

Occupational Requirements Survey (ORS)

Collection Manual

Version 4.0



Instructions in this manual became effective August 2018. It includes updated procedures information from Procedure Alerts through #194, Technical Memorandums through #332, and applicable ORS SO-70s through #66.

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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 two 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 and training, as well as mental and cognitive demands.

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

Information Reference Guide

Useful references are shown below.

References

- To view the ORS 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/>
- 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](#).

Major Changes to ORS Manual (August 2018)

The ORS Collection Manual has been revised. Several sections have undergone extensive changes. Charts, text boxes and styles were reformatted throughout the manual for consistency. Please carefully read and review the Major Changes Table below to identify updated procedural guidance and changes for ORS Collection.

Chapter	Source	Section Number and Action
Introduction	SI&P	Introduction revised
Key Concepts (1)	PPD Maintenance	1_03 Added examples of job demands out of scope for ORS collection. 1_05 Updated duration scale charts
	Procedures Alert 193	1_05 Added clarification of the difference between frequency and duration.
Collection Strategies (2)	PPD Maintenance	2_01 Added a cross-reference to Task Lists chapter.
Classifying Jobs (3)	PPD Maintenance	3_01 Moved SOC and O*NET subsection from Key Concepts chapter (1_01) to this section. 3_01 Updated SOC coding examples to 2018 SOC codes.
	PSO Team	3_02 Updated job characteristics captured for ORS. 3_04 Replaced “PSO” references in this section with “selection”.
Task Lists (4)	PPD Maintenance	4_01 Added note that documenting incidental tasks is optional. 4_02 Added guidance about identifying critical and incidental tasks when using job descriptions to create task lists. 4_05 Added a cross-reference to Driving section.
SVP (5)	PPD Maintenance	5_01 Combined section 5_01 and 5_02 and moved all subsections under 5_02 to 5_01. Renumbered remaining sections. 5_01 Added hyperlinks to the four SVP components. 5_01 Added summary guidance regarding vocationally relevant preparation time and SVP

		<p>exclusions under subsection Computing SVP Level.</p> <p>5.01 Eliminated Calculating SVP-an example header. Reformatted existing example as table. Added additional examples to illustrate how to calculate SVP for combinations resulting in both the same SVP and different SVP levels.</p> <p>5.01 Added guidance to subsection Collecting concurrent SVP time.</p> <p>5.01 Reformatted and updated examples under Using “Unknown” and “Not Required”.</p> <p>5.01 Added background information about why it may be hard to collect SVP requirements for non-levelable jobs.</p>
	<p>SO-70: 66</p>	<p>5.01 Added guidance for Credentials under Using “Unknown” and “Not Required”.</p>

	ORS Revision Team	<p>5_02 Reformatted guidance for collecting Minimum Education into separate subsections.</p> <p>5_02 Clarified guidance for collecting reading and writing when no formal education is required.</p> <p>5_02 Eliminated guidance about multi-selecting Bachelor’s and graduate degrees in CIERA.</p> <p>5_02 Eliminated guidance about excluding certifications, educational certificates, or licenses from the ‘Other’ Minimum Education category. The ‘Other’ Minimum Education category has been eliminated.</p> <p>5_02 Updated examples to reflect time entry changes due to CIERA design changes.</p> <p>5_03 Relabeled component to Credentials (formerly Pre-employment Training) and updated definition.</p> <p>5_03 Reorganized section: changed sub-section order, eliminated/revised some sub-section headings, clarified existing content and examples throughout this section.</p>
	SO-70: 65	5_03 Added apprenticeship sub-section and coding instructions
	ORS Revision Team	<p>5_05 Relabeled component to On the Job Training OJT (formerly Post-employment Training).</p> <p>5_05 Relabeled section headings for consistency with other sections.</p>
Cognitive Elements (6)	Cognitive Team	This chapter experienced significant changes. Review the entire chapter.
Physical Demands (7)	PPD Maintenance	<p>All sections within this chapter were reformatted and existing procedures were condensed where redundant.</p> <p>7_01 Eliminated some examples and added an example of concurrent demands.</p> <p>7_01 Added guidance for ‘One’ or ‘Both’ coding.</p> <p>7_02 Reordered, reformatted, and added examples to Sitting vs. Standing/Walking for consistency with other sections.</p>

	SO-70: 63	7_02 Replaced “prone” with “lying down” in sitting definition. Added example of active lying down.
	ORS 721 Revision Team	<p>7_03 Clarified Lifting that involves upward pulling.</p> <p>7_03 Revised Lifting/Carrying weight ranges.</p> <p>7_03 Added new and modified existing Lifting/Carrying examples.</p> <p>7_04 Eliminated Pushing/Pulling – ‘Feet Only’.</p> <p>Modified Pushing/Pulling – ‘Feet/Legs’ type.</p> <p>7_04 Added new and modified existing examples in Pushing/Pulling.</p> <p>7_06 Added guidance to Manipulation-‘Foot/Leg Controls’.</p>
	Procedures Alert 193	7_07 Added guidance on active keyboarding.
	ORS 721 Revision Team	<p>7_08 Added Low Postures definition. Revised procedures for collection of Crawling, Crouching, Kneeling and Stooping postures. Added coding examples.</p> <p>7_09 Added guidance for loading docks (TM #323 supplement).</p> <p>7_10 Added that Driving may include presence of a Credential (License or Other) depending on vehicle operated. Added examples of vehicles.</p> <p>7_11 Relabeled element to Speaking (formerly Communicating Verbally).</p> <p>7_11 Modified Hearing categories to In Person Speech (formerly One-on-One and Group or Conference categories), Telephone, Other Remote Speech (formerly combined as Telephone and similar remote communication devices). Eliminated Passage of a Hearing Test category.</p>
	SO-70: 62	Updated examples.
	ORS 721 Revision Team	7_12 Added example to Vision exclusions.
Environmental Conditions (8)	ORS 721 Revision Team	Switched section order of Heavy Vibration and Proximity to Moving Mechanical parts to group elements that require PPE coding. Renumbered affected sections.

		<p>8_01 Moved definitions of Mitigation and PPE to Environmental Conditions chapter (formerly 1_07). Updated types of PPE examples within definition and added example.</p>
	<p>SO-70: 60</p>	<p>8_06 Added firefighter example to Humidity.</p>
	<p>ORS 721 Revision Team</p>	<p>8_08 Existing procedures were condensed in the section to eliminate redundancy.</p> <p>8_08 Added radiation as an exclusion for this element.</p> <p>8_09 Added word “mechanical” to Condition 1. Added example of non-power tool as exclusion.</p>
<p>Glossary</p>		<p>Terms added or revised:</p> <ul style="list-style-type: none"> • Associate’s Degree • At Will • Bachelor’s • Bachelor’s/Master’s Combined Degrees • Control of Workload • Credentials (formerly Pre-employment Training) • Crowds • Driving • Doctorate • Duration • Frequency • Frequency of Work Being Checked • General Public • Hearing-In Person Speech • Hearing-Telephone • Hearing-Other Remote Speech • Hearing-Other Sounds • High, Exposed Places • High School • Interaction with Public/Crowds • Low Postures • Master’s • On the Job Training (formerly Post-employment Training) • Other Credential • Pace • Pause Control • People Skills • Personal Contacts

		<ul style="list-style-type: none"> • Personal Protective Equipment (PPE) • Presence of a Supervisor • Problem Solving • Professional degree • Reaching • Sitting • Speaking (formerly Communicating Verbally) • Standing • Structure Related Climbing Ramps or Stairs • Telework • Traditional Keyboard • Verbal Interactions • Vocational Associate’s Degree • Vocational High School • Working around Crowds • Working with the General Public • Work Pace • Work Related Climbing Ramps or Stairs • Work Review <p>Terms Eliminated:</p> <ul style="list-style-type: none"> • Adaptability • Change in Work Location • Change in Work Task • Controlling Workflow • Decision-making • Interaction • Pace of Work • Post-employment training • Pre-employment training • Touchscreen Keyboard • Work as Generally Performed • Work Location (Adaptability) • Work-Related Personal Interactions • Work Schedule (Adaptability) • Work Tasks (Adaptability)
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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:

- [Task, Worker, Job, Occupation](#)
- [Critical Job Function, Critical and Incidental Tasks](#)
- [Job Demands](#)
- [Thresholds](#)
- [Duration](#)
- [Accommodations](#)

1_01 Task, Worker, Job, Occupation

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 *Dictionary of Occupational Titles* and the *Revised Handbook for Analyzing Jobs*.

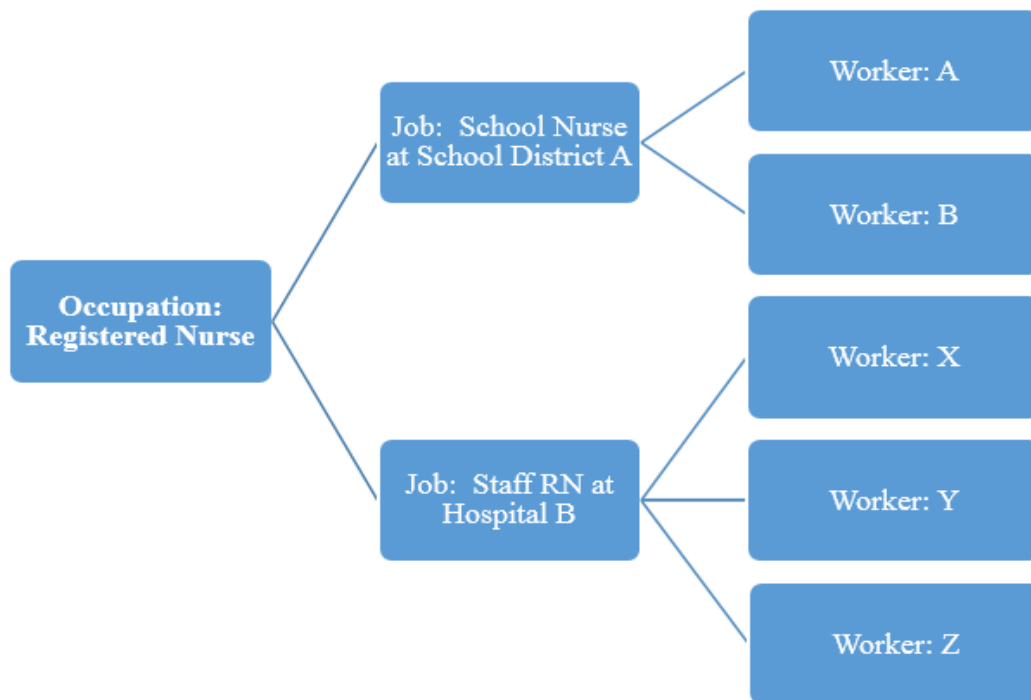
Job

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 not specific to a company. In ORS, all sampled jobs are assigned to an occupation defined in the [Standard Occupational Classification \(SOC\)](#) system. For more information about job classification in ORS, see [Chapter 3: Classifying Jobs](#).

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 function include janitors clean the building and grounds, teachers prepare and present lessons and monitor students, and 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 (see section [3_01](#)), 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.

For more information on how to collect and document critical job function(s) and critical tasks in ORS, see [Chapter 4: 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 like field trips, tradeshow, conferences, award ceremonies, etc., 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.

Tasks Examples	Type	Reason
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.
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), despite the frequency they are performed
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 are assigned tasks for accountants at this establishment. These tasks do not usually support the critical job function of accountants, but since workers spend 10% or more of their work time doing this, it is included as a critical task for this job.
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.
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.
All employees in a hotel are required to smile and greet customers when they enter the establishment or in passing.	Incidental	Important, required task but not specific to any single establishment job. Include only for jobs where workers spend 10% or more time doing.
When the copier is out of paper, any staff member refills the machine.	Incidental	Important task but not specific to any single establishment job.
In a two-person landscaping crew, at least one worker must be able to drive the company truck to the various job locations. Driving would be considered an incidental task since only 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.

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 Elements](#)
- [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. 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, etc.

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 required 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 [Chapter 4: 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 Duration and Frequency

Frequency is the number of times a worker experiences a demand while performing critical tasks. Many cognitive demands for ORS are measured using frequencies, for example, the frequency work is checked by a supervisor or lead worker.

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

When a respondent indicates that an element is not performed or experienced as part of the critical tasks, duration is coded as 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:

Duration Scale	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.

Duration is different than frequency. For example, workers may use a computer “all day” (frequency) but may actually only be typing or manipulating a mouse for four hours of an eight hour work day. The other time is reading material on screen, or performing other tasks that are not keyboarding. The duration for keyboarding in this example is 50% and is coded as Frequent (i.e., 1/3 up to 2/3).

Duration for critical tasks that occur less than daily

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.

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.

Duration Coding Examples:

Example 1 - Teachers
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 one out of every 10 work days.
Duration Coding
Code duration for Outdoors as ‘Up to 2%’. Using the duration scale, one hour biweekly falls into the Seldom category (Up to 1 hour per week).

Example 2 – Restaurant Servers
Servers work at a restaurant that has an outdoor seating area open 3 months out of the year. Servers spend 1/3 to 2/3 of their shift outside while the patio is open, if they are assigned to the section. During the remaining 9 months of the year, servers work inside only.
Duration Coding
Code duration for Outdoors as ‘2% up to 1/3’. Using the duration scale, the amount of time described on an annual basis falls into the Occasional category (One week up to 4 months).

Example 3 – Fast Food Crew Members
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 the trash. During a typical shift, only one 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.
Duration Coding
Code Lifting/Carrying weight range as 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 (Up to 1 hour per week).

Example 4 – Potato Chip Factory

At a potato chip factory, workers hired as “packers” are expected to perform and rotate through three distinct functions: packing, picking, 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/Walk = 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

Changes 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 a change is available to all workers in the job, it is not considered an accommodation.

Accommodations Examples	Accommodation?	Reason
Allowing a worker to avoid/ reassigning <i>critical tasks</i> to other workers in the job	Yes	Employer modification for one worker to perform critical tasks.
Allowing a worker to avoid/reassigning <i>incidental tasks</i> to other workers in the job	Not Applicable	Accommodations apply to critical tasks only and all incidental tasks are excluded from ORS collection
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
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
Buildings with handicap access ramps and other unrestricted handicap access equipment	No	Employer does not provide or restrict their use
Tools such as eyeglasses, contacts, and hearing aids	No	Employer does not provide or restrict their use

Chapter 2: Collection Strategies



The goal of ORS is to collect as much quality data as possible in an efficient manner. Strategies for success rely on positive respondent feedback, knowledgeable field economists, and expedited collection procedures. Good response rates are the foundation of reliable statistical data. 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.

ORS presents a unique collection opportunity because most people are familiar with the Social Security Administration (SSA) programs. While it does not guarantee cooperation, this familiarity may help field economists get quality information for ORS. The following strategies, explained further in this chapter, facilitate successful ORS collection:

- [Use Job Descriptions and Other Descriptive Documents to Prepare for Collection](#)
- [Identify a Collection Approach](#)
- [Prioritize to Maximize Data Collected](#)
- [Take Advantage of Opportunities to Observe Workers on Jobs](#)

2_01 Use Job Descriptions and Other Documents to Prepare for Collection

Job descriptions and other establishment documents (e.g., Workers Compensation forms, OSHA/workplace safety forms, and organizational charts) are valuable tools when making a preliminary assessment of jobs and in expediting collection. However, the value of ORS is the quality of data obtained by the interaction of field economists with respondents while conducting an interview.

Use caution with establishment documents that include references to ORS elements and duration. Job demands listed in job descriptions and other establishment documents may not match the definitions and thresholds for ORS elements. The description may also reflect the maximum exertion or exposure a worker could experience instead of the normal expectations and requirements of the job.

Before using any job descriptions or other descriptive documents, verify with the respondent they are current and accurately reflect the critical function and critical tasks of the job. Critical tasks, job demands and durations listed in a job description cannot be used until they have been confirmed and verified by a knowledgeable respondent. Probing questions are necessary to determine incidental tasks, and to reconcile incomplete, unclear, or conflicting information present in a job description. Job descriptions, or any other company documentation, are aids to collection and do not substitute for an interview.

Job descriptions and other establishment documents may expedite collection by helping to:

- Identify the potential critical job function(s) and critical tasks
- Verify Standard Occupational Classification (SOC) coding
- Review O*NET task lists associated with possible SOC options
- Launch discussions with the respondent on task lists, ORS data elements, and leveling
- Provide information on work schedules and supervisory information
- Learn about educational, training, certification, licensure, and experience requirements for Specific Vocational Preparation (SVP)

The presence of ORS data elements may be evident from the occupational information obtained from job descriptions and respondent discussion. For example:

- Presence/absence of physical demand elements (e.g., writing is present, so gross and fine manipulation must be present)

- Presence/absence of environmental condition elements (e.g., tasks performed entirely in an office so working outdoors is not present)

Clarify any conflicting information that arises between respondent information collected early in the interview, or through job descriptions, and answers provided later in the collection interview. Confirm with the respondent that the researched information applies to the selected occupations. Resolve discrepancies with the respondent, during the interview or through follow up as needed.

For more information about using job descriptions to create task lists, see [Chapter 4 02: Use of Job Descriptions in Creating Task Lists](#)

Special situations

In certain situations, it is more common for establishment documentation to be generalized descriptions of the jobs. Central offices and temporary help firms are examples where this occurs, but it can also occur in maintenance and service industries where the nature of the call influences the activities.

These situations should be evaluated on the occupational information provided, including the ability of the respondent to provide valid responses. When using establishment descriptions, a quote may be coded usable if the respondent can confirm the critical job function and critical tasks the company defined as relevant for the occupation. Any specific vocational preparation, cognitive demands, physical demands, and environmental conditions elements coded based on establishment descriptions must be verified by the respondent.

2_02 Identify a Collection Approach

Determine the best collection approach based on personal preference, establishment size, industry, and respondent personality. Options include collecting:

- Each quote individually.
- Multiple quotes concurrently.
- A portion of the interview for each quote individually and a portion for multiple quotes concurrently.

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_03 Prioritize to Maximize Data Collected

Efforts must be made to collect all data for all selected occupations. Sometimes that is not possible due to respondent constraints. Apply the following collection priorities to maximize data collected. Collect these items first:

- Task Lists
- SVP
- Cognitive Elements

These three elements inform the conversation and coding for all of the other elements.

Collect these physical demand elements next:

- Sitting vs. Standing/Walking and Sit/Stand at Will
- Lifting/Carrying
- Pushing/Pulling: hand/arm and foot/leg

Collect the remaining elements to the greatest extent possible. At a minimum, attempt to collect the presence or absence of each item. Conversational interviewing techniques can increase efficiency. Use information provided throughout the interview to support coding decisions. For example, if the task list for an occupation includes use of a computer, [near visual acuity](#) is present and may be assumed.

2_04 Take Advantage of Opportunities to Observe Workers on Jobs

ORS is collected by interviewing respondents who understand their establishment's job demands. Observations of workers can also be helpful in understanding how work is performed. They 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.

Chapter 3: Classifying Jobs

Matching jobs found in individual establishments to the closest standard occupation in the national economy ensures any job demands collected reflect the correct occupation.



Other factors may also result in the need to further distinguish jobs during collection.

This chapter outlines the procedures for classifying and distinguishing jobs during the ORS collection process:

- [SOC Classification](#)
- [Job Characteristics](#)
- [Work Schedules](#)
- [Other ORS Variations](#)

3_01 SOC Classification

ORS classifies selected jobs found in establishments into the most detailed occupational code available. Federal statistical agencies are mandated to use the [SOC](#) system for the purpose of collecting, calculating, or disseminating occupational or labor market data.

To provide additional levels of detail, ORS jobs are classified using expanded eight-digit occupational codes based on those used in the [O*NET \(Occupational Information Network\) Online](#).

Use the critical function and critical tasks of the job to determine the work performed and consider the skills, education, and training required to identify the best matching SOC code. Apply the [SOC Classification Principles and Coding Guidelines](#) and the definitions in the O*NET to determine the best match.

When determining which SOC code is the best match, all workers classified in an occupation must perform the duties described in the sentences at the beginning of the definition as closely as possible. Some SOC definitions will have one or more “May” statements that describe tasks workers in an occupation may – but are not required to – perform in order to be classified in that occupation.

For more SOC coding guidance, see [NCS Volume 1, Chapter 4](#).

Using O*NET

ORS requires job demands data coded at the most detailed level possible. SOC codes listed in the SOC manual are only listed at the 6-digit level. To provide additional levels of detail, ORS uses expanded 8-digit occupational codes based on codes created and used in the O*NET.

O*NET occupations contain definitions and detailed task lists and can provide verification that the best 6-digit SOC and 8-digit occupational code has been selected. If the task list provided by the respondent is significantly different from the O*NET list, review the 6-digit SOC coding to ensure it is the best fit. Do not rely solely on the O*NET to determine the proper coding of SOCs or identify critical tasks.

Document any situation where an 8-digit occupational code was available and not used. This may be appropriate because the occupation is not covered by any of the more detailed breakouts, or when more than one detailed breakout applies.

Example: A small shipyard has a combination Marine Engineer SOC 17-2121.01 and Marine Architect SOC 17-2121.02 occupation. The occupation performs both critical functions equally and the occupational work levels (4-Factors) are the same. Instead of choosing one of the two 8-digit codes, match the occupation to the 6-digit (combination) SOC 17-2121.00. Document your reason for not choosing one of the more detailed 8-digit SOC levels.

Classifying combination jobs

Some workers perform jobs that span more than one occupation. These **combination jobs** are difficult to classify in one detailed SOC code. If it is a common combination, check for any SOCs that cover the full span of the job.

When classifying a combination job, follow standard SOC classification principles:

- Select the SOC that matches the highest skill level performed by the job. Base skill level on information collected from the respondent.
- When there is no perceptible difference in skill levels, classify the SOC based on the critical functions/tasks performed most often.

Document *all* SOC coding choices, including the correct secondary SOC code and associated duties.

Collect and code ORS elements based on how workers perform *all* critical tasks of a job that are related to different critical job functions, even if those tasks are related to different SOC occupations.

Combination SOC Examples	Combination Job	Action	Reason
Receptionist/Secretary handles phones, reception, correspondence, and scheduling.	Yes	Select Secretary SOC. Document the receptionist SOC and collect all critical tasks.	The Secretary is the job with the higher skill level.
Fast food crew workers may cook and prepare fast food and/or serve customers depending on their shift assignments	No	Select Fast Food and Counter Workers (35-3023.00)	Common combination job with a detailed SOC that covers the full span of expected duties.
Teacher/janitor teaches shop during the school year; cleans the school during the summer.	No	Split the job during selection.	The two jobs are unrelated and could be held by two different people.

Residual occupations

Classify jobs whose critical function and critical tasks are not described in a distinct detailed occupation in the appropriate “All Other” or residual occupation. Residual occupation categories appear as the last occupation in a group with a code ending in “-9” and are identified by the words “All Other” at the end of the title. Residual occupations help identify unusual or emerging occupations.

Do not use residual occupation codes when you have insufficient information to determine whether a job belongs in a detailed or residual SOC. Code these jobs as a Refusal (REF), and at a minimum, select and enter the appropriate broader SOC (XX-0000.00). Always code the maximum detail possible even in the case of refusals. For example, 11-9030.00 Education and Childcare Administrators, would be preferred rather than 11-0000.00 Management Occupations.

Do not use residual occupation codes as a fallback when an establishment job title reflects a broad SOC group and encompasses different detailed SOC. If a respondent cannot separate the detailed SOC, select the detailed SOC which covers the majority of workers in the job title.

Residual SOC Examples	SOC Code
A school district groups all elementary and middle school teachers together. Respondent states the majority work at the elementary school.	Select SOC of majority, 25-2021.00 Elementary School Teachers, Except Special Education. Collect job demands applying to Elementary School Teachers only.
Substitute teachers (Short-term)	Select 25-3031.00, Substitute Teachers, Short-Term. Substitute teachers are no longer coded in a residual SOC.
University respondent cannot determine subject taught by associate professors in humanities department. An online search reveals majority of associate professors in the department teach English.	Select SOC of majority, 25-1123.00, English Language and Literature Teachers, Postsecondary.

3_02 Job Characteristics

Jobs in ORS are also classified by broad characteristics such as full-time/part-time and their work level, including supervisory duties.

ORS procedures for classifying job characteristics and work level follow NCS procedures. See [NCS Volume 1, Sections 4_01, 4_05](#), and [Chapters 5 and 6](#).

3_03 Work Schedules

Collect the number of daily and weekly hours and annual weeks workers in the job are expected to perform.

Code the permanent, on-going schedule of both exempt and non-exempt employees even when this time may exceed straight time pay. Include routine recurring overtime hours to accurately reflect hours and percent of day in calculations. Exclude overtime hours worked for non-exempt employees working sporadic or ad-hoc overtime schedules.

Routine Overtime Work Schedule Coding Example		
Non-exempt production jobs work a permanent schedule of 10 hours a day, 5 days per week, year round. As a result, they receive 10 hours of overtime each week.		
Work Schedule Coding		
Hours/Day	Hours/Week	Weeks/Year
10.00	50.00	52.00

For non-standard or varying work schedules, calculate the average work schedule.

Non-standard Work Schedule Coding Example		
Firefighters work 24 hours/day shifts three times over a nine-day period, year round. According to FLSA requirements, if a 7 day period is established, hours worked over 53 for firefighters must be compensated at premium overtime rates.		
Work Schedule Calculation		
<i>Hours per work period:</i> 24 hours * 3 shifts = 72 hours per 9 days		
<i>Average hours per week:</i> (72 hours / 9 days) * 7 days per week = 56 average hours per week		
Work Schedule Coding		
Hours/Day	Hours/Week	Weeks/Year
24.00	56.00	52.00
* Code the permanent, on-going schedule of non-exempt employees even when this time may exceed straight time pay. Include routine recurring overtime hours to accurately reflect hours and percent of day in calculations.		

For general procedures regarding work schedule coding, see [NCS Volume 1, Chapter 8](#).

3_04 Other ORS Variations

Jobs in ORS can vary for other reasons than those described earlier in this chapter. To capture the variability correctly, it is important to discuss with the respondent early in the interview if there are any differences in the work requirements for workers within the selected jobs.

When ORS element demands vary within a job title, identify the reasons and how workers are assigned to critical tasks. Reasons ORS variations may occur include:

- **Work preferences.** Example: Workers may be able to select whether to use the phone or email to contact a customer. In this situation, code the duration based on the way most workers normally perform critical tasks.
- **Different tasks assigned on a regular basis.** Example: Workers rotate through different tasks supporting the same critical job functions within the same job. In this situation, collect and code the full range of ORS element variation for critical tasks performed within the job.
- **The same critical tasks are performed at known different frequencies.** Example: Workers in the same job have different shifts that create variation in frequency and duration. In this situation, where the workers do not rotate regularly through the shifts, sample the narrowest position and collect job demands only related to the narrowest position selected.

Collect and code the full range of ORS element variation within the company job title when the differences are due to routine workload differences, or the workers are assigned by the company to rotate through all situations.

When workers within an establishment job title are assigned specific critical tasks and are not expected to rotate regularly or perform all critical tasks, sample the narrowest position and collect job demands only related to the narrowest position selected.

Other ORS Variations Examples	Action	Reason
A company has day and night shift janitors that do not rotate. During selection, 'day shift' janitors were selected. Leveling is the same, but the physical demands for lifting and push/pull differ for janitors working day shift versus working night shift.	Collect and code job demands for day shift janitors as one narrowly defined job. Enter the quote employment as the number of day shift janitors only.	The duration of elements experienced are different by the shift, and workers do not rotate between shifts.
A company has one job title 'Landscaper'. Landscapers work in crews performing the same general work, although workers can perform different tasks which change from day to day, depending on crew assigned and location. The Landscaper job title includes both general crew workers and crew leaders. Crew leaders have a higher level of experience, responsibility, and problem solving than crew workers. Both crew workers and crew leaders were selected.	Collect and code the full ORS element range experienced by crew workers as one narrowly defined job. Collect and code crew leaders as a separate narrowly defined job. Enter the quote employments as the number of crew workers and the number of crew leaders.	Crew workers are expected to rotate through various critical tasks. Crew leaders are a separate quote since leveling, cognitive and SVP would be different.
Nursing assistants at Hospital A experience variations within ORS elements based primarily on the department they are assigned as well as the shift they work. Nursing assistants rotate through shifts but do not usually move between departments. Day shift has more interaction with patients and families.	Select nursing assistants in one department as one narrowly defined job. Collect and code the full range of job demands experienced across all shifts within the selected department. Enter the quote employment of all shifts of nursing assistants in the selected department.	Workers do not rotate between departments but are expected to rotate between the various shifts.

Chapter 4: Task Lists

A **task list** outlines the critical job function(s) and itemizes the [critical tasks](#) performed within a job. Only the knowledge, cognitive abilities, physical actions, and environmental conditions associated with a job's critical tasks are in-scope for ORS.

The collection of task lists is essential to understanding how the critical tasks performed relate to the job demand elements. Therefore, coding of task lists is itself a required ORS element.



This chapter outlines the procedures for using task lists during the ORS collection process:

- [Collecting Task Lists](#)
- [Use of Job Descriptions in Creating Task Lists](#)
- [Documenting an ORS Task List](#)
- [Consistency between Task List and Element Coding](#)
- [Job Demands when Traveling is Involved](#)

4_01 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 any [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 something that anyone in the organization could do?

ORS Task Lists Examples

Court Room Clerk	
<u>Critical Job Function</u>	<u>Critical Tasks</u>
Performs clerical and courtroom duties in support of the municipal court	<ul style="list-style-type: none"> • Prepares docket or calendar of cases to be called • Assigns new court dates • Prepares legal forms, prepares and corrects convictions on computer • Reviews and researches 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.
<p>Excluded tasks*:</p> <ul style="list-style-type: none"> • 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 done by any job in the organization.) • 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.

Middle School Teacher	
<u>Critical Job Functions</u> 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.	<u>Tasks</u> <ul style="list-style-type: none"> • 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*: <ul style="list-style-type: none"> • 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.

Hairdresser	
<u>Critical Job Function</u> Provides beauty services relating to clients' requests.	<u>Tasks</u> <ul style="list-style-type: none"> • 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*: <ul style="list-style-type: none"> • 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.

4_02 Use of Job Descriptions in Creating Task Lists

Job descriptions often provide considerable information about the tasks that jobs perform, but they can be outdated and misleading. See [2_01 Use Job Descriptions and Other Documents to Prepare for Collection](#). Respondents are the primary source of information. If a respondent is insistent that a job description be used to code tasks, the following must be verified before using the information:

- Description is current
- Description is for the correct job
 - Title/job code matches quote selection
 - Description covers sufficiently narrow tasks/duties (e.g., if the selected quote is an art teacher then the description for a primary teacher would not be narrow enough)
- Tasks/duties are accurately portrayed (job descriptions often overstate tasks/duties)
 - All critical tasks are included.
 - Incidental tasks are identified for exclusion.

Even after verification of the above items, proceed with caution. Job descriptions can be useful in determining what tasks should be included, but they often don't describe how tasks are performed. If the respondent doesn't have direct knowledge of sampled positions in order to verify the accuracy of a job description and the information provided on it, then the information is not usable.

4_03 Documenting an ORS Task List

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 in order to be used. Helpful factors to include for context and improved understanding of potential ORS elements are:

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

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.

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.

Copying/pasting entire job descriptions, the O*NET task list, the O*NET definition, or the SOC Manual definition is unacceptable and does not meet the task list requirement. If the respondent doesn't have direct knowledge of the sampled jobs in order to verify the accuracy of a job description and the information provided on it, do not use the information.

Documenting an ORS Task List 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, rest rooms, 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. The janitor 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 also 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. The janitor also plants flowers and shrubs in spring and fall.

The janitor 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.”

Example – Janitor Task List	
Critical job function: Cleans interior and performs light indoor and grounds maintenance at an elementary school.	
Task List:	<ul style="list-style-type: none">• 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

4_04 Consistency between Task List and Element Coding

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.

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 as '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)'.

ORS Task Lists and Element Coding Inconsistency Examples

Example 1 – LAN Techs
Critical Job Function: Maintains company software and hardware for all employees.
<p>Task List:</p> <ul style="list-style-type: none"> • 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
<p>Possible Element Coding Inconsistency with Task List:</p> <p>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.</p>
<p>Resolution:</p> <p>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, emergency situation.</p>

Example 2 – Preschool Instructor
Critical Job Function: Provides classroom instruction and recreational activities to preschool age children.
<p>Task List:</p> <ul style="list-style-type: none"> • Teaches lessons to children using toys and other learning tools • Monitors recess and playtime • Reports progress to parents • Develops lesson plans
<p>Possible Element Coding Inconsistency with Task List:</p> <p>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.</p>
<p>Resolution:</p> <p>Code for overhead reaching. Coding is consistent with the task list, as it is done in support of teaching lessons and monitoring playtime.</p>

Example 3 – Machine Operator

Critical Job Function: Responsible for all aspects of operation of injection molding machines.

Task List:

- Operates injection molding machine
- Performs machine set up and adjusts as necessary
- Inspects final product
- Resolves machinery issues.

Possible Element Coding Inconsistency with Task List:

Respondent indicates that the machine operator climbs stairs that are a part of the machine to make adjustments on the top of the machine and when machinery malfunctions.

Resolution:

Code for work-related climbing. Add documentation to explain this demand is part of critical tasks (performing machine adjustments and resolving machinery issues) which support the critical job function.

Example 4 – 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 sweeps and mops the dental office before closing which takes about 15 minutes each 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:

Exclude cleaning duties and driving from the task list. Sweeping and mopping the dental office is not associated with the critical job function and the job spends less than 10% of time performing this task. Dropping off mail is not specific to the job – anyone in the establishment can do it.

4_05 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

Exclude:

- Driving and travel and their associated demands that are part of a regular commute
- Lifting or pushing/pulling personal luggage
- Exposure [Outdoors](#) 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 [7_10 Driving](#).

Job Demands when Traveling Examples	Include:	Exclude:
A college professor must drive between campuses during a regular workday.	Include this intra-day driving.	When professor commutes to one campus on one day and teaches at a different campus on a different day. This driving is part of a normal commute.
Computer consultants travel by car and plane to client sites, carrying a laptop in a shoulder bag and wheeled personal luggage.	<p>Sitting while flying</p> <p>Walking between airport and car, client sites and car, and around airport</p> <p>Driving elements - sitting, gross manipulation, far visual acuity, peripheral vision, foot/leg controls</p> <p>Lifting/carrying work laptop.</p>	<p>Pushing/pulling personal luggage is excluded because the worker can choose what to bring</p> <p>Outdoor exposure between client sites, car and airport-does not meet Outdoors condition of performing critical tasks outdoors.</p>
Pharmaceutical sales reps drive to doctors' offices carrying sample cases.	<p>Driving elements -- sitting, gross manipulation, far visual acuity, peripheral vision, foot/leg controls</p> <p>Walking to and from the car while working</p> <p>Lifting/carrying sample cases.</p>	<p>Traveling to and returning from a work office or residence as part of a commute</p> <p>Outdoor exposure between car and doctors' offices - does not meet Outdoors condition of performing critical tasks outdoors.</p>

Chapter 5: 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 average performance in a specific job.

This chapter includes procedures for collecting the following SVP elements:

- [Collecting SVP](#)
- [Minimum Education](#)
- [Credentials](#)
- [Experience](#)
- [On the Job Training](#)



5_01 Collecting SVP

SVP measures the *minimum* vocational preparation time needed for a job, not the type of knowledge required. 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](#)
- [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

The following chart illustrates 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, experience, and training required by the establishment for average performance in a specific job. 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.

When multiple combinations of education and experience will result in the *same* SVP level, code the combination the establishment accepts that requires the least formal education.

Ensure that the information coded and the resulting SVP level makes 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 examples below illustrate what is included and excluded from SVP and how overall SVP level is calculated.

Bookkeeper SVP Coding Example 1-Basic SVP		
Job Description Requirements: Requires a minimum of 6 months experience in bookkeeping.		
Additional Information Provided by Respondent:		
<ul style="list-style-type: none"> • 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 + Credentials + Experience + On the Job Training		
Coding and Time Counted as SVP		
	Code:	Time Counted as SVP:
Minimum Education	High School	0
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.		

Bookkeeper SVP Coding Example 2-Combinations Result in Different SVP	
<p>Job Description Requirements: Either a minimum of 6 months experience in bookkeeping <u>or</u> an Associate's degree.</p> <p>Additional Information Provided by Respondent:</p> <ul style="list-style-type: none"> • 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 + Credentials + Experience + On the Job Training	
SVP Level Comparison	
Time counted as SVP:	Time counted as SVP:
Min Education (High School): 0	Min Education (Associate's): 1 year
Credentials (none): 0	Credentials (none): 0
Experience: 6 months	Experience (none): 0
<u>On the Job Training:</u> + 3 weeks	<u>On the Job Training:</u> + 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
SVP Level = 5	SVP Level = 6
SVP Coding and Explanation	
<ul style="list-style-type: none"> • Minimum Education: High School • Credentials: No, not required • Experience: 6 months • On the Job Training: 3 weeks • SVP Level = 5 	
<p>When either experience <u>or</u> education will meet requirements, code the one that results in the lowest SVP.</p> <p>NOTE: Probationary periods are not counted as on the job training. Time spent completing general education portions of required degrees is also excluded.</p>	

Bookkeeper SVP Coding Example 3-Combinations Result in Same SVP	
<p>Job Description Requirements: Either a minimum of 1 year experience in bookkeeping <u>or</u> an Associate’s degree.</p> <p>Additional Information Provided by Respondent:</p> <ul style="list-style-type: none"> • 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 + Credentials + Experience + On the Job Training	
SVP Level Comparison	
Time counted as SVP:	Time counted as SVP:
Min Education (High School): 0	Min Education (Associates): 1 year
Credentials (none): 0	Credentials (none): 0
Experience: 1 year	Experience (none): 0
<u>On the Job Training:</u> + 3 weeks	<u>On the Job Training:</u> + 3 weeks
Total Preparation Time = Over 1 year up to and including 2 years	Total Preparation Time = Over 1 year up to and including 2 years
SVP Level = 6	SVP Level = 6
SVP Coding and Explanation	
<ul style="list-style-type: none"> • Minimum Education: High School • Credentials: No, not required • Experience: 1 year • On the Job Training: 3 weeks • SVP Level = 6 	
<p>When multiple combinations of education and experience will result in the <i>same</i> SVP level, code the combination the establishment accepts that requires the least formal education.</p> <p>NOTE: Probationary periods are not counted as on the job training. Time spent completing general education portions of required degrees is also excluded.</p>	

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 credentials needed for the job also require degrees or experience time as part of the credentialing requirement. Include all overlapping time required between 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.

Concurrent SVP Time Examples	Code	Reason
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 Credentials/License.	Concurrent minimum education and license. The time required for the license is already reflected in Minimum Education.
A police detective must have a minimum of two years’ prior experience as a police officer, along with required coursework and an exam. Required coursework is completed after becoming a police officer.	Code ‘2 years’ for Experience. Code ‘Yes, required’ and ‘Concurrent’ for Credentials/Other.	Concurrent experience and coursework time not resulting in a degree or educational certificate. The time to complete coursework is reflected in Experience.
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 Credentials/Certification.	Concurrent experience and certification. The time required for certification is already reflected in Experience.
A BLS field economist (FE) spends 6 months completing on-the-job training and completes one week of National Office collection training during that 6 months.	Code ‘6 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.

Using ‘Unknown’ and ‘Not required’

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

- Code ‘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 ‘Not required’ for an SVP component when presence or duration is unavailable may understate the actual SVP.

Do not code individual subcomponents of Credentials unless the presence of all subcomponents has been determined. When the presence of any subcomponent is unknown, code Credentials as “Unknown.”

Not Required vs. Unknown Examples

Respondent confirms prior experience is preferred but not required.
Respondent does not know if the job requires prior experience.

Respondent does not know if the job requires any credentials, but can confirm one of the critical tasks is operating a passenger vehicle requiring a standard drivers' license.

Code As:

Experience - 'Not Required'
Experience – 'Unknown'
Credentials – 'Unknown'. Do not code presence of drivers's license when other subcomponents of Credentials are unknown.

Note: If any of the four SVP components is coded as 'Unknown', the system cannot compute an overall SVP level and portions of SVP are imputed for estimation.

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 find formal training requirements for these jobs.

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

Coding '0' or 'Not required' will give the job an artificially low SVP level.

Non-levelable Job Example-Lead Actor in a Theatre**Company-Preparation Required:**

None specified, but respondent states that they would not cast someone without some prior acting experience as the lead actor.

Four yr. drama degree. Five yrs. 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.

Code As:

Experience
'Unknown'

Bachelor's degree - 2 years; Experience - 7 years

5_02 Minimum Education

Minimum Education measures the minimum level of formal coursework required of a job, excluding general education.



Collecting Minimum Education

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

- Type of degree requirement
- Vocational time to complete coursework relevant to the job

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

*Education SVP Chart**

Degree	Vocational Time Included	Reason
4 years of High School	None	All time is general education
4 years Vocational High School	2 of 4 years	2 years are general education
2 years Associate's Degree	1 of 2 years	1 year is general education
2 years Vocational Associate's	2 years	All time is vocational
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. Code all vocationally relevant education time required. Exclude the portion of time for general education.

Example: Master's degree is minimum education required. Select Master's degree option from dropdown. Code time for Master's and vocationally relevant portion of Bachelor's.

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.

Coding Graduate Degrees

Graduate degrees are 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 include 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)

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.

Minimum Education Examples	Action	Reason
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 minimum education. Exclude 2 years of general education
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.

5_03 Credentials

Credentials include training time required as a condition of hiring which often results in a certification, license, or educational certificate.



Include:

- Certifications
- Licenses
- Educational Certificates
- Apprenticeships
- Vocational training
- Non-credit courses
- Credit courses that do not result in a degree

Exclude:

- Credentials that may be desirable but are not a job requirement.
- Credentials not associated with any critical job tasks and only a hiring criteria requirement.
- Certificates of attendance or participation for training that is not vocationally relevant.

Collecting Credentials

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

When training for a certification or license is provided after hire, first clarify that the certification/license is a requirement for the job that was selected.

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

Sometimes a company will hire workers for jobs that require credentials with the expectation the worker will obtain the credential. When a credential or non-degree related coursework is a condition of hire, code it under credentials, even when it can be completed post-hire.

Lawyer Example: 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.

Do not code individual subcomponents of Credentials unless the presence of all subcomponents has been determined. When the presence of any subcomponent is unknown, code Credentials as “Unknown.” See [Section 5.01](#) Using ‘Unknown’ and ‘Not Required.’

Classifying Credentials

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

- Certification
- License
- Educational Certificate
- Other

The purpose of many 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.

Certifications

A **certification** is a credential issued by a certification body or industry/professional association, which acknowledges that occupation specific skills and abilities exist, and which expires if not renewed.

Certification example: 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.

Licenses

A **license** is a credential issued by a government agency, which constitutes a legal authority to perform a specific occupation, and which expires if not renewed.

Sometimes credentials will have titles using the word ‘certificates’ but are actually issued by a government agency and therefore, should be coded under licenses. States may use the term certificate in place of license, particularly when the attainment of certification from a private association is a requirement for licensure. Code these as licenses. For example, teaching “certificates” are often issued by states’ departments of education and would therefore be coded as a ‘License.’

Governments sometimes use private third-party organizations to handle training for and/or administration of licenses. In such cases, the government is still the official sanctioning body, and the third party is simply the intermediary. Code these as licenses.

License example: 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. Code both Series 7 and 63 as licenses.

Note: Commercial drivers’ license (CDL) is a common license, with different classes and endorsements legally required to operate specific types of vehicles. CDLs are considered occupation-specific licenses. Exclude standard passenger vehicle licenses from the License category since they are not occupation specific. See “Other” credentials for more information on coding standard passenger vehicle licenses.

Educational Certificates

An **educational certificate** is a credential issued by an educational institution (or a training provider) that certifies an occupation specific program of study was completed, and that typically does not expire.

Educational certificates are post-secondary certificates similar to formal degree programs, such as an associate’s degree, in that they are usually offered at community or on-line colleges and universities and are typically awarded for life. 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.

Educational Certificate Example: An establishment requires its paralegals to have obtained paralegal certificates, most commonly from the nine month paralegal course at the local community college.

Other Credentials

Other credentials include any 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 that do not result in a degree, license, certification, or educational certificate.

Include training that is a condition of hire and in support of a job’s critical function(s) and tasks, but not occupationally specific as “Other.”

Examples of types of certifications and licenses which are not occupation specific and should be counted as “Other” credentials are:

- CPR, Basic Life Support (BLS), and first aid certifications (for occupations where these certifications support critical job function(s) such as emergency response and healthcare).
- Drivers’ License for standard passenger vehicles where driving supports the critical tasks.
- Food service safety and sanitation certifications such as food handling permits.

Code certifications that are company specific or do not directly convey to other establishments as “Other” credentials. For example, Forklift Operator certifications are coded as “Other” credentials since these certifications are awarded and renewed by individual establishments, and forklifts are operated by a variety of occupations. While OSHA provides guidelines regarding forklift operations and private enterprises are able to supply a portion of training, each establishment individually certifies their workers for the type of industrial truck and work environment.

Credentials Summary table

	Duration	Awarded by	Nature
Certification	Time-limited	Certification body	Occupation specific
License	Time-limited	Government agency	Occupation specific
Educational Certificate	Lifetime	Educational Institution or Training provider	Occupation specific
Other	Varies	Varies	Vocationally relevant but not specific to an occupation or specific to an establishment

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. It is 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.

Classifying apprenticeships will vary by occupation, state or local regulations. The time spent in an apprenticeship is coded in the same category as the credential reached for the journeyman level.

- If the state or municipality issues licenses for apprenticeship training, classify the apprenticeship as a license.
- If an apprenticeship is registered under a trade agency or a union without additional regulation from a government agency, classify the apprenticeship as a certification.
- If an apprenticeship is company-specific and not part of any trade organization/union, and not transferrable to another business entity, classify the apprenticeship as an other credential.

Report the amount of training time associated with the level of apprenticeship selected, 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.

Coding Duration for Credentials

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

Do not include 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. This is preferable to coding “Unknown.”

If the same credential-related training occurs in different configurations (i.e., hours, days, months, years), capture the training time in hours.

Concurrent 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 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.

Concurrent License and Educational Certificate Example: Paramedics in Alabama must be licensed through the state. Requirements for licensure include successfully passing the National Registry of Emergency Medical Technicians (NREMT) paramedic exam. NREMT exam prerequisites include the completion of a formal paramedic training program culminating in an educational certificate or a vocational associate’s degree (60 credits, 2 years to complete). The educational certificate involves 45 credits and takes 1.5 years to complete.

Code License and enter “Concurrent” and Educational Certificate and enter 1.5 years.

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

Code License and enter “Concurrent” and Bachelor’s degree and enter 2 years.

Concurrent vs. No Formal Time

There are situations where a 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.

Or

- 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.

Avoid Understating/Overstating Duration Associated with Credentials

Ensure the overall SVP level accurately reflects the actual amount of time needed to initially obtain a credential, particularly when time is stated in hours or course credits.

For required training which does not result in a degree but 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 which are time spent toward general education. Distinguish between classes that can be taken concurrently and those that must be taken consecutively to avoid overstatement.

There may be constraints on the training that change the actual amount of time needed to obtain a credential. These constraints may be required pre-requisites 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.

Credential Examples	Action
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 'License'-'Yes' and 51 months duration. State-issued, occupation specific.
Elementary teachers must have their teaching 'certification' issued by the state. Time needed for certification is concurrent with Bachelor's degree. District also requires all teachers to have CPR certification (4 hour Red Cross training)	For teaching certification: Code 'License'-'Yes' and 'Concurrent.' State-issued, occupation specific. For CPR certification: Do not count. This certification is related to an unexpected emergency-response task for this occupation; not relevant to critical job function of a teacher.
Dental assistants must receive a state-issued certification in order to practice. The state-issued certification requires completion of a dental assisting program with a certificate from an accredited specialty school in dental 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, doesn't expire. For state-issued dental assisting certification: Code 'License' and 'Concurrent'. State-issued, occupation specific. Time toward dental assisting license is concurrent with educational certificate. For the state issued x-ray license: Code 'Other'-'Yes' and 'Concurrent'. X-ray license is not occupation specific. Time toward x-ray license is concurrent with educational certificate.
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'-'Yes' and 'Concurrent'. State-issued, occupation specific. Time is concurrent with time spent toward certification. For board certification: Code 'Certification'-'Yes' and 4 years. Certification body, occupation specific.
Truck drivers at shipping company must have commercial driver's licenses that do not require classroom training.	For CDL: Code 'License'-'Yes' and 'No formal time.' State-issued, occupation specific. No time is required; application or test only.
Pizza delivery drivers needs standard state-issued driver's license	For the standard driver's license: Code 'Other'-'Yes'-'No Formal Time.' Not occupation specific, but related to critical job function. No time is required; application or test only.

Credential Examples	Action
Retail store workers handling food at a convenience store must complete 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.
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.
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: Code 'Other'- 'Yes' – 'No Formal Time.' Not occupation specific, but related to critical job function. No time is required; application or test only.

5_04 Experience

Experience measures the minimum amount of prior relevant work activity.

Include:

- Skills 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 or experience, collect the option that involves the least time 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 credential requirements, code time under experience. Code the presence of a credential and select 'Concurrent' for the duration. See [5_01 Collecting Concurrent SVP Time](#) for examples of coding overlapping SVP time.

Experience Examples	Action	Reason
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.
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.
A fast food worker must have a history of good work attendance.	Do not collect	Non-vocational experience.
A cashier must have one year of general work experience to demonstrate reliability.	Do not collect	Non-vocational experience.

5_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, work place 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.

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”, “mentoring,” and “active shadowing.”

Collect a range. A respondent may provide a range for training based on variations between individual workers within the job. When the amount of training provided varies based on the amount of education or experience of a new worker, document the accepted combinations and code the one that represents the least amount of time overall.

Example: Housekeepers at a hotel require between one hour and one day of on-the-job training, depending on prior experience. A new hire with no prior experience requires a minimum of eight hours of on-the-job training. A new hire with five years of experience may only require an hour of on-the-job training. For this occupation’s SVP, code OJT time as eight hours and experience as “No, not required,” as it results in the minimum time required over all the SVP components.

Use an [estimated SVP level](#) for the job to narrow the range. Collect information on required education, credentials, and experience for the job, and identify two or three likely SVP levels for the job. Use these estimated SVP levels to help a respondent narrow the range provided for OJT.

Example: The respondent says there is no minimum education, credentials, or prior experience required for the housekeeping position. The overall SVP level for this position is likely either SVP 1 or SVP 2 depending on how much OJT time is coded. Any OJT time that exceeds 4 hours, will move the SVP level from 1 to 2. Determine if the minimum OJT required is 4 hours or less or more than 4 hours up to one month. Code the minimum time provided.

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 thresholds to estimate OJT. If a respondent remains non-committal on an amount of time for OJT, 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:

- “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 .9 to any time the respondent provides.

Example: Respondent states OJT time would be less than a week. Code 0.9 weeks in CIERA.

Examples of Fallback coding for OJT

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

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 you are not able to collect a reliable estimate, code OJT as “unknown.”

Collecting OJT for non-standard work schedules

If a work schedule is **not** 8/40/52 and OJT time is less than one month:

- Clarify whether training time follows the work schedule or has a unique schedule. For example, a part-time worker may work full-time on training days.
- Collect and code the total number of hours of training.

Coding OJT based on non-standard work schedule

<i>Training</i>	<i>Full Time Standard (8/40/52)</i>	<i>Full Time Non-standard (12/36/52)</i>	<i>Part Time (4/20/52)</i>
<i>1 week</i>	<i>1 week</i>	<i>36 hours</i>	<i>20 hours</i>
<i>1 day</i>	<i>1 day</i>	<i>12 hours</i>	<i>4 hours</i>
<i>2 weeks</i>	<i>2 weeks</i>	<i>72 hours</i>	<i>40 hours</i>

OJT Examples	Action	Reason
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	This is a standard FT work schedule; Vocationally relevant training
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
New restaurant servers working 36 hours per week receive OJT from experienced servers on a 3-hour lunch shift.	Code as 3 hours	This is a non-standard work schedule, collect training time in hours; Vocationally relevant training
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
New and experienced firefighters are required to do 3 hours of training per shift on an ongoing basis.	Do not collect	Continuing education

Chapter 6: Cognitive Elements

Cognitive elements measure selected mental abilities needed to perform critical tasks. Some key cognitive demands of occupations are the need to accept work review levels, adapt to changes in the pace of work, solve problems, and interact with others.

This chapter includes procedures for collecting the following cognitive elements:



- [Collecting Cognitive Elements](#)
- [Work Review: Frequency of Work Being Checked and Presence of Supervisor](#)
- [Pace: Control of Workload, Work Pace, and Pause Control](#)
- [Personal Contacts: Verbal Interactions and People Skills](#)
- [Problem Solving](#)
- [Interactions with General Public/Crowds and Telework](#)

6_01 Collecting Cognitive Elements

Determine the best response for each cognitive 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.

Questions and Response Options for Cognitive Elements	
Cognitive Element	Questions and Response Options
Work Review - Frequency of Work Being Checked	<p>How frequently is work checked in this job by a supervisor or lead worker?</p> <ul style="list-style-type: none"> • More than once per day • Once per day • Less than once per day, but at least once per week • Less often than weekly
Work Review – Presence of Supervisor	<p>Are supervisors or lead workers generally present in the same physical work area as workers?</p> <ul style="list-style-type: none"> • Yes • No
Control of Workload	<p>What <u>most</u> controls the workload of this job? (Select one)</p> <ul style="list-style-type: none"> • Machinery, equipment, or software • (Company determined) numerical performance targets • People (such as customers, supervisor, etc.) • Self-paced by worker • Other (specify)
Work Pace	<p>How would you describe the pace of work for this job? Would you say that in a typical day or week ...</p> <ul style="list-style-type: none"> • The pace is consistent, and generally fast • The pace is consistent, and generally slow • The pace varies
Pause Control	<p>Can workers step away from their work area easily outside of scheduled breaks?</p> <ul style="list-style-type: none"> • Yes • No
Personal Contacts-Verbal Interactions	<p>How often does this occupation require verbal, work-related interactions?</p> <ul style="list-style-type: none"> • Constantly, every few minutes • Not constantly, but more than once per hour • Not more than once per hour, but more than once per day • Once per day or less often

Cognitive Element	Questions and Response Options
Personal Contacts-People Skills	<p>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?</p> <ul style="list-style-type: none"> • Basic • More than basic
Problem Solving	<p>The next question is about “problem solving” tasks that the worker does in his/her job. Think of “problem solving” as what happens when workers are faced with a new or difficult situation which requires them to think for a while about what to do next. How often is the worker responsible for solving problems that take more than 5 minutes to think of a good solution?</p> <ul style="list-style-type: none"> • More than once per day • Once per day • Not every day, but at least once per week • Not every week, but at least once per month • Less often than monthly, including never
General Public	<p>Are workers in this job required to <u>work with the general public</u>?</p> <ul style="list-style-type: none"> • Yes • No
Crowds	<p>Are workers in this job required to <u>work around crowds</u> in a way that restricts their movement? (We define a crowd as a situation in which a lot of unfamiliar people are present considering the space available, movement is restricted, and a certain level of disorganization is present.)</p> <ul style="list-style-type: none"> • Yes • No
Telework	<p>Are workers in this job permitted to <u>work from home or telework</u>?</p> <ul style="list-style-type: none"> • 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 [critical job function](#) can be performed remotely.
- Code the highest [frequency](#) experienced or required when performing critical tasks for these cognitive elements: [Work Review- Frequency of Work Being Checked](#), [Personal Contacts-Verbal Interactions](#), and [Problem Solving](#). This captures the highest frequency of cognitive demands workers are ever expected to perform for critical tasks.
- Code the typical experience for [Work Review-Presence of Supervisor](#) and [Control of Workload](#). This captures the average experience of these cognitive demands for critical tasks performed.
- Refer to the section on each of the following cognitive demands for element-specific coding guidance: [Work Pace](#), [Pause Control](#), [Personal Contacts-People Skills](#), [Working with the General Public](#), and [Working Around Crowds](#).
- Document and include examples to illustrate why coding choices were made.

6_02 Work Review: Frequency of Work Being Checked and Presence of Supervisor

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:

- Frequency of Work Being Checked
- Presence of Supervisor



Collecting Frequency of Work Being Checked

Frequency of Work Being Checked answers the question: How frequently is work checked in this job by a supervisor or lead worker?

Use the following frequency categories:

- More than once per day
- Once per day
- Less than once per day, but at least once per week
- Less often than weekly

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 intended to ensure performance standards are being met rather than infrequent (e.g., semi-annual or annual) performance reviews.

Collect the highest frequency of checks that a worker receives while performing critical tasks under normal circumstances. The frequency of work being checked 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 machine checking when a supervisor or lead worker uses results to assess workers' performance. Code the frequency with which the machine metrics are checked by the supervisor. Exclude 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.

Exclude:

- The highest frequency of checking the establishment would perform on a worker with known or suspected unsatisfactory performance.
- Routine checking by fellow or lower-level workers and feedback provided directly by customers.
- Automated recorders such as cameras that serve only as security measures.

Frequency of Work Checked Examples

More than 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 more than once per day.
	A machinist producing parts has finished work pulled twice per day 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 under frequent random monitoring to ensure adherence to law and policy. The telemarketer is told by the supervisor when performance does not meet expectations.
Once per day	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 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.
Less than once per day, but 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 on a weekly basis. Staff are told when performance does not meet expectations.

Frequency of Work Checked Examples

Less often than weekly

A factory plant director has full plant responsibilities. Work is only evaluated 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.

Collecting Presence of Supervisor

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

Collect the presence (yes/no) of a supervisor or lead worker in the same physical work area with workers supervised. The presence of a supervisor/lead worker must be in person.

The intent of this element is to capture the physical proximity of supervisors or lead workers to workers in the job. Supervisors or lead workers in the same physical vicinity can monitor workers to ensure they stay on task and provide immediate assistance when needed. Exclude indirect or higher level supervisors who may not be able or expected to provide this kind of direct monitoring and immediate assistance.

Include open-bay work areas, open-bay work areas with cubicles, offices that abut work areas, offices equipped with cameras that provide coverage of all nearby work areas.

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 assistance. Likewise, if workers perform their work in different locations, the supervisor must be physically present for the majority of time on a typical work day to be considered as being in the same physical work area.

Supervisor Present Examples	Code	Reason
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.
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.

Supervisor Present Examples	Code	Reason
Drafters work in a large office with the lead drafter in a nearby cubicle and engineering supervisor on a different floor.	Yes	Supervisor is not physically present in vicinity, but a lead worker is.
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.
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.
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.

6_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.

Collecting Control of Workload

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

The intent of this element is to identify the determining factor that drives the rate at which a worker must process new or incoming information, or to take physical action based on new information to handle the workload.

Determine whether the amount of workload is set by technology, strict organizational rules, other people, or the worker. Select one of the following options:

Workload controlled by:	Select when the following criteria apply:
Machinery, equipment, or software	<ul style="list-style-type: none"> • The worker must adapt to or keep up with the workload controlled by machinery, equipment used, or software, <u>and</u>, • The work is pushed to the worker by the machinery, equipment, or software
(Company determined) Numerical performance targets	<ul style="list-style-type: none"> • The workload is set by other sources within the organization, by clear output or performance targets, <u>and</u> • The worker's performance is monitored closely at intervals, possibly controlling pay levels, <u>and</u> • 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.

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.
Self-paced by worker	The workload is mostly self-paced 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.
Other (specify)	The workload is set by another factor not listed above. Enter a description of the factor when this option is selected.

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.

Control of Workload Examples	Code	Reason
A quality inspector must sort products on a conveyor belt.	Machinery, equipment, or software	The conveyor belt (machine) most controls the workload.
Machine tenders offload work from a continuously operating machine.	Machinery, equipment, or software	The continuously operating machinery most controls the workload.
A telemarketer makes outbound calls to generate and follow up on sales leads. The calling software automatically dials the next number as soon as the prior call has ended.	Machinery, equipment, or software	While people (leads) could influence the length of each call, the auto-dialing software most controls the workload.
A quality inspector must check a certain number of widgets per hour each shift.	Numerical performance targets	Hourly target most controls the workload.
Outside salesperson receives commissions based on number of weekly items sold.	Numerical performance targets	While customers may also influence, the weekly numerical target with number of weekly items sold controlling pay level most controls the workload.

Control of Workload Examples	Code	Reason
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.	People	The amount of people entering the facility most controls the workload.
Pharmacy techs receive electronic prescription requests that come directly from doctors' offices.	People	While the orders are received through software, the pharmacy customers, including doctors' offices, mainly controls the workload.
A car wash attendant is responsible for putting the customer's car through the machine and drying it off once it comes out.	People	While some control of workload depends on the car wash equipment, and even the weather, ultimately the amount of customers is the factor that most controls the workload.
Janitors are assigned certain cleaning tasks based on schedule and rotation assigned by their supervisor.	People	The workload is set externally by fluctuating demands of the supervisor.
A senior sales representative is responsible for generating new accounts with quarterly sales targets based on new customer rates and overall dollar volume achieved.	Self-paced by worker	While people (customers) may also impact the workload, the sales representative is allowed significant discretion to vary timing of tasks within certain limits over a broader period of time, therefore the sales representative most controls the workload.
Janitors in a production facility are assigned a part of the facility to maintain. They can determine how and what to clean in their assigned building area as long as areas are maintained within general guidelines.	Self-paced by worker	These janitors are allowed significant discretion to vary timing of tasks within certain limits, rather than having control of workload set externally
Fish processors' workload varies based on the amount of fish caught by incoming ships.	Other	The workload is mostly determined by an external source other than technology, strict organizational rules, other people, or the worker.

Collecting 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?
- The pace is consistent, and generally slow?
- The pace varies?

The intent of this element identifies the consistency of the work pace and the rate at which work is performed. Work pace specifically refers to the speed at which work is performed.

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 at tax season or human resources personnel during calendar year re-enrollment periods)

If the pace is consistent, determine the rate that applies on a daily or weekly basis. Consistent, and generally fast pace can include steady 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 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.
	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.

Work Pace Examples

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.

LAN technician experiences fast and slow periods depending on help desk calls fielded or when updates and upgrades are deployed.

Cashiers at large grocery store experience fast and slow periods depending on the volume of customers.

Restaurant servers at 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.

Collecting Pause Control

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

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 outside of scheduled breaks such as lunch or morning/afternoon break periods.

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

- Workers typically have the flexibility to choose when to take breaks throughout the day
- 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.).

The intent of this element is to capture jobs that have the flexibility to choose or control how and when they can take a break. 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.

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.

Pause Control Examples

	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 co-workers or clients, they have the ability to step away quickly, if needed.
Yes	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.
	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.
	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.
No	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.

6_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 two elements:

- Verbal Interactions
- People Skills



Collecting Verbal Interactions

Verbal Interactions answers the question: How often does this occupation require verbal, work-related interactions?

Use the following frequency categories:

- Constantly, every few minutes
- Not constantly, but more than once per hour
- Not more than once per hour, but more than once per day
- Once per day or less often

The intent of this element is to measure the frequency workers must begin verbally interacting with others for critical tasks. Verbal interaction includes the ability to participate in exchanges that may include both speaking and listening components: the ability to speak in order to determine what to say and the ability to listen in order to respond appropriately to others.

Collect the highest frequency of work-related verbal interaction that a worker has while performing critical tasks. If the frequency changes during the work schedule, code the most frequent level experienced while performing critical tasks and document the circumstances.

Include live interactions occurring in person, or via telephone or video-conferencing.

Exclude:

- Passive listening including listening to instructions only with no other interaction required as well as announcements or recordings (non-live interactions).
- Non-verbal exchanges such as email.
- Optional social contacts that are not required for critical tasks

Verbal Interactions Examples

**Constantly,
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.

**Not constantly,
but more than
once per hour**

Nail salon technicians generally assist one or two customers each hour.

Site leader will talk to someone: her crew, other skilled trades, and clients several times per hour, but not usually every few minutes.

A junior sales representative sells printing services and manages customer prospect profiles.

**Not more than
once per hour,
but more than
once per day**

An insurance office assistant answers customers' questions from occasional calls and walk-in clients as well as supports co-workers' verbal requests.

A factory plant director has full plant responsibilities. Generally he has a few in-person meetings a week, takes some calls and face-to-face meetings throughout the day, but handles a lot of interaction through email and his executive assistant.

Construction laborers interact with skilled trade workers and site workers a few times per day.

**Once per day or
less often**

Medical transcriptionist transcribes medical recordings.
Receives/transmits files via email.

Research statistician attends weekly meetings but largely works independently on research projects.

Collecting 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?

People skills includes both verbal and written exchanges.

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.

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: 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.

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.
	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.
More than basic	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 consists of mostly solitary activity and only involves simple greetings and exchange of verbal information.
	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.
	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.

6_05 Problem Solving

Problem solving measures how often workers are faced with a new or difficult situation which requires them to think for a while about what to do next.



Collecting Problem Solving

Problem Solving answers the question: How often is the worker responsible for solving problems that take more than 5 minutes to think of a good solution?

Use the following frequency categories:

- More than once per day
- Once per day
- Not every day, but at least once per week
- Not every week, but at least once per month
- Less often than monthly, including never

The intent of problem solving is to provide information on task adaptability requirements of jobs, as well as on decision making and flexibility needed for critical tasks. The defining characteristics of problem solving are that there is no obvious, immediate solution to a problem, and the worker must identify and weigh alternatives to arrive at a solution. Apply the 5 minute threshold to the time it takes workers to think of an answer themselves, not the time it takes workers to find or get an answer from someone else.

Collect the highest frequency of problem solving the job requires. If the frequency changes during the work schedule, code the most frequent level experienced and document the circumstances.

Include both individual and group (e.g., team) problem solving when the worker is responsible for the decision. Exclude group problem solving that consists only of brainstorming or in situations in which the worker has no accountability.

Exclude routine decisions and decisions requiring five or fewer minutes of thought from this element. Jobs where workers deal directly with the public (e.g., retail sales, restaurants, and help centers) are often viewed as requiring frequent problem solving because interactions with the public can be idiosyncratic, unpredictable, problematic, and emotional. However, if problems with the general public can be resolved in five minutes or less, exclude the frequency of this type of problem solving.

Problem Solving Examples

More than once per day	An internal medicine physician works as part of a care team and collaboratively decides the best treatment approach for multiple patients on a daily basis who have conflicting symptoms, multiple health issues, or rare medical conditions. The physician must weigh patients' unique medical histories, symptoms, and test results, as well as current medications and prior treatment plans before determining how to proceed.
	The regional manager of several fast food stores analyzes rapidly changing sales and operations data and uses this data to make multiple daily decisions regarding individual store staffing levels, food offerings, and application of national promotions.
	Software developers handle complex software needs and work to come up with solutions. They solve unique problems, such as writing and debugging innovative code and complex software, modifying guidelines or determining the next steps needed to satisfy requirements as part of their daily critical tasks.
	A construction project manager computes multi-step bids, negotiates with 3 rd party contractors, and responds to unique client requests as part of daily critical tasks.
	A nurse practitioner treats multiple patients daily. Most have routine conditions that are straightforward to diagnose. Approximately once per day, a patient displays unusual symptoms and the nurse practitioner must consider the patient's complaints along with the findings of a physical examination and testing to make a diagnosis and decide a course of treatment.
Once per day	A fast food marketing analyst develops promotional campaigns and tests market strategies for new products. Development of a new idea requires careful consideration and research of a variety of analytics. The analyst typically encounters one new or difficult issue per day when researching and developing marketing strategies, testing possible promotional campaigns, and delivering detailed assessments to regional and national management.
	Staff accountants reconcile the general ledger, create monthly financial statements, and oversee accounts payable and accounts receivable transactions. They also complete monthly sales tax and property tax returns. Around once per day, an unanticipated problem with the general ledger, taxes or other payable or receivable issue arises that the staff accountant must thoroughly assess before addressing.
	A plumber foreman directs crew, mentors apprentice plumbers, and reads blueprints to complete custom projects for large commercial clients. Usually once per day there is either a specification that needs a unique work-around depending on the project or a training/supervisory issue that must be resolved with the crew/apprentices.

Problem Solving Examples

	<p>Staff nurses lead other lower-skilled healthcare support workers and deal with patient needs. As part of patient care team, they monitor and assess patient's unique history, medical needs, drug interactions, and vital signs to provide patient care and determine whether to escalate care to attending physicians. Many patients are routine, but usually at least once per week, a patient with complex symptoms and needs must be assessed and treated.</p>
Not every day, but at least once per week	<p>A medical coder references medical records, including physician transcriptions to apply universal codes for use when filing insurance claims. At least once per week, the coder encounters an unusual diagnosis or treatment that does not neatly fit within conventional codes. The coder must research and consider precedent to determine the code that best represents the situation while optimizing reimbursement from insurance.</p>
Not every day, but at least once per week, cont'd.	<p>A fast food store manager supervises crew and resolves work place and customer service issues. Most issues are quickly and easily solved but once or twice per week, an issue between staff members or a customer service issue escalates and requires careful consideration to appropriately resolve.</p>
	<p>A commercial plumber assesses building blueprints in conjunction with the customer needs to decide the best pipe layout. Project lengths vary but typically plumbers initiate a new job that would require initial assessment on a weekly basis.</p>
	<p>A licensed practical nurse (LPN) in a nursing home is responsible for patients and directing other lesser-skilled nursing staff such as nursing aides. Most issues are routine, but a few times a month, a resident may develop multiple symptoms, requiring the LPN to determine how to proceed.</p>
	<p>A payroll clerk handles routine payroll processing. A few times per month, they typically need to resolve why a report isn't working or determine why something didn't calculate or budget correctly.</p>
Not every week, but at least once per month	<p>A shift supervisor of fast food workers must resolve customer complaints and resolve scheduling/training issues as they arise. Problems in these areas that take more than five minutes to resolve usually only occur a few times per month.</p>
	<p>A backhoe operator excavates, moves and grades earth. Most projects are routine and the operator follows customer specifications. A few times per month, they must determine a workaround because of impediments like location of underground pipes or wires.</p>

Problem Solving Examples

**Less often
than
monthly,
including
never**

Nursing assistants provide basic patient care such as bathing, grooming, feeding, and moving patients under the direction of other nursing staff. They must document and report any problems to LPNs or RNs.

Entry level customer service representatives (CSRs) follow scripts to deal with the most common problems customers want resolved. If they encounter an issue that deviates from the common issues, they are trained to escalate the issue to a higher level CSR.

Fast food crew workers are trained to handle preparing a fixed menu of quick cook items as well as run the register. Any problems are referred to team leaders and shift supervisors who are always available to answer.

Construction flaggers monitor and direct traffic. Critical tasks are simple and there are never any complex problems to resolve.

6_06 Interaction with General Public/Crowds and Telework

Interaction with the General Public/Crowds and Telework consists of three elements:

- Working with the General Public
- Working around Crowds
- Telework



Collecting Working with the General Public

Working with the General Public answers the question: Are workers in this job required to work with the general public?

Collect the presence (yes/no) of any critical tasks where working with the general public is required. If any critical task requires working with the general public, code Yes.

The intent of this element is to identify settings where workers must have contact (i.e., in person or via telephone) with individuals other than co-workers (e.g., customers, clients, or workers from other establishments).

Include:

- Individuals having a transient relationship with the organization (e.g., delivery driver, new customers or clients).
- Large numbers of people rotate in and out on a regular basis (e.g., students).
- In-person and/or telephone contacts.

General Public Examples

	Teachers work with students and must also meet with parents in person and on the telephone.
	Customer service representatives handle complaints from customers via telephone.
Yes	Parts driver delivers items to various third party repair shops.
	Human resources generalists work with other workers at all levels and departments of the establishment (co-workers). However, they also work with workers outside the establishment such as auditors and insurance brokers.

General Public Examples

No

Production line welders work exclusively with other company employees on the production line. Any contacts with third parties are handled by the foreman or production manager.

Lab workers testing blood samples report results via email or fax to doctors' offices.

Sous chefs work in a gourmet restaurant in the kitchen. The head chef deals with ordering supplies (third party vendors) and any customer issues with food orders.

Garbage collector collects and dumps refuse from curb-side containers into truck. No contacts with general public in order to perform critical tasks.

Collecting 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?

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.

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.

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.

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.

Crowds Examples	Collect As	Reason
Politicians greeting throngs of supporters at a rally.	Yes	Meets all conditions.
Security guards at a rock concert must patrol through crowds of people in both open areas and seated areas.	Yes	Meets all conditions.
Bussers in a busy restaurant with small aisles must clear and reset tables as customers come and go.	Yes	Meets all conditions.
Transit police monitor commuters and investigate suspicious behavior in packed subway cars during rush hour.	Yes	Meets all conditions.
A transportation security screener must screen individuals as they come through security lines.	No	Doesn't meet disorganization condition.
Cashiers work with general public but usually remain behind counter and register.	No	Doesn't meet movement restricted by the crowd condition.
Bus drivers experience crowds of people, but remain separated from commuters in their driver's seat.	No	Doesn't meet restricted movement condition.
Call center workers in large call center work in small cubicles and have weekly stand-up team meetings in crowded conference room with their co-workers.	No	Doesn't meet unfamiliar people condition.

Collecting Telework

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

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

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

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 (e.g., a lawyer representing a client through email, telephone, in person, and in court or a salesperson who performs sales contacts both in-person and by email/telephone). Code telework as “No” if the critical job function must *always* be performed somewhere other than the worker’s home (even if some tasks could be performed from home).

Exclude the presence of telework when it is only permitted after standard hours or allowed during emergencies.

Telework Examples	
Yes	Call center employees work 100% remotely (all calls routed to their designated phone number).
	A cyber school teacher provides classes via video-conferencing and assists students remotely.
	LAN tech works from home two days per week assisting end-users remotely from work-issued laptop.
No	Pizza delivery drivers must pick up pizzas and deliver them to customers.
	Public school teachers must report to school facilities.
	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.

Chapter 7: Physical Demands

Physical Demands are the physical activities workers perform to carry out [critical tasks](#).

This chapter includes procedures for collecting the following physical demands:



- [Collecting Physical Demands](#)
- [Sitting vs. Standing/Walking](#)
- [Lifting/Carrying](#)
- [Pushing/Pulling](#)
- [Reaching](#)
- [Keyboarding](#)
- [Manipulation](#)
- [Low Postures: Stooping, Crouching, Kneeling, Crawling](#)
- [Climbing](#)
- [Speaking/Hearing Requirements](#)
- [Vision](#)

7_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. Collect duration for all elements except for Vision and Hearing. 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 [7_03 Collecting Lifting/Carrying](#).
 - Climbing Ramps/Stairs - Structure has unique collection guidelines. See [7_09 Collecting Climbing Ramps or Stairs](#).
4. Several ORS elements have higher [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 SVP or license requirements. Code physical demands when the establishment specifies it requires them in order 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 of the critical tasks performed can be completed using one hand/arm (foot/leg), code as 'One.'

Keep tasks and maximum weight lifted in mind when coding manipulation/keyboarding/reaching/etc. as one or both hands. If it seems like a task or weight amount would normally use two hands, then verify with the respondent if possible and code as such.

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 normally requires both hands.

8. To avoid overstatement, do not double count physical demands except where specified.

Examples:

- *Code an Administrative Assistant typing on a computer as Keyboarding only, and do not include this time in Gross and Fine Manipulation.*
- *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.*

9. Any time spent during paid breaks should be coded based on the way workers experience demands when they are not on break.

Example: If workers generally stand for all their tasks, except for when they are on a paid break, 100% of the work schedule should be coded as Standing/Walking. Do not code the time workers spend on breaks as Sitting.

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.

Examples:

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 elements should not be coded concurrently for ORS.

Examples:

- *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.*

7_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.

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 an average 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.

Teller Example-Sitting vs. Standing/Walking Duration							
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							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #c0c0c0;">Sit/Stand/Walk</th> </tr> <tr> <th style="background-color: #c0c0c0;">Sitting </th> <th style="background-color: #c0c0c0;">Stand/Walk </th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">3.00 Hrs</td> <td style="text-align: center;">5.00 Hrs</td> </tr> </tbody> </table>	Sit/Stand/Walk		Sitting	Stand/Walk	3.00 Hrs	5.00 Hrs	<p>Calculation for Stand/Walk:</p> <p>Standing/Walking Hours = Total Hours – Sitting Hours</p> <p>8 hours total – 3 hours sitting =</p> <p>5 hours standing/walking</p>
Sit/Stand/Walk							
Sitting	Stand/Walk						
3.00 Hrs	5.00 Hrs						
<p>Reason: The total amount of time coded for sitting and standing/walking <i>must</i> 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.</p>							

Dental Hygienist Example-Sitting vs. Standing/Walking Duration

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

Sit/Stand/Walk	
Sitting	Stand/Walk
5.50 Hrs	2.50 Hrs

Calculations:

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.

Grocery Store Cashier Example-Sitting vs. Standing/Walking Duration







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

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

Document the above in remarks.

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 an average work day. Probe and document if these durations seem unexpected or unusual given the task list and nature of the job.

Office Workers Example-Sitting vs. Standing/Walking Duration							
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							
<table border="1"> <thead> <tr> <th colspan="2">Sit/Stand/Walk</th> </tr> <tr> <th>Sitting </th> <th>Stand/Walk </th> </tr> </thead> <tbody> <tr> <td>100.00 %</td> <td>0.00 %</td> </tr> </tbody> </table>	Sit/Stand/Walk		Sitting 	Stand/Walk 	100.00 %	0.00 %	Code 100 % sitting and 0% standing/walking and document.
Sit/Stand/Walk							
Sitting 	Stand/Walk 						
100.00 %	0.00 %						
<p>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 an average work day. It is not necessary to adjust reasonable responses to reflect small amounts of incidental activity.</p>							

Collecting 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.
- There is no assigned time during the day to sit or stand.
- 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 that specific critical task, then they may still 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, 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.

Sitting/Standing At Will Examples	Collect As	Reason
Traveling sales reps sit while driving and stand while visiting with clients.	At Will is 'Yes'	Worker's choice
Software engineers use standing desks while working except for client meetings.	At Will is 'Yes'	Worker's choice
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
An office clerk can choose when to file and typically stands while filing invoices.	At Will is 'Yes'	Worker's choice
A pharmaceutical sales rep driving to clients can choose when to make trips and additional stops.	At Will is 'Yes'	Worker's choice
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
A kindergarten teacher must escort students to the school entrance at designated dismissal times.	At Will is 'No'	Worker does not choose
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
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
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
A security guard chooses to sit or stand, except when she walks to investigate suspicious situations.	At Will is 'No'	External factors

7_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.

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:

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, that is, seldom or occasionally, is often heavier than that lifted for longer durations, that is, frequently or constantly.

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.

How often is this weight lifted/carried?

Consider the duration of other critical tasks performed by the job and physical demand elements experienced.

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 lbs. 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.

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.

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.

What is the most weight lifted/carried [at each duration level]?

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).

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.

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).

Lifting/Carrying Examples	Collect as Lifting/Carrying?	Reason
Assembly line workers lift cans, jars, or bottles from cardboard boxes and place them on a conveyor.	Yes	Meets lifting definition
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
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
Cashiers exchange payment/receipts with customers.	Yes	Meets lifting definition
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.
Call center operators wear a headset while taking client calls.	No	Worn weight which doesn't cause exertion
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
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.






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.

2. 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.
3. 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.
4. 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.
- 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.
- Any weight coded at the Constant 2/3 or more duration, including negligible weight items.

Lifting/Carrying Coding Examples





Example 1 – Landscaper				
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

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.

7_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):

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

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.

Meeting Pushing/Pulling Thresholds Examples	Meets the Threshold	Reason
Pulls down a garage door manually.	Yes	Meets the force threshold
Pulls open large drawers containing cadavers in the county morgue.	Yes	Meets the force threshold
Pushes a patient in a wheelchair.	Yes	Meets the force threshold
Pushes/pulls a chipper/shredder machine.	Yes	Meets the force threshold
Pushes/pulls a commercial floor waxing machine.	Yes	Meets the force threshold
Pushes a snow blower to clear sidewalks.	Yes	Meets the force threshold
Pushes 1 lb. widgets constantly along a manual assembly line.	Yes	Meets the production rate threshold
Pulls open an office desk drawer, occasionally.	No	Does not meet either threshold
Pushes an IV stand across a patient's room, occasionally.	No	Does not meet either threshold
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-Foot/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 [7_01 Coding One or Both](#) 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.

Pushing/Pulling Types and One/Both Examples	Collect Type and One/Both	Collect Duration
Technicians sit and push, with one hand, a 100 lbs.-equipment cart. The total time pushing is 30 min. per day.	One hand/arm only. No legs, because the workers sit.	2% up to 1/3
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
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
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
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
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
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
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

7_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 [7_01 Coding One or Both](#) for guidelines.

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 when it is already captured as part of another physical demand element:

- [Crawling](#)
- [Climbing ladders, ropes, scaffolding](#): during ascending/descending of ladders, ropes, and scaffolds only
- [Keyboarding](#): exclude reaching while typing or using mouse

Reaching Examples	Collect As:	Reason
Picking apples from the tops of mature trees.	Overhead	Meets the threshold
Spotting children on uneven bars.	Overhead	Meets the threshold
Hanging an IV bag on a stand.	Overhead	Meets the threshold
Opening and closing stage curtains with a rope and pulley.	Overhead	Meets the threshold
Pruning trees and shrubs.	Both types of Reaching	Meets the threshold for both types.
Attaching drywall to studs.	Both types of Reaching	Meets the threshold for both types.
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
Checking a car's oil.	At/Below Shoulder	Meets the threshold
Reaching in bins for sandwich ingredients.	At/Below Shoulder	Meets the threshold
Loading a commercial dishwasher.	At/Below Shoulder	Meets the threshold
Reaching for the control to open a bus door.	At/Below Shoulder	Meets the threshold
Reaching across a desk for the handset to answer a telephone in cubicle.	Not Present	Workers' able to move phone closer to avoid reaching.

7_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, 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 [7_01 Coding One or Both](#) 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.

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

Exclude coding gross manipulation when it is already captured as part of another physical demand element:

- Gross manipulation involved in [keyboarding](#) or the use of a mouse
- 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

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.

Example: A worker grasps a tape roll with one hand and pinches the tape lead with the other.

Include fine manipulation involved with:

- Writing
- Pressing buttons on office equipment such as fax machines, printers, copiers
- Entering data using touchscreens, including the following types of electronic devices: tablet computers, touch screen mobile phones, touch screen point of sale devices, cash registers, including hybrid cash registers, portable scanners

Exclude fine manipulation when:

- Entering data on traditional keyboards or 10-Key pads. Include duration for these types of keyboards as [keyboarding](#).

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.

Manipulation Examples	
Gross	Handling a conventional phone receiver.
	Holding lumber and handling tools when building cabinetry.
	Lifting and moving packages.
	Driving a delivery van using a steering wheel and shifting gears.
	Using a pipe wrench.
Fine	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.	
Gross and Fine	Writing.
	Playing a guitar.
	Cutting with scissors.
	Using a screwdriver.
Foot/Leg	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

7_07 Collecting Keyboarding

Keyboarding is 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.



Collecting Keyboarding

Collect the presence and duration of keyboarding using traditional keyboards.

Traditional Keyboard refers to a panel of keys used as the primary input device on a computer, typographic machine or 10-Key numeric keypad.

Include:

- All aspects of using a desktop computer, including a mouse
- Adding machines
- Calculators
- Laptops
- Stenographer's machines
- Typewriters

Collect durations for the use of *any other* keyboarding devices not listed above as [Fine Manipulation](#). Examples of other keyboarding devices that should be coded as fine manipulation include tablets, smartphones, cash registers, and retail scanners.

Notes:

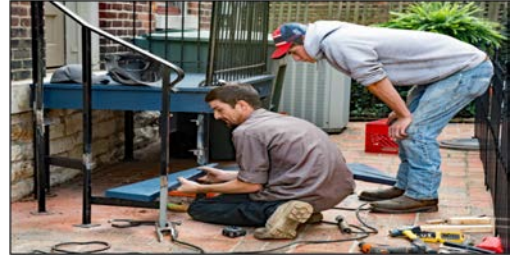
- Do not include all time spent in front of a computer as keyboarding. Only include active typing or use of a mouse.
- Active typing includes having hands positioned over the keyboard for short intervals while waiting for a response to input. It excludes longer periods of waiting where hands can be at rest.
- Consider workers may have down time between critical tasks that involve keyboarding.
- Do not include keyboarding or the use of a mouse in the duration for gross or fine manipulation, or reaching.
- If a worker must use a computer monitor or a screen on another electronic device, then code [Near Visual Acuity](#)- 'Yes' as a default.

Keyboarding vs. Fine Manipulation Examples	Code As
Customer service reps enter information into an order system on a desktop computer.	Traditional keyboard
Accounting clerks use adding machines to settle accounts.	Traditional keyboard
A receptionist at a spa uses a typing motion on a touchscreen device to book services and send customized messages to clients.	Fine Manipulation
Bartenders enters drink orders into a touchscreen order-system	Fine Manipulation
Salespeople communicate with customers using a Blackberry.	Fine Manipulation
Cashiers at a retail store use registers with a hybrid keyboard that has 72 flat keys and a 10-key pad.	Fine Manipulation
Musicians play keyboards such as pianos and organs.	Fine Manipulation

7_08 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.



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, 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:

Coding Postures Used	Coding Criteria:
Yes-Required	Code ‘Yes-Required’ when <i>any</i> of the following dictates use of specific posture(s): <ul style="list-style-type: none"> • 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.
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 in order 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.

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.

Low Postures Coding Examples

Example 1 – Pest Control Worker

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 in order 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

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

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

7_09 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 workers 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.

Categorize stools and ladders as follows:

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 handicap access ramps or climbing steps to enter and exit public buildings and non-residential structures. Federal law requires the availability of handicap access ramps at entrance of 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 handicap access 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 handicap access 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.

Climbing Ramps or Stairs Examples	Action	Type
A machine operator climbs stairs to access the machine platform.	Collect	Work-Related-include duration
Delivery drivers climb a mobile ramp to load and unload material from the back of a delivery truck.	Collect	Work-Related-include duration
Retail sales workers climb movable stairs to obtain merchandise from high shelves	Collect	Work-Related-include duration
Bus drivers climb steps into bus	Collect	Work-Related-include duration
Delivery drivers climb stairs while making residential deliveries or during home visits	Collect	Structure-Related –include presence only
Visiting nursing aides climb stairs while visiting clients at their homes	Collect	Structure-Related –include presence only
An office manager must use stairs to access files and supplies located on another floor.	Collect	Structure-Related –include presence only
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
Attorneys visiting courthouses	Do not collect	Public building –climbing stairs during entry/exit into structure is voluntary
Nursing assistants push patients up handicap-access ramps.	Do not collect	Handicap-access ramps are excluded from both types of Climbing Ramps and Stairs
Pharmaceutical sales representatives visit doctors’ offices and health clinics	Do not collect	Public buildings –climbing stairs during entry/exit into structure is voluntary
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.

Climbing Ladders, Ropes, Scaffolds Examples

An electrician ascends poles to install or repair power lines.

A drywall installer climbs scaffolding to plaster a ceiling.

Heavy truck driver climbs a short ladder using arms and legs to enter the cab of a semi-truck.

Fitness instructor uses arms and legs to scale the rock wall at a gym.

7_10 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 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:

- [Manipulation – 'Foot/Leg Controls'](#)
- [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 4 05](#).

7_11 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 and/or other sounds.

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.

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 Co-workers

Any coordinating with coworkers which involves expressing and exchanging ideas and information including planning, explaining, resolving, as well as giving detailed instructions to others 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.

Speaking Examples	Include duration	Reason
A TV news anchor reports news in a pleasant, well-controlled voice.	Yes	Expressing oral information accurately
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
A human resources manager explains benefits to a new employee	Yes	Expressing oral information accurately; conveying detailed instructions to other workers
A cashier asks customers whether they will pay with cash or credit	Yes	Expressing oral information to general public
A bartender asks for customer's drink orders	Yes	Expressing oral information to general public
An IT help desk technician provides instructions to end-user	Yes	Expressing oral information to other workers; conveying detailed instructions to other workers

Speaking Examples	Include duration	Reason
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
A bartender talks to customers about their lives because it generates more tips	No	Exclude socializing.
A human resources managers sends new employees benefits booklets via email	No	Exclude non-verbal communication.
A sales representative listens to potential customer's questions	No	Exclude time spent listening from speaking.
A team assembler indicates to another team member that the line stopped.	No	Exclude since machinery malfunction is incidental-chance occurrence
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.
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.
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 four 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.
- **Telephone:** Includes the ability to hear speech through a telephone. This includes using telephone headsets and speakerphones as well as traditional handsets. 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.
- **Other Sounds:** Includes the ability to hear other sounds outside of words/language that are related to critical tasks. Include hearing items

such as machinery and equipment alarms and sounds, as well as animal or human sounds other than speech, 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 co-workers 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).
- Include the presence of other sounds for jobs that operate or work in close proximity to equipment (e.g., forklifts) and must hear the warning sounds to accomplish their critical tasks or to avoid accidents while performing critical tasks.

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.
Telephone	A politician participates in a town hall style debate and responds to audience comments.
	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.
Other Remote Speech	A salesperson uses hands-free enabled mobile phone while calling clients in the car.
	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.

Hearing Requirements Examples

	A veterinary tech identifies problems by listening to sounds from animals under care.
Other Sounds	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.
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. 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.

7_12 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 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.

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.

Note: Always code 'Peripheral Vision' when driving is performed as a critical task.

Vision Examples	
Near Visual Acuity	A watch repairperson 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 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.
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 in 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 in order to know a customer has entered the premises. Exclude the presence of far visual acuity for this task as since clarity of vision is not required.

Chapter 8: 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 following environmental conditions:

- [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](#)



8_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.

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 dry 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)

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.

Mitigation and PPE Examples	Action
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.
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.
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.
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.

8_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.



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

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.

Outdoors Examples	Action	Reason
A teacher watches children while outdoors for recess.	Collect	Meets both conditions
A groundskeeper mows lawns and trims shrubs.	Collect	Meets both conditions
Servers wait on tables located outdoors under an awning but without sides.	Collect	Meets both conditions
Hospital transporters wheel patients to vehicles.	Collect	Meets both conditions
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
A fast food crew member takes trash to a dumpster behind the restaurant throughout the day.	Collect	Meets both conditions
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
An employee commutes to and from the workplace.	Do not collect	Doesn't meet condition 1, exposure related to traveling/commute
A miner works in an underground mine.	Do not collect	Doesn't meet condition 1 or 2
An archaeologist inspects artifacts in a three-sided tent at the dig site.	Do not collect	Doesn't meet condition 2

8_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 40 degrees F or colder temperatures for 2/3 or more of the workday, or
 - Workers are exposed to 32 degrees F or colder temperatures for less than 2/3 of the workday



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

8_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:**
 - The atmosphere is dry with temperatures above 90 degrees F, or
 - The atmosphere 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.

Extreme Heat Examples	Action	Reason
An asphalt machine operator spreads hot asphalt on streets and roads. The machine produces intense heat.	Collect and document	Meets conditions
A commercial laundry worker reaches into dryers. Dryers create humidity and raise temperatures above 85 degrees.	Collect	Meets conditions
A restaurant cook works close to a hot commercial stove and oven in a kitchen.	Collect	Meets conditions
An airline ramp agent loads and unloads baggage on a hot tarmac.	Collect as Outdoors	Weather-related
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
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

8_05 Wetness

Wetness is present when the following two conditions exist:

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



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

Wetness Examples	Action	Reason
A dishwasher cleans pots, pans, and trays by hand.	Collect	Meets conditions
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
A nurse washes hands between patients.	Collect	Meets conditions
A waiter wipes down tables with a wet rag and does not use a glove.	Collect	Meets conditions
A dog walker works in rainy weather.	Collect as Outdoors	Weather-related
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

8_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.



Humidity Examples	Action	Reason
A garment presser uses a pressing machine that discharges steam to iron damp clothing.	Collect	Meets conditions
A gym attendant works in and around a sauna.	Collect	Meets conditions
A firefighter wearing protective gear experiences humidity while spraying water to contain fires.	Collect	Meets conditions
A bicycle police officer patrols pedestrian areas during humid, summer months.	Collect as Outdoors	Weather-related
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
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

8_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.

Heavy Vibration Examples	Action	Reason
A jackhammer operator runs a compressed air, rock-drilling machine that has continuous vibration.	Collect	Meets conditions
A printing press operator uses a cylinder type press that has continuous vibration while running.	Collect	Meets conditions
A bulldozer operator experiences intense vibration when the blade hits the ground and the bulldozer moves forward.	Collect	Meets conditions
A janitor operating a floor buffer in commercial buildings	Do not collect	Does not meet the threshold
A barber uses small clippers to trim hair along the neck.	Do not collect	Does not meet the threshold
A residential maintenance worker performs routine repairs with a handheld drill.	Do not collect	Does not meet the threshold
A teacher uses an electric pencil sharpener.	Do not collect	Does not meet the threshold

8_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, 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. 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). 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.

Hazardous Contaminants Examples	Action	Reason
A natural gas company worker repairs leaks in gas lines. Although precautions are taken, even when the job is done properly, workers inhale toxic fumes that negatively impact breathing.	Collect, code duration, “Yes” to PPE	Meets conditions
An automotive mechanic breathes fumes from grease, oil, gas, and engine exhaust while working.	Collect	Meets conditions
A casino worker is exposed to heavy second hand smoke from tobacco that contains benzene, arsenic, carbon monoxide, chromium metal, lead, and nicotine	Collect	Meets conditions
A cosmetologist applies strong chemicals such as bleach, dye, and tint to color hair.	Collect	Meets conditions
A farm worker, stacking hay and grain with a pitchfork, inhales large amounts of dust.	Collect	Meets conditions
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
A textile dye-machine operator works without protective clothing, tending equipment that mixes strong acids and	Collect	Meets conditions

Hazardous Contaminants Examples	Action	Reason
anhydrous ammonia for use in bleaching and finishing carpets.		
A glassworker at a historical museum uses old-fashioned methods to apply acids to etch glass.	Collect	Meets conditions
A worker in a busy open-air tollbooth breathes auto exhaust all day.	Collect	Meets conditions
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
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
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
A tank truck driver drives trucks to deliver industrial application gases to customers.	Do not collect	Does not meet the threshold
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
A teacher inhales chalk dust while using the blackboard.	Do not collect	Does not meet the threshold
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
Registered nurses must use hand sanitizers and other disinfectants such as isopropyl alcohol swabs.	Do not collect	Does not meet the threshold
A lifeguard works in a chlorinated swimming pool.	Do not collect	Does not meet the threshold

8_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 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.
- Risks associated with standard office equipment, such as shredders and copiers, also do not meet the threshold.

Proximity to Moving Mechanical Parts Examples	Action	Reason
A deli worker operates a slicer to cut meats and cheeses. Even with required safety guards in place, injury is possible.	Collect	Meets conditions
A landscaper uses a chipper/shredder to mulch branches and tree debris.	Collect	Meets conditions
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
Mechanics working on running engines and moving vehicle parts while performing repairs.	Collect	Meets conditions
An accountant uses a crosscut shredder. Snagged clothing could cause injury.	Do not collect	Does not meet the threshold
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
Food preparation workers use chef knives to chop and dice food.	Do not collect	Does not meet the definition of mechanical equipment
A cashier in a grocery store works around a conveyor belt that moves grocery items.	Do not collect	Does not meet the threshold
A carpenter uses manual hammer and screwdriver.	Do not collect	Does not meet definition of mechanical equipment
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.

8_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.

High, Exposed Places Examples	Action	Reason
A painter works from ladders or scaffolding.	Collect	Meets conditions
A lineperson repairs power lines, working from the bucket of a cherry picker or climbing the pole.	Collect	Meets conditions
A tree trimmer cuts branches using canopies and truck-mounted lifts.	Collect	Meets conditions
Loading-dock workers are exposed and at risk of falling five feet or more.	Collect	Meets conditions
A retail sales clerk uses a step stool to reach items on upper shelves.	Do not collect	Does not meet the height threshold
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
A lifeguard, in a tower, is surrounded by a 5-foot railing.	Do not collect	Not exposed

8_11 Noise Intensity Level

Noise Intensity Level

The amount of noise that workers experience while working.

All work environments have a noise level. There are four levels:

Quiet

- Private office
- 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) workers use to lessen noise exposure while performing critical tasks. If workers use equipment that lessens all noise exposure, collect exposure as quiet.

Noise Intensity Level Examples	Action
An accountant works in a private office with minimal noise and few interruptions.	Collect as quiet
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.	Collect as moderate
A stone quarry worker hears explosions and heavy machinery throughout the day. Even with required hearing protection, sounds are loud.	Collect as loud
A landscaper uses chainsaws, chipper/shredders, and wet saws to cut pavers. The landscaper is not required to wear hearing protection.	Collect as very loud

Appendix 1

List of Potential Hazards

Air Contaminants

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

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

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

Toxic Substances

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

Mineral Dusts

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

Derived from <https://www.osha.gov/SLTC/hazardoustoxicsubstances/index.html>

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 ¾" 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:

<http://www.ed.gov/about/offices/list/ous/international/usnei/us/doctorate.doc>

Glossary

Accommodation

Are changes to tasks or the work environment that an employer makes to meet the needs of an individual worker with a disability or other work constraints.

Associate's Degree

A post-secondary undergraduate academic degree (Associate of Arts or Associates of Science) awarded upon completion of a course of study usually lasting two years. One of the two years is vocational education and counted toward SVP and the other year is considered general education. This is in contrast with vocational associate's degrees in which both years are vocational in nature and are included in SVP.

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

Issued by a certification body or industry/professional association, acknowledges that occupation specific skills and abilities exist, and expires if not renewed.

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).

Combination Jobs

Jobs that encompass two or more distinct sets of duties. Requires the coding of a primary SOC and the documentation of a secondary SOC.

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.

Credentials

An SVP component that includes training time required as a condition of hiring which often results in a certification, license, or educational certificate.

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

Issued by an educational institution (or a training provider), certifies that an occupation specific program of study was completed, and typically does not expire.

Exertion

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

Experience

Measures the minimum amount of prior relevant work activity.

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 dry 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, or otherwise working primarily with fingers rather than the whole hand or arm, as in gross manipulation.

Force

An interaction that changes the motion of an object.

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.

Frequency of Work Being Checked

A cognitive element which measures the frequency work is checked by either a supervisor or a lead worker to ensure that performance standards are being met.

Frequent

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

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 and/or other sounds.

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 Sounds

Includes the ability to hear other sounds outside of words/language that are related to critical tasks. Include hearing items such as machinery and equipment alarms and sounds, as well as animal or human sounds other than speech, etc.

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.

High School Vocational

A diploma signifying satisfactory completion of secondary general education with a concentration in career subjects and/or technical instruction plus applicable mathematics and science requirements, usually acquired in vocational technical school. Half of the time spent in a high school vocational education classes are included in SVP because half of the time is considered general education and the other half is considered vocationally relevant. A high school student spending six months at vo-tech would count for three months of SVP.

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).

Interaction with Public/Crowds

A category of cognitive demands which consists of three elements: Working with the General Public, Working around Crowds, and Telework.

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

Issued by a government agency, which constitutes a legal authority to perform a specific occupation, and which expires if not renewed.

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 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.

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 not specific to a 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 Credential

Credential 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 two elements – Work Related 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.

Problem solving

A cognitive element that measures how often workers are faced with a new or difficult situation which requires them to think awhile about what to do next.

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.

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 (RHAI)

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 facility 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, 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 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.

Verbal Interactions

A cognitive element under Personal Contacts which measures how often workers must verbally interact with others for critical tasks.

Vocational Associate's Degree

A post-secondary degree awarded after completion of a two-year technical or vocational program which often results in an Associate of Applied Science degree. All time toward a vocational associate's degree is vocationally relevant and is included as SVP time. This contrasts with a regular associate's degree where usually only one of the two years of time is vocational education, therefore, only one year counts towards SVP.

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.

Working around Crowds

A cognitive element that identifies settings in which the worker is required to work in a crowd in a way that restricts their movement.

Working with the General Public

A cognitive element that identifies jobs where workers must have contact (i.e. in person or via telephone) with individuals other than co-workers (e.g., general public or workers from other establishments).

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 at which work is performed.

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.

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*.