Job Skills Most Needed Across All Occupations

in Manufacturing

Job Skills Overview

Job skills are personal abilities that help workers carry out job-related tasks. However, depending on the occupation, the required skills can be very different. For instance, construction workers need a unique set of skills different from accountants, teachers, or production workers.

Some of the most important job skills come as second nature to employees. The ability to listen well, show up to work on time, to take and apply instructions, and to maintain focus for long periods of time are critical to success in almost any workplace. Basic phone courtesy and computer and e-mail skills fall in this category. Most of the time, these sorts of skills are assumed: that is, employers expect employees to have them. People who struggle with these basic skills or job requirements can take part in what is known as "skills workshops." These sorts of workshops are often held at local job centers, community colleges or non-profit centers. These types of skills are not the focus here.

Rather the focus is on the skills that employers list as "required" or "desired" in position announcements and specific to the sort of work at issue. A corporate manager, for instance, may need to demonstrate meeting leadership skills and lawyers will need to show that they are persuasive. Specialized job skills like this can be thought of as adjectives and short phrases describing how successful employees do their jobs.

Fortunately, these required skills can be summarized across different occupational groups. Using data compiled from the Occupational Information Network (ONET), skills can be categorized into four useful groups that can aid in training and career planning and transitions. The four types of job skills discussed here are: Knowledge Areas, General Work Activities, Detail Work Activities, and Tools & Technologies.

A Knowledge Area is a key educational or experience requirement for an occupation (e.g. Computers and Electronics).

General Work Activities are types of job behaviors that occur across multiple occupations (e.g. interacting with computers).

Detailed Work Activities are types of specific job behaviors or duties particular to an occupation (e.g. use computers to enter, access or retrieve data).

Tools & Technologies are machines, equipment, tools, and information technologies that one could be expected to use in a particular occupation (e.g. Microsoft Access).

In many occupations, prior experience can itself be an essential job skill. People who have held similar jobs in the past are often uniquely qualified to continue, or to expand into new occupations. Many essential at-work skills are transferable to what are called related occupations, which mean that they can easily be applied to a variety of different jobs.

Source: CWIA analysis of Occupation Information Network (O*NET) data.

Knowledge Areas

(Total of 33 – all listed below)

388 occupations were analyzed and the knowledge area, "English Language," was found needed in 63 percent of all occupations (243/388).

Knowledge Areas are key educational or experience requirements for an occupation (e.g. Computers and Electronics).

Knowledge Area	Occupations Requiring	Pct.
English Language	243	63%
Mathematics	229	59%
Customer and Personal Service	206	53%
Mechanical	178	46%
Administration and Management	175	45%
Computers and Electronics	160	41%
Production and Processing	160	41%
Education and Training	145	37%
Clerical	140	36%
Engineering and Technology	129	33%
Public Safety and Security	122	31%
Design	112	29%
Law and Government	84	22%
Communications and Media	76	20%
Physics	76	20%
Chemistry	71	18%
Personnel and Human Resources	71	18%
Building and Construction	70	18%
Economics and Accounting	69	18%
Psychology	63	16%
Sales and Marketing	63	16%
Transportation	60	15%
Telecommunications	41	11%
Biology	34	9%
Medicine and Dentistry	31	8%
Food Production	26	7%
Therapy and Counseling	21	5%
Sociology and Anthropology	20	5%
Geography	16	4%
Fine Arts	12	3%
Philosophy and Theology	9	2%
History and Archeology	3	1%
Foreign Language	2	1%

Source: CWIA analysis of Occupation Information Network (O*NET) data.

General Work Activities

(Total of 41 – all listed below)

391 occupations were analyzed and the general work activity, "Getting Information," was found in 95 percent of all occupations (371/391).

General Work Activities are types of job behaviors that occur across multiple occupations (e.g. interacting with computers).

General Work Activity	Occupations Requiring	Pct.
Getting Information	371	95%
Identifying Objects, Actions, and Events	310	79%
Monitor Processes, Materials, or Surroundings	286	73%
Communicating with Supervisors, Peers, or Subordinates	265	68%
Making Decisions and Solving Problems	254	65%
Handling and Moving Objects	243	62%
Inspecting Equipment, Structures, or Material	237	61%
Evaluating Information to Determine Compliance with Standards	236	60%
Updating and Using Relevant Knowledge	217	55%
Processing Information	216	55%
Documenting/Recording Information	211	54%
Establishing and Maintaining Interpersonal Relationships	209	53%
Organizing, Planning, and Prioritizing Work	200	51%
Performing General Physical Activities	200	51%
Judging the Qualities of Things, Services, or People	194	50%
Controlling Machines and Processes	189	48%
Communicating with Persons Outside Organization	176	45%
Analyzing Data or Information	174	45%
Estimating the Quantifiable Characteristics of Products, Events, or Information	169	43%
Interacting With Computers	147	38%
Thinking Creatively	138	35%
Interpreting the Meaning of Information for Others	134	34%
Scheduling Work and Activities	125	32%
Coordinating the Work and Activities of Others	123	31%
Training and Teaching Others	114	29%
Performing for or Working Directly with the Public	107	27%
Performing Administrative Activities	101	26%
Resolving Conflicts and Negotiating with Others	95	24%
Repairing and Maintaining Mechanical Equipment	92	24%

General Work Activity	Occupations Requiring	Pct.
Developing Objectives and Strategies	85	22%
Developing and Building Teams	82	21%
Provide Consultation and Advice to Others	81	21%
Guiding, Directing, and Motivating Subordinates	74	19%
Operating Vehicles, Mechanized Devices, or Equipment	71	18%
Coaching and Developing Others	66	17%
Monitoring and Controlling Resources	61	16%
Assisting and Caring for Others	57	15%
Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	50	13%
Selling or Influencing Others	48	12%
Repairing and Maintaining Electronic Equipment	38	10%
Staffing Organizational Units	22	6%

Source: CWIA analysis of Occupation Information Network (O*NET) data.

Detailed Work Activities

(Total of 2,122 - top 15% listed below)

398 occupations were analyzed and the detailed work activity, "use hand or power tools," was found needed in 43 percent of all occupations (171/398).

Detailed Work Activities are types of specific job behaviors or duties particular to an occupation (e.g. use computers to enter, access or retrieve data).

Detailed Work Activity	Occupations Requiring	Pct.
use hand or power tools	171	43%
read technical drawings	119	30%
use computers to enter, access or retrieve data	119	30%
direct and coordinate activities of workers or staff	117	29%
understand technical operating, service or repair manuals	116	29%
read blueprints	110	28%
read work order, instructions, formulas, or processing charts	110	28%
maintain records, reports, or files	108	27%
move or fit heavy objects	105	26%
fabricate, assemble, or disassemble manufactured products by hand	100	25%
communicate technical information	98	25%
examine products or work to verify conformance to specifications	96	24%
use oral or written communication techniques	96	24%
use precision measuring tools or equipment	94	24%
measure, weigh, or count products or materials	93	23%
prepare reports	90	23%
adhere to safety procedures	85	21%
clean equipment or machinery	76	19%
maintain production or work records	74	19%
adjust production equipment/machinery setup	69	17%
monitor production machinery/equipment operation to detect problems	68	17%
read specifications	68	17%
confer with engineering, technical or manufacturing personnel	66	17%
use spreadsheet software	62	16%

Detailed Work Activity	Occupations Requiring	Pct.
make presentations	61	15%
perform safety inspections in manufacturing or industrial setting	61	15%
use word processing or desktop publishing software	61	15%
develop policies, procedures, methods, or standards	60	15%
load or unload material or workpiece into machinery	60	15%
operate hoist, winch, or hydraulic boom	60	15%

Source: CWIA analysis of the Occupation Information (O*NET) data.

Tools & Technologies

(Total of 2,109 - top 15% listed below)

163 occupations were analyzed and the tool/technology, "personal computer," was found needed in 72 percent of all occupations (118/163).

Tools & Technologies are machines, equipment, tools, and information technologies that one could be expected to use in a particular occupation (e.g. Microsoft Access).

Tool or Technology	Occupations Requiring	Pct.
Personal computers	118	72%
Data base user interface and query software	111	68%
Desktop computers	106	65%
Spreadsheet software	100	61%
Word processing software	95	58%
Notebook computers	82	50%
Internet browser software	64	39%
Hammers	61	37%
Project management software	60	37%
Analytical or scientific software	59	36%
Office suite software	57	35%
Screwdrivers	56	34%
Presentation software	53	33%
Power drills	52	32%
Electronic mail software	50	31%
Power saws	50	31%
Adjustable wrenches	47	29%
Computer aided design CAD software	47	29%
Laser printers	47	29%
Tape measures	46	28%
Personal digital assistant PDAs or organizers	45	28%
Utility knives	45	28%
Forklifts	43	26%
Ladders	41	25%
Graphics or photo imaging software	40	25%
Hoists	40	25%
Power grinders	40	25%
Accounting software	38	23%
Saws	37	23%
Respirators	36	22%
Scaffolding	35	21%
Air compressors	34	21%
Locking pliers	34	21%
Micrometers	34	21%
Calipers	33	20%
Levels	33	20%

Tool or Technology	Occupations Requiring	Pct.
Calendar and scheduling software	32	20%
Scanners	32	20%
Welders	32	20%
Jacks	31	19%
Protective gloves	31	19%
Pry bars	31	19%
Workshop presses	31	19%
Blow torches	30	18%
Files	30	18%
Safety glasses	30	18%
Enterprise resource planning ERP software	29	18%
Two way radios	29	18%
Adjustable widemouth pliers	28	17%
Inventory management software	28	17%
Socket sets	27	17%
Squares	26	16%
Welding masks	26	16%
Workshop cranes	26	16%
Cold chisels	25	15%
Goggles	25	15%
Multimeters	25	15%
Power sanders	25	15%
Shears	25	15%
Tablet computers	25	15%
Document management software	24	15%
Soldering irons or guns	24	15%

Source: CWIA analysis of Occupation Information Network (O*NET) data.