experience demands when they are not on break.

Table 5-2: Sitting vs. Standing/Walking Examples

Collect as:	Sitting vs. Standing / Walking Examples
Sitting	• An over-the-road truck driver drives a tractor-trailer. • A police officer rides a bicycle to patrol traffic. (Active sitting). • A landscaper mows a residential lawn with a seated mower. • Design drafters can sit all day to do their work, but the company provides standing desks. Most drafters sit 50% of the day and stand 50% of the day (All time counts as sitting.) • A medical resident on call for a thirty-hour shift takes a strategic nap. • A yoga instructor lies face down on their core while performing a reverse back bend also known as the bow pose. (Active lying down).
Standing / Walking	• A pest control worker crawls in an attic to apply pesticides. • A landscaper stands on a zero-turn-mower to mow residential lawns. • Workers stand their entire shift except during paid breaks.

Coding Duration for Sitting vs. Standing / Walking

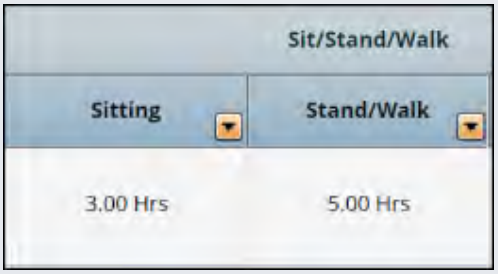
Collect the actual daily hours or percent of hours that workers spend sitting OR standing/walking. The total amount of time coded for sitting and standing/walking **must** add up to the full daily work schedule.

Sitting vs. standing/walking is based on an entire typical work day, not just on critical tasks. Coding for a typical work day generally reflects the normal exertion expected of a job. Ask the respondent to provide the duration workers spend sitting vs. standing/walking over a

typical work day. Probe and document if these durations seem unexpected or unusual given the task list and nature of the job. It is not necessary to adjust reasonable responses to reflect small amounts of incidental activity.

If a job spends a portion of the day sitting and the rest standing, but the respondent can only provide a range, use the mid-point of the range to calculate hours spent between Sitting and Standing/Walking.

Table 5-3: Sitting vs. Standing/Walking Duration Examples

Example 1 – Teller – Sitting vs. Standing/Walking Duration
Description: Most tellers sit for 3 hours per day while working at the drive-thru window. The rest of the day, tellers are either standing at the counter, stooping from a standing position to access the under-counter safe, or walking to escort customers to safety deposit boxes. The daily work schedule is 8 hours.
Standing/Walking Duration Coding: Total Hours = Standing/Walking Hours+ Sitting Hours 8 hours total = **3 hours** sitting + **5 hours** standing/walking 
Reason: The total amount of time coded for sitting and standing/walking **must** add up to the full daily work schedule. Subtract time spent sitting from the total full daily work schedule to determine total time spent standing/walking.

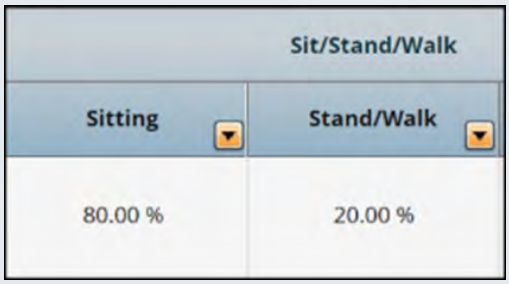
Example 2 – Dental Hygienist – Sitting vs. Standing/Walking Duration
Description: Dental hygienists sit while cleaning patients' teeth and entering information into the computer system. They must stand/walk between patients' rooms and to retrieve dental supplies. Respondent states dental hygienists spend 2-3 hours standing/walking and the rest of the time sitting. The daily work schedule is 8 hours.
Standing/Walking Duration Coding: Standing/Walking: **2.5 hours** per day (Midpoint of range of 2-3 hours) Sitting: **5.5 hours** per day (Subtract hours spent standing/walking from daily total hours). Total: Sitting for 5.5 hrs. + Standing for 2.5 hrs. = 8 hour work day. 

Reason: If a job spends a portion of the day sitting and the rest standing, but the respondent can only provide a range, use the mid-point of the range to calculate hours spent between Sitting and Standing/Walking.

Example 3 – Grocery Store Cashier – Sitting vs. Standing/Walking Duration

Description: Respondent states grocery store cashiers sit 80% and stand/walk for the other 20% of their shift. While it seems unusual for cashiers to sit the majority of the shift, respondent explains cashiers have stools at their registers and only stand/walk whenever they move customers' carts or walk around to scan large items.

Standing/Walking Duration Coding: Document the above in remarks.



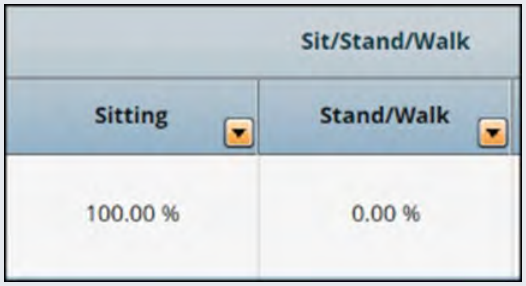
Sit/Stand/Walk	
Sitting	Stand/Walk
80.00 %	20.00 %

Reason: Coding for a typical work day generally reflects the normal exertion expected of a job. Ask the respondent to provide the duration workers spend sitting vs. standing/walking over a typical work day. Probe and document if these durations seem unexpected or unusual given the task list and nature of the job.

Example 4 – Office Workers – Sitting vs. Standing/Walking Duration

Description: Respondent states office workers sit for the entire eight hour work day except whenever they stand/walk to use shared office equipment or occasionally meet with colleagues in their cubicles or conference space.

Standing/Walking Duration Coding: Code **100%** sitting and **0%** standing/walking and document.



Sit/Stand/Walk	
Sitting	Stand/Walk
100.00 %	0.00 %

Reason: Coding for a typical work day generally reflects the normal exertion expected of a job. Ask the respondent to provide the duration workers spend sitting vs. standing/walking over a typical work day. It is not necessary to adjust reasonable responses to reflect small amounts of incidental activity.

Sitting/Standing at Will

The ability to alternate between **Sitting/Standing at Will** is present when the following conditions exist:

- Workers typically have the flexibility to choose between sitting and standing throughout the day **and**
- There is no assigned time during the day to sit or stand **and**
- No external factors determine whether an employee must sit or stand.

Collect the presence (**Yes**/**No**) of Sitting/Standing at Will.

This element captures jobs that have the ability to choose or control how and when they respond to external factors. When collecting for this element, consult the job's documented task list to determine whether any of the critical tasks assigned would prevent the ability to sit/stand at will.

The ability to sit/stand at will can be present even when there are specific critical tasks that require workers to be sitting or standing. If workers can determine/schedule when to perform critical tasks, then they have the ability to sit/stand at will. Driving is an example of a task that is commonly performed while seated. If workers can control when the driving must be performed or may take breaks from driving as needed, then it is still possible for Sitting/Standing at Will to be present. Exclude time sitting or standing during incidental tasks or scheduled breaks from determining the ability to sit/stand at will.

When workers may choose between sitting and standing/walking, time is coded as sitting. Therefore, when time is coded as 100% sitting, sitting/standing at will may be coded either **Yes** or **No**. When time is coded as 100% standing, all work must be done from a standing position so sitting/standing at will must be coded **No**.

While there are similarities between sitting/standing at will and the cognitive element, pause control, there is not a one-to-one relationship. Sit/stand at will captures the flexibility to choose how or when during the day the work is physically performed, while pause control measures the latitude to take a brief break from the work when needed. It is possible for a worker to be able to easily take a break, but be unable to sit/stand at will and vice versa.

Do not assume Sitting/Standing at Will coding based on a job's ability to telework. While the ability to telework indicates additional flexibilities may also exist, jobs may not be allowed to regularly telework every day. Therefore, critical tasks done outside teleworking may still require the job to stand without control of the timing. For example, real estate agents may conduct open houses which require standing/walking a few days per week, but generally telework on other days.

Table 5-4: Sitting/Standing At Will Examples

#	Sitting/Standing At Will Examples	Code As	Reason
1	Traveling sales reps sit while driving and stand while visiting with clients. They control when the appointments are made and can allow enough time to take driving breaks as needed.	At Will is **Yes**	Worker's choice
2	Software engineers use standing desks while working except for client meetings.	At Will is **Yes**	Worker's choice
3	A hospital billing supervisor usually works seated in the office, but may stand/walk out to main area to resolve client/customer service issues.	At Will is **Yes**	Worker's choice
4	An office clerk can choose when to file and typically stands while filing invoices.	At Will is **Yes**	Worker's choice
5	A pharmaceutical sales rep driving to clients can choose when to make trips and additional stops.	At Will is **Yes**	Worker's choice
6	An elementary teacher may sit or stand to instruct students and while performing duties related to monitoring them.	At Will is **Yes**	Worker's choice
7	A kindergarten teacher must escort students to the school entrance at designated dismissal times.	At Will is **No**	Worker does not choose
8	Delivery drivers generally have to meet a schedule or a predetermined route and must stand/walk at each stop to deliver items.	At Will is **No**	Worker does not choose
9	An over-the-road truck driver must meet a delivery schedule. He stops to refuel and for weigh stations.	At Will is **No**	Worker does not choose
10	An event parking lot attendant must stand when cars are entering the parking lot to accept payment and direct cars.	At Will is **No**	External factors
11	A security guard chooses to sit or stand, except when she walks to investigate suspicious situations.	At Will is **No**	External factors

5_03 Lifting/Carrying

Lifting is raising or lowering an object from one level to another. Lifting can include an upward pulling motion, which is not counted as Pulling with Hands/Arms.

Carrying is transporting an object, usually by holding it in the hands or arms, or wearing it on the body, usually around the waist or upper torso.

Lifting/Carrying is a measure of strength.

Collecting Lifting/Carrying

Collect the presence and duration of any lifting/carrying needed to carry out the job's critical tasks. Use the weight and duration chart below to collect the weight lifted/carried by duration level.

Table 5-5: Collecting Lifting/Carrying – Weight/Duration Table

Constant (2/3 or more)	Frequent (1/3 up to 2/3)	Occasional (2% up to 1/3)	Seldom (Up to 2%)
None	None	None	None
Negligible	Negligible	Negligible	Negligible
1 to 10 lbs.	1 to 10 lbs.	1 to 10 lbs.	1 to 10 lbs.
11 to 25 lbs.	11 to 25 lbs.	11 to 25 lbs.	11 to 25 lbs.
>25 lbs.	26 to 50 lbs.	26 to 50 lbs.	26 to 50 lbs.
	>50 lbs.	51 to 75 lbs.	51 to 75 lbs.
		76 to 100 lbs.	76 to 100 lbs.
		>100 lbs.	>100 lbs.

None – None means there is no weight lifted or carried.

Negligible – **Negligible** means the weight is so small that measurement is not meaningful. Negligible includes anything lifted or carried weighing less than one pound (e.g., a pen, a few sheets of paper). Include:

- ✓ Time spent raising, lowering, or transporting objects
- ✓ Weight worn while standing that causes physical exertion

Exclude:

- × Lifting/carrying workers may perform for incidental tasks
- × Time workers spend simply holding/grasping objects, while not actively raising/lowering/or otherwise transporting them
- × Weight of items worn on the body that would not cause physical exertion such as cell phones, headsets, stethoscopes, hard hats, safety glasses, ear protection, etc.
- × Any weight worn while sitting

Refining Lifting/Carrying

Consider the following questions when collecting lifting/carrying.

Table 5-6: Lift/Carry Questions to Consider

Questions	Explanation
What do workers in this job lift and carry?	Always document what workers are lifting or carrying. Ensure items lifted/carried relate to critical tasks performed.
Approximately how much do these items weigh?	Use the weight ranges listed in the weight and duration chart above as a guide (e.g., More than 10 pounds? More than 25 pounds?).
How often are they lifting and carrying these items?	Use the duration ranges listed in the weight and duration chart above as a guide (e.g., More than 1/3 of the time? Less than 2/3 of time?). Consider the duration of other critical tasks performed by the job and physical demand elements experienced. As the duration of lifting/carrying increases, the maximum weight lifted by workers should decrease (i.e., the longer something is lifted/carried, the greater the chance it weighs less).
What is the most weight ever lifted/carried by the job to perform the critical tasks?	It takes more strength to lift something for longer lengths of time, so the weight that workers lift for shorter durations (seldom or occasionally) is often heavier than that lifted for longer durations (frequently or constantly).
What do workers lift that weighs that amount (most weight ever)?	When the maximum weight lifted seems excessive given the critical tasks performed, ask: "What do workers lift that weighs that much?" If the item identified does not relate to critical tasks, ask for the next highest weight workers lift.

Can workers reduce the weight lifted/carried?	If the item identified does relate to critical tasks performed, determine whether workers are permitted to adjust the weight lifted/carried to fall into a lower weight category for weights above 10 pounds at any duration while performing critical tasks. When the worker has the option, code the lower weight range and document accordingly.
	
	Consider the following when determining whether to probe further:
	• Not all occupations will have the choice to reduce the weight.
	  o Example: Delivery drivers cannot open packages and only lift the individual contents.
	• It may not be possible to reduce the weight and still meet performance expectations.
	  o Example: Restaurant bussers could take dishes and cutlery back to the kitchen one at a time (negligible weight), however, this would adversely impact their performance of critical tasks.
	
	In general, more physically demanding jobs are less likely to be able to modify the weight lifted and carried. And less physically demanding jobs, like office workers, are less likely to require heavy lifting/carrying at any duration.

Avoid Overstating Lifting/Carrying

Do not assume weights listed in job descriptions are the amount of weight the job normally carries/lifts to perform their critical tasks. Weights listed in job descriptions may be an arbitrarily determined maximum number of pounds included for workers' compensation and other insurance purposes.

Ensure lifting/carrying durations collected make sense considering the time spent performing other critical tasks that don't require active lifting/carrying (e.g., driving, keyboarding, writing, holding, or grasping but not lifting/carrying objects). Also consider the workers may have downtime between critical tasks performed (e.g., between waiting on customers).

Use professional analysis and probing questions when a respondent states that **any** lifting/carrying, even of negligible weight, is required frequently or constantly. Keep in mind that the activity must occur for 2/3 or more of the day (e.g., 5 hours and 20 minutes in an 8 hour day) to be coded as constant. Consider the time spent performing other physical demands and whether the workday will allow for such a high duration.

Such a high rate of occurrence will typically occur:

- During repetitive production-type work.
- When workers wear physically exerting weight while standing/walking (tool belts, safety or other equipment).

Table 5-7: Lifting/Carrying Examples

#	Lifting/Carrying Examples	Code as Lifting/ Carrying?	Reason
1	Assembly line workers lift cans, jars, or bottles from cardboard boxes and place them on a conveyor.	Yes	Meets lifting definition
2	Construction workers wear tool belts to carry hammers, flat bars, screwdrivers, and other hand tools while working on a construction site.	Yes	Meets carrying definition
3	Workers in a computer component factory repetitively lift 3 oz. circuit boards to quickly inspect and place them in a box all day.	Yes	Meets lifting definition
4	Cashiers exchange payment/receipts with customers.	Yes	Meets lifting definition
5	Salespeople in a department store lift customer purchases to scan tags and place in bags and then lift bags and hand them to customers.	Yes	Meets lifting definition
6	HR representatives hold a telephone receiver while speaking to employees.	No	Duration holding/ grasping receiver while speaking captured only as Gross Manipulation; Include time lifting up and placing down receiver as Lifting/Carrying.
7	Call center operators wear a headset while taking client calls.	No	Worn weight which doesn't cause exertion

#	Lifting/Carrying Examples	Code as Lifting/ Carrying?	Reason
8	Mall security guards wear gun belts and bulletproof vests while patrolling through the mall on foot their entire shift.	Yes	Include duration of worn items while standing/ walking
9	Police officers wear gun belts and bulletproof vests while driving during patrol.	No	Exclude duration of worn items while sitting

Coding Lifting/Carrying

Using the weight and duration chart, determine the maximum weight lifted ever and for each duration level. Round weight up to a whole number to determine the weight range.

1. Code the maximum weight lifted/carried ever and use this weight to select the appropriate range for the **Up to 2%** duration in CIERA.
2. The most weight lifted/carried ever will be the same as the most weight lifted **Up to 2%**, except in the case of negligible weight. When the maximum weight ever lifted is **Negligible**, code **0** (zero) for the Maximum Weight Lifted Ever entry and **Negligible** in the **Up to 2%** duration.
3. Code the most weight lifted/carried in the Occasional **2% up to 1/3** duration in CIERA. This weight will be the same or less than the amount collected for Seldom **Up to 2%** duration.
4. Code the most weight lifted/carried in the Frequent **1/3 up to 2/3** duration in CIERA. This weight will be the same or less than the amount collected for Occasional **2% up to 1/3** duration.
5. Code the most weight lifted/carried in the Constant **2/3 or more** duration in CIERA. This will be the same or less than the amount collected at the Frequent **1/3 up to 2/3** duration.

Document:

- Items lifted/carried.
- Heaviest item lifted or carried.
- Any weight coded at the Constant **2/3 or more** duration, including negligible weight items.
- When lifting/carrying an object does not require hands.

Example: Workers wearing tool belts experience gross manipulation when lifting the belt and zero gross manipulation while carrying it. Collect the time spent wearing the tool belt while standing/walking toward the lifting/carrying element and document the presence/absence of gross manipulation.

Lifting/Carrying the Weight of a Person

Consider the following questions when a respondent indicates that a job must lift or carry the weight of another person.

Table 5-8: Questions to Consider When Lifting or Carrying the Weight of Another Person

Questions	Explanation	Example
Is lifting or carrying another person in support of critical tasks?	Sometimes workers, especially in emergency response jobs, may not be required to lift or carry people but may choose to do so to be helpful. If this lifting/carrying is not a requirement of the job, do not include it.	Police officer chooses to help paramedics move accident victims at the scene of a collision.
Do workers have the option to lift or carry a person with the help of a coworker?	If workers may team lift, count only the amount of weight that the respondent estimates one worker would have to lift or carry.	Two EMTs carry a stretcher to move a patient to an ambulance.
Are workers required to actually lift or carry a person or move the person in some way from one point to another?	When workers are responsible for moving someone, but they do not have to fully lift or carry the person, count only the amount of weight that the respondent estimates the worker would have to actually lift or carry.	Patient transporters partially lift and partially push a patient from a hospital bed to a gurney.
Are assistive devices available to help with lifting?	If workers may use assistive devices to assist with lifting, count only the amount of weight that the respondent estimates the worker would have to actually lift or carry.	CNA uses a Hoyer lift to move a patient between a bed and a wheelchair.

Table 5-9: Lifting/Carrying Coding Examples

Example 1 – Landscaper
Description: As part of a landscape crew, workers operate either weed trimmers or leaf blowers while performing detail trim and clean-up work. Workers lift/carry the 12-pound gas-powered lawn equipment the entire day. Three times per day, for 10 minutes, the workers must lift portable fuel tanks to refuel equipment. The portable fuel tanks hold several gallons of gas and weigh approximately 30 pounds. The workers do not need to lift or carry anything else. The work schedule is 8 hours/day.
Landscaper Coding:

Lifting/Carrying (Max Weight Lifted…)				
Ever	2/3 or more	1/3 up to 2/3	2% up to 1/3	up to 2%
30 Lbs	11-25 lbs	11-25 lbs	26-50 lbs	26-50 lbs

Example 2 – Sales Representatives

Description: Sales representatives, while visiting customers throughout a typical day, lift negligible weight items such as pens, paper, and cell phones. Sometimes representatives need to lift cabinet samples, weighing six pounds each, to show potential clients design and color choices. The cumulative time spent lifting/carrying the cabinet samples as well as the negligible weight items is less than 1/3 of the day. Sales reps spend the remaining 2/3 of their day driving, speaking to clients, and writing/entering orders.

The sales reps also lift boxes of display materials while setting up a booth at the annual sales show. The boxes weigh 30 pounds each and the total time spent lifting these is 10 minutes. Besides the annual sales show, the sales reps don't lift anything more than 10 pounds. This is the most they ever have to lift.*

Sales Representatives Coding:

Lifting/Carrying (Max Weight Lifted...)				
Ever	2/3 or more	1/3 up to 2/3	2% up to 1/3	up to 2%
6 Lbs	None	None	1 to 10 lbs	1 to 10 lbs

*Exclude the weight of boxes lifted for the annual sales show from lifting/carrying duration coding because the annual sales show is an incidental task.

Example 3 – Patient Transporter

Description: Transports patients to areas throughout the hospital by utilizing wheelchairs, gurney stretchers or movable beds. Stocks supplies in patient rooms and cleans transport equipment. Like all hospital staff, may also respond to emergency situations, such as emergency medical calls.*

Patient transporters partially lift or assist others in lifting patients to move them on or off beds, examination tables, surgical tables, or stretchers. Hospital regulations say no one may lift over 75 pounds unassisted. Transporters move 2-3 patients per hour. Transporters replace supplies periodically throughout their shift. Boxes of supplies are 5-7 pounds. Supplies are transported on a movable cart. Employees clean equipment at the end of their shift or as needed throughout the day. This involves cleaning solution, towels and bedding and takes a total of 30 minutes a day.

Example 3 – Patient Transporter

Patient Transporter Coding:

Lifting/Carrying (Max Weight Lifted…)				
Ever	2/3 or more	1/3 up to 2/3	2% up to 1/3	up to 2%
75 lbs	None	None	1 to 10 lbs	51 to 75 lbs

*Exclude emergency situations. Critical tasks do not include tasks that occur because of unusual events, including emergency situations. There are other employees at the hospital who would likely respond to emergencies as part of their critical tasks. This is an incidental task for Patient Transporters.

5_04 Pushing/Pulling

Pushing is exerting force upon an object so that the object moves away from the origin of the force.

Pulling is exerting force upon an object so that the object moves toward the origin of the force.

Pushing/Pulling is a measure of strength, not dexterity. Force or exertion must meet a threshold for Pushing/Pulling to be present.

Force is an interaction that changes the motion of an object. Factors affecting the amount of force needed are:

- Weight of object(s) being pushed/pulled
- Friction, specifically pushing/pulling on a smooth vs. coarse surface
- Incline

Example: The amount of force required for a worker to push/pull a dolly with a weight on it across a flat surface or a 30-degree incline is (approximately*):

Weight	Flat Surface	Incline
25 lbs.	2 force pounds	11 force pounds
50 lbs.	6 force pounds	14 force pounds
100 lbs.	11 force pounds	18 force pounds

*The values in this chart are to illustrate the difference between weight and force pounds and the potential effect of an incline in the amount of force pounds required to push or pull an object. These values are unique to this specific example and should not be considered thresholds.

Collecting Pushing/Pulling

Include the presence and duration of pushing/pulling when critical tasks performed meet **one** of the following thresholds:

- A worker uses **ten force pounds** or more, or
- A worker uses any amount of force 2/3 or more of the day (constant or **production rate**).

A **production rate** includes a constant repetition of a negligible amount of force, requiring considerable strength at any weight.

Documentation, including examples of items pushed/pulled, must be provided to support the coding.

Table 5-10: Meeting Pushing/Pulling Thresholds Examples

#	Meeting Pushing/Pulling Thresholds Examples	Meets the Threshold	Reason
1	Pulls down a garage door manually	Yes	Meets the force threshold
2	Pulls open large drawers containing cadavers in the county morgue	Yes	Meets the force threshold
3	Pushes a patient in a wheelchair	Yes	Meets the force threshold
4	Pushes/pulls a chipper/shredder machine	Yes	Meets the force threshold
5	Pushes/pulls a commercial floor waxing machine	Yes	Meets the force threshold
6	Pushes a snow blower to clear sidewalks	Yes	Meets the force threshold
7	Pushes 1 lb. widgets constantly along a manual assembly line	Yes	Meets the production rate threshold
8	Pulls open an office desk drawer, occasionally	No	Does not meet either threshold
9	Pushes an IV stand across a patient's room, occasionally	No	Does not meet either threshold
10	Pushes open a typical household door, occasionally	No	Does not meet either threshold

Coding Pushing/Pulling – Meeting Thresholds

Collect the presence and duration of pushing and pulling together.

- Code the duration of any pushing/pulling required for critical tasks equal to ten or more force-pounds. This meets the force threshold.
- Code the duration of any force-pounds required for critical tasks if the pushing/pulling occurs more than 2/3 of the day. This meets the production rate threshold.
- Code pushing/pulling as **`Not Present`** when pushing/pulling duration is less than 2/3 of the day and involves less than ten pounds of force. This does not meet either threshold for pushing/pulling.
- When pushing/pulling force amounts vary above and below the force threshold, code total duration experienced if the sum of all tasks involving pushing/pulling are present for more than 2/3 of the day. If total duration is less than 2/3 of the day, code only the duration for tasks requiring over ten pounds of force.
- Code **`Present Duration Unknown`** only when a critical task requires force clearly exceeding ten pounds and the duration is not known. Do not code **`Present Duration Unknown`** based solely on the knowledge a task requiring pushing/pulling may exist from a job description or other written source, unless verified by a respondent.
- If the force threshold cannot be determined, code **`Unknown`** unless it can be verified that duration exceeds 2/3 of the day (production rate threshold). Force is not a consideration above 2/3 of the day.

Types of Pushing/Pulling

Separate pushing and pulling based on the part of the body used. Collect as:

- **Hands/Arms**, when the upper body is used.
- **Feet/Legs**, when the lower body is used, and upper leg muscles are needed to create the force.

Exclude feet only pushing/pulling, when the pushing is done primarily by feet from a seated position and upper leg muscles do not create the force. Feet only pushing/pulling is counted as Manipulation-Feet/Leg Controls.

Most pushing and pulling that occurs while walking uses arms and legs to apply force. Types of Pushing/Pulling using arms and legs include:

- Wheelchairs
- Commercial carpet cleaners
- Carts
- Walk-behind lawn mowers

Knowing a worker is standing is not sufficient to determine whether legs are the source of the force exerted. Consider the object pushed/pulled while standing and determine with the respondent whether the legs are included in creating force necessary to push/pull it by noting the following:

- When the workers are standing only so they are in the proper position (e.g., height) to do the pushing and pulling with the arms, Push/Pull with Legs is not present.
- When the workers are standing and using leg muscles to contribute to generate the forces needed to meet the 10 lbs. of force threshold, Push/Pull with Legs is present.

For each type of pushing and pulling, code whether the critical task performed requires one or both hands/arms (feet/legs). See 5_01 Collecting Physical Demands for guidelines.

Notes:

- If a task requires a worker to operate foot/leg controls, code duration in Manipulation-Foot/Leg Controls only. Do not include time spent operating foot/leg controls as Pushing/Pulling-Feet/Legs.
- Bicycling and swimming are activities which require considerable exertion and meet the force threshold for pushing/pulling. Include any time spent performing these activities in pushing/pulling duration as both feet/legs (and both hands/arms for swimming).
- Exclude pushing/pulling actions involved while workers ascend or descend ropes, ladders, or scaffolding, since the time spent pushing/pulling when performing this physical demand is included in the Climbing Ropes, Ladders, or Scaffolding element.

Table 5-11: Pushing/Pulling Types and One/Both Examples

#	Pushing/Pulling Types and One/Both Examples	Collect Type and One/Both	Collect Duration
1	Technicians sit and push, with one hand, a heavy equipment cart on a carpeted surface. The total time pushing is 30 min. per day.	One hand/arm only. No legs because the workers sit.	2% up to 1/3
2	Librarians walk behind and push heavy two-shelf cart full of books for 3 hours per day.	Hands/arms and feet/legs; both sides of the body for each.	1/3 up to 2/3
3	Swim instructors swim 4 hours out of an 8-hour day.	Hands/arms and feet/legs; both sides of the body for each.	1/3 up to 2/3

#	Pushing/Pulling Types and One/Both Examples	Collect Type and One/Both	Collect Duration
4	Textile workers stand at a commercial loom pushing/pulling with two hands to weave fabric for 7 hours of an 8-hour day.	Both hands/arms. A rare example of pushing/pulling from a non-seated position with hands/arms only.	**2/3 or more**
5	Police officers patrol on a bicycle for 1 hour of an 8-hour day.	Both feet/legs. A rare example of push/pull feet/legs; no hands/arms.	**2% up to 1/3**
6	Excavating machine operators use both arms and legs to operate controls and pedals (clutch) for 6 hours of an 8-hour shift.	Both hands/arms only. Operating foot pedals included as Manipulation-Foot/Leg Controls.	**2/3 or more** under Push/Pull – Hand/ Arms & under Manipulation
7	Bus drivers operate gas/brake pedals for automatic transmission buses, driving for 1 hour and 45 minutes of 2 hour shift.	Manipulation-Foot/Leg Controls. Driving meeting the production rate threshold no longer included with Pushing/Pulling.	**2/3 or more** under Manipulation
8	Sewing machine operators push foot treadles when using an industrial sewing machine 80% of day.	Manipulation-Foot/Leg Controls. Operating foot pedals included as Manipulation-Foot/Leg Controls.	**2/3 or more** under Manipulation

5_05 Reaching

Reaching is extending the hand(s) and arm(s) in any direction, requiring the straightening and extending of the arm(s) and elbow(s) and the engagement of the shoulder(s).

There are two types of Reaching:

- Overhead Reaching
- At/Below the Shoulder Reaching

Overhead Reaching is extending the arm(s) with the hand higher than the head and one of the following two conditions exists:

- Condition 1: The worker bends the elbow, and the angle at the shoulder is about 90 degrees or more.
- Condition 2: The worker keeps the elbow extended, and the angle at the shoulder is about 120 degrees or more.

At/Below the Shoulder Reaching is any reaching which does not meet the threshold for Overhead.

Collecting Reaching

Collect the presence and duration of both types of reaching. For each type, code whether the task requires one or both hands/arms. See 5_01 Collecting Physical Demands for guidelines.

Collect reaching when it meets all three of the following criteria:

- Meets the definition of reaching above
- Is in support of critical tasks
- Is required, not an employee choice

Collect the duration for the entire range of motion for reaching, not just the time at full extension. While workers can bend their arms at any time when reaching, do not collect an action as reaching if it does not actually require some extension of the arm and elbow and engagement of the shoulders. For example, operating a steering wheel of a standard vehicle does not meet the requirement of reaching, since the seat can be adjusted to avoid extension of the arm and engagement of the shoulders.

Include only the reaching necessary to perform the critical tasks of the job.

- ✓ If workers can stand as needed to avoid overhead reaching, collect task as at/below the shoulder reaching. Standing is the only means of avoiding overhead reaching that should be considered, (i.e., do not substitute another physical demand such as climbing a stepladder to avoid reaching).
- ✓ If workers have the ability to adjust themselves or easily reposition items to avoid at/below the shoulder reaching, do not include as reaching.

> Example: Office workers position their telephones, keyboards, and paperwork anywhere on their desks and avoid reaching.

- If workers do not have the ability to easily reposition themselves due to the nature of critical tasks or physical setting of work environment, include the type and duration of reaching performed.

  Example: Fast food cashiers must hand customers food items across the counter and through drive through windows. Even if they reposition themselves closer to counter or window, they can't avoid reaching.

Document examples of actions that require reaching to support coding selections.

Exclude reaching involved with the following:

- Crawling
- Climbing ladders, ropes, scaffolding: during ascending/descending of ladders, ropes, and scaffolds only

Table 5-11: Reaching Examples

#	Reaching Examples	Collect As:	Reason
1	Picking apples from the tops of mature trees	Overhead	Meets the threshold
2	Spotting children on uneven bars	Overhead	Meets the threshold
3	Hanging an IV bag on a stand	Overhead	Meets the threshold
4	Opening and closing stage curtains with a rope and pulley	Overhead	Meets the threshold
5	Pruning trees and shrubs	Both types of Reaching	Meets the threshold for both types.
6	Attaching drywall to studs	Both types of Reaching	Meets the threshold for both types.
7	Filing folders in overhead cabinets. Worker can stand to avoid reaching overhead	At/Below Shoulder	Meets the threshold for At/Below Shoulder, do not count as Overhead
8	Checking a car's oil	At/Below Shoulder	Meets the threshold
9	Reaching in bins for sandwich ingredients	At/Below Shoulder	Meets the threshold
10	Loading a commercial dishwasher	At/Below Shoulder	Meets the threshold
11	Reaching for the control to open a bus door	At/Below Shoulder	Meets the threshold
12	Reaching across a desk to keyboard, grasp office supplies, or for the handset to answer a telephone in cubicle	Not Present	Workers' able to reposition themselves/items closer to avoid reaching.

5_06 Manipulation

There are three types of Manipulation:

- Gross Manipulation
- Fine Manipulation
- Foot/Leg Controls

Gross Manipulation is seizing, holding, grasping, turning, or otherwise working with the hand(s).

Fine Manipulation is touching, picking, pinching, keyboarding, or otherwise working primarily with fingers rather than with the whole hand or arm, as in gross manipulation.

Foot/Leg Controls is the use of one or both feet or legs to move controls on machinery or equipment. Controls include, but are not limited to, pedals, buttons, levers, and cranks.

Collecting Manipulation

Collect the presence and duration of manipulation. For each type, code whether the task requires one or both hands or feet. See 5_01 Collecting Physical Demands for guidelines.

Gross Manipulation

For gross manipulation, fingers are involved only to the extent that they are an extension of the hand to hold or operate an object or tool, such as a hammer.

Fingers are involved only to the extent that they are an extension of the hand to hold or operate an object or tool.

Include gross manipulation involved with the following:

- ✓ Lifting/carrying involving the hands.
- ✓ Pushing/pulling involving use of hands.
- ✓ Reaching for something using hands.
- ✓ Driving involving hands (steering wheel, gear shifts, etc.)
- ✓ Writing
- ✓ Grasping a computer mouse

Exclude gross manipulation involved with the following:

- × Gross manipulation involved while climbing ladders, ropes, and scaffolds (during ascending/descending of ladders, ropes, and scaffolds only).
- × Lifting/carrying that involves a part of the body other than hands.

Table 5-12: Gross Manipulation Examples

Gross Manipulation Examples
Handling a conventional phone receiver
Holding lumber and handling tools
Lifting and moving packages
Driving a delivery van using a steering wheel and shifting gears

Gross Manipulation Examples
Using a pipe wrench

Fine Manipulation

Include duration for fine manipulation involved with:

- ✓ Writing
- ✓ Pressing buttons on office equipment such as fax machines, printers, copiers, telephones
- ✓ Entering data on electronic devices and using touchscreens including: keyboarding, using the touchpad on a laptop, clicking/using scroll wheel on a computer mouse, tablet computers, touch screen mobile phones, touch screen point of sale devices, cash registers, including hybrid cash registers, and using portable scanners

Notes:

- **Keyboarding** includes activities such as entering text or data into a computer or other machine by means of a keyboard, typographic machine, or 10-Key numeric keypad using a repetitive motion with the fingers, rather than the whole hand. Include the panel of keys used as the primary input device (alphanumeric and 10-key numeric keypads) on desktop computers, adding machines, calculators, laptops, stenographer's machines, and typewriters. In addition to including the duration along with other fine manipulation, use of these types of machines should be coded **Yes** under keyboarding.
- Do not include all time spent in front of a computer as fine manipulation. Only include active typing or use of a mouse.
- Active typing includes having hands positioned over the keyboard for short intervals while waiting for a response to input. It excludes longer periods of waiting where hands can be at rest.
- Because only active typing/mouse usage is included, fine manipulation for 2/3 or more of the time is unusual and requires documentation explaining the situation.
- Consider workers may have down time between critical tasks that involve fine manipulation.
- If a worker must use a computer monitor or a screen on another electronic device, then code Near Visual Acuity - **Yes** as a default.
- Do not assume that using a traditional keyboard requires both hands simply because that is how most workers in the job typically perform keyboarding. Only code fine manipulation as both if critical tasks require speed (such as a minimum words per minute requirement) and using one hand would be considered an unreasonable loss of efficiency.

Table 5-13: Fine Manipulation Examples

Fine Manipulation Examples
Pushing buttons on a copy machine
Counting coins and paper money
Pinning and hand sewing garments
Separating groups of documents with paper clips
Inserting small parts on a production line
Adjusting calibration equipment
Sorting through bins of eyeglass screws
Stringing small beads on a wire to make a bracelet
Collecting tickets and handing out receipts
Entering information into an order system using a laptop keyboard and touchpad mouse
Using an adding machine to settle accounts
Using a touchscreen device to book services and send customized messages to clients
Entering drink orders into a touchscreen order-system
Communicating with customers using text on a smartphone
Using registers with hybrid keyboards
Playing piano keys

Gross and Fine Manipulation

Some tasks require simultaneous gross manipulation and fine manipulation, like writing. Code duration for tasks requiring simultaneous fine and gross manipulation in both elements.

Table 5-14: Gross and Fine Manipulation Examples

Gross and Fine Manipulation Examples
Writing
Using a computer mouse
Playing a guitar
Using a telephone
Cutting with scissors
Playing keys and pulling stops of an organ
Using a measuring tape
Using a screwdriver

Foot/Leg Controls

The intent of foot/leg controls is to capture instances of pedals that control machinery or equipment, and commonly adjust speed, on/off status, and height through varied pressure or toggling. Operating such controls involves smaller, more precise foot movements and typically does not require the upper leg muscles to create force.

In contrast, pushing/pulling feet/legs captures demands requiring use of feet as extension of the force created by the upper leg muscles. For example, bicycle "pedals" act as levers extending the pushing/pulling force created by the upper leg muscles. Exclude any motion already captured as pushing/pulling feet/legs, like operating a bicycle, from foot/leg controls manipulation.

Table 5-15: Foot/Leg Controls Examples

Foot/Leg Controls Examples
Stepping on a lever to lower and raise salon chairs
Pressing a floor button to raise a dental chair
Pressing a gas pedal to drive a passenger vehicle
Pressing a knee lever (an alternative to a conventional foot pedal) to operate a sewing machine
Pressing pedals while playing a baby grand piano

5_07 Low Postures: Stooping, Crouching, Kneeling, and Crawling

There are four **low postures**:

- Stooping
- Crouching
- Kneeling
- Crawling

Workers may use these postures to lower or position themselves over something at or below knee level or get closer to the ground. A worker cannot stoop, crouch, kneel, or crawl at the same time.

Figure 5-A: Low Postures

Stooping is bending the body forward and down while bending the spine at the waist 45 degrees or more either over something below waist level or down towards an object on or near the ground. Stooping should be significant enough that when bending, if arms were extended toward the ground, workers' hands would be at or below the knees. Stooping must be performed while standing.

Crouching is bending the body downward and forward by bending the legs and spine.

Kneeling is bending the legs at the knees to come to rest on the knee or knees.

Crawling is moving about on hands and knees or hands and feet.

Collecting Low Postures

Determine whether any critical tasks require low postures. When critical tasks require low movements, collect the presence and duration of the total time spent getting low using stooping, crouching, kneeling, and crawling postures. The time spent in these postural positions is usually minimal. Be sure the duration provided corresponds to critical tasks.

If critical tasks require low postures, determine which postures workers use. For each posture type, select one of the following:

Table 5-16: Collecting Low Postures

Coding Postures Used	Coding Criteria:
`Yes-Required`	Code `Yes-Required` when **any** of the following dictates use of specific posture(s): • **The employer**. For example, delivery drivers are trained and expected to crouch, rather than stoop, when bending to retrieve packages. • **The nature of critical tasks performed.** For example, a tile installer must kneel while laying floor tile. • **The physical settings of the establishment or work environment**. For example, bakers stoop when placing trays into ovens below counter height.
`Yes-Worker's Choice`	Code `Yes - Worker's Choice` when none of the criteria from `Yes - Required` apply and workers may choose the posture they use. • If one posture is the most commonly used by workers, code `Yes - Worker's Choice` for only the most commonly used posture. • If there is no clear worker preference or the respondent does not know which posture is most commonly used, code `Yes - Worker's Choice` for all postures workers may use.
`No`	Code `No` when a posture is not required or generally used when getting low.
`Unknown`	Code `Unknown` if it is not possible to determine whether or not a posture is required or generally used.

The intent of these options is to capture the types of postures workers use when getting low is required and distinguish between jobs where workers **must use** specific posture(s) versus having **the flexibility to decide which** posture(s) to use.

Different tasks may require the use of the same posture(s). If use of a specific posture(s) is required for **any** task, code `Yes-Required` even if workers have the choice to use the same posture for most other tasks.

Notes:

- × Exclude stooping performed while workers are sitting.
- × If workers can easily adjust or re-position themselves or objects higher to avoid low postures, do not collect the presence and duration of getting low for that task. Examples include storing items on a higher shelf, raising the dental chair, and adjusting a patient's bed upwards.

Table 5-17: Low Postures Examples

Collect as	Low Postures Examples
Stooping	• A mechanic stoops over a car engine while making repairs. • A janitor stoops while emptying small desk trashcans. • A cafeteria worker stoops to retrieve kitchen equipment stored below counter level.
Crouching	• A bricklayer crouches to spread mortar and position bricks on lower parts of walls. • An HVAC repairperson crouches to inspect a malfunctioning air conditioner. • A physical education teacher crouches to demonstrate the catcher position while playing softball.
Kneeling	• A carpet installer kneels while pressing carpet firmly in place over tack strips, using hand tools. • An electrician kneels to connect wiring to fixtures located in cramped places. • A plumber kneels while installing piping for a radiant floor heating system.
Crawling	• A concrete worker crawls while smoothing and finishing the surface of poured concrete sidewalks. • An HVAC repairperson crawls through narrow spaces to reach all parts of a furnace • An insulation installer crawls through a home's crawlspace.
Exclude	• A teacher leans over to look at a student's paper. The teacher could be handed the paper by the student and read it standing upright. • Clerical employees bend slightly at the waist while sitting to retrieve a document from the bottom drawer of their desks. Stooping must be done while standing. • Accountant stoops to pick up a dropped item or to plug in a computer monitor. Both of these are incidental tasks and are excluded. • Hairstylists slightly bend over customer while cutting hair. Stooping must meet the threshold of bending at a 45 degree angle or greater. • Engineers keep reference materials and supplies in lower filing cabinet drawers in their work area. They can choose where to store these files. • A pizza delivery driver bends to get into a car. Stooping must meet the threshold of bending at a 45 degree angle or greater. Standard vehicles do not require stooping to enter.

Low Postures Coding Examples

Table 5-18: Low Postures Coding Examples

Example 1 – Pest Control Worker

Description: Pest control workers spend up to 1/3 of their day performing tasks that require low movements. They use these movements to investigate and address pest infestations on ground areas. The company trains workers to crouch when placing traps in certain locations and kneel when placing traps in other locations and workers do both. Workers also must be able to crawl to access crawl spaces or under deck areas. When asked whether workers need to stoop, the respondent replies that they use portable sprayers with long nozzles and do not stoop.

Pest Control Worker Coding:

Getting Low				
Duration	Stooping	Kneeling	Crouching	Crawling
2% up to 1/3	No	Yes, Required	Yes, Required	Yes, Required

Example 2 – Medical Office Secretary

Description: A medical office secretary must use low postures when accessing patient medical records stored in central office filing cabinets. The secretary spends up to 2% of the day in low postures since most records are stored high enough to avoid getting low. The employer doesn't care how the secretary gets low and says they generally stoop or crouch. They do not kneel or crawl.

Medical Office Secretary Coding:

Getting Low				
Duration	Stooping	Kneeling	Crouching	Crawling
Up to 2%	Yes, Worker Choice	No	Yes, Worker Choice	No

Example 3 – Delivery Drivers

Description: Delivery drivers are required to crouch when lifting heavy packages. When scanning tags on these heavy packages placed on the dolly, they may choose how they get low, and they typically crouch. Respondent is unsure how much time drivers spend using low postures. They typically don't use the other low postures.

Delivery Drivers Coding:

Getting Low				
Duration	Stooping	Kneeling	Crouching	Crawling
Present, Duration Unknown	No	No	Yes, Required	No

5_08 Climbing

Climbing is the act of ascending or descending stairs, ramps, ladders, ropes or scaffolding and similar structures using feet, legs, hands, and/or arms.

There are two types of climbing:

- Climbing Ramps or Stairs
- Climbing Ladders, Ropes, or Scaffolds

Climbing Ramps or Stairs is present when a worker ascends or descends ramps or stairs primarily using feet and legs. A worker may use arms and hands for balance only, as in holding a stair railing.

Climbing Ladders, Ropes, or Scaffolds is present when a worker ascends or descends ladders, scaffolding, ropes, or poles, using feet/legs and hands/arms. A worker typically uses both upper body and lower body climbing ladders, ropes, or scaffolds.

Determining Climbing Type

If the type of climbing present does not directly correspond to either of the above elements, select the element that most closely resembles the action performed by the workers and document.

While ladders typically are higher, the difference between stairs and ladders is about the physical requirements needed to climb, not height. Additionally, stairs typically ascend forward and up, while ladders typically ascend vertically.

Categorize stools and ladders as follows:

Table 5-19: Climbing – Stool and Ladder Categories

Type	Description	Collect As
Single Step Stool	A small stool with one-step often used to reach a higher-level shelf or cabinet. A worker does not need to use the upper body.	Climbing ramps/stairs
Household Double Step Stool	A stool that folds out into two stair-like steps. Ascent is forward and up rather than vertical. A worker does not need to use the upper body.	Climbing ramps/stairs
Step Ladder	A ladder, typically between eight and twelve feet tall, with steps that fit most of the foot. Ascent is vertical rather than stair-like. A worker must use the upper and lower body.	Climbing ladders, ropes, or scaffolds
Traditional ladder	Ladders, including extension ladders, designed to reach the tops of structures, with rungs rather than steps. A worker must use both the upper and lower body.	Climbing ladders, ropes, or scaffolds

Collecting Climbing Ramps or Stairs

When Climbing Ramps or Stairs is present, determine if it is **work-related** or **structure-related**, and code accordingly.

Work-related: Performing critical tasks would require climbing regardless of the building structure. Work-related climbing includes climbing stairs/ramps on machinery and equipment, the use of step stools, or the use of mobile ramps.

Structure-related: Performing critical tasks would not require climbing if the workplace was one level. Structure-related climbing includes climbing stairs or ramps that are part of a building structure, including climbing steps to enter/exit residential structures as well as climbing full stair flights within both residential and public structures.

Structure-related climbing does not include the use of ADA-compliant ramps or climbing steps to enter and exit public buildings and non-residential structures. Federal law requires the availability of an ADA-compliant entrance at these structures; therefore, climbing steps to enter and exit public and non-residential buildings is voluntary. Assume all public and non-residential buildings have availability of alternate access, even when structures may be grandfathered from accessibility requirements. Further, climbing ADA-compliant ramps does not meet the physical exertion this element intends to capture for ramps/stairs.

A job may perform both work-related and structure-related climbing. Collect the presence and the duration of any work-related climbing. Collect the presence only of any structure-related climbing.

Notes:

- **Public and non-residential structures**: Exclude climbing steps to enter and exit public buildings and non-residential structures from both work- and structure-related climbing.
- **Ramps**: Include only work-related ramps that are part of equipment or machinery or portable loading ramps. Do not include ADA-compliant ramps when coding this element.
- **Elevators**: When workers have unrestricted use of building elevators, code **No** for structure-related climbing. If elevators are present, but workers are expected to use stairs or are restricted from using building elevators, code **Yes** for structure-related climbing.
- **Loading docks**: Do not assume climbing is required whenever loading docks exist. Many loading docks may not require the physical exertion of climbing. Often, loading docks allow vehicles to be positioned so loading/unloading and transition to storage space is on the same level. If loading docks are ramps that are part of the building structure, code **Yes** for structure-related climbing.

Table 5-20: Climbing Ramps or Stairs Examples

#	Climbing Ramps or Stairs Examples	Action	Type
1	A machine operator climbs stairs to access the machine platform.	Collect	Work-Related-include duration
2	Delivery drivers climb a mobile ramp to load and unload material from the back of a delivery truck.	Collect	Work-Related-include duration
3	Retail sales workers climb movable stairs to obtain merchandise from high shelves.	Collect	Work-Related-include duration
4	Bus drivers climb steps into bus.	Collect	Work-Related-include duration

#	Climbing Ramps or Stairs Examples	Action	Type
5	Delivery drivers climb stairs while making residential deliveries.	Collect	Structure-Related –include presence only
6	Visiting nursing aides climb stairs while visiting clients at their homes.	Collect	Structure-Related –include presence only
7	An office manager must use stairs to access files and supplies located on another floor.	Collect	Structure-Related –include presence only
8	A teacher escorts children up and down stairs in a three-story building. Elevator use is restricted to medical use only.	Collect	Structure-Related –include presence only
9	Attorneys visit courthouses.	Do not collect	Public building –climbing stairs during entry/exit into structure is voluntary
10	Nursing assistants push patients up ADA-compliant ramps.	Do not collect	ADA-compliant ramps are excluded from both types of Climbing Ramps and Stairs
11	Pharmaceutical sales representatives visit doctors' offices and health clinics.	Do not collect	Public buildings –climbing stairs during entry/exit into structure is voluntary
12	An apartment property manager ascends steep driveways while maintaining rental properties.	Do not collect	Steep driveways do not count as ramps or stairs.

Collecting Climbing Ladders, Ropes, or Scaffolds

If workers must climb something that requires the use of both the upper and lower body to climb, include it in this element. Collect the presence and the duration of climbing ladders, ropes, or scaffolds.

Note: Do not include the time spent ascending or descending ladders, ropes, or scaffolds in gross manipulation, pushing/pulling, and reaching durations. These physical demands are contained within the climbing element.

Table 5-21: Climbing Ladders, Ropes, Scaffolds Examples

#	Climbing Ladders, Ropes, Scaffolds Examples
1	An electrician ascends poles to install or repair power lines.
2	A drywall installer climbs scaffolding to plaster a ceiling.
3	Heavy truck driver climbs a short ladder using arms and legs to enter the cab of a semi-truck.
4	Fitness instructor uses arms and legs to scale the rock wall at a gym.

5_09 Driving

Driving, a type of task, is the operation of a motorized passenger vehicle or other conveyance. Include operating passenger vehicles such as automobiles, vans, or light trucks, and other vehicles such as tractor trailers, buses, equipment (e.g., forklifts, golf carts, riding mowers), trains, boats, or aircraft.

Collecting Driving

Collect the presence of driving only when it is confirmed that driving is performed in support of a critical task for the job. Include a description of **all** types of vehicles driven in the task list documentation.

× Exclude non-motorized conveyances, such as riding an animal or bicycle.

Driving involves multiple physical demands:

- Far Visual Acuity: Far Visual Acuity is assumed when Driving is present.
- Peripheral Vision: Peripheral Vision is assumed when Driving is present.
- Gross Manipulation: Time spent driving will be the base duration for Gross Manipulation.

Driving may also include:

- Near Visual Acuity.
- Credentials – License or Other (commercial or standard drivers' licenses).

Driving when operating a passenger vehicle with automatic transmission and power brakes also includes:

- Foot/Leg Controls – One.
- Credentials – Other (standard drivers' licenses).

Driving when operating a passenger vehicle with automatic transmission and power brakes does not include:

- Pushing/Pulling – Feet/Legs: Operating the gas and brake pedals in this type of standard passenger vehicle does not meet the force threshold.
- Reaching: Operating a steering wheel does not meet the requirement of reaching. When driving a passenger vehicle, the steering wheel is close enough that the driver does not extend the arms enough to engage the shoulder.

Driving normally involves the use of both hands while operating a steering wheel. Document whenever a vehicle has unique controls that would not require both hands.

Except for the above guidance, do not assume the presence or duration of any physical demand based upon vehicle type. The use of cruise control should not be considered when determining duration/use of ORS elements. Large or specialized vehicles may have different controls, so always confirm expectations with the respondent and code based on the actual equipment. Many modern large trucks, buses, and equipment may require little physical exertion or no more than is needed for driving a passenger car.

For more information on how to collect job demands for occupations when traveling is involved, see Section 5_01.

5_10 Speaking and Hearing Requirements

Speaking is expressing or exchanging ideas by means of the spoken word to impart oral information to clients or the public and to convey detailed verbal instructions to other workers accurately, loudly or quickly.

Hearing Requirements account for the ability to hear, understand, and distinguish speech.

Collecting Speaking

This element measures speaking as a critical task (e.g., television announcer) or speaking as a primary activity in support of a critical task (e.g., customer service). Not all speech is captured in this element.

Include:

- ✓ Any speaking (in support of critical tasks) with the public or clients (including simple, straightforward exchanges).
- ✓ Speaking with coworkers to provide detailed instructions or to coordinate or plan work.

Consider these questions when determining the presence and amount of time workers spend speaking:

- Do the critical tasks performed require any speaking to accomplish them?
- Can critical tasks be completed independently without contact with others?
- When workers speak to others, why are they communicating? Are they expressing or exchanging ideas or giving detailed instructions to others?
- When speaking occurs, is clarity of speech important? In other words, must it be conveyed accurately, loudly, or quickly?

Tasks which involve making/working with things – objects, equipment, tools – are less likely to require speaking to accomplish critical tasks. Tasks that involve working with people, ideas, or providing services to others are likely to require speaking.

While there are some exceptions such as service workers dealing with the general public, in general, the less skilled a job is, the less likely workers will be required to speak to perform their critical tasks. In contrast, the more skilled a job is, the more likely workers will be required to speak to perform some of their critical tasks. Higher skilled jobs are more likely to express or exchange ideas and give detailed instructions to others.

Collect the duration workers are actually speaking. Do not include the time workers spend listening during a conversation. Do not assume a 50/50 split for speaking/listening. The job, critical tasks being performed, and the nature of the conversation can impact the amount of time spent speaking versus listening. Ask the respondent to estimate how much time is spent speaking versus listening.

Examples where speaking/listening may not be evenly split:

- Therapists may spend 80% of a conversation listening and 20% of the time speaking.
- Telemarketers may spend 80% of the conversation speaking and 20% of the time listening.

Coordinating with Coworkers

Any coordinating with coworkers which involves expressing and exchanging ideas and information including planning, explaining, resolving, as well as giving detailed instructions to other workers accurately should be included in the presence and duration of speaking. Do not limit speaking to only clients, general public, and supervisors.

Exclude from the presence and duration of speaking coordinating with coworkers when it involves basic exchanges where clarity of speech isn't necessary such as alerting other coworkers that tasks are complete, equipment/part has malfunctioned, or supplies are low.

Table 5-22: Speaking Examples and Duration Guidance

#	Speaking Examples	Include Duration	Reason
1	A TV news anchor reports news in a pleasant, well-controlled voice.	Yes	Expressing oral information accurately
2	A hospital nurse discusses cases on the current shift with other health care staff to exchange information about patients' care plans.	Yes	Expressing oral information accurately; conveying detailed instructions to other workers
3	A human resources manager explains benefits to a new employee.	Yes	Expressing oral information accurately; conveying detailed instructions to other workers
4	A cashier asks customers whether they will pay with cash or credit.	Yes	Expressing oral information to general public
5	A bartender asks for customer's drink orders.	Yes	Expressing oral information to general public
6	An IT help desk technician provides instructions to end-user.	Yes	Expressing oral information to other workers; conveying detailed instructions to other workers
7	Finish carpenters coordinate work and resolve issues with site foreman, other carpenters, and skilled trades. They also give instructions to construction helpers.	Yes	Expressing oral information and conveying detailed instructions to other workers
8	A bartender talks to customers about their lives because it generates more tips.	No	Exclude socializing
9	A human resources manager sends new employees benefits booklets via email.	No	Exclude non-verbal communication
10	A sales representative listens to potential customer's questions.	No	Exclude time spent listening from speaking
11	A team assembler indicates to another team member that the line stopped.	No	Exclude since machinery malfunction is incidental-chance occurrence

#	Speaking Examples	Include Duration	Reason
12	Housekeepers in a hotel speak to alert supervisors when there's an issue with room or if they need more supplies. They also may exchange basic greetings with hotel guests in hallways or when dropping off supplies like extra towels, linens, toiletries.	No	Exclude since speaking is not a primary component of critical tasks performed. Basic exchanges which don't meet criteria
13	Busser tells servers they finished clearing a table.	No	Exclude since speaking is not a primary component of critical tasks performed. Basic exchanges which don't meet criteria
14	Landscaping crew alert each other or crew leaders when they've finished their task or to ask, "What's next?"	No	Exclude since speaking is not a primary component of critical tasks performed. Basic exchanges which don't meet criteria

Collecting Hearing Requirements

There are three types of hearing requirements:

- **In Person Speech:** Includes the ability to hear speech (spoken words) in person, both one on one and in group or conference settings. Includes the use of video conferencing equipment and software that mimics live interactions by employing participant video with sound.
- **Telephone:** Includes the ability to hear speech through a telephone. In addition to use of a traditional telephone, this includes using telephone headsets, speakerphones, and Voice over Internet Protocol (VOIP) using traditional handsets or through a computer. Also includes the ability to hear the telephone ringing.
- **Other Remote Speech:** Includes the ability to hear speech through other remote communication devices such as walkie-talkies, intercoms, public address systems, drive-through headsets, etc.

Collect the presence of any types of hearing necessary to perform critical tasks. Include the ability to hear verbal instructions or information necessary to perform critical tasks. Exclude hearing for any conversation or sounds that are:

- Social in nature – between coworkers or with the public.
- Public announcements and public safety alarms, such as fire, tornado, weather, and other public safety alerts.
- Related to incidental tasks

Notes:
- Speaking and hearing requirements measure different physical demands. While often related, it is possible for hearing to be present while speaking is not required to perform critical tasks (for example, workers must hear verbal instructions in person and via telephone, but do not need to speak more than basic exchanges to perform critical tasks).
- Exclude other non-speech sounds such as equipment alarms, animal sounds, or human sounds that aren't speech (such hearing for patients' vital signs, crying, etc.).

Table 5-23: Hearing Requirements Examples

Collect as	Hearing Requirements Examples
In Person Speech	• Cashiers listen to customers' requests. • Guidance counselors listen to students' concerns. • A hospital nurse, discharging patients, listens to questions about the instructions. • A secretary takes minutes during a board meeting. • A politician participates in a town hall style debate and responds to audience comments. • A software developer confers with clients and coworkers throughout the country using Skype videoconferencing software.
Telephone	• A dispatcher answers 911 calls using a telephone headset and sends help to the given location. • A carpenter uses a cell phone to receive instructions from foreman while working at job site. • A salesperson uses hands-free enabled mobile phone while calling clients in the car.
Other Remote Speech	• A bus driver uses a walkie-talkie to communicate with her operator regarding the route status. • Mechanics must hear requests/instructions through shop public address system. • A fast food crew member uses a headset to hear customers' orders placed through the drive-thru speaker.
Exclude	• A teacher must be able to hear a tornado alarm to get children to safety. • A teacher must be able to hear the bell signaling that it's time to change classes. The bell is a public announcement for everyone in the school. • Workers must be able to hear and respond to a hurricane warning. • Assemblers listen to small talk while working on production line. • A veterinary tech identifies problems by listening to sounds from animals under care. • An RN must hear and respond to patient alarms. He must also listen through stethoscope for patients' vital signs. • A machine operator listens for alarms to stop the machine and clear jams. • A day care center worker listens for a crying baby.

5_11 Vision

There are three vision elements:

- Near Visual Acuity
- Far Visual Acuity
- Peripheral Vision

Near Visual Acuity is clarity of vision at approximately 20 inches or less, as when working with small objects or reading small print.

Far Visual Acuity is clarity of vision at a distance of 20 feet or more, involving the ability to distinguish features of a person or objects at a distance.

Peripheral Vision is what is seen above, below, to the left or right by the eye while staring straight ahead.

Collecting Vision

Collect the presence of each vision type when it is required to perform critical tasks.

Near and Far Visual Acuity

Many tasks require the ability to see, but may not require clarity of vision either close-up or far away.

Include the presence of near visual acuity and far visual acuity when a worker is required to see with clarity at the designated distances. Clarity involves the ability to see details of objects.

Do not include the presence of near visual acuity or far visual acuity when a worker is required to have vision but not clarity.

Notes:

- ✓ Always code the presence of near visual acuity when the job uses a computer or a screen on another electronic device in support of a critical job function, regardless of distance.
- ✓ Always code the presence of far visual acuity when driving is performed as a critical task.
- × Do not assume the presence of far visual acuity, especially in indoor environments, for tasks like general situational awareness (personal safety) or customer service.
- × Exclude far visual acuity required for incidental tasks. For example, bank tellers would not need far visual acuity in the case of a robbery because this is a chance occurrence.
- × Do not assume the presence of far or near visual acuity for the act of climbing ladders. Keep in mind jobs that climb ladders may have these vision requirements based on other critical tasks.

Peripheral Vision

Peripheral Vision includes the need to actively scan a broad area as part of critical tasks performed**.** The need to maintain focus and monitor a broad field of vision is not met when workers are only using peripheral vision to maintain general situational awareness while moving around the work environment. The need is also not met if workers can turn their heads or look around at any time while performing the critical task. While many workers are expected to

maintain awareness of the overall work environment for a variety of reasons, few non-driving jobs are actually restricted by their tasks from turning their head if they need to see around them.

Notes:

- ✓ Always code Peripheral Vision when driving is performed as a critical task.
- × Do not assume the presence of peripheral vision for the act of climbing ladders. Keep in mind jobs that climb ladders may have this vision requirement based on other critical tasks.

Table 5-24: Vision Examples

Collect as	Vision Examples
Near Visual Acuity	• A watch repair person must see small parts within the watch. • A payroll clerk enters information in HR software. • A technician must read small numbers printed on electronic parts such as circuit board components.
Far Visual Acuity	• A park ranger observes a forest from a remote fire lookout station. • A delivery truck driver drives a truck in city traffic. • A warehouse worker must see pallet labels on high shelf for pulling stock. • A surveyor must see distances to locate property lines. • Retail security guards need to identify features of people and objects at distances of more than 20 ft. as part of monitoring and security responsibilities.
Peripheral Vision	• A soccer referee must actively scan a field containing multiple players while maintaining focus on the ball as well as other players moving elsewhere on the field. • Heavy equipment operators must keep watch in all directions. • Bus drivers operate school buses on public roadways. • A security guard actively scans both the interior and exterior of a large retail store. • Rough carpenters assemble multi-story structures at the earliest stages of construction. They must maneuver in high, exposed places across scaffolding and narrow beams and ledges. They must maintain focus on forward-facing tasks while simultaneously taking in their broader environment.
Exclude	• Restaurant servers use peripheral vision while moving around with food items and hot beverages in tight spaces and aisles. While servers need to be aware of their surroundings, they do not need to actively scan a wide area, but can turn their head and focus on the direction they are moving. • Cashiers use peripheral vision to identify potential shoplifters. Critical job function is assisting customers, not store security. Exclude the presence of peripheral vision for this task as it is not in support of the critical job function of retail cashiers. • Retail sales workers must be able to see the store entrance from distances greater than 20 feet to know a customer has entered the premises. Exclude the presence of far visual acuity for this task since clarity of vision is not required. • Teacher working bus duty, PE, or recess as part of their critical tasks must observe children. Exclude far visual acuity when clarity of vision is not required. Exclude peripheral vision as the teacher could turn their head as they scan the environment. • Cart Pusher needs to be able to see shopping carts across the parking lot. Critical task is to retrieve carts from the parking lot. Exclude Far Visual Acuity as it does not require clarity of vision or distance. Workers need to identify an object as a cart, and they may walk closer, if needed.

Chapter 6: Environmental Conditions

Environmental conditions are the surroundings and/or conditions experienced by workers as they perform critical tasks.

This chapter includes procedures for collecting the environmental conditions elements:

- Collecting Environmental Conditions
- Outdoors
- Extreme Cold
- Extreme Heat
- Wetness
- Humidity
- Heavy Vibration
- Hazardous Contaminants
- Proximity to Moving Mechanical Parts
- High, Exposed Places
- Noise Intensity Level

6_01 Collecting Environmental Conditions

Collect the duration of exposure for all environmental conditions, except Noise Intensity Level, when:

- Workers experience the condition while carrying out critical tasks. See Overall Coding Threshold for All ORS Elements.
- Conditions meet any of the specified thresholds listed below.
- Devices installed or personal protective equipment (PPE) required by the employer only partially mitigates exposure.

Table 6-1: Thresholds for Environmental Conditions

Environmental Condition	Threshold
Outdoors	• Critical tasks are performed outdoors • Must be unprotected and exposed to elements
Extreme Cold (non-weather only)	• 40 degrees or below when exposed 2/3 or more of the time, or • 32 degrees or below when exposed up to 2/3 of the time
Extreme Heat (non-weather only)	• Above 90 degrees in a not humid environment, or • Above 85 degrees in a humid environment
Wetness (non-weather only)	• Any contact with water or liquids and/or working in a wet area
Humidity (non-weather only)	• Must be oppressive atmosphere
Heavy Vibration	• Exposure to shaking or vibration that causes a strain on the body or extremities
Hazardous Contaminants	• Exposure that negatively affects the respiratory system, eyes, skin, or other living tissue via inhalation, ingestion, or contact
Proximity to Moving Mechanical Parts	• Must present a risk of bodily injury
High, Exposed Places	• Must be exposed and at risk of falling five feet or more from workers center of gravity. • Must be at risk of bodily injury from falling
Noise Intensity Level	• None (must meet requirements in definition)

Do not code exposure based on **potential** risk during any random event. Ensure any environmental conditions provided meet the specific thresholds and workers actually **routinely experience** these conditions as a part of critical tasks performed. For example, several environmental conditions associated with more unpredictable or chance events may be provided for jobs where emergency response is a critical job function. Document whenever unexpected environmental conditions are coded to confirm they meet our definitions and thresholds and that the workers actually routinely experience exposure (i.e., they aren't just a condition that a worker could potentially encounter).

Collecting Mitigation

Mitigation occurs when the employer installs devices or requires the use of personal protective equipment (PPE) that fully or partially eliminates potentially hazardous conditions or exposures.

Personal Protective Equipment (PPE) is equipment used or worn to minimize exposure to serious workplace injuries and illnesses. Examples of PPE include items worn: gloves, boots, helmets, goggles, earplugs, respirators, and protective clothing such as lab coats. Examples of other PPE equipment used include laser shields and equipment guards that prevent injury, as well as equipment such as laboratory and industrial ventilation systems that remove fumes.

Measure exposure to conditions as workers experience them using personal protective equipment (PPE). Code the presence of PPE when workers are required, expected, and typically use it to mitigate exposure.

Document the use and type of PPE and how it mitigates. The presence of PPE for the following environmental conditions requires special coding in CIERA:

- Hazardous Contaminants
- Proximity to Moving Mechanical Parts
- High, Exposed Places
- Noise Intensity Level

If PPE use is voluntary, code environmental conditions as most workers experience them.

If an employer installs devices or requires personal protective equipment, collect the duration of exposure as it is actually experienced, and note the presence of PPE.

If, according to the respondent, personal protective equipment or devices eliminate exposure, document the use of PPE and code the occupation as **`Fully Mitigated`**.

Table 6-2: Mitigation and PPE Examples

#	Mitigation and PPE Examples	Action
1	A ramp agent loads and unloads plane cargo on a tarmac with exposure to loud noise. The company requires the worker to wear noise-cancelling headsets.	Collect Noise Intensity Level as **`Quiet`** or **`Moderate`**, depending on the level of mitigation provided by PPE.
2	Workers wear fully enclosed protective suits while identifying and disposing of asbestos in buildings.	Collect time (or duration) exposed to Hazardous Contaminants as **`Fully Mitigated`** and **`Yes`** for PPE.
3	Employer provides ear plugs upon request, but most workers do not use them. The noise level in work environment is moderate without ear plugs.	Code as noise intensity as **`Moderate`** and use of PPE as **`No`** since most workers do not use it.
4	Production workers operate equipment with protective laser guards in front of cutting blade. If an object crosses the laser guard, the blade stops cutting.	Collect time (or duration) exposed to Proximity to Moving Mechanical Parts as **`Fully Mitigated`** and **`Yes`** for PPE.

6_02 Outdoors

Outdoors is present when two conditions exist:

- **Condition 1**: Workers perform critical tasks outdoors.
- **Condition 2**: Workers are unprotected and exposed to the elements.

Exclude outdoor exposure if the only exposure is related to traveling between job sites or commuting, unless the worker is performing critical tasks between the transportation mode and other site, such as making deliveries.

Note: A work site is considered protected when it has a roof and at least three sides.

Table 6-3: Outdoors Examples

#	Outdoors Examples	Action	Reason
1	A teacher watches children while outdoors for recess.	Collect	Meets both conditions
2	A groundskeeper mows lawns and trims shrubs.	Collect	Meets both conditions
3	Servers wait on tables located outdoors under an awning but without sides.	Collect	Meets both conditions
4	Hospital transporters wheel patients to vehicles.	Collect	Meets both conditions
5	Mechanics working at a small garage, has to drive vehicle out of the garage/bay and into the parking lot, then either drive another car back into the bay or walk back.	Collect	Meets both conditions
6	A fast-food crew member takes trash to a dumpster behind the restaurant throughout the day.	Collect	Meets both conditions
7	A pharmaceutical sales rep walks to and from the car with each client visit.	Do not collect	Doesn't meet condition 1, exposure related to traveling/commute only
8	An employee commutes to and from the workplace.	Do not collect	Doesn't meet condition 1, exposure related to traveling/commute
9	A miner works in an underground mine.	Do not collect	Doesn't meet condition 1 or 2
10	An archaeologist inspects artifacts in a three-sided tent at the dig site.	Do not collect	Doesn't meet condition 2

6_03 Extreme Cold

Extreme Cold is present when two conditions exist:

- **Condition 1**: Workers' exposure is related to critical tasks and not due to weather.
- **Condition 2**:
  - Workers are exposed to an atmosphere of 40 degrees F or colder temperatures for 2/3 or more of the workday, or
  - Workers are exposed to an atmosphere of 32 degrees F or colder temperatures for less than 2/3 of the workday

Extreme Cold includes localized sources of cold that change atmospheric temperatures to levels that exceed the threshold.

Table 6-4: Extreme Cold Examples and Collection Guidance

#	Extreme Cold Examples	Action	Reason
1	A meat cutter works in a 40 degree cooler to carve beef carcasses for more than 3/4 of the day.	Collect	Meets conditions
2	A freeze tunnel operator, wearing protective clothing, works for short periods in -34 degree F temperatures.	Collect	Meets conditions
3	A building maintenance worker shovels snow from sidewalks in 10-degree temperatures.	Collect as Outdoors	Weather-related
4	A mining machine operator drives a shuttle car to transport materials in an underground mine that is 58 degrees.	Do not collect	Does not meet the threshold
5	A forklift operator works in an unheated warehouse that is always below 40 degrees in the winter.	Do not collect	Weather-related
6	Restaurant wait staff enter walk-in freezer for supplies whenever cooks and food preparation workers are busy.	Do not collect	Incidental task for servers

6_04 Extreme Heat

Extreme Heat is present when two conditions exist:

- **Condition 1**: Workers' exposure is related to critical tasks and not due to weather.
- **Condition 2**:
  - Workers are exposed to an atmosphere that is not humid with temperatures above 90 degrees F, or
  - Workers are exposed to an atmosphere that is humid with temperatures above 85 degrees F.

Humid means a high level of water vapor in the air. The presence or absence of humidity affects the way that extreme heat is experienced.

Extreme Heat includes localized sources of heat that change atmospheric temperatures to levels that exceed the threshold.

Most jobs do not have outdoor exposure to hot, non-weather temperatures. When it is present, collect the duration of exposure and document.

Table 6-5: Extreme Heat Examples and Collection Guidance

#	Extreme Heat Examples	Action	Reason
1	An asphalt machine operator spreads hot asphalt on streets and roads. The machine produces intense heat.	Collect and document	Meets conditions
2	A commercial laundry worker reaches into dryers. Opening the dryers releases humidity and raises atmospheric temperatures above 85 degrees.	Collect	Meets conditions
3	A restaurant cook works in a small commercial kitchen close to hot equipment such as stoves, grills, deep fryers, and ovens which creates humid temperatures above 85 degrees.	Collect	Meets conditions
4	A baker in a large and highly ventilated commercial kitchen reaches into hot ovens, however the ovens do not raise atmospheric temperature above 85 degrees.	Do not collect	Does not meet the threshold
5	An airline ramp agent loads and unloads baggage on a hot tarmac.	Collect as Outdoors	Weather-related
6	A salon worker is exposed to steam, hot wax, and hot towels while giving facials and waxings.	Do not collect	Does not meet the threshold
7	A warehouse worker moves freight and stock in a warehouse that is not climate controlled and is above 90 degrees.	Do not collect	Weather-related

6_05 Wetness

Wetness is present when the following two conditions exist:

- **Condition 1**: The worker has any contact with water or liquid, including contact resulting from working in a wet environment.
- **Condition 2**: The worker's exposure is related to critical tasks and not due to weather.

When critical tasks are completed in a wet environment, there is usually some contact with water or liquid. This contact should be included, and duration should be coded based on the time it is actually experienced.

The use of gloves may or may not mitigate exposure to wetness. Document when workers use gloves to mitigate exposure to wetness.

Table 6-6: Wetness Examples and Collection Guidance

#	Wetness Examples	Action	Reason
1	A dishwasher cleans pots, pans, and trays by hand.	Collect	Meets conditions
2	A cannery worker reaches under jets of water when feeding food products into a washing machine that preps the items for cooking and canning.	Collect	Meets conditions
3	A nurse washes hands between patients.	Collect	Meets conditions
4	A waiter wipes down tables with a wet rag and does not use a glove.	Collect	Meets conditions
5	A dog walker works in rainy weather.	Collect as Outdoors	Weather-related
6	A pharmaceutical sales rep walks from a physician's office to the car in snow.	Do not collect	Weather-related and not related to critical tasks

6_06 Humidity

Humidity is present when three conditions exist:

- **Condition 1**: Workers' exposure is related to critical tasks and not due to weather.
- **Condition 2**: Workers experience air containing a high amount of water or water vapor.
- **Condition 3**: The atmosphere is oppressive. An oppressive atmosphere must be very uncomfortable and could affect breathing.

Table 6-7: Humidity Examples and Collection Guidance

#	Humidity Examples	Action	Reason
1	A garment presser uses a pressing machine that discharges steam to iron damp clothing.	Collect	Meets conditions
2	A gym attendant works in and around a sauna.	Collect	Meets conditions
3	A firefighter wearing protective gear experiences humidity while spraying water to contain fires.	Collect	Meets conditions
4	A bicycle police officer patrols pedestrian areas during humid, summer months.	Collect as Outdoors	Weather-related
5	A server retrieves orders from a restaurant kitchen where food preparation and dishwashing activities generate humidity. The kitchen has a commercial ventilation system.	Do not collect	Mitigated, not oppressive
6	A warehouse worker moves freight and stock in a warehouse that is not climate controlled and is above 90 degrees and humid in summer months.	Do not collect	Weather-related

6_07 Heavy Vibration

Heavy Vibration is present when two conditions exist:

- **Condition 1**: Exposure to a shaking object or surface causes a strain on the body or extremities.
- **Condition 2**: Vibration is heavy.

Office machines, hair clippers and other small hand tools do not meet the threshold.

Note: While heavy vibration exposure is often continuous, continuity is not a requirement. Include intermittent exposure in heavy vibration as long as it meets the two conditions.

Table 6-8: Heavy Vibration Examples and Collection Guidance

#	Heavy Vibration Examples	Action	Reason
1	A jackhammer operator runs a compressed air, rock-drilling machine that forcefully vibrates.	Collect	Meets conditions
2	A printing press operator uses a cylinder type press that has continuous vibration while running.	Collect	Meets conditions
3	A bulldozer operator experiences intense vibration when the blade hits the ground and the bulldozer moves forward.	Collect	Meets conditions
4	A motorcycle mechanic test drives motorcycles to diagnose problems. Some models vibrate handlebars to the extent that hands and arms are considerably affected. Motorcycles also may vibrate heavily due to mechanical issues.	Collect	Meets conditions
5	A janitor operates a floor buffer in commercial buildings.	Do not collect	Does not meet the threshold
6	A barber uses small clippers to trim hair along the neck.	Do not collect	Does not meet the threshold
7	A residential maintenance worker performs routine repairs with a handheld drill.	Do not collect	Does not meet the threshold
8	A teacher uses an electric pencil sharpener.	Do not collect	Does not meet the threshold

6_08 Hazardous Contaminants

Hazardous Contaminants are present when the following condition is met:

- Workers are exposed to substances that have a negative impact upon respiration, eyes, skin, or other living tissue. Exposure may be through inhalation, ingestion, or physical contact.

Collecting Hazardous Contaminants

The threshold of negative impact upon respiration, eyes, skin, or other living tissue based on known exposure must be met in order for this element to be coded present. A condition that workers "may" encounter is not included. Code the presence and duration to hazardous contaminants when exposure is likely even when the job is done properly.

Exposure needs to be present, but does not have to be produced by the worker. Workers may be exposed to contaminants produced by others in proximity.

Employers may have protective procedures in place when these hazards exist. Measure exposure to conditions as workers experience them using personal protective equipment (PPE). Collect the presence and the type of PPE used. If, according to the respondent, personal protective equipment or devices eliminate exposure, document the use of PPE and code the occupation as **`Fully Mitigated`**.

Potential Hazards and Exclusions

For a list of potential hazards, see List of Potential Hazards in Appendix 1. This list is not exhaustive, and respondents may not know or provide these chemical names as listed. The presence of a potential hazard isn't enough — the intensity needs to meet the hazardous contaminant threshold. Collect Material Safety Data Sheets from the employer, if available, and document the chemical(s) present.

Illegal narcotics such as heroin, fentanyl (inhalable), and methamphetamines are not listed in Appendix 1 but in uncontrolled forms and environments can be highly toxic to skin and respiratory systems in very small amounts. They meet the threshold for hazardous contaminants and PPE may be used to mitigate exposure. Collect the presence only when the respondent explicitly states workers experience exposure to one of these contaminants (for example, specialized narcotics units or first responders in areas where there are high levels of drug activity where the work environment and form of illegal narcotics is uncertain). Mitigation protocols and training may be more rigorous where exposure is expected and should be taken into account when coding incidence and duration.

Exclude the following:

× Household cleaners do not present the level of negative impact needed to be considered hazardous. Household bleach used in small quantities does not meet the threshold. While chlorine and ammonia are listed as potential hazards, when diluted, they do not meet the level of contaminant captured for ORS.

× Isopropyl alcohol (rubbing alcohol) is also listed on hazardous contaminants list. However, alcohol swabs commonly used in health care settings do not present the level of negative impact needed to be considered hazardous.

× Biohazards such as blood and other bodily fluids are not considered hazardous contaminants.
× Radiation is not considered a hazardous contaminant.

Table 6-9: Hazardous Contaminants Examples and Collection Guidance

#	Hazardous Contaminants Examples	Action	Reason
1	A natural gas company worker repairs leaks in gas lines. Although precautions are taken, even when the job is done properly, the respondent indicates workers inhale toxic fumes that negatively impact breathing.	Collect, code duration, **Yes** to PPE	Meets conditions
2	An automotive mechanic breathes fumes from grease, oil, gas, and engine exhaust while working.	Collect	Meets conditions
3	A casino worker is exposed to heavy secondhand smoke from tobacco that contains benzene, arsenic, carbon monoxide, chromium metal, lead, and nicotine	Collect	Meets conditions
4	A cosmetologist applies strong chemicals such as bleach, dye, and tint to color hair.	Collect	Meets conditions
5	A farm worker, stacking hay and grain with a pitchfork, inhales large amounts of dust.	Collect	Meets conditions
6	An equipment operator tends machines that clean semiconductor wafers using cleaning solutions made of sulfuric acid and hydrochloric acid. Operators are not required to wear protective clothing.	Collect	Meets conditions
7	A textile dye-machine operator works without protective clothing, tending equipment that mixes strong acids and anhydrous ammonia for use in bleaching and finishing carpets.	Collect	Meets conditions
8	A glassworker at a historical museum uses old-fashioned methods to apply acids to etch glass.	Collect	Meets conditions
9	A worker in a busy open-air tollbooth breathes auto exhaust all day.	Collect	Meets conditions
10	Firefighters enter burning structures to evacuate occupants. Required PPE (respirators) protect workers from inhaling toxic fumes that negatively impact breathing.	Do not collect duration; Code as **Fully Mitigated**	Mitigated by PPE. Does not meet threshold
11	An industrial metal finishing worker, wearing a respirator, pours pigments, paint paste, and thinner into cans and stirs with a paddle.	Do not collect duration; Code as **Fully Mitigated**	Mitigated by PPE. Does not meet threshold
12	A glazier uses acid to etch glass. Rigid protocols are in place and PPE is used to protect all living tissue of workers.	Do not collect duration; Code as **Fully Mitigated**	Mitigated by PPE. Does not meet threshold
13	A veterinary technician uses fentanyl for surgery preparation. This controlled drug poses no risk to living tissue when properly stored, contained, and administered.	Do not collect	Does not meet the threshold
14	A tank truck driver drives trucks to deliver industrial application gases to customers.	Do not collect	Does not meet the threshold

#	Hazardous Contaminants Examples	Action	Reason
15	A paint store clerk breathes fumes while mixing small amounts of latex, low-VOC paint in a retail store.	Do not collect	Does not meet the threshold
16	A teacher inhales chalk dust while using the blackboard.	Do not collect	Does not meet the threshold
17	A hotel housekeeper cleans rooms using common household cleaning agents, such as window cleaner, tile cleaner, and furniture polish.	Do not collect	Does not meet the threshold
18	Registered nurses must use hand sanitizers and other disinfectants such as isopropyl alcohol swaps.	Do not collect	Does not meet the threshold
19	A lifeguard works in a chlorinated swimming pool.	Do not collect	Does not meet the threshold

6_09 Proximity to Moving Mechanical Parts

Moving mechanical parts refers to moving materials, mechanical parts, settings, or any moving objects that could cause bodily injury when used properly.

Proximity to Moving Mechanical Parts is present when one of the following conditions exists:

- **Condition 1**: Mechanical equipment operated by workers presents a risk of bodily injury when used properly.
- **Condition 2**: Machinery, equipment or any moving object near workers could cause bodily injury.

Collect the presence and the type of personal protective equipment (PPE) when the employer provides it. Measure the exposure as workers experience it with the use of required protective equipment. If required protective equipment (shields, machine guards, etc.) mitigates all exposure, code **`Fully Mitigated`**.

Exclude:

× Any vehicles (including automobiles, forklifts, etc.) being driven by or near workers as responsibility for their proper operation is on the driver.
× Non-worker (patients, customers, etc.) risk of bodily injury.
× Minimal risk of bodily injury when used properly.
× Non-motorized hand tools or equipment that do not move automatically (e.g., scissors, knives, guns, screwdrivers, hammers, etc.)
× Risks associated with standard office equipment, such as shredders and copiers, that present a nominal risk of injury.

Examples of bodily injury include (but are not limited to): cuts, abrasions, injury to eyes, loss of extremities, fractures, crushed hands or feet, and hernia.

Notes: Proximity to moving mechanical parts should only be coded when workers are at risk of injury by parts moving automatically on equipment that is being properly operated. For workers who drive or work around vehicles (e.g., automobiles, forklifts, etc.), moving mechanical parts should be:

✓ Included when workers must work on vehicles (e.g., mechanics) in a manner that exposes them to the moving parts inside the vehicle.
× Excluded when workers drive vehicles but are not exposed to the moving parts inside the vehicles they drive.
× Excluded when workers must work in an area where other workers are driving. While the workers in the area could get injured by a vehicle hitting them, such an injury would be due to improper operation of the vehicle and would not be resulting from the automatically moving parts in the interior of the vehicle.

Table 6-10: Proximity to Moving Mechanical Parts Examples

#	Proximity to Moving Mechanical Parts Examples	Action	Reason
1	A deli worker operates a slicer to cut meats and cheeses. Even with required safety guards in place, injury is possible.	Collect	Meets conditions
2	A landscaper uses a chipper/shredder to mulch branches and tree debris.	Collect	Meets conditions
3	A worker who removes products from a machine or conveyor belt works close and could be injured while off-loading when machine is in motion.	Collect	Meets conditions
4	Mechanics working on running engines and moving vehicle parts while performing repairs.	Collect	Meets conditions
5	A carpenter uses power tools, such as power saws, electric drills, and pneumatic nail guns.	Collect	Meets conditions
6	An accountant uses a crosscut shredder. Snagged clothing could cause injury.	Do not collect	Does not meet the threshold
7	A cafeteria cook operates industrial mixers, with impenetrable protective guards, to prepare food items for lunch.	Do not collect duration; Code as **Fully Mitigated**	Mitigated by PPE. Does not meet the threshold
8	Food preparation workers use chef knives to chop and dice food.	Do not collect	Does not meet the definition of mechanical equipment
9	A cashier in a grocery store works around a conveyor belt that moves grocery items.	Do not collect	Does not meet the threshold
10	A carpenter uses manual hammer and screwdriver.	Do not collect	Does not meet definition of mechanical equipment
11	A taxi driver operates a passenger vehicle through crowded city streets and rush hour traffic.	Do not collect	Does not meet threshold. While the vehicle itself is moving mechanical equipment, there are not moving parts or settings inside the vehicle to which workers are exposed while normally operating the vehicle.
12	A dentist uses a drill with exposed bits when grinding a patient's teeth down. Risk of worker bodily injury is minimal when the drill is used properly.	Do not collect	Does not meet threshold. Only consider the risk of worker bodily injury.

6_10 High, Exposed Places

High, Exposed Places is present when two conditions exist:

- **Condition 1:**
  - Workers' center of gravity is at least five feet off the ground, or
  - Workers are at ground level and at risk of falling several feet below ground level.

- **Condition 2:**
  - Workers are exposed and at risk of bodily injury from falling.
  - There are no walls or railings surrounding workers to lessen the possibility of falling.

Collect the presence and type of personal protective equipment when the employer provides it. Safety harnesses or tethers do not remove the possibility of injury.

Table 6-11: High, Exposed Places Examples and Collection Guidance

#	High, Exposed Places Examples	Action	Reason
1	A painter works from ladders or scaffolding.	Collect	Meets conditions
2	A lineperson repairs power lines, working from the bucket of a cherry picker or climbing the pole.	Collect	Meets conditions
3	A tree trimmer cuts branches using canopies and truck-mounted lifts.	Collect	Meets conditions
4	Loading-dock workers are exposed and at risk of falling five feet or more.	Collect	Meets conditions
5	A retail sales clerk uses a step stool to reach items on upper shelves.	Do not collect	Does not meet the height threshold
6	A construction superintendent performs site inspections at high-rise construction projects. Not all walls or railings are complete, but the superintendent never walks near the edges.	Do not collect	Not exposed
7	A lifeguard, in a tower, is surrounded by a 5-foot railing.	Do not collect	Not exposed

6_11 Noise Intensity Level

Noise Intensity Level is the amount of noise that workers experience while working.

All work environments have a noise level. The table below illustrates the four noise levels.

Table 6-12: Noise Intensity Level Examples

Noise Intensity Level	Examples
Quiet	• Mortuary • Golf course • Art museum
Moderate	• Business office • Department store • Fast food restaurant • Grocery store
Loud	• Can manufacturing department • Large earth moving equipment • Heavy traffic
Very Loud	• Rock concert • Jackhammer work • Rocket engine testing area

Collect actual levels that workers experience while performing critical tasks. If noise levels vary within the work environment, collect the typical level. Do not automatically code the loudest level. Actual noise levels may not always match expectations (for example, a library with moderate noise, similar to a business office).

Collect the presence of personal protective equipment (hearing protection or noise dampening devices) any time workers use PPE to lessen noise exposure while performing critical tasks, even if PPE is not used all the time. Measure the noise level as workers experience it with the use of required protective equipment. If workers use equipment that eliminates all noise exposure, collect exposure as quiet.

Table 6-13: Noise Intensity Level Examples and Coding Guidance

#	Noise Intensity Level Examples	Code as:
1	An accountant works in a private office with minimal noise and few interruptions.	**Quiet**
2	A librarian works in a library that is quiet when no activities are taking place, but moderate during children's story hour, adult book club, and summer reading program. Activities occur more than half of each day.	**Moderate**
3	A stone quarry worker hears explosions and heavy machinery throughout the day. Even with required hearing protection, sounds are loud.	**Loud**
4	A landscaper uses chainsaws, chipper/shredders, and wet saws to cut pavers. The landscaper is not required to wear hearing protection.	**Very Loud**

Appendix 1

List of Potential Hazards

Air Contaminants

Acetaldehyde
Acetic acid
Acetic anhydride
Acetone
Acetonitrile
Acetylene
Acetylene dichloride;
Acetylene tetrabromide
A-Chloroacetophenone
Acridine, chrysene
Acrolein
Acrylamide
Acrylonitrile
Aldrin
Allyl alcohol
Allyl chloride
Allyl glycidyl ether
Allyl propyl disulfide
Alpha-Alumina
Alpha-Methyl styrene
Alpha-Naphthylamine
Aluminum Metal (as Al)
Ammonia
Ammonium sulfamate
Aniline and homologs
Anisidine
Anthracene, BaP
Antimony and compounds
ANTU (alpha)
Arsenic, inorganic
Arsenic, organic
Arsine
Asbestos
Azinphos-methyl
Barium sulfate
Barium, soluble
Benomyl
Benzene
Benzidine
Benzo(a)pyrene
Benzoyl peroxide
Benzyl chloride
Beryllium and
Beryllium compounds
Beta-Chloroprene
Beta-Naphthylamine
Beta-Propriolactone
Biphenyl; see Diphenyl
Bis(Chloromethyl)
Bismuth telluride
Boron oxide
Boron trifluoride
Bromine
Bromoform
Butadiene
Butanethiol
Butyl mercaptan
Butylamine
Butyl-m-cresol
Butyraldehyde (butanal)
Cadmium (as Cd)
Calcium Carbonate
Calcium hydroxide
Calcium oxide
Calcium silicate
Calcium sulfate
Camphor, synthetic
Carbaryl (Sevin)
Carbinol
Carbinol
Carbon black
Carbon dioxide
Carbon disulfide
Carbon monoxide
Carbon tetrachloride
Carbon tetrachloride
Cellosolve acetate
Cellulose
Ceramic fibers
Chlordane
Chlorinated camphene
Chlorinated diphenyl
Chlorine
Chlorine dioxide
Chlorine trifluoride
Chloroacetaldehyde
Chlorobenzene
Chlorobromomethane
Chlorodiphenyl
Chloroethane (DDT)
Chloroethylene
Chloroform
Chloromethyl methyl
Chlorophenoxyacetic
Chloropicrin
Chloropropane (DBCP)
Chromates (as CrO(3))
Chromic acid
Chromium (II) compounds
Chromium (III)
Chromium (VI) compounds
Chromium metal
Chrysene; see Coal tar
Clopidol
Coal dust
Coal tar pitch
Cobalt metal, dust
Coke oven emissions
Copper
Cotton dust (e)
Crag herbicide (Sesone)
Cresol, all isomers
Cristobalite
Crotonaldehyde
Crystalline silica
Cumene
Cyanides (as CN)
Cyclohexane
Cyclohexanol
Cyclohexanone
Cyclohexene
Cyclopentadiene
Decaborane
Demeton (Systox)
Diacetone alcohol
Diatomaceous earth
Diazomethane
Diborane
Dibutyl phosphate

Dibutyl phthalate
Dichlorodifluoromethane
Dichlorodiphenyltri-
Dichloroethyl ether
Dichloromethane; see
Dichloromonofluoro-
Dichlorotetrafluoro-
Dichlorvos (DDVP)
Dicyclopentadienyl iron
Dieldrin
Diethyl ether
Diethylamine
Difluorodibromomethane
Diglycidyl ether (DGE)
Dihydroxybenzene
Diisobutyl ketone
Diisopropylamine
Dimethoxymethane
Dimethyl acetamide
Dimethyl sulfate
Dimethyl-1,2-dibromo-2
Dimethylamine
Dimethylaminobenzene
Dimethylaniline
Dimethylbenzene
Dimethylformamide
Dimethylphthalate
Dinitrate
Dinitrobenzene
Dinitro-o-cresol
Dinitrotoluene
Dioxane
Diphenyl (Biphenyl)
Diphenylmethane
Dipropylene glycol
Di-sec octyl phthalate
Dust
Dusts and mists
Emery
Endrin
Epichlorohydrin
EPN
Ethanethiol
Ethanolamine
Ether (IGE)
Ethyl acetate
Ethyl acrylate
Ethyl alcohol (Ethanol)
Ethyl amyl ketone
Ethyl benzene
Ethyl bromide
Ethyl butyl ketone
Ethyl chloride
Ethyl ether
Ethyl formate
Ethyl mercaptan
Ethyl mercaptan
Ethyl silicate
Ethylamine
Ethylene chlorohydrin
Ethylene dibromide
Ethylene dichloride
Ethylene glycol
Ethylene glycol methyl
Ethylene oxide
Ethylenediamine
Ethyleneimine
Ethylidene chloride
Ferbam
Ferrovanadium dust
Flour dust (inhalable)
Fluorides (as F)
Fluorine
Fluoromethane
Fluorotrichloromethane
Formaldehyde
Formic acid
Fume (as Cu)
Fume (as V2O5)
Fume and insoluble
Furfural
Furfuryl alcohol
Glycerin (mist)
Glycidol
Glycol monoethyl ether
Grain dust (oat, wheat)
Graphite, natural
Graphite, synthetic
Guthion
Gypsum
Hafnium
Heptachlor
Heptane (n-Heptane)
Heptanone
Hexachloroethane
Hexachloronaphthalene
Hexamethylene diisocyanate
Hexone (Methyl)
Hydrazine
Hydrogen bromide
Hydrogen chloride
Hydrogen cyanide
Hydrogen fluoride
Hydrogen peroxide
Hydrogen selenide
Hydrogen sulfide
Hydroquinone
Iodine
Iron oxide fume
Isobutyl acetate
Isobutyl alcohol
Isobutyl ketone
Isocyanate (MDI)
Isomyl acetate
Isomyl alcohol
Isophorone
Isopropanol
Isopropyl acetate
Isopropyl alcohol
Isopropyl ether
Isopropyl glycidyl
Isopropylamine
Kaolin
Ketene
Lead inorganic (as Pb)
Limestone
Lindane
Lithium hydride
LPG (Liquified)
Magnesite
Magnesium oxide fume
Malathion
Maleic anhydride
Malononitrile
Manganese compounds
Manganese fume (as Mn)
Marble
Metalworking fluids aerosol
Mercaptan
Mercury (aryl)
Mercury (organo) alkyl
Mercury (vapor) (as Hg)
Mesityl oxide
Metal
Methane
Methanethiol
Methoxychlor
Methyl acetate
Methyl acetylene
Methyl acetylene

Methyl acrylate
Methyl alcohol
Methyl amyl alcohol
Methyl bromide
Methyl butyl ketone
Methyl cellosolve
Methyl cellosolve
Methyl chloride
Methyl chloroform
Methyl ether
Methyl ethyl ketone
Methyl formate
Methyl hydrazine
Methyl iodide
Methyl isoamyl ketone
Methyl isobutyl
Methyl isobutyl ketone;
Methyl isocyanate
Methyl mercaptan
Methyl methacrylate
Methyl n-amyl ketone
Methyl nitramine
Methyl propyl ketone
Methylal
Methylamine
Methylcyclohexane
Methylcyclohexanol
Methylene bisphenyl
Methylene chloride
Mica (respirable)
Mica; see Silicates
M-isomer
Mixture, vapor
MOCA 4, 4'-Methylenebis(2-chloroaniline)
Molybdenum (as Mo)
Monomethyl aniline
Monomethyl hydrazine
Morpholine
N-Amyl acetate
Naphtha (Coal tar)
Naphthalene
Naphthylthiourea
N-Butyl alcohol
N-Butyl glycidyl ether
N-butyl ketone
N-Butyl-acetate
N-Ethylmorpholine
N-Hexane
Nickel carbonyl (as Ni)
Nickel, metal
Nickel, soluble
Nicotine
Nitramine
Nitric acid
Nitric oxide
Nitrobenzene
Nitroethane
Nitrogen dioxide
Nitrogen trifluoride
Nitroglycerin
Nitromethane
Nitrotoluene
Nitrotrichloromethane
N-Nitrosodimethylamine
N-Propyl acetate
N-Propyl alcohol
N-Propyl nitrate
O-Chlorobenzylidene
Octachloronaphthalene
Octane
O-Dichlorobenzene
Oil mist, mineral
O-isomer
O-Methylcyclohexanone
Osmium tetroxide
O-Toluidine
Oxalic acid
Oxide dust
Oxides (as Sn)
Oxyacetic acid
Oxygen difluoride
Ozone
Paraquat, respirable
p-Benzoquinone
p-Dichlorobenzene
Pentaborane
Pentachloride
Pentachloronaphthalene
Pentachlorophenol
Pentaerythritol
Pentane
Perchloroethylene
Perchloromethyl
Perchloryl fluoride
Petroleum distillates
Petroleum gas
Phenanthrene
Phenol
Phenyl ether, vapor
Phenyl ether-biphenyl
Phenyl glycidyl ether
Phenylethylene
Phenylhydrazine
Sodium hydroxide
Stoddard Solvent
Styrene
Tetrafluoroethylene
Tin, organic compounds
Titanium dioxide
Toluene
Toxaphene
Tremolite
Tributyl phosphate
Trichloroethylene
Trichloromethane
Trichloronaphthalene
Tridymite
Triethylamine
Trifluorobromomethane
Triorthocresyl
Triphenyl phosphate
Tripoli (as quartz)
Turpentine
Uranium (as U)
Vanadium
Vegetable oil mist
Vinyl benzene
Vinyl chloride
Vinyl cyanide
Vinyl toluene
Warfarin
Wood dust, all species except Western Red Cedar
Xylenes
Xylidine
Yttrium
Zinc chloride fume
Zinc oxide
Zinc oxide fume
Zinc stearate
Zirconium compounds

Toxic Substances

Benzene
Beryllium and beryllium compounds
Butyraldehyde (butanal)
Cadmium fume
Cadmium dust
Carbon disulfide
Carbon tetrachloride
Chromic acid and chromates
Ethylene dibromide
Ethylene dichloride
Fluoride as dust
Formaldehyde
Gasoline
Hydrogen fluoride
Hydrogen sulfide
Mercury
Methyl chloride
Methylene Chloride
MOCA 4,4'-Methylenebis(2-chloroaniline)
Organo (alkyl) mercury
Styrene
Sulfuric Acid
Tetrachloroethylene
Tetrahydrofuran
Toluene
Trichloroethylene

Mineral Dusts

Silica
Crystalline
Quartz
Cristobalite
Amorphous
Silicates
Mica
Soapstone
Talc
Tremolite
Asbestiform
Graphite
Coal Dust

Derived from OSHA Website

Appendix 2

Common Objects and Their Weights

Weight (lbs.)	Description
½	Upholstery hammer
1	Claw hammer
2	Framing hammer
4-7	Laptop computer
9	Gallon of milk
10	2″ x 4″ x 8′ Douglas Fir lumber
12	1 gallon of interior house paint (Glidden Brilliance Interior Flat)
16	2″ x 6″ x 8′ Douglas Fir lumber
17	Household gas grill propane tank (empty)
20	Sledge hammer
21	2″ x 8″ x 8′ Douglas Fir lumber
23	Mid-size passenger car tire (Ford Fusion; Michelin Pilot HX MXM4 P225/50R17)
24	40″ LED television (Samsung 5000 Series TV with stand)
33	Household gas grill propane tank (full)
37	8″ x 8″ x 16″ common cement block
39	Light truck tire (Ford F-150; Goodyear Wrangler SR-A P275/65R18)
45	8′ x 4′ x ½″ Sheet of plywood
51	8′ x 4′ x ½″ Sheet of drywall
52	12″ x 8″ x 16″ common cement block
52	Case of copy paper (standard thickness)
60	5 gallons of interior house paint (Glidden Brilliance Interior Flat)
60	Standard bag of concrete mix
60	1/6 keg of beer
62	Pre-mixed all-purpose joint compound (5 gallons)
68	8′ x 4′ x 3/4″ Sheet of plywood
72	60″ Plasma television (Samsung 6500 Series Smart TV with stand)
80	Large bag of concrete mix

Appendix 3

List of Professional and Doctorate Degrees

Professional degrees may be awarded in the following 11 fields (not exhaustive):

- Doctor of Chiropractic (D.C. or D.C.M.)
- Doctor of Dental Surgery (D.D.S.) or Doctor of Dental Medicine (D.M.D.)
- Doctor of Jurisprudence or Juris Doctor (J.D.)
- Doctor of Medicine (M.D.)
- Doctor of Optometry (O.D.)
- Doctor of Osteopathic Medicine/Osteopathy (D.O.)
- Doctor of Pharmacy (Pharm.D.)
- Doctor of Podiatric Medicine/Podiatry (D.P.M., D.P., or Pod.D.)
- Master of Divinity (M.Div.), Master of Hebrew Letters (M.H.L.), or Rabbinical Ordination (Rav)
- Doctor of Veterinary Medicine (D.V.M.)
- Doctor of Psychology (Psy.D. or D.Psych)

Doctorate degrees may be awarded in the following 24 fields (not exhaustive):

- Doctor of Arts (D.A.)
- Doctor of Business Administration (D.B.A.)
- Doctor of Church Music (D.C.M.)
- Doctor of Canon Law (J.C.D./D.C.L.)
- Doctor of Design (D.Des.)
- Doctor of Education (Ed.D.)
- Doctor of Engineering (D.Eng./D.E.Sc./D.E.S.)
- Doctor of Fine Arts (D.F.A.)
- Doctor of Hebrew Letters (D.H.L.)
- Doctor of Industrial Technology (D.I.T.)
- Doctor of Juridical Science (J.S.D./S.J.D.)
- Doctor of Music (D.M.)
- Doctor of Musical/Music Arts (D.M.A.)
- Doctor of Music Education (D.M.E.)
- Doctor of Modern Languages (D.M.L.)
- Doctor of Nursing Science (D.N.Sc.)
- Doctor of Philosophy (Ph.D.)
- Doctor of Public Administration (D.P.A.)
- Doctor of Physical Education (D.P.E.)
- Doctor of Public Health (D.P.H.)
- Doctor of Sacred Theology (S.T.D.)
- Doctor of Science (D.Sc./Sc.D.)
- Doctor of Social Work (D.S.W.)
- Doctor of Theology (Th.D.)

List derived from Structure of the U.S. Education System: Research Doctorate Degrees.

Glossary

Accommodations
Are adjustments to tasks or the work environment that an employer makes, enabling a person with a disability to compete equally or perform critical tasks.

Associate's Degree
A post-secondary undergraduate degree awarded after completion of an academic course of study or a technical/vocational program usually lasting two years. The amount of education directly related to vocational preparation will vary based on the specific course of study.

At/Below the Shoulder Reaching
Reaching that is present but does not meet the threshold for Overhead Reaching.

At Will
Timing of performing an activity is dictated by the worker's discretion including the ability to choose or control how and when they respond to external factors.

Bachelor's Degree
A post-secondary undergraduate academic degree (Bachelor of Arts or Bachelor of Science) awarded upon completion of a course of study usually lasting four years. Two of the four years are vocational education and counted toward SVP and the other two years are considered general education.

Bachelor's/Master's Combined Degrees (5 year program)
A post-secondary degree program resulting in a combined undergraduate academic degree (Bachelor of Arts or Bachelor of Science) and graduate degree (Master's) awarded upon completion of a course of study usually lasting five years. Three of the five years are vocational education and counted toward SVP and the other two years are considered general education.

Carrying
Transporting an object, usually by holding it in the hands or arms, or wearing it on the body, usually around the waist or upper torso.

Certification
A non-degree credential awarded by a non-governmental certification body (i.e., industry/professional association) based on an individual demonstrating through an examination process that he or she has acquired the designated knowledge, skills and abilities to perform a specific occupation. The examination can be either written, oral, or performance-based. A certification is a time-limited credential (i.e., expires if not renewed) that is renewed through a recertification process.

CIERA
The Compensation Information Entry and Review Application is the data entry system for ORS.

Climbing Ladders/Ropes/Scaffolding
Ascending or descending ladders, scaffolding, ropes, poles and the like using feet and legs and hands and arms.

Climbing Ramps/Stairs
Ascending or descending ramps and/or stairs using primarily feet and legs. Hands and arms may be used for balance (i.e., to hold a railing).

Consistent, and Generally Fast Pace
Work pace that is continuous and steady with little or no waiting or few periods of downtime.

Consistent, and Generally Slow Pace
Work pace that is generally unhurried with periods of waiting and downtime.

Constant
2/3 or more of the time.

Control of Workload
A cognitive element under Pace which identifies the determining factor (technology, strict organizational rules, other people, the worker, other external factor) that drives the rate at which a worker must process new or incoming information, or to take physical action based on new information.

Crawling
Moving about on hands and knees or hands and feet.

Credit-Hour
A semester unit is equivalent to one credit hour. Three credit hours equals one class and nine credit hours equals a full course load for one semester.

Critical Job Function
The main purpose of the job. Consists of critical tasks that are integral to the job. The job would not exist without the critical job function(s), which is the primary pay factor for the job.

Critical Tasks
Activities workers must perform to carry out their critical job function(s). A task is considered critical when it is a primary and required component of the critical job function(s) and/or when a job spends more than 10% of work day or work week performing it.

Crouching
Bending the body downward and forward by bending the legs and spine.

Crowd
A situation in which all of the following conditions must be met: many unfamiliar people are present considering the space available, movement is restricted, any given arrangement of the crowd is temporary, a certain level of disorganization is present, and workers are not separated from the people by counters, dividers or other objects.

Dictionary of Occupational Titles (DOT)
An occupational classification system developed by the U.S. Department of Labor's Employment and Training Administration (ETA) used by the Social Security Administration (SSA) in their disability programs.

Doctorate Degree
A graduate degree that is research-oriented and requires a dissertation or similar independent research effort. The Doctor of Philosophy (Ph.D.) and research doctorate are equivalent in title. All time toward a Doctorate degree is vocationally relevant (usually four years) and is included as SVP time in addition to the vocationally relevant time needed to complete a Bachelor's degree (two years).

Driving
Driving is the operation of a motorized passenger vehicle or other conveyance. Includes passenger vehicles such as automobiles, vans, or light trucks, and other vehicles such as tractor trailers, buses, equipment (e.g. forklifts, golf carts, riding mowers), trains, boats or aircraft.

Duration
Measures the total time a worker performs critical tasks using certain physical demands or is exposed to an environmental condition.

Duration Scale
A scale measuring the duration of an activity being performed or exposure to an environmental condition. Scale: Seldom (up to 2%), Occasional (2% up to 1/3 of the time), Frequent (1/3 up to 2/3 of the time), and Constant (2/3 or more).

Educational Certificate
A credential awarded by an educational institution (such as a community or on-line college, a 4-year college or university, or a trade school) based on completion of all requirements for a program of study, including coursework and test or other performance evaluations. Educational certificates are typically awarded for life (like a degree). Certificates of attendance or participation in a short-term training (e.g., 1 day) are not in-scope for educational certificates.

Exertion
The physical effort that a worker uses to complete a task.

Experience
Measures the minimum amount of prior relevant work activity.

External Verbal Interactions
A cognitive element under Personal Contacts which measures the frequency of verbal interactions with people who do not work for the same employer, company, organization, or establishment as the job, including the general public, vendors, students, contractors, or delivery people. See Verbal Interactions.

Extreme Cold
40 degrees or below when exposure is constant (2/3 or more of the work day) and 32 degrees or below when exposure is frequent or less (less than 2/3 of the work day). Include only non-weather, critical task related exposure.

Extreme Heat
Above 85 degrees with humidity and above 90 degrees in a not humid atmosphere. Include only non-weather, critical task related exposure.

Far Visual Acuity
Clarity of vision at a distance of 20 feet or more, including the ability to distinguish features of a person or objects at a distance.

Fine Manipulation
Touching, picking, pinching, keyboarding, or otherwise working primarily with fingers rather than the whole hand or arm, as in gross manipulation.

Foot/Leg Controls
The use of one or both feet or legs to move controls on machinery or equipment. Controls include, but are not limited to, pedals, buttons, levers, and cranks.

Force
An interaction that changes the motion of an object.

Frequency
Measures the number of times a worker experiences a demand while performing critical tasks, and used for some cognitive and mental requirements, i.e., Internal and External Verbal Interactions and Frequency of Work Being Checked.

Frequency of Work Being Checked
A cognitive element under Work Review which measures the highest frequency work is routinely checked by a supervisor or lead worker to ensure that performance standards are being met.

Frequent
From 1/3 up to 2/3 of the time.

General Education
Time spent completing coursework that is not vocationally specific. General education time is not included in SVP.

General Public
Members of the general public include any individual outside of the worker's organization, including customers and clients, regardless of whether the individual is familiar or unfamiliar to the worker. This includes routine visitors, vendors, students, contractors, or delivery persons, as they are not considered internal to the worker's organization and should be considered members of the general public.

Gross Manipulation
Seizing, holding, grasping, turning or otherwise working with hand(s). Fingers are involved only to the extent that they are an extension of the hand to hold or operate an object or tool, such as a hammer.

Hazardous Contaminants
Exposure to substances that have a negative impact upon respiration, eyes, skin, or other living tissue through inhalation, ingestion or physical contact.

Hearing Requirements
Account for the ability to hear, understand, and distinguish speech.

Hearing-In Person Speech
Includes the ability to hear speech (spoken words) in person, both one on one and in group or conference settings.

Hearing-Other Remote Speech
Includes the ability to hear speech through other remote communication devices such as walkie-talkies, intercoms, public address systems, drive-through headsets, etc.

Hearing-Telephone
Includes the ability to hear speech through a telephone. Also includes the ability to hear the telephone ringing.

Heavy Vibration
Exposure to a shaking object or surface causing a strain on the body or extremities.

High, Exposed Places
Exposure to possible bodily injury from falling due to workers' center of gravity being at least five feet off the ground or being at ground level and at risk of falling several feet below ground level, with no walls or railings surrounding workers to lessen the possibility of falling.

High School Diploma (GED)
A diploma signifying satisfactory completion of secondary general education. No time towards high school or GED is included in SVP because all time is considered general education.

Humidity
Exposure to air that contains a high amount of water or water vapor in which the atmosphere is oppressive. Include only non-weather, critical task related exposure.

Incidental Tasks
Are excluded from ORS collection. The task does not support the job's critical function(s) and is not a primary or required component of the job's critical function(s).

Internal Verbal Interactions
A cognitive element under Personal Contacts which measure the frequency of verbal interactions with people who do not work for the same employer, company, organization, or establishment as the job, including the general public, vendors, students, contractors, or delivery people. See Verbal Interactions.

Job
Represents all workers in an establishment with the same or similar tasks such that they may be analyzed collectively. In ORS, a sampled quote represents a job.

Job Demands
The knowledge, cognitive abilities, and physical actions required to perform critical tasks, as well as environmental conditions experienced while completing critical job tasks.

Keyboarding
Entering text or data into a computer or other machine by means of a keyboard, using a repetitive motion requiring the use of the whole hand.

Kneeling
Bending the legs at the knees to come to rest on the knee or knees.

License
A credential awarded by a government agency that conveys a legal authority to perform a specific occupation. Licenses are based on some combination of degree or certificate attainment, certifications, educational certificates, assessments (including state-administered exams), apprenticeship programs, or work experience. A license is time-limited (i.e., expires if not renewed) and must be renewed periodically.

Lifting
Raising or lowering an object from one level to another. This includes upward pulling.

Low Postures
Includes four postures – stooping, crouching, kneeling, or crawling – which workers may use to lower or position themselves over something at or below knee level or get closer to the ground.

Master's Degree
A graduate degree awarded upon completion of a course of study usually lasting one to two years following a Bachelor's degree. All time toward a Master's degree is vocationally relevant and is included as SVP time in addition to the vocationally relevant time needed to complete a Bachelor's degree (two years).

Minimum Education
Measures the minimum level of formal coursework resulting in a degree required of a job, excluding general education.

Mitigation
When the employer installs devices or requires the use of personal protective equipment (PPE) that fully or partially eliminates potentially hazardous conditions or exposures.

Near Visual Acuity
Clarity of vision at approximately 20 inches or less as when working with small objects or reading small print, including use of computers.

Negligible Weight
So small an amount that measurement is not meaningful (e.g., a pen, a few sheets of paper). Includes anything lifted or carried weighing less than one pound.

Noise Intensity Level
The amount of noise that workers experience while working.

Non-Degree Credentials
An SVP component that includes training time required as a condition of hire which often results in a license/certification, educational certificate, or apprenticeship. Defined based on guidelines established by the Intra-agency Working Group on Expanded Measures of Enrollment and Attainment (GEMEnA).

Observable Behaviors
Actions that can be watched such as typing, driving, standing, lifting, reaching, etc.

Occasional
From 2% up to 1/3 of the time.

Occupation
A broad term representing a defined set of responsibilities, skills, and tasks common across establishments rather than specific to an individual company.

Occupation Specific Credentials
Credentials such as licenses, certifications, and educational certificates which only apply to a specific occupation (or small group of occupations). Occupation specific credentials may be the same for a broad occupation group (digits 4 and 5 of the SOC code), but would rarely cross major SOC groups.

On the Job Training (OJT)
Measures the minimum amount of training time occurring after a worker has been hired.

Oppressive (Humidity)
Atmosphere must be very uncomfortable and could affect breathing.

Other Non-Degree Credential
Non-degree credentials which may be relevant for a wide variety of jobs and occupations and may expire or be valid for life.

Outdoors
Unprotected exposure to weather-related atmospheric conditions such as heat, cold, rain, snow, or wind.

Overhead Reaching
Extending the arm(s) with the hand higher than the head and either the worker bends the elbow with the shoulder at an angle of 90 degrees or more, or the worker keeps the elbow extended, and the angle at the shoulder is about 120 degrees or more.

Pace
A category of cognitive demands consisting of three elements – Control of Workload, Work Pace, and Pause Control – and which refers to the cognitive speed needed to perform critical tasks.

Pause Control
A cognitive element under Pace which identifies whether the worker has the ability to easily step away from their work area for short, unscheduled breaks as needed.

People Skills
A cognitive element under Personal Contacts that includes the ability to listen, communicate, and relate to others.

Peripheral Vision
What is seen above, below, to the left or right by the eye while staring straight ahead.

Personal Contacts
A category of cognitive demands consisting of three elements – Internal and External Verbal Interactions and People Skills – that measures how often workers must engage in verbal interactions with others and the kind of interpersonal skills required for critical tasks.

Personal Protective Equipment (PPE)
Equipment used or worn to minimize exposure to serious workplace injuries and illnesses.

Presence of Supervisor
A cognitive element under Work Review which determines whether or not a supervisor/lead worker is generally present in the same physical area as workers being supervised.

Production Rate
Constant repetition of pushing/pulling with a negligible amount of force requiring considerable strength at any weight.

Professional Degree
A graduate degree that is required to work in a specific career/profession. Professional degrees do not require a Master's degree, and typically fall into three main fields (medical, law, and religion). All time toward a Professional degree is vocationally relevant (usually two to four years) and is included as SVP time in addition to the vocationally relevant time needed to complete a Bachelor's degree (two years).

Proximity to Moving Mechanical Parts
Operation of or proximity to any moving materials, mechanical parts, settings, or any moving objects that could cause bodily harm when used properly.

Public Work Area
A cognitive element under Work Setting which measures whether a job requires working in an area where people who do not work for the employer, company, organization, or establishment can physically approach or communicate with the worker.

Pulling
Exerting force upon an object so that the object moves toward the origin of the force.

Pushing
Exerting force upon an object so that the object moves away from the origin of the force.

Reaching
Extending the hand(s) and arm(s) in any direction, requiring the straightening and extending of the arm(s) and elbow(s) and the engagement of the shoulder(s).

Revised Handbook for Analyzing Jobs (RHAJ)
A guiding document for writing occupational descriptions created by the U.S. Department of Labor's ETA used in developing the 1991 revision of the Dictionary of Occupational Titles.

Seldom
Up to 2% of the time.

Semester
Is one-half of an academic year and is equal to 15 weeks.

Semester Unit
Is equivalent to one credit hour. Three credit hours equals one class and nine credit hours equals a full course load for one semester.

Semi-skilled Work
Work that requires some skill but does not require complex duties. Generally SVP of 3 or 4.

Sitting
A worker is either active or inactive in a seated position or lying down. Active sitting may involve pushing or pulling with feet/legs. A worker that is not standing/walking, must be sitting.

Sitting/Standing at Will
Workers typically have the flexibility to choose between sitting and standing throughout the day, there is no assigned time during the day to sit or stand, and no external factors determine whether an employee must sit or stand.

Skill Level
Work classification that divides occupations into unskilled, semi-skilled, or skilled work.

Skilled Work
Work requiring high levels of judgment and adaptability; setting of realistic goals or independent planning; understanding, carrying out, and remembering of complex instructions; and often encompasses abstract ideas and problem solving. Generally SVP of 5 or greater.

Speaking
Expressing or exchanging ideas by means of the spoken word to impart oral information to clients or the public and to convey detailed verbal instructions to other workers accurately, loudly, or quickly.

Specific Vocational Preparation (SVP)
The minimum amount of preparation time required by a typical worker to learn the techniques, acquire the information, and develop the aptitude needed for average performance in a specific job.

Standing/Walking
Whenever workers are not sitting or lying down.

Stooping
Bending the body forward and down while bending the spine at the waist 45 degrees or more either over something below waist level or down towards an object on or near the ground. Stooping should be significant enough that when bending, if arms were extended toward the ground, workers' hands would be at or below the knees. Stooping must be performed by standing. Exclude stooping performed while workers are sitting.

Strength
The capacity for exertion or endurance.

Structure-related Climbing Ramps or Stairs
Performing critical tasks would not require climbing if the workplace was one level. Structure-related climbing includes climbing stairs or ramps that are part of a building structure, including climbing steps to enter/exit residential structures as well as climbing full stair flights.

Task
A distinct activity assigned to, or performed by workers, who are carrying out job duties that result in a specific outcome.

Task List
Reflect and record the detailed activities workers perform to accomplish the critical job function. A task list connects the critical job function with ORS element coding.

Telework
A cognitive element under Work Setting that identifies jobs that allow workers the flexibility to perform their critical job function from the worker's home.

Threshold
A magnitude or intensity that must be met or exceeded for a certain demand to be considered for ORS collection.

Traditional Keyboard
A panel of keys used as the primary input device on a computer, typographic machine or 10-Key numeric keypad. Includes stenographer's machines, typewriters, laptops, all aspects of using a desktop computer, including a mouse, adding machines, and calculators.

Unobservable Behaviors
Actions which cannot be watched such as learning and applying knowledge, perception, problem solving, etc.

Unskilled Work
Work that requires little or no judgment for simple duties that can be learned on the job in a short time period. Generally SVP of 1 or 2.

Varies
Work pace that changes throughout the work period with fluctuations on a daily, weekly, or seasonal basis. Includes only the variation between slow and fast pace. Does not include when the pace changes but would still fall within the same category.

Verbal Interactions
Cognitive elements under Personal Contacts which measure the most often workers in the job typically initiate or respond to new, verbal work-related interactions, with internal and external contacts. See External Verbal Interactions and Internal Verbal Interactions.

Walking
Moving about on foot.

Wetness
Any contact with water or liquid, including working in a wet area. Include only non-weather, critical task related exposure.

Work Pace
A cognitive element under Pace which identifies both the consistency and the rate at which work occurs. Work pace specifically refers to the speed needed to perform critical tasks.

Work-Related Climbing Ramps or Stairs
Performing critical tasks would require climbing regardless of the building structure. Work-related climbing includes climbing stairs/ramps on machinery and equipment, the use of step stools, or the use of mobile ramps.

Work Review
A category of cognitive demands consisting of two elements – Frequency of Work Being Checked and Presence of Supervisor – which measure how often work is checked and whether workers have immediate access to a supervisor if necessary.

Work Schedule Variability
A cognitive element measuring whether the employer changes the work schedule, requiring workers to report on different days or times, or work a different number of hours from week-to-week.

Work Setting
A category of cognitive demands consisting of three elements – Public Work Area, Working around Crowds, and Telework – which measure the area or environment where workers perform their critical job function(s) and critical tasks.

Worker
An employee who is assigned a specific set of tasks. The term worker is equivalent to the term position, historically used in the Dictionary of Occupational Titles and the Revised Handbook for Analyzing Jobs.

Working Around Crowds
A cognitive element under Work Setting that identifies settings in which the worker is required to work in a crowd in a way that restricts their movement.

Workload
The amount of work expected to be performed in a set amount of time.