

S-1. List of ONET elements having a value for “Level”

O*NET decomposes occupations into several hundred attributes called elements. Those elements are categorized into a small number of groups such as abilities, skills, knowledge, etc. We refer to these collectively as “skills”. The following table lists all elements in O*NET version 24.2 that have a value for “Level”. According to O*NET, the level value indicates the degree to which a particular element is required or needed to perform the associated occupation.

Table S1. Elements from O*NET dataset version 24.2 having a value for Level.

element category	element name	element id
Abilities	Oral Comprehension	1.A.1.a.1
Abilities	Written Comprehension	1.A.1.a.2
Abilities	Oral Expression	1.A.1.a.3
Abilities	Written Expression	1.A.1.a.4
Abilities	Fluency of Ideas	1.A.1.b.1
Abilities	Originality	1.A.1.b.2
Abilities	Problem Sensitivity	1.A.1.b.3
Abilities	Deductive Reasoning	1.A.1.b.4
Abilities	Inductive Reasoning	1.A.1.b.5
Abilities	Information Ordering	1.A.1.b.6
Abilities	Category Flexibility	1.A.1.b.7
Abilities	Mathematical Reasoning	1.A.1.c.1
Abilities	Number Facility	1.A.1.c.2
Abilities	Memorization	1.A.1.d.1
Abilities	Speed of Closure	1.A.1.e.1
Abilities	Flexibility of Closure	1.A.1.e.2
Abilities	Perceptual Speed	1.A.1.e.3
Abilities	Spatial Orientation	1.A.1.f.1
Abilities	Visualization	1.A.1.f.2
Abilities	Selective Attention	1.A.1.g.1
Abilities	Time Sharing	1.A.1.g.2
Abilities	Arm-Hand Steadiness	1.A.2.a.1
Abilities	Manual Dexterity	1.A.2.a.2
Abilities	Finger Dexterity	1.A.2.a.3
Abilities	Control Precision	1.A.2.b.1
Abilities	Multilimb Coordination	1.A.2.b.2
Abilities	Response Orientation	1.A.2.b.3
Abilities	Rate Control	1.A.2.b.4
Abilities	Reaction Time	1.A.2.c.1
Abilities	Wrist-Finger Speed	1.A.2.c.2

Abilities	Speed of Limb Movement	1.A.2.c.3
Abilities	Static Strength	1.A.3.a.1
Abilities	Explosive Strength	1.A.3.a.2
Abilities	Dynamic Strength	1.A.3.a.3
Abilities	Trunk Strength	1.A.3.a.4
Abilities	Stamina	1.A.3.b.1
Abilities	Extent Flexibility	1.A.3.c.1
Abilities	Dynamic Flexibility	1.A.3.c.2
Abilities	Gross Body Coordination	1.A.3.c.3
Abilities	Gross Body Equilibrium	1.A.3.c.4
Abilities	Near Vision	1.A.4.a.1
Abilities	Far Vision	1.A.4.a.2
Abilities	Visual Color Discrimination	1.A.4.a.3
Abilities	Night Vision	1.A.4.a.4
Abilities	Peripheral Vision	1.A.4.a.5
Abilities	Depth Perception	1.A.4.a.6
Abilities	Glare Sensitivity	1.A.4.a.7
Abilities	Hearing Sensitivity	1.A.4.b.1
Abilities	Auditory Attention	1.A.4.b.2
Abilities	Sound Localization	1.A.4.b.3
Abilities	Speech Recognition	1.A.4.b.4
Abilities	Speech Clarity	1.A.4.b.5
Knowledge	Administration and Management	2.C.1.a
Knowledge	Clerical	2.C.1.b
Knowledge	Economics and Accounting	2.C.1.c
Knowledge	Sales and Marketing	2.C.1.d
Knowledge	Customer and Personal Service	2.C.1.e
Knowledge	Personnel and Human Resources	2.C.1.f
Knowledge	Production and Processing	2.C.2.a
Knowledge	Food Production	2.C.2.b
Knowledge	Computers and Electronics	2.C.3.a
Knowledge	Engineering and Technology	2.C.3.b
Knowledge	Design	2.C.3.c
Knowledge	Building and Construction	2.C.3.d
Knowledge	Mechanical	2.C.3.e
Knowledge	Mathematics	2.C.4.a
Knowledge	Physics	2.C.4.b
Knowledge	Chemistry	2.C.4.c
Knowledge	Biology	2.C.4.d
Knowledge	Psychology	2.C.4.e
Knowledge	Sociology and Anthropology	2.C.4.f

Knowledge	Geography	2.C.4.g
Knowledge	Medicine and Dentistry	2.C.5.a
Knowledge	Therapy and Counseling	2.C.5.b
Knowledge	Education and Training	2.C.6
Knowledge	English Language	2.C.7.a
Knowledge	Foreign Language	2.C.7.b
Knowledge	Fine Arts	2.C.7.c
Knowledge	History and Archeology	2.C.7.d
Knowledge	Philosophy and Theology	2.C.7.e
Knowledge	Public Safety and Security	2.C.8.a
Knowledge	Law and Government	2.C.8.b
Knowledge	Telecommunications	2.C.9.a
Knowledge	Communications and Media	2.C.9.b
Knowledge	Transportation	2.C.10
Skills	Reading Comprehension	2.A.1.a
Skills	Active Listening	2.A.1.b
Skills	Writing	2.A.1.c
Skills	Speaking	2.A.1.d
Skills	Mathematics	2.A.1.e
Skills	Science	2.A.1.f
Skills	Critical Thinking	2.A.2.a
Skills	Active Learning	2.A.2.b
Skills	Learning Strategies	2.A.2.c
Skills	Monitoring	2.A.2.d
Skills	Social Perceptiveness	2.B.1.a
Skills	Coordination	2.B.1.b
Skills	Persuasion	2.B.1.c
Skills	Negotiation	2.B.1.d
Skills	Instructing	2.B.1.e
Skills	Service Orientation	2.B.1.f
Skills	Complex Problem Solving	2.B.2.i
Skills	Operations Analysis	2.B.3.a
Skills	Technology Design	2.B.3.b
Skills	Equipment Selection	2.B.3.c
Skills	Installation	2.B.3.d
Skills	Programming	2.B.3.e
Skills	Operation Monitoring	2.B.3.g
Skills	Operation and Control	2.B.3.h
Skills	Equipment Maintenance	2.B.3.j
Skills	Troubleshooting	2.B.3.k
Skills	Repairing	2.B.3.l

Skills	Quality Control Analysis	2.B.3.m
Skills	Judgment and Decision Making	2.B.4.e
Skills	Systems Analysis	2.B.4.g
Skills	Systems Evaluation	2.B.4.h
Skills	Time Management	2.B.5.a
Skills	Management of Financial Resources	2.B.5.b
Skills	Management of Material Resources	2.B.5.c
Skills	Management of Personnel Resources	2.B.5.d
Work Activities	Getting Information	4.A.1.a.1
Work Activities	Monitor Processes, Materials, or Surroundings	4.A.1.a.2
Work Activities	Identifying Objects, Actions, and Events	4.A.1.b.1
Work Activities	Inspecting Equipment, Structures, or Material	4.A.1.b.2
Work Activities	Estimating the Quantifiable Characteristics of Products, Events, or Information	4.A.1.b.3
Work Activities	Judging the Qualities of Things, Services, or People	4.A.2.a.1
Work Activities	Processing Information	4.A.2.a.2
Work Activities	Evaluating Information to Determine Compliance with Standards	4.A.2.a.3
Work Activities	Analyzing Data or Information	4.A.2.a.4
Work Activities	Making Decisions and Solving Problems	4.A.2.b.1
Work Activities	Thinking Creatively	4.A.2.b.2
Work Activities	Updating and Using Relevant Knowledge	4.A.2.b.3
Work Activities	Developing Objectives and Strategies	4.A.2.b.4
Work Activities	Scheduling Work and Activities	4.A.2.b.5
Work Activities	Organizing, Planning, and Prioritizing Work	4.A.2.b.6
Work Activities	Performing General Physical Activities	4.A.3.a.1
Work Activities	Handling and Moving Objects	4.A.3.a.2
Work Activities	Controlling Machines and Processes	4.A.3.a.3
Work Activities	Operating Vehicles, Mechanized Devices, or Equipment	4.A.3.a.4
Work Activities	Interacting With Computers	4.A.3.b.1
Work Activities	Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	4.A.3.b.2
Work Activities	Repairing and Maintaining Mechanical Equipment	4.A.3.b.4
Work Activities	Repairing and Maintaining Electronic Equipment	4.A.3.b.5
Work Activities	Documenting/Recording Information	4.A.3.b.6
Work Activities	Interpreting the Meaning of Information for Others	4.A.4.a.1
Work Activities	Communicating with Supervisors, Peers, or Subordinates	4.A.4.a.2
Work Activities	Communicating with Persons Outside Organization	4.A.4.a.3
Work Activities	Establishing and Maintaining Interpersonal Relationships	4.A.4.a.4
Work Activities	Assisting and Caring for Others	4.A.4.a.5
Work Activities	Selling or Influencing Others	4.A.4.a.6
Work Activities	Resolving Conflicts and Negotiating with Others	4.A.4.a.7
Work Activities	Performing for or Working Directly with the Public	4.A.4.a.8
Work Activities	Coordinating the Work and Activities of Others	4.A.4.b.1

Work Activities	Developing and Building Teams	4.A.4.b.2
Work Activities	Training and Teaching Others	4.A.4.b.3
Work Activities	Guiding, Directing, and Motivating Subordinates	4.A.4.b.4
Work Activities	Coaching and Developing Others	4.A.4.b.5
Work Activities	Provide Consultation and Advice to Others	4.A.4.b.6
Work Activities	Performing Administrative Activities	4.A.4.c.1
Work Activities	Staffing Organizational Units	4.A.4.c.2
Work Activities	Monitoring and Controlling Resources	4.A.4.c.3